INDUSTRIAL LANDS ANALYSIS

FOR THE CENTRAL PUGET SOUND REGION

Puget Sound Regional Council
PSRC
cai community attributes inc

March 2015

Puget Sound Regional Council

Project Lead:	Erika Harris Associate Planner, PSRC	Puget Sound Regional Council 1011 Western Ave #500 Seattle, WA 98104 206 464 7090 psrc.org
PSRC Staff:	Lauren Engel Michael Jensen Rebeccah Maskin Ivan Miller Patrick Pierce Mark Simonson	
Technical Working Group:	Rob Allen Charlene Anderson Allison Daniels Chandler Felt Joseph Gellings Allan Giffen Tom Hauger Gloria Hirashima Kell McAboy Katrina Knutson Bill Mandeville Ian Munce Geri Poor Frank Slusser Sarah Stiteler Elizabeth Chamberlain	Pierce County City of Kent City of Bremerton King County Port of Seattle City of Everett City of Seattle City of Marysville Port of Tacoma Kitsap County Dept. of Commerce,WA City of Tacoma Port of Seattle Snohomish County City of Redmond City of Auburn

cai community attributes inc

President & CEO:	Chris Mefford	Community Attributes, Inc. 1411 Fourth Ave, Suite 1401 Seattle, WA 98101 206 523 6683 communityattributes.com
Analysis and Research:	Annie Boeckman Spencer Cohen Erin Gengo Mark Goodman Diana Haring Yolanda Ho Michaela Jellicoe Bryan Lobel Radhika Nair Alison Peters Tyler Schrag Elliott Weiss	

Funding for this document provided in part by member jurisdictions, grants from U.S. Department of Transportation, Federal Transit Administration, Federal Highway Administration and Washington State Department of Transportation. PSRC fully complies with Title VI of the Civil Rights Act of 1964 and related statutes and regulations in all programs and activities. For more information, or to obtain a Title VI Complaint Form, see http://www.psrc.org/about/public/titlevi or call 206-587-4819.

American with Disabilities Act (ADA) Information:
Individuals requiring reasonable accommodations may request written materials in alternate formats, sign language interpreters, physical accessibility accommodations, or other reasonable accommodations by contacting the ADA Coordinator, Thu Le at 206-464-6175, with two weeks advance notice. Persons who are deaf or hard of hearing may contact the ADA Coordinator, Thu Le through TTY Relay 711.

Additional copies of this document may be obtained by contacting: Puget Sound Regional Council
Information Center
1011 Western Avenue, Suite 500
Seattle, Washington 98104-1035
206-464-7532 • fax 206-587-4825 • info@psrc.org
psrc.org

CONTENTS

ACRONYMS

BINMIC	Ballard-Interbay MIC
BNSF	Burlington Northern/Santa Fe (rail line)
CAGR	Compound Annual Growth Rate
CAI	Community Attributes Inc.
CAMPS	Center for Advanced Manufacturing in Puget Sound
CPC	City Planning Commission
CPP	Countywide Planning Policies
EIS	Environmental Impact Statement
EPA	Environmental Protection Agency
FMSIB	Freight Mobility Strategic Investment Board
GMPC	Growth Management Planning Council
IRDB	Industrial Revenue Development Bonds
JBLM	Joint Base Lewis-McChord
LAMIRD	Limited Areas of More Intense Rural Development
Mbps	Megabits Per Second
MIC	Manufacturing/Industrial Centers
MRSC	Municipal Research and Services Center
NAFTA	North American Free Trade Agreement
NYIRN	New York Industrial Retention Network
PDR	Production, Distribution and Repair (district)
PMD	Planned Manufacturing District
PSIC	Puget Sound Industrial Center
PSRC	Puget Sound Regional Council
R&D	Research and Development
SEPA	State Environmental Policy Act
SODO	South of Downtown (Seattle)
SR	State Route
TIF	Tax Increment Financing
UW	University of Washington
WEDFA	Washington Economic Development Finance Authority
WSDOT	Washington State Department of Transportation
WTO	World Trade Organization

An Industrial Lands Analysis for the Central Puget Sound Region

Executive Summary

INTRODUCTION

The central Puget Sound region's economy is growing and will continue to add jobs through 2040. Economic activity on industrial land is a significant contributor to the region's prosperity and growth. PSRC forecasts suggest that industrial jobs on industrial lands will increase by almost 84,000 between 2012 and 2040.

This report provides an updated assessment of economic activity on industrial land in the central Puget Sound region, including analysis of industry forecasts and the region's ability to accommodate economic growth on industrial lands. The report provides data and analysis intended to serve a broad range of land use and economic development planning needs and interests.

PROJECT APPROACH & METHODS

This report takes as its starting point that PSRC's forecast employment will be accommodated within the region. Industrial businesses' location choices reflect complex factors, including land price, rents and availability, proximity of resource inputs, distribution networks, anchors and assets, and markets. This analysis focuses on industrial-zoned or designated land within the region and how these areas could accommodate forecast growth.

The analysis segments industrial lands as follows:

- **Gross Industrial Supply Estimates.** An inventory of all industrial-zoned land in the region, spread across four counties, 82 cities and towns, plus military and tribal lands, and their diverse systems of zoning and land use designation to identify lands where industrial activities are permitted to occur and /or are encouraged.
- **Net Industrial Land Supply.** A subset of the gross industrial land supply representing lands available or potentially available to accommodate growth in industrial jobs, including vacant land and land available for infill and redevelopment. Net supply excludes lands that are not available or appropriate for future industrial development (rights-of-way, parks, protected open space,

protected resource lands, and certain public facilities such as airports).

The analysis then assesses, at the scale of individual subareas (defined as 13 geographically proximate industrial agglomerations of 1,000 or more acres, plus four remaining dispersed areas in each county), how forecast employment can be accommodated, and whether and how development patterns in each subarea might need to change to do so.

INDUSTRIAL ZONING

Urban planning practices in the region will continue to have a profound influence on the location and function of industrial activity in the region. As such, this analysis also contemplates land use management and planning strategies necessary to successfully accommodate future growth in the industrial sector.

Cities across the region use the term 'industrial' to denote a set of uses that are land-intensive, often involving atypical patterns of noise, light, and hours of operation. Industrial uses span a wide range, from traditional core industrial uses such as manufacturing, transportation, warehousing, freight terminals, and railroad yards to related uses such as nurseries, repair services, and laboratories. These uses differ in many ways, including land utilization, employment patterns, locational preferences, and linkages to the regional economy.

Cities regulate industrial uses by listing permitted, prohibited or conditional uses, without specifically defining the overarching 'industrial' segment. The wide range of allowed uses, and the difficulty in striking the right balance for such an assortment of uses, has led to a system where zoning codes are viewed as too permissive by core industrial users.

Current zoning for industrial land conflates two ideas about land use. The first is the need to set aside land for employment-based uses that can operate only in certain specific locations. The second is the need to make space within cities for certain land-intensive uses, such as automotive repair and services. The latter may locate in industrial-zoned land mainly because the area allows outdoor storage and easy auto access close to employment centers. Another use, which is not traditionally considered a core industrial use but is increasingly found on industrial-zoned land, is research and development (R&D). R&D uses vary widely; in some instances they involve manufacturing or production, and in some cases they are indistinguishable from office uses. Regardless of their character, these uses are allowed in many industrial designations throughout the region.

TRENDS SHAPING INDUSTRIAL LAND USE IN THE CENTRAL PUGET SOUND REGION

Historic Global Manufacturing Trends

Historically, a massive shift in production away from the U.S. and to countries such as China affected the demand for land throughout the U.S., including the central Puget Sound region. More recently, outsourcing of manufacturing to Mexico, in addition to traditional outsourcing to Asia, continues regionally according to real estate professionals interviewed for this study.

Recent Resurgence of Manufacturing Jobs

Manufacturing employment, as a fraction of total employment, declined for the past half century in the U.S. In addition to offshoring, economists identified productivity gains, domestic labor costs and other factors as driving forces behind this contraction. In recent years, however, important changes have led to modest but noticeable shifts back toward domestic production, such as the following:

- Rising labor costs in China and lower energy costs in the U.S., narrowing some of the cost advantages of offshoring.
- Companies' desire to be close to customers to respond quickly to shifts in demand.
- A political climate supportive of manufacturing employment.

Manufacturing industries, including computers and electronics, machinery, fabricated metals, electrical equipment, and plastics and rubber, are leading the on-shoring trend. Other sectors reviving domestic manufacturing include production of furniture, petroleum, chemicals, primary metals, and food and beverages.

Transformations in Manufacturing

The global manufacturing sector is expected to continue undergoing profound transformations. Trends underway in 2015 include the following:

- Large-scale manufacturing of complex and commodity products will continue, but a growing share of manufacturing will continue moving toward smaller-scale, specialized and/or local production.
- Increased automation and technology in manufacturing will change workforce requirements, both in skills demanded and the types and quantities of occupations.
- Manufacturing will continue to evolve from production alone to include design and production supporting services.

- Technology will enable lower-impact and cleaner modern industrial processes – effectively reducing many traditional land use conflicts that have isolated industrial activity to industrial zones.
- Closed-loop manufacturing, triple-net business models, and other sustainability practices will continue to gain traction and market share in the industrial sector.
- Small-size, artisanal or "craft" production of small batches of specialized products, the so-called "Maker Movement," will take place inside city limits where access to urban markets and industry peers is paramount.

U.S. competition for industrial users in the Puget Sound region include the Gulf region, South Carolina, and Colorado, as well as regional competition from Idaho and Oregon.

Implications for Industrial-Zoned Lands

Technology advances in industrial processes, controls, buildings, and equipment have resulted in decreased sound, odor, and vibration, allowing many modern industrial businesses to co-exist with minimal impacts to adjacent residential or commercial uses. Such modern industrial businesses may not need exclusively industrial-zoned land to operate. Industrial uses may, however, be unable to compete for the generally higher-priced land outside industrial-zoned lands.

Urban manufacturing, variously known as local production or artisanal manufacturing, is a growing component of industrial jobs. It is predominantly comprised of small and medium-sized enterprises and often combines small retail, design, or office spaces with production and distribution functions. These uses can also be part of mixed-use environments and do not need exclusively industrial-zoned land to operate. These types of uses, however, are presently a small component of industrial jobs.

Due to these trends, the extent to which industrial activities must concentrate on industrial-zoned land may decline. Current regulations in some cities across the region do not reflect this changing paradigm of industry and may constrain land choices.

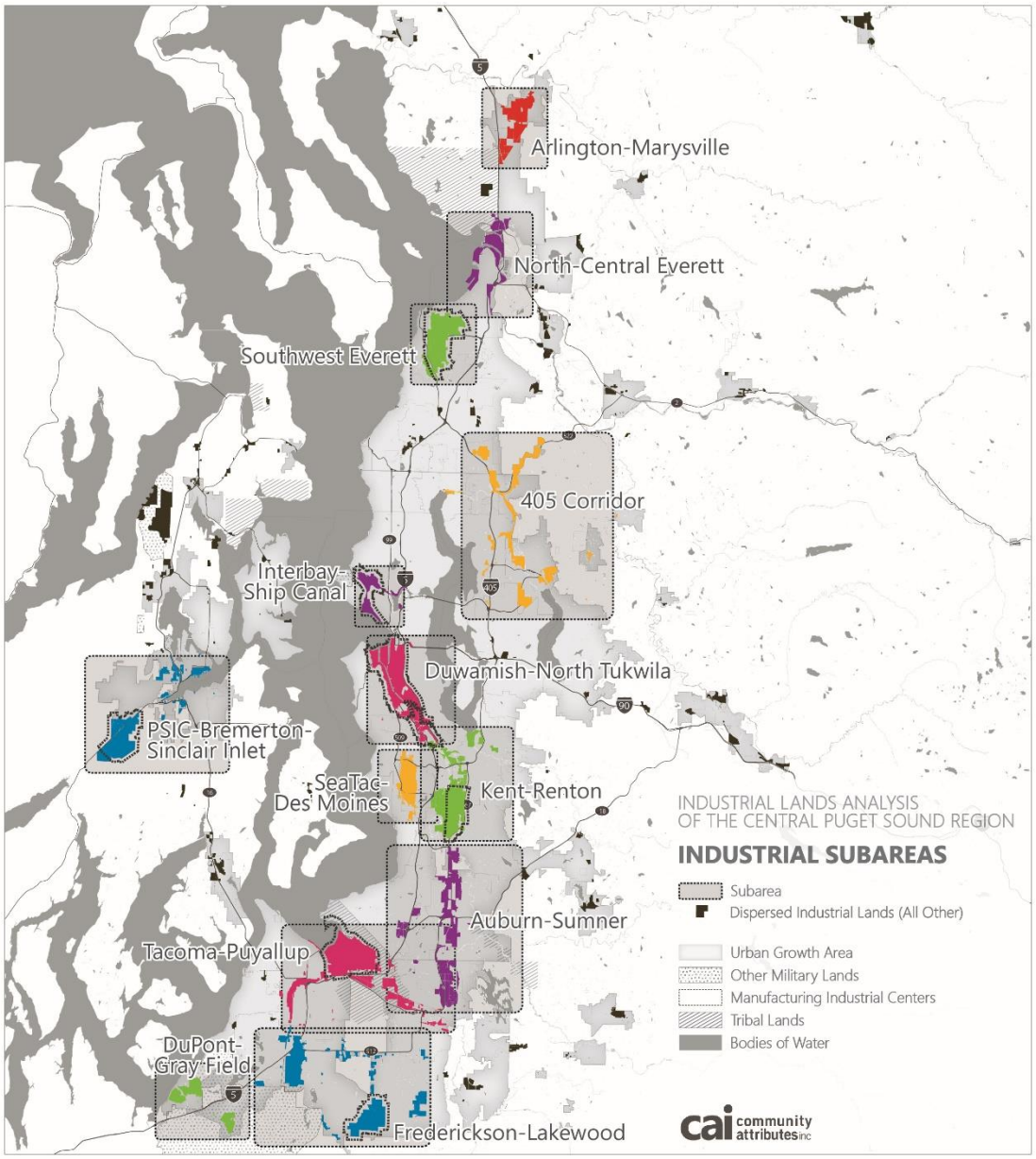
As discussed above, non-industrial-zoned land can, and will continue to, absorb industrial jobs. Opportunities for mixing non-disturbing industrial uses with other land uses will increase as the nature of some industrial activities change. Nevertheless, some industrial activities in the region will continue to have impacts and low compatibility with other uses. It is important to protect industrial-zoned land for these heavy industrial activities, especially lands with unique assets and large infrastructure investments such as ports and intermodal freight nodes.

UNDERSTANDING THE REGION'S INDUSTRIAL LANDS

What is the distribution of industrial land?

The geography of gross supply of industrial land in the region is uneven. The region's industrial-zoned lands fit into 13 geographic concentrations or subareas (See **Exhibit E.1**). An additional category, "dispersed," includes industrial lands scattered across the region. These 13 subareas and scattered land in the "dispersed" category make up 100% of

Exhibit E.1. Industrial Subareas of the Central Puget Sound Region



industrially zoned land in the region. No geographically proximate concentration of industrial-zoned land greater than 1,000 acres exists outside of the 13 subareas and dispersed lands.

What is the supply of industrial land in the region?

The region contains **71,983** gross acres of industrial-zoned and designated lands spread across four counties, 65 jurisdictions, and military and tribal lands (see **Exhibit E.2**).

The region contains **28,615** acres' net supply of industrial lands. This is a subset of gross supply and excludes land in existing rights-of-ways, parks, protected open space, protected resource lands (wetlands, floodways, etc.), and certain public facilities (including airports).

How has the quantity and distribution of industrial land in the region changed since 1998?

Since industrial lands in the region were last inventoried in 1998, gross industrial land supply has undergone erosion in some areas, with modest growth in others. Areas experiencing erosion of industrial land include Bel-Red, Everett's Snohomish Riverfront Redevelopment area, Renton Landing, SODO's Stadium District, Snohomish industrial between Everett, Mill Creek, and Lynnwood, and Auburn heavy commercial. Some jurisdictions that have added to the supply of industrial land include Arlington, Bremerton, Pierce County, and Tacoma, among others. Regional manufacturing/industrial centers (MICs) are doing a good job overall in protecting industrial land, and many MICs added industrial zoning within their boundaries.

The changes in supply also reflect methodological changes such as the inclusion of selected military areas as part of the region's industrial land supply, including Puget Sound Naval Shipyard, Naval Station Everett, Bangor Trident Base, and the McChord and Gray Field areas of Joint Base Lewis-McChord.

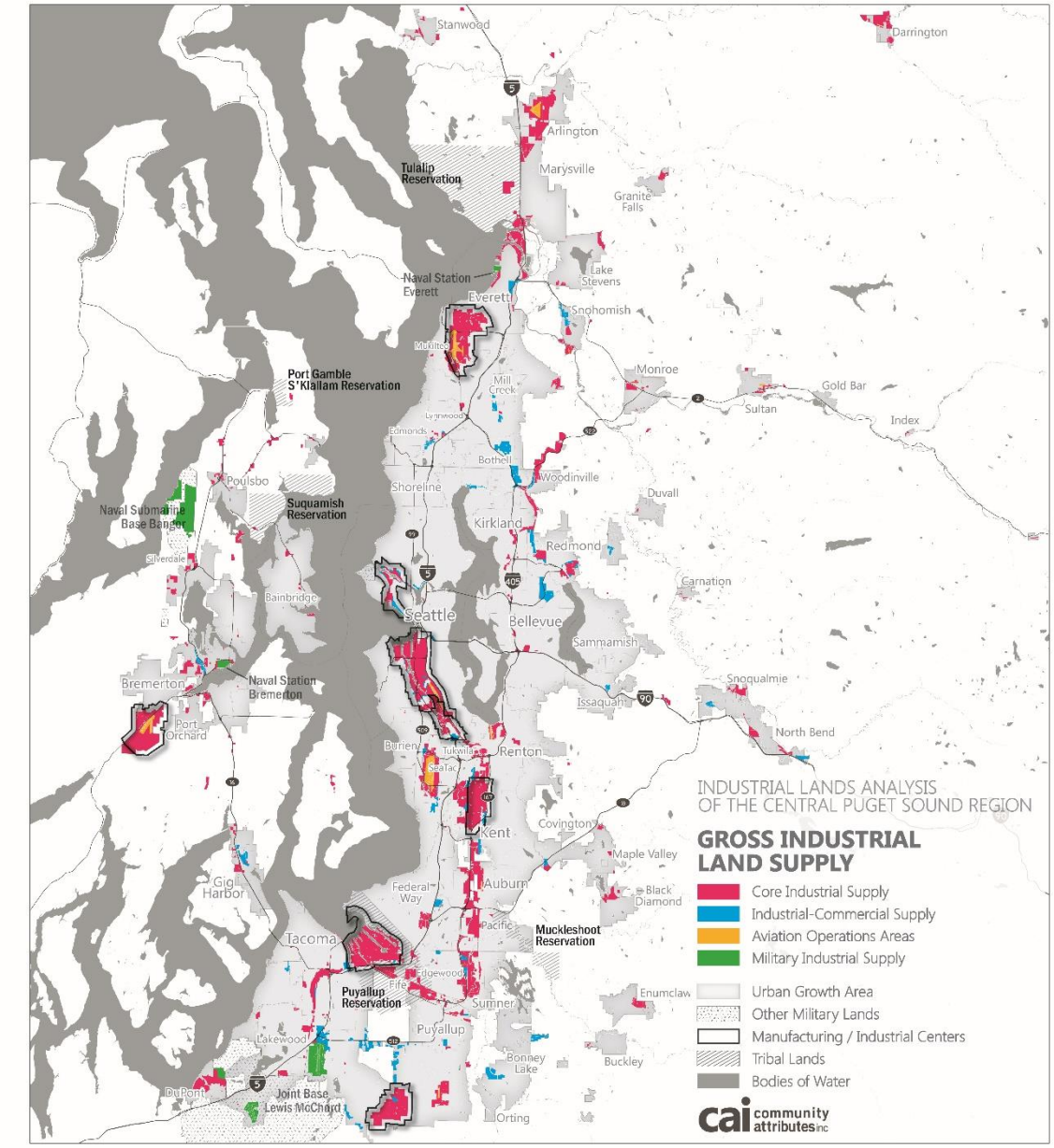
What industrial specializations are occurring on major concentrations of industrial land in the region?

Aerospace manufacturing is concentrated largely in the Southwest Everett subarea and, to a smaller extent, in the Duwamish-North Tukwila subarea.

The principal industrial land agglomerations in the central Puget Sound region are the Duwamish-North Tukwila and Kent-Renton subareas. These subareas make up the non-aerospace industrial core of the region. The Duwamish-North Tukwila and the Tacoma-Puyallup subareas include the Port of Seattle's and Port of Tacoma's primary marine shipping facilities. The Kent-Renton and Frederickson-Lakewood subareas specialize in transportation, distribution and logistics, warehousing and

manufacturing, while the Arlington-Marysville subarea specializes in distribution and logistics.

Exhibit E.2. Gross Industrial Land Supply of the Central Puget Sound Region



Three other industrial areas have specialized roles in the region. The I-405 Corridor is a high tech industrial corridor that includes traditional manufacturing and business parks with flex-tech land use. The Auburn-Sumner subarea provides distribution facilities for the region and beyond. The Interbay-Ship Canal subarea is a hub of maritime industry activities

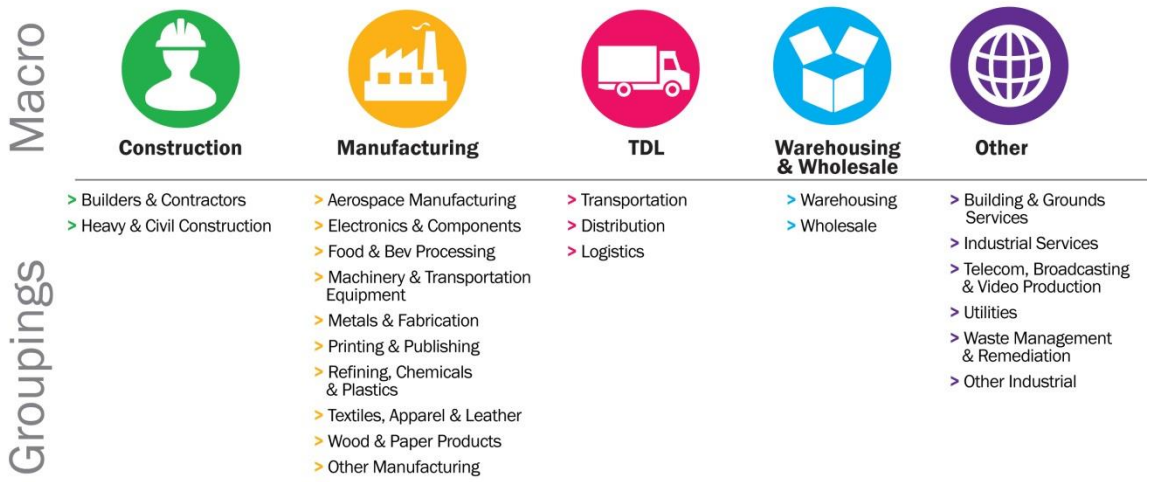
including commercial fishing fleet moorage, shipyards, and cold storage facilities.

How much of the region's industrial employment is on industrial land?

Sixty percent of the region's total industrial-related sector jobs are located in one of the 13 subareas or dispersed lands. Sectors with the highest share of employment on industrial-zoned land include Ship and Boat Building, Repair and Maintenance, and Refining Chemicals and Plastics. Sectors with a higher share of employment off industrial-zoned land include Building and Ground Services, Telecom, Broadcasting and Video Production, and Printing and Publishing.

The number of jobs on industrial lands totaled 473,700 in 2012, representing about 27.3% of all jobs across the central Puget Sound region. Between 2000 and 2012, employment on industrial lands has averaged 26.5% of total covered employment across the region.

Industrial jobs are defined in this study as occupations in the industrial activities shown in the graphic below.



What are the region's unique assets that could help retain and expand current industrial activity and attract new industrial users?

Key assets of the region include the presence of deepwater ports, proximity to China and Pacific Rim trade hubs (a relatively large industrial sector within a growing regional economy), ease of transportation access due to road, rail, water and air interfaces, support infrastructure such as pipelines for petroleum products (including jet fuel delivery to Sea-Tac International Airport), and the presence of large industrial anchors such as aerospace, maritime and life sciences employers. Planning and

programming of freight transportation projects, such as Freight Mobility Strategic Investment Board (FMSIB) projects, that improves access and mobility needs for freight-dependent industrial areas is also a unique asset.

Other regional assets are access to a highly skilled workforce, the presence of workforce development programs, availability of relatively inexpensive electricity, and local industrial policies that prioritize protection or strengthening of industrial sectors.

Interviews with local industrial business owners revealed the following physical and regulatory factors that drive the selection process for potential locations for industrial purposes:

- Land available that is buffered from residential uses.
- Access to a skilled workforce.
- Ease of transportation.
- Pre-approved, pre-permitted land.
- A regulatory environment with certainty of regulations established, respected businesses who can vouch for the permitting process, similar businesses in the area, and support from the Department of Ecology.

What is the contribution of industrial land to the regional economy?

In 2012, total wages paid out by industrial activities on industrial lands summed to $24.4 billion. Overall, the annual earnings from industrial jobs on industrial lands averaged $80,000 in 2012. Wages associated with industrial jobs on industrial lands equaled 23.2% of all wages paid out across the region in 2012. By comparison, the average wage across the four-county central Puget Sound region in 2012 was $59,700. Retail Trade, one of the largest segments of the regional work force, supported an average wage of $36,300, while Finance and Insurance paid an average wage of $86,900.

Estimated state tax revenues generated by industrial activities on industrial lands totaled over $2.25 billion in 2012.

FORECAST GROWTH

PSRC's forecasts show industrial jobs on industrial-zoned lands increasing from **305,100 in 2012 to 389,000 by 2040**.[1] This represents an addition of 83,900 industrial jobs regionwide through 2040, which yields a compound

[1] Estimates and forecasts represent covered jobs, i.e., hired workers, and thus exclude the self-employed. However, due the nature of many industrial activities, the differences between covered employment and total employment (covered + self-employed) is very small.

annual growth rate (CAGR) of 0.9%. This is lower than the 1.3% CAGR for PSRC's regional employment forecast across all sectors and land types.

Importantly, the proportion of industrial to non-industrial jobs is forecast to experience a pronounced change—**total non-industrial jobs are projected to grow from 36% of total jobs on industrial lands in 2012 to 45% by 2040.**

Variable growth among different industrial subsectors could usher in changes in the composition of employment on industrial lands. The Warehousing & Wholesale sector is projected to grow as a share of total industrial jobs on industrial lands (including public sector jobs) from 17% in 2012 to 21% in 2040, while the share of Manufacturing jobs is expected to decline (55% in 2012 to 46% in 2040). Other industrial activities – largely composed of Industrial Services – have the highest forecast growth rate and are projected to increase as a share of total industrial jobs from 8% to 13% by 2040.

ABSORPTION OF FORECAST GROWTH

Does the central Puget Sound region have enough industrial land to satisfy demand through 2040?

Subareas vary in their capacity to absorb employment growth anticipated to occur in each subarea. Mathematically, all subareas have the capacity to absorb growth, but considerations such as the desirability of existing vacant land and redevelopment ability will require strategies in some subareas to adapt to the demand for land in those areas. This analysis is based on current land use and other conditions. If the supply of industrial land changes, the findings will change. Demand findings for the subareas can be grouped into the following categories:

- **Strong demand/limited capacity.** For some subareas, strategies and planning will be required to accommodate industrial growth. These include the Interbay-Ship Canal, Duwamish-North Tukwila, Kent-Renton, and SeaTac-Des Moines subareas.
- **Strong demand/adequate capacity.** In some subareas, capacity appears adequate, but demand is strong enough to merit management strategies. These include the Frederickson-Lakewood, Southwest Everett and Tacoma-Puyallup subareas.
- **Adequate capacity.** Some subareas have adequate land capacity to accommodate growth forecasts. These include the I-405 Corridor, Arlington-Marysville, and North-Central Everett subareas, as well as the dispersed areas in all four counties.
- **Surplus capacity.** Some subareas have surplus land capacity beyond growth forecasts. These include the DuPont-Gray Field,

Puget Sound Industrial Center (PSIC)-Bremerton-Sinclair Inlet, and Auburn-Sumner subareas.

STRATEGIC POLICY APPROACHES FOR INDUSTRIAL LANDS

This report is intended to serve as a reference document for strategic conversation. Potential strategies are evident in the report's findings. Strategies that would help strengthen the competitiveness of industrial lands for industrial users are listed below to provoke dialogue among local and regional planners and leaders. Continued collaboration could further develop these strategies into coordinated, actionable steps for jurisdictions and stakeholders.

1. Ensure an adequate supply of land for industrial uses

The following policies and actions are examples of strategies that local jurisdictions should consider to protect existing land supply and, where necessary, to expand it.

- Identify and protect priority users of industrial lands.
- Limit non-industrial uses on industrial land and provide adequate non-industrial land for non-industrial uses off industrial land.
- Increase the supply of land zoned to accommodate low-impact industrial uses.
- Retain large parcels for large industrial needs.
- Work with industrial businesses to improve space efficiency and land utilization.

2. Simplify regulations to improve permitting efficiency

As industrial needs and external land use challenges evolve, new regulatory tools may help preserve industrial land for industrial uses and improve the effectiveness of existing industrial districts. Planned-action ordinances and special zoning districts streamline the permitting process and provide predictability for industrial users.

3. Develop a strategic planning framework for industrial areas

Jurisdictions can develop industrial subarea plans and strategies to encourage growth, protection or conversion of industrial land. These plans and strategies may also include economic development incentives.

4. Take advantage of Industrial Revenue Development Bonds

Industrial Revenue Development Bonds (IRDBs) are administered by the Washington Economic Development Finance Authority (WEDFA) and are used to provide low-interest, tax-free loans to industrial development

projects. These bonds could be used more widely to support industrial development.

5. Facilitate information sharing of best practices

PSRC can convene planners in the region to share information on best practices for industrial land use policy, permitting, freight mobility, brownfields cleanup, industrial economic development, and other industrial land and development topics.

6. Update regional designations

When next updating the regional MIC designation procedures, PSRC should consider changing the procedures to reflect that 1) the core industrial land designation protects industrial land more effectively than the industrial-commercial designation and 2) housing should not be allowed on core industrial land. In addition, PSRC should consider developing regional designation procedures and criteria for countywide MICs.

7. Continue to monitor supply and demand for industrial land

The region should continue to monitor and track the supply and demand for industrial land. In short intervals, PSRC could report on a small number of indicators. Examples of indicators that can be tracked in the short term include employment, wages, and land vacancy rates. In longer intervals, comprehensive analysis similar to this study could be repeated. An industrial lands data viewer could be developed to interactively display information in this analysis. In addition, PSRC can consider how the distinctions among industrial zoning and land use designations might be incorporated into PSRC's Plan Review Program, particularly for MIC plans.

8. Align infrastructure planning with industrial land policy

Aligning and coordinating transportation and utility infrastructure planning and policies at the local, regional, and state levels are key to an effective strategy and successful funding. This is particularly important with regard to transportation, given the need to protect freight mobility. One transportation funding consideration could be to include among funding criteria the degree to which jurisdictions are affected by destination-based sales tax provisions.

9. Provide support for brownfields cleanups

Local jurisdictions can support brownfields cleanup and development by creating or updating inventories, prioritizing sites to be studied and remediated, and connecting landowners with technical assistance. As

described in Chapter 3, state and federal agencies provide technical assistance and funding to both local jurisdictions and private landowners.

10. Provide economic development support

Interviews and peer city analyses reveal the need for economic development strategies that go beyond land use regulation and support, and incorporate workforce development, marketing, and business retention services to help small industrial businesses. These strategies can foster entrepreneurship by providing advocacy, branding, marketing, training and other support.

1 Introduction

Chapter 1. Introduction

PROJECT PURPOSE, GOALS AND OBJECTIVES

This report provides an analysis of industrial land supply and demand in the central Puget Sound region through 2040. The study examines existing conditions and anticipated market demand to assess whether the region has an adequate and appropriate supply of industrial land for the future. The report follows a similar effort published by PSRC in 1998.

The study seeks to address the following key questions:

- What is the supply of industrial land in the region? What is the distribution of industrial land within the region? How does that quantity, distribution and development in the region compare to the 1998 study?
- How are jurisdictions in the region planning for their industrial land?
- How much of the region's industrial employment is on industrial land?
- What industrial specializations are occurring on major concentrations of industrial land in the region?
- What is the contribution of industrial land to the regional economy?
- Does the region have an adequate supply of industrial land to meet current and future industry demand?
- What are the region's unique assets that could help retain and expand current industrial activity and attract new industrial uses?
- What actions, investments, or strategies do stakeholders think are needed to ensure an adequate and appropriate supply of industrial land?

REGIONAL CONTEXT

The Central Puget Sound Region

The central Puget Sound region is the largest metropolitan region in the Pacific Northwest. The region includes King, Kitsap, Pierce, and Snohomish counties with 82 cities and towns, represented in **Exhibit 1.1**. It covers an area of nearly 6,300 square miles (4,032,000 acres) with an estimated 2014 population of 3.8 million.

Exhibit 1.1. The Central Puget Sound Region

Source: PSRC, 2014.

The Puget Sound Regional Council

PSRC is the federally designated metropolitan planning organization for the region. PSRC's mission is to ensure a thriving central Puget Sound now and into the future through planning for regional transportation, growth management and economic development. Through PSRC, the four-county Puget Sound region's cities, towns, ports, tribes, transit agencies, and state entities work together to develop policies and make decisions about regional issues.

POLICY CONTEXT AND PAST STUDIES

The impetus and need for this study aligns with current policies and past analyses that shape land management in the central Puget Sound region. Industrial lands in the central Puget Sound region are embedded in a regional policy framework. The Growth Management Act, countywide planning policies, local comprehensive plans, and land use codes all acknowledge the role of industrial land uses and integrate planning for these lands into community visions, infrastructure investments, and economic development objectives.

This section summarizes some of the key laws and programs germane to this study's application.

The Growth Management Act

The Washington State Growth Management Act, first passed in 1990, mandates local comprehensive planning in heavily populated and high growth areas of the state. It establishes 13 goals, such as managing urban growth, protecting agricultural, forestry, and environmentally sensitive areas, protecting property rights, reducing sprawl, promoting economic development, and encouraging efficient multimodal transportation systems.

Countywide Planning Policies

The Countywide Planning Policies (CPPs) are a series of policies that address growth management issues in each county in the central Puget Sound region. The Growth Management Planning Council (GMPC) brings together elected officials from each county and the cities and jurisdictions within it to develop the CPPs.

Adopted and recently updated, the CPPs provide a countywide vision and serve as a framework for each jurisdiction to develop its own comprehensive plan, which must be consistent with the overall vision for the future of the respective county.

Buildable Lands Analysis

The Buildable Lands amendment, adopted in 1997, directs counties and its cities to evaluate capacity for growth based upon the amount of land available for urban development. The four central Puget Sound counties completed the first Buildable Lands evaluation in 2002 and are currently completing updates.

The four counties in this region each produce a Buildable Lands report in compliance with the Growth Management Act. Each analysis follows a distinct methodology, but seeks to address a common concern: ensuring

the land use policies in the counties and cities sufficiently accommodate anticipated growth, given the jurisdictions' vision for land use.

VISION 2040

Adopted under 36.70A.270, PSRC maintains VISION 2040, which contains the region's multicounty[1] planning policies. These policies establish a common regionwide framework that ensures consistency among county and city comprehensive plans and CPPs.

VISION 2040's Regional Growth Strategy groups the region into seven types of geographies:

- Metropolitan Cities (5)
- Core Cities (14, including unincorporated Silverdale)
- Larger Cities (18)
- Small Cities (46)
- Unincorporated Urban Growth Areas
- Rural lands
- Resource lands

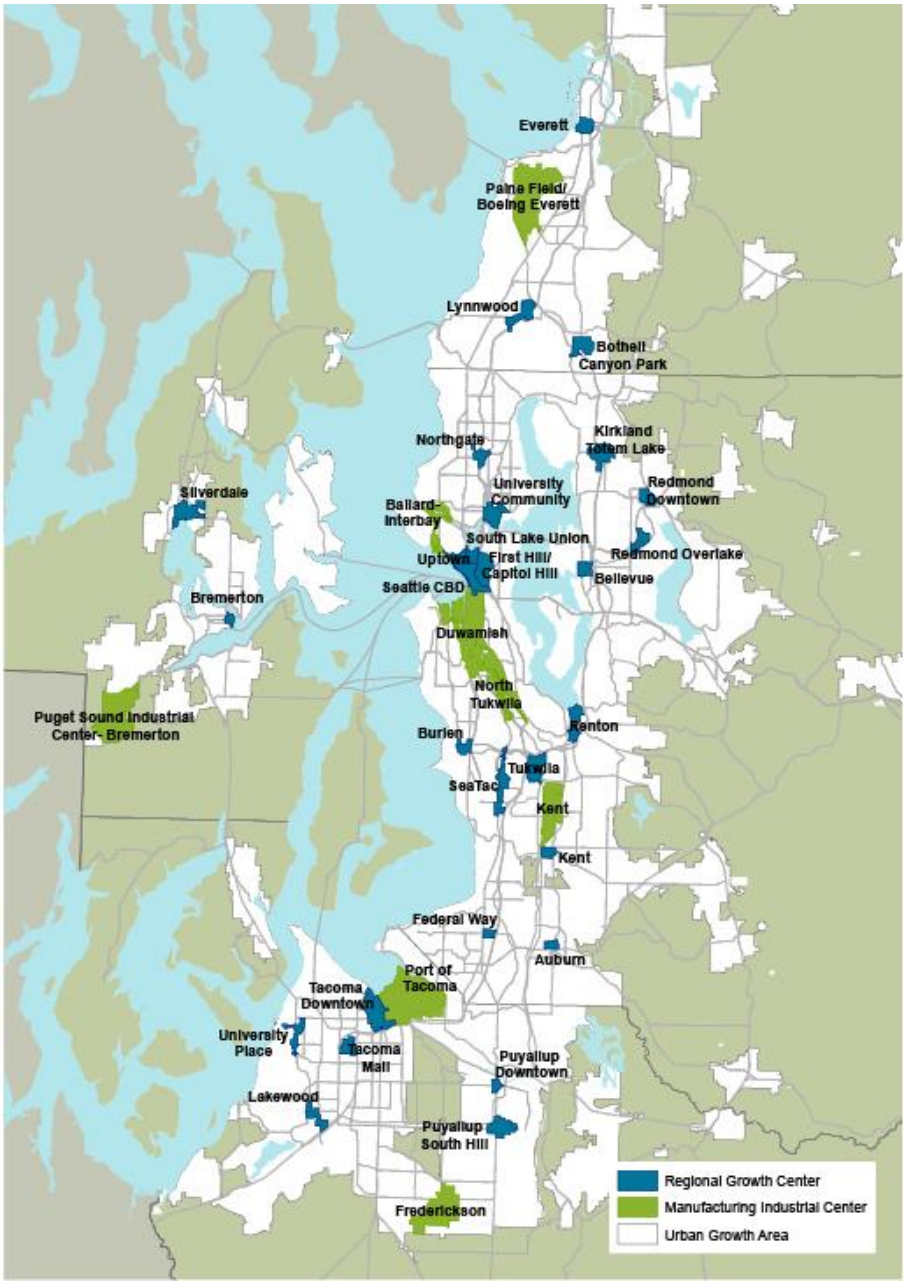
VISION 2040 focuses most of the region's employment and housing growth into metropolitan and core cities, which contain more than two dozen designated "Regional Growth Centers," as shown in **Exhibit 1.2**. Centers in larger cities also play an important and increased role over time as places that accommodate growth.

Overall, VISION 2040 identifies 27 regional growth centers. These places play an important role as locations of the region's most significant business, governmental and cultural facilities. The 18 cities that have one or more regional growth center are expected to accommodate a significant portion of the region's residential growth (53%) and employment growth (71%).

Additionally, eight regional manufacturing/industrial centers (MICs) are designated. These are locations for more intensive commercial and industrial activity. MICs are designated based on an existing minimum employment threshold, land planned specifically for industrial and/or manufacturing uses, protection from incompatible land uses, efficient size and shape, planning for transportation facilities and services and urban design standards. Unlike regional growth centers, MICs have greater total employment as well as greater heavy industrial employment and are typically not appropriate for housing. VISION 2040 also discourages other non-supportive land uses such as retail or non-related offices in MICs.

[1] WAC 365-196-305(8): Multicounty Planning Policies

Exhibit 1.2. Central Puget Sound Regional Growth Centers and Manufacturing/Industrial Centers, 2014



Source: PSRC, 2014.

Industrial Land Compatibility

When zoning was first introduced in the early 1900s, the purpose of zoning, and industrial zoning in particular, was to offer protection from incompatible uses. Many industrial uses in the central Puget Sound region still create impacts which make them incompatible with sensitive uses such as residential. Typical impacts of heavy industrial uses can include:

- Machinery and trucks creating loud noises and vibration
- Industrial processes creating odors
- Freight traffic and industrial processes creating air pollution, leading to asthma and other public health concerns
- Freight movement creating road safety impacts
- Lighting creating visual impacts such as glare

Stakeholders interviewed for this study report that some non-industrial uses, when adjacent to industrial uses, can have negative impacts on industrial uses as well. These can include:

- Retail, services, and other uses generating traffic congestion, impacting freight mobility
- Residential, office, and other development increasing land values in the immediate area, resulting in industrial businesses not being able to afford land prices and rents
- Residents near industrial uses complaining about noise, odors, and other impacts listed above, leading to nuisance investigations

These are reasons to separate and buffer industrial uses that have such impacts. Zoning codes are typically where this issue is or should be addressed. Many zoning codes allow a wide variety of uses in industrial zones. This can create compatibility problems. Concerns about public health, environmental justice, and industrial competitiveness have raised the prominence of this issue.

While land in the region needs to be set aside to avoid these industrial compatibility impacts, it is important to recognize that some industrial uses do not have compatibility impacts, and can therefore be mixed with other uses. Evaluating zoning and land use based on these issues can increase compatibility and industrial economic development.

1998 Industrial Lands Report and Addendum Summary

In 1998, PSRC published *Industrial Land Supply and Demand in the Central Puget Sound Region*, a snapshot of industrial employment and demand and supply of industrial land in the region. The report included data collected for 60 major concentrations of industrial land. It allowed an understanding of the concentrations in terms of type of industrial area, readiness for development, development activity and potential for conversion of industrial land to non-industrial development. An addendum published in 2000 addressed issues discovered in the 1998 report, including analysis of employment by subsector, zoning and development regulations, infrastructure, workforce proximity, and other characteristics of major industrial concentrations.

Data from the 1998 study showed that, through the year 2020, on an aggregate basis, demand for industrial land in the region is projected at 5,600 to 7,100 acres with an estimated net supply of 21,000 acres. Supply exceeded demand by a factor of three, although there were two important caveats. First, one-third of the supply was not served by infrastructure and adequate transportation. Second, the supply was located over a four-county area and was predominantly found away from areas of strong market demand, such as the Kent Valley.

For example, the study found that only 8% of the region's net supply existed in the industrial corridor from the Duwamish MIC to Auburn. The majority existed in Snohomish, Pierce and Kitsap counties (81%). Data in the initial 1998 study also showed that traditional industrial employers such as aerospace, warehousing and transportation were growing. They needed land appropriate for their use with truck access, rail options and means to minimize conflicts with commercial and residential uses. The study also noted the portion of the region's job base that is non-industrial was growing faster than industrial jobs; therefore, pressure to use industrial land for commercial and office uses continued to mount.

The 2000 addendum concluded that industrial jobs were important because of their quantity as well as quality. Although the percent of total employment attributed to industrial jobs was projected to decrease from 37% in 1980 to 28% in 2020, the employment base is a significant component of the regional economy. The addendum also concluded that most local governments included preservation language in their industrial zoning code and specifically limited non-industrial uses. Nevertheless, a wide range of non-industrial uses were permitted on industrial lands. Several factors created pressure to use industrial land for non-industrial purposes, including growth in service, retail and other non-industrial jobs, population growth and the need for residential land.

REPORT ORGANIZATION

This *Industrial Lands Analysis* of the central Puget Sound region covers the past, current and future of local, regional and global trends that affect local industrial lands policies and the markets that utilize industrial lands. The remainder of the report is organized into the following chapters:

Chapter 2. Review of Industrial Trends and Peer Regions. A review of regionwide and local trends, and best practices, challenges and opportunities from peer regions.

Chapter 3. Industrial Lands in the Central Puget Sound Region. A catalog of the existing regulations and available supply of industrial land within the central Puget Sound region.

Special Insert. Subarea Profiles. Individual presentation of each industrial subarea in the central Puget Sound region, including defining land uses and land supply.

Chapter 4. Contribution of Industrial Land to the Regional Economy. Regional and local impacts and changes since the 1998 study.

Chapter 5. Regional and Subarea Employment Forecasts. The forecasted growth in employment for the central Puget Sound region.

Chapter 6. Growth Capacity for Industrial Land in the Central Puget Sound Region. An analysis of growth capacity at both regional and sub-regional scales.

Chapter 7. Policy and Zoning Strategies for Enhancing Industrial Land in the Central Puget Sound Region. Recommended strategies and actions for industrial growth and retention.

2 Review of Industrial Trends & Peer Cities

Chapter 2. Review of Industrial Trends and Peer Cities

CHAPTER INTRODUCTION

This chapter presents background and economic trends related to production that have real consequences for the central Puget Sound region's industrial sector, as well as specific trends and issues shaping the use and management of industrial lands at the local level.

The first section of the chapter reviews regional economic clusters concentrated on industrial lands. This overview provides context to understand the industries that are leading changes in industrial land utilization. The subsequent sections examine trends and issues that shape industrial land use in the region, including global trends changing industrial activity worldwide. Statewide and local trends follow. These sections provide brief overviews of the many forces that affect supply and demand of the region's industrial lands.

The latter section of the chapter reviews six cities in the U.S., plus Vancouver, British Columbia, and how they have evaluated and managed long-term supply and demand of their industrial lands.

INDUSTRIAL LANDS AND REGIONAL CLUSTERS

Industrial lands play a vital role in six of the 10 clusters that drive the region's job creation and revenue. These are:

- Aerospace
- Maritime
- Transportation and Logistics
- Life Sciences and Global Health
- Clean Tech
- Industrial Business Services

Aerospace

The central Puget Sound region is home to a unique cluster of aerospace companies that design and assemble aircraft. These companies and supporting industries reinforce the manufacturing sector in Washington state.

The majority of aerospace and supporting activities occur on industrial lands. Aerospace manufacturers, especially those in assembly, require

large parcels of land and a large floor-plate to operate. The Boeing Company's factory in Everett is the largest building in the world by volume and holds several production lines. Access to transportation networks is a major consideration for aerospace manufacturers. In the Boeing Company's case, the company is able to utilize the Port of Everett's deepwater shipping facilities which have a custom aerospace dock and Everett's Paine Field for airspace access and road infrastructure to transport employees and components. For these reasons, industrial lands are ideally suited to the needs of this sector.

Maritime

The central Puget Sound region has a large and diverse maritime sector located on industrial lands. Typical maritime uses include commercial fishing, seafood processing, passenger transportation, ship and boat building, container terminals, marine support industries and deep and shallow draft water transportation. Seafood processing, for example, is a large industry in this cluster. The central Puget Sound region is home to seven of the top-20 seafood suppliers in the U.S., including Trident Seafood, Tri-Marine and Nippon Suisan. The Maritime cluster relies on a robust and concentrated support system to fuel its growth. This includes everything from fueling operations to research, naval architects, marinas, accountants, maritime lawyers, cold storage, boat dealers, and public ports.

Transportation and Logistics

The Transportation and Logistics cluster encompasses ports, air, rail, and truck transportation, container terminals and warehousing and storage. The cluster is key to various shipping, warehousing, and airline businesses as well as the tourism, maritime, manufacturing, military, and technology sectors. The region's ports play the role of an international gateway and trade resource in this sector, providing fast and convenient links to global markets.

Medical Devices, Life Sciences and Global Health

Typical Medical Device, Life Science and Global Health companies utilizing industrial land in the region manufacture different types of products such as ultrasound machines, defibrillators, and drugs for treatment in Crohn's disease and arthritis. The largest regional employers in this industry are Philips Healthcare, Physio-Control, Cascade Engineering Services, and NanoString Technologies.

Clean Tech

The region's geography and culture of environmental protection supports a growing Clean Tech cluster. Activities associated with this sector include salvage yards, recycling centers, architectural manufacturing and

engineering. Facilities for energy production and distribution also utilize industrial lands.

Industrial Business Services

A variety of supporting business services, such as repair services, operate on industrial-zoned lands. Additionally, manufacturing businesses are evolving to incorporate larger service and repair components into their traditional production activities.

GLOBAL TRENDS SHAPING INDUSTRIAL LAND USE IN THE CENTRAL PUGET SOUND REGION

Historic Global Manufacturing Trends

Global economic forces related to production have profound implications for industrial land use at a local level. In the 1980s, major policy shifts like trade liberalization massively increased global shifts in the production of goods underway since World War II. New overseas supply chains and markets were forged, economies of scale were realized, and profits soared on the low cost of foreign labor. Entire industries changed. In the case of textile production, for example, the North American Free Trade Agreement (NAFTA) erased import duties on much of the apparel produced in Mexico, leading to a massive shift in textile production away from the U.S. In 1991, American-made apparel accounted for more than half of all the clothing bought domestically, and by 2012, it accounted for 2.5%.

Another profound impact on U.S. industrial activity happened with China's entry into the World Trade Organization (WTO) in the mid-1990s, which marked the country's entry into the international economy. This policy shift had the effect of dampening employment in the manufacturing sector by *one-third* in the U.S. These global events affected the demand for industrial land throughout the U.S., including the central Puget Sound region. Trade liberalization has benefited the region as well, especially in the case of regional manufacturers such as the Boeing Company and the region's ports.

In addition, outsourcing of manufacturing to Mexico, in addition to traditional outsourcing to Asia, continues regionally, according to real estate professionals interviewed for this study.

Recent Resurgence of Manufacturing Jobs

Manufacturing employment as a fraction of total employment declined for the past half century in the U.S. It declined from 28% in 1962 to only 9% in 2011. Economists identified large productivity gains as the driving force behind this contraction. Additional factors, such as the entry of China as a major player in trade in 1990, have exacerbated the downward

trend. In recent years, however, there are signs that a recovery may be on the way, including:

- Rising wage costs in China and lower energy costs in the U.S., narrowing some of the cost advantages of offshoring.
- Companies' desire to be close to customers to respond quickly to shifts in demand.
- A political climate supportive of manufacturing employment.

This process of on-shoring is still in its infancy but manufacturing industries, including computers and electronics, machinery, fabricated metals, electrical equipment, and plastics and rubber are leading the on-shoring trend. Other sectors reviving domestic manufacturing include production of furniture, petroleum, chemicals, primary metals and food and beverages.

In addition to recovery, the global manufacturing sector is expected to undergo a set of transformations, creating the "factory of the future":

- Large-scale manufacturing of complex products will continue, but a growing proportion of manufacturing will move to small-scale, possibly even within homes.
- Technology will reduce the number of certain types of jobs created by manufacturing.
- Manufacturing will require a higher-skilled workforce.
- Manufacturing will continue to evolve from production alone to include activities that fall under an umbrella of services.

On-shoring trends may not necessarily bring jobs to the Puget Sound region, however. In addition to global outsourcing, central Puget Sound competition for industrial users includes Colorado, South Carolina and other southeastern states. Local real estate professionals interviewed for this study also identified neighboring Idaho as increasingly competitive for industrial tenants.

Industrial areas play an important role as locations for incubators. Manufacturing-aware cities and regions (cities and regions with a long history of protective industrial policies) often support these incubation spaces by allowing production space as well as providing investment capital. Entrepreneurial and maker communities often produce small ideas that graduate to large companies (Theo Chocolates in the Fremont area is one example).

WASHINGTON'S MANUFACTURING SECTOR AND REGIONAL TRENDS

While macroeconomic forces changed the U.S. manufacturing sector, employment in the Puget Sound region's industries—apart from historic volatility in aerospace manufacturing prior to the tech boom—remained remarkably stable.

Since 2009, however, Washington's manufacturing exports grew more than **three times** as fast as the state's overall economy. In March 2012, manufacturing employed 277,900 in the state. Between March 2011 and 2012, Washington's manufacturing sector added 14,600 jobs, leading all other sectors in job gains. Most of that growth was in the central Puget Sound region by the Boeing Company and other aerospace firms, accounting for more than half of all job gains. The remaining new jobs came from producers of metal, machines, food products, electronics, and industrial equipment.

Today, some local companies that benefitted from re-shoring are aerospace firms (specifically, manufacturers who make large numbers of parts from raw metal or plastic) that were the most susceptible to offshoring a decade ago. However, as these jobs return, a different workforce is required to support manufacturing in the central Puget Sound region.

Technology Changes Washington's Manufacturing Sector

The central Puget Sound region's manufacturing industries are concentrated largely in advanced manufacturing. Manufacturing sectors are underpinned by technology, including aerospace, medical devices and biotechnology, energy production, and food manufacturing. Technology is both a driver of automation, keeping labor costs low (a key determinant in what types of manufacturing jobs are returning), as well as in the democratization of manufacturing, where individuals can customize and make their own products in small batches or a single unit using web-based software and assembly or 3-D printing.

New Processes

Newer technologies—especially accessible and accurate 3-D printers, design software, and assembly tools—benefit Washington's composite manufacturing sector by allowing design engineers to bypass the time-intensive design process to produce parts faster. Another relatively new industrial process is "just-in-time" processing, with parts arriving just in time for use rather than being stored for a long time. This has changed the need for storage space. Technology has also enabled dramatically lower-impact and cleaner modern industrial processes, effectively

reducing many traditional land use conflicts that can isolate industrial activity to industrial zones.

Automation and the New Industrial Workforce

Technology advancement has dramatically altered industrial sector workforce needs. Stakeholders and local real estate experts convened for this project noted that a strong trend in regional manufacturing is the growing use of technology. Automation may result in fewer employees required to run a factory, lab, warehouse or mill. For example, focus groups named Amazon's new fulfillment centers in Kent and DuPont as examples of trends in modern warehouse automation. The space in DuPont will have one section of the warehouse dark because automated robots can perform the packaging and shipping tasks without lights, around the clock.

In many cases, however, a higher level of technological skill is required to operate automated technologies. Automation can also benefit workers by reducing exposure to hazardous working conditions. This lowers potential Labor and Industry rates, lowering overhead costs. Automation thus affects the type of employment more than land utilization. Washington's manufacturers will benefit from job training programs and non-profits who work to align technical skill with industry need.

Artisanal and Craft Urban Industrial Land Uses

A major trend in manufacturing in urban areas across the U.S. and locally focuses on small-size "craft" production of small batches of specialized products. Wineries, distilleries, breweries, specialty furniture stores, and interior fixtures are examples in the Puget Sound region. This type of manufacturing takes place inside city limits where access to urban markets and industry peers is paramount. Since 2013, Seattle neighborhoods like Ballard, Fremont and Georgetown as well as the Woodinville Wine District and Heritage Distilling in Gig Harbor are examples of places which have benefited from a convergence of relatively affordable real estate, favorable industrial and commercial zoning and thriving residential growth.

Regional Trends for Industrial Lands

Evolution and management trends of the region's industrial lands include:

- Incursion on industrial land by other types of land uses.
- Conversion of industrial land to other types of land uses.
- Regional economic development efforts for industrial lands.

Incursion on Industrial Land by Other Types of Land Uses

The incursion of non-industrial land uses into industrial areas—especially uses that generate heavy traffic volumes or substantially increase land values—is a key issue facing the region's urban industrial areas. Land use frictions develop as heavy industries operate beside new uses. Land use competition, transition and pressure are more prevalent in relatively more urban concentrations of industrial lands, such as in the Duwamish and Ballard-Interbay areas. For example, Scott Galvanizing, one of Ballard's oldest manufacturers, moved to Snohomish County citing the pressures of operating in an increasingly gentrifying and residential neighborhood hampering production.

While Seattle has historically limited the amount and size of office and retail spaces allowed in its industrial zoned areas, protection is skirted in various ways. In particular, the Industrial Commercial (IC) zone accounts for 8% of all industrial zoning in the city and allows office uses in Interbay, north Lake Union, and north SODO areas. While the intent of the Industrial Commercial zone is to promote industrial and commercial development while accommodating a wide range of other employment activities, the zoning has resulted in a tremendous incursion of single-use office development.

Another aspect of incursion comes in the form of continuing pressure to remove land from industrial zoning designations or to loosen limits on non-industrial uses and allow a wider range of uses, especially residential, on industrial-zoned lands. Policies that may encourage incursion include allowing a wide range of non-industrial uses, including residential uses, on industrial-zoned lands.

Conversion of Industrial Land to Other Types of Land Uses

As the region grows and evolves, several cities are responding to demand for residential, office, and mixed-use development by rezoning previously industrial-zoned areas. Most rezoning is of post-industrial districts with weak demand and low potential for attracting new industrial users.

BEL-RED CORRIDOR
The Bel-Red Corridor is a major employment area for Bellevue, encompassing a 900-acre area that stretches between State Route SR 520 and Bel-Red Road. Dozens of aging warehouses, strip malls, and auto body shops dot the landscape. Historically, this district contained most of Bellevue's light industrial land. From 1995 to 2004, the number of people working in the corridor dropped 5%, while employment increased by 20% in Bellevue as a whole. Large employers such as Safeway moved its food

distribution warehouse to Auburn and a planned transit line with two stations is slated for the district. The decline in employment led the City of Bellevue to rezone the area to accommodate a mix of office, residential and retail uses. Over the next 15 years, the redevelopment along the corridor may bring as many as 13,000 office workers and up to 2,000 more residents living there.

RENTON LANDING
Formerly a 46-acre site on the south end of Lake Washington owned by the Boeing Company, The Landing is a new urban village with more than 600,000 square feet of national and local retail stores, restaurants, and entertainment, as well as an additional 880 units of residential housing. Puget Sound Energy, Paccar, and the Boeing Company previously owned the land for industrial uses such as coal briquette manufacturing and a now-defunct steam plant. In 2004, the Boeing Company sold 46 surplus acres for the first phase of The Landing. The Boeing Company's nearby workforce in Renton led to steady retail sales during the week, with weekends, evenings and happy hours bringing in different crowds from throughout the region.

Regional Economic Development Efforts for Industrial Lands

Several cities have integrated planning and economic development and focused on their industrial areas. Four examples include the Center for Advanced Manufacturing in Puget Sound (CAMPS) in Kent, City of Everett's Streamlined Permitting, Canyon Park in Bothell, and PSIC-Bremerton.

CENTER FOR ADVANCED MANUFACTURING PUGET SOUND
CAMPS is a resource center located in Kent that brings together manufacturers, supply chain partners, pre-qualified business development specialists, and strategic partners. It helps small- to mid-sized manufacturing businesses find innovative products and processes, better position their company in the supply chain process, access pre-qualified business development specialists, and find solutions to workforce and capital formation issues. It was created by the City of Kent and the Kent Chamber of Commerce in 2002 to maintain the vitality of the valley's manufacturing base. CAMPS is an innovative concept. As an organization focused on the manufacturing sector's unique needs and challenges, it ensures that the sector remains a competitive part of the region's economy.

CITY OF EVERETT'S STREAMLINED PERMITTING
In 1997 Everett adopted a Planned Action Ordinance for southwest Everett that expedited State Environmental Policy Act (SEPA) review for industrial land in the area. A Planned Action EIS is a form of

Environmental Impact Statement (EIS) authorized in 1995 by the Washington State Legislature to streamline the development process. It provides for early environmental review of potential development in a specified area, identifies mitigation measures upfront, and eliminates onerous environmental review requirements for proposed projects that fit the desired intent of the area.

Everett has since authorized over 5 million square feet of development using this expedited process. Expedited reviews have significantly reduced permitting time (to 3-4 weeks from 3-4 months) and uncertainty for developers.

CANYON PARK, BOTHELL

In 1984, Bothell's Canyon Park was a working dairy farm. Ten years later, the area was home to 86% of Snohomish County's 5,000 biotech workers, most of them in the 200-acre Canyon Park Business Center. While clusters of biotech and life science firms located in Redmond and Seattle, Canyon Park's sprawling, suburban character offered room for expansion at a low price relative to other areas. Philips, an anchor of the area, acquired many of the area's ultrasound manufacturing companies in 1998. Today, Philips employs 2,000 workers in the region and is a leader in ultrasound technology development and manufacturing. Despite extensive economic development efforts focusing on bringing biotech employment from Seattle, South Lake Union supplanted the park as a regional biotech hub, and Canyon Park has excess capacity and room for growth. In addition, the headquarters of Seattle Genetics is located here. The Boeing Company has also located temporary offices in a large portion of Canyon Park while its Everett site is reconfigured.

In 2012 the City of Bothell received a grant of $500,000 to fund a project for the Bothell Med Tech Manufacturing Innovation Partnership Zone. The first round of funding is being used to establish an incubator for startup medical tech firms in partnership with the University of Washington C4C, UW Bothell and Lake Washington Technical Institute programs. This is to be followed by the city and the Innovation Partnership Zone working together for a larger facility catering to the med tech industry through office, conference and hospitality services located in Canyon Park.

PUGET SOUND INDUSTRIAL CENTER-BREMERTON

PSIC-Bremerton, on the Kitsap Peninsula at the foot of the Olympic Peninsula, is the newest of eight designated MICs in the region. While the area comprises 3,700 acres of largely undeveloped land with good highway and rail access, it currently has the smallest amount of employment of any MIC (estimated at 876 jobs in 2010) and low demand hampers development despite studies into market feasibility and extensive eco-industrial marketing efforts.

Notable New Regional Efforts

Notable new regional efforts include support of the maritime sector. These are creation of a new "Maritime Federation" by the Seattle-King County Economic Development Council, as well as Governor Inslee's creation of the Governor's Maritime Sector Lead position.

A COMPARATIVE ANALYSIS OF PEER REGIONS

Chicago, Portland, OR, San Francisco, New York, Philadelphia, and Boston are often cited for their comprehensive and innovative approaches to industrial land regulation. Additionally, Vancouver, BC offers a neighboring region's perspective. Based on this, the following cities were selected for review:

- Chicago
- Portland, OR
- San Francisco
- New York
- Philadelphia
- Boston
- Vancouver, BC

Exhibit 2.1. Peer Regions Chosen for Review

Overall strategies employed by cities to regulate their industrial land include:

- Defining geographical areas within industrial-zoned land for increased protections for industrial uses.
- Improving existing zoning codes.
- Creating new zoning categories to reflect patterns of industrial use.
- Aligning recommendations for infrastructure with land policies.
- Providing tax incentives, assistance with workforce development, services for business retention to attract emerging new industrial businesses and assistance with site selection for businesses looking to expand or relocate.

While several of these strategies are replicable in the central Puget Sound region, their success in local jurisdictions depends on the individual jurisdiction's trends in employment, planning context and the appetite of its industrial property owners for change.

Chicago

Existing Regulatory Context

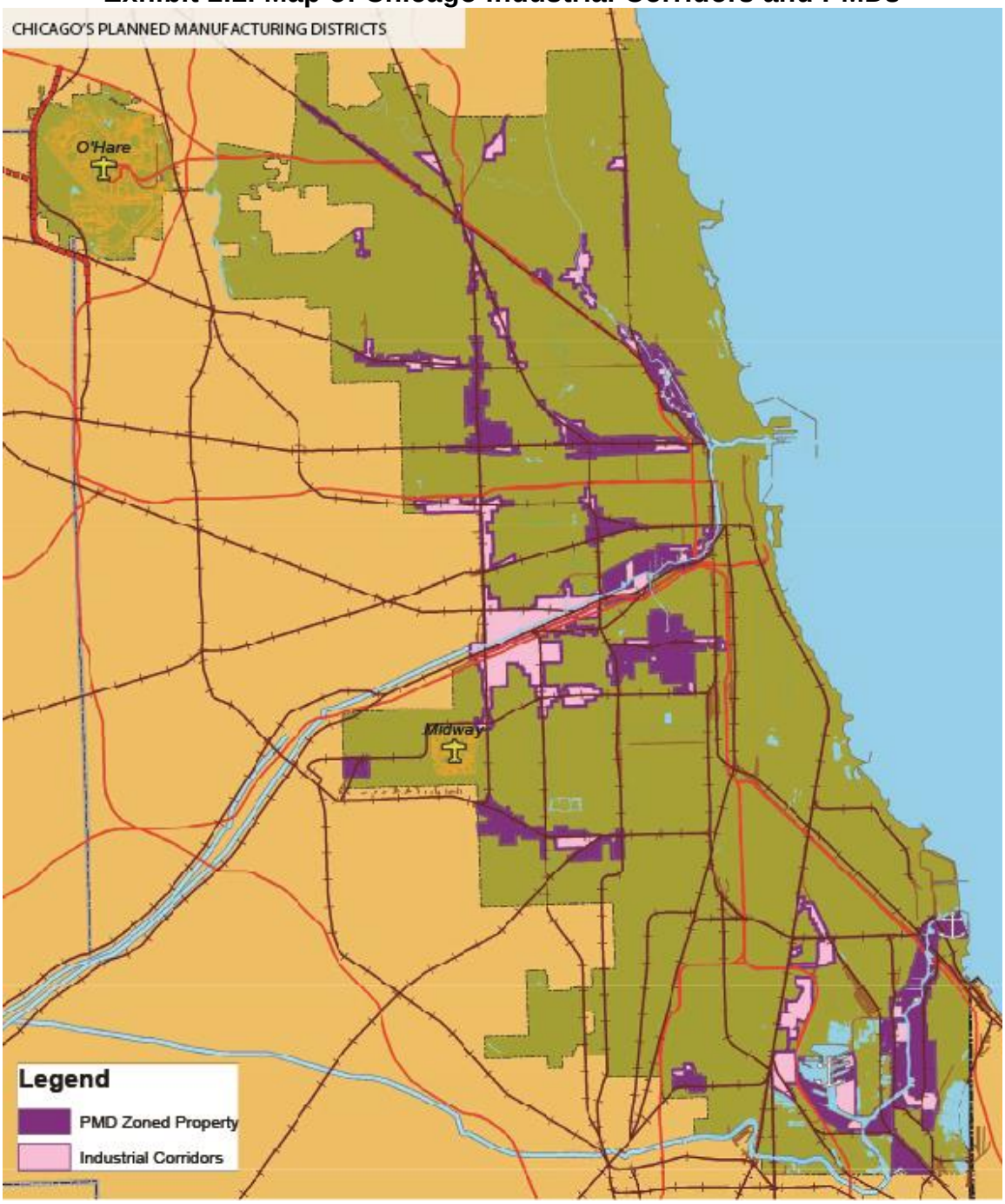
Since the 1940s, Chicago has implemented plans and policies to concentrate industrial activity in specific areas that are uniquely suited to manufacturing activities. Typically located along waterways and rail corridors, these areas were formalized as designated Industrial Corridors by the Chicago Plan Commission starting in 1992. Since then, proposed zoning changes for properties within corridor boundaries to a use other than manufacturing require Plan Commission review.[1] Today, Chicago's 26 designated Industrial Corridors comprise 16% of all land within the city and 66% of all the land that is zoned for manufacturing. Between 1988 and 2007, the city designated 14 smaller districts within 12 of these corridors called Planned Manufacturing Districts (PMDs). These districts are clusters of parcels amounting to at least five contiguous acres that operate under a single, regulatory regime. Once a PMD is designated, no zoning changes may occur and no land can be removed from it. The idea behind the PMD is to prevent piecemeal, parcel-by-parcel rezoning that may undermine the viability of the industrial district. PMDs are typically located in successful industrial corridors that face high conversion pressure from other uses.

Elected officials or property owners can propose PMDs which then go through an extensive review process to get designated. PMDs regulate uses more narrowly than larger industrial corridors. Each PMD has a specific list of permitted uses where existing non-conforming uses can convert only to a permitted use on this list. Changes from manufacturing to a different permitted use within PMDs are required to be reviewed by the Zoning Board of Appeals, elevating the decision to the city. In this way, PMDs function in a similar way to overlay districts, but tie the properties together.

The designation of PMDs in Chicago was a long, conflict-laden process.[2] Controversy regarding their effectiveness and calls for dismantling or adjusting boundaries for several of them continue. Nevertheless, there is some evidence that PMDs are successful at preventing encroachment. PMDs designated through broad-based community planning and participation from its property owners, such as Clybourne Corridor, are more stable over time since a plurality of property owners feel a sense of ownership around the initiative.

The PMD designation is a major innovation in Chicago's regulatory tools. PMDs address the complex agglomeration preferences and ecosystem dynamics of industrial uses and protect them from a slow, parcel-by-parcel erosion.

Exhibit 2.2. Map of Chicago Industrial Corridors and PMDs



Source: City of Chicago

Beyond Land Use Regulation: Promoting Industrial Entrepreneurship, Business Incubation and Workforce Development

In addition to zoning, Chicago uses Tax Increment Financing (TIF[3]) funds from designated districts in industrial areas to make infrastructure improvements, support existing businesses and attract new ones. The city also funds programs focused on workforce development and business retention, including the following two leading examples:

- **The Industrial Council of Nearwest Chicago.**[4] Established in 1967, this group provides area companies with free business development, advocacy and consulting services. It developed the Fulton-Carroll Business Incubator in 1980 to help fledgling manufacturing companies. It incubates a wide range of industrial businesses, from high-tech to wholesaling, and is careful to attract tenants that utilize its industrial-friendly features such as loading docks, bay doors, freight elevators and high ceilings.

- **Manufacturing Renaissance in Chicago.** This organization ensures local workers have access to high-quality training programs so that local industrial businesses have access to a long-term supply of skilled workers. The group builds relationships with local colleges to include relevant training programs, and augment their existing programs with national accreditations.

Portland, OR

Existing Regulatory Context[5]

Portland's Comprehensive Plan designates its industrial land as either Mixed Employment, Central Employment or Industrial Sanctuary. Four categories of base zones implement these designations:

1. General Employment Zones: General Employment 1 (EG1), General Employment 2 (EG2)
2. Central Employment Zones (EX)
3. General industrial Zones: General Industrial 1(IG1), General Industrial 2 (IG2)
4. Heavy Industrial (IH)

- **General Employment Zones (EG1 and EG2).** These zones implement the Mixed Employment map designation of Portland's Comprehensive Plan. These zones are intended to incorporate industrial and industrial-related activities as well as supportive commercial uses, capturing a broad range of services and employment uses. EG1 zones are typically found in mostly developed, urban areas with small blocks and lots while EG2 zones are typically found on larger blocks and lots in less urban contexts. Residential uses are allowed as a conditional use on both zoning designations.

- **Central Employment Zones (EX).** These zones implement the Central Employment map designation and are intended to allow industrial and commercial uses that need a central location. Residential and mixed-use are permitted outright in this zoning category.

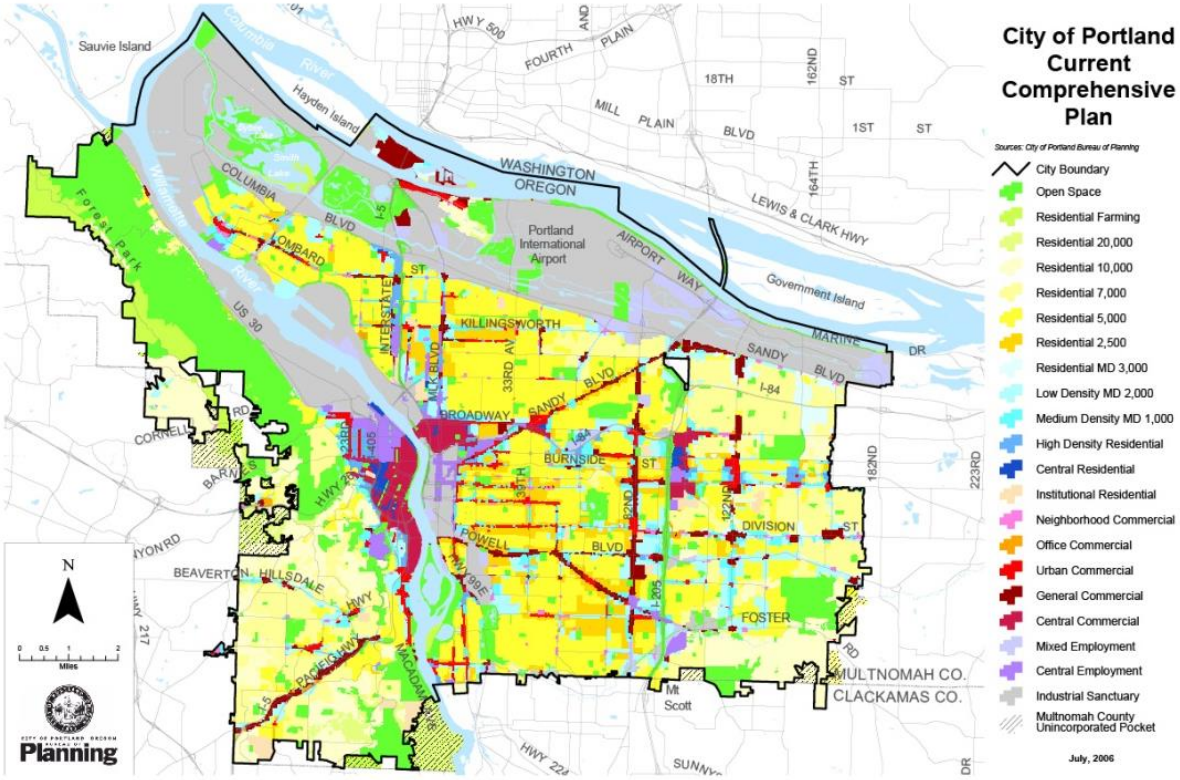
- **General Industrial Zones: General Industrial 1 (IG1), General Industrial 2 (IG2).** The two General Industrial zones and the Heavy Industrial zone implement the Industrial Sanctuary designation. General Industrial zones encompass areas where most industrial uses are likely to locate, while other uses are restricted to prevent potential conflicts and to preserve land for industry. IG1 zones are in more developed areas with a regular block pattern and small lots while IG2 zones are in less developed areas with irregular, large blocks and large lots. Residential uses are allowed as a conditional use on both these zoning designations.

- **Heavy Industrial (IH).** The Heavy Industrial zone encompasses locations for industries incompatible in other parts of the city. Development standards are the minimum necessary to assure safe, functional, efficient, and environmentally sound development.

Residential uses are allowed as a conditional use in this zoning designation.

Early recognition of the role of industrial land, its special needs and protection through the Industrial Sanctuary zone designation is a major innovation in Portland's regulatory tools.

Exhibit 2.3. Map of Portland Comprehensive Plan Designations



Source: City of Portland website, accessed November 2014

Beyond Land Use Regulation: Economic Development and Freight Planning and Investments

In addition to these regulations, the city adopted a Freight Master Plan in 2006 with a roadmap of infrastructure investments to improve freight mobility. Economic development planning around industrial land with the Working Harbor Reinvestment Strategy provides a 10-year plan of public investments by the city in industrial districts along the deep water shipping channel.

San Francisco

Existing Regulatory Context

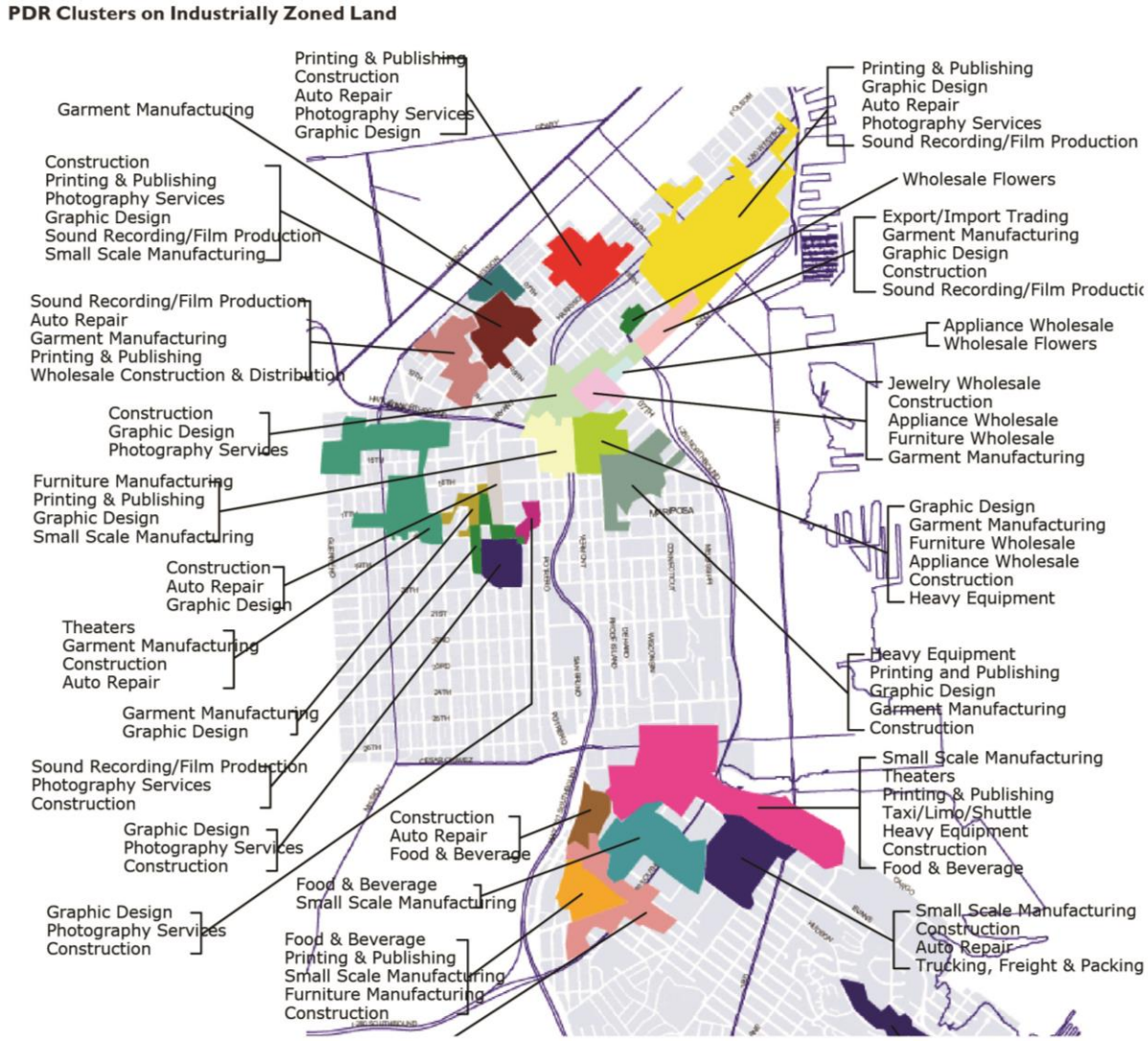
The planning context at the heart of San Francisco's regulatory tools is related to the management of industrial-zoned land in a dense, urban area where overall supply of land is limited, and demand for other uses, especially housing, is very high. In addition, the Port of San Francisco is gradually transitioning from an industrial past with a large portfolio of land and buildings on the waterfront to a smaller, more compact entity, making way for mixed-use and recreational uses along the water's edge. The types of industries attracted to San Francisco are increasingly niche manufacturing or services which are compatible with residential uses, reflecting the city's transition to a services and knowledge-based economy.

San Francisco regulates industrial land through two broad categories of districts: (1) Industrial, and (2) Production, Distribution and Repair (PDR) districts.

San Francisco's reconceptualization of light industrial uses as production, distribution and repair uses is a major innovation in its regulatory tools for industrial land.[6] This is intended to be both a substantive and a semantic distinction. It captures the current activities on the city's industrial land better and eliminates the association some may have of the word "industrial," provoking mental images of smokestacks and other markers of a bygone industrial past.

PDR land captures a wide range of uses, from auto-repair, printing and transportation to furniture manufacturing, food production, performance spaces and digital media. The goal is to recognize the hybrid as well as benign nature of many modern industrial uses. San Francisco's supply of industrial-zoned land is small and these innovations are designed to reduce further erosion of this land. Approximately 1,274 acres of land are protected for PDR uses in San Francisco.

Exhibit 2.4. PDR Clusters on Industrial Land in San Francisco



Source: City of San Francisco, accessed November, 2013

The city first developed the PDR zoning category in 1998 and refined the regulations in 2014. The 1998 zoning prohibited residential and office uses, and limited retail and institutional uses in both PDR-1-D and PDR-1-G zoning districts. Over the next six years, the industrial community conveyed that the regulations were too restrictive and the regulations discouraged production, distribution and repair development. In April 2014, San Francisco adopted a new set of regulations that recognized the complex economics of developing new PDR space and the need for non-residential space to subsidize the PDR space. This new legislation amended the planning code to allow office, retail and certain institutional uses to be combined with PDR uses in new mixed-use development projects. It encourages the development of small enterprise work spaces—a building that includes discreet work space units, commonly

referred to as business incubators—which are independently accessed from the building's common areas.

Subject to obtaining a conditional use authorization from the Planning Commission, applicants with parcels of 20,000 square feet or larger in PDR-1-D or PDR-1-G zoning districts north of 20th Street are permitted to construct new developments containing a minimum of one-third total gross floor area of PDR uses. The remaining two-thirds may be allocated to office use, retail uses, or institutional uses such as assembly, social services, education, religious facilities, residential care and job training centers. Each small enterprise counts as 0.5 square feet of PDR space and 0.5 square feet of non-PDR space. This allows up to 33% of new PDR space to be characterized as accessory retail use. To be eligible, the development site must be vacant or substantially underutilized. Small enterprise work spaces are limited to a maximum of 1,500 square feet each, instead of 100 square feet previously allowed.

The following sections describe industrial zones in San Francisco.

Industrial Districts

- **Light Industrial (M-1).** These districts provide land for smaller industries dependent upon truck transportation. Most industries are permitted, while the large or noxious ones are excluded. The permitted industries have restrictions regarding enclosure, screening and minimum distance from residential districts.

- **Heavy Industrial (M-2).** These districts are the least use-restricted and are at the eastern edge of the city, separated from residential and commercial areas. These are suitable for larger industries served by rail and water transportation and by large utility lines. Heavier industries are permitted, with fewer screening and enclosure requirements than M-1 Districts, but some uses are permitted only as a conditional use or at specific distance from residential districts. Permitted uses include manufacturing, wholesale, storage, retail, repair, and service uses. Auto-wreckers and certain other uses, including residential, are conditional, requiring authorization by the Planning Commission.

- **Heavy Commercial (C-M).** These districts provide a limited supply of land for certain heavy commercial uses not permitted in other commercial districts. While the emphasis is on wholesaling and business services, limited light manufacturing and processing are permitted. Standards are imposed on enclosure within buildings and screening of outdoor uses to prevent potential incompatibility of some of these uses and the proximity to residential and other commercial areas.

- **Service/Light Industrial (SLI).** These districts are designed to protect and facilitate the expansion of existing general commercial, manufacturing, home and business service, live/work use, arts uses, light industrial activities and small design professional office firms. Permitted uses include retail, general commercial, home, personal and business services, light industrial, institutional, cultural arts and artisan, live/work space, and parking. Existing group housing and dwelling units are protected from demolition or conversion to nonresidential use and development of new group housing and low-income affordable dwelling units are permitted as a conditional use. General office, hotels, movie theaters, nighttime entertainment and adult entertainment uses are not permitted.

- **Service/Light Industrial/Residential (SLR) Mixed-Use.** This district is designed to maintain and facilitate the growth and expansion of small-scale light industrial, home and business service, wholesale distribution, arts production and performance/exhibition activities, live/work use, general commercial and neighborhood-serving retail and personal service activities. It protects existing housing and encourages the development of housing and live/work space at a scale and density compatible with the existing neighborhood.

  Permitted uses include retail, general commercial, home, personal and business services, light industrial, institutional, cultural arts and artisan, live/work space, parking and residential activities. General office, hotels, nighttime entertainment, movie theaters, adult entertainment and heavy industrial uses are not permitted.

- **Service/Secondary Office (SSO).** This district is designed to accommodate small-scale light industrial, home and business service, arts activities, live/work uses, small-scale professional office space and large-floor-plate "back office" space for sales and clerical work forces. Nighttime entertainment is permitted as a conditional use. Demolition or conversion of existing group housing or dwelling units require conditional use authorization.

  Permitted uses include offices, retail, general commercial home, personal and business services, light industrial, institutional, cultural arts and artisan, live/work space, and parking. Residential activities and nighttime entertainment uses require conditional use approval.

Production, Distribution and Repair Districts (PDR)

- **PDR-1-B District: Light Industrial Buffer.** The intent of this district is to create a buffer area between residential

neighborhoods and light industrial areas, primarily in the Bayview Hunters Point neighborhood. Thus, this district prohibits residential uses and limits office, retail, and institutional uses. Generally, all other uses are permitted. This zone allows for less intensive production, distribution, and repair activities that will not compromise the quality of life of nearby residents. These uses generate less external noise, odors, and vibrations and engage in fewer trucking activities than those permitted in PDR-2 districts, discussed on the following page. Uses in this district are generally conducted completely within enclosed structures. Small-scale retail and office uses are permitted, as are other activities that may serve to buffer existing residential neighborhoods from areas of concentrated industrial operations

- **PDR-1-D District: Design.** The intent of this district is to retain and encourage less-intensive production, distribution, and repair businesses, especially the existing clusters of design-related businesses. As such, this district prohibits residential uses and office, and limits retail and institutional uses. Additionally, this district prohibits heavy industrial uses, which generate external noise, odors, and vibrations and engage in frequent trucking activities. Generally, all other uses are permitted.

- **PDR-1-G District: General.** The intent of this district is to retain and encourage existing production, distribution, and repair activities and promote new business formation. Thus, this district prohibits residential and office uses and limits retail and institutional uses. Additionally, this district allows for more intensive production, distribution, and repair activities than PDR-1-B and PDR-1-D but less intensive than PDR-2. Generally, all other uses are permitted.

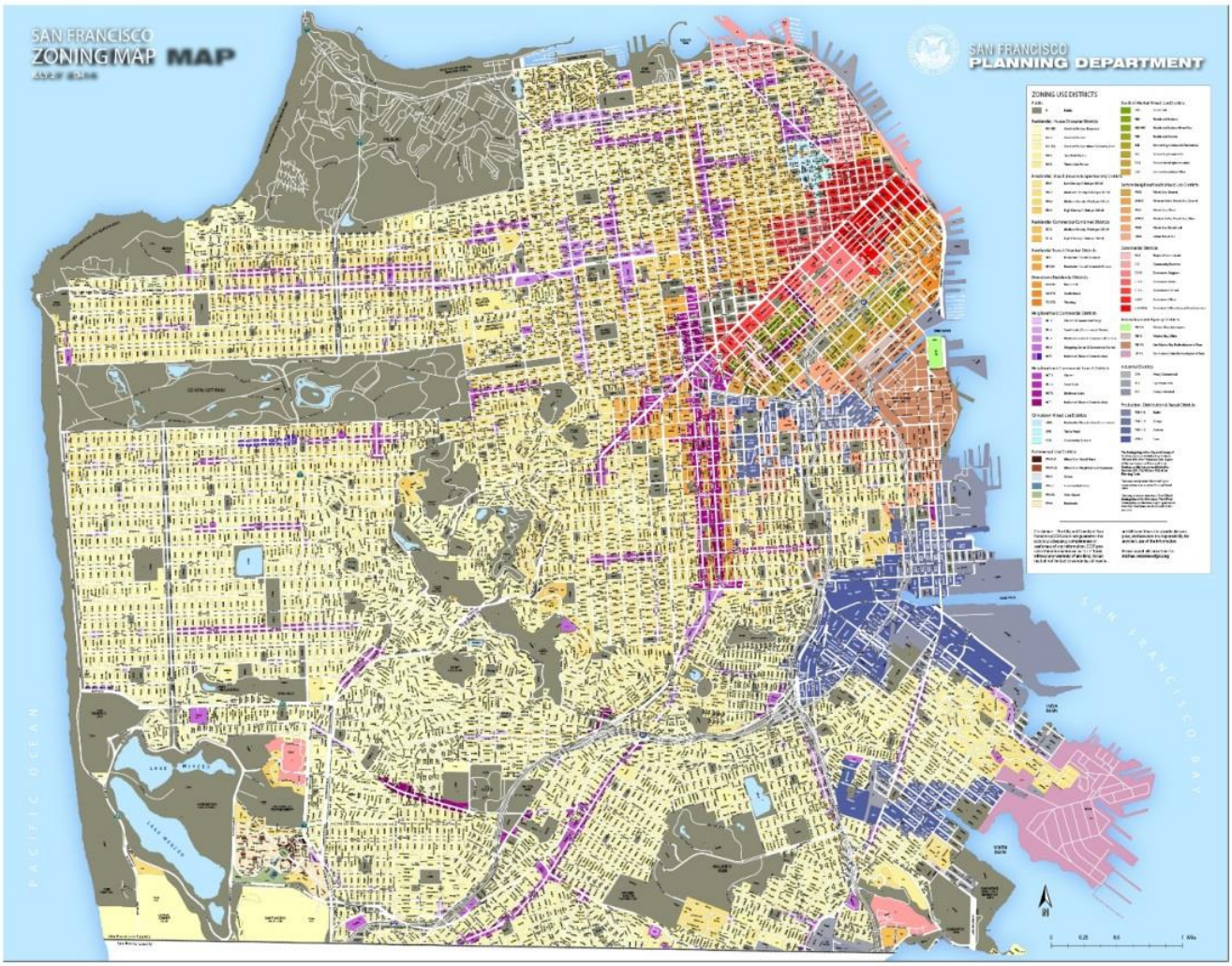
- **PDR-2 District: Core Production, Distribution, and Repair.** The intent of this district is to encourage the introduction, intensification, and protection of a wide range of light and contemporary industrial activities. This district prohibits new housing, large office developments, large-scale retail and the heaviest of industrial uses, such as incinerators. Generally, all other uses are permitted.

  The conservation of existing flexible industrial buildings is also encouraged. These districts permit certain non-industrial, non-residential uses, including small-scale retail and office, entertainment, certain institutions, and similar uses that would not create conflicts with the primary industrial uses or are compatible with the operational characteristics of businesses in the area.

Light industrial uses in these districts can operate fully or partially enclosed, or in open areas. These uses may require trucking activity, including trucks with up to 18 wheels or more occurring at any time of the day or night. PDR activities in these areas may emit noises, vibrations, odors, and other emissions, as permitted by law.

Chemical, biological, and other hazardous, explosive, or flammable materials may be stored on site within the requirements of local, state, and federal health and safety regulations, and within the stipulation of this code. Additional use size maximums and minimum distance requirements on certain activities, raw materials used for production, manufacturing, repair, storage, research, and distribution could be imposed.

Exhibit 2.5. Zoning Map of San Francisco



Source: City of San Francisco website, accessed November 2014

Beyond Land Use Regulation: Advocacy, Marketing, and Branding Assistance

SF Made is a local organization that provides assistance with industrial retention and expansion, as well as advocacy, marketing and branding. The group engages directly with entrepreneurs and growing small companies that manufacture within San Francisco, offering industry-specific education, networking opportunities, as well as connections to local resources. SF Made focuses on developing an urban model for manufacturing incubation that other major U.S. cities can use to catalyze their own local manufacturing sectors.

New York

Existing Regulatory Context

New York regulates its industrial land through a base Manufacturing (M) district further divided into a range of lower, medium and higher density districts. Based on this structure, the broad manufacturing zoning district is divided into the M1, M2 and M3 districts.

New York's manufacturing zoning district encompasses a range of industrial and manufacturing activities ranging from catering suppliers, lighting fabricators and warehouse and distribution centers to film production studios, ferry and ship terminals and essential municipal facilities. In addition to these traditional and emerging industrial uses, manufacturing districts permit many commercial uses and, with limitations, some community facility uses.

Industrial uses are permitted in all of the three manufacturing districts, M1, M2 and M3, according to the characteristics of their operations. Each of the three districts incorporate differing performance standards that limit the amount and type of industrial nuisances permitted. Light manufacturing uses are permitted in all manufacturing districts. In general, more potentially noxious uses are limited to M3 districts, but may also locate in M1 and M2 districts if they comply with the higher performance standards of those districts. All industrial uses must also comply with applicable city, state and federal environmental regulations.

With some exceptions, commercial uses, including hotels and business, professional and government offices, are permitted in manufacturing districts. However, many retail and service uses, as well as hotels and motels, are prohibited in M2 and M3 districts. Community facilities are excluded entirely from M2 and M3 districts and restricted to a few uses in M1 districts. Certain community facilities, such as schools, are allowed in M1 districts only by special permit.

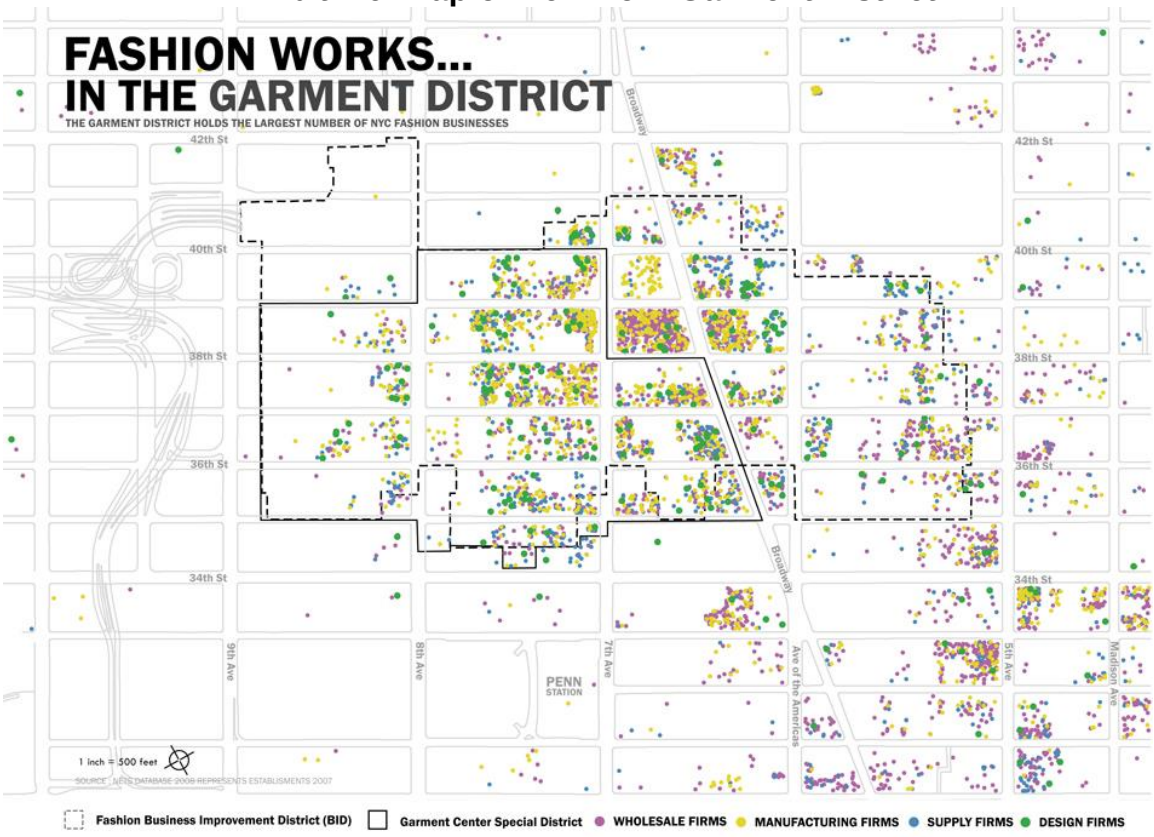
Today, new residential developments and conversions are permitted in selected M1 districts that have a significant number of existing residences. Paired districts, mapped in Mixed-Use districts (MX) and the Special Long Island City Mixed-Use district, combine an M1 district with a residential district, allowing a fine-tuned mixture of appropriate uses. Other older industrial areas, like Soho and Noho in Manhattan, have changed significantly as obsolete industrial buildings are converted to residential use by special permit. New residences are prohibited in all M2 and M3 districts.

Beyond Land Use Regulation: Business Assistance and Marketing

The New York Industrial Retention Network (NYIRN). A division of the Pratt Institute's Center for Community Development, this group provides several services for industrial businesses to remain and grow in NYC. These include assistance with employee hiring and training and with advocacy and marketing through the Made in NYC program. Importantly, the organization offers assistance to industrial firms with grants and incentive programs offered by the city, especially with regard to site selection for expansion or relocation.

The Garment District. The treatment of New York's Garment District is a major innovation in New York's regulatory tools. This special purpose district was created in 1987 to retain and preserve production and showroom uses in selected blocks between 35th and 40th Streets, and Broadway and 9th Avenue, in Midtown Manhattan. The midblock portions of this district are designated manufacturing preservation areas (P1), where residential uses and hotels are not allowed as-of-right and the conversion of manufacturing space is restricted, requiring a certification from the City Planning Commission (CPC) that an equal amount of floor area has been preserved for specified industrial uses. In 2005, a new preservation area (P2) was created in the midblock between 8th and 9th Avenues as a part of a broader Hudson Yards rezoning. As part of this rezoning, new residential and commercial space is permitted on lots with less than 70,000 square feet of floor area. The conversion of larger buildings to residential, hotel, or office use is permitted by authorization of the CPC.

Exhibit 2.6. Map of New York Garment District



Source: Sarah Williams, Spatial Information Design Lab, accessed November 2014

Philadelphia

Existing Regulatory Context

Though similar to other cities in the Puget Sound region with a port and a relatively large industrial sector, Philadelphia faces several challenges unique to its economy and geography. This includes a forecast reduction in industrial jobs, greater distance from China, a shallower river port and the absence of large anchor industrial users on the level of the Boeing Company.

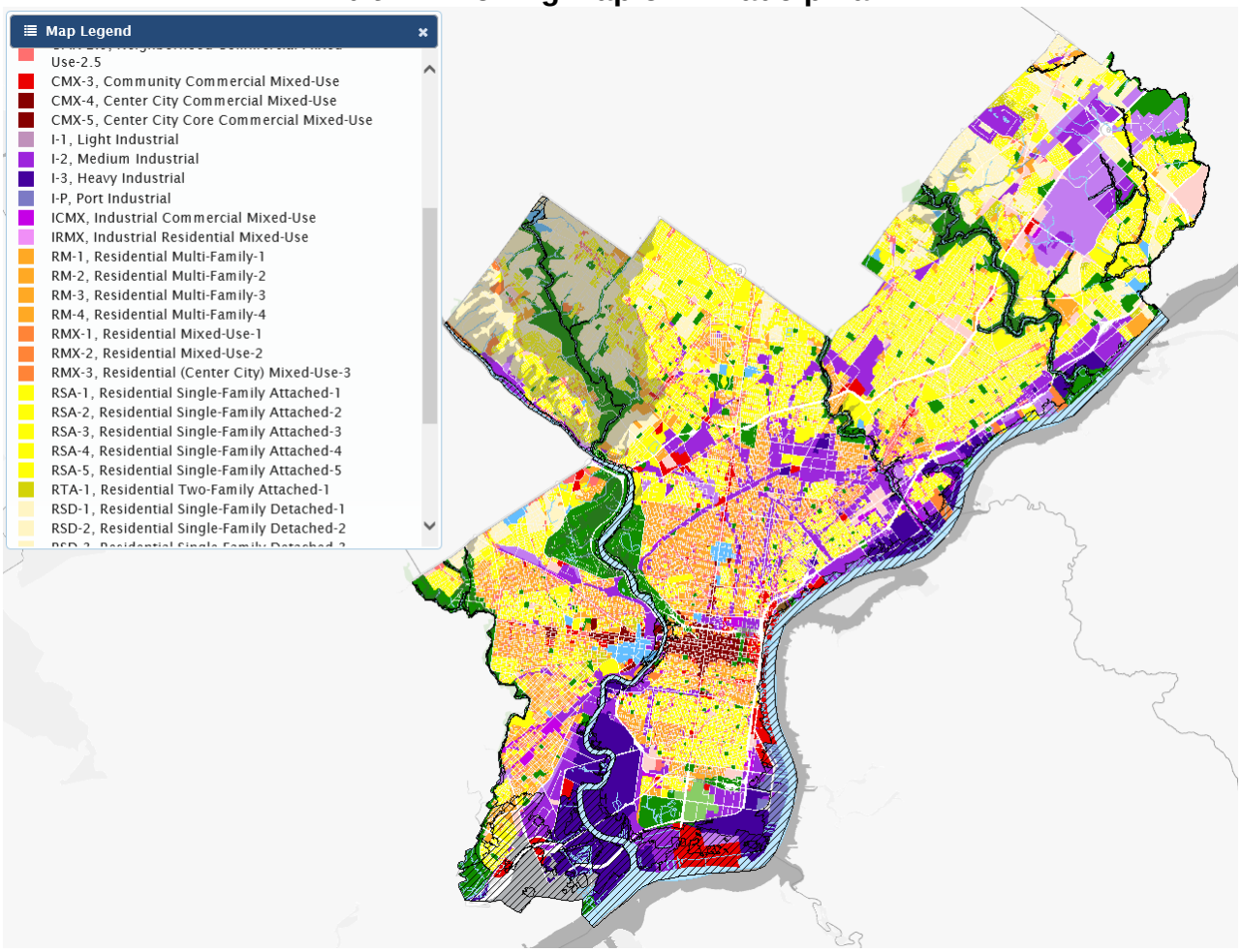
Philadelphia uses three categories of zoning districts to regulate its industrial land:

- **Industrial Residential Mixed-Use (IRMX).** These districts include a mix of very low-impact industrial uses, including artists and artisan industrial and residential and neighborhood-oriented commercial uses.

- **Industrial Commercial Mixed-Use (ICMX).** These districts are a buffer between industrial districts and commercial and residential districts.

- **Light Industrial (I-1), Medium Industrial (I-2) Heavy Industrial (I-3) and Port Industrial (IP).** The scale between light and heavy industrial districts takes into account noise, odor, vibration and other activities that impact the surrounding neighborhoods. The intensity of allowed industrial uses increases from low intensity in the I-1 district, to medium intensity in the I-2 district, and to high intensity in the I-3 district. Port Industrial or I-P is intended to accommodate marine-related industrial uses such as docks, wharves, piers, and related cargo facilities. All industrial uses require lot setbacks if they are located next to residential areas.

Exhibit 2.7. Zoning Map of Philadelphia



Source: City of Philadelphia website, accessed November 2014

Beyond Land Use Regulation: Industrial and Workforce Development Corporations, Marketing, and Incentives

Philadelphia Industrial Development Corporation is Philadelphia's public-private economic development corporation. It supports investment, business growth and developments across the city. It uses flexible financing products and a portfolio of industrial and commercial real estate to foster growth in the city.

In addition, PHL Made is an organization that supports industrial businesses with marketing and branding. NextFab Studio is a makerspace that fosters entrepreneurship and provides spaces, facilities with 3-D printers as well as outreach and marketing services.

The city also offers numerous non-regulatory, incentive-based programs aimed at retaining industrial businesses:

- **Job Creation Tax Credit.** May be applied against the city's Business Income and Receipts Tax liability. Eligible businesses are allowed to claim $5,000 or 2% of the annual wages paid, whichever is higher, for each qualified new full-time job created in the City of Philadelphia.

- **Real Estate Tax Abatement**. The City of Philadelphia offers a 10-year abatement of real estate taxes on qualifying rehabilitation or construction to encourage urban development and improvements to certain deteriorated industrial and commercial properties.

- **Urban Industry Initiative.** Created by a grant from Pew Charitable Trusts to find a successful approach to keeping urban manufacturing companies from leaving the City of Philadelphia. The Urban Industry Initiative developed a unified, innovative economic development and business retention strategy. This includes outreach and comprehensive business assistance to manufacturers in the lower northeast and lower northwest sections of the city (425 manufacturing businesses representing over 22,000 jobs), as well as a wide range of business concerns. UII targets specific neighborhoods for a broad set of business assistance resources, builds connections among companies and addresses business development deterrents such as crime, trash, and graffiti.

- **The Philadelphia Workforce Development Corporation.** This private nonprofit organization offers comprehensive employment and training programs. The corporation provides companies with recruitment and referral services as well as customized and on-the-job training for new employees at no cost to the employer.

- **Philadelphia Industrial Development Corporation.** This organization provides an array of services to help local businesses become more profitable, provide goods and services, and generate jobs to sustain Philadelphia's economic foundation. This includes a range of financial and managerial services, including direct loans to small businesses and minority contractors.

Philadelphia's redevelopment of its historic Navy Yard is a great example of a targeted area strategy. The City of Philadelphia became the owner of the 1,200-acre Navy Yard in 2000. The Philadelphia Industrial Development Corporation—a quasi-public agency tasked with economic development in Philadelphia—manages the planning, development and operations of this significant addition to the city's land supply.[7] A comprehensive master plan was developed in 2004 to convert the former military shipyard to a vibrant, mixed-use industrial and business campus. While the Navy still maintains a small presence, the Navy Yard now employs over 11,000 employees at 143 companies in the office, industrial/manufacturing, and research and development sectors. In

addition, the Yard was chosen for one of the U.S. Department of Energy's five nationwide Innovation Hubs. The Energy Efficient Buildings Hub is being developed in partnership with federal, state and local agencies and universities with the dual mission of reducing regional energy use in existing commercial buildings by 20% by 2020 with cost-effective solutions, and promoting regional economic growth and job creation.

Boston

Existing Regulatory Context

Boston's zoning establishes five types of base industrial districts:

1. Light Manufacturing (LM)
2. Restricted Manufacturing (M)
3. General (I)
4. Maritime Economy Reserve (MER)
5. Waterfront (W)

Of these, MER and W districts are specifically established for water-dependent and water-related industrial uses. Single-family residential land uses are prohibited in all the industrial districts. Multi-family uses are conditional in the M and W districts. Light Manufacturing (LM) is regulated separately and has a specific list of allowed, conditional and prohibited uses.

In addition to the base zoning district, neighborhood districts add a layer of regulations, typically further restricting uses and the sizes of structures A third layer of regulation, the special purpose overlay district, encompasses specific contiguous groups of properties. Base zoning regulations apply in addition to those carried by the overlay district.

Boston's zoning regulations are similar to other cities' zoning in terms of allowed, prohibited, and conditional uses in industrial areas. Boston does not allow residential uses, but does allow some retail and office uses. In general, Boston's code is complex as it encompasses three layers of regulatory oversight—base zoning, overlay districts, and neighborhood districts—all of which carry varying regulations. Boston's treatment of waterfront businesses is unique in that it applies specific regulations for waterfront uses by establishing special base zones for waterfront industrial areas through its W and MER zoning districts.

Beyond Land Use Regulation: Business Loans, Industrial Bonds, and Economic Development Plans

In addition to the zoning code, the city administers several incentive-based programs. These programs are coordinated and run by the Boston Local Development Corporation, a private non-profit corporation administered by the City of Boston. Its programs include:

- Loans for existing or potential industrial businesses to acquire new business property and purchase equipment and machinery to expand or use as seed money.
- The Back Streets Back-up Loan Program supports businesses through real estate assistance, workforce training, business assistance and

resources and partnerships.

- Tax-exempt industrial development bonds are issued to acquire land and construct new facilities, expand/renovate existing facilities or purchase new equipment. Projects eligible for tax-exempt financing are manufacturing facilities that create tangible products, cogeneration or small power facilities for furnishing local energy or gas, and solid waste/resource recovery facilities. These projects often have a strong job creation/retention component.

- Tax-exempt enterprise zone facility bonds for qualified businesses to finance the cost of commercial, retail or similar facility used by the borrower. The borrower must operate within an enterprise zone and 95% of the proceeds from the bond issue must be used to finance qualified zone property.

Each of the city's industrial zones have distinct economic development plans to identify land use, circulation, business and workforce services, image development and infrastructure improvements.

Vancouver, BC

Existing Regulatory Context

Vancouver's regional growth strategy establishes two land use designations that apply to industrial lands. These are Industrial and Mixed Employment. The Industrial designation is intended for industrial activities as well as related but limited accessory uses, such as office and retail. Residential uses are not included in this designation. The Mixed Employment designation, as its name suggests, is intended for industrial uses as well as wider variety of office and retail uses. Residential uses are not intended in this designation.

The City of Vancouver[8] implements these regional designations through two types of industrial districts encompassing 12 zoning designations:

1. Industrial Districts
2. Light Industrial Districts

Industrial Districts

- **MC-1, MC-2.** These are mixed-use districts that allow industrial, commercial and residential uses which are compatible with one another and with nearby residential districts. MC-2 limits residential uses in areas adjacent to heavy industrial zones.

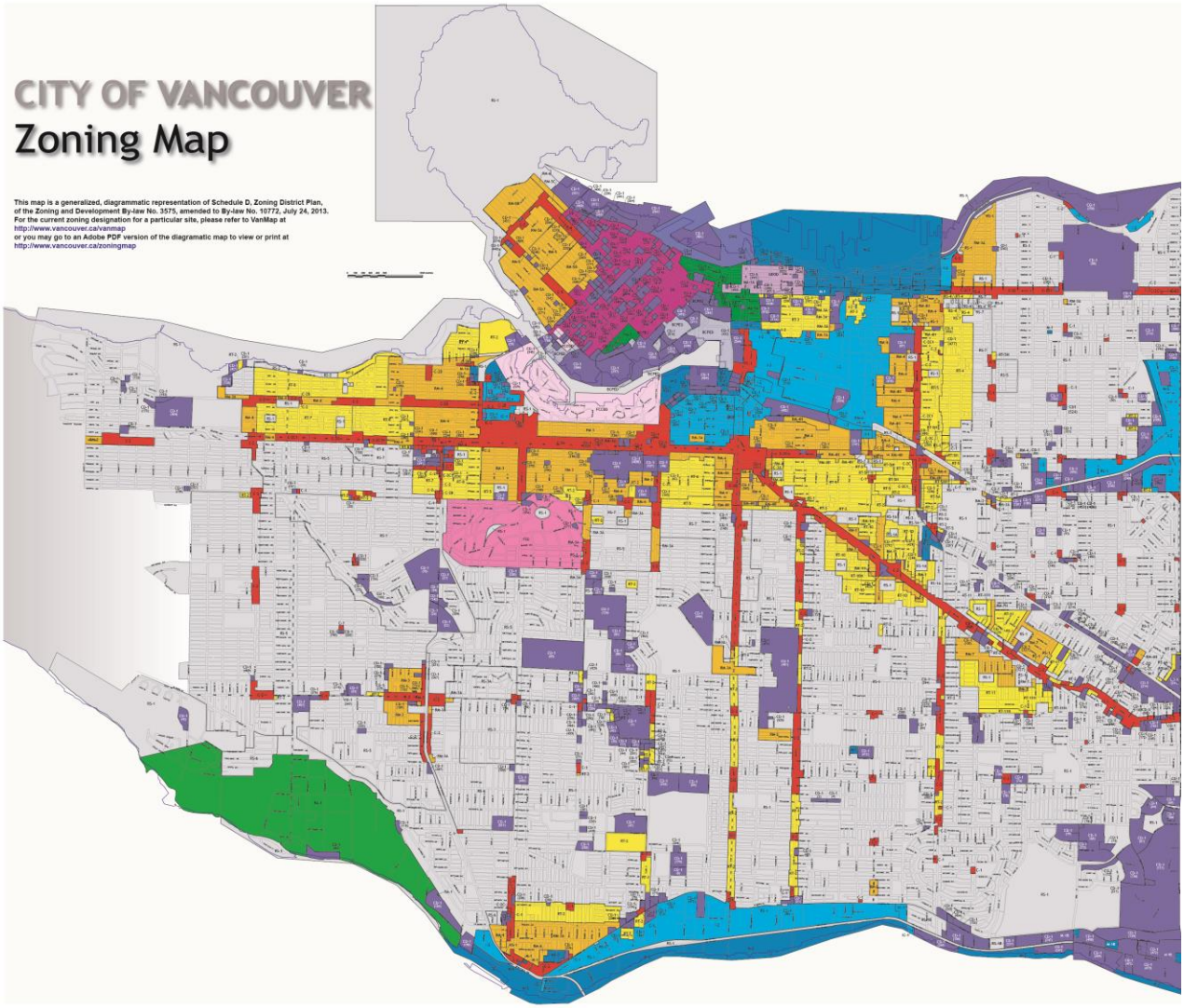
- **M-1, M-1A, M-1B, M-2 and M-2.** These zones permit industrial and other uses that are generally incompatible with residential land use, but are beneficial because they provide employment opportunities or serve a necessary function in the city. It does not permit potentially dangerous or environmentally incompatible uses when situated near residential districts. The M-1A district places emphasis on compatibility with adjacent residential districts while M-1B restricts the types and scale of non-industrial uses.

Light Industrial Districts

IC-1, IC-2, I-1, I-2 and I-3. These zoning categories permit light industrial uses that are generally compatible with one another and with adjoining residential or commercial districts. They also permit advanced technology industry, industry with a significant amount of research and development activity and commercial uses compatible with and complementing light industrial uses. The I-1 and I-3 zoning designations specifically permit advanced technology industry, and industry with a significant amount of research and development activity. The I-1 district does not permit office or retail uses. The IC-2 and IC-3 districts include additional design regulations such as compatibility with the function and character of adjacent streets or other landmarks.

The City of Vancouver owns approximately 1,577 acres of industrial-zoned land, a small share (about 5.6%) of the approximately 28,246 total industrial-zoned acres in the region. For a scale comparison, the Ballard-Interbay subarea is close to this size. Vancouver's industrial zoning allows a broad mix of uses within its districts.

Exhibit 2.8. Zoning Map of Vancouver, BC



Source: City of Vancouver website, accessed November 2014

IN REVIEW

Industrial lands play a vital role in many of the central Puget Sound region's economic clusters, with specific trends and issues having real consequences in shaping the use and management of these lands. Recent trends include a resurgence of manufacturing jobs and new processes and technological advances requiring a more educated workforce.

Regionally, incursion of non-industrial land uses into industrial areas or conversion of land use directly affects supply and demand for industrial lands and, in most cases, these impacts are difficult or nearly impossible to isolate or quantify.

Peer cities offer policy ideas for improving, cultivating and promoting industrial lands. Findings range from designating special tax districts, adopting plans for infrastructure investments or providing organizations that assist industrial-based companies with advocacy, grants, education, incentives, marketing and branding. Examples from peer cities show innovative solutions to complexities of their industrial lands developed at the *citywide* scale. The central Puget Sound region includes 82 different cities with individual governing bodies, zoning codes and city visions. This diversity of jurisdictions makes developing a *regional* strategy more challenging.

Endnotes

[1] Chicago Sustainable Industries (CSI)." City of Chicago . N.p., n.d. Web. 07 Nov. 2014.

[2] Rast, Joel. "Policy Research Report Abstract." UW-Milwaukee: Center for Economic Development. UW-Milwaukee: Center for Economic Development, 1 Apr. 2008. Web. 30 Oct. 2014.

[3] 'Tax Increment Financing is a special funding tool used by the City of Chicago to promote public and private investment across the city. Funds are used to build and repair roads and infrastructure, clean polluted land and put vacant properties back to productive use, usually in conjunction with private development projects. Funds are generated by growth in the Equalized Assessed Valuation (EAV) of properties within a designated district over a period of 23 years. Funding levels for specific projects are coordinated with area plans and goals. When an area is declared a TIF district, the amount of property tax the area generates is set as a base EAV amount. As property values increase, all property tax growth above that amount can be used to fund redevelopment projects within the district. The increase, or increment, can be used to pay back bonds issued to pay upfront costs, or can be used on a pay-as-you-go basis for individual projects. At the conclusion of the 23-year period, the increase in revenue over the base amount is distributed annually among the seven taxing bodies in the city that are based on property values.' "Tax Increment Financing Program." City of Chicago. N.p., n.d. Web. 29 Oct. 2014.

[4] Sustainable Urban Industrial Development (PAS 577). 2014. APA Planning Advisory Service. Nancey Green Leigh, FAICP, Nathanael Z. Hoelzel, Benjamin R. Kraft, C. Scott Dempwolf.

[5] City of Portland. 1999. Regional Industrial Lands Study for Portland and Vancouver Metropolitan Area. Prepared by Otak, Inc. Portland, OR. http://www.metroregion.org/library_docs/maps_data/regionalindustriallandstudy.pdf.

City of Portland. 2006. Freight Master Plan. Prepared by the City of Portland Office of Transportation.

City of Portland. 2007. Working Harbor Reinvestment Strategy. City of Portland Bureau of Planning. Portland, OR. http://www.portlandonline.com/planning/index.cfm?c=ecfji.

[6] City of San Francisco. 2002. Industrial Land in San Francisco: Understanding Production, Distribution, and Repair. July 2002. Prepared by San Francisco Planning Department, San Francisco, CA. http://www.ci.sf.ca.us/site/uploadedfiles/planning/neighborhoodplans/pdf/cw_dpr_chapter5_2.pdf.

[7] Philadelphia industrial Market and Land Use Strategy, Philadelphia Industrial Development Corporation, 2010.

[8] City of Vancouver. 1995. Industrial Lands Strategy. Prepared by City of Vancouver Planning Department. Vancouver, BC.

3 Industrial Lands in the Central Puget Sound Region

Chapter 3. Industrial Lands in the Central Puget Sound Region

CHAPTER INTRODUCTION

This chapter presents the current conditions of industrial lands in the central Puget Sound region, including the zoning policies that govern the region's industrial lands; tabulations of land area throughout the industrial lands, including total land and land that is available to accommodate growth. An important component of the analysis of industrial land in the region is the structure of policies and regulations governing industrial-zoned land. This chapter identifies specific policies and elements of land use regulatory regimes across cities that affect the supply of industrial land at an empirical level, and identifies some innovative and effective local approaches. It compares zoning across designated MICs as well as individual jurisdictions.

The second section of this chapter quantifies the amount of land in industrial areas, including areas with potential infill and redevelopment opportunities. A third section provides contextual considerations of regionwide industrial supply, including infrastructure access, climate change considerations, brownfields, and environmental justice. The section that follows provides detailed profiles of the use and character of each industrial subarea in the region.

INDUSTRIAL ZONING ACROSS THE REGION

Cities across the central Puget Sound region use comprehensive plan policies and development regulations to manage their supplies of industrial land. To avoid the appearance that all industrial land designations are roughly equivalent, this section categorizes lands upon which significant industrial development is present and/or permitted to occur as one of the following two:

1. **Core industrial.** This segment includes zoning designations on lands dominated by traditional industrial land uses. These zoning designations include lands on which traditional industrial land uses are permitted to occur.
2. **Industrial-commercial.** This segment includes zoning designations on lands with a significant component of both industrial and commercial uses. These zoning designations include lands on which industrial and commercial uses are permitted to occur.

Designated Manufacturing/Industrial Centers

Since 2003, MICs have been recognized at the regional level and are a key component of the regional growth strategy (see **Exhibit 3.1**). These regional centers are intended to be locations of more intensive industrial activity that are typically characterized by large contiguous parcels served by the region's major transportation infrastructure, including roads, rail, and port facilities. VISION 2040 discourages non-supportive land uses in regional MICs, such as retail, non-related offices, or housing, in order to preserve the basic sector industries located in these centers.

Regional MICs, together with designated regional growth centers, represent a small share of the region's land, but contain a significant share of the region's employment and, in growth centers, the region's population and housing. VISION 2040's regional growth strategy expects regional centers to accommodate a significant share of the region's growth.

Centers are recognized at the regional level through a set of designation procedures. The purpose of the procedures is to:

a. Document that the proposed center has the desire, capacity, and development potential to play a regional role in attracting and accommodating a significant share of the jurisdiction's employment growth.

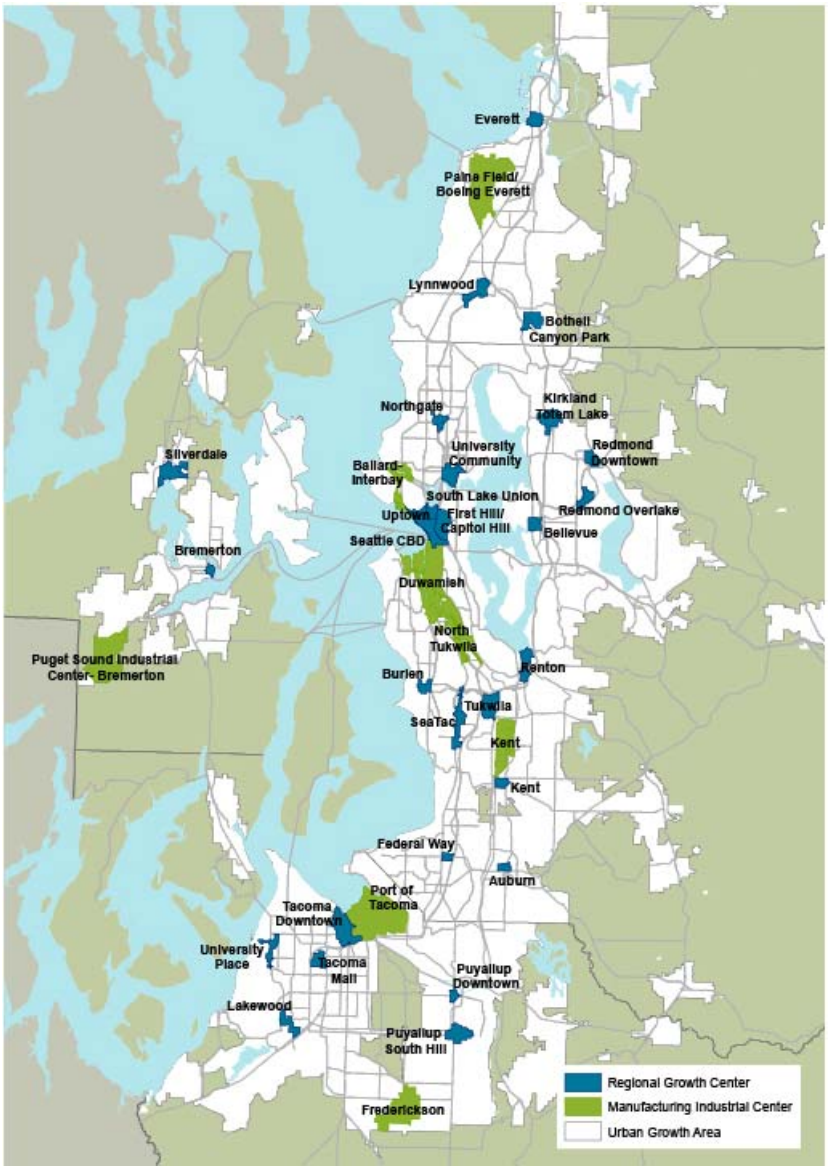
b. Limit the number and geographic distribution of regional MICs. The region needs to maintain a reasonable number and distribution in order for MICs to:

> i. Serve as an organizing framework for the Freight and Goods component of the region's Metropolitan Transportation System.
>
> ii. Serve as the primary concentrations of industrial- and manufacturing-related jobs that are important to the region.
>
> iii. Have the potential to generate sufficient market demand to make centers successful.

c. Provide regional consistency regarding the type, location, distribution, and development potential of new manufacturing industrial centers.

d. Ensure that regional MICs meet the goals and expectations established in VISION 2040.

Exhibit 3.1. Regional Growth Centers and Manufacturing/Industrial Centers, Central Puget Sound Region, 2014



Source: PSRC, 2014.

Regional Manufacturing/Industrial Centers

There are currently eight regional MICs. Regional MICs represent only 0.6% of the regional land area (about 24,000 gross acres) but contain about 9.3% of total employment (150,000 employees). The eight regional MICs include the following:

- Ballard-Interbay (Seattle)
- Duwamish (Seattle)
- Frederickson (Unincorporated Pierce County)
- Kent (Kent)
- North Tukwila (Tukwila)
- Paine Field/Boeing Everett (Everett, Unincorporated Snohomish County)
- Port of Tacoma (Tacoma)
- PSIC-Bremerton (formerly South Kitsap Industrial Area)

Countywide Manufacturing/Industrial Centers

In addition to regional centers, VISION 2040 supports development in smaller-scale centers in all municipalities (see **Exhibit 3.2**). Centers are recognized first in comprehensive plans and then in countywide planning policies. When countywide centers meet minimum thresholds and have done significant planning, including a market study, they may submit for designation at the regional level.

Currently, three centers have been designated at the countywide level; these include the following:

- South Tacoma Valley (Tacoma)
- Sumner-Pacific (Sumner and Pacific)
- Arlington-Marysville (Arlington and Marysville)

Exhibit 3.2. Summary of Industrial Employment and Manufacturing/Industrial Centers in the Central Puget Sound Region, 2013

Land Type	Industrial Jobs on Industrial Zoned Land	
	Total # of Jobs	% of Total Jobs
Regional MICs	122,200	40.1 %
Countywide MICs	15,300	5.0%
Remainder within Subareas	151,700	49.7%
Dispersed	15,800	5.2%

Manufacturing/Industrial Centers Zoning

- **The Ballard-Interbay MIC** (BINMIC) is located in the northwest part of the city of Seattle. It is among the smallest MICs in size, with a gross acreage of 971 acres. It encompasses a working waterfront focused on commercial fishing, boat building and repair, as well as wharfs, railyards, warehouses and general industrial facilities. A total of seven zoning designations regulate land within the MIC. These include four zoning designations within the core industrial category and three within the industrial-commercial category. Buffer zones are used along the edges of the MIC where industrial-zoned land is adjacent to retail and residential uses.

- **The Duwamish MIC** is located in the southern part of the city of Seattle. It is among the largest MICs in size, with a gross acreage of 5,062 acres. The Duwamish MIC is the Port of Seattle's primary marine shipping area and working waterfront, with deep water berths, wharfs, piers, shipyards, dry docks, container cranes, on-dock rail, container yards, cargo distribution and warehousing, oil and petroleum storage facilities and major railroad yards. At the southern end it includes a large part of King County International Airport/Boeing Field. The MIC also contains a number of heavy industries such as Nucor Steel and three concrete plants. With a total of nine zoning designations, the Duwamish has the finest-grained zoning among MICs. These include four designations in the core industrial category and five in the industrial-commercial category. Buffer zones are used along the edges of the MIC around residential areas such as Georgetown.

- **The Frederickson MIC** is located within urban unincorporated Pierce County, southeast of Tacoma. It has a gross acreage of 2,837 acres. The Boeing Company operates on land here. Since it was designated in anticipation of development, this MIC includes a significant amount of vacant land. A total of three zoning designations regulate land within the MIC. These include one zoning designation in the core industrial category and two in the industrial-commercial category.

- **The Kent MIC** is located in the Kent Valley north of downtown Kent. The MIC comprises the eastern half of a larger industrial area called the Kent North Valley Industrial Area. The Kent MIC is a smaller regional MIC with a gross acreage of 1,685 acres. The two zoning designations that regulate land within the MIC are in the core industrial category.

- **The North Tukwila MIC** extends from Seattle's southern city limit to South 126th Street. It is among the smaller MICs in size, with a gross acreage of 961 acres. A portion of King County International Airport/Boeing Field is located within the MIC, at the north end. The two zoning designations that regulate land within the MIC are in the core industrial category.

- **The Paine Field/Boeing Everett MIC** is located in the City of Everett and unincorporated Snohomish County. It is among the larger MICs in size, with a gross acreage of 4,241 acres. The MIC is home to Boeing's aeronautical facilities and activity in the MIC is dominated by aviation; aircraft production, maintenance, testing, flight training, business and corporate aviation, and military aviation activities. A total of five zoning designations regulate land within the MIC. All five of these designations are in the core industrial category.

- **The Port of Tacoma MIC** is located in the City of Tacoma, along the waterfront and on lands adjoining the waterways on Tacoma's Commencement Bay. It is among the larger MICs in size, with a gross acreage of 5,160 acres. It is dominated by port and marine terminals, marine cargo, on-dock intermodal rail yards, container terminals, roll-on/roll-off facilities, non-containerized cargo facilities (moving grain, fruit, alumina, and wood chips), automobile import facilities, shipyards, boat building and drydocks. A total of six zoning designations regulate land within the MIC. All six of these designations are included in the core industrial category.

- **The Puget Sound Industrial Center-Bremerton MIC** is located in Southwest Bremerton. It is among the larger MICs in size, with a gross acreage of 3,565 acres. Since it was designated in anticipation of development, this MIC includes a significant amount of vacant parcels. The three zoning designations that regulate land within the MIC are in the core industrial category.

The region's eight MICs include 37 zoning designations. Of these, 28 zoning designations regulate lands dominated by traditional industrial land uses and are categorized as core industrial. Nine designations regulate lands with a significant component of both industrial and commercial uses and are categorized as industrial-commercial. Aviation specific zoning designations are present in four of the eight MICs.

Exhibit 3.3. lists the zoning designations across the MICs and categorizes them as core industrial or industrial-commercial.

Exhibit 3.4. lists the zoning designations across the MICs, categorizes them as core industrial or industrial-commercial and lists their estimated existing employment and acreage.

Exhibit 3.3. Zoning by Manufacturing/Industrial Center in the Central Puget Sound Region, 2013

MIC	CORE INDUSTRIAL	INDUSTRIAL-COMMERCIAL
Ballard-Interbay	1. Industrial General 1 (IG1 U/45) 2. Industrial General 1 (IG1 U/65) 3. Industrial General 2 (IG2 U/65) 4. Industrial General 2 (IG2 U/45)	1. Industrial Commercial (IC-65) 2. Industrial Commercial (IC-45) 3. Industrial Buffer (U/45)
Duwamish	1. Industrial General 1(IG1 U/85) 2. Industrial General 1 (IG1 U/65) 3. Industrial General 2 (IG2 U/85) 4. Industrial General 2 (IG2 U/65)	1. Industrial Buffer (IB U/45) 2. Industrial Buffer (IB U/85) 3. Industrial Buffer (IB U/65) 4. Industrial Commercial (IC 85-160) 5. Industrial Commercial (IC-65)
Frederickson	1. Pierce County Employment Center (EC)	1. Pierce County Employment Services (ES) 2. Pierce County Community Employment (CE)
Kent MIC	1. General Industrial (M3) 2. Limited Industrial (M2)	
North Tukwila	1. Manufacturing Industrial Center/ Heavy Industrial (MIC/H) 2. Manufacturing Industrial Center/Light Industrial (MIC/L)	
Paine Field / Boeing Everett	1. Heavy Commercial Light Industrial (C-2) 2. Office and Industrial Park (M-1) 3. Heavy Manufacturing (M-2) 4. Light Industrial (LI) 5. Business Park (M-M)	
Port of Tacoma	1.Industrial, Light Industrial (M1) 2. Heavy Industrial (M2) 3. Port Maritime and Industrial (PMI) 4. Shoreline 8 (S8) 5. Shoreline 9 (S9) 6. Shoreline 10 (S10)	
PSIC- Bremerton	1. General Industrial (GI) 2. Port Industrial Mix (PIM) 3. Aviation Business (AB)	

Exhibit 3.4. Zoning, Total Employment and Acreage by MIC in the Central Puget Sound Region, 2013

MIC	CORE INDUSTRIAL	INDUSTRIAL COMMERCIAL	TOTAL EMPLOYMENT	ACREAGE
Ballard-Interbay	1. Industrial General 1 (IG1 U/45) 2. Industrial General 1 (IG1 U/65) 3. Industrial General 2 (IG2 U/65) 4. Industrial General 2 (IG2 U/45)	1. Industrial Commercial (IC-65) 2. Industrial Commercial (IC-45) 3. Industrial Buffer (U/45)	14,237	971 Ballard-Interbay
Duwamish	1. Industrial General 1(IG1 U/85) 2. Industrial General 1 (IG1 U/65) 3. Industrial General 2 (IG2 U/85) 4. Industrial General 2 (IG2 U/65)	1. Industrial Buffer (IB U/45) 2. Industrial Buffer (IB U/85) 3. Industrial Buffer (IB U/65) 4. Industrial Commercial (IC 85-160) 5. Industrial Commercial (IC-65)	58,771	5062 Duwamish
Frederickson	1. Pierce County Employment Center (EC)	1. Pierce County Employment Services (ES) 2. Pierce County Community Employment (CE)	3,330	2837 Frederickson
Kent MIC	1. General Industrial (M3) 2. Limited Industrial (M2)		15,046	1970 Kent
North Tukwila	1. Manufacturing Industrial Center/ Heavy Industrial (MIC/H) 2. Manufacturing Industrial Center/Light Industrial (MIC/L)		13,499	961 North Tukwila
Paine Field / Boeing Everett	1. Heavy Commercial Light Industrial (C-2) 2. Office and Industrial Park (M-1) 3. Heavy Manufacturing (M-2) 4. Light Industrial (LI)		42,413	4241 Paine Field/Boeing Everett
Port of Tacoma	1.Industrial, Light Industrial (M1) 2. Heavy Industrial (M2) 3. Port Maritime and Industrial (PMI) 4. Shoreline 8 (S8) 5. Shoreline 9 (S9)		9,250	5160 Port of Tacoma
Puget Sound Industrial Center-Bremerton	1. General Industrial (GI) 2. Port Industrial Mix (PIM) 3. Aviation Business(AB)		876	3565 Puget Sound Industrial Center-Bremerton

Local Zoning for Industrial Lands[1]

Exhibit 3.5. shows the various zoning designations across jurisdictions in the region with lands upon which significant industrial development is present and/or permitted to occur. In addition to core industrial and industrial-commercial segments of gross supply, two other segments of industrial lands are included in this table – aviation operations areas and military industrial – but are not separately identified. Jurisdictions with aviation zoning designations are Arlington, Auburn, Bremerton, Darrington, Everett, Monroe, Mukilteo, Pierce County, Renton, SeaTac, Seattle, Snohomish County, Snohomish, and Tukwila. Those with military zoning designations are Bremerton, DuPont, Everett, Kitsap County, Lakewood, and Pierce County. The following were noted based on a comparison of zoning across the region:

- 65 out of 82 jurisdictions in the region contain lands upon which significant industrial development is present and/or permitted to occur.
- 15 cities use the Business Park zoning designation.
- 3 cities use specific Tech Park zoning designations.
- 8 jurisdictions have Heavy Industry designations.
- 21 jurisdictions allow for only light industrial uses.

Exhibit 3.5. Existing Zoning Across Jurisdictions

	Jurisdiction	Core Industrial	Industrial-Commercial
1	**Algona**	Light Industrial (LI)	
2	**Arlington**	General Industrial (GI), Light Industrial (LI), Aviation Flightline (AF)	Business Park (BP)
3	**Auburn**	Heavy Industrial (M2), Light Industrial (M1), Airport Landing Field (LF), Environmental Park (EP)	Heavy Commercial (C3)
4	**Bainbridge**	Water Dependent Industrial (WD-1), Light Manufacturing	
5	**Bellevue**	Light Industrial (LI)	
6	**Black Diamond**	Light Industrial (Bus Pk/Light Ind), Industrial (IND)	
7	**Bothell**	Light Industrial (LI)	Office Professional (OP), Community Business (CB), Light Industrial (LI), Motor Vehicle Sales Overlay (MVSO)
8	**Bonney Lake**		Eastown

	Jurisdiction	Core Industrial	Industrial-Commercial
9	**Bremerton**	General Industrial (GI), Industrial Park (IP), Marine Industrial (MI), Industrial (I), Naval Shipyard, Port Industrial Mix (PIM), Aviation Business (AB), Mixed Employment (ME)	Freeway Corridor (FC)
10	**Buckley**	Industrial (IND)	
11	**Burien**	Industrial (I), Airport Industrial-2 (AI-2)	Airport Industrial-1 (AI-1)
12	**Carnation**	Light Industrial/Manufacturing (LI/M), Service Commercial (SC)	
13	**Covington**	Industrial (I)	General Commercial (GC)
14	**Darrington**	Light Industrial (LI)	
15	**Des Moines**		Business Park (B-P)
16	**DuPont**	Industrial (IND), Manufacturing Research (MRP), Business TechPark (BTP)	
17	**Duvall**	Light Industrial (LI)	
18	**Edgewood**	Industrial (I)	Business Park (BP)
19	**Everett**	Heavy Manufacturing (M-2), Marine Services (M-S), Office and Industrial Park (M-1), Evergreen Way (E-1), Business Park (M-M), Waterfront Commercial (W-C)	Heavy Commercial Light Industrial (C-2), Heavy Commercial Light Industrial ES (C-2ES)
20	**Fife**	Community Commercial, Industrial, Regional Commercial	Business Park
21	**Federal Way**	Commercial Enterprise (CE)	Corporate Park (CP-1), Office Park (OP-1)
22	**Gig Harbor**	Employment District (ED)	Planned Community Development Business Park District (PCD-BP), General Business (B-2), Public Institutional (PI), Residential and Business District (RB-2)
23	**Granite Falls**	Industrial (I), Light Industrial (LI), Industrial Retail (IR)	
24	**Index**	Light Industrial -Railroad	

	Jurisdiction	Core Industrial	Industrial-Commercial
25	**Issaquah**	Intensive Commercial (IC), Mineral Resources (M)	
26	**Kenmore**	Regional Business (RB)	
27	**Kent**	Industrial Park (M1), General Industrial (M3) , Limited Industrial (M2), Industrial Agricultural (MA), Industrial Park/commercial (M1-C)	Industrial Park/commercial (M1-C), Commercial Manufacturing-1(CM-1), Commercial Manufacturing (CM-2)
28	**King County**	Industrial (I)	
29	**Kirkland**	Light Industrial Technology (LIT), Planned Area (PLA 6G (2)), Totem Lake -10 A (TL 10A), Totem Lake -10 C (TL 10C), Totem Lake -10E (TL 10E), Totem Lake -9A (TL 9A), Totem Lake -7 (TL 7), Totem Lake -10B(TL 10B), Totem Lake -10D (TL 10D), Totem Lake (TL 10E), Totem Lake (TL 6A)	
30	**Kitsap County**	Industrial (IND), Light Industrial (LI), Rural Industrial (RI), Business Center (BC), Twelve Trees Employment Center (TTEC), Military (MIL), Park (P), Rural Commercial (RCO), Rural Employment Center (REC)	
31	**Lake Stevens**	General Industrial (GI), Light Industrial (LI), Public/ Semi-Public (P/SP), General Industrial w/Development Agreement (GIDA)	
32	**Lakewood**	Industrial Two (I2), Industrial One (I1), Industrial Business Park (IBP)	Air Corridor 1 (AC1), Clear Zone (CZ)
33	**Lynnwood**	Light Industrial (LI), Public (P1), Planned Unit Development (PUD)	Business/Technical Park (BTP), Light Industrial (LI)
34	**Maple Valley**	Business Park (BP), Service Commercial (SC), Community Business (CB), Central Commerce (CC), Planned Unit Development (PUD)	
35	**Marysville**	General Industrial (GI), Light Industrial (LI)	
36	**Mill Creek**		Business Park (BP)
37	**Milton**	Light Manufacturing (M-1)	

	Jurisdiction	Core Industrial	Industrial-Commercial
38	**Mountlake Terrace**		Light Industrial/ Office Park (LI/OP)
39	**Monroe**	Light Industrial (LI), General Industrial (GI), Limited Open Space-Airport (LOSA)	
40	**Mukilteo**	Industrial Park (IP), Light Industrial (LI), Heavy Industrial (HI), Planned Industrial (PI), Business Park (BP)	
41	**North Bend**	Employment Park-1 (EP-1)	Employment Park (EP-2)
42	**Orting**	Public Facilities	
43	**Pacific**	COM, IND	COM
44	**Pierce County**	Pierce County Employment Center (EC), Pierce County Rural Industrial Center (RIC), Pierce County Urban Military Lands (UML)	Pierce County Community Employment (CE), Pierce County Employment Services (ES), Pierce County Research Office (RO), Pierce County Employment Based Planned Communities (EBPC)
45	**Port Orchard**	Employment-Industrial/Office (EO)	
46	**Poulsbo**	Light Industrial (LI)	Business Park (BP), Office Commercial Industrial (OCI)
47	**Puyallup**	Limited Manufacturing (ML), Public Facilities (PF)	Business Park (MP)
48	**Redmond**	Industry (I), Manufacturing Park (MP), Business Park (BP), Gateway Design District (GDD1)	Overlake Business & Advanced Technology (OBAT), Business Park (BP)
49	**Renton**	Industrial Medium (IM), Industrial Light (IL), Industrial Heavy (IH)	
50	**Roy**	Light Industrial (LI)	
51	**SeaTac**	Industrial (I), Aviation Operations (AVO), Business Park (BP)	Aviation Business (ABC)

	Jurisdiction	Core Industrial	Industrial-Commercial
52	**Seattle**	Industrial General 2 (IG2 U/65), Industrial General 1 (IG1 U/45), Industrial General 1 (IG1 U/65), Industrial General 2 (IG2 U/85), Industrial General 2 (IG2 U/45), Industrial General 1 (IG1 U/85)	Industrial Commercial (IC-45), Industrial Commercial (IC-65), Industrial Commercial (IC-85), Industrial Buffer (IB U/85), Industrial Buffer (IB U/45), Industrial Buffer (IB U/65)
53	**Skykomish**	Industrial	
54	**Snohomish County**	Industrial Park, Rural Industrial, Heavy Industrial, Freeway Service, General Commercial, Native American Land, Planned Industrial Park, Rural Industrial	Light Industrial
55	**Snohomish**	Industrial (IND), Airport Industry (AIN)	Business Park (BP)
56	**Snoqualmie**	Utility Park (UP), Planned Com/Industrial (PCI)	Mixed Use (MU)
57	**South Prairie**	Industrial (IND)	
58	**Stanwood**	General Industrial (GI), Light Industrial (LI), General Commercial (GC)	
59	**Steilacoom**	Industrial (I)	
60	**Sultan**	Economic Development (ED), Public and Institutional (P/I)	
61	**Sumner**	Light Industrial, Heavy Industrial	Interchange Commercial
62	**Tacoma**	Light Industrial (M1), Shoreline (S9), Heavy Industrial (M2), Port Maritime and Industrial (PMI), Shoreline (S10), Shoreline (S7), Planned Business Development (PDB)	Warehouse Residential (WR), Commercial Industrial Mixed-Use (CIX)
63	**Tukwila**	Heavy Industrial (HI), Manufacturing Industrial Center/ Heavy Industrial (MIC/H), Light Industrial (LI), Manufacturing Industrial Center/Light Industrial (MIC/L), Tukwila Valley South (TVS)	Commercial/Light Industrial (CLI)

	Jurisdiction	Core Industrial	Industrial-Commercial
64	**University Place**		Light Industrial - Business Park (IB)
65	**Woodinville**	Industrial (I)	General Business (GB)

THE SUPPLY OF INDUSTRIAL LAND

Summary

For the purposes of this report, and to be consistent with PSRC's 1998 Industrial Land Supply and Demand report, industrial land supply is characterized as either "gross supply" or "net supply." Gross industrial land supply refers to all industrial land, including active sites, vacant land, and physically redevelopable land. Net industrial land supply refers to a subset of the gross supply that may be available for growth, including vacant land, and physically redevelopable land.

The gross industrial land supply in the central Puget Sound region totaled 71,983 acres as of 2013. The net industrial land supply in the central Puget Sound region totaled 28,615 acres as of 2013. Since the 1998 report, gross industrial land supply has undergone erosion in some areas, with modest growth in others.

Methodology

Defining Industrial Lands

The core findings of this report depend on how to define what makes land industrial for inclusion in this analysis. This seemingly simple concept is a complex task given the array of mixed-use zones among the many jurisdictions (82 cities and towns, plus military and tribal lands, and four counties) and their diverse systems of zoning and land use designation.

Complicating issues include lands designated as "Business Park" or "Employment Center." Land designated for "Public Facilities" in comprehensive plans includes schools and parks, but also utilities and communication facilities. Modern hybrid and mixed-use zones and overlays allow for a blend of commercial, industrial and office uses, to further complicate this important starting point.

This study defines industrial lands as those lands upon which significant industrial development is present and/or permitted to occur, according to the steps presented in the following sections:

STEP 1 – ZONING AND FUTURE LAND USE DESIGNATION
The first step in attaining a selection of the region's industrial land base is to intersect lands designated for future industrial use in area comprehensive plans with lands currently zoned for industrial use in city and county zoning codes. Comprehensive plan designations represent community consensus and adopted policy around the future use of land within jurisdictional boundaries. The Growth Management Act requires that zoning be consistent with comprehensive plan designations.

STEP 2 – RESEARCH AND REFINEMENT
In cases where the industrial land designation was unclear, research ascertained current land use and development by review of assessors' parcel data, satellite imagery, web-based mapping applications, and Internet searches, and consultation with jurisdictions' planning staff.

STEP 3 – SEGMENTATION OF GROSS LAND SUPPLY
Step 2 resulted in a refined selection of gross industrial land supply (occupied and vacant lands). Variation exists among jurisdictions with regard to the intended use of industrial lands, and not all industrial lands are available for private development in the same way. Obvious examples include military reservations and airports.

The study therefore segments the region's industrial lands into the following four categories:

1. **Core industrial.** Lands dominated by traditional industrial land uses.
2. **Industrial-commercial.** Lands with a significant component of both industrial and commercial uses. Examples of this type are found in Lynnwood/Mountlake Terrace, Woodinville, Everett, and Bremerton.
3. **Military industrial.** Includes industrial zones at Naval Stations Bremerton and Everett, the Naval Undersea Warfare Engineering Station adjacent to Keyport in Kitsap County, Joint Base Lewis-McChord and several others in the region.
4. **Aviation operations areas.** Land devoted to aviation operation areas (runways, taxi areas and ramps), which are unlikely to be vacated.

Special Cases

In addition, the following categories of lands in the region required special consideration.

TRIBAL LANDS
There are 10 federally recognized tribes (Tulalip, Sauk-Suiattle, Snoqualmie, Muckleshoot, Puyallup, Suquamish, Jamestown S'Klallam, Port Gamble S'Klallam, Stillaguamish, and Nisqually) present in the region, each of which manage their land in tribal areas or reservations. Of these, industrial areas are found in the following areas:

- **Tulalip Industrial Park** was identified as a major concentration in the 1998 study; as of yet, however, nothing has been developed to the west of the casino on I-5. The tribe's 2009 Comprehensive Plan Update showed a total of 641 acres designated for industrial land use. This is a significant reduction from the area designated in 1994 and considered as supply in the 1998 study.
- The **Puyallup Reservation is** located in the Tacoma tide-flats.
- **Port Madison Suquamish Indian Reservation** includes a small number of parcels designated "Rural Industrial" by Kitsap County.

NATURAL RESOURCE LANDS

Natural resource lands, especially mineral lands, encompass quarries and related resource processing. One example of such a designation is found on a gravel quarry just west of Silverdale in Kitsap County. This Mineral Resource designation is also surrounded by an Urban Industrial designation. Natural resource lands themselves are not generally included for the purposes of industrial land supply analysis, except where they are known to be transitioning to industrial use.

LIMITED AREAS OF MORE INTENSE RURAL DEVELOPMENT (LAMIRDS)

The Kitsap LAMIRDs (Type III) are small in area, but LAMIRDs containing industrial uses will be included as gross industrial land supply for the purposes of this study. The four Type III Kitsap County LAMIRDs included are: Striebel's Corner at SR 104 and Border Way; SR 3 and Pioneer Way NW; SR 307 and Gunderson Road; and Solid Waste Site Road. In addition, the Pierce County LAMIRD at McMillan Industrial Park is included.

It should also be noted that, while none currently exist in the region, the Washington State Legislature has provided guidelines for Major Industrial Developments located outside the urban growth boundary[2]:

"A county required or choosing to plan under RCW 36.70A.040 may establish, in consultation with cities consistent with provisions of RCW 36.70A.210, a process for reviewing and approving proposals to authorize siting of specific major industrial developments outside urban growth areas (Washington State Legislature 1995). Major industrial development means a master planned location for a specific manufacturing, industrial, or commercial business that: (a) requires a parcel of land so large that no suitable parcels are available within an urban growth area; or (b) is a natural resource-based industry requiring a location near agricultural land, forest land, or mineral resource land upon which it is dependent. The major industrial development shall not be for the purpose of retail commercial development or multiple tenant office parks. Several criteria must be met for a major industrial development to be approved outside an urban growth area. There are no Major Industrial Developments in the region's rural areas."

PLANNED DEVELOPMENTS

The 1998 study considered a sizeable portion of a 4,200-acre Pierce County development project formerly known as Cascadia (now known as Tehaleh) a part of the net land supply per the original master plan. Since that time, a new developer has purchased the site and recently resumed construction of new homes in the northeast quadrant of the site (Phase 1). The portion of this development that remains designated for industrial employment uses is included in the current gross and net supply analyses.

King County's Redmond Ridge Urban Planned Development also contains a limited number of industrial parcels. Specifically, industrial development at Alder Crest and 231st Way is included.

Pierce County's Sunrise Planned Development is not included, and the Gig Harbor North Business Park, included in the 1998 study as industrial land supply, is not included in the current study due to its mixed-commercial nature.

Geography of Analysis

This study analyzes industrial lands and economic impacts at the regional level, and sub-regionally. Industrial "concentrations" as defined by the 1998 study ("concentration(s) of contiguous industrial land – developed or undeveloped – at least 25 acres in size") are too numerous to allow for individual analysis or comparison. Concentrations are aggregated into larger units of analysis, termed subareas, for purposes of this study (**Exhibit 3.6**). This subarea reporting geography will allow for individual profiling at a sub-regional level (see individual **Subarea Profiles**).

The region's industrial-zoned lands fit into 13 geographic concentrations or subareas (**Exhibit 3.6**). An additional category, "dispersed," includes industrial lands scattered across the region.

Net Industrial Land Supply Approach

The 1998 report defined gross (designated) industrial land supply as lands designated in comprehensive plans for future industrial land use. Net land supply was defined as a subset comprised of vacant and underutilized land that deducts acreage for future rights-of-way and critical areas. Net supply was intended to reflect lands available for growth in the region's industrial sector. This study extends the concepts of gross (designated) and net industrial land supply to enable comparison of supply findings.

The methodology used to calculate net supply in this study is similar to both King County's and Pierce County's methods for calculating buildable lands. This report differs primarily in using improvement value per land square foot to determine barriers to redevelopment. King County utilizes the ratio of improvement value to land value, and Pierce County uses a current versus future employment ratio. The following steps were used to identify net industrial land supply.

STEP 1 - INITIAL EXCLUSIONS
Parcels were excluded that are not available or appropriate for future industrial development. These include non-industrial lands (all parcels lying outside of areas identified as gross industrial land supply, existing rights-of-way, parks, protected open space, and protected resource lands (including Conservation Futures dedications, wetlands, floodways, etc.), certain public facilities (including airports).

STEP 2 - IDENTIFY VACANT LAND

Vacant lands are defined as parcels with no or very little improvement values or building square feet (land with $.001 improvement value per square foot) as recorded by county assessors. The resulting vacant parcels are considered *Tier A* of the region's net supply.

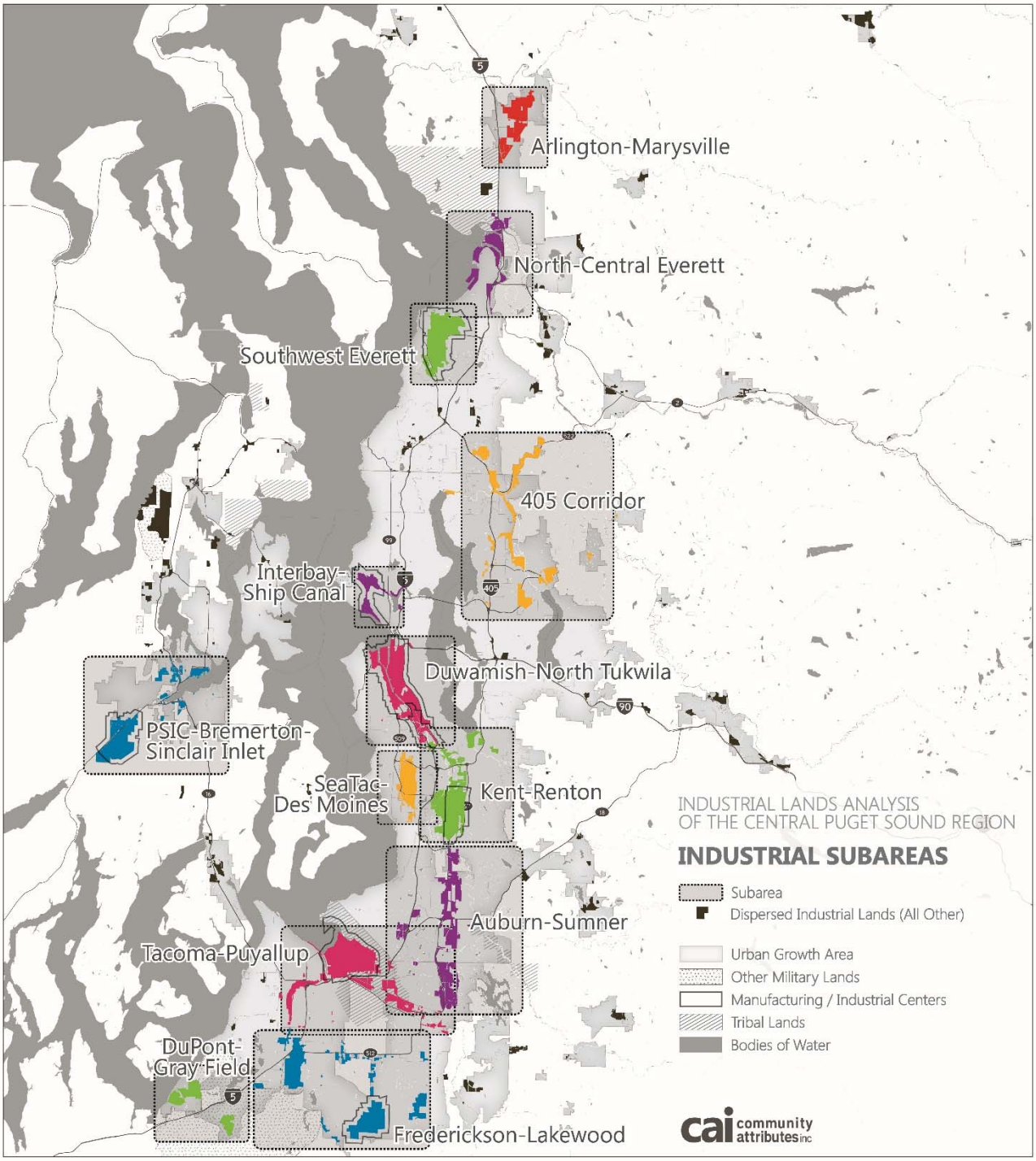
STEP 3 - IDENTIFY POTENTIALLY PHYSICALLY REDEVELOPABLE LAND

Potentially physically redevelopable lands are defined as parcels with limited improvements as a calculation of improvement value per land square foot. Tier B net supply includes parcels with minor improvements (land with $.001 to $2.50 improvement value per square foot of land). Tier C net supply includes parcels that are partially developed (land with $2.50 to $5.00 improvement value per square foot of land).

STEP 4 - CALCULATE FUTURE DEDUCTIONS

This analysis also made subtotal deductions from available supply for future street rights-of-way and future public uses (2% in urban areas, 5% for suburban areas). In addition, a 10% market factor deduction accounts for a portion of net supply that may never be redeveloped by the private market due to factors such as isolated and oddly shaped parcels, very small parcel size, obvious limits due to ownership, and other real estate market dynamics. The 10% market factor matches market factors used in King and Pierce counties' buildable land analyses.

Exhibit 3.6. Industrial Subareas for Analysis, 2013



Regionwide Profile of Central Puget Sound Industrial Land Supply

Gross Supply

The gross industrial land supply (active plus vacant and physically redevelopable) in the central Puget Sound region totals 71,983 acres as of 2013 (see **Exhibit 3.7**). The gross supply consists of four segments: core industrial lands comprise 72%, or 51,595 acres of the total; industrial-commercial land supply is 12%, totaling 8,403 acres; military industrial lands represent 9% of the region's supply at 6,746 acres; and, aviation operations areas total 7%, or 5,238 acres of supply.

King County contains the greatest proportion of the region's gross industrial land supply with 35%, followed by Pierce and Snohomish with 29% and 22%, respectively. Kitsap County contains 14% of the region's gross supply.

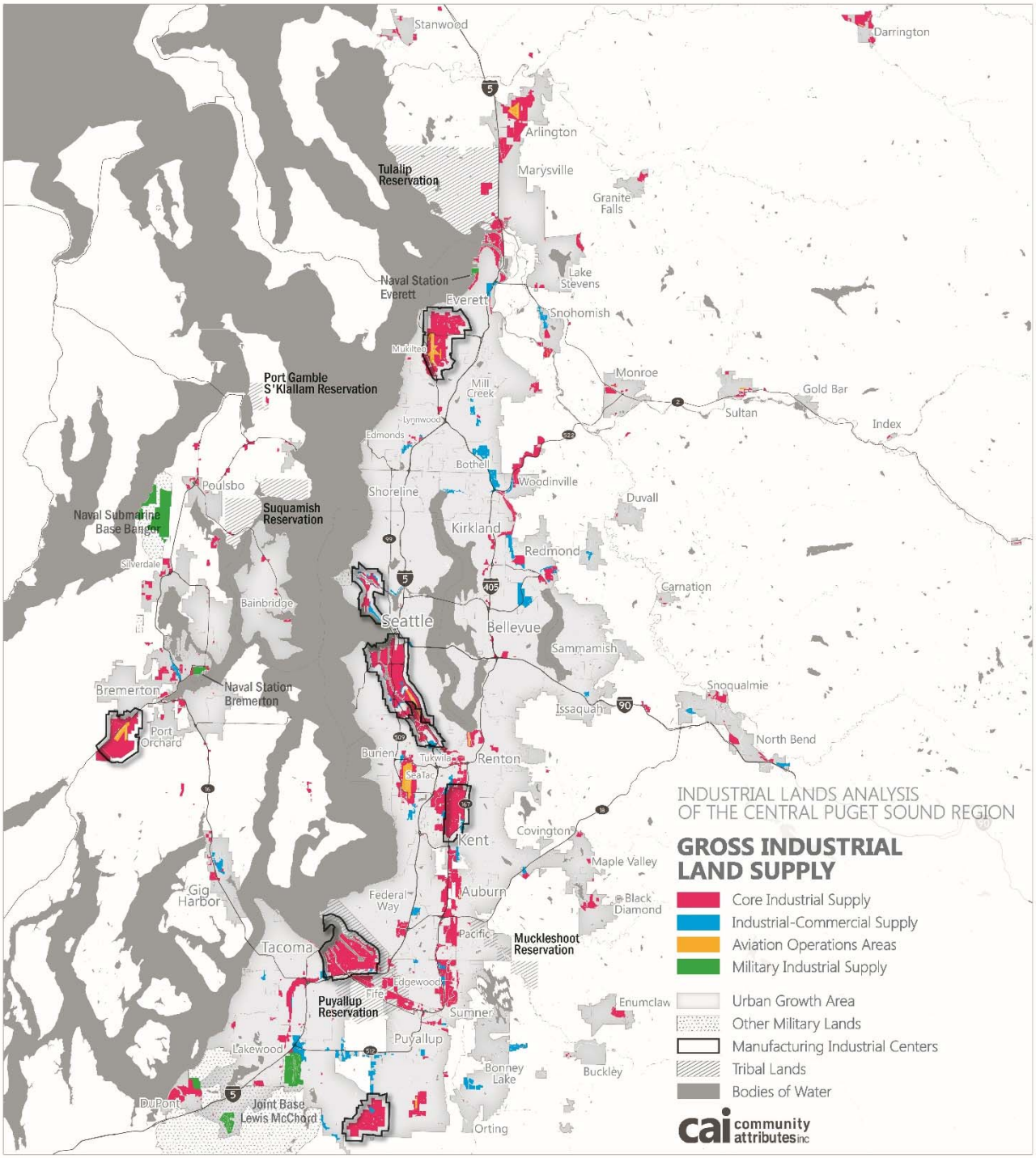
Change in Gross Supply 1998-2013

Since the 1998 report, gross industrial land supply has undergone erosion in some areas, with modest growth in others. Areas experiencing erosion of industrial land include Bel-Red, Everett's Snohomish Riverfront Redevelopment area, Renton Landing, Seattle's Stadium District, industrial areas of unincorporated Snohomish County between Everett, Mill Creek, and Lynnwood (North Creek), and Auburn Heavy Commercial (this zone includes Emerald Downs, which hasn't had a change of use, but has had its zoning changed to reflect the commercial nature of the activity at the site).

Growth in industrial land supply has taken place in unincorporated areas of Pierce County with CE (Community Employment) designations north of Frederickson, and in newly designated industrial land in Arlington, DuPont, Tacoma and other jurisdictions. See the insets below for a closer look at two changes to the region's industrial land supply.

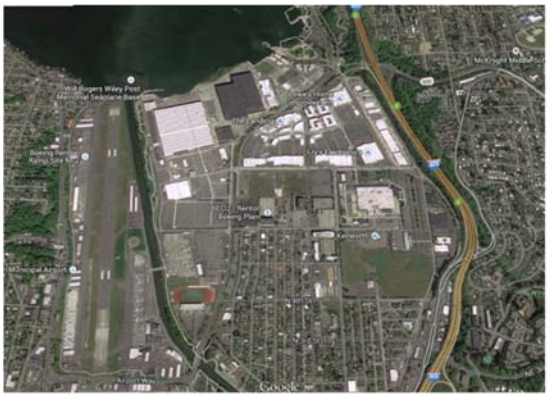
The changes in supply also reflect the inclusion of selected military areas as part of the region's industrial land supply, including parts of Puget Sound Naval Shipyard, Naval Station Everett, Bangor Trident Base and the McChord and Gray Field areas of Joint Base Lewis-McChord. These areas contain industrial employment, including enlisted personnel and civilian contractors. Additionally, smaller areas of several urban planned developments and the Tulalip Indian Reservation were categorized as industrial land than were in 1998. These important changes in methodology account for much of the difference in the land supply figure since 1998.

Exhibit 3.7. Gross Industrial Land Supply in the Central Puget Sound Region, 2013



Land within designated regional MICs seems to have generally retained its industrial zoning. **Exhibit 3.8**, Change in Gross Industrial Land Supply, 1998 and 2013, maps the changes. All of the MICs retained the vast majority of their industrial land. Where change occurred within the MICs, the map mostly shows an infill of industrial zoning within the boundaries, and some small losses of industrial zoning in areas just outside of the boundary.

RENTON LANDING – RENTON, WASHINGTON



The consolidation and reduced footprint of Boeing's activities in Renton led to surplus land available for redevelopment to the southeast of its present airplane factory. Two urban center districts were designated by the City of Renton, and a large mixed-use center (The Landing) was developed on the site.

"Consolidation of Boeing operations may cause certain property located within District One to be deemed surplus, making it available for redevelopment within the near future. District One is envisioned to include a variety of uses."
–City of Renton Comprehensive Plan

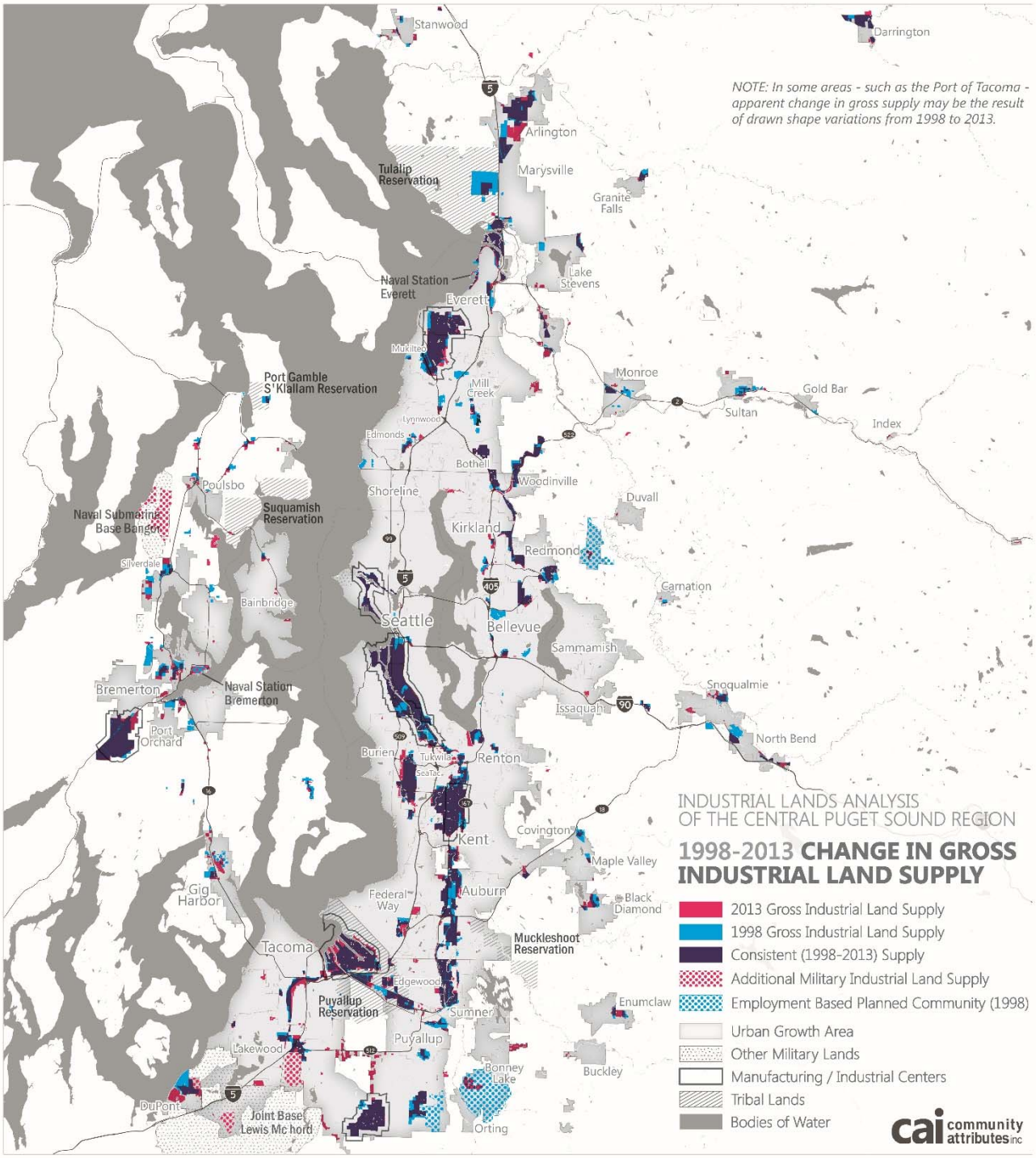
UNINCORPORATED PIERCE COUNTY, WASHINGTON

The industrial and mixed-industrial lands along SR 512 and Canyon Road E in Pierce County are now classified as Employment Centers in the Pierce County Comprehensive Plan (highlighted in red near SR 512 and Portland Avenue, above). Employment Centers are intended to provide accessible, high-paying jobs in manufacturing and related industries. Those businesses are defined by the county's Department of Planning and Land Services as:

"Land intensive type uses such as heavy industrial (e.g., manufacturing, product assembling, fabrication, processing) and heavy trucking are encouraged to locate in the Employment Centers.

Uses such as light manufacturing, assembly and wholesale activities and corporate offices are encouraged to locate in the Employment Centers, especially where they would have less impact on surrounding residential areas in terms of nuisance factors or hazards than would heavy industrial and heavy trucking activities." -Pierce County Department of Planning and Land Services.

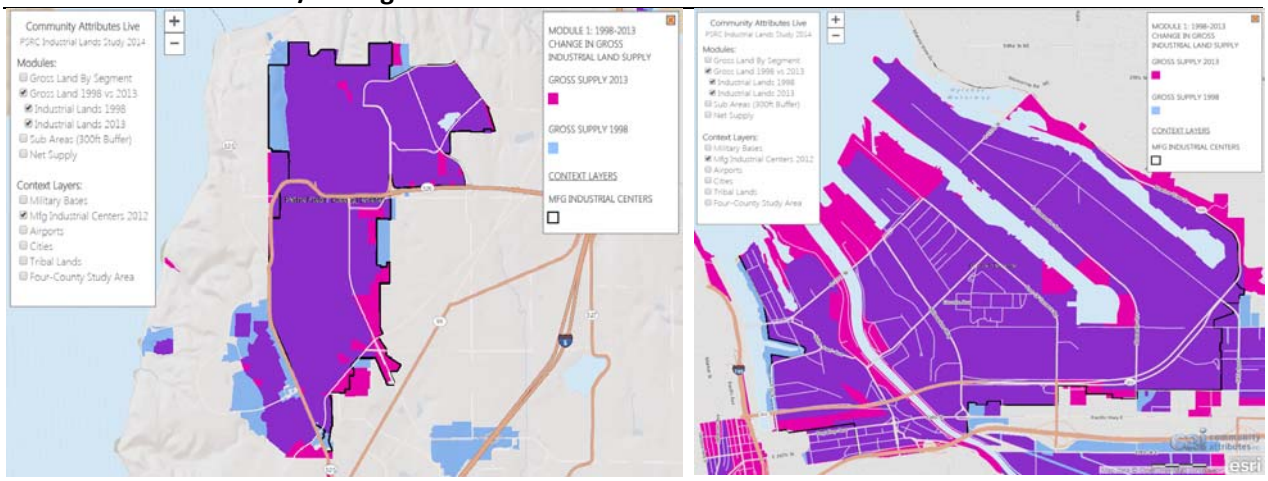
Exhibit 3.8. Change in Gross Industrial Land Supply in the Central Puget Sound Region, 1998-2013



This retention and change is shown in the following illustrative figures in **Exhibit 3.9.** The figure on the left shows that most of the zoning in the Paine Field/Boeing Everett MIC has not changed since 1998 (shown in purple). Where change has occurred, it is mostly an infill of industrial zoning within the boundary (shown in magenta) and some loss of industrial zoned land just outside of the MIC boundary (shown in blue). A similar situation is shown in the figure on the right for the Port of Tacoma MIC.

Exhibit 3.9. Zoning in Paine Field/Boeing Everett MIC and Port of Tacoma MIC, 1998 and 2013

Paine Field/Boeing Everett MIC | **Port of Tacoma MIC**

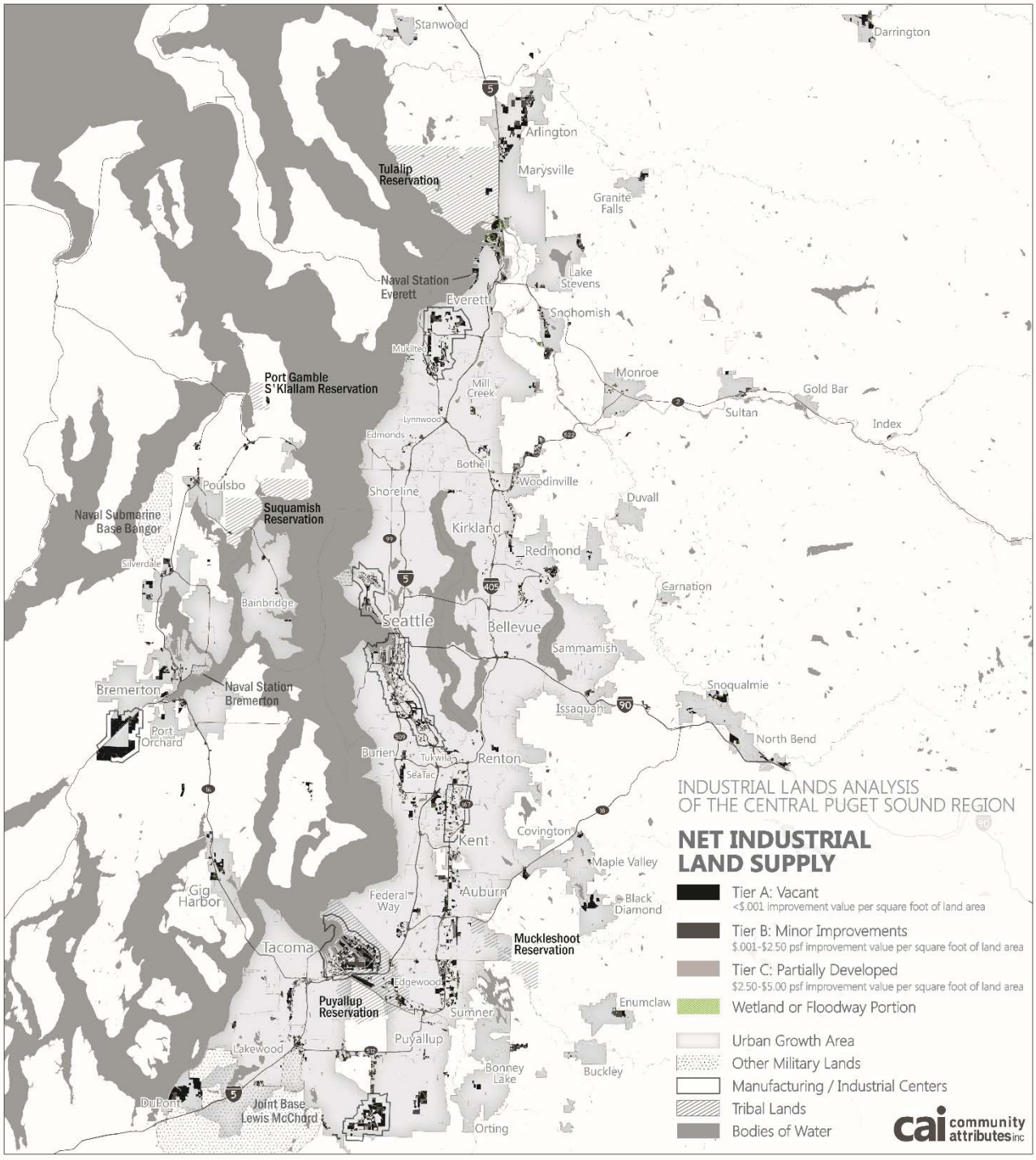


Source: PSRC, 2014.

Net Supply

The net industrial land supply (vacant and physically redevelopable) in the central Puget Sound region is estimated at 28,615 total acres as of 2013 (**Exhibit 3.10**). This figure represents 40% of the region's gross supply. The total amount comprises three tiers of net supply: Tier A lands, those that are vacant, total 17,318 acres (24% of gross supply); Tier B lands, those with minor improvements, total 8,615 acres, or 12% of gross supply; and Tier C lands, those with partial development, comprise 2,681 acres, or 4% of the region's gross supply.

Exhibit 3.10. Net Industrial Land Supply in the Central Puget Sound Region, 2013



REGIONWIDE CONSIDERATIONS

The following considerations affect the availability, characteristics, and adequacy of the region's industrial land supply, and are not reflected in the net supply calculations:

- Infrastructure
- Climate change
- Brownfields
- Environmental justice

These considerations are described below, as well as potential future work to address them in order to preserve and enhance industrial land in the region.

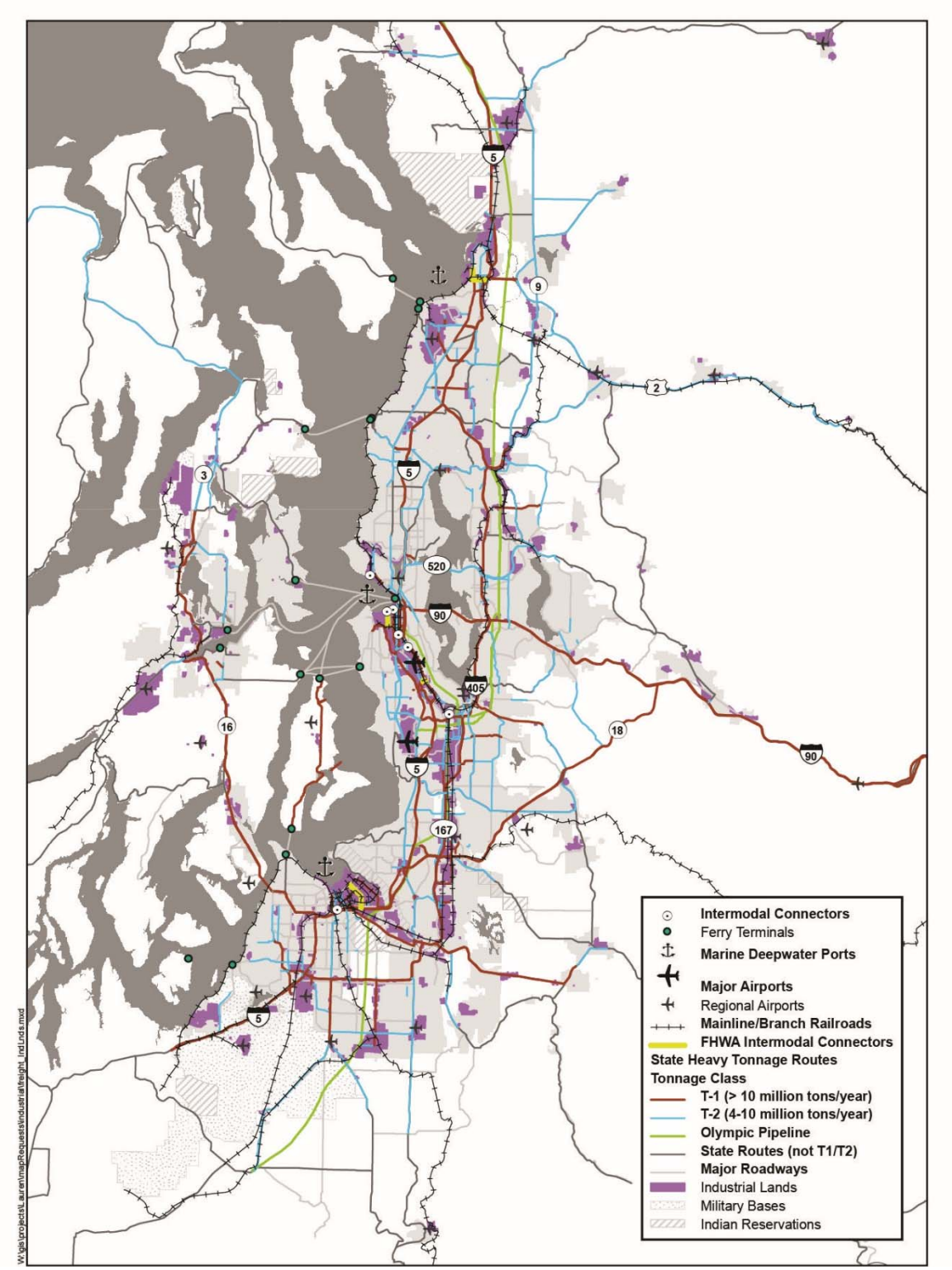
Workforce development, marketing, and other economic development-related strategies are also important considerations that affect the demand for industrial land. Many of these strategies have already been identified in PSRC's Regional Economic Strategy.

Infrastructure

Freight Transportation

Freight transportation is infrastructure for industrial activity, such as seaports, airports, and railroads. It provides important economic and quality-of-life contributions to the regional economy by supporting the daily functions of every business and household in the central Puget Sound region through regional distribution. **Exhibit 3.11** shows major freight transportation infrastructure throughout the region, including rail, deepwater marine ports, airports, pipelines, and roadways. Together, goods movement-dependent industries such as wholesale and retail trade, manufacturing, construction, agriculture, mining, transportation, and warehousing contributed roughly $99 billion to the gross regional product of the metropolitan area in 2013 (roughly 34% of the total gross regional product).[3] These industries provided almost 603,543 jobs in the central Puget Sound region, or roughly 34% of total regional employment. These jobs and employment sectors in the region are dependent on the regional transportation system to bring goods to market.

Exhibit 3.11. Major Freight Transportation Infrastructure Throughout the Central Puget Sound Region



Source: PSRC, 2014.

The region's deepwater ports and air cargo facilities support international and national trade movements that connect international markets to the region and throughout the U.S. Together, the marine and air ports of the central Puget Sound region provide direct and indirect statewide employment to over 200,000 people, contribute almost $1 billion dollars in state and local tax revenues, and generate billions of dollars of revenues through their real estate activities and tenants.[4] The Port of Seattle, Port of Tacoma, and Port of Everett have foreign trade zones which help create employment opportunities by facilitating exports, attracting offshore activity, and encouraging retention of domestic activity. The U.S. Department of Transportation (DOT) is developing the American Marine Highway program, which could further increase the role of marine ports in the freight transportation system.[5]

Rail is another important freight mode. Compared to trucking, it is generally less expensive, and has less impact on traffic congestion and air quality. Rail serving the region includes the Class 1 rail facilities of the Burlington Northern/Santa Fe and the Union Pacific mainlines and intermodal yards, all of which provide vital long-haul rail capacity to feed the needs of international cargo and regional businesses.[6] A number of short line railroads support regional industries by providing short-haul connectivity to markets within and beyond the central Puget Sound region.

In addition to port and rail infrastructure, access to interstates and other major roadway facilities is a critical need for most industrial activities. The Washington State Department of Transportation (WSDOT) prepares the Washington Freight and Goods Transportation System report which classifies all highways, county roads, and city streets by annual gross truck tonnage, ranging from T-1 (the highest tonnage) to T-5 (the least tonnage). The biannual Freight and Goods Transportation System report serves as an inventory of the freight system and is used as a basis for funding eligibility, fulfilling federal reporting requirements, and supporting planning for freight mobility improvements. The main high volume truck freight economic corridors are defined by annual tonnage and include all T-1 (carrying more than 10 million tons per year) and T-2 (carrying 4 to 10 million tons per year) corridors in the state. Also classified as truck freight economic corridors are routes that serve as alternatives to primary cross-state freight routes during severe weather or other disruptions. WSDOT, working with PSRC, the Washington State Freight Plan Technical Teams, Tribes, cities, counties, ports, and many other organizations, has developed objective criteria and defined the state's truck freight economic corridors as[7]:

- High volume, backbone highway infrastructure essential to Washington's economy.

- Critical alternative routes to the main highway freight system.
- Routes that have been identified as first- or last-mile connectors to freight intensive land uses.

This system also includes the national freight network, which was established to assist states in strategically directing resources toward improved system performance for efficient movement of freight on the highway portion of the nation's freight transportation system. This includes the National Highway System, freight intermodal connectors, and aerotropolis transportation systems.[8]

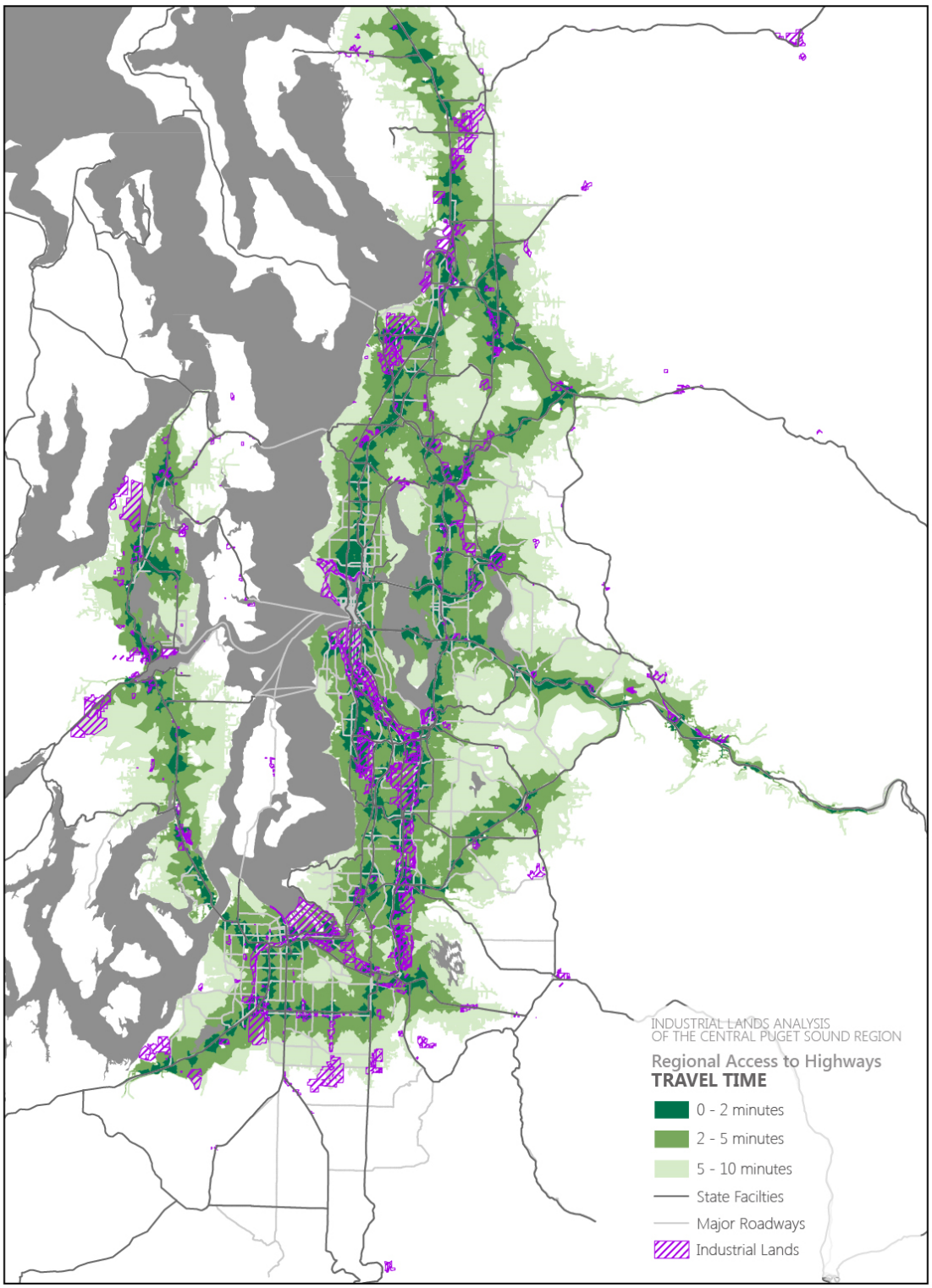
Exhibit 3.12 depicts industrial land access to major roadway facilities by showing distance based on travel time from interstates and highways. Dark green areas have the fastest access to highways, while the white areas are more than 10 minutes from a highway. Most industrial areas in the region are located within five minutes of an interstate or highway. With the exception of parts of PSIC-Bremerton-Sinclair Inlet and Frederickson-Lakewood, the industrial subareas are all within at least 10 minutes of a major facility. Some industrial land in the dispersed category is more than 10 minutes from an interstate or highway.

PSRC has developed a comprehensive, multimodal Regional Freight Strategy that serves as the freight component of the region's long-range transportation plan, Transportation 2040.[9] The Regional Freight Strategy considers all of the main freight modes, including rail, truck, air, and marine cargo, and examines the current and future issues as the region looks to planning for a sustainable transportation system out to 2040. The Regional Freight Strategy has been developed through coordination with member agencies and other regional freight stakeholders. It establishes 23 recommendations across major planning issues brought up in Transportation 2040, including congestion and mobility, safety and security, sustainable funding, maintenance and preservation, and the environment. The Regional Freight Strategy is included as Appendix J of Transportation 2040.

Each industry, freight transportation provider, shipper, or community in the central Puget Sound region experiences a unique set of freight transportation issues and constraints. The Transportation 2040 Regional Freight Strategy identified issues that are starting to affect the movement of freight. These issues are summarized below.

- Increasing congestion on the roads means more wasted truck time, growing transportation costs, and increased emissions from idling on congested facilities. In 2011, congestion in the U.S. resulted in 5.5 billion hours of travel delay, or 38 hours of delay (yearly) per

Exhibit 3.12. Travel Time from Industrial Land to Major Roadway Facilities in the Central Puget Sound Region



Source: PSRC, 2014.

auto commuter.[10] By 2040 the average daily number of trips is projected to increase by 40% for all vehicle types, and there will likely be a corresponding increase in time wasted in congestion for passenger and freight vehicles alike.

- Congestion can create more congestion. As reliability decreases, and congestion increases, many companies send more trucks on the roads to make the same number of deliveries, further adding to the region's problems with congestion.
- Limited Port Connectivity. There are limited arterials and rail lines by which to access the ports, and many of the access facilities are congested or deteriorating. Unless action is taken, this may impact the ability of the ports to operate, or adversely affect the movement of vital regional goods into or out of the port facilities. The Pacific Gateway projects (SR 167 and SR 509 completion to ports) provide potential solutions to this issue.
- Efficient mobility for trucking is also a key issue for the movement of air cargo, where the commodity is usually of high value and shipments are particularly time sensitive. Areas in the region that generate or receive air freight are among the most dependent on connectivity by truck.
- Growing congestion on key freight corridors. Many of the main corridors that help the region to connect to the national system, such as I-5, I-90, and SR 167, are on the list of most congested infrastructure. The completion of SR 509 is expected to provide some relief to I-5 congestion.
- Challenging "Last Mile" Connectivity. In some places, the region's arterial system that serves to connect businesses and homes to the national freight system is deteriorating or congested with passenger vehicles. The ability to access the region's interstates and highways from local facilities that make up the supply chain is an important link that needs to be considered.

In addition, land use planning and design issues were raised. These issues include the erosion of industrial land supply, restrictions on truck delivery times and routes, lack of truck parking areas, and truck routes that don't adequately accommodate truck movements. A more detailed description of freight transportation issues can be found in Section 2 of the Regional Freight Strategy.

Stakeholders in the group interviews conducted for the industrial lands analysis discussed the issues listed above, especially the importance of freight transportation infrastructure to industrial development and the need to make further improvements to the freight transportation system. Specific projects mentioned during the interviews include grade separation of road and rail crossings, the extension of SR 167 and SR 509, and the completion of the Port of Everett Freight Corridor. There was also interest in adding industrial track to improve connection to the rail

system. Interviewees stated that if improvements were made, the region would be more attractive to potential users of industrial lands.

Other stakeholders expressed concern about the increasing competition with residential, commercial, and recreational land uses for land in port areas and along rail corridors considered ideal for freight shipping purposes. This competition has led to reduced availability of land for marine freight and rail freight transport. In some cases, rail and marine freight has been forced to shift to trucks.

Two organizations, the FAST Corridor Partnership and the Washington State Freight Mobility Strategic Investment Board (FMSIB), are particularly effective in helping to implement the Regional Freight Strategy. Both groups have established track records for funding local freight mobility projects with regional, state, and national benefits.

The FAST Corridor Partnership consists of 26 local cities, counties, ports, federal, state and regional transportation agencies, railroads, and trucking interests, intent on solving freight mobility problems with coordinated solutions in the central Puget Sound region.[11] The FAST Corridor team has identified projects and programs to improve freight mobility in the region. Twenty out of 25 projects on the FAST Corridor project list have been completed. The FAST Corridor Partnership remains active and continues to work toward completing the remaining projects, while examining the freight mobility challenges of the future. The FAST Corridor program serves as a national model and could potentially address current and future challenges as funding becomes available.

FMSIB is charged with creating a comprehensive and coordinated state program to facilitate freight movement between and among local, national and international markets.[12] The board also looks for solutions that lessen the impact of the movement of freight on local communities. The board proposes policies, projects, corridors and funding to the Legislature to promote strategic investments in a statewide freight mobility transportation system. Although the FAST Corridor Partnership and FMSIB have excellent track records in helping to implement the Regional Freight Strategy, the effectiveness of these groups is challenged by the lack of stable transportation funding.

Marine Deepwater Ports

The region's natural deepwater ports in Everett, Seattle, and Tacoma provide vital trade links within Washington as well as with the nation and the world. Port terminals cannot be transferred elsewhere in the region, thus are unique industrial areas. Marine ports also support ship building and repair, commercial fishing and naval operations. Maritime industries are a fundamental part of the region's early history and culture; many of the businesses and much of the infrastructure have been established for over a century.

Much of the region's economy depends on the services provided by these ports. A 2014 joint study by the ports of Seattle and Tacoma found that activities related to their combined marine terminal operations were affiliated with $138.1 billion in total economic activity in 2013, accounting for a third of Washington's GDP. The two seaports provided about 18,900 jobs directly and, including both indirect and induced jobs, supported an estimated 48,100 jobs total.[13] Together, these seaports are North America's third-largest container gateway, though the trend towards increasingly larger ships and competition for market share from other West Coast ports challenge Seattle and Tacoma's future vitality. The two ports recently announced a Seaport Alliance in an effort to address these challenges and expand their economic opportunities.

The U.S. Census Bureau Foreign Trade Bureau ranked the Port of Everett's custom district first in Washington for exports, with $22.7 billion in cargo exported in 2013.[14] The local aerospace industry is a substantial economic driver, relying heavily on the seaport for the transport of parts for the 747, 767 and 777 jetliners. According to an independent Martin Associates study, the Port of Everett supports close to 35,000 jobs in the region, and its activities generate around $280 million in state and local taxes.

Deepwater ports and industrial waterfront property require upland support and connections to surface transportation. These port areas have unique infrastructure needs and assets such as piers, rail facilities, pipelines for fuel delivery and cargo distribution and warehousing facilities that support regional industrial activities. Federal, state, and regional agencies, along with the region's ports, railroads, and local jurisdictions, have invested over $600 million in FAST Corridor projects to facilitate the movement of freight.

Over time, some of the land in these port areas has been converted into non-industrial uses. The loss of this limited resource could impact the regional economy, suggesting that these areas may need policies to protect and buffer them from incompatible uses for them to remain viable. Additional challenges include the presence of brownfield sites which limit development.

Water and Sewer

Within the industrial subareas, information was collected regarding existing water and sewer service and adequacy for full development of the industrial areas, assuming typical industrial uses. Most industrial subareas have adequate water and sewer infrastructure for typical industrial uses. However, there are several industrial areas that lack adequate infrastructure. These include the following areas:

- Southeast part of PSIC-Bremerton
- Werner Road industrial area in Bremerton
- Industrial areas on Smith and Spencer Islands in Everett
- Industrial area in northwest Auburn
- Industrial area in the Shaw/East Pioneer neighborhood in Puyallup
- West industrial areas in DuPont

Areas that are served by water and sewer infrastructure, but that need improvements for full industrial development, include the following areas:

- A portion of Thun Field in Pierce County
- The northwest part of PSIC – Bremerton
- The southwest industrial area in the city of SeaTac
- Parts of the southeast Redmond and Overlake areas in Redmond.

Areas that need only developer extensions to individual parcels are considered generally adequate for this study.[15]

Broadband

Over the last decade, broadband Internet needs have rapidly grown for industrial activities. Technological shifts in how products and parts are created, such as additive manufacturing (i.e., 3-D printing), require that companies have Internet readily available. Additionally, traditional manufacturing has begun to incorporate Internet connectivity into its operations, using it to streamline processes, eliminate waste, collect real-time performance data and increase productivity. Only about 10% of companies are using such systems currently, but eventually, as more companies adopt these new technologies, those lacking Internet access will find it more difficult to compete.[16]

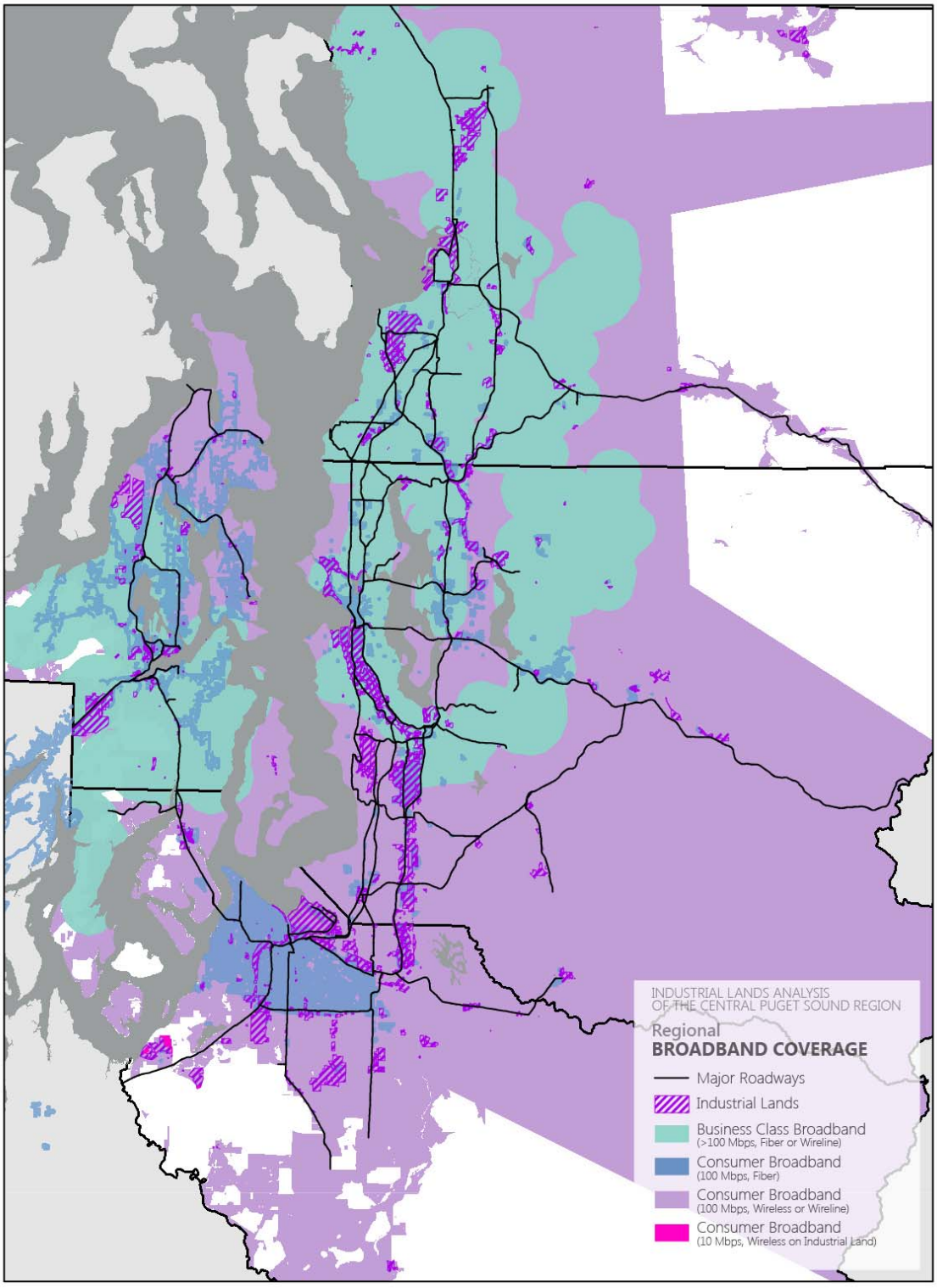
Access to broadband is considered an important economic development tool for encouraging manufacturing. Broadband service that is considered adequate for industrial activity has a speed of 100 megabits per second (Mbps) or greater and is ideally provided by fiber-optic cable, which is preferable to copper wire due to its durability and ability to handle higher speeds.[17]

Exhibit 3.13 shows broadband coverage for the region from the Washington State Broadband Office. Most industrial areas in the region have access to business-class broadband, either immediately or with some lead time. Business-class broadband is adequate for industrial users because it has speeds of 100 Mbps or more, can be either fiber-optic cable or wireline, and offers a service level agreement. For the industrial areas where business-class broadband is unavailable, almost all have access to relatively high-speed (100 Mbps) consumer-grade broadband.

This level of broadband service is adequate for most industrial users, especially areas served by fiber-optic cable. **Exhibit 3.13** indicates that only industrial areas in the City of DuPont have broadband service speeds at or less than 10 Mbps, which would not be adequate for many industrial activities.

Although the broadband map shows that most industrial land in the region has adequate broadband access, comments from stakeholders indicate that many properties do not have adequate broadband service. In many cases this is due to lack of financing for connecting broadband from the property line to the end user. Broadband financing tools may help with this issue. In addition, including fiber and other broadband infrastructure should be considered during development and redevelopment of a site because the installation cost is significantly lower when trenches are open. Tracking broadband service levels and the needs for targeted industries will help ensure industrial areas have adequate broadband service.

Exhibit 3.13. Broadband Coverage in the Puget Sound Region, 2014



Source: Washington State Broadband Office, PSRC, 2014.

Climate Change

Climate change refers to the alteration of the global atmosphere attributed to human activity compared to natural climate variability.[18] Climate change is predicted to have increasingly adverse effects, particularly to industrial land at low elevations and in floodplains. Both adaptation to and mitigation for climate change should be addressed to reduce the impact of these effects.

The University of Washington's Climate Impacts Group completed a comprehensive assessment of the impacts of climate change on Washington. Using global climate models scaled to the Pacific Northwest, the assessment projects that Washington is likely to experience higher temperatures, enhanced seasonal precipitation patterns, declining snowpack, seasonal changes in stream flow, sea level rise, increase in wave heights, warmer sea surface temperature and ocean acidification.[19] Expected adverse effects on infrastructure and the built environment resulting from those changes include the following:

- Sea level rise and storm surge will increase the risk of flooding, erosion and damage to coastal infrastructure. Rising sea levels will lead to a reduction in marine industrial land supply in some areas.
- More extreme precipitation will increase the risk of flooding, landslides and erosion, which may damage or disrupt infrastructure systems and overwhelm drainage structures.
- Warmer temperatures and heat waves could strain energy and transportation systems—though they also offer benefits such as reduced snow and ice removal costs.
- Prolonged low summer flows could affect river navigation.
- Lower summer streamflow will reduce summer hydropower production at a time when warmer temperatures will increase electricity demand for cooling.
- Larger and more intense forest fires could damage buildings, roads and other infrastructure.

The Washington State Department of Ecology (Ecology) is the primary state agency working on climate issues and has responsibility for the oversight of shoreline management. Ecology's webpage on Sea Level Rise and Coastal Hazards has reports, resources, and mapping and visualization tools.[20] Appendix L of Transportation 2040, the region's action plan for transportation in the central Puget Sound region, includes sea level rise maps based on data from 2008.[21] Municipal Research and Services Center (MRSC) also has many resources such as maps showing affected shoreline areas, FEMA floodplain maps, visualization tools and guidance manuals.

Several Washington communities have begun to consider sea level rise in their comprehensive plans, shoreline master programs, climate action

plans, hazard mitigation plans, and other functional plans and programs.[22] For example, King County has assessed the vulnerability of major wastewater facilities to flooding from sea level rise and has included adaptation policies in its Strategic Climate Action Plan. In the *Gorst Watershed Subarea Plan*, Bremerton and Kitsap County recommend adaptation measures to account for sea level rise in the design of buildings, impervious areas, and roadway, flood management, and utility facilities. Recommendations for adapting to climate change and sea level rise could involve limiting new development in highly vulnerable areas and promoting new sustainable development in appropriate non-vulnerable areas. Additional recommendations are provided on MRSC's website.

Climate change mitigation refers to reducing greenhouse gas emissions and absorbing carbon. Industrial processes and energy use account for approximately 20% of greenhouse gas emissions in Washington and 28% nationally.[23,24] Because Washington uses hydropower for much of its electricity, the industrial greenhouse gas emissions are less in Washington than in other states.

EPA has identified strategies that industry can take to help mitigate climate change impacts.[25] For example, co-locating industries whose waste products can become inputs for another's process can minimize waste and transport. Similarly, efficient transportation for employees, inputs and products can reduce greenhouse gas emissions. Switching to fuels that produce less CO_2 emissions but provide the same amount of energy can also reduce greenhouse gas emissions. Where industrial areas are not already connected to energy infrastructure, decentralized, renewable energy sources such as solar or wind power can be more affordable.

Washington Governor Jay Inslee signed an Executive Order in 2014 outlining a series of steps to cut carbon pollution in Washington and advance development and use of clean energy technologies.[26] Several components of this Executive Order could eventually affect users and managers of industrial land in the region, creating both opportunities and challenges. The action plan in the Executive Order has six main elements:

- Reduce carbon emissions through a new cap-and-market program.
- End use of electricity generated by coal.
- Develop clean transportation options and cleaner fuels.
- Accelerate development and deployment of clean energy technology.
- Improve building energy efficiency.
- Reduce state government's carbon footprint.

These elements are similar to federal initiatives to address climate change, as listed in the United States' Climate Action Plan.[27] Climate action plans and similar documents have been developed at all scales, from the United Nations to local jurisdictions. These climate change policies and programs, as well as the evolving research on the effects of and adaptation to climate change, should be monitored and considered in planning for industrial lands.

Brownfields

Brownfields are real property where expansion, redevelopment or reuse may be complicated by the presence, or potential presence, of hazardous substances.[28] A long history of industrial use sometimes leaves sites with contaminants that present risk to public health and safety. While many of these sites have been cleaned up, others still have confirmed or suspected contaminants. Unless otherwise documented, the property owner is liable for the contamination on the site.

Exhibit 3.14 presents brownfield sites identified as awaiting cleanup or undergoing cleanup that are currently receiving some type of public assistance, such as grants and loans, to defray assessment and remediation costs. The exhibit does not show brownfields sites that have already been remediated. Superfund is the federal government's program to clean up the nation's uncontrolled hazardous waste sites. Seattle's Lower Duwamish Waterway and Tacoma's Middle Waterway are just two of many Superfund sites in the region.

Exhibit 3.14 also illustrates suspected sites, which are sites with known or suspected environmental hazards. These sites have not received public assistance with assessment or cleanup, and the levels of contamination are unknown. The remediation of some of them is governed through environmental covenants, such as containing an area of environmental risk by paving over it for use as a parking lot or a concrete slab to serve as part of a building's foundation. Some of these suspected sites may have already been cleaned up, but the property owners may have decided that the cost and complexity of removing them from the list outweighed the benefits of removing the brownfield designation. While there are many suspected sites, many sites are on this list because the contamination is not severe enough to require public funding to clean them up. However, some of these sites may not have received enough assessment to know that they have severe contamination. Furthermore, other contaminated sites yet to be identified and/or assessed may exist.

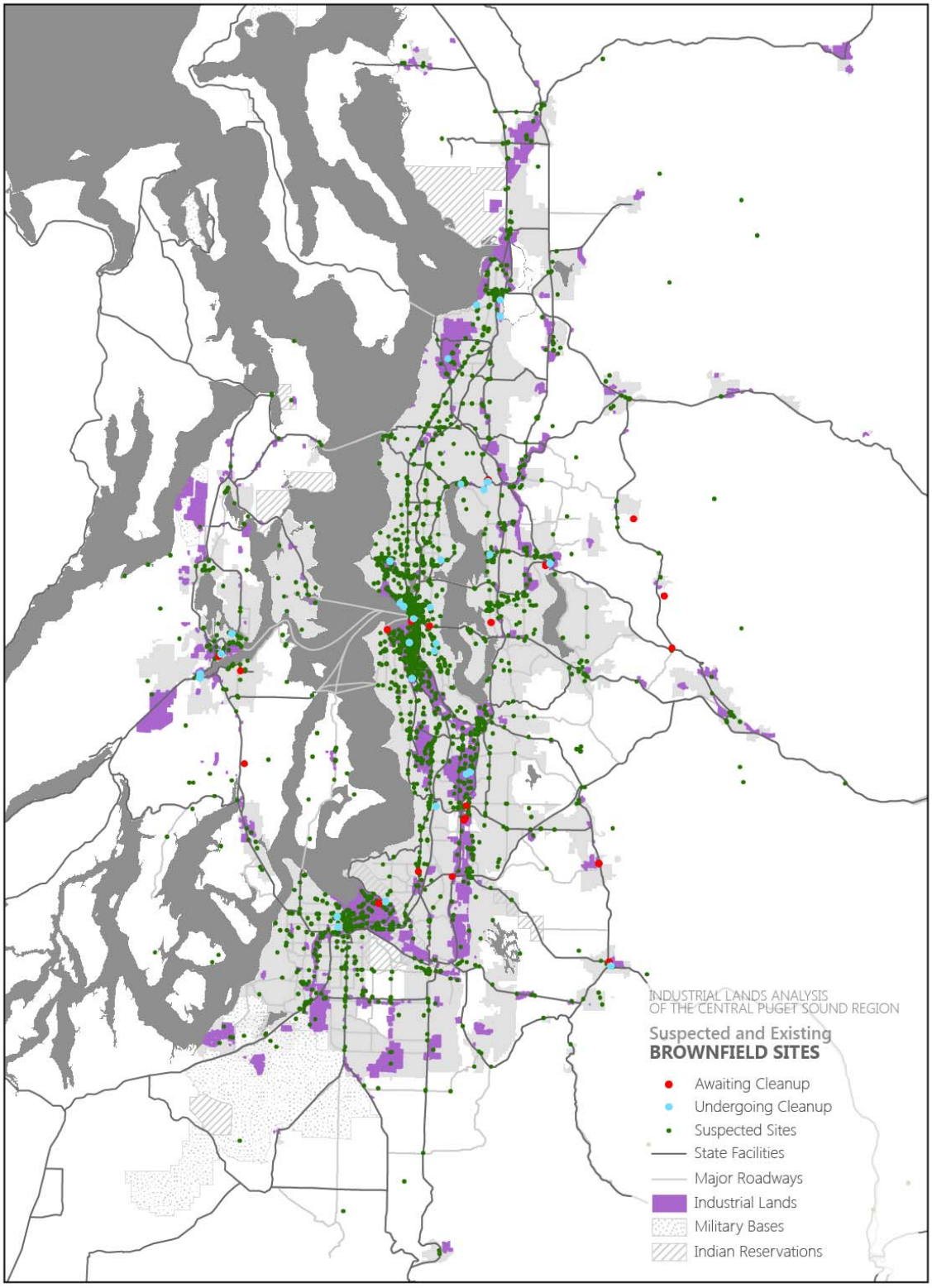
Cleaning up and reinvesting in these properties protects the environment, reduces blight and eases development pressures on greenfields, forests and farmlands. Additionally, it enables new development to use existing infrastructure and takes advantage of existing access to waterways, major

highways and railroads. Commercial and industrial redevelopment often generates revenues sufficient to cover a site's remediation costs.

Brownfields can be difficult to redevelop because the current owner may have trouble finding a buyer. Depending on the severity of the contamination, an otherwise willing buyer may have trouble finding the financing necessary to purchase the property. The extent to which contamination is a major barrier to industrial redevelopment in the region is unknown. About 28% of contaminated sites shown on Exhibit 3.14 (awaiting cleanup, undergoing cleanup and suspected sites) are located on industrial land.

Washington has a cooperative approach to brownfields cleanup and redevelopment.[29] Technical assistance, grants and a revolving loan program are available through state agencies and private consultants. The Department of Ecology manages cleanups under the Model Toxics Control Act and administers cleanup grants. The Department of Commerce manages the Brownfields Revolving Loan Fund and provides technical assistance to parties interested in redeveloping. Commerce also provides other revitalization grants and loans. Ecology and Commerce work closely with the Environmental Protection Agency's brownfields staff and routinely collaborate on strategies to assist communities. EPA also works directly with some property owners. Gaining a better understanding of how to leverage brownfields assistance programs could help with brownfields cleanup efforts in the region.

Exhibit 3.14. Suspected and Existing Brownfield Sites in the Puget Sound Region, 2014



Sources: Ecology,[30] PSRC, 2014.

Environmental Justice

Since the mid-1990s, a renewed emphasis on environmental justice has become an integral part of the planning process for urban regions in the United States. The concept of "environmental justice," derived from Title VI of the Civil Rights Act of 1964 and other civil rights statutes, was reemphasized as a national policy goal by presidential Executive Order 12898, issued in 1994.[31] The Executive Order directs "each federal agency to make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations."

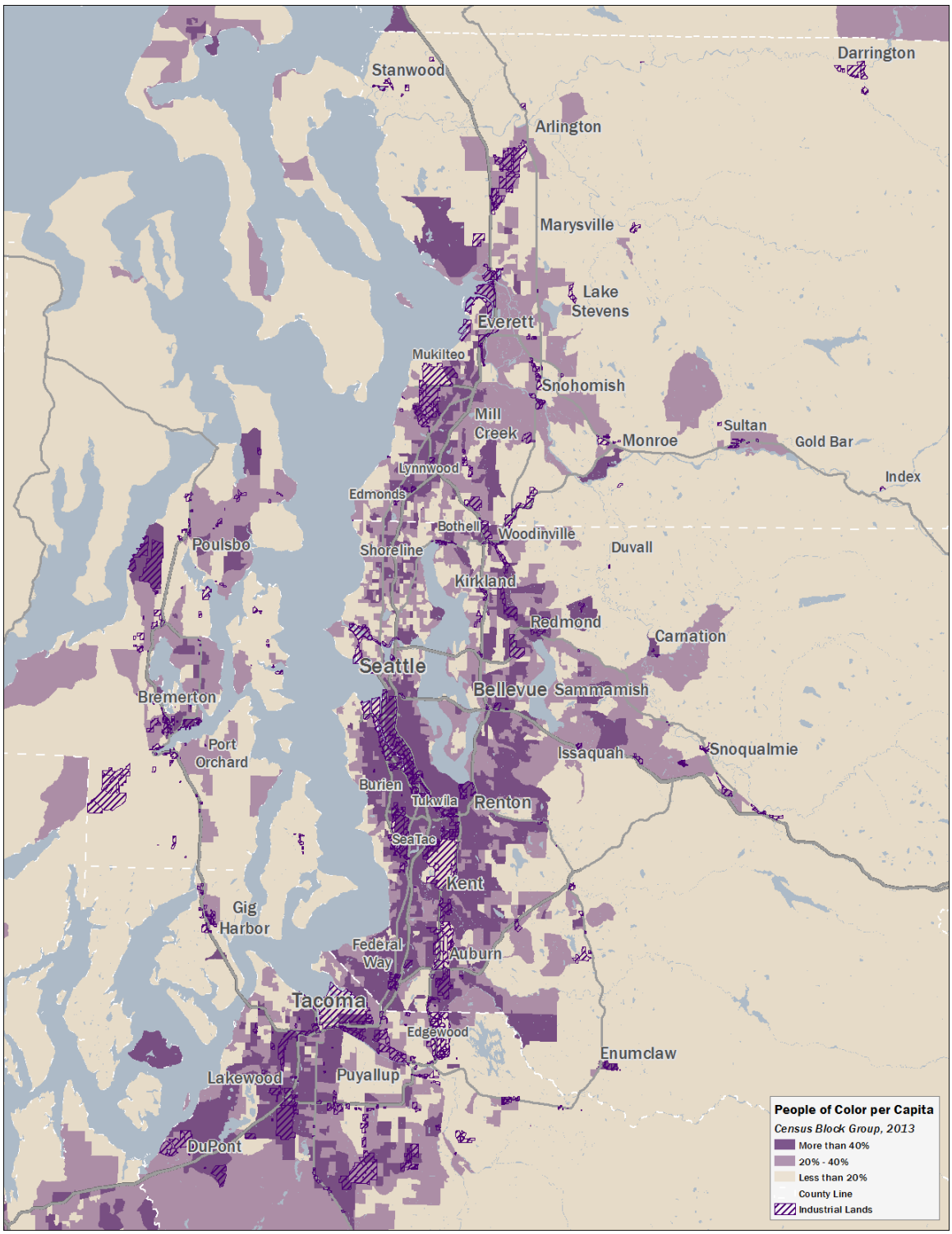
Minorities, or non-White persons including White persons of Hispanic/Latino origin, comprised 31.2% of the region's total population in 2010. [32] Minorities comprised the largest share of the population in King County (35.2%), followed by Pierce County (29.7%), Snohomish County (25.7%), and Kitsap County (20.9%), Blacks/African Americans constituted 5.4% of the region's total population, American Indians/Alaskan Natives 1.1%, Asians/Pacific Islanders 11.8%, and Hispanics/Latinos 8.8%.

Understanding the demographics of the region is a first step in considering environmental justice. In 2010, the regionwide poverty rate was 11.7%. The poverty rate was higher in King County (12.2%) and Pierce County (20.0%) and lower in Kitsap County (11.3%) and Snohomish County (9.9%).

Exhibits 3.15 and 3.16 compare the location of industrial lands to the regional rates of minority populations (people of color) and low-income populations (households in poverty). Just over half (52%) of industrial lands in the region are in census tracts where the percentage of people of color is greater than 32%. About a fifth of the region's industrial lands (20%) are in census tracts where the percentage of households in poverty is greater than 11.7%.

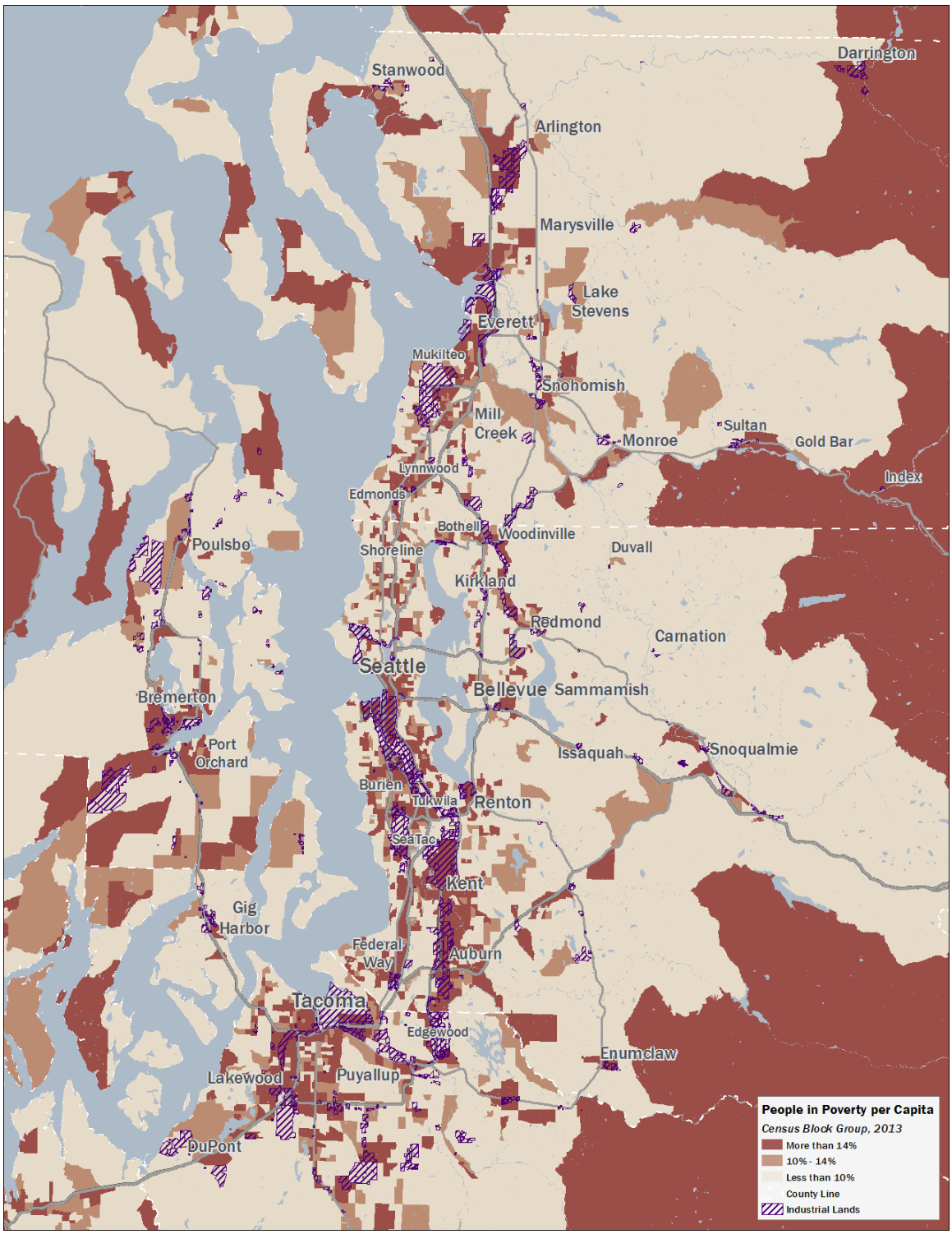
Living near industrial lands could have both advantages and disadvantages. On one hand, living near industrial land could result in exposure to negative environmental effects such as noise, glare, dust, and odors. On the other hand, living near industrial land could also provide close access to job opportunities. This high-level analysis indicates that minority populations may have a high likelihood of living near industrial lands. Gaining a better understanding of the environmental effects, job opportunities, and transit access in specific industrial areas would help identify potential effects to environmental justice populations, as well as strategies to mitigate effects and increase benefits.

Exhibit 3.15. Minority Population Rates Per Capita and Industrial Lands in the Central Puget Sound Region, 2013



Sources: U.S. Census 2010, PSRC 2014.

Exhibit 3.16. Persons in Poverty Per Capita and Industrial Lands in the Central Puget Sound Region, 2013



Sources: U.S. Census 2010, PSRC 2014.

REFERENCES AND TECHNICAL ENDNOTES

[1] Zoning cross-walk tables may be found in Appendix A.

[2] Washington State Legislature. 1995. RCW 36.70a.365, Major industrial developments. http://apps.leg.wa.gov/rcw/default.aspx?cite=36.70a.365

[3] PSRC. 2014. Gross regional product and employment. http://www.psrc.org/data/employment/covered-emp.

[4] Port of Seattle. Economic Impact Study. http://www.portseattle.org/downloads/business/EconomicImpact_2009Brochurev2.pdf.

[5] US DOT. 2014. Marine Highway Program. http://www.marad.dot.gov/ships_shipping_landing_page/mhi_home/mhi_home.htm.

[6] PSRC. 2010. Regional Freight Strategy. http://www.psrc.org/assets/10543/T2040Update2014AppendixJ.pdf.

[7] Washington State Freight Economic Corridors. http://www.wsdot.wa.gov/Freight/EconCorridors.htm.

[8] National Freight Highway System. http://ops.fhwa.dot.gov/freight/infrastructure/nfn/index.htm.

[9] PSRC. 2010. Regional Freight Strategy. http://www.psrc.org/assets/10543/T2040Update2014AppendixJ.pdf.

[10] Texas A&M Transportation Institute. 2012 Urban Mobility Report. http://d2dtl5nnlpfr0r.cloudfront.net/tti.tamu.edu/documents/mobility-report-2012.pdf.

[11] PSRC. 2014b. FAST Corridor. http://www.psrc.org/transportation/freight/fast.

[12] Freight Mobility Strategic Investment Board. 2014. Welcome. http://www.fmsib.wa.gov/.

[13] Port of Seattle and Port of Tacoma. 2014. Study reveals $4.3 billion economic impact from Tacoma and Seattle ports, http://www.portseattle.org/Newsroom/News-Releases/Pages/default.aspx?year=2014#467.

[14] Port of Everett. Freight Movement. http://www.portofeverett.com/seaport/freight-movement.

[15] Source: Interviews with City and County planning directors and staff. November 2014.

[16] Wakefield, K. J. July 1, 2014. "How the Internet of Things is Transforming Manufacturing." Forbes Magazine. http://www.forbes.com/sites/ptc/2014/07/01/how-the-internet-of-things-is-transforming-manufacturing/

[17] Interview with Wilford Saunders, Washington State Broadband Office. September 2014.

[18] APA. 2009. "Planning for Climate Change." http://washington-apa.org/documents/SustainableWashingtonExecutiveSummary.pdf.

[19] Ecology. 2012a. *Preparing for a Changing Climate*, Chapter 10 Infrastructure and the Built Environment. https://fortress.wa.gov/ecy/publications/publications/1201004.pdf).

[20] Ecology. 2012b. "Sea Level Rise and Coastal Hazards." http://www.ecy.wa.gov/climatechange/2012ccrs/coasts.htm.

[21] PSRC. 2010. *Transportation 2040*, Appendix L, Climate Change Background. http://www.psrc.org/assets/4888/Appendix_L_-_Climate_Change_-_FINAL_-_August_2010.pdf.

[22] MRSC. 2014. "Sea Level Rise: A Challenge for Washington's Coastal Communities." http://insight.mrsc.org/2014/04/28/sea-level-rise-a-challenge-for-washingtons-coastal-communities/.

[23] Ecology. 2010. Issues and Options for Benchmarking Industrial GHG Emissions. http://www.ecy.wa.gov/climatechange/docs/Benchmarking_White_Paper_Final.pdf.

[24] EPA .2014a. "Sources of Greenhouse Gas Emissions." http://www.epa.gov/climatechange/ghgemissions/sources/industry.html

[25] EPA. 2014b. "Reducing Emissions from Industry." http://www.epa.gov/climatechange/ghgemissions/sources/industry.html#Reducing.

[26] Washington Governor's Office. 2014. "Governor Inslee announces executive action to reduce carbon pollution and promote clean energy." http://www.governor.wa.gov/news/releases/article.aspx?id=247.

[27] EPA. 2014c. "Climate Change and President Obama's Action Plan." http://www.whitehouse.gov/share/climate-action-plan.

[28][28] Commerce. 2014. Brownfields Revolving Loan Fund. http://www.commerce.wa.gov/Programs/Infrastructure/Brownfields-Revolving-Loan-Fund/Pages/Industrial-Development.aspx.

[29] Ecology. 2014. Brownfields Revitalization. http://www.ecy.wa.gov/programs/tcp/brownfields/brownfields_hp.html.

[30] Ecology. 2014. Toxics Cleanup Program Web Reporting. Brownfields Inventory and Confirmed and Suspected Contaminated Sites List. https://fortress.wa.gov/ecy/tcpwebreporting/

[31] EPA. Summary of Executive Order 12898 - Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations. http://www2.epa.gov/laws-regulations/summary-executive-order-12898-federal-actions-address-environmental-justice.

[32] PSRC. 2012. Environmental Justice Demographic Profile 2012. http://www.psrc.org/assets/8587/EJDemographicProfile.pdf.

Special Insert: Subarea Profiles

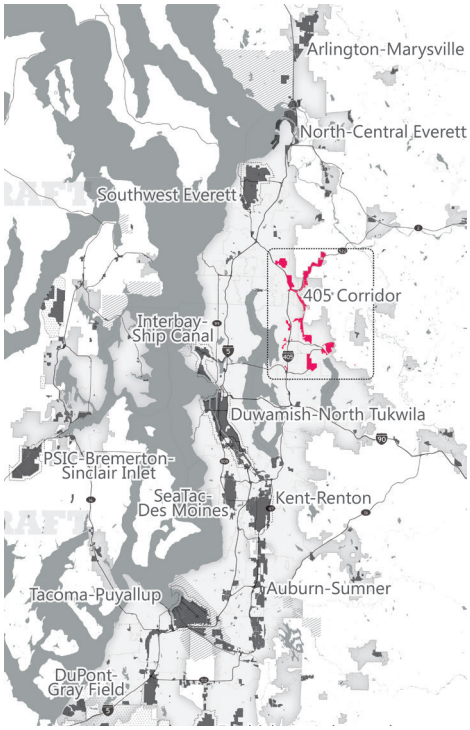
The following pages provide detailed profiles of each industrial subarea in the region. The subareas are listed below.

1. 405 Corridor
2. Arlington-Marysville
3. Auburn-Sumner
4. DuPont-Gray Field
5. Duwamish-North Tukwila
6. Frederickson-Lakewood
7. Interbay-Ship Canal
8. Kent-Renton
9. North-Central Everett
10. PSIC-Bremerton-Sinclair Inlet
11. SeaTac-Des Moines
12. Southwest Everett
13. Tacoma-Puyallup

1. Dispersed-King County
2. Dispersed-Kitsap County
3. Dispersed-Pierce County
4. Dispersed-Snohomish County

Industrial Subarea Profile: 405 CORRIDOR

Key Map



Overview

The 405 Corridor subarea is a network of lands along major transportation corridors from Bothell to Bellevue. The subarea's 4,405 acres are characterized by high overall employment density. The subarea has much industrial-commercial land that also supports many non-industrial jobs, with 53,600 of the subarea's 95,300 workers. These interspersed commercial uses, as well as light industrial high-tech and "flex" space may account for the subarea's higher than average lease rates, since commercial space is typically more expensive. These lands may be subject to significant development pressure, especially where zoning allows for higher density commercial uses in predominantly industrial areas.

Prominent infrastructure, assets and anchors include I-405 and SR 520 which bisect the subarea from North to South and East to West, respectively. The Port of Seattle-owned Eastside Rail Corridor is a major freight rail asset. The Microsoft campus anchors the eastern end of the corridor, and Bel-Red has numerous development projects in the pipeline.

Vital Statistics

Subarea Size, in Acres
4,405

Percent of Region's Industrial Land
6%

Industrial / Non-Industrial Employment
41,800 / 53,600

Percent of Region's Industrial Employment
8%

Ownership (by Parcel Area)
9% Public
91% Private

Average Parcel Size
3.6 acres

Specialization
Printing & Publishing, Electronics, Wholesaling

Industries & Employment

Macro Grouping	Industry Grouping	Employment	Percentage of Subarea	Percentage of All Subareas
Construction		**4,900**	**12%**	**16%**
	Builders & Contractors	4,600	11%	
	Heavy & Civil Construction	400	1%	
Manufacturing		**23,200**	**55%**	**14%**
	Aerospace Manufacturing	1,300	3%	
	Electronics & Components	5,800	14%	
	Food & Bev Processing	1,000	2%	
	Machinery & Transport. Equip.	2,100	5%	
	Metals & Fabrication	1,100	3%	
	Printing & Publishing	8,500	20%	
	Refining, Chemicals & Plastics	800	2%	
	Textiles, Apparel & Leather	100	0%	
	Wood & Paper Products	100	0%	
	Other Manufacturing	2,400	6%	
Transportation Distr. & Logistics		**1,500**	**4%**	**5%**
	Transp., Distr., Logistics	1,500	4%	
Warehousing & Wholesale		**5,400**	**13%**	**11%**
	Warehousing & Storage	100	0%	
	Wholesaling	5,300	13%	
Other Industrial		**3,100**	**16%**	**28%**
	Building & Grounds Serv.	2,000	5%	
	Industrial Services	300	1%	
	Telecom, Broadcasting & Video Prod.	3,100	7%	
	Utilities	500	1%	
	Waste Mgmt. & Remediation	400	1%	
	Other Industrial	500	1%	
All Industrial		**41,800**		
Non-industrial		52,100		
Public Sector		1,500		
Total Employment		**95,300**		

Source: PSRC, Washington State Employment Security Department (ESD), CAI, 2012
NOTE: Total employment represents covered employment only; numbers may not sum due to rounding; percentage of subarea represents percentage of all industrial jobs in the subarea; percentage of all subareas represents percentage of macro grouping total across all subareas; employment figures for individual groupings may be suppressed (-) due to confidentiality requirements.

Industrial Subarea Profile: 405 CORRIDOR

Land Use

Top Ten Assessor's Land Use Codes

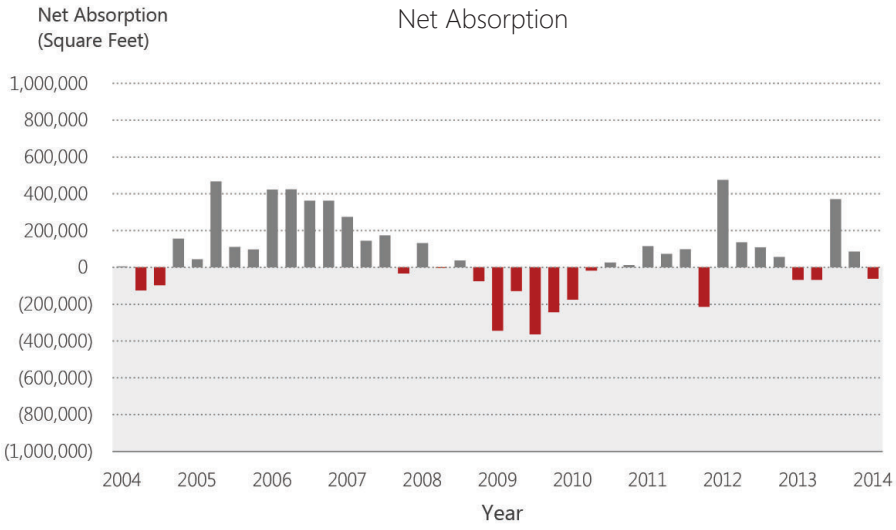
Rank	Category	Acreage
1	High Tech/ Flex	805
2	Warehouse	422
3	Industrial Park	334
4	Undeveloped (Vacant) Land	289
5	Office Building	245
6	Vacant (Industrial)	185
7	Vacant (Commercial)	170
8	Industrial (General Purpose)	142
9	Right of Way/Utility, Road	134
10	Mining/Quarry/Ore Processing	108

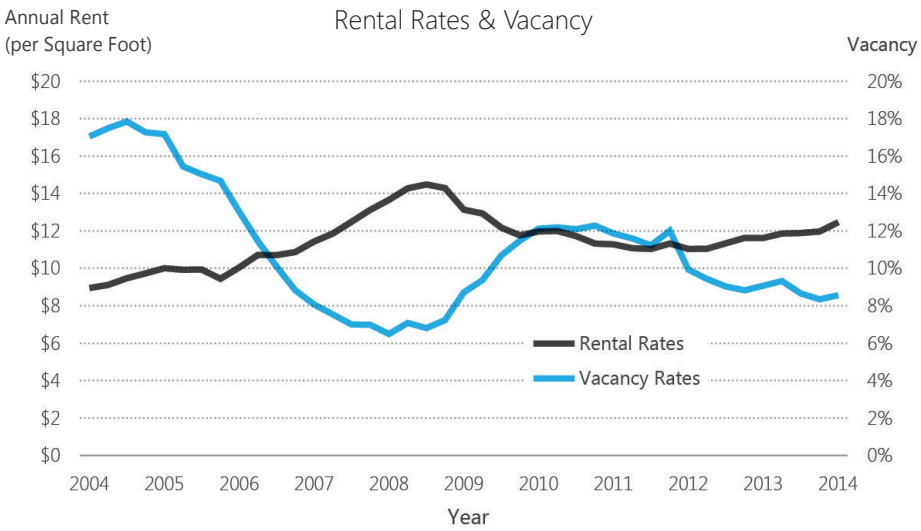
Source: King County Assessor; CAI
Note: Assessor's land use codes may not accurately reflect current parcel land use.

Above: "Flex Tech" building in Bothell.

Below: Aerial view of Microsoft West Campus, Redmond.

Market Trends





Facilities

Bldg Size (sq ft)	# of Parcels
0-5k	437
5k-200k	763
200k - 1m	43
1m+	1

Bldg Age	# of Parcels
1900-1950	40
1950-1975	28
1975-2000	132
2000+	47

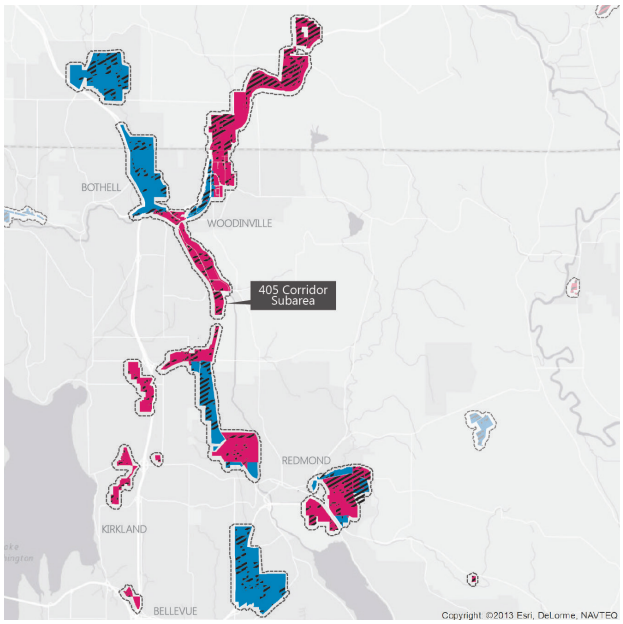
Floor Area Ratio	# of Parcels
.0-.1	425
.1-.25	177
.25-.5	496
.5-.75	97
.75+	49

Source: King, Snohomish, Pierce, Kitsap County Assessor, 2013; CAI, 2014
Note: Limited data may exist on building age.

Source: CoStar; CAI, 2014

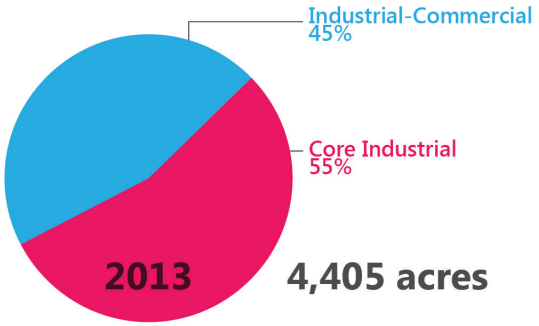
Industrial Subarea Profile: 405 CORRIDOR

Gross Industrial Land Supply By Segment

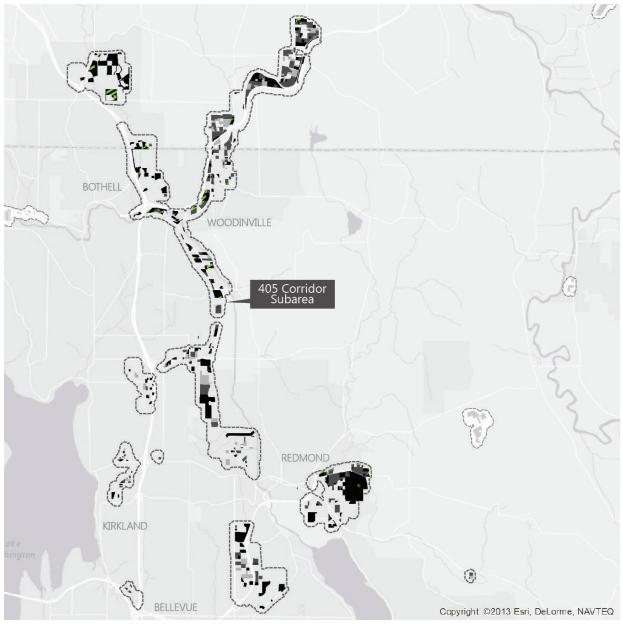


Gross industrial land supply are lands either currently zoned industrial, or designated in comprehensive plans for future industrial land use.

- Core Industrial Land
- Industrial-Commercial Land
- Aviation Operation Areas
- Military Industrial Land
- Net Supply *(See Below)*



Net Industrial Land Supply By Tier



Net industrial land supply is a subset of gross supply comprised of vacant and physically redevelopable land that deducts acreage for future rights-of-way and critical areas and is intended to reflect lands available for growth in the region's industrial sector.

- Tier A: Vacant
- Tier B: Minor Improvements
- Tier C: Partially Improved
- Wetland or Floodway Portion
- Subarea Boundaries

Net Supply Parcel Sizes

0-5 Acres	480
5-20 Acres	71
20-50 Acres	8
50+ Acres	1

Note: Parcel shapes as mapped do not reflect deductions for future rights-of-way, public uses or market factor. For deductions, see table, below.

Deduction Type	Tier A Vacant	w / Market Factor	Tier B Minor Improvements	w / Market Factor	Tier C Partially Developed	w / Market Factor	Total	w / Market Factor
Selection	892		576		214		1,682	
Less Floodway	13		6		0		19	
Less Wetland	63		10		1		74	
Less Future R.O.W.'s @ 2%	41		28		11		79	
Less Future Public Use @ 2%	41		28		11		79	
Market Factor @ 10%		73		50		19		143
Total Less Future Deductions	**734**	**661**	**504**	**454**	**191**	**172**	**1,430** ac.	**1,287** ac.

Source: King, Snohomish, Pierce, Kitsap County Assessor, 2013; CAI, 2014
Note: Totals may not sum due to rounding.

Industrial Subarea Profile: ARLINGTON-MARYSVILLE

Key Map

Overview

The Arlington-Marysville industrial subarea is an important industrial and commercial hub in central Snohomish County. Marysville is the second largest city in the County with over 60,000 residents, while Arlington is a small, growing community with strong economic development efforts underway. Arlington Municipal Airport is a busy small craft airport and the focus of a burgeoning industrial area, with a mix of small aircraft support businesses, distribution space, and a broad range of light industrial activity. Nearby Marysville is a rapidly growing commercial hub in Snohomish County, the northernmost commercial center in the central Puget Sound region. Additionally, the newly designated 4,091-acre Arlington-Marysville countywide Manufacturing-Industrial Center (MIC) is well-positioned for industrial growth and future recognition as a regional MIC by PSRC.

Prominent infrastructure, assets and anchors include Arlington Municipal Airport, excellent truck access to I-5, access to north-central Washington, the northern Puget Sound and Canada; and a large area of BNSF freight rail spur-served industrial sites east of Arlington Airport.

Vital Statistics

Subarea Size, in Acres
3,303

Percent of Region's Industrial Land
5%

Industrial / Non-Industrial Employment
4,600 / 1,200

Percent of Region's Industrial Employment
1%

Ownership (by Parcel Area)
28% Public
72% Private

Average Parcel Size
9.6 acres

Specialization
Manufacturing, Warehousing

Industries & Employment

Macro Grouping	Industry Grouping	Employment	Percentage of Subarea	Percentage of All Subareas
Construction		500	11%	2%
	Builders & Contractors	-	-	
	Heavy & Civil Construction	-	-	
Manufacturing		3,000	66%	2%
	Aerospace Manufacturing	-	-	
	Electronics & Components	-	-	
	Food & Bev Processing	-	-	
	Machinery & Transport. Equip.	-	-	
	Metals & Fabrication	-	-	
	Printing & Publishing	-	-	
	Refining, Chemicals & Plastics	-	-	
	Textiles, Apparel & Leather	-	-	
	Wood & Paper Products	-	-	
	Other Manufacturing	-	-	
Transportation Distr. & Logistics		300	8%	1%
	Transp., Distr., Logistics	-	-	
Warehousing & Wholesale		600	13%	1%
	Warehousing & Storage	-	-	
	Wholesaling	-	-	
Other Industrial		200	3%	1%
	Building & Grounds Serv.	-	-	
	Industrial Services	-	-	
	Telecom, Broadcasting & Video Prod.	-	-	
	Utilities	-	-	
	Waste Mgmt. & Remediation	-	-	
	Other Industrial	-	-	

All Industrial	**4,600**
Non-industrial	600
Public Sector	600
Total Employment	**5,800**

Source: PSRC, Washington State Employment Security Department (ESD), CAI, 2012
NOTE: Total employment represents covered employment only; numbers may not sum due to rounding; percentage of subarea represents percentage of all industrial jobs in the subarea; percentage of all subareas represents percentage of macro grouping total across all subareas; employment figures for individual groupings may be suppressed (-) due to confidentiality requirements.

Industrial Subarea Profile: ARLINGTON-MARYSVILLE

Land Use

Top Ten Assessor's Land Use Codes

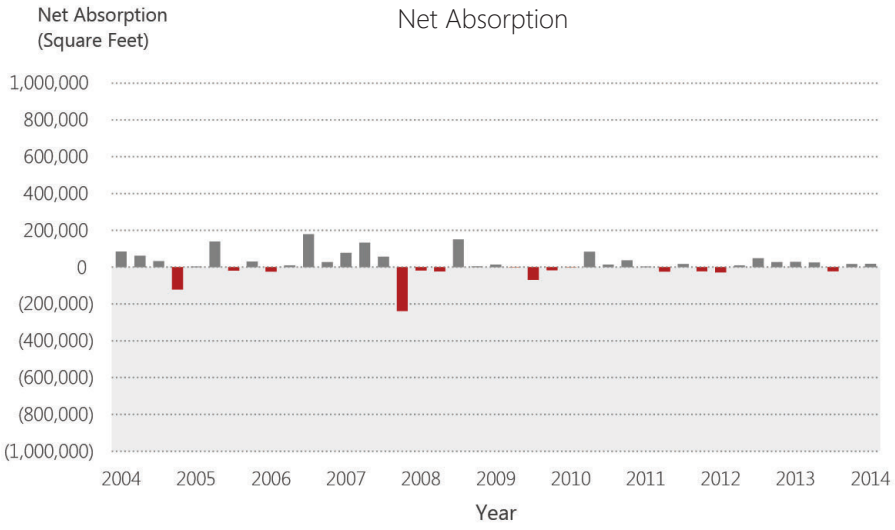
Rank	Category	Acreage
1	Airports & Flying Fields	1,212
2	Undeveloped (Vacant) Land	856
3	Open Space Agriculture	442
4	Mobile Home Park	430
5	Warehousing & Storage Srvcs	237
6	Other Business Services	165
7	Transportation Equipment	147
8	Other Aircraft Transportation	145
9	General Contract Constr. Srvcs	126
10	Hardware, Plumbing Supplies	110

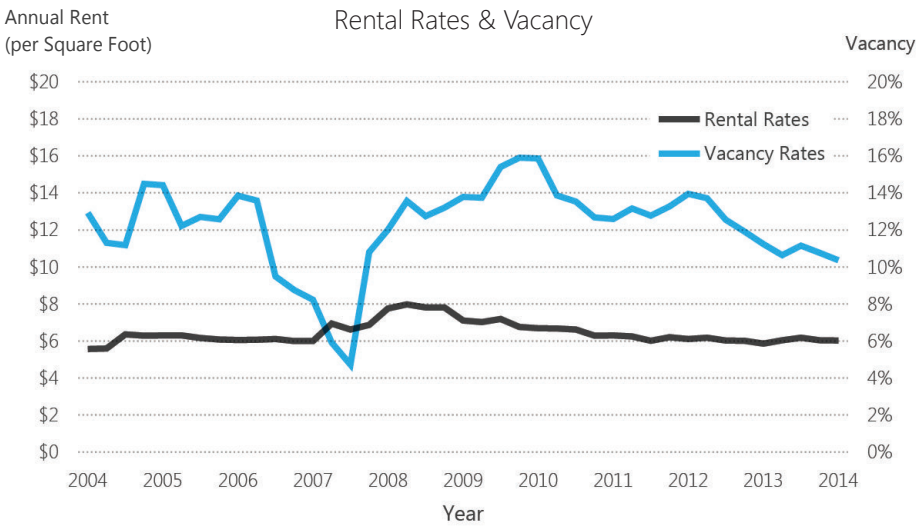
Source: Snohomish County Assessor, CAI
Note: Assessor's land use codes may not accurately reflect current parcel land use.
Note: Designated Forest or Agricultural Land under the State of Washington's Conservation Futures Program (84.34 RCW), while still zoned or designated industrial, has had future development rights purchased.

Above: Marysville Industrial.

Below: Industrial area surrounding Arlington Municipal Airport.

Market Trends





Facilities

Bldg Size (sq ft)	# of Parcels
0-5k	153
5k-200k	154
200k - 1m	4
1m+	0

Bldg Age	# of Parcels
1900-1950	44
1950-1975	55
1975-2000	141
2000+	71

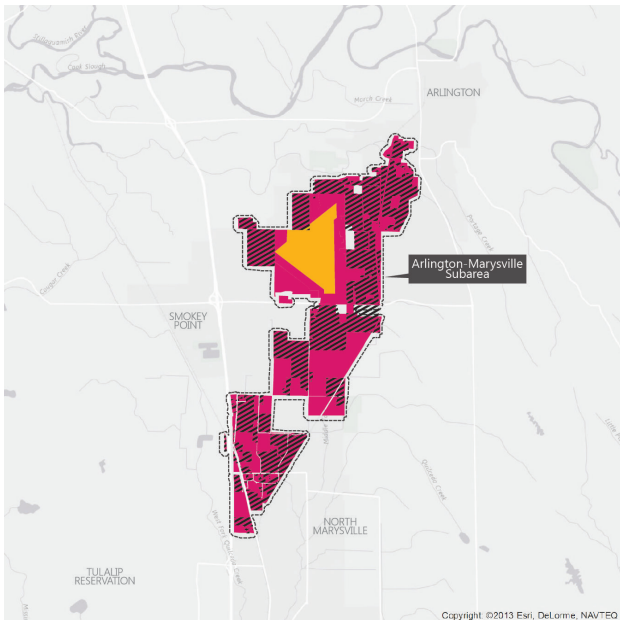
Floor Area Ratio	# of Parcels
.0-.1	139
.1-.25	70
.25-.5	84
.5-.75	10
.75+	8

Source: King, Snohomish, Pierce, Kitsap County Assessor, 2013; CAI, 2014
Note: Limited data may exist on building age.

Source: CoStar; CAI, 2014

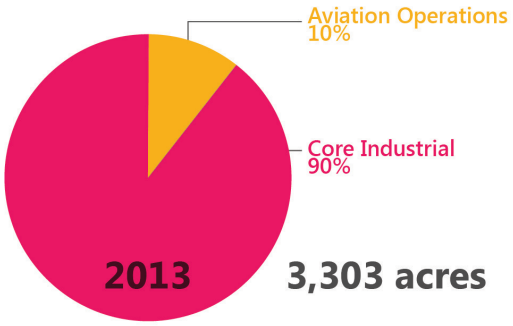
Industrial Subarea Profile: ARLINGTON-MARYSVILLE

Gross Industrial Land Supply By Segment

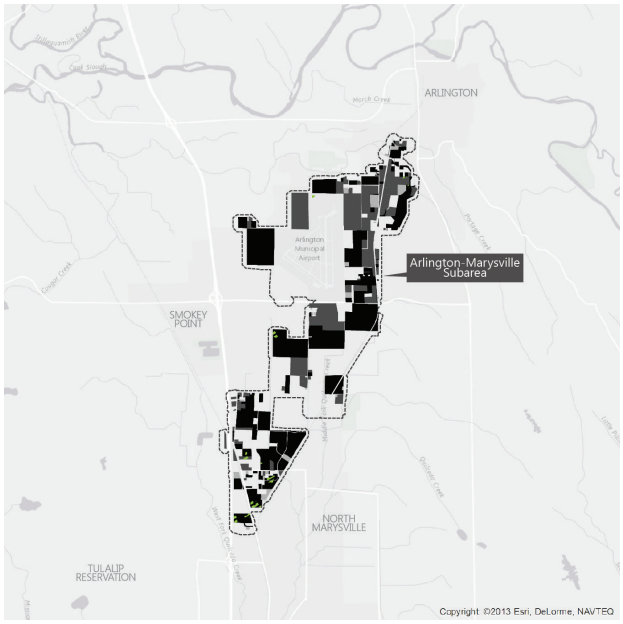


Gross industrial land supply are lands either currently zoned industrial, or designated in comprehensive plans for future industrial land use.

- Core Industrial Land
- Industrial-Commercial Land
- Aviation Operation Areas
- Military Industrial Land
- Net Supply *(See Below)*



Net Industrial Land Supply By Tier



Net industrial land supply is a subset of gross supply comprised of vacant and physically redevelopable land that deducts acreage for future rights-of-way and critical areas and is intended to reflect lands available for growth in the region's industrial sector.

- Tier A: Vacant
- Tier B: Minor Improvements
- Tier C: Partially Improved
- Wetland or Floodway Portion
- Subarea Boundaries

Net Supply Parcel Sizes

0-5 Acres	225
5-20 Acres	66
20-50 Acres	6
50+ Acres	7

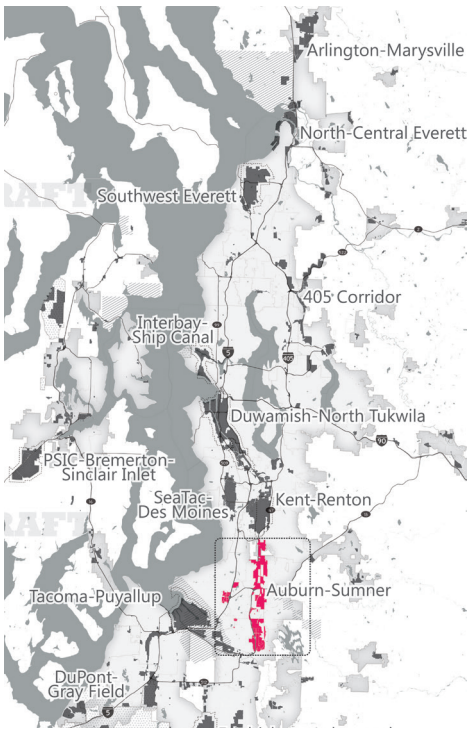
Note: Parcel shapes as mapped do not reflect deductions for future rights-of-way, public uses or market factor. For deductions, see table, below.

Deduction Type	Tier A Vacant	w / Market Factor	Tier B Minor Improvements	w / Market Factor	Tier C Partially Developed	w / Market Factor	Total	w / Market Factor
Selection	1,064		672		70		1,806	
Less Floodway	0		0		0		0	
Less Wetland	16		3		0		75	
Less Future R.O.W.'s @ 2%	52		33		4		46	
Less Future Public Use @ 2%	52		33		4		46	
Market Factor @ 10%		94		60		6		221
Total Less Future Deductions	**943**	**849**	**602**	**542**	**63**	**57**	**1,608 ac.**	**1,447 ac.**

Source: King, Snohomish, Pierce, Kitsap County Assessor, 2013; CAI, 2014
Note: Totals may not sum due to rounding.

Industrial Subarea Profile: AUBURN-SUMNER

Key Map



Overview

Located immediately south of the Kent-Renton subarea, Auburn-Sumner is also a major industrial corridor in the region. This subarea encompasses the Sumner-Pacific Manufacturing Industrial Center (MIC). Industrial activity in Auburn-Sumner is driven by warehousing, transportation, distribution and logistics, and construction, similar to Kent-Renton but with a lesser aerospace manufacturing concentration. Compared to Kent-Renton, Auburn-Sumner has a higher percentage of Tier A (vacant) land due to its distance from major freight infrastructure nodes such as the Port of Seattle and Sea-Tac International Airport.

Prominent infrastructure, assets and anchors include SR 167 (Valley Freeway) as the principal vehicular/freight corridor serving the subarea; Highway 18 runs perpendicular to SR 167 and provides access to I-90 to the east and I-5 to the west; Class I railroad mainlines connecting Auburn-Sumner to the West Coast mainline system, as well as to the east through Stampede Pass, bisect the subarea with spur lines, serving the majority of the valley floor. Recent investments in grade separations along the FAST Corridor (Freight Action STrategy for the Everett-Seattle-Tacoma Corridor) have significantly reduced conflicts between road and rail in areas of Auburn-Sumner.

Vital Statistics

Subarea Size, in Acres
6,037

Percent of Region's Industrial Land
8%

Industrial / Non-Industrial Employment
29,700 / 6,400

Percent of Region's Industrial Employment
6%

Ownership (by Parcel Area)
10% Public
90% Private

Average Parcel Size
3.4 acres

Specialization
Wholesaling, TDR, Apparel, Aerospace

Industries & Employment

Macro Grouping	Industry Grouping	Employment	Percentage of Subarea	Percentage of All Subareas
Construction		**3,900**	**13%**	**13%**
	Builders & Contractors	2,900	10%	
	Heavy & Civil Construction	1,000	3%	
Manufacturing		**12,400**	**42%**	**7%**
	Aerospace Manufacturing	3,400	11%	
	Electronics & Components	100	0%	
	Food & Bev Processing	1,400	5%	
	Machinery & Transport. Equip.	900	3%	
	Metals & Fabrication	800	3%	
	Printing & Publishing	100	0%	
	Refining, Chemicals & Plastics	700	2%	
	Textiles, Apparel & Leather	3,400	11%	
	Wood & Paper Products	800	3%	
	Other Manufacturing	800	3%	
Transportation Distr. & Logistics		**3,400**	**12%**	**11%**
	Transp., Distr., Logistics	3,400	12%	
Warehousing & Wholesale		**8,300**	**28%**	**16%**
	Warehousing & Storage	2,300	8%	
	Wholesaling	6,000	20%	
Other Industrial		**1,700**	**6%**	**7%**
	Building & Grounds Serv.	900	3%	
	Industrial Services	400	1%	
	Telecom, Broadcasting & Video Prod.	100	0%	
	Utilities	-	-	
	Waste Mgmt. & Remediation	200	1%	
	Other Industrial	-	-	
All Industrial		**29,700**		
Non-industrial		6,000		
Public Sector		400		
Total Employment		**36,000**		

Source: PSRC, Washington State Employment Security Department (ESD), CAI, 2012
NOTE: Total employment represents covered employment only; numbers may not sum due to rounding; percentage of subarea represents percentage of all industrial jobs in the subarea; percentage of all subareas represents percentage of macro grouping total across all subareas; employment figures for individual groupings may be suppressed (-) due to confidentiality requirements.

Industrial Subarea Profile: AUBURN-SUMNER

Land Use

Top Ten Assessor's Land Use Codes

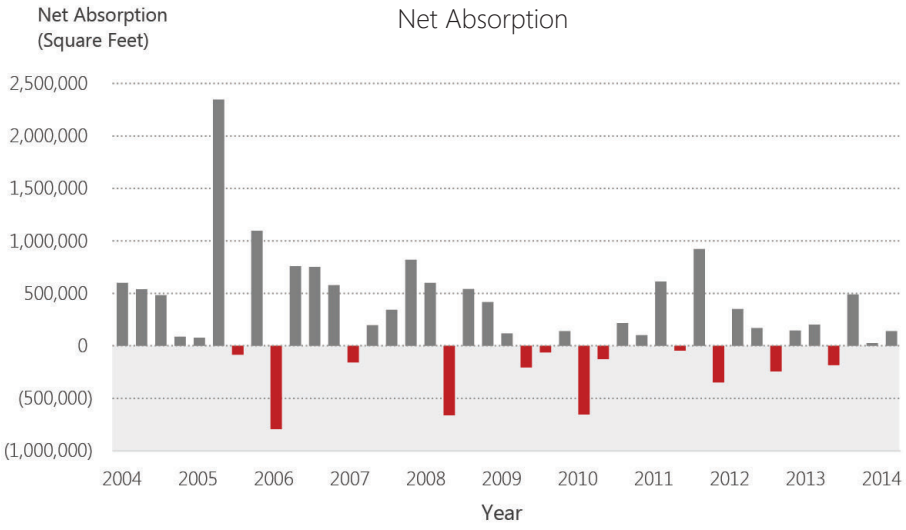
Rank	Category	Acreage
1	Warehouse	1,325
2	Vacant (Industrial) Land	1,142
3	General Warehousing Storage	615
4	Vacant (Commercial) Land	349
5	Industrial (Light)	256
6	Contractor Services	254
7	Right of Way/Utility, Road	209
8	Industrial (General Purpose)	122
9	Terminal (Rail)	120
10	Single Family (Res Use/Zone)	117

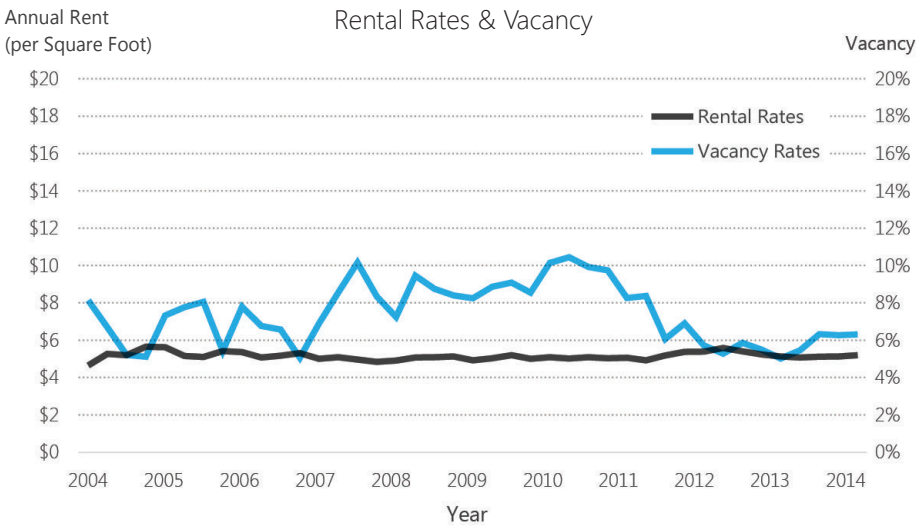
Source: King & Pierce County Assessor; CAI
Note: Assessor's land use codes may not accurately reflect current parcel land use.

Above: Sumner Corporate Park.

Below: Distribution Center located in Auburn.

Market Trends





Facilities

Bldg Size (sq ft)	# of Parcels
0-5k	816
5k-200k	613
200k - 1m	55
1m+	3

Bldg Age	# of Parcels
1900-1950	148
1950-1975	115
1975-2000	128
2000+	117

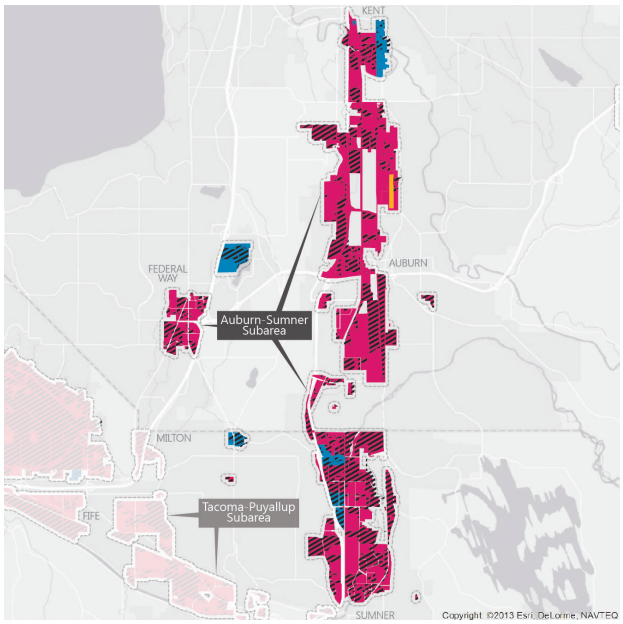
Floor Area Ratio	# of Parcels
.0-.1	978
.1-.25	281
.25-.5	405
.5-.75	69
.75+	22

Source: King, Snohomish, Pierce, Kitsap County Assessor, 2013; CAI, 2014
Note: Limited data may exist on building age.

Source: CoStar; CAI, 2014

Industrial Subarea Profile: AUBURN-SUMNER

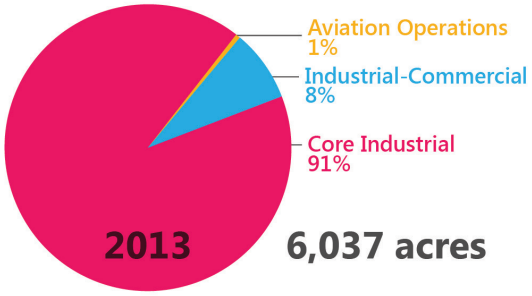
Gross Industrial Land Supply By Segment



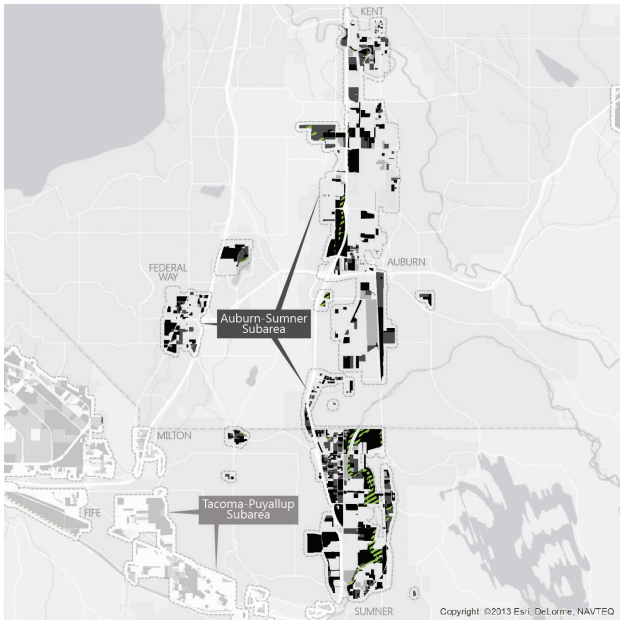
Gross industrial land supply are lands either currently zoned industrial, or designated in comprehensive plans for future industrial land use.

- Core Industrial Land
- Industrial-Commercial Land
- Aviation Operation Areas
- Military Industrial Land
- Net Supply *(See Below)*

Note: Adjacent Subareas are masked to highlight the featured Subarea.



Net Industrial Land Supply By Tier



Net industrial land supply is a subset of gross supply comprised of vacant and physically redevelopable land that deducts acreage for future rights-of-way and critical areas and is intended to reflect lands available for growth in the region's industrial sector.

- Tier A: Vacant
- Tier B: Minor Improvements
- Tier C: Partially Improved
- Wetland or Floodway Portion
- Subarea Boundaries

Net Supply Parcel Sizes

0-5 Acres	770
5-20 Acres	144
20-50 Acres	22
50+ Acres	1

Note: Parcel shapes as mapped do not reflect deductions for future rights-of-way, public uses or market factor. For deductions, see table, below.

Deduction Type	Tier A Vacant	w / Market Factor	Tier B Minor Improvements	w / Market Factor	Tier C Partially Developed	w / Market Factor	Total	w / Market Factor
Selection	1,844		825		393		3,062	
Less Floodway	177		11		4		192	
Less Wetland	27		23		0		50	
Less Future R.O.W.'s @ 2%	82		40		19		141	
Less Future Public Use @ 2%	82		40		19		141	
Market Factor @ 10%		148		71		35		254
Total Less Future Deductions	**1,476**	**1,328**	**712**	**641**	**350**	**315**	**2,538 ac.**	**2,284 ac.**

Source: King, Snohomish, Pierce, Kitsap County Assessor, 2013; CAI, 2014
Note: Totals may not sum due to rounding.

Industrial Subarea Profile: DUPONT-GRAY FIELD

Key Map

Overview

The DuPont-Gray Field subarea is small in comparison to other subareas in the region, with only 3% of regional industrial land. Manufacturing uses predominate, and the subarea's straddling of Joint Base Lewis-McChord may be attractive to defense-related uses. The subarea has developed recently, as the buildings on a number of significant parcels for which data is available were built after the year 2000. Significant development has occurred as recently as 2013, as absorption of new space spiked late in that year. Despite the influx of new industrial building area, building vacancy remains low. Net supply analysis, however, indicates that over half of the subarea's land is vacant or potentially redevelopable.

Prominent infrastructure, assets and anchors include I-5 as a major transportation corridor that serves the subarea, linking it to the cities of Olympia to the south and Tacoma and Seattle to the north. Joint Base Lewis-McChord is adjacent to the subarea and is an asset for military-industrial companies.

Vital Statistics

Subarea Size, in Acres
1,916

Percent of Region's Industrial Land
3%

Industrial / Non-Industrial Employment
1,000 / 2,200

Percent of Region's Industrial Employment
~0%

Ownership (by Parcel Area)
32% Public
68% Private

Average Parcel Size
14.3 acres

Specialization
Manufacturing

Industries & Employment

Macro Grouping	Industry Grouping	Employment	Percentage of Subarea	Percentage of All Subareas
Construction		**100**	**9%**	**0%**
	Builders & Contractors	-	-	
	Heavy & Civil Construction	-	-	
Manufacturing		**800**	**84%**	**0%**
	Aerospace Manufacturing	-	-	
	Electronics & Components	-	-	
	Food & Bev Processing	-	-	
	Machinery & Transport. Equip.	-	-	
	Metals & Fabrication	-	-	
	Printing & Publishing	-	-	
	Refining, Chemicals & Plastics	-	-	
	Textiles, Apparel & Leather	-	-	
	Wood & Paper Products	-	-	
	Other Manufacturing	-	-	
Transportation Distr. & Logistics		**<100**	**2%**	**0%**
	Transp., Distr., Logistics	-	-	
Warehousing & Wholesale		**<100**	**2%**	**0%**
	Warehousing & Storage	-	-	
	Wholesaling	-	-	
Other Industrial		**<100**	**3%**	**0%**
	Building & Grounds Serv.	-	-	
	Industrial Services	-	-	
	Telecom, Broadcasting & Video Prod.	-	-	
	Utilities	-	-	
	Waste Mgmt. & Remediation	-	-	
	Other Industrial	-	-	

All Industrial	**1,000**
Non-industrial	2,200
Public Sector	0
Total Employment	**3,200**

Source: PSRC, Washington State Employment Security Department (ESD), CAI, 2012
NOTE: Total employment represents covered employment only; numbers may not sum due to rounding; percentage of subarea represents percentage of all industrial jobs in the subarea; percentage of all subareas represents percentage of macro grouping total across all subareas; employment figures for individual groupings may be suppressed (-) due to confidentiality requirements.

Industrial Subarea Profile: DUPONT-GRAY FIELD

Land Use

Top Ten Assessor's Land Use Codes

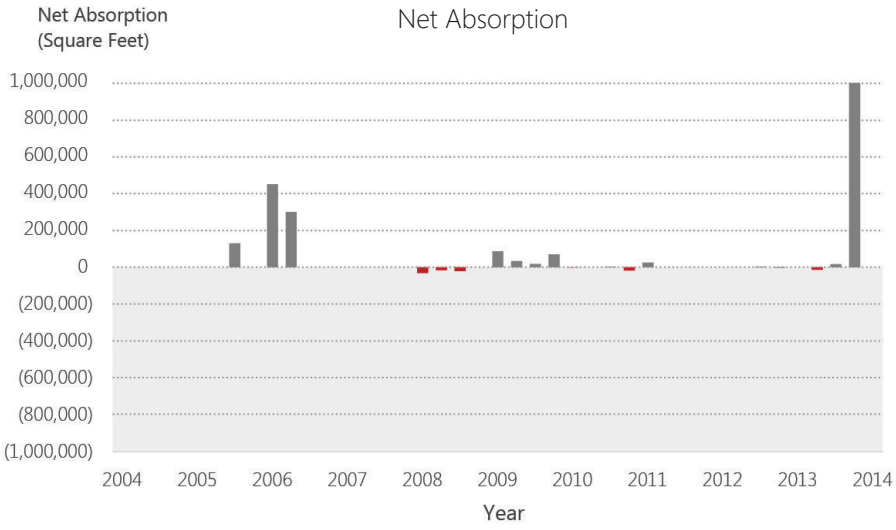
Rank	Category	Acreage
1	Vacant Industrial Land	782
2	Military Bases	552
3	Golf Courses	519
4	General Warehousing Storage	414
5	Communication	253
6	Other Undeveloped Land	215
7	Primary Metal Industries	203
8	Stone/Clay/Glass Mfg	198
9	Wetlands Recorded	168
10	Indian Reservation Land	146

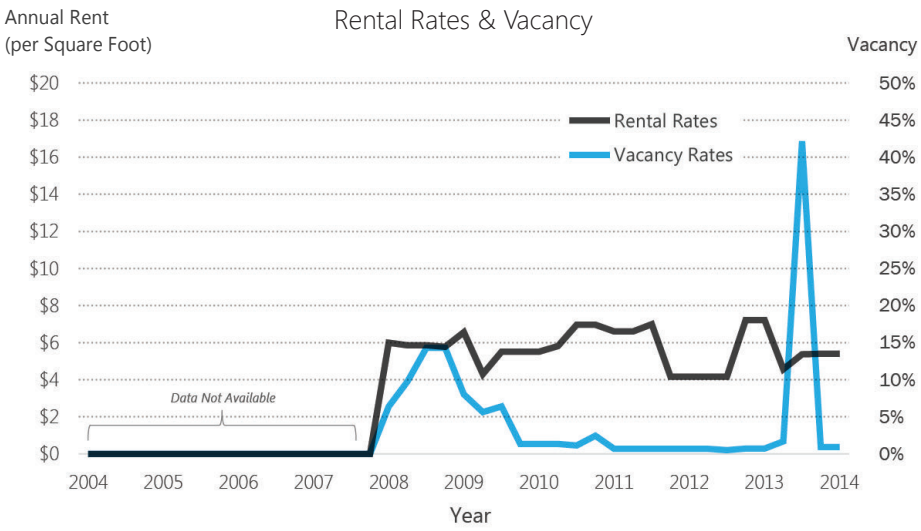
Source: Pierce County Assessor; CAI
Note: Assessor's land use codes may not accurately reflect current parcel land use.

Above: Rendering of DuPont's Northwest Landing Corporate Park Gateway.

Below: Intel Corp.'s DuPont Campus.

Market Trends





Facilities

Bldg Size (sq ft)	# of Parcels
0-5k	2
5k-200k	10
200k - 1m	2
1m+	2

Bldg Age	# of Parcels
1900-1950	1
1950-1975	0
1975-2000	4
2000+	11

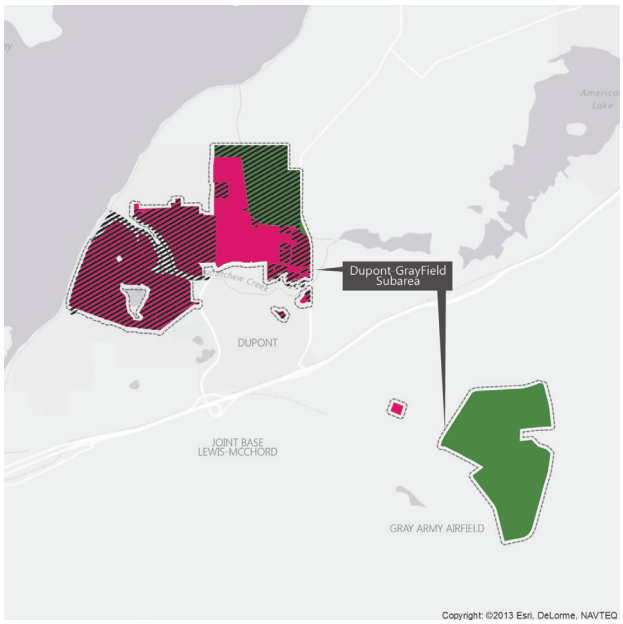
Floor Area Ratio	# of Parcels
.0-.1	74
.1-.25	5
.25-.5	5
.5-.75	2
.75+	1

Source: King, Snohomish, Pierce, Kitsap County Assessor, 2013; CAI, 2014
Note: Limited data may exist on building age.

Source: CoStar; CAI, 2014

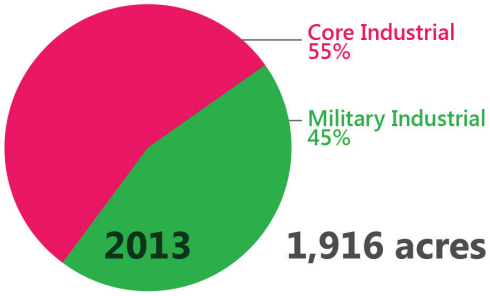
Industrial Subarea Profile: DUPONT-GRAY FIELD

Gross Industrial Land Supply By Segment



Gross industrial land supply are lands either currently zoned industrial, or designated in comprehensive plans for future industrial land use.

- Core Industrial Land
- Industrial-Commercial Land
- Aviation Operation Areas
- Military Industrial Land
- Net Supply *(See Below)*



Net Industrial Land Supply By Tier

Net industrial land supply is a subset of gross supply comprised of vacant and physically redevelopable land that deducts acreage for future rights-of-way and critical areas and is intended to reflect lands available for growth in the region's industrial sector.

- Tier A: Vacant
- Tier B: Minor Improvements
- Tier C: Partially Improved
- Wetland or Floodway Portion
- Subarea Boundaries

Net Supply Parcel Sizes

0-5 Acres	49
5-20 Acres	8
20-50 Acres	12
50+ Acres	4

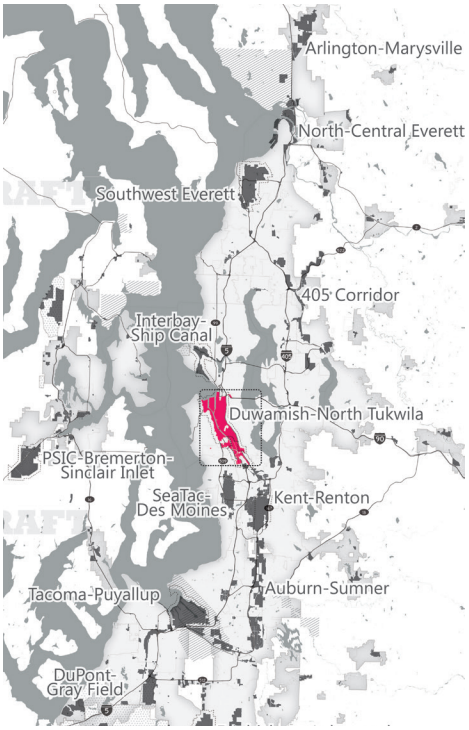
Note: Parcel shapes as mapped do not reflect deductions for future rights-of-way, public uses or market factor. For deductions, see table, below.

Deduction Type	Tier A Vacant	w / Market Factor	Tier B Minor Improvements	w / Market Factor	Tier C Partially Developed	w / Market Factor	Total	w / Market Factor
Selection	1,090		143		3		1,236	
Less Floodway	0		0		0		0	
Less Wetland	1		0		0		1	
Less Future R.O.W.'s @ 2%	54		7		0		62	
Less Future Public Use @ 2%	54		7		0		62	
Market Factor @ 10%		98		13		0		111
Total Less Future Deductions	**980**	**882**	**129**	**116**	**3**	**2**	**1,112 ac.**	**1,000 ac.**

Source: King, Snohomish, Pierce, Kitsap County Assessor, 2013; CAI, 2014
Note: Totals may not sum due to rounding.

Industrial Subarea Profile: DUWAMISH-NORTH TUKWILA

Key Map



Vital Statistics

Subarea Size, in Acres
5,497

Percent of Region's Industrial Land
8%

Industrial / Non-Industrial Employment
48,100 / 27,300

Percent of Region's Industrial Employment
10%

Ownership (by Parcel Area)
37% Public
63% Private

Average Parcel Size
2.2 acres

Specialization
Aerospace, Wholesaling, TDL

Overview

The Duwamish-North Tukwila industrial subarea is one of the most important industrial concentrations in the region. It has the third-highest employment total of any subarea, yet parcels here are smaller than elsewhere due to denser urban development patterns. Consequently, employment density in the Duwamish is also higher. Rental rates are significantly higher here than in most other industrial subareas in the region. Vacant land is scarce in the Duwamish and some properties require remediation, forcing growing and new firms to consider other locations. Most of the land area is core industrial land, and much heavy industrial activity takes place here - including steel smelting, container shipping and concrete manufacturing.

This subarea contains the Duwamish and North Tukwila MICs and is anchored by two of the region's most important industrial assets: the Port of Seattle and King County International Airport. The Port of Seattle operates in one of the region's primary marine shipping areas. A substantial amount of land throughout the Duwamish subarea is used for import/export (international and Alaskan or other domestic) or port-related support services and major railyards. The port and its related operations account for a great deal of industrial activity present in this area and King County Airport is a logistical hub for Boeing Commercial Airplanes. In addition, immediate access to I-5 the length of the subarea, a natural deep water harbor, fueling pipelines, access to the national rail system, and buffering from residential zones represent important benefits to industrial firms in this location. Recently, the EPA announced a 20-year, $342 million project to remove 90% of the pollution in the Duwamish river via extensive dredging and capping.

Industries & Employment

Macro Grouping	Industry Grouping	Employment	Percentage of Subarea	Percentage of All Subareas
Construction		**6,900**	**14%**	**22%**
	Builders & Contractors	6,200	13%	
	Heavy & Civil Construction	700	2%	
Manufacturing		**21,500**	**45%**	**13%**
	Aerospace Manufacturing	11,100	23%	
	Electronics & Components	300	1%	
	Food & Bev Processing	1,400	3%	
	Machinery & Transport. Equip.	1,600	3%	
	Metals & Fabrication	2,000	4%	
	Printing & Publishing	2,100	4%	
	Refining, Chemicals & Plastics	200	0%	
	Textiles, Apparel & Leather	800	2%	
	Wood & Paper Products	200	0%	
	Other Manufacturing	1,800	4%	
Transportation Distr. & Logistics		**6,600**	**14%**	**22%**
	Transp., Distr., Logistics	6,600	14%	
Warehousing & Wholesale		**8,700**	**18%**	**17%**
	Warehousing & Storage	400	1%	
	Wholesaling	8,300	17%	
Other Industrial		**4,500**	**9%**	**18%**
	Building & Grounds Serv.	1,400	3%	
	Industrial Services	900	2%	
	Telecom, Broadcasting & Video Prod.	300	1%	
	Utilities	-	-	
	Waste Mgmt. & Remediation	1,000	2%	
	Other Industrial	900	2%	
All Industrial		**48,100**		
Non-industrial		18,900		
Public Sector		8,400		
Total Employment		**75,400**		

Source: PSRC, Washington State Employment Security Department (ESD), CAI, 2012
NOTE: Total employment represents covered employment only; numbers may not sum due to rounding; percentage of subarea represents percentage of all industrial jobs in the subarea; percentage of all subareas represents percentage of macro grouping total across all subareas; employment figures for individual groupings may be suppressed (-) due to confidentiality requirements.

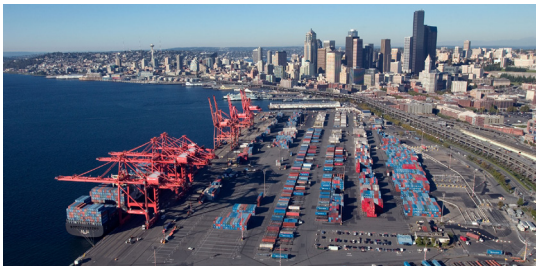
Industrial Subarea Profile: DUWAMISH-NORTH TUKWILA

Land Use

Top Ten Assessor's Land Use Codes

Rank	Category	Acreage
1	Warehouse	832
2	Air Terminals & Hangars	596
3	Industrial (Heavy)	591
4	Terminal (Marine/Comm Fish)	475
5	Vacant (Industrial)	413
6	Right of Way/Utility, Road	348
7	Industrial (General Purpose)	326
8	Terminal (Marine)	305
9	Terminal (Rail)	150
10	Industrial (Light)	134

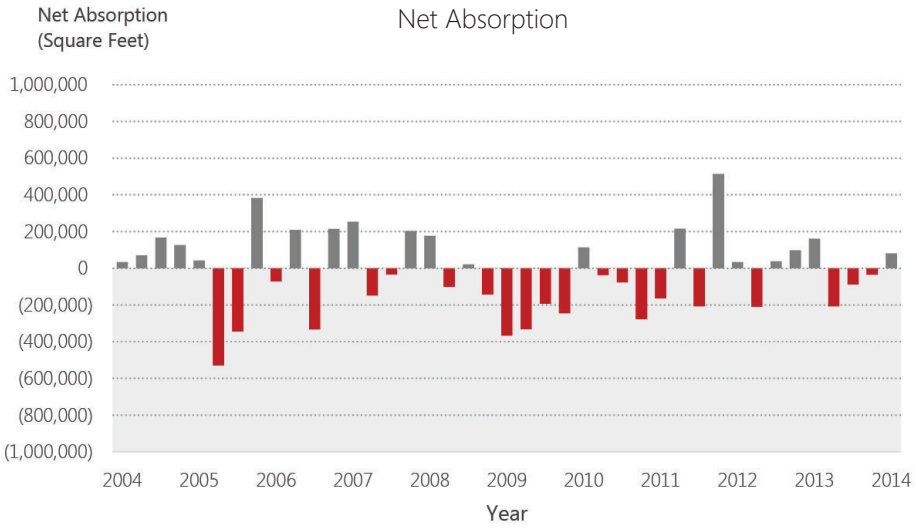
Source: King County Assessor; CAI
Note: Assessor's land use codes may not accurately reflect current parcel land use.

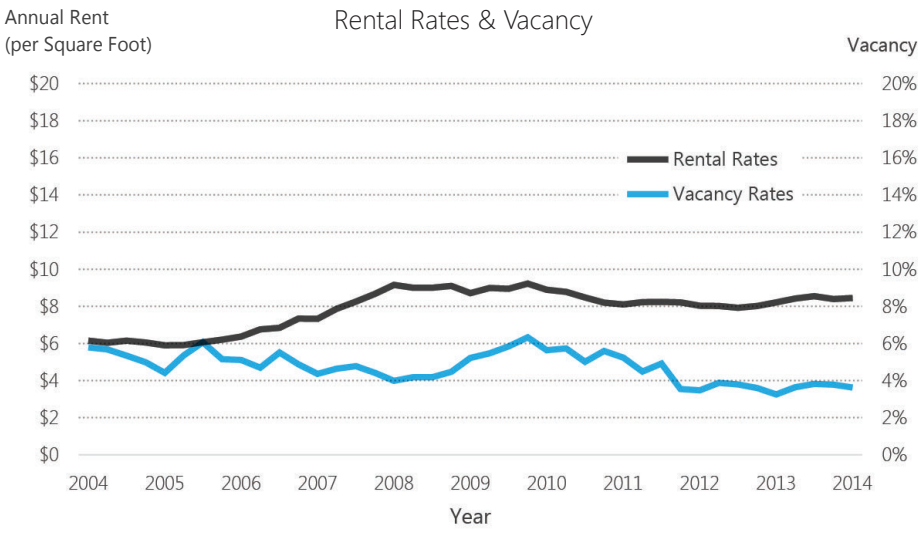


Above: Port of Seattle Marine Terminals.

Below: Highway 99 crossing the Duwamish waterway.

Market Trends





Facilities

Bldg Size (sq ft)	# of Parcels
0-5k	1,369
5k-200k	989
200k - 1m	51
1m+	3

Bldg Age	# of Parcels
1900-1950	105
1950-1975	3
1975-2000	0
2000+	1

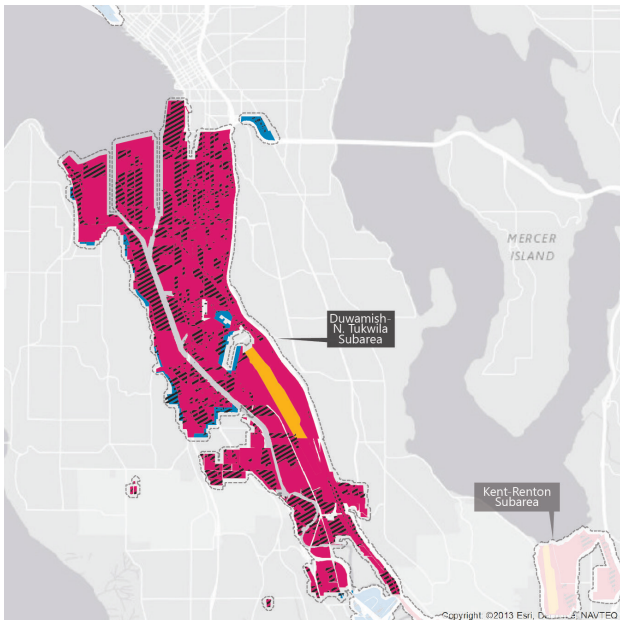
Floor Area Ratio	# of Parcels
.0-.1	1,072
.1-.25	235
.25-.5	380
.5-.75	365
.75+	360

Source: King, Snohomish, Pierce, Kitsap County Assessor, 2013; CAI, 2014
Note: Limited data may exist on building age.

Source: CoStar; CAI, 2014

Industrial Subarea Profile: DUWAMISH-NORTH TUKWILA

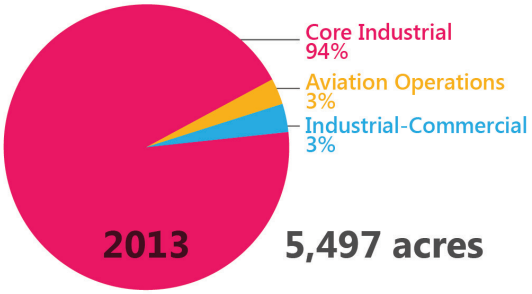
Gross Industrial Land Supply By Segment



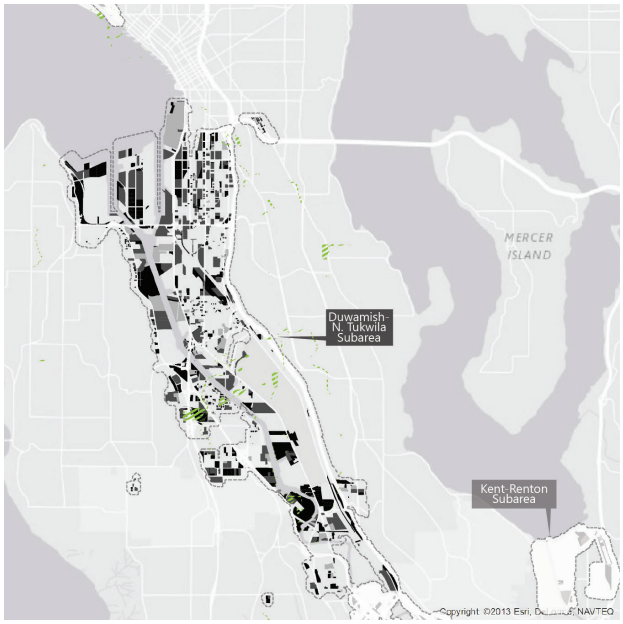
Gross industrial land supply are lands either currently zoned industrial, or designated in comprehensive plans for future industrial land use.

- Core Industrial Land
- Industrial-Commercial Land
- Aviation Operation Areas
- Military Industrial Land
- Net Supply *(See Below)*

Note: Adjacent Subareas are masked to highlight the featured Subarea.



Net Industrial Land Supply By Tier



Net industrial land supply is a subset of gross supply comprised of vacant and physically redevelopable land that deducts acreage for future rights-of-way and critical areas and is intended to reflect lands available for growth in the region's industrial sector.

- Tier A: Vacant
- Tier B: Minor Improvements
- Tier C: Partially Improved
- Wetland or Floodway Portion
- Subarea Boundaries

Net Supply Parcel Sizes

0-5 Acres	956
5-20 Acres	78
20-50 Acres	9
50+ Acres	2

Note: Parcel shapes as mapped do not reflect deductions for future rights-of-way, public uses or market factor. For deductions, see table, below.

Deduction Type	Tier A Vacant	w / Market Factor	Tier B Minor Improvements	w / Market Factor	Tier C Partially Developed	w / Market Factor	Total	w / Market Factor
Selection	847		874		335		2,056	
Less Floodway	5		1		0		6	
Less Wetland	3		6		0		9	
Less Future R.O.W.'s @ 2%	17		17		7		41	
Less Future Public Use @ 2%	17		17		7		41	
Market Factor @ 10%		81		83		32		196
Total Less Future Deductions	**805**	**725**	**832**	**749**	**321**	**289**	**1,959 ac.**	**1,763 ac.**

Source: King, Snohomish, Pierce, Kitsap County Assessor, 2013; CAI, 2014
Note: Totals may not sum due to rounding.

Industrial Subarea Profile: FREDERICKSON-LAKEWOOD

Key Map

Overview

Industrial areas in the central Pierce County subarea stretch from the Lakewood Industrial Park to the Pierce County Airport (Thun Field), and include McChord Field on Joint Base Lewis-McChord and the Frederickson regional MIC. The area includes a wide range of uses, from food manufacturing to high-end customization of Corvettes. The area is dominated by Boeing's production of key components for commercial airliners, as well as the company's premier carbon-fiber component manufacturing plant in Frederickson.

Prominent infrastructure, assets and anchors include close access to I-5, with connection to Seattle and Portland, either directly or via SR 512. SR 512 also connects the area to SR 167 and other industrial subareas in the Kent Valley and east of Lake Washington, as well as to I-90 leading east out of the region. Freight rail access is important to several industrial users with active sidings here and is available from the subarea as far south as Chehalis and north directly to the Port of Tacoma, with connections from there to the national rail network and the entire continental United States.

Vital Statistics

Subarea Size, in Acres
7,264

Percent of Region's Industrial Land
10%

Industrial / Non-Industrial Employment
8,600 / 4,300

Percent of Region's Industrial Employment
2%

Ownership (by Parcel Area)
17% Public
83% Private

Average Parcel Size
3.1 acres

Specialization
Manufacturing, Warehousing & Wholesale

Industries & Employment

Macro Grouping	Industry Grouping	Employment	Percentage of Subarea	Percentage of All Subareas
Construction		**1,200**	**17%**	**4%**
	Builders & Contractors	-	-	
	Heavy & Civil Construction	-	-	
Manufacturing		**3,700**	**55%**	**2%**
	Aerospace Manufacturing	-	-	
	Electronics & Components	-	-	
	Food & Bev Processing	-	-	
	Machinery & Transport. Equip.	-	-	
	Metals & Fabrication	-	-	
	Printing & Publishing	-	-	
	Refining, Chemicals & Plastics	-	-	
	Textiles, Apparel & Leather	-	-	
	Wood & Paper Products	-	-	
	Other Manufacturing	-	-	
Transportation Distr. & Logistics		**1,300**	**12%**	**4%**
	Transp., Distr., Logistics	1,300	12%	
Warehousing & Wholesale		**1,400**	**12%**	**3%**
	Warehousing & Storage	-	--	
	Wholesaling	-	-	
Other Industrial		**900**	**4%**	**4%**
	Building & Grounds Serv.	-	-	
	Industrial Services	-	-	
	Telecom, Broadcasting & Video Prod.	-	-	
	Utilities	-	-	
	Waste Mgmt. & Remediation	-	-	
	Other Industrial	-	-	
All Industrial		**8,600**		
Non-industrial		2,700		
Public Sector		1,600		
Total Employment		**12,900**		

Source: PSRC, Washington State Employment Security Department (ESD), CAI, 2012
NOTE: Total employment represents covered employment only; numbers may not sum due to rounding; percentage of subarea represents percentage of all industrial jobs in the subarea; percentage of all subareas represents percentage of macro grouping total across all subareas; employment figures for individual groupings may be suppressed (-) due to confidentiality requirements.

Industrial Subarea Profile: FREDERICKSON-LAKEWOOD

Land Use

Top Ten Assessor's Land Use Codes

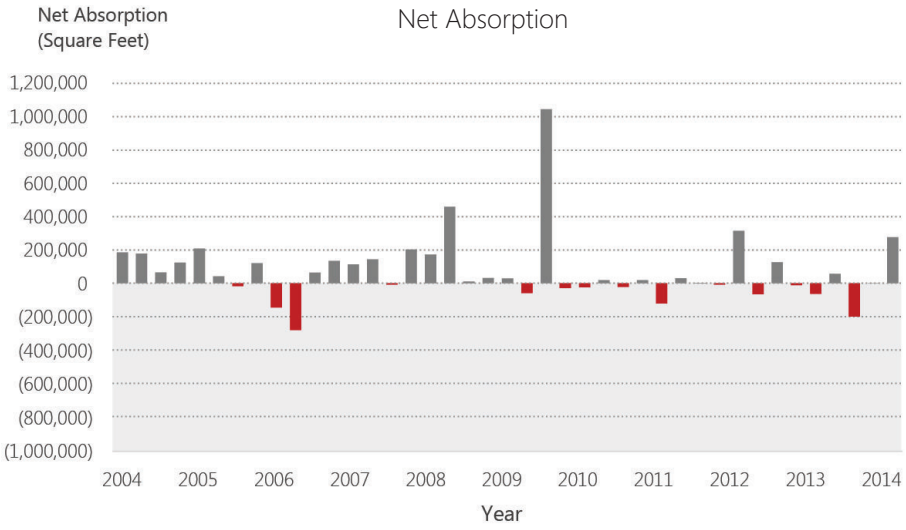
Rank	Category	Acreage
1	Vacant Industrial Land	782
2	Fabricated Metal Products	552
3	General Warehousing Storage	519
4	Single Family Dwelling	414
5	Contractor Services	253
6	Vacant Land Undeveloped	215
7	Commercial Vacant Land	203
8	Current Use Open Space	198
9	Miscellaneous Manufacturing	168
10	Recreational Activities	146

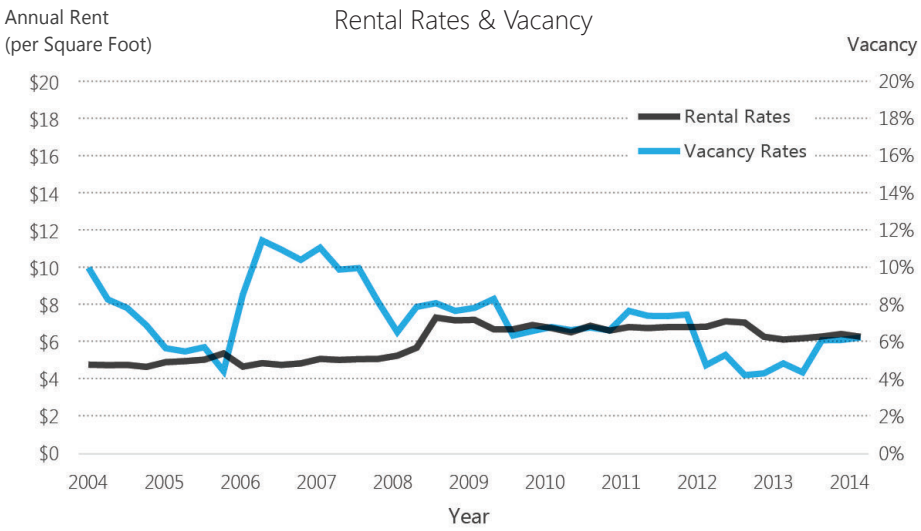
Source: Pierce County Assessor; CAI
Note: Assessor's land use codes may not accurately reflect current parcel land use.
Note: Designated Forest or Agricultural Land under the State of Washington's Conservation Futures Program (84.34 RCW), while still zoned or designated industrial, has had future development rights purchased.

Above: A LEED- certified maintenance facility at Joint Base Lewis McChord.

Below: A carbon fiber technician works at Frederickson's Toray Industries.

Market Trends





Facilities

Bldg Size (sq ft)	# of Parcels
0-5k	862
5k-200k	303
200k - 1m	8
1m+	1

Bldg Age	# of Parcels
1900-1950	165
1950-1975	321
1975-2000	392
2000+	296

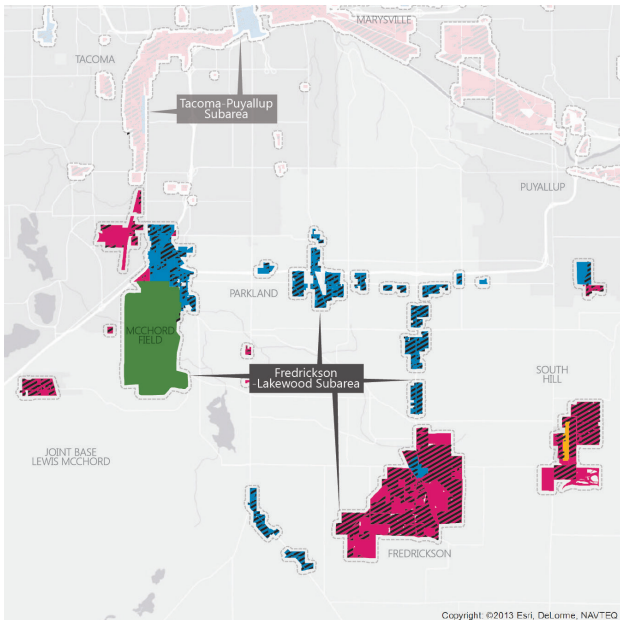
Floor Area Ratio	# of Parcels
.0-.1	1,090
.1-.25	415
.25-.5	185
.5-.75	16
.75+	4

Source: King, Snohomish, Pierce, Kitsap County Assessor, 2013; CAI, 2014
Note: Limited data may exist on building age.

Source: CoStar; CAI, 2014

Industrial Subarea Profile: FREDERICKSON-LAKEWOOD

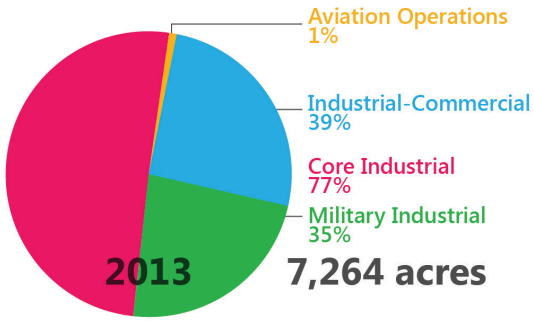
Gross Industrial Land Supply By Segment



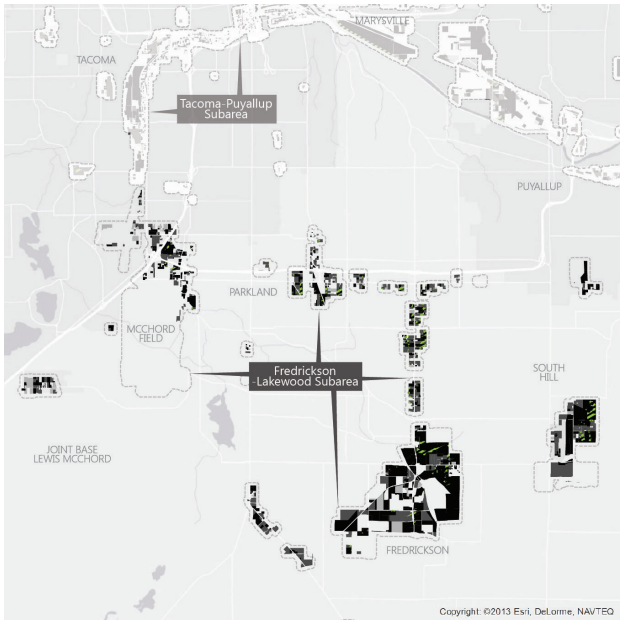
Gross industrial land supply are lands either currently zoned industrial, or designated in comprehensive plans for future industrial land use.

- Core Industrial Land
- Industrial-Commercial Land
- Aviation Operation Areas
- Military Industrial Land
- Net Supply *(See Below)*

Note: Adjacent Subareas are masked to highlight the featured Subarea.



Net Industrial Land Supply By Tier



Net industrial land supply is a subset of gross supply comprised of vacant and physically redevelopable land that deducts acreage for future rights-of-way and critical areas and is intended to reflect lands available for growth in the region's industrial sector.

- Tier A: Vacant
- Tier B: Minor Improvements
- Tier C: Partially Improved
- Wetland or Floodway Portion
- Subarea Boundaries

Net Supply Parcel Sizes

0-5 Acres	952
5-20 Acres	100
20-50 Acres	21
50+ Acres	7

Note: Parcel shapes as mapped do not reflect deductions for future rights-of-way, public uses or market factor. For deductions, see table, below.

Deduction Type	Vacant	w / Market Factor	Minor Improvements	w / Market Factor	Partially Developed	w / Market Factor	Total	w / Market Factor
Selection	2,133		1,170		311		3,614	
Less Floodway	5		1		0		6	
Less Wetland	156		49		2		207	
Less Future R.O.W.'s @ 2%	99		56		15		170	
Less Future Public Use @ 2%	99		56		15		170	
Market Factor @ 10%		177		101		28		313
Total Less Future Deductions	**1,775**	**1,597**	**1,008**	**907**	**278**	**250**	**3,061 ac.**	**2,755 ac.**

Source: King, Snohomish, Pierce, Kitsap County Assessor, 2013; CAI, 2014
Note: Totals may not sum due to rounding.

Industrial Subarea Profile: INTERBAY-SHIP CANAL

Key Map

Vital Statistics

Subarea Size, in Acres
1,251

Percent of Region's Industrial Land
2%

Industrial / Non-Industrial Employment
10,700 / 22,800

Percent of Region's Industrial Employment
2%

Ownership (by Parcel Area)
32% Public
68% Private

Average Parcel Size
1.0 acres

Specialization
Food & Bev Processing, Printing & Publishing, TDL

Overview

One of the smaller industrial subareas in the region, the development pattern in Interbay-Ship Canal is generally smaller and denser than elsewhere in the region, with older building stock and higher floor-to-area-ratios (FAR). Industrial employment is driven by maritime cluster activity, but industrial/non-industrial employment is evenly split. Industrial properties in Interbay-Ship Canal are facing both incursion of, and conversion to, non-industrial land uses. The subarea also contains the Ballard-Interbay MIC.

Prominent infrastructure, assets and anchors include the U.S. Army Corp's Chittenden Locks, which offer the distinct advantage of connecting fresh water moorage to saltwater fishing and freighting grounds, Fisherman's Terminal which provides anchorage for more than 600 commercial fishing vessels in the North Pacific small fishing fleet, a major freight rail yard (Balmer Yard) and spurs, Terminal 91, providing moorage to large fishing commercial fishing vessels, cold storage and other services, a cruise ship terminal, and truck access to Highway 99 on the eastern edge of the area. Salmon Bay Gravel is a major ballast provider for domestic marine freighters. Seattle Maritime Academy is a major maritime education and training asset. Many import/export operations are also located along the Lake Washington ship canal.

Industries & Employment

Macro Grouping	Industry Grouping	Employment	Percentage of Subarea	Percentage of All Subareas
Construction		**1,400**	**13%**	**4%**
	Builders & Contractors	1,000	10%	
	Heavy & Civil Construction	300	3%	
Manufacturing		**6,200**	**58%**	**4%**
	Aerospace Manufacturing	300	3%	
	Electronics & Components	400	4%	
	Food & Bev Processing	1,900	18%	
	Machinery & Transport. Equip.	700	7%	
	Metals & Fabrication	300	2%	
	Printing & Publishing	1,400	13%	
	Refining, Chemicals & Plastics	100	1%	
	Textiles, Apparel & Leather	300	3%	
	Wood & Paper Products	100	1%	
	Other Manufacturing	500	5%	
Transportation Distr. & Logistics		**1,200**	**11%**	**4%**
	Transp., Distr., Logistics	1,200	11%	
Warehousing & Wholesale		**1,100**	**10%**	**2%**
	Warehousing & Storage	-	-	
	Wholesaling	-	-	
Other Industrial		**700**	**6%**	**3%**
	Building & Grounds Serv.	100	1%	
	Industrial Services	100	1%	
	Telecom, Broadcasting & Video Prod.	200	2%	
	Utilities	-	-	
	Waste Mgmt. & Remediation	-	-	
	Other Industrial	200	2%	
All Industrial		**10,700**		
Non-industrial		22,400		
Public Sector		400		
Total Employment		**33,500**		

Source: PSRC, Washington State Employment Security Department (ESD), CAI, 2012
NOTE: Total employment represents covered employment only; numbers may not sum due to rounding; percentage of subarea represents percentage of all industrial jobs in the subarea; percentage of all subareas represents percentage of macro grouping total across all subareas; employment figures for individual groupings may be suppressed (-) due to confidentiality requirements.

Industrial Subarea Profile: INTERBAY-SHIP CANAL

Land Use

Top Ten Assessor's Land Use Codes

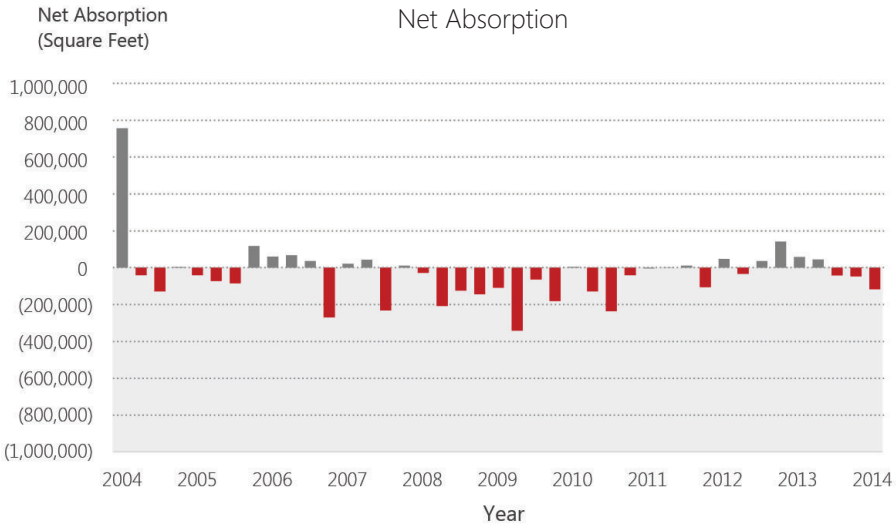
Rank	Category	Acreage
1	Terminal (Marine)	359
2	Warehouse	130
3	Marina	114
4	Terminal (Rail)	89
5	Vacant (Industrial)	82
6	Office Building	81
7	Right of Way/Utility, Road	38
8	Medical/Dental Office	34
9	Industrial (General Purpose)	31
10	Governmental Service	27

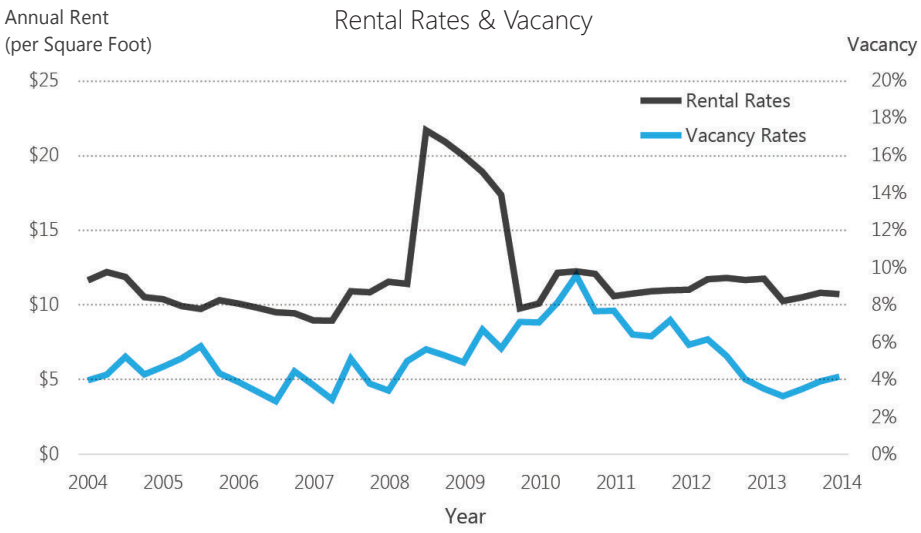
Source: King County Assessor; CAI
Note: Assessor's land use codes may not accurately reflect current parcel land use.

Above: Boeing jet bodies passing via freight rail through Interbay's BNSF Balmer Yard.

Below: Port of Seattle's Fisherman's Terminal on Salmon Bay provides moorage for over 600 commercial fishing and pleasure vessels

Market Trends





Facilities

Bldg Size (sq ft)	# of Parcels
0-5k	678
5k-200k	472
200k - 1m	16
1m+	1

Bldg Age	# of Parcels
1900-1950	52
1950-1975	1
1975-2000	0
2000+	0

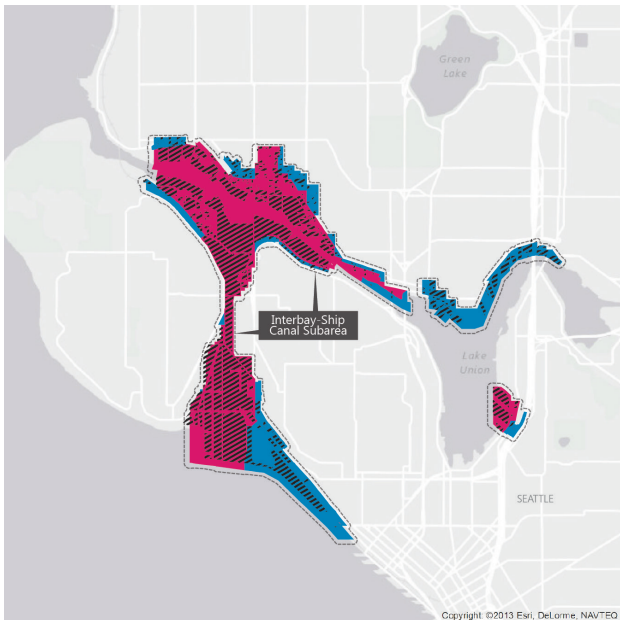
Floor Area Ratio	# of Parcels
.0-.1	406
.1-.25	81
.25-.5	166
.5-.75	156
.75+	358

Source: King, Snohomish, Pierce, Kitsap County Assessor, 2013; CAI, 2014
Note: Limited data may exist on building age.

Source: CoStar; CAI, 2014

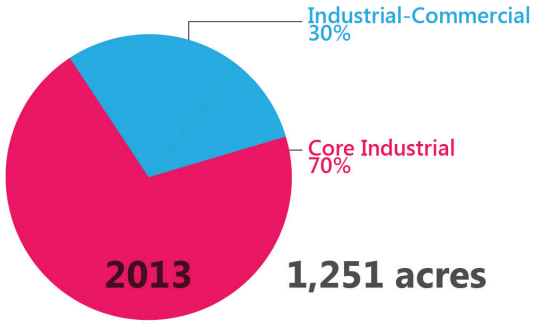
Industrial Subarea Profile: INTERBAY-SHIP CANAL

Gross Industrial Land Supply By Segment



Gross industrial land supply are lands either currently zoned industrial, or designated in comprehensive plans for future industrial land use.

- Core Industrial Land
- Industrial-Commercial Land
- Aviation Operation Areas
- Military Industrial Land
- Net Supply *(See Below)*



Net Industrial Land Supply By Tier

Net industrial land supply is a subset of gross supply comprised of vacant and physically redevelopable land that deducts acreage for future rights-of-way and critical areas and is intended to reflect lands available for growth in the region's industrial sector.

- Tier A: Vacant
- Tier B: Minor Improvements
- Tier C: Partially Improved
- Wetland or Floodway Portion
- Subarea Boundaries

Net Supply Parcel Sizes

0-5 Acres	537
5-20 Acres	24
20-50 Acres	3
50+ Acres	3

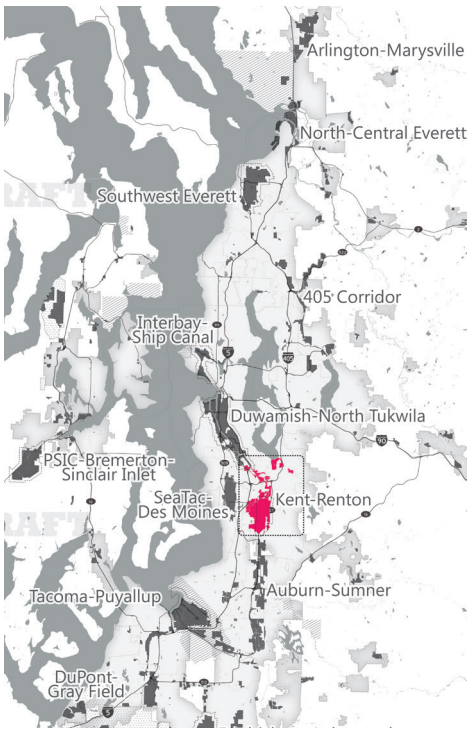
Note: Parcel shapes as mapped do not reflect deductions for future rights-of-way, public uses or market factor. For deductions, see table, below.

Deduction Type	Tier A Vacant	w / Market Factor	Tier B Minor Improvements	w / Market Factor	Tier C Partially Developed	w / Market Factor	Total	w / Market Factor
Selection	237		457		175		869	
Less Floodway	0		0		0		0	
Less Wetland	0		0		0		0	
Less Future R.O.W.'s @ 2%	5		9		4		17	
Less Future Public Use @ 2%	5		9		4		17	
Market Factor @ 10%		23		44		17		83
Total Less Future Deductions	**228**	**205**	**439**	**395**	**168**	**151**	**835** ac.	**761** ac.

Source: King, Snohomish, Pierce, Kitsap County Assessor, 2013; CAI, 2014
Note: Totals may not sum due to rounding.

Industrial Subarea Profile: KENT-RENTON

Key Map



Overview

Located within the heart of the Puget Sound region, the Kent-Renton Subarea is comparatively larger than most of the other industrial subareas with newer building stock and lower FARs. Industrial activity in this subarea is driven by warehousing, transportation, distribution and logistics and aerospace manufacturing. The majority of the subarea is characterized by large tracts evenly distributed throughout the Green River valley with the exception of areas closer to Renton where smaller parcel sizes dominate. Recently, surplus land previously owned by Boeing in Renton was converted to retail and commercial uses. Other parts of the subarea are facing similar conversion pressures to accommodate the development of supportive amenities such as hospitality, retail and restaurant uses. Prominent infrastructure, assets and anchors include nearby Sea-Tac International Aiport (access would be greatly improved by completing a SR 509 extension to I-5); SR 167—the principal vehicular/freight corridor serving the subarea; ready access to I-405 and I-5 via primary arterials as well as access to Highway 18; Class I railroad mainlines run through the center of the subarea connecting Kent-Renton to the West Coast mainline system and east through Stampede Pass, with spur lines serving the majority of the valley floor. Boeing and PACCAR anchor the northern end with a secondary Boeing center in the heart of the subarea. The Kent MIC also resides here.

Vital Statistics

Subarea Size, in Acres
5,970

Percent of Region's Industrial Land
8%

Industrial / Non-Industrial Employment
49,300 / 14,500

Percent of Region's Industrial Employment
10%

Ownership (by Parcel Area)
9% Public
91% Private

Average Parcel Size
4.2 acres

Specialization
Aerospace, Wholesaling, TDL

Industries & Employment

Macro Grouping	Industry Grouping	Employment	Percentage of Subarea	Percentage of All Subareas
Construction		**3,500**	**7%**	**11%**
	Builders & Contractors	3,100	6%	
	Heavy & Civil Construction	400	1%	
Manufacturing		**24,700**	**50%**	**15%**
	Aerospace Manufacturing	11,900	24%	
	Electronics & Components	1,300	3%	
	Food & Bev Processing	2,500	5%	
	Machinery & Transport. Equip.	1,700	3%	
	Metals & Fabrication	2,300	5%	
	Printing & Publishing	1,400	3%	
	Refining, Chemicals & Plastics	1,000	2%	
	Textiles, Apparel & Leather	400	1%	
	Wood & Paper Products	1,100	2%	
	Other Manufacturing	1,100	2%	
Transportation Distr. & Logistics		**5,500**	**11%**	**18%**
	Transp., Distr., Logistics	5,500	11%	
Warehousing & Wholesale		**12,800**	**26%**	**25%**
	Warehousing & Storage	800	2%	
	Wholesaling	12,000	24%	
Other Industrial		**2,800**	**6%**	**12%**
	Building & Grounds Serv.	500	1%	
	Industrial Services	600	1%	
	Telecom, Broadcasting & Video Prod.	400	1%	
	Utilities	200	0%	
	Waste Mgmt. & Remediation	300	1%	
	Other Industrial	700	1%	
All Industrial		**49,300**		
Non-industrial		12,800		
Public Sector		1,700		
Total Employment		**63,800**		

Source: PSRC, Washington State Employment Security Department (ESD), CAI, 2012
NOTE: Total employment represents covered employment only; numbers may not sum due to rounding; percentage of subarea represents percentage of all industrial jobs in the subarea; percentage of all subareas represents percentage of macro grouping total across all subareas; employment figures for individual groupings may be suppressed (-) due to confidentiality requirements.

Industrial Subarea Profile: KENT-RENTON

Land Use

Top Ten Assessor's Land Use Codes

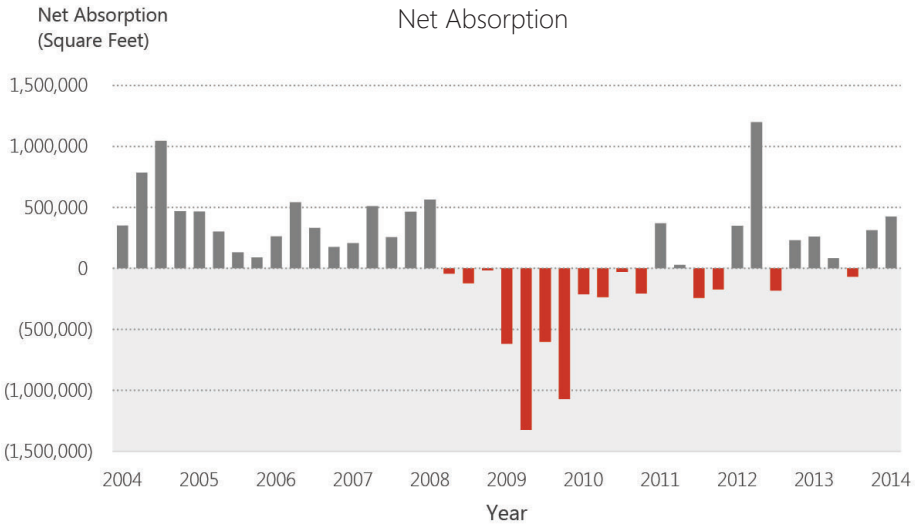
Rank	Category	Acreage
1	Warehouse	2,468
2	Vacant (Industrial)	733
3	Industrial (Gen Purpose)	478
4	Right of Way/Utility, Road	281
5	Industrial (Heavy)	273
6	Office Building	239
7	Vacant (Commercial)	216
8	Industrial Park	202
9	Utility, Public	157
10	Air Terminals & Hangars	153

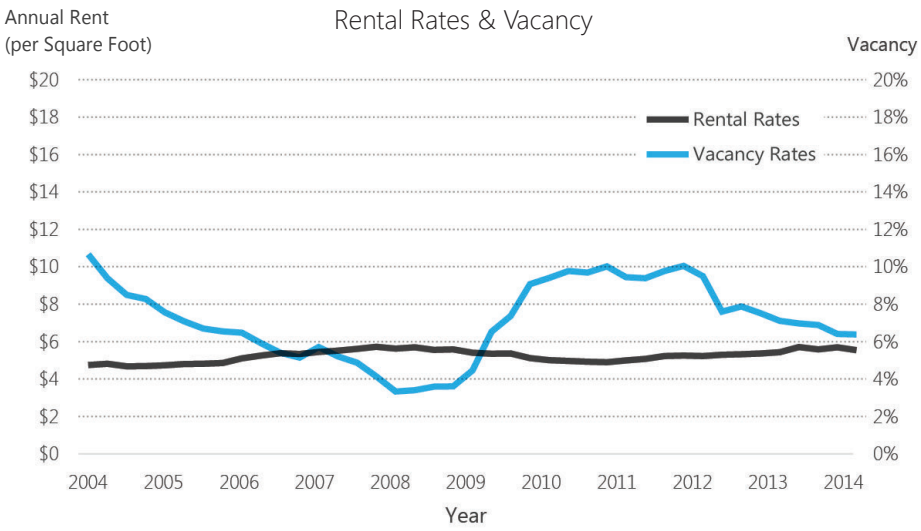
Source: King County Assessor; CAI
Note: Assessor's land use codes may not accurately reflect current parcel land use.

Above: Renton Boeing Plant.

Below: Distribution Center Complex, Kent.

Market Trends





Facilities

Bldg Size (sq ft)	# of Parcels
0-5k	628
5k-200k	695
200k - 1m	65
1m+	2

Bldg Age	# of Parcels
1900-1950	12
1950-1975	3
1975-2000	2
2000+	0

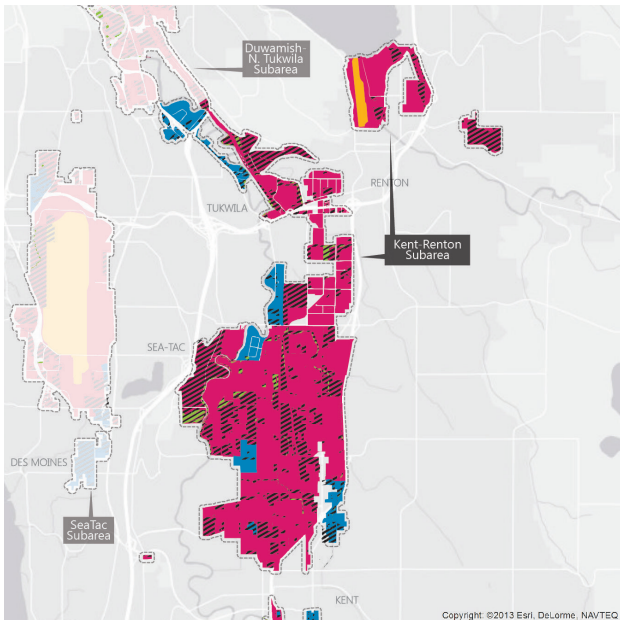
Floor Area Ratio	# of Parcels
.0-.1	638
.1-.25	151
.25-.5	454
.5-.75	123
.75+	24

Source: King, Snohomish, Pierce, Kitsap County Assessor, 2013; CAI, 2014
Note: Limited data may exist on building age.

Source: CoStar; CAI, 2014

Industrial Subarea Profile: KENT-RENTON

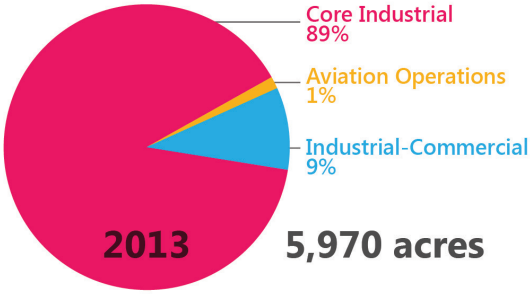
Gross Industrial Land Supply By Segment



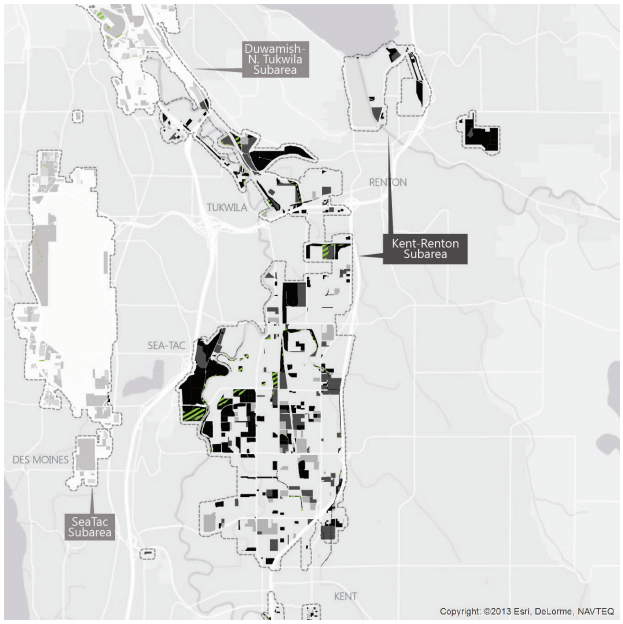
Gross industrial land supply are lands either currently zoned industrial, or designated in comprehensive plans for future industrial land use.

- Core Industrial Land
- Industrial-Commercial Land
- Aviation Operation Areas
- Military Industrial Land
- Net Supply *(See Below)*

Note: Adjacent Subareas are masked to highlight the featured Subarea.



Net Industrial Land Supply By Tier



Net industrial land supply is a subset of gross supply comprised of vacant and physically redevelopable land that deducts acreage for future rights-of-way and critical areas and is intended to reflect lands available for growth in the region's industrial sector.

- Tier A: Vacant
- Tier B: Minor Improvements
- Tier C: Partially Improved
- Wetland or Floodway Portion
- Subarea Boundaries

Net Supply Parcel Sizes

0-5 Acres	439
5-20 Acres	92
20-50 Acres	12
50+ Acres	1

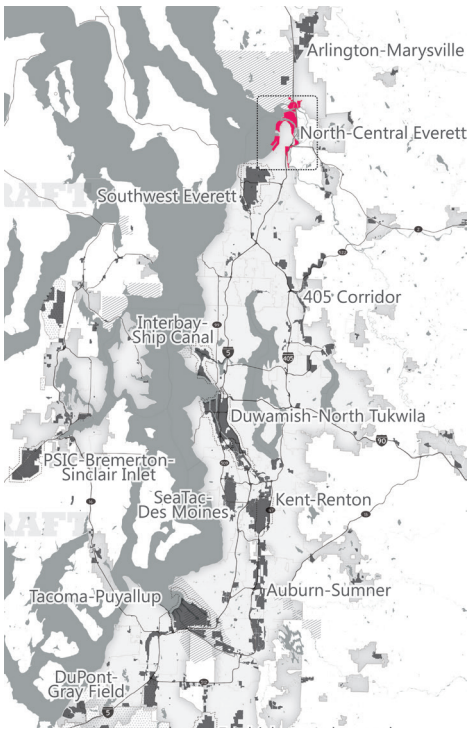
Note: Parcel shapes as mapped do not reflect deductions for future rights-of-way, public uses or market factor. For deductions, see table, below.

Deduction Type	Tier A Vacant	w / Market Factor	Tier B Minor Improvements	w / Market Factor	Tier C Partially Developed	w / Market Factor	Total	w / Market Factor
Selection	1,118		492		275		1,885	
Less Floodway	74		20		2		96	
Less Wetland	37		0		0		37	
Less Future R.O.W.'s @ 2%	20		9		5		35	
Less Future Public Use @ 2%	20		9		5		35	
Market Factor @ 10%		97		45		26		168
Total Less Future Deductions	**967**	**870**	**453**	**408**	**262**	**236**	**1,682 ac.**	**1,514 ac.**

Source: King, Snohomish, Pierce, Kitsap County Assessor, 2013; CAI, 2014
Note: Totals may not sum due to rounding.

Industrial Subarea Profile: NORTH-CENTRAL EVERETT

Key Map



Overview

The North-Central Everett industrial subarea includes a mix of industrial activities related to maritime, aerospace, military—and decreasingly, timber. While two industrial anchors here characterize the present and future of the subarea's industry—the Port of Everett and Naval Station Everett—a major historical industrial anchor in the area is transitioning to other uses. In 2012, the Kimberly Clark pulp mill shut down, eliminating 750 jobs. The site has been cleared, but there is ongoing debate as to whether its future should remain industrial. At present, no other pulp/paper mills, and only two lumber mills, remain in the City of Everett.

Prominent infrastructure, assets and anchors include Naval Station Everett, the deepwater Port of Everett, and the Port of Everett marina. Much of the subarea is within one mile of I-5, giving close access to the U.S.–Canada international border crossing. The subarea has excellent freight rail access to the I-5 rail corridor and the northern tier freight rail network via Stevens Pass.

Vital Statistics

Subarea Size, in Acres
2,507

Percent of Region's Industrial Land
3%

Industrial / Non-Industrial Employment
3,000 / 2,200

Percent of Region's Industrial Employment
1%

Ownership (by Parcel Area)
41% Public
59% Private

Average Parcel Size
4.1 acres

Specialization
Manufacturing, Construction

Industries & Employment

Macro Grouping	Industry Grouping	Employment	Percentage of Subarea	Percentage of All Subareas
Construction		**500**	**17%**	**2%**
	Builders & Contractors	-	-	
	Heavy & Civil Construction	-	-	
Manufacturing		**1,700**	**55%**	**1%**
	Aerospace Manufacturing	-	-	
	Electronics & Components	-	-	
	Food & Bev Processing	-	-	
	Machinery & Transport. Equip.	-	-	
	Metals & Fabrication	-	-	
	Printing & Publishing	-	-	
	Refining, Chemicals & Plastics	-	-	
	Textiles, Apparel & Leather	-	-	
	Wood & Paper Products	-	-	
	Other Manufacturing	-	-	
Transportation Distr. & Logistics		**400**	**12%**	**1%**
	Transp., Distr., Logistics	-	-	
Warehousing & Wholesale		**400**	**12%**	**1%**
	Warehousing & Storage	-	-	
	Wholesaling	-	-	
Other Industrial		**100**	**4%**	**0%**
	Building & Grounds Serv.	-	-	
	Industrial Services	-	-	
	Telecom, Broadcasting & Video Prod.	-	-	
	Utilities	-	-	
	Waste Mgmt. & Remediation	-	-	
	Other Industrial	-	-	

All Industrial	**3,000**
Non-industrial	1,000
Public Sector	1,200
Total Employment	**5,100**

Source: PSRC, Washington State Employment Security Department (ESD), CAI, 2012
NOTE: Total employment represents covered employment only; numbers may not sum due to rounding; percentage of subarea represents percentage of all industrial jobs in the subarea; percentage of all subareas represents percentage of macro grouping total across all subareas; employment figures for individual groupings may be suppressed (-) due to confidentiality requirements.

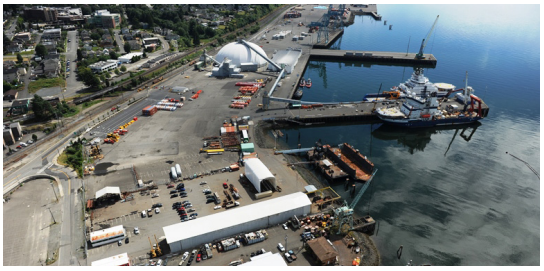
Industrial Subarea Profile: NORTH-CENTRAL EVERETT

Land Use

Top Ten Assessor's Land Use Codes

Rank	Category	Acreage
1	Undeveloped (Vacant) Land	515
2	Other Water Areas	464
3	Sawmills & Planing Mills	193
4	Military Bases & Reservations	166
5	Marine Terminals	157
6	Pulp	149
7	Logging Camps & Contractors	133
8	Marinas	124
9	Sewage Disposal	104
10	Other Agricuture & Related	92

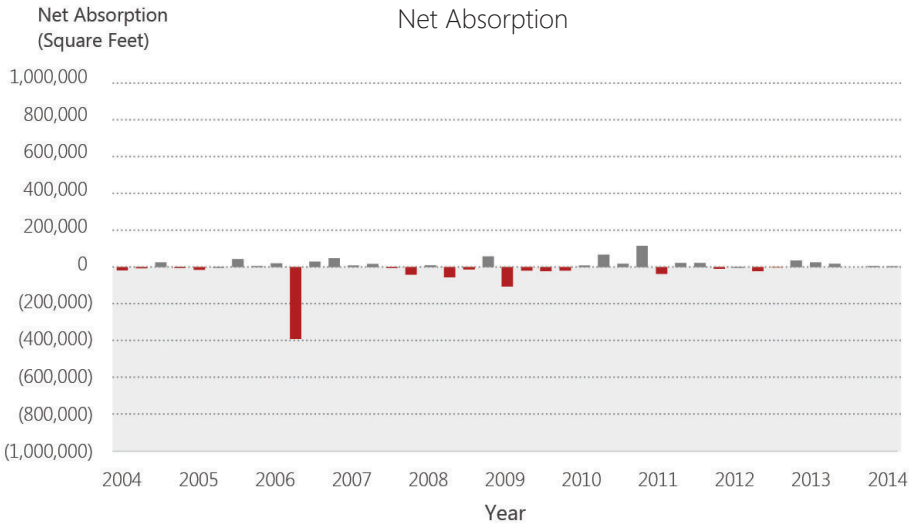
Source: Snohomish County Assessor; CAI
Note: Assessor's land use codes may not accurately reflect current parcel land use.
Note: Designated Forest or Agricultural Land under the State of Washington's Conservation Futures Program (84.34 RCW), while still zoned or designated industrial, has had future development rights purchased.

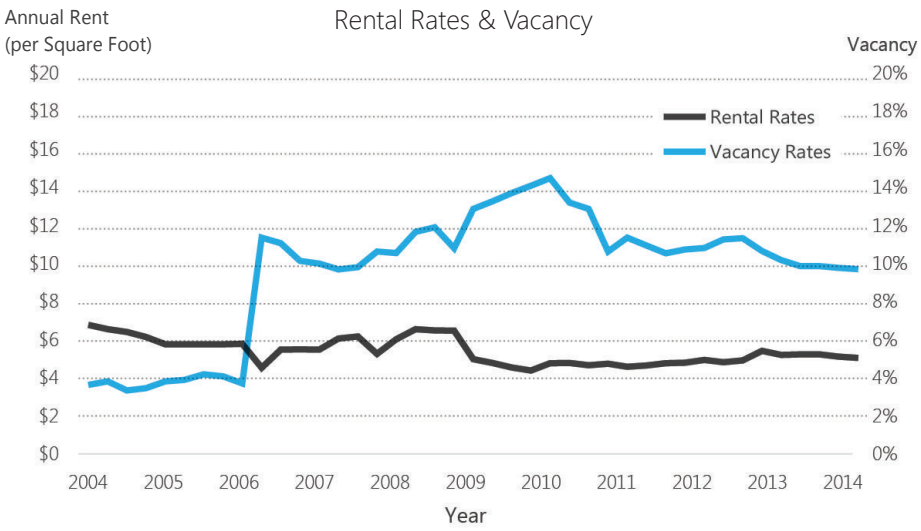


Above: Everett's Vigor Industrial.

Below: The USS Nimitz arrives at its new homeport of Naval Station Everett.

Market Trends





Facilities

Bldg Size (sq ft)	# of Parcels
0-5k	162
5k-200k	161
200k - 1m	2
1m+	0

Bldg Age	# of Parcels
1900-1950	125
1950-1975	68
1975-2000	107
2000+	25

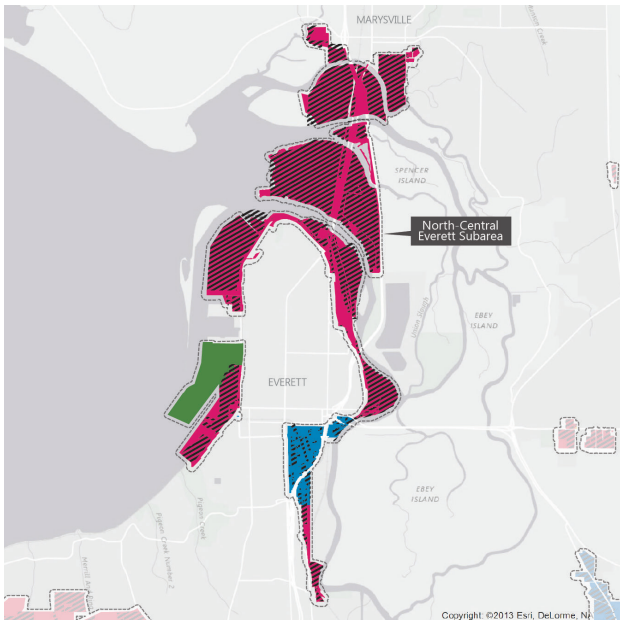
Floor Area Ratio	# of Parcels
.0-.1	122
.1-.25	39
.25-.5	57
.5-.75	41
.75+	66

Source: King, Snohomish, Pierce, Kitsap County Assessor, 2013; CAI, 2014
Note: Limited data may exist on building age.

Source: CoStar; CAI, 2014

Industrial Subarea Profile: NORTH-CENTRAL EVERETT

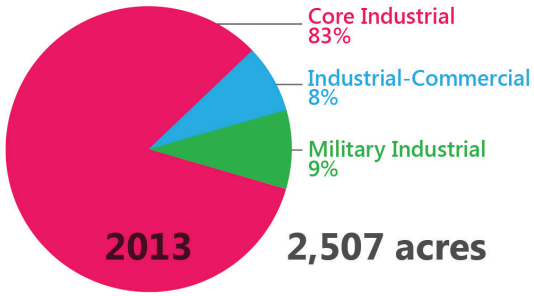
Gross Industrial Land Supply By Segment



Gross industrial land supply are lands either currently zoned industrial, or designated in comprehensive plans for future industrial land use.

- Core Industrial Land
- Industrial-Commercial Land
- Aviation Operation Areas
- Military Industrial Land
- Net Supply *(See Below)*

Note: Adjacent Subareas are masked to highlight the featured Subarea.



Net Industrial Land Supply By Tier

Net industrial land supply is a subset of gross supply comprised of vacant and physically redevelopable land that deducts acreage for future rights-of-way and critical areas and is intended to reflect lands available for growth in the region's industrial sector.

- Tier A: Vacant
- Tier B: Minor Improvements
- Tier C: Partially Improved
- Wetland or Floodway Portion
- Subarea Boundaries

Net Supply Parcel Sizes

0-5 Acres	373
5-20 Acres	69
20-50 Acres	31
50+ Acres	5

Note: Parcel shapes as mapped do not reflect deductions for future rights-of-way, public uses or market factor. For deductions, see table, below.

Deduction Type	Tier A Vacant	w / Market Factor	Tier B Minor Improvements	w / Market Factor	Tier C Partially Developed	w / Market Factor	Total	w / Market Factor
Selection	1,503		791		74		2,368	
Less Floodway	77		46		0		123	
Less Wetland	720		211		8		939	
Less Future R.O.W.'s @ 2%	14		11		1		26	
Less Future Public Use @ 2%	14		11		1		26	
Market Factor @ 10%		68		51		6		125
Total Less Future Deductions	**678**	**610**	**513**	**461**	**63**	**57**	**1,254 ac.**	**1,128 ac.**

Source: King, Snohomish, Pierce, Kitsap County Assessor, 2013; CAI, 2014
Note: Totals may not sum due to rounding.

Industrial Subarea Profile: PSIC-BREMERTON-SINCLAIR INLET

Key Map

Vital Statistics

Subarea Size, in Acres
5,526

Percent of Region's Industrial Land
8%

Industrial / Non-Industrial Employment
12,600 / 3,100

Percent of Region's Industrial Employment
3%

Ownership (by Parcel Area)
49% Public
51% Private

Average Parcel Size
6.7 acres

Specialization
Manufacturing

Overview

PSIC-Bremerton-Sinclair Inlet is one of the larger industrial subareas in the region by area. While it makes up 8% of the region's industrial land, it contains only 3% of the region's industrial employment. This employment is dominated by private and public sector Puget Sound Naval Shipyard activities and related manufacturing employment, though there is significant non-industrial employment also present in the subarea. The development pattern is mixed–dense, urban industrial development fabric in Bremerton, large, vacant tracts in PSIC-Bremerton. Half the land, by acreage, is owned by the Port of Bremerton. 47% of the subarea (largely within the PSIC-Bremerton MIC) is vacant Tier A net supply. A major issue facing this subarea is a need for major infrastructure investment. The area has an award-winning eco-industrial master plan in place to guide future development, and a Planned Action Ordinance that streamlines development review. PSIC-Bremerton is also a designated regional MIC.

Prominent infrastructure, assets and anchors include Puget Sound Naval Shipyard and the Bremerton Ferry Terminal adjacent to the Shipyard, and Bremerton National Airport. Truck access to I-5 is 30 miles on SR 16, or via ferry to downtown Seattle. Area freight rail operators include the Puget Sound & Pacific Railroad (PSAP), with connections to BNSF and UP.

Industries & Employment

Macro Grouping	Industry Grouping	Employment	Percentage of Subarea	Percentage of All Subareas
Construction		**400**	**3%**	**1%**
	Builders & Contractors	-	-	
	Heavy & Civil Construction	-	-	
Manufacturing		**11,400**	**90%**	**7%**
	Aerospace Manufacturing	-	-	
	Electronics & Components	-	-	
	Food & Bev Processing	-	-	
	Machinery & Transport. Equip.	-	-	
	Metals & Fabrication	-	-	
	Printing & Publishing	-	-	
	Refining, Chemicals & Plastics	-	-	
	Textiles, Apparel & Leather	-	-	
	Wood & Paper Products	-	-	
	Other Manufacturing	-	-	
Transportation Distr. & Logistics		**200**	**2%**	**1%**
	Transp., Distr., Logistics	-	-	
Warehousing & Wholesale		**300**	**2%**	**1%**
	Warehousing & Storage	-	-	
	Wholesaling	-	-	
Other Industrial		**200**	**2%**	**1%**
	Building & Grounds Serv.	-	-	
	Industrial Services	-	-	
	Telecom, Broadcasting & Video Prod.	-	-	
	Utilities	-	-	
	Waste Mgmt. & Remediation	-	-	
	Other Industrial	-	-	
All Industrial		**12,600**		
Non-industrial		2,000		
Public Sector		1,100		
Total Employment		**15,700**		

Source: PSRC, Washington State Employment Security Department (ESD), CAI, 2012
NOTE: Total employment represents covered employment only; numbers may not sum due to rounding; percentage of subarea represents percentage of all industrial jobs in the subarea; percentage of all subareas represents percentage of macro grouping total across all subareas; employment figures for individual groupings may be suppressed (-) due to confidentiality requirements.

Industrial Subarea Profile: PSIC-BREMERTON-SINCLAIR INLET

Land Use

Top Ten Assessor's Land Use Codes

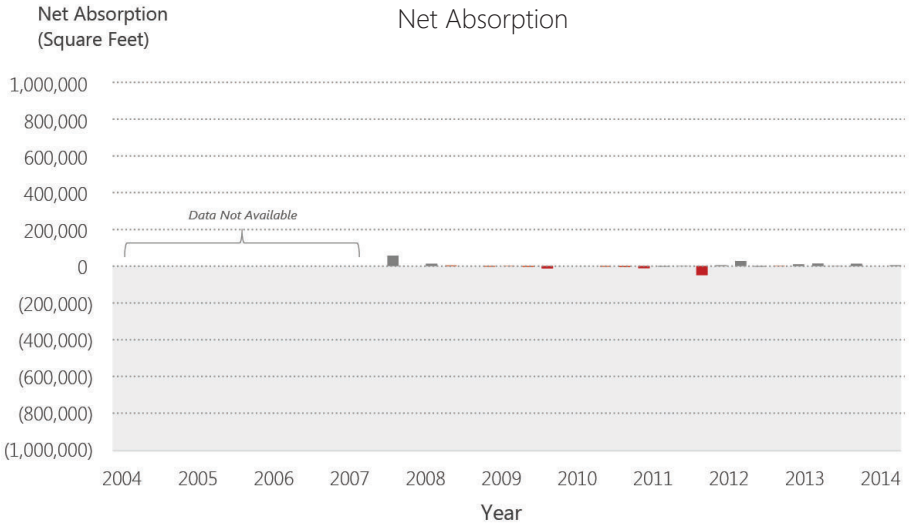
Rank	Category	Acreage
1	T-Hangar	1,133
2	Single Family	134
3	Light Warehouse	97
4	Shell, Office Building	81
5	Small Shop	53
6	Storage Warehouse	48
7	Office	36
8	Service Garage	25
9	Auto Showroom	25
10	Mini Warehouse	21

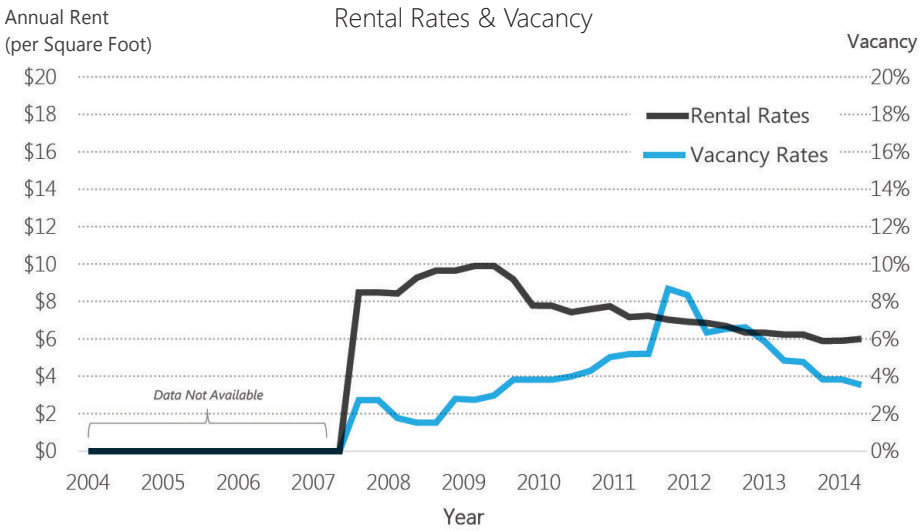
Source: Kitsap County Assessor; CAI
Note: Assessor's land use codes may not accurately reflect current parcel land use.

Above: PSIC-Bremerton.

Below: Puget Sound Naval Shipyard on the Bremerton waterfront.

Market Trends





Facilities

Bldg Size (sq ft)	# of Parcels
0-5k	713
5k-200k	113
200k - 1m	0
1m+	0

Bldg Age	# of Parcels
1900-1950	601
1950-1975	64
1975-2000	104
2000+	57

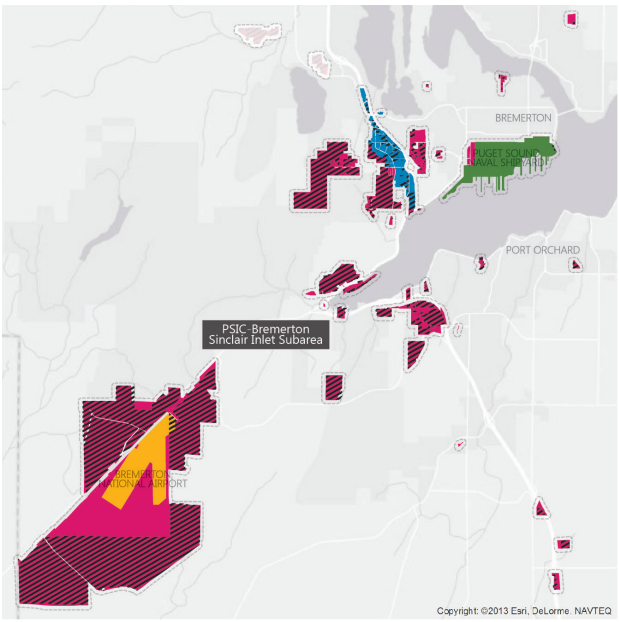
Floor Area Ratio	# of Parcels
.0-.1	574
.1-.25	184
.25-.5	59
.5-.75	7
.75+	2

Source: King, Snohomish, Pierce, Kitsap County Assessor, 2013; CAI, 2014
Note: Limited data may exist on building age.

Source: CoStar; CAI, 2014

Industrial Subarea Profile: PSIC-BREMERTON-SINCLAIR INLET

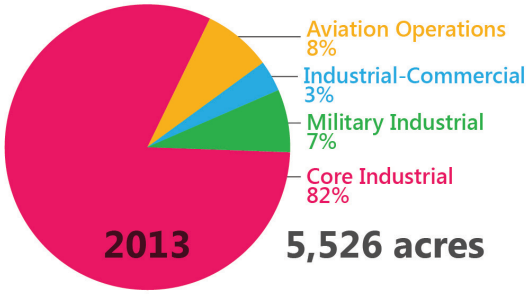
Gross Industrial Land Supply By Segment



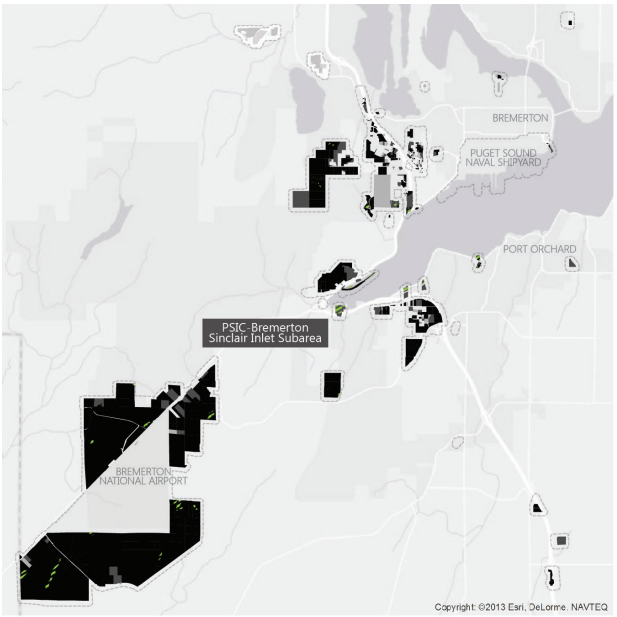
Gross industrial land supply are lands either currently zoned industrial, or designated in comprehensive plans for future industrial land use.

- Core Industrial Land
- Industrial-Commercial Land
- Aviation Operation Areas
- Military Industrial Land
- Net Supply *(See Below)*

Note: Adjacent Subareas are masked to highlight the featured Subarea.



Net Industrial Land Supply By Tier



Net industrial land supply is a subset of gross supply comprised of vacant and physically redevelopable land that deducts acreage for future rights-of-way and critical areas and is intended to reflect lands available for growth in the region's industrial sector.

- Tier A: Vacant
- Tier B: Minor Improvements
- Tier C: Partially Improved
- Wetland or Floodway Portion
- Subarea Boundaries

Net Supply Parcel Sizes

0-5 Acres	422
5-20 Acres	115
20-50 Acres	25
50+ Acres	7

Note: Parcel shapes as mapped do not reflect deductions for future rights-of-way, public uses or market factor. For deductions, see table, below.

Deduction Type	Tier A Vacant	w / Market Factor	Tier B Minor Improvements	w / Market Factor	Tier C Partially Developed	w / Market Factor	Total	w / Market Factor
Selection	3,030		291		121		3,442	
Less Floodway	9		7		0		16	
Less Wetland	41		41		1		83	
Less Future R.O.W.'s @ 2%	149		12		6		167	
Less Future Public Use @ 2%	149		12		6		167	
Market Factor @ 10%		268		22		11		301
Total Less Future Deductions	**2,682**	**2,414**	**219**	**197**	**108**	**97**	**3,009 ac.**	**2,708 ac.**

Source: King, Snohomish, Pierce, Kitsap County Assessor, 2013; CAI, 2014
Note: Totals may not sum due to rounding.

Industrial Subarea Profile: SEATAC-DES MOINES

Key Map

Overview

SeaTac-Des Moines is one of the smallest subareas in the region, representing only 4% of the region's industrial land and 2% percent of the region's industrial employment. The predominant industrial activities are related to Sea-Tac International Airport with nearly 80% of industries and employment within the subarea associated with transportation, distribution and logistics. FARs on sites in this subarea are low due to the nature of land associated with air traffic and transportation, distribution and logistics activities.

Prominent infrastructure, assets and anchors include Highway 99 running directly through the subarea with easy access and close proximity to I-5 and Highway 518 (connecting to I-405), as well as SR 509 connecting to the Duwamish-North Tukwila subarea. Sea-Tac International Airport, the Pacific Northwest's principal air cargo gateway, accounts for 80% of the subarea lying in public ownership and dominates the subarea as the primary employer. Sea-Tac is the third-largest airport for international cargo on the West Coast (excluding Alaska). Additionally, Sea-Tac Airport's jet fuel pipeline is a major infrastructure asset for the subarea.

Vital Statistics

Subarea Size, in Acres
2,648

Percent of Region's Industrial Land
4%

Industrial / Non-Industrial Employment
7,700 / 5,400

Percent of Region's Industrial Employment
2%

Ownership (by Parcel Area)
80% Public
20% Private

Average Parcel Size
5.7 acres

Specialization
TDL

Industries & Employment

Macro Grouping	Industry Grouping	Employment	Percentage of Subarea	Percentage of All Subareas
Construction		100	2%	0%
	Builders & Contractors	-	-	
	Heavy & Civil Construction	-	-	
Manufacturing		400	6%	0%
	Aerospace Manufacturing	-	-	
	Electronics & Components	-	-	
	Food & Bev Processing	-	-	
	Machinery & Transport. Equip.	-	-	
	Metals & Fabrication	-	-	
	Printing & Publishing	-	-	
	Refining, Chemicals & Plastics	-	-	
	Textiles, Apparel & Leather	-	-	
	Wood & Paper Products	-	-	
	Other Manufacturing	-	-	
Transportation Distr. & Logistics		6,100	79%	21%
	Transp., Distr., Logistics	6,100	79%	
Warehousing & Wholesale		400	5%	1%
	Warehousing & Storage	-	-	
	Wholesaling	-	-	
Other Industrial		600	8%	3%
	Building & Grounds Serv.	-	-	
	Industrial Services	-	-	
	Telecom, Broadcasting & Video Prod.	-	-	
	Utilities	-	-	
	Waste Mgmt. & Remediation	-	-	
	Other Industrial	-	-	

All Industrial	**7,700**
Non-industrial	3,200
Public Sector	2,200
Total Employment	**13,100**

Source: PSRC, Washington State Employment Security Department (ESD), CAI, 2012
NOTE: Total employment represents covered employment only; numbers may not sum due to rounding; percentage of subarea represents percentage of all industrial jobs in the subarea; percentage of all subareas represents percentage of macro grouping total across all subareas; employment figures for individual groupings may be suppressed (-) due to confidentiality requirements.

Industrial Subarea Profile: SEATAC-DES MOINES

Land Use

Top Ten Assessor's Land Use Codes

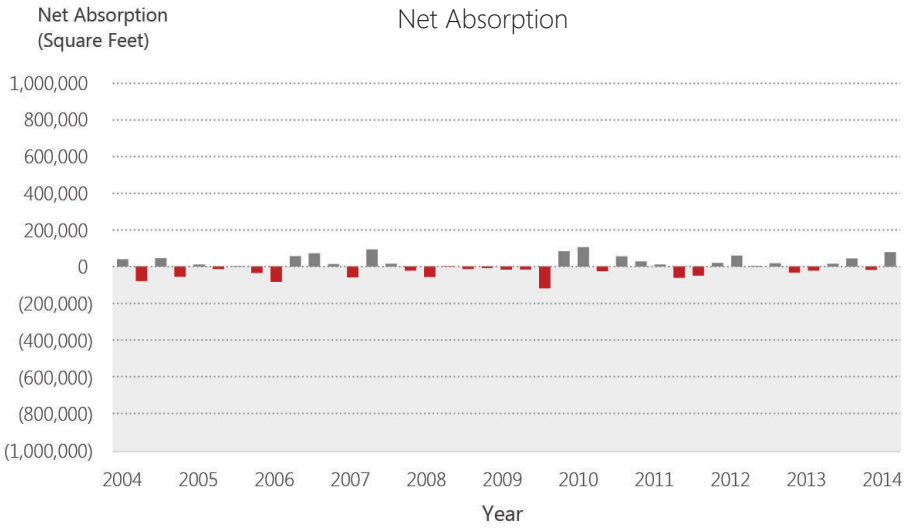
Rank	Category	Acreage
1	Air Terminals & Hangars	1,757
2	Vacant (Commercial)	405
3	Warehouse	127
4	Vacant (Industrial)	70
5	Single Family (Res Use/Zone)	52
6	Office Building	37
7	Parking (Commercial Lot)	25
8	Governmental Service	23
9	Mini Warehouse	16
10	Single Family (C/I Zone)	14

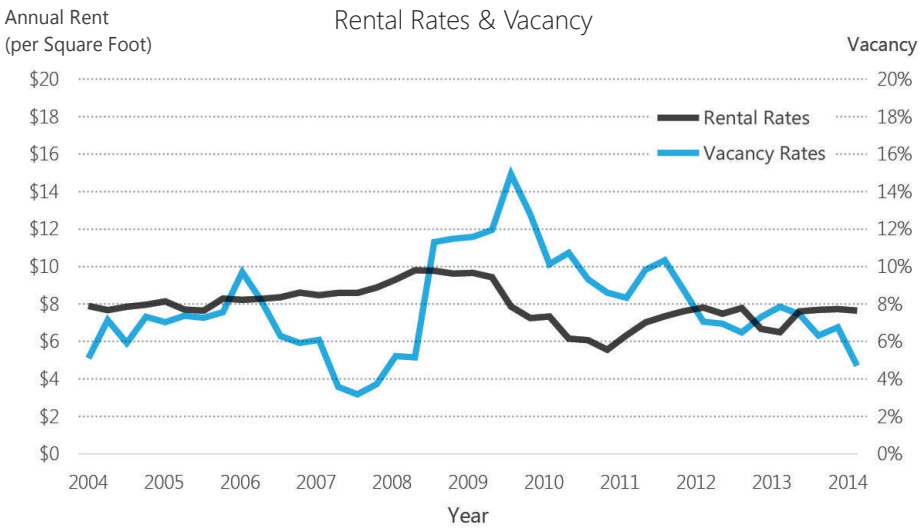
Source: King County Assessor; CAI
Note: Assessor's land use codes may not accurately reflect current parcel land use.

Above: Warehousing and logistics near Sea-Tac Airport.

Below: Sea-Tac International Airport and passenger terminals.

Market Trends





Facilities

Bldg Size (sq ft)	# of Parcels
0-5k	402
5k-200k	60
200k - 1m	2
1m+	1

Bldg Age	# of Parcels
1900-1950	40
1950-1975	71
1975-2000	7
2000+	2

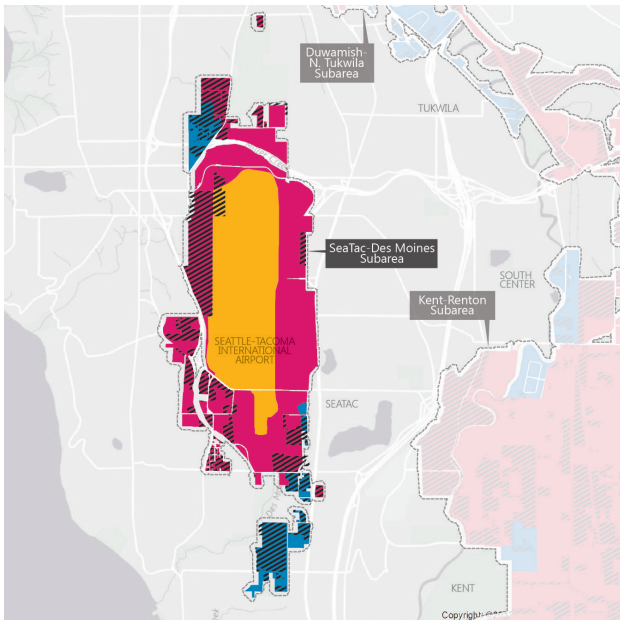
Floor Area Ratio	# of Parcels
.0-.1	326
.1-.25	94
.25-.5	37
.5-.75	7
.75+	1

Source: King, Snohomish, Pierce, Kitsap County Assessor, 2013; CAI, 2014
Note: Limited data may exist on building age.

Source: CoStar; CAI, 2014

Industrial Subarea Profile: SEATAC-DES MOINES

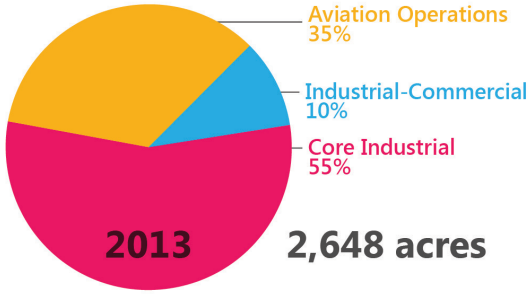
Gross Industrial Land Supply By Segment



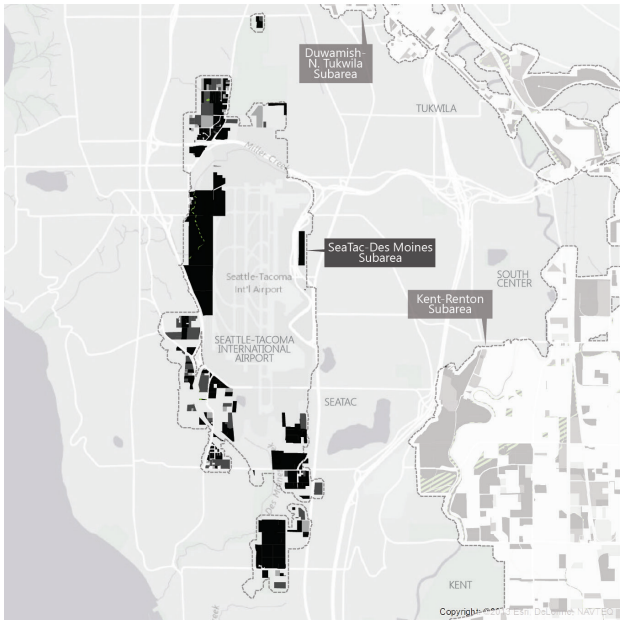
Gross industrial land supply are lands either currently zoned industrial, or designated in comprehensive plans for future industrial land use.

- Core Industrial Land
- Industrial-Commercial Land
- Aviation Operation Areas
- Military Industrial Land
- Net Supply *(See Below)*

Note: Adjacent Subareas are masked to highlight the featured Subarea.



Net Industrial Land Supply By Tier



Net industrial land supply is a subset of gross supply comprised of vacant and physically redevelopable land that deducts acreage for future rights-of-way and critical areas and is intended to reflect lands available for growth in the region's industrial sector.

- Tier A: Vacant
- Tier B: Minor Improvements
- Tier C: Partially Improved
- Wetland or Floodway Portion
- Subarea Boundaries

Net Supply Parcel Sizes

0-5 Acres	297
5-20 Acres	20
20-50 Acres	6
50+ Acres	1

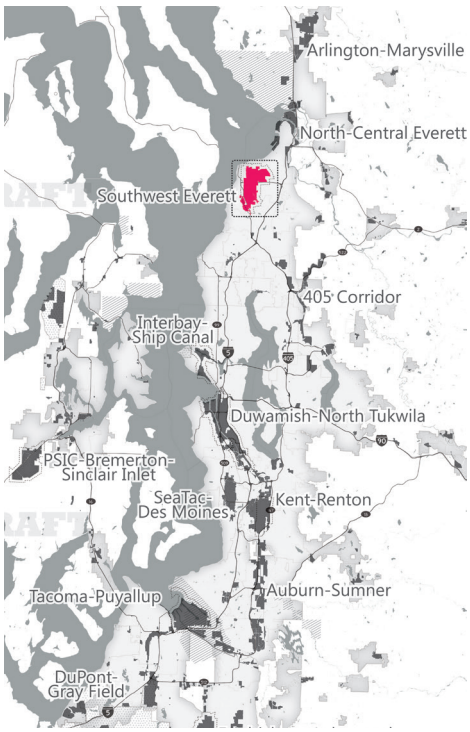
Note: Parcel shapes as mapped do not reflect deductions for future rights-of-way, public uses or market factor. For deductions, see table, below.

Deduction Type	Tier A Vacant	w / Market Factor	Tier B Minor Improvements	w / Market Factor	Tier C Partially Developed	w / Market Factor	Total	w / Market Factor
Selection	520		116		44		680	
Less Floodway	3		0		0		3	
Less Wetland	0		1		0		1	
Less Future R.O.W.'s @ 2%	10		2		1		14	
Less Future Public Use @ 2%	10		2		1		14	
Market Factor @ 10%		50		11		4		65
Total Less Future Deductions	**496**	**446**	**110**	**99**	**42**	**38**	**649 ac.**	**584 ac.**

Source: King, Snohomish, Pierce, Kitsap County Assessor, 2013; CAI, 2014
Note: Totals may not sum due to rounding.

Industrial Subarea Profile: SOUTHWEST EVERETT

Key Map



Overview

Southwest Everett is one of the larger industrial subareas in the region, composing 6% of the region's industrial land, but 10% of its industrial employment. This density of manufacturing employment is due largely to the presence of the Boeing Everett manufacturing facility, as well as other major employers, including the Port of Everett's Mount Baker Terminal. The development pattern is large-scale, with low FARs and many newer, larger facilities, especially distribution centers. There is a significant acreage of vacant (Tier A) net supply. The City of Mukilteo recently acquired 122 acres of the industrial land formerly located in Everett on the west side of Japanese Gulch and aims to develop it for future park and open space use. The City of Everett has also designated the Southwest/Paine Field subarea (in addition to its downtown) as a Planned Action Ordinance, expediting future industrial development proposed for the area. Prominent infrastructure, assets and anchors include Paine Field - recently approved for commercial air service - and the Boeing Everett Airplane Factory, the largest building in the world by volume. Additional assets include the Mount Baker Terminal for oversized aircraft parts, ready truck access to Highway 99 and I-405 via SR 525 and to I-5 via SR 526, and major freight rail connectivity to the I-5 rail corridor, the northern tier rail network via Stevens Pass, and into the Boeing plant and the Port of Everett seaport. The subarea is also home to the Paine Field/Boeing Everett MIC.

Vital Statistics

Subarea Size, in Acres
4,449

Percent of Region's Industrial Land
6%

Industrial / Non-Industrial Employment
50,800 / 5,000

Percent of Region's Industrial Employment
10%

Ownership (by Parcel Area)
38% Public
62% Private

Average Parcel Size
5.1 acres

Specialization
Aerospace

Industries & Employment

Macro Grouping	Industry Grouping	Employment	Percentage of Subarea	Percentage of All Subareas
Construction		**1,700**	**3%**	**6%**
	Builders & Contractors	1,300	3%	
	Heavy & Civil Construction	400	1%	
Manufacturing		**45,000**	**89%**	**27%**
	Aerospace Manufacturing	38,000	76%	
	Electronics & Components	3,300	6%	
	Food & Bev Processing	300	1%	
	Machinery & Transport. Equip.	600	1%	
	Metals & Fabrication	900	2%	
	Printing & Publishing	100	0%	
	Refining, Chemicals & Plastics	300	1%	
	Textiles, Apparel & Leather	-	-	
	Wood & Paper Products	100	0%	
	Other Manufacturing	700	1%	
Transportation Distr. & Logistics		**800**	**1%**	**3%**
	Transp., Distr., Logistics	800	1%	
Warehousing & Wholesale		**2,100**	**4%**	**4%**
	Warehousing & Storage	200	0%	
	Wholesaling	1,900	4%	
Other Industrial		**1,200**	**2%**	**5%**
	Building & Grounds Serv.	100	0%	
	Industrial Services	300	1%	
	Telecom, Broadcasting & Video Prod.	300	1%	
	Utilities	200	0%	
	Waste Mgmt. & Remediation	200	0%	
	Other Industrial	100	0%	
All Industrial		**50,800**		
Non-industrial		3,200		
Public Sector		1,800		
Total Employment		**55,800**		

Source: PSRC, Washington State Employment Security Department (ESD), CAI, 2012
NOTE: Total employment represents covered employment only; numbers may not sum due to rounding; percentage of subarea represents percentage of all industrial jobs in the subarea; percentage of all subareas represents percentage of macro grouping total across all subareas; employment figures for individual groupings may be suppressed (-) due to confidentiality requirements.

Industrial Subarea Profile: SOUTHWEST EVERETT

Land Use

Top Ten Assessor's Land Use Codes

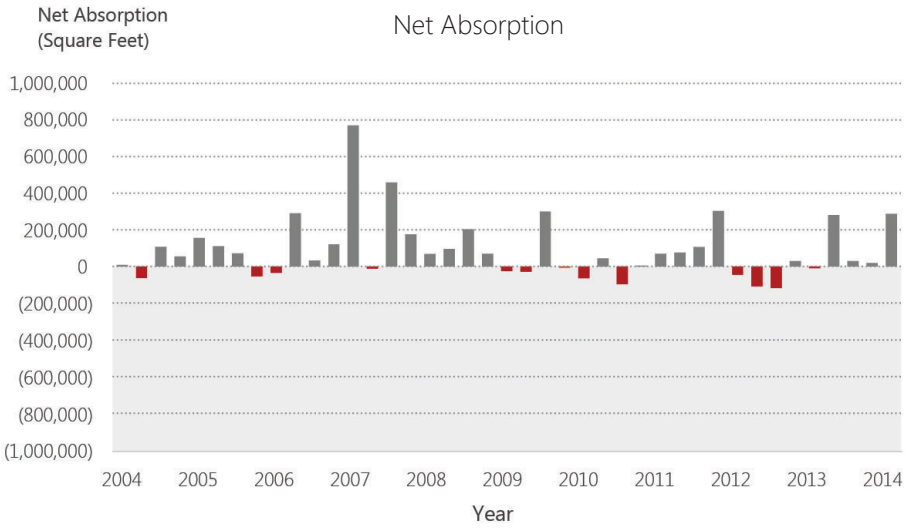
Rank	Category	Acreage
1	Transportation Equipment	1,145
2	Airports & Flying Fields	928
3	Undeveloped (Vacant) Land	704
4	Mining & Quarrying	200
5	Other Miscellaneous Mfg	190
6	Warehousing & Storage Srvcs	108
7	Electrical Machinery, Equip	97
8	Nursery, Primary, Sec School	70
9	Other Business Services	57
10	Electric Utility	53

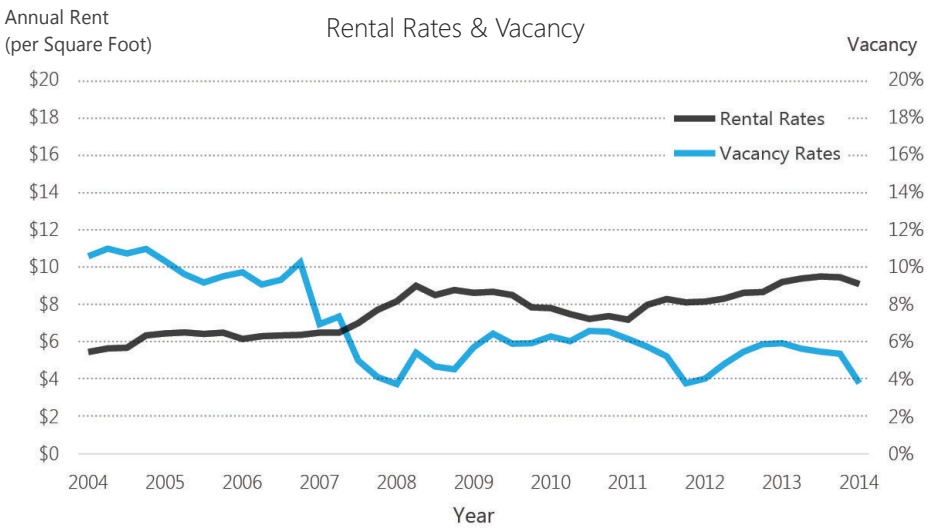
Source: Snohomish County Assessor; CAI
Note: Assessor's land use codes may not accurately reflect current parcel land use.

Above: Everett's Boeing Factory is the world's largest building by volume.

Below: Southwest Everett's Paine Field and surrounding industrial area.

Market Trends





Facilities

Bldg Size (sq ft)	# of Parcels
0-5k	189
5k-200k	293
200k - 1m	15
1m+	0

Bldg Age	# of Parcels
1900-1950	50
1950-1975	93
1975-2000	226
2000+	128

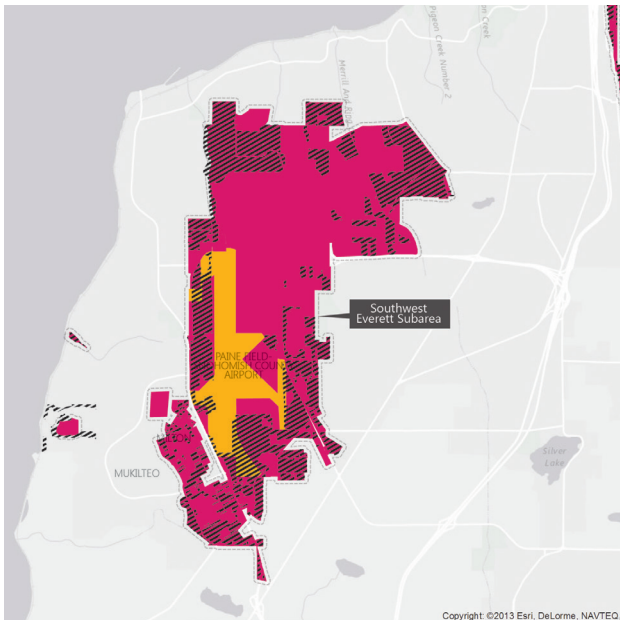
Floor Area Ratio	# of Parcels
.0-.1	165
.1-.25	113
.25-.5	157
.5-.75	19
.75+	43

Source: King, Snohomish, Pierce, Kitsap County Assessor, 2013; CAI, 2014
Note: Limited data may exist on building age.

Source: CoStar; CAI, 2014

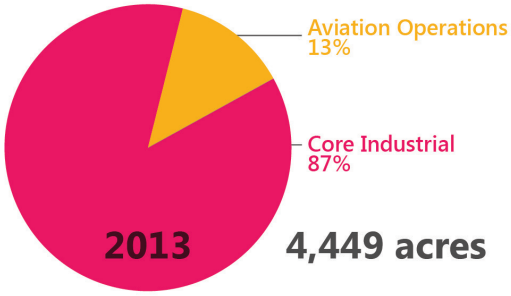
Industrial Subarea Profile: SOUTHWEST EVERETT

Gross Industrial Land Supply By Segment

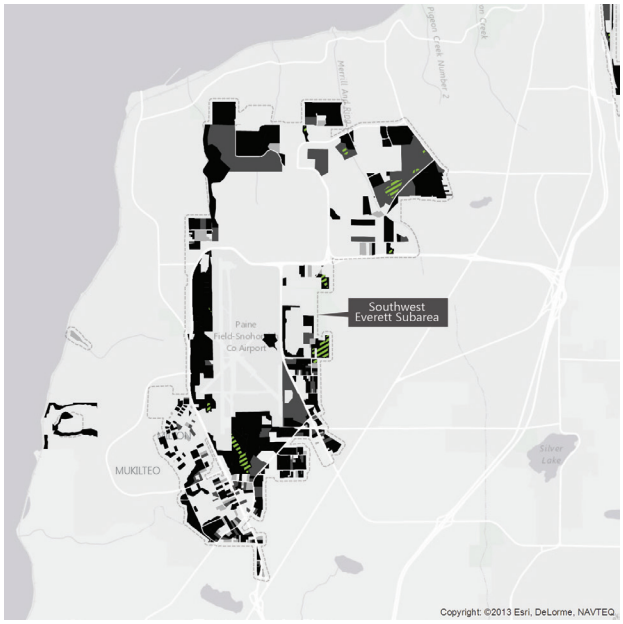


Gross industrial land supply are lands either currently zoned industrial, or designated in comprehensive plans for future industrial land use.

- Core Industrial Land
- Industrial-Commercial Land
- Aviation Operation Areas
- Military Industrial Land
- Net Supply *(See Below)*



Net Industrial Land Supply By Tier



Net industrial land supply is a subset of gross supply comprised of vacant and physically redevelopable land that deducts acreage for future rights-of-way and critical areas and is intended to reflect lands available for growth in the region's industrial sector.

- Tier A: Vacant
- Tier B: Minor Improvements
- Tier C: Partially Improved
- Wetland or Floodway Portion
- Subarea Boundaries

Net Supply Parcel Sizes

0-5 Acres	502
5-20 Acres	40
20-50 Acres	11
50+ Acres	3

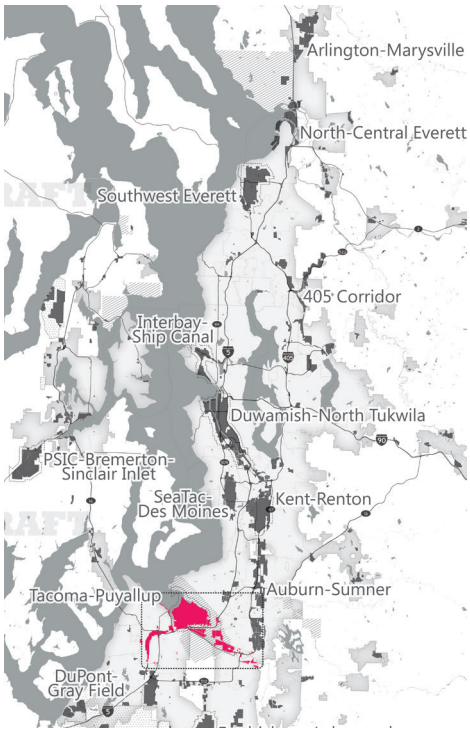
Note: Parcel shapes as mapped do not reflect deductions for future rights-of-way, public uses or market factor. For deductions, see table, below.

Deduction Type	Tier A Vacant	w / Market Factor	Tier B Minor Improvements	w / Market Factor	Tier C Partially Developed	w / Market Factor	Total	w / Market Factor
Selection	1,154		468		83		1,705	
Less Floodway	0		0		0		0	
Less Wetland	57		17		1		75	
Less Future R.O.W.'s @ 2%	22		9		2		33	
Less Future Public Use @ 2%	22		9		2		33	
Market Factor @ 10%		105		43		8		156
Total Less Future Deductions	**1,053**	**948**	**433**	**390**	**79**	**71**	**1,565** ac.	**1,408** ac.

Source: King, Snohomish, Pierce, Kitsap County Assessor, 2013; CAI, 2014
Note: Totals may not sum due to rounding.

Industrial Subarea Profile: TACOMA-PUYALLUP

Key Map



Overview

The Tacoma-Puyallup subarea represents 11% of the region's industrial land and is home to a diverse array of industrial and non-industrial employers, though industrial jobs outnumber non-industrial jobs more than two-to-one. Manufacturing and warehousing and wholesale are the two largest employment sectors, with each accounting for about one-third of industrial employment. The subarea is characterized by a higher than average degree of public ownership due to large holdings by the Port of Tacoma. The industrial market has been consistent in this subarea, with steady vacancy rates and an average lease rate around $5 per square foot. The public entities located in the subarea play a role in stabilizing the market by acting as industrial anchors and inviting related industries to locate nearby.

The Port of Tacoma is the dominant presence and industrial anchor for the Tacoma-Puyallup subarea. Other prominent infrastructure includes the Port of Tacoma MIC, I-5 as the major transportation corridor serving the subarea and linking it to Sea-Tac International Airport to the north. In addition, four on- or near-dock intermodal yards link the Port of Tacoma to the regional freight rail and highway networks, including SR 167 and SR 509.

Vital Statistics

Subarea Size, in Acres
7,594

Percent of Region's Industrial Land
11%

Industrial / Non-Industrial Employment
21,300 / 8,900

Percent of Region's Industrial Employment
4%

Ownership (by Parcel Area)
45% Public
55% Private

Average Parcel Size
2.8 acres

Specialization
Wholesaling, Builders & Contractors, TDL

Industries & Employment

Macro Grouping	Industry Grouping	Employment	Percentage of Subarea	Percentage of All Subareas
Construction		**2,600**	**12%**	**8%**
	Builders & Contractors	2,200	11%	
	Heavy & Civil Construction	400	2%	
Manufacturing		**7,100**	**33%**	**4%**
	Aerospace Manufacturing	400	2%	
	Electronics & Components	-	-	
	Food & Bev Processing	600	3%	
	Machinery & Transport. Equip.	500	2%	
	Metals & Fabrication	1,100	5%	
	Printing & Publishing	-	-	
	Refining, Chemicals & Plastics	1,500	7%	
	Textiles, Apparel & Leather	100	1%	
	Wood & Paper Products	1,400	6%	
	Other Manufacturing	1,100	5%	
Transportation Distr. & Logistics		**2,000**	**10%**	**7%**
	Transp., Distr., Logistics	2,000	10%	
Warehousing & Wholesale		**6,600**	**31%**	**13%**
	Warehousing & Storage	1,600	7%	
	Wholesaling	5,000	24%	
Other Industrial		**3,000**	**14%**	**12%**
	Building & Grounds Serv.	600	3%	
	Industrial Services	800	4%	
	Telecom, Broadcasting & Video Prod.	1,100	5%	
	Utilities	-	-	
	Waste Mgmt. & Remediation	500	2%	
	Other Industrial	100	0%	
All Industrial		**21,300**		
Non-industrial		5,800		
Public Sector		3,100		
Total Employment		**30,200**		

Source: PSRC, Washington State Employment Security Department (ESD), CAI, 2012
NOTE: Total employment represents covered employment only; numbers may not sum due to rounding; percentage of subarea represents percentage of all industrial jobs in the subarea; percentage of all subareas represents percentage of macro grouping total across all subareas; employment figures for individual groupings may be suppressed (-) due to confidentiality requirements.

Industrial Subarea Profile: TACOMA-PUYALLUP

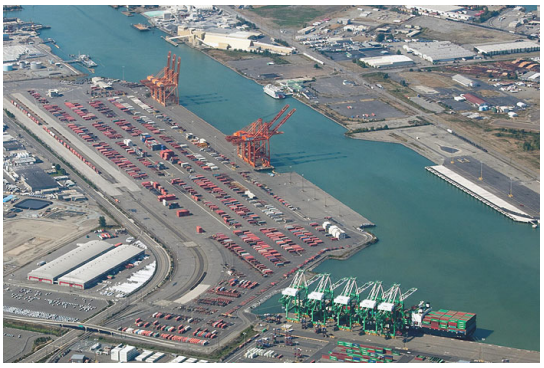
Land Use

Top Ten Assessor's Land Use Codes

Rank	Category	Acreage
1	General Warehousing Storage	1,339
2	Vacant Industrial Land	1,120
3	Other Resource Production	440
4	Lumber & Wood Mfg	391
5	Chemical Mfg	321
6	Other Transportation & Utilities	312
7	Current Use Farm & Agriculture	268
8	Primary Metal Industries	263
9	Marine Craft Transportation	247
10	Wholesale Trade	212

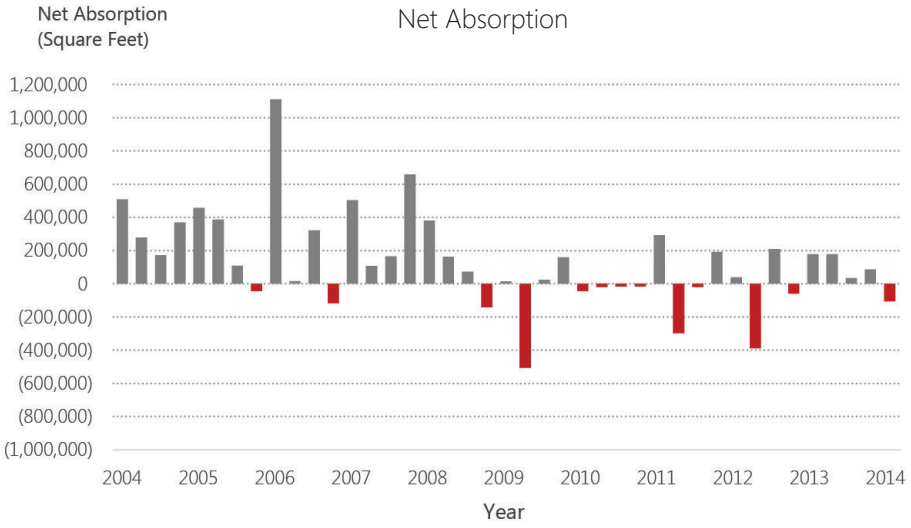
Source: Pierce County Assessor; CAI
Note: Assessor's land use codes may not accurately reflect current parcel land use.
Note: Designated Forest or Agricultural Land under the State of Washington's Conservation Futures Program (84.34 RCW), while still zoned or designated industrial, has had future development rights purchased.

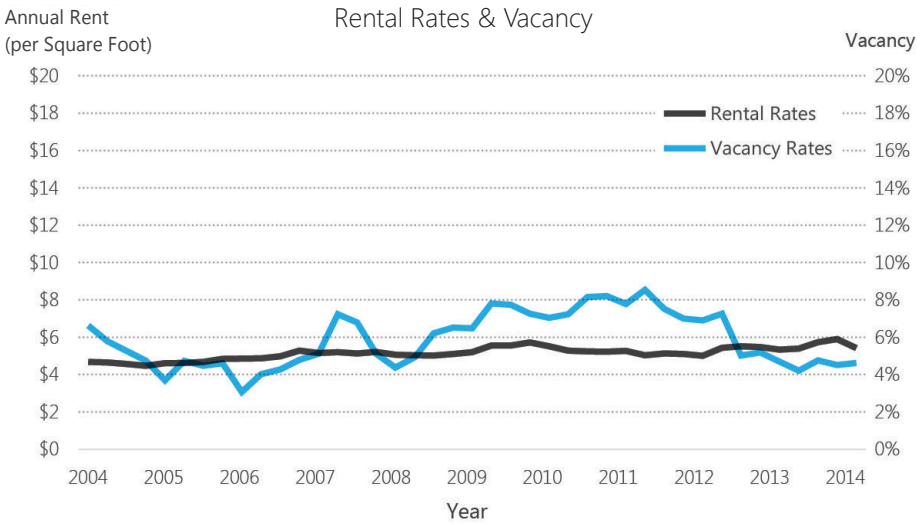
Above: Snoqualmie Building Distribution Center, Fife.



Below: Port of Tacoma marine terminals and industrial area with the Blair Waterway & Turning Basin.

Market Trends





Facilities

Bldg Size (sq ft)	# of Parcels
0-5k	602
5k-200k	798
200k - 1m	38
1m+	0

Bldg Age	# of Parcels
1900-1950	337
1950-1975	397
1975-2000	511
2000+	193

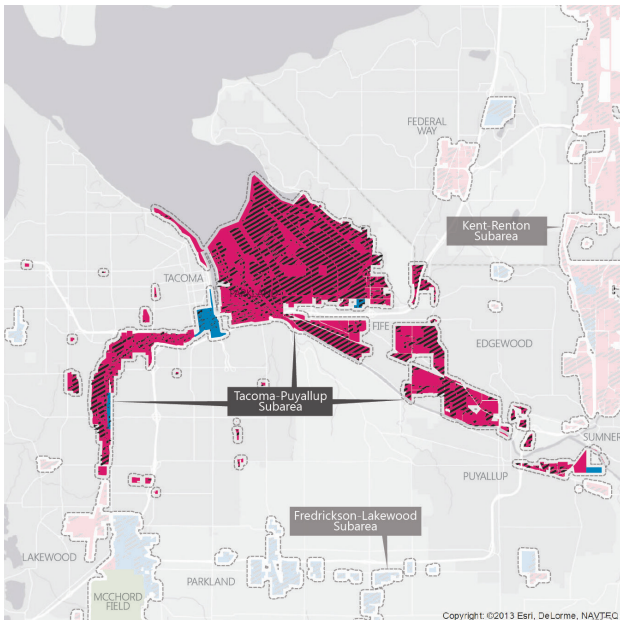
Floor Area Ratio	# of Parcels
.0-.1	1,716
.1-.25	237
.25-.5	393
.5-.75	148
.75+	200

Source: King, Snohomish, Pierce, Kitsap County Assessor, 2013; CAI, 2014
Note: Limited data may exist on building age.

Source: CoStar; CAI, 2014

Industrial Subarea Profile: TACOMA-PUYALLUP

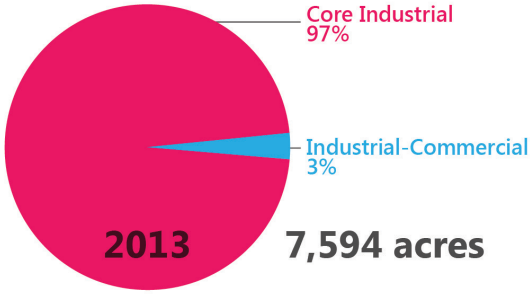
Gross Industrial Land Supply By Segment



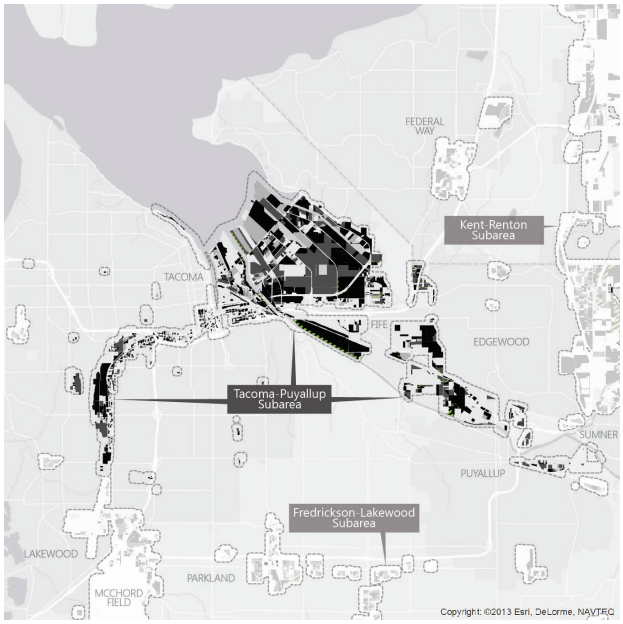
Gross industrial land supply are lands either currently zoned industrial, or designated in comprehensive plans for future industrial land use.

- Core Industrial Land
- Industrial-Commercial Land
- Aviation Operation Areas
- Military Industrial Land
- Net Supply *(See Below)*

Note: Adjacent Subareas are masked to highlight the featured Subarea.



Net Industrial Land Supply By Tier



Net industrial land supply is a subset of gross supply comprised of vacant and physically redevelopable land that deducts acreage for future rights-of-way and critical areas and is intended to reflect lands available for growth in the region's industrial sector.

- Tier A: Vacant
- Tier B: Minor Improvements
- Tier C: Partially Improved
- Wetland or Floodway Portion
- Subarea Boundaries

Net Supply Parcel Sizes

0-5 Acres	1,471
5-20 Acres	155
20-50 Acres	34
50+ Acres	15

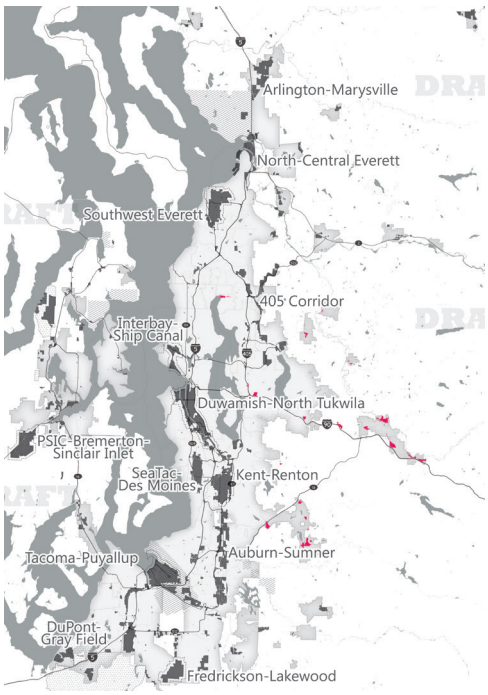
Note: Parcel shapes as mapped do not reflect deductions for future rights-of-way, public uses or market factor. For deductions, see table, below.

Deduction Type	Tier A Vacant	w / Market Factor	Tier B Minor Improvements	w / Market Factor	Tier C Partially Developed	w / Market Factor	Total	w / Market Factor
Selection	2,771		1,668		638		5,077	
Less Floodway	71		21		1		93	
Less Wetland	6		9		2		17	
Less Future R.O.W.'s @ 2%	135		82		32		248	
Less Future Public Use @ 2%	135		82		32		248	
Market Factor @ 10%		242		147		57		447
Total Less Future Deductions	**2,425**	**2,182**	**1,474**	**1,327**	**572**	**514**	**4,470** ac.	**4,023** ac.

Source: King, Snohomish, Pierce, Kitsap County Assessor, 2013; CAI, 2014
Note: Totals may not sum due to rounding.

Industrial Lands Profile: DISPERSED - KING COUNTY

Key Map



Overview

This profile represents an aggregation of all other industrial lands in King County not captured in geographically proximate concentrations of 1,000 or more acres. These lands, in total, comprise 4% of the region's industrial lands and support only 2% of industrial employment in the region.

Employment in these areas is driven by a wide variety of manufacturing, warehousing and wholesaling activities. Most of the facilities are small, with low FARs, and relatively few have been built in recent years. A great deal of King County's dispersed industrial lands are vacant–about 45% of the total supply.

Vital Statistics

Subarea Size, in Acres
2,835

Percent of Region's Industrial Land
4%

Industrial / Non-Industrial Employment
6,270 / 1,560

Percent of Region's Industrial Employment
2%

Ownership (by Parcel Area)
6% Public
94% Private

Average Parcel Size
4.5 acres

Specialization
Manufacturing, Warehousing & Wholesale

Industries & Employment

Macro Grouping	Industry Grouping	Employment	Percentage of Subarea	Percentage of All Subareas
Construction		1,200	19%	4%
	Builders & Contractors	-	-	
	Heavy & Civil Construction	-	-	
Manufacturing		2,150	34%	1%
	Aerospace Manufacturing	-	-	
	Electronics & Components	-	-	
	Food & Bev Processing	-	-	
	Machinery & Transport. Equip.	-	-	
	Metals & Fabrication	-	-	
	Printing & Publishing	-	-	
	Refining, Chemicals & Plastics	-	-	
	Textiles, Apparel & Leather	-	-	
	Wood & Paper Products	-	-	
	Other Manufacturing	-	-	
Transportation Distr. & Logistics		280	4%	1%
	Transp., Distr., Logistics	-	-	
Warehousing & Wholesale		1,820	30%	4%
	Warehousing & Storage	-	-	
	Wholesaling	-	-	
Other Industrial		760	12%	3%
	Building & Grounds Serv.	-	-	
	Industrial Services	-	-	
	Telecom, Broadcasting & Video Prod.	-	-	
	Utilities	-	-	
	Waste Mgmt. & Remediation	-	-	
	Other Industrial	-	-	
All Industrial		**6,270**		
Non-industrial		1,560		
Public Sector		-		
Total Employment		**8,150**		

Source: PSRC, Washington State Employment Security Department (ESD), CAI, 2012
NOTE: Total employment represents covered employment only; numbers may not sum due to rounding; percentage of subarea represents percentage of all industrial jobs in the subarea; percentage of all subareas represents percentage of macro grouping total across all subareas; employment figures for individual groupings may be suppressed (-) due to confidentiality requirements.

Industrial Lands Profile: DISPERSED - KING COUNTY

Land Use

Top Ten Assessor's Land Use Codes

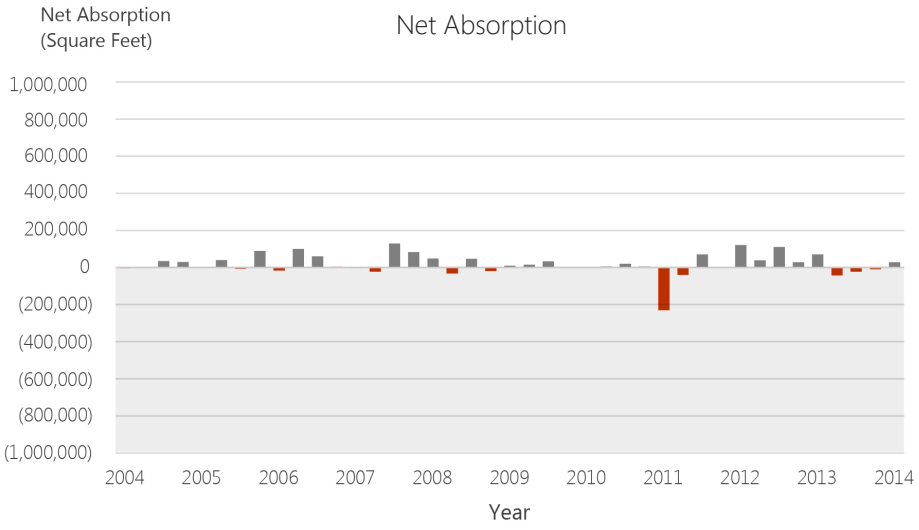
Rank	Category	Acreage
1	Vacant (Industrial)	825
2	Warehouse	229
3	Mining/Quarry/Ore Processing	217
4	Industrial (Heavy)	192
5	Single Family (C/I Zone)	177
6	Vacant (Commercial)	153
7	Utility, Public	126
8	Service Building	112
9	Industrial (Gen Purpose)	104
10	Right of Way/Utility, Road	89

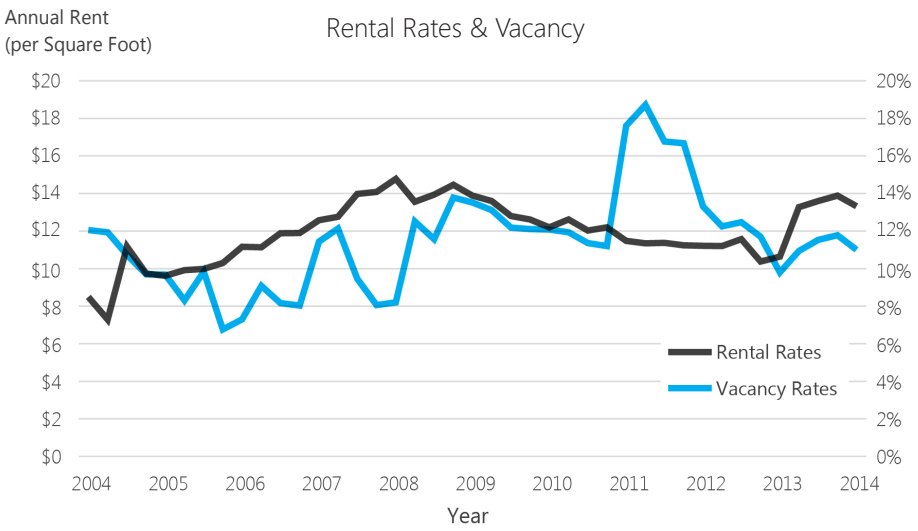
Source: King County Assessor; CAI
Note: Assessor's land use codes may not accurately reflect current parcel land use.
Note: Designated Forest or Agricultural Land under the State of Washington's Conservation Futures Program (84.34 RCW), while still zoned or designated industrial, has had future development rights purchased.

Above: North Bend industrial park.

Below: Spacelabs Healthcare, a medical devices manufacturer in Snoqualmie.

Market Trends





Facilities

Bldg Size (sq ft)	# of Parcels
0-5k	434
5k-200k	207
200k - 1m	3
1m+	0

Bldg Age	# of Parcels
1900-1950	16
1950-1975	3
1975-2000	11
2000+	7

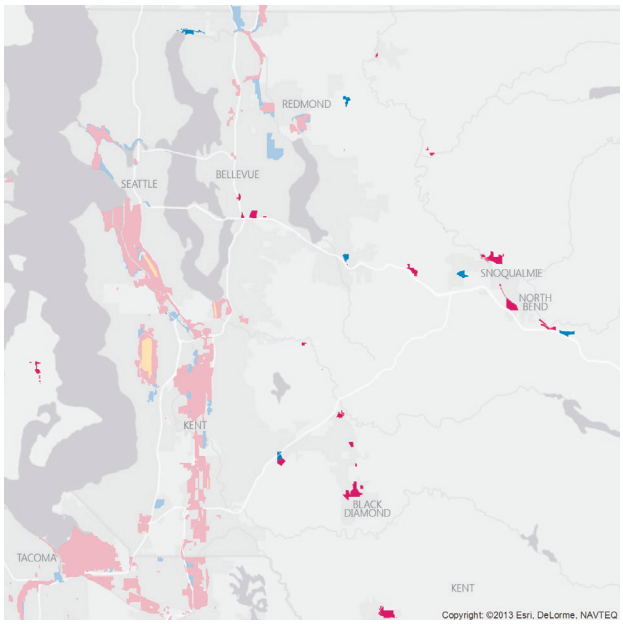
Floor Area Ratio	# of Parcels
.0-.1	408
.1-.25	94
.25-.5	105
.5-.75	23
.75+	14

Source: King, Snohomish, Pierce, Kitsap County Assessor, 2013; CAI, 2014
Note: Limited data may exist on building age.

Source: CoStar; CAI, 2014

Industrial Lands Profile: DISPERSED - KING COUNTY

Gross Industrial Land Supply By Segment

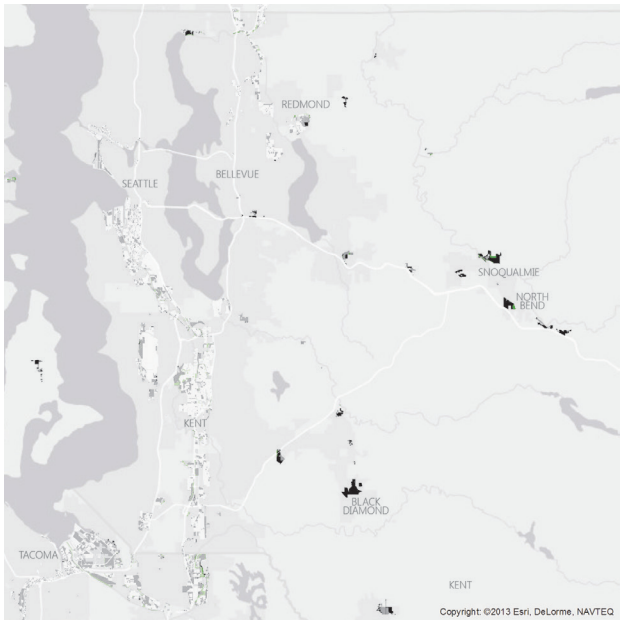


Gross industrial land supply are lands either currently zoned industrial, or designated in comprehensive plans for future industrial land use.

- Core Industrial Land
- Industrial-Commercial Land
- Aviation Operation Areas
- Military Industrial Land

Note: Subareas are masked to highlight dispersed industrial lands.

Net Industrial Land Supply By Tier



Net industrial land supply is a subset of gross supply comprised of vacant and physically redevelopable land that deducts acreage for future rights-of-way and critical areas and is intended to reflect lands available for growth in the region's industrial sector.

- Tier A: Vacant
- Tier B: Minor Improvements
- Tier C: Partially Improved
- Wetland or Floodway Portion
- Subarea Boundaries

Note: Subareas are masked to highlight dispersed industrial lands.

Net Supply Parcel Sizes

0-5 Acres	292
5-20 Acres	71
20-50 Acres	32
50+ Acres	3

Note: Parcel shapes as mapped do not reflect deductions for future rights-of-way, public uses or market factor. For deductions, see table, below.

Deduction Type	Tier A Vacant	w / Market Factor	Tier B Minor Improvements	w / Market Factor	Tier C Partially Developed	w / Market Factor	Total	w / Market Factor
Selection	1,629		669		84		2,382	
Less Floodway	29		4		1		34	
Less Wetland	29		4		3		35	
Less Future R.O.W.'s @ 2%	79		33		4		116	
Less Future Public Use @ 2%	79		33		4		116	
Market Factor @ 10%		141		217		7		208
Total Less Future Deductions	**1,415**	**1,273**	**594**	**535**	**73**	**66**	**2,082 ac.**	**1,874 ac.**

Source: King, Snohomish, Pierce, Kitsap County Assessor, 2013; CAI, 2014
Note: Totals may not sum due to rounding.

Industrial Lands Profile: DISPERSED - KITSAP COUNTY

Key Map

Overview

This profile represents an aggregation of all other industrial lands in Kitsap County not captured in geographically proximate concentrations of 1,000 or more acres. Combined, these lands comprise a relatively substantial amount (7%) of regional industrial lands but have a negligible amount of the region's industrial employment. Naval bases in Bangor and Keyport account for much of the concentrated areas of industrial land in this subarea, which is otherwise scattered in small parcels throughout the area. Due to the lack of assessor's categorizations of parcels available in this area, it appears that single-family residential is a principle land use, however, it only accounts for around 5% of the land use in this category. The military industrial activities present at Bangor and Keyport represent the major land use on Kitsap's dispersed industrial lands. Private-sector industrial employment is characterized by manufacturing of a wide range of products, including furniture, machine parts and beer. Only about 12% of this land is vacant (Tier A) net supply.

Vital Statistics

Subarea Size, in Acres
4,856

Percent of Region's Industrial Land
7%

Industrial / Non-Industrial Employment
1,480 / 2,080

Percent of Region's Industrial Employment
~0%

Ownership (by Parcel Area)
12% Public
88% Private

Average Parcel Size
8.8 acres

Specialization
Manufacturing

Industries & Employment

Macro Grouping	Industry Grouping	Employment	Percentage of Subarea	Percentage of All Subareas
Construction		**360**	**25%**	**1%**
	Builders & Contractors	-	-	
	Heavy & Civil Construction	-	-	
Manufacturing		**660**	**45%**	**0%**
	Aerospace Manufacturing	-	-	
	Electronics & Components	-	-	
	Food & Bev Processing	-	-	
	Machinery & Transport. Equip.	-	-	
	Metals & Fabrication	-	-	
	Printing & Publishing	-	-	
	Refining, Chemicals & Plastics	-	-	
	Textiles, Apparel & Leather	-	-	
	Wood & Paper Products	-	-	
	Other Manufacturing	-	-	
Transportation Distr. & Logistics		**-**	**-**	**-**
	Transp., Distr., Logistics	-	-	
Warehousing & Wholesale		**-**	**-**	**-**
	Warehousing & Storage	-	-	
	Wholesaling	-	-	
Other Industrial		**210**	**14%**	**1%**
	Building & Grounds Serv.	-	-	
	Industrial Services	-	-	
	Telecom, Broadcasting & Video Prod.	-	-	
	Utilities	-	-	
	Waste Mgmt. & Remediation	-	-	
	Other Industrial	-	-	
All Industrial		**1,480**		
Non-industrial		980		
Public Sector		1,100		
Total Employment		**4,230**		

Source: PSRC, Washington State Employment Security Department (ESD), CAI, 2012
NOTE: Total employment represents covered employment only; numbers may not sum due to rounding; percentage of subarea represents percentage of all industrial jobs in the subarea; percentage of all subareas represents percentage of macro grouping total across all subareas; employment figures for individual groupings may be suppressed (-) due to confidentiality requirements.

Industrial Lands Profile: DISPERSED - KITSAP COUNTY

Land Use

Top Ten Assessor's Land Use Codes

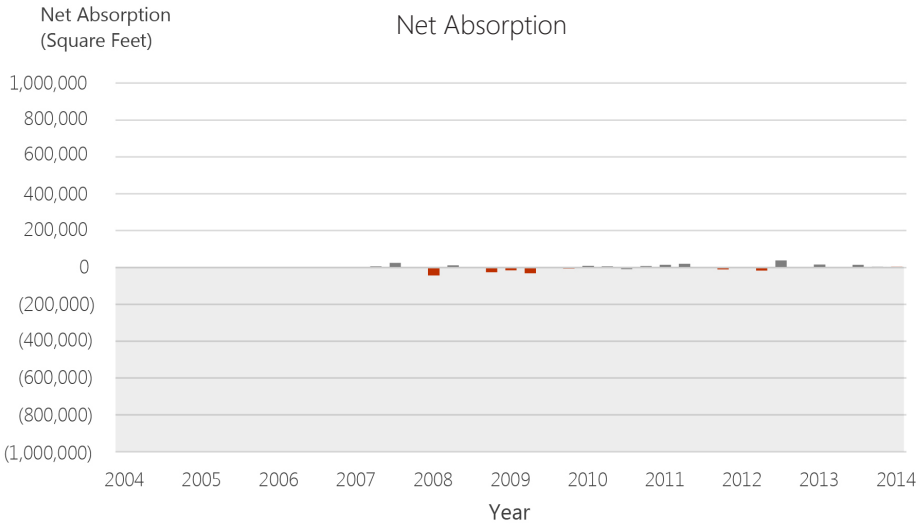
Rank	Category	Acreage
1	Single Family	226
2	Storage Warehouse	160
3	Light Warehouse	74
4	Office	46
5	Mini Warehouse	40
6	Light Manufacturing	35
7	Light Utility Storage	31
8	School Classrooms	22
9	Storage Garage	22
10	Distribution Warehouse	19

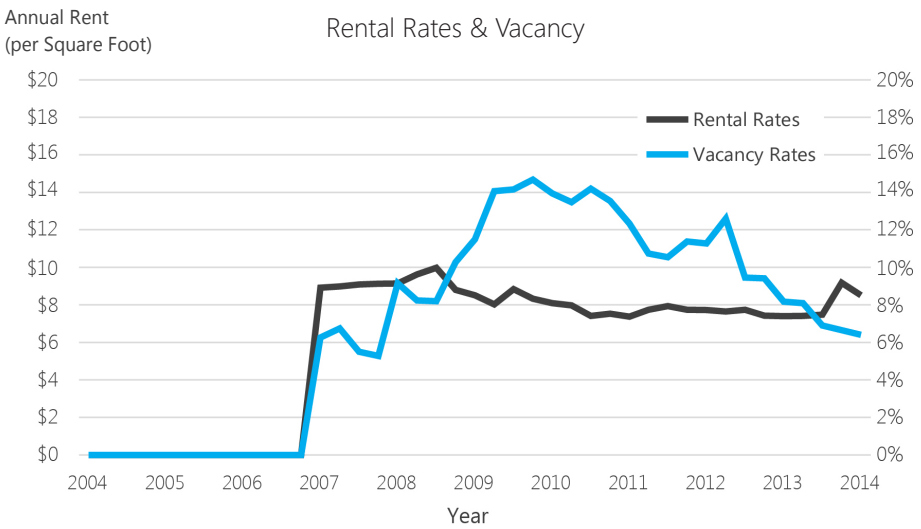
Source: Kitsap County Assessor; CAI
Note: Assessor's land use codes may not accurately reflect current parcel land use.
Note: Designated Forest or Agricultural Land under the State of Washington's Conservation Futures Program (84.34 RCW), while still zoned or designated industrial, has had future development rights purchased.

Above: Watson Furniture Group manufacturing plant in Poulsbo.

Below: U.S. Naval Base Kitsap in Bangor on the east shore of Hood Canal.

Market Trends





Facilities

Bldg Size (sq ft)	# of Parcels
0-5k	420
5k-200k	140
200k - 1m	0
1m+	0

Bldg Age	# of Parcels
1900-1950	298
1950-1975	27
1975-2000	148
2000+	87

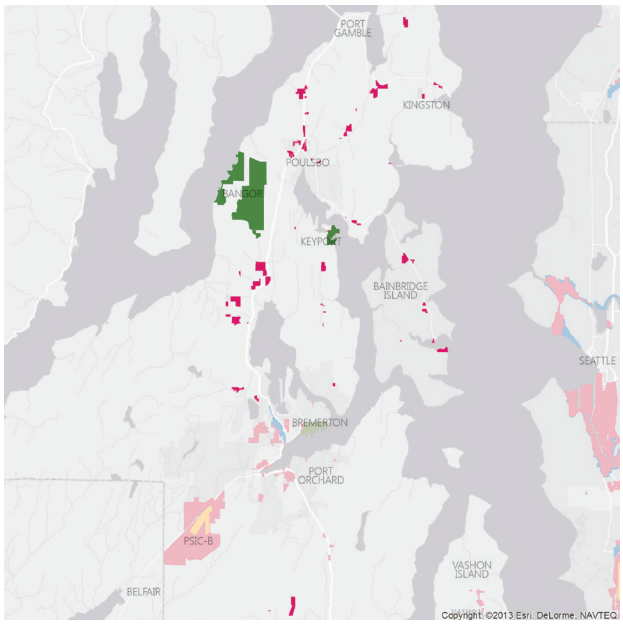
Floor Area Ratio	# of Parcels
.0-.1	422
.1-.25	60
.25-.5	28
.5-.75	12
.75+	38

Source: King, Snohomish, Pierce, Kitsap County Assessor, 2013; CAI, 2014
Note: Limited data may exist on building age.

Source: CoStar; CAI, 2014

Industrial Lands Profile: DISPERSED - KITSAP COUNTY

Gross Industrial Land Supply By Segment



Gross industrial land supply are lands either currently zoned industrial, or designated in comprehensive plans for future industrial land use.

- Core Industrial Land
- Industrial-Commercial Land
- Aviation Operation Areas
- Military Industrial Land

Note: Subareas are masked to highlight dispersed industrial lands.

Net Industrial Land Supply By Tier

Net industrial land supply is a subset of gross supply comprised of vacant and physically redevelopable land that deducts acreage for future rights-of-way and critical areas and is intended to reflect lands available for growth in the region's industrial sector.

- Tier A: Vacant
- Tier B: Minor Improvements
- Tier C: Partially Improved
- Wetland or Floodway Portion
- Subarea Boundaries

Note: Subareas are masked to highlight dispersed industrial lands.

Net Supply Parcel Sizes

0-5 Acres	338
5-20 Acres	64
20-50 Acres	7
50+ Acres	0

Note: Parcel shapes as mapped do not reflect deductions for future rights-of-way, public uses or market factor. For deductions, see table, below.

Deduction Type	Tier A Vacant	w / Market Factor	Tier B Minor Improvements	w / Market Factor	Tier C Partially Developed	w / Market Factor	Total	w / Market Factor
Selection	869		370		90		1,329	
Less Floodway	32		8		0		40	
Less Wetland	99		8		2		109	
Less Future R.O.W.'s @ 2%	37		18		4		59	
Less Future Public Use @ 2%	37		18		4		59	
Market Factor @ 10%		66		32		8		208
Total Less Future Deductions	**664**	**598**	**319**	**287**	**79**	**71**	**1,062 ac.**	**956 ac.**

Source: King, Snohomish, Pierce, Kitsap County Assessor, 2013; CAI, 2014
Note: Totals may not sum due to rounding.

Industrial Lands Profile: DISPERSED - PIERCE COUNTY

Key Map

Overview

This profile represents an aggregation of all other industrial lands in Pierce County not captured in geographically proximate concentrations of 1,000 or more acres. These lands comprise a small portion of the region's industrial lands and contain relatively little industrial employment, the bulk of which is in manufacturing and industrial services. The most prominent activities on these lands include seafood processing and medical device-related manufacturing. These lands have experienced a significant amount of construction in recent years; most facilities are small, with low FARs. Approximately one-third of Pierce County's dispersed industrial land supply is vacant.

Vital Statistics

Subarea Size, in Acres
1,883

Percent of Region's Industrial Land
3%

Industrial / Non-Industrial Employment
1,080 / 1,450

Percent of Region's Industrial Employment
~0%

Ownership (by Parcel Area)
6% Public
94% Private

Average Parcel Size
2.9 acres

Specialization
Manufacturing

Industries & Employment

Macro Grouping	Industry Grouping	Employment	Percentage of Subarea	Percentage of All Subareas
Construction		**250**	**23%**	**1%**
	Builders & Contractors	-	-	
	Heavy & Civil Construction	-	-	
Manufacturing		**450**	**42%**	**0%**
	Aerospace Manufacturing	-	-	
	Electronics & Components	-	-	
	Food & Bev Processing	-	-	
	Machinery & Transport. Equip.	-	-	
	Metals & Fabrication	-	-	
	Printing & Publishing	-	-	
	Refining, Chemicals & Plastics	-	-	
	Textiles, Apparel & Leather	-	-	
	Wood & Paper Products	-	-	
	Other Manufacturing	-	-	
Transportation Distr. & Logistics		**-**	**-**	**-**
	Transp., Distr., Logistics	-	-	
Warehousing & Wholesale		**-**	**-**	**-**
	Warehousing & Storage	-	-	
	Wholesaling	-	-	
Other Industrial		**250**	**23%**	**1%**
	Building & Grounds Serv.	-	-	
	Industrial Services	-	-	
	Telecom, Broadcasting & Video Prod.	-	-	
	Utilities	-	-	
	Waste Mgmt. & Remediation	-	-	
	Other Industrial	-	-	

All Industrial	**1,080**
Non-industrial	1,450
Public Sector	-
Total Employment	**2,670**

Source: PSRC, Washington State Employment Security Department (ESD), CAI, 2012
NOTE: Total employment represents covered employment only; numbers may not sum due to rounding; percentage of subarea represents percentage of all industrial jobs in the subarea; percentage of all subareas represents percentage of macro grouping total across all subareas; employment figures for individual groupings may be suppressed (-) due to confidentiality requirements.

Industrial Lands Profile: DISPERSED - PIERCE COUNTY

Land Use

Top Ten Assessor's Land Use Codes

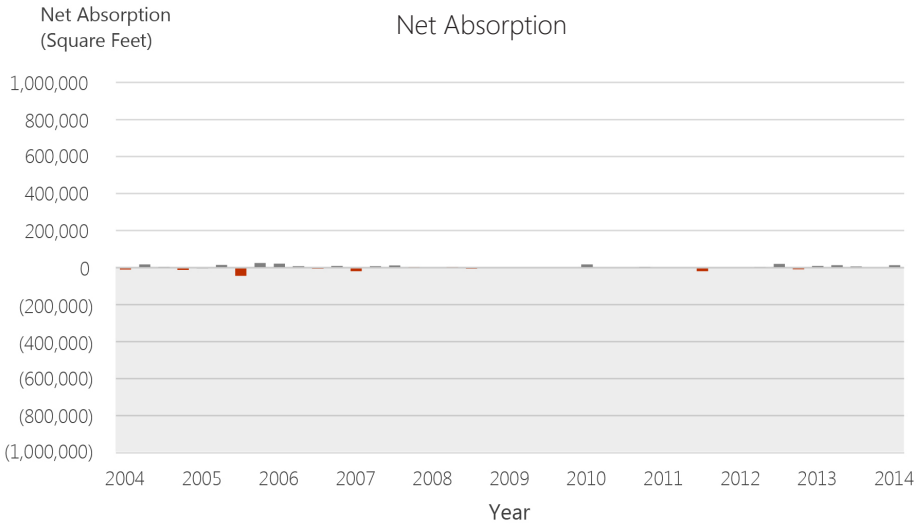
Rank	Category	Acreage
1	Designated Forest Land	416
2	Undeveloped (Vacant) Land	295
3	Vacant (Commercial)	204
4	Vacant (Industrial)	140
5	General Warehousing Storage	95
6	Single Family	92
7	Utilities	60
8	Other Residential	59
9	Quarry (Sand, Rock)	58
10	Mobile Home Park	45

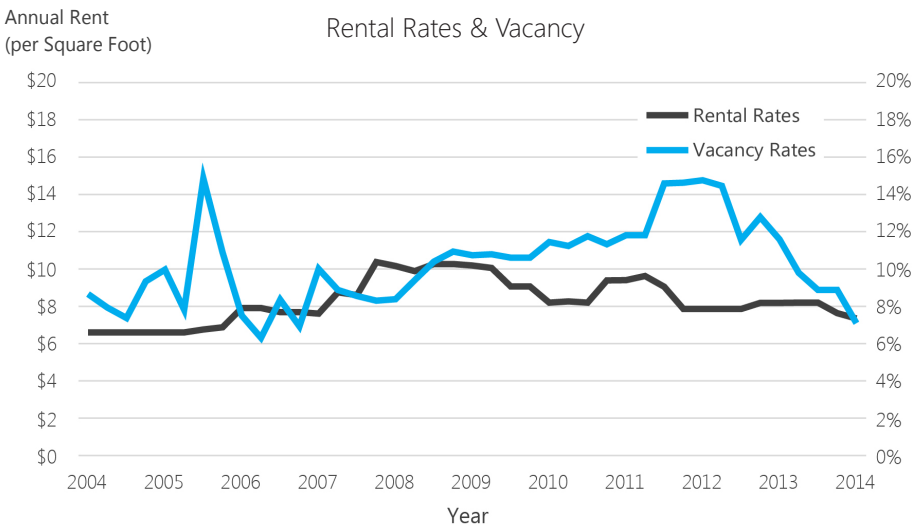
Source: Pierce County Assessor; CAI
Note: Assessor's land use codes may not accurately reflect current parcel land use.
Note: Designated Forest or Agricultural Land under the State of Washington's Conservation Futures Program (84.34 RCW), while still zoned or designated industrial, has had future development rights purchased.

Above: Concrete contractors in Bonney Lake.

Below: Minterbrook Oyster Company seafood processing plant in Gig Harbor.

Market Trends





Facilities

Bldg Size (sq ft)	# of Parcels
0-5k	208
5k-200k	92
200k - 1m	2
1m+	0

Bldg Age	# of Parcels
1900-1950	18
1950-1975	39
1975-2000	118
2000+	127

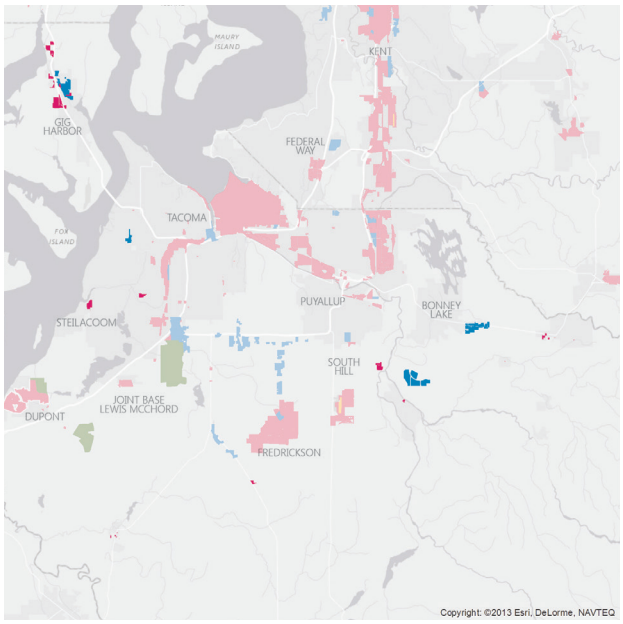
Floor Area Ratio	# of Parcels
.0-.1	351
.1-.25	61
.25-.5	49
.5-.75	63
.75+	13

Source: King, Snohomish, Pierce, Kitsap County Assessor, 2013; CAI, 2014
Note: Limited data may exist on building age.

Source: CoStar; CAI, 2014

Industrial Lands Profile: DISPERSED - PIERCE COUNTY

Gross Industrial Land Supply By Segment

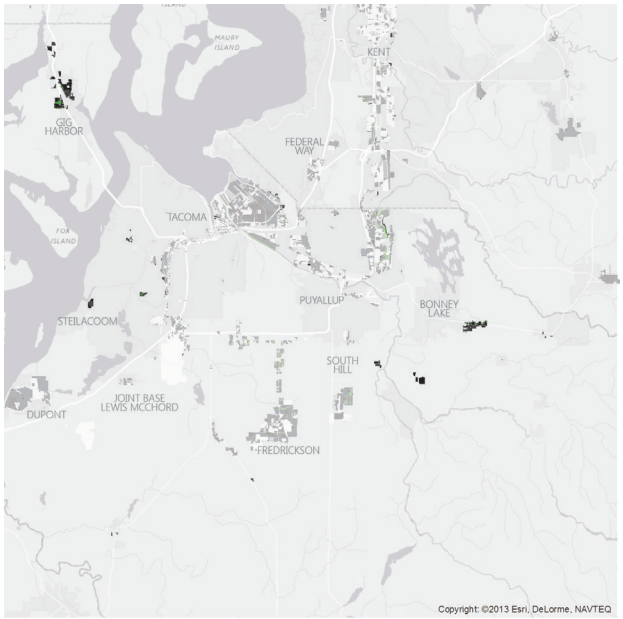


Gross industrial land supply are lands either currently zoned industrial, or designated in comprehensive plans for future industrial land use.

- Core Industrial Land
- Industrial-Commercial Land
- Aviation Operation Areas
- Military Industrial Land

Note: Subareas are masked to highlight dispersed industrial lands.

Net Industrial Land Supply By Tier



Net industrial land supply is a subset of gross supply comprised of vacant and physically redevelopable land that deducts acreage for future rights-of-way and critical areas and is intended to reflect lands available for growth in the region's industrial sector.

- Tier A: Vacant
- Tier B: Minor Improvements
- Tier C: Partially Improved
- Wetland or Floodway Portion
- Subarea Boundaries

Note: Subareas are masked to highlight dispersed industrial lands.

Net Supply Parcel Sizes

0-5 Acres	261
5-20 Acres	64
20-50 Acres	10
50+ Acres	0

Note: Parcel shapes as mapped do not reflect deductions for future rights-of-way, public uses or market factor. For deductions, see table, below.

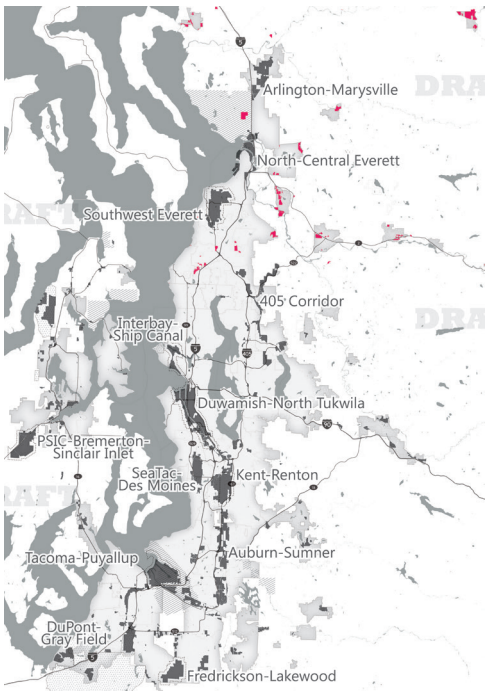
Deduction Type	Tier A Vacant	w / Market Factor	Tier B Minor Improvements	w / Market Factor	Tier C Partially Developed	w / Market Factor	Total	w / Market Factor
Selection	773		441		40		1,254	
Less Floodway	0		0		0		0	
Less Wetland	48		19		0		67	
Less Future R.O.W.'s @ 2%	36		21		2		59	
Less Future Public Use @ 2%	36		21		2		59	
Market Factor @ 10%		65		38		4		107
Total Less Future Deductions	**652**	**587**	**380**	**342**	**36**	**33**	**1,068 ac.**	**962 ac.**

Source: King, Snohomish, Pierce, Kitsap County Assessor, 2013; CAI, 2014
Note: Totals may not sum due to rounding.

Industrial Lands Profile:

DISPERSED - SNOHOMISH COUNTY

Key Map



Overview

This profile represents an aggregation of all other industrial lands in Snohomish County not captured in geographically proximate concentrations of 1,000 or more acres. About 6% of the region's industrial lands fall into this category and around 2% of regional industrial employment is located on these lands. Manufacturing is the dominant category, featuring jobs in food processing, apparel and maritime-related activities. Facility construction has occurred at a relatively constant rate over the years, with a notable uptick between 1975-2000. Snohomish County dispersed industrial lands contain approximately 28% vacant (Tier A) net supply.

Vital Statistics

Subarea Size, in Acres
4,039

Percent of Region's Industrial Land
6%

Industrial / Non-Industrial Employment
6,930 / 6,050

Percent of Region's Industrial Employment
2%

Ownership (by Parcel Area)
15% Public
85% Private

Average Parcel Size
3.6 acres

Specialization
Manufacturing

Industries & Employment

Macro Grouping	Industry Grouping	Employment	Percentage of Subarea	Percentage of All Subareas
Construction		**1,150**	**17%**	**4%**
	Builders & Contractors	-	-	
	Heavy & Civil Construction	-	-	
Manufacturing		**4,260**	**62%**	**3%**
	Aerospace Manufacturing	-	-	
	Electronics & Components	-	-	
	Food & Bev Processing	-	-	
	Machinery & Transport. Equip.	-	-	
	Metals & Fabrication	-	-	
	Printing & Publishing	-	-	
	Refining, Chemicals & Plastics	-	-	
	Textiles, Apparel & Leather	-	-	
	Wood & Paper Products	-	-	
	Other Manufacturing	-	-	
Transportation Distr. & Logistics		**180**	**3%**	**1%**
	Transp., Distr., Logistics	-	-	
Warehousing & Wholesale		**880**	**13%**	**2%**
	Warehousing & Storage	-	-	
	Wholesaling	-	-	
Other Industrial		**470**	**7%**	**2%**
	Building & Grounds Serv.	-	-	
	Industrial Services	-	-	
	Telecom, Broadcasting & Video Prod.	-	-	
	Utilities	-	-	
	Waste Mgmt. & Remediation	-	-	
	Other Industrial	-	-	

All Industrial	**6,930**
Non-industrial	5,100
Public Sector	950
Total Employment	**12,970**

Source: PSRC, Washington State Employment Security Department (ESD), CAI, 2012
NOTE: Total employment represents covered employment only; numbers may not sum due to rounding; percentage of subarea represents percentage of all industrial jobs in the subarea; percentage of all subareas represents percentage of macro grouping total across all subareas; employment figures for individual groupings may be suppressed (-) due to confidentiality requirements.

Industrial Lands Profile: DISPERSED - SNOHOMISH COUNTY

Land Use

Top Ten Assessor's Land Use Codes

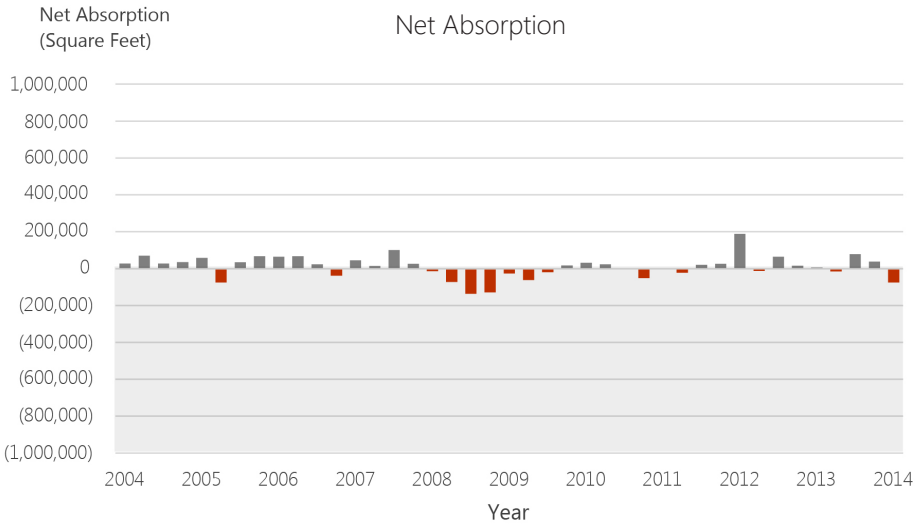
Rank	Category	Acreage
1	Undeveloped (Vacant) Land	1,015
2	Single Family (Detached)	270
3	Sawmills & Planing Mills	247
4	Designated Forest Lands	243
5	Solid Waste Disposal	198
6	Warehousing & Storage Services	169
7	Condominiums	163
8	Airports & Flying Fields	150
9	Sewage Disposal	143
10	Eng., Lab & Scientific Instr.	119

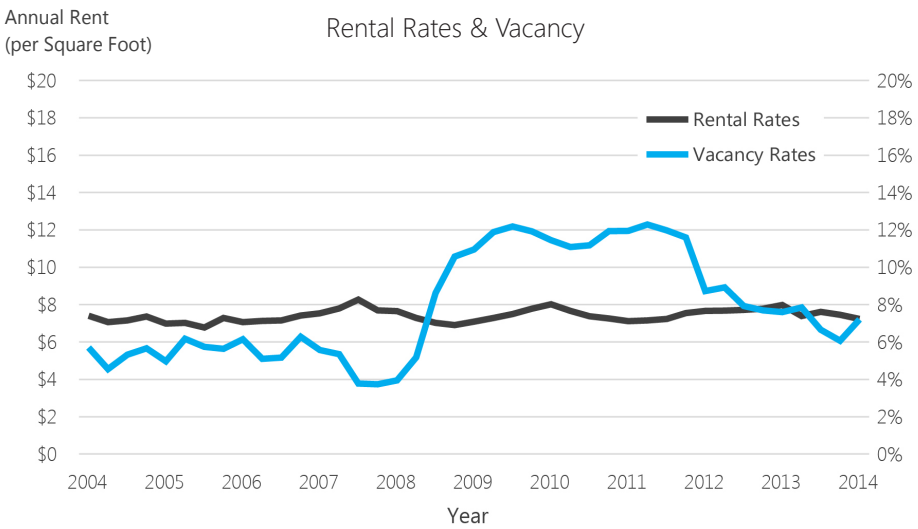
Source: Snohomish County Assessor; CAI
Note: Assessor's land use codes may not accurately reflect current parcel land use.
Note: Designated Forest or Agricultural Land under the State of Washington's Conservation Futures Program (84.34 RCW), while still zoned or designated industrial, has had future development rights purchased.

Above: Cobalt Enterprises, Inc., a parts manufacturer in Granite Falls.

Below: Hampton Lumber Mill in Darrington sits in the shadows of the North Cascades.

Market Trends





Facilities

Bldg Size (sq ft)	# of Parcels
0-5k	370
5k-200k	314
200k - 1m	4
1m+	0

Bldg Age	# of Parcels
1900-1950	164
1950-1975	134
1975-2000	263
2000+	127

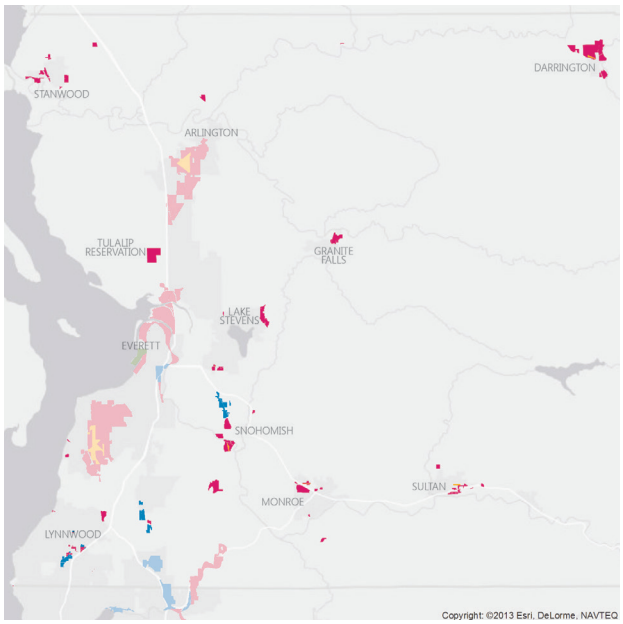
Floor Area Ratio	# of Parcels
.0-.1	340
.1-.25	128
.25-.5	170
.5-.75	34
.75+	16

Source: King, Snohomish, Pierce, Kitsap County Assessor, 2013; CAI, 2014
Note: Limited data may exist on building age.

Source: CoStar; CAI, 2014

Industrial Lands Profile: DISPERSED - SNOHOMISH COUNTY

Gross Industrial Land Supply By Segment

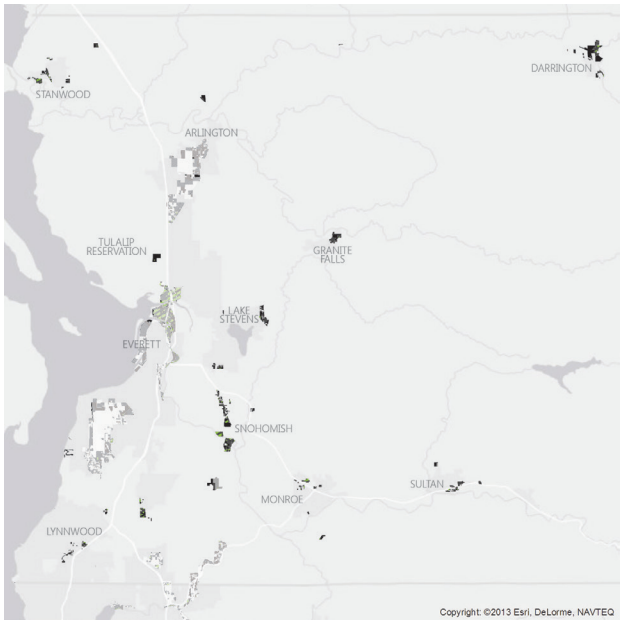


Gross industrial land supply are lands either currently zoned industrial, or designated in comprehensive plans for future industrial land use.

- Core Industrial Land
- Industrial-Commercial Land
- Aviation Operation Areas
- Military Industrial Land

Note: Subareas are masked to highlight dispersed industrial lands.

Net Industrial Land Supply By Tier



Net industrial land supply is a subset of gross supply comprised of vacant and physically redevelopable land that deducts acreage for future rights-of-way and critical areas and is intended to reflect lands available for growth in the region's industrial sector.

- Tier A: Vacant
- Tier B: Minor Improvements
- Tier C: Partially Improved
- Wetland or Floodway Portion
- Subarea Boundaries

Note: Subareas are masked to highlight dispersed industrial lands.

Net Supply Parcel Sizes

0-5 Acres	599
5-20 Acres	110
20-50 Acres	19
50+ Acres	6

Note: Parcel shapes as mapped do not reflect deductions for future rights-of-way, public uses or market factor. For deductions, see table, below.

Deduction Type	Tier A Vacant	w / Market Factor	Tier B Minor Improvements	w / Market Factor	Tier C Partially Developed	w / Market Factor	Total	w / Market Factor
Selection	1,554		1,137		331		3,022	
Less Floodway	2		11		0		13	
Less Wetland	141		164		8		313	
Less Future R.O.W.'s @ 2%	71		48		16		135	
Less Future Public Use @ 2%	71		48		16		135	
Market Factor @ 10%		127		87		29		243
Total Less Future Deductions	**1,269**	**1,142**	**866**	**779**	**291**	**262**	**2,426 ac.**	**2,183 ac.**

Source: King, Snohomish, Pierce, Kitsap County Assessor, 2013; CAI, 2014
Note: Totals may not sum due to rounding; parcel counts for Snohomish County should be considered only as estimates due to data limitations.

4 Contribution of Industrial Land to the Regional Economy

Chapter 4. Contribution of Industrial Land to the Regional Economy

CHAPTER INTRODUCTION

The industrial sector continues to be critical to the diversification and strength of the central Puget Sound economy. This chapter covers findings from the following analyses:

1) Employment, wages, and business revenues regionwide and by activity.
2) The distribution of industrial activities by subarea.
3) Economic impacts of these activities to the regional economy.
4) Fiscal impacts of these activities for local and state governments.

Throughout this analysis, employment and wages are reported across all industrial and non-industrial lands and by land use segmentations.

Methodology

This analysis employs the following steps in sequence to assess the contributions of industrial lands: 1) defining industrial activities by economic codes; 2) assessing the direct contributions of these activities, in the form of jobs, wages, and estimated business revenues; 3) the economic impacts of industrial activities on industrial lands, based on input-output analysis; and 4) the fiscal contributions of industrial activities on industrial lands.

Defining Industrial Activities

There are several considerations in defining and measuring industrial economic activities. In this analysis, industrial activities are defined as economic activities that require and/or enjoy benefits associated with industrially zoned lands. **Exhibit 4.1** below illustrates the different types of demand for industrial land.

In the most commonly understood case, industrial activities are activities that have significant byproducts or externalities and are thus by regulation required to locate in specifically zoned lands; such cases would include certain types of manufacturing, such as paper manufacturing. However, there are additional factors driving demand for industrial lands; these include access to physical assets, such as a rail spurs, spatial needs, and agglomeration benefits. For instance, a video production company, while not required by regulation to locate on industrial lands, may seek out facilities with high ceilings, such as the vacant part of a warehouse. In

other cases, a machine repair business may demand location on industrial lands to be in closer proximity to many of its clients. Example businesses demanding industrial land are illustrated in **Exhibit 4.2**. Importantly, these factors are not mutually exclusive—in many cases businesses may locate on industrial lands for two or more reasons.

Exhibit 4.1. Defining Industrial Lands Activities by Type of Demand

NEED	EXAMPLES	ILLUSTRATIVE ACTIVITIES
Physical Separation	>Noise >Odor	Chemical Manufacturing (NAICS 325) Paper Manufacturing (NAICS 322)
Physical Assets	>Rail transportation >Marine terminals	Some types of warehousing (NAICS 493)
Space	>Building square footage >High ceilings	Caterers (NAICS 72232) Motion Picture & Video Prod.(NAICS 51211)
Physical Clustering (agglomeration)	>Business-to-Business >Cooperative prod. dev.	Machinery/Eq. Rental & Leasing (NAICS 5324) Comm'l & Ind'l Equipment Repair (NAICS 8113)

Exhibit 4.2. Examples of Industrial Land Demand by Types of Business

Example	Physical Separation	Physical Assets	Space	Physical Clustering
Comm'l & Ind Equipment Repair (NAICS 8113)	—	—	●	●
Caterers (NAICS 72232)	—	—	●	—
Warehousing & Storage (NAICS 5324)	—	●	●	—
Paper Manufacturing (NAICS 322)	●	●	●	—

Industrial Economic Sector Codes

North American Industry Classification System (NAICS) codes are the standard codes used for categorizing and aggregating economic data. In this analysis, NAICS codes are the most basic unit of employment data. To more accurately describe and assess industrial activities, combinations of NAICS codes are created to represent those industries and activities that demand industrial land as a core input in their business operations. **Appendix B** details this industry selection and definitional process.

An inherent challenge with the NAICS codes is the use of one code to classify all business activities. In most cases, the codes sufficiently approximate and represent a business's primary activities, but there are many cases in which a large share of business operations occurs outside the assigned classification. For example, among large retail businesses, employment in support of non-retail activities, such as warehousing or distribution space, can often be classified as retail based on the company's primary activity. Another example is Paccar; while the company is primarily engaged in the manufacturing of transportation equipment, a large part of its business involves truck leasing and financing. These nuances are obscured through the assignment of a single industry code.

Industrial Employment and Land Zoning Mismatches

Data presented throughout this report disaggregate industrial and non-industrial activities on industrial lands. For example, many wholesalers, builders and contractors will locate on commercial, not industrial land; at the same time, many non-industrial uses, including stadiums, auto repair, adult entertainment, and fitness uses, are often found on industrial lands. This segmentation is important for understanding changes in the nature of industrial activities and the role of industrial land as an important input.

Economic and Fiscal Impacts

The Washington State Input-Output Model is the primary tool for estimating the regionwide impacts of industrial activities on industrial lands. The model produces estimates of jobs, business revenues, and wages attributable to direct, indirect, and induced effects.

Indirect effects refer to jobs, revenues, and incomes generated via business-to-business transactions, such as the additional jobs supported across the region among aerospace suppliers fulfilling orders with Boeing Commercial. Likewise, machinery and electronics manufacturing will often require services and inputs provided by machine shops and component manufacturers. When there is new demand for machinery, this results in additional demand for component parts provided by suppliers, extending the number of jobs required to fulfill these new orders.

Induced effects refer to those impacts supported via the spending of household income supported by industrial activities. Because industrial jobs tend to pay wages much higher than the regional average, these activities are expected to have a strong induced impact on the region's economy. Multipliers are used to articulate these relationships across the regional economy. A more detailed discussion of input-output analysis, and the localizing of the statewide model for the central Puget Sound region, can be found in **Appendix C**.

Fiscal impacts in this analysis refer to: 1) direct tax payments—to both state and local governments—by industrial activities on industrial lands; and 2) tax revenues drawn from additional economic activities supported via indirect and induced effects across the region. For these latter estimates, revenues are apportioned by jurisdiction based on economic activity shares and local tax rates applied when necessary (e.g., in jurisdictions with a local Business & Occupation (B&O) tax rate, and to account for variation in tax rates across cities).

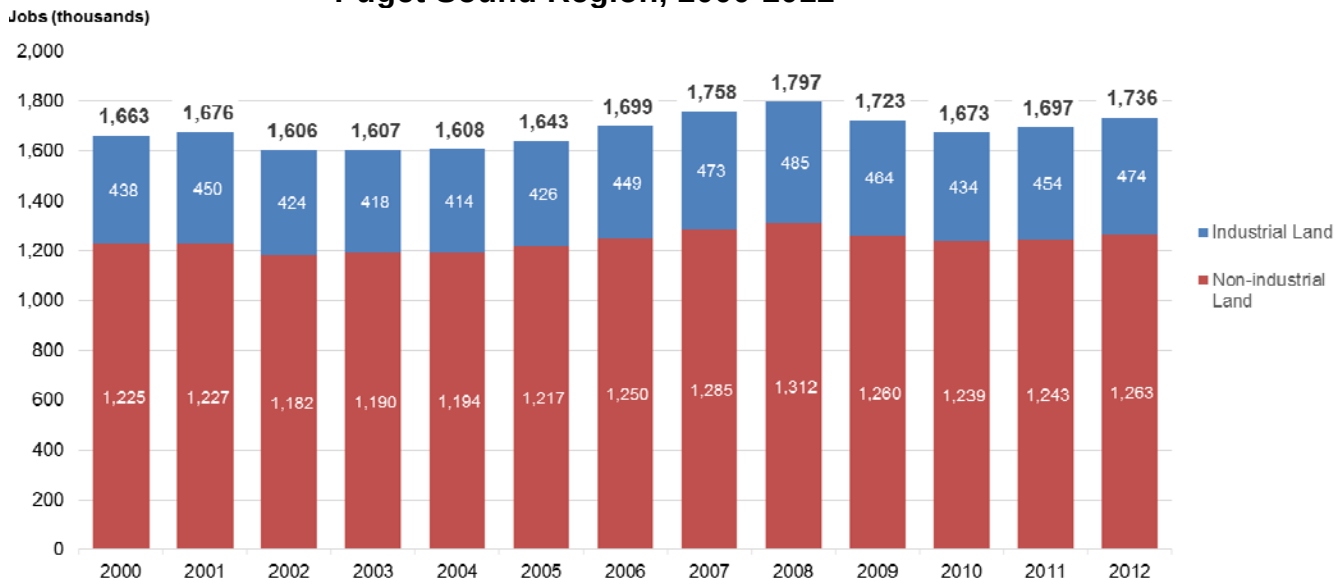
JOBS AND WAGES ON INDUSTRIAL LANDS

This chapter reports covered jobs. Covered jobs refer to hired workers, and thus exclude military personnel, sole proprietors, and other forms of self-employment.[1] "Total jobs" in this chapter thus refer only to covered jobs.

Total jobs on industrial lands totaled 474,000 in 2012, representing about 27.3% of all jobs across the central Puget Sound region (**Exhibit 4.3**). Between 2000 and 2012, employment on industrial lands has averaged 26.5% of total covered employment across the region.

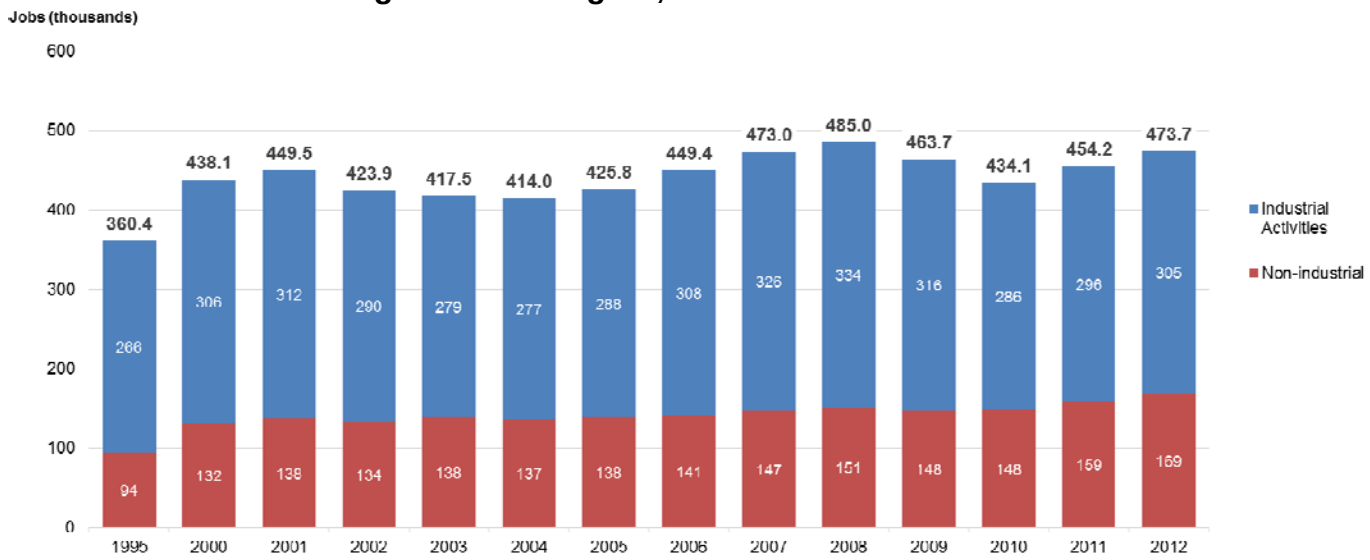
Total industrial employment on industrial lands summed to 305,100 jobs in 2012 (**Exhibit 4.4**). This total includes all private sector industrial jobs, plus the Puget Sound Naval Shipyard, while excluding public education, other government jobs, and private sector non-industrial jobs such as retail, restaurants, and software publishing (of which a large number were located in the 405 Corridor subarea in 2012). Industrial jobs on industrial lands increased two consecutive years, following two years of decline, from a peak of 334,000 jobs in 2008.[2]

Exhibit 4.3. Jobs on and off Industrial Lands, All Job Types, Central Puget Sound Region, 2000-2012



Sources: PSRC, 2014; Community Attributes Inc., 2014.

Exhibit 4.4. Industrial and Non-Industrial Employment on Industrial Lands, Central Puget Sound Region, 1995 and 2000-2012



Sources: PSRC, 2014; Community Attributes Inc., 2014.

Manufacturing jobs constituted the largest share of industrial jobs in 2012 (35.7%), though this is down from the year 2000 by 4.2 percentage points (**Exhibits 4.5** and **4.6**). Industrial employment on industrial lands represented nearly two-thirds of all jobs on industrial lands, based on 2012 land supply boundaries. However, private sector non-industrial activities, such as retail and other services, have grown as a share of employment on industrial lands, increasing from 24.0% in 2000 to 29.9% in 2012.

Exhibit 4.5. Industrial Lands Employment by Industry Grouping, Central Puget Sound Region, 1995, 2000-2012

Industry Groupings	1995	2000	2008	2012	Change, 2000-2012
Core Industrial Activities					
Construction	21,300	31,000	44,000	30,800	-0.6%
Manufacturing*	160,900	174,800	177,100	169,000	-3.3%
Transportation, Distribution & Logistics	28,700	37,800	36,600	29,700	-21.4%
Warehousing & Wholesale	43,100	45,100	51,300	51,300	13.7%
Other Industrial Activities	12,100	17,800	25,000	24,400	37.1%
Subtotal, Core Industrial Activities	*266,100*	*306,500*	*334,000*	*305,100*	-0.5%
Public Education	1,000	1,000	2,300	2,000	100.0%
Other Government (excluding PSNS and education)	15,500	25,500	25,000	25,000	-2.0%
Non-industrial Private Sector Employment	77,800	105,100	123,700	141,600	34.7%
All Covered Employment	**360,400**	**438,100**	**485,000**	**473,700**	**8.1%**

*Includes Puget Sound Naval Shipyard.
Sources: PSRC 2014; Community Attributes Inc., 2014.
Note: Other Industrial Activities include repair shops, for example, and other smaller employer activities.

Exhibit 4.6. Change in Share of Total Covered Employment by Industrial Grouping on Industrial Lands, Central Puget Sound Region, 1995, 2000-2012

	1995-2000	2000-2008	2008-2012	1995-2012	2000-2012
Core Industrial Activities					
Construction	7.8%	4.5%	-8.5%	2.2%	-0.1%
Manufacturing (including PSNS)	1.7%	0.2%	-1.2%	0.3%	-0.3%
Transportation, Distribution & Logistics (TDL)	5.7%	-0.4%	-5.1%	0.2%	-2.0%
Warehousing & Wholesale	0.9%	1.6%	0.0%	1.0%	1.1%
Other Industrial Activities	8.0%	4.3%	-0.6%	4.2%	2.7%
Subtotal, Core Industrial Activities	2.9%	1.1%	-2.2%	0.8%	0.0%
Public Education	0.0%	11.0%	-3.4%	4.2%	5.9%
Other Government (excluding PSNS and education)	10.5%	-0.2%	0.0%	2.9%	-0.2%
Non-industrial Private Sector Employment	6.2%	2.1%	3.4%	3.6%	2.5%
All Covered Employment					

Sources: PSRC 2014; Community Attributes Inc., 2014.

The gross industrial land supply map in Chapter 3 shows the segmentation of industrial lands in the region into core industrial and industrial-commercial lands. **Exhibit 4.7** shows industrial and non-industrial jobs on core industrial and industrial-commercial land. **Exhibit 4.7** indicates that over time, non-industrial jobs have grown at a much faster rate than industrial jobs, regionally as well as on industrial lands (98% of regional employment growth 1995-2012 is non-industrial). Employment growth rates on industrial lands are higher than the remainder of the region (regardless of zoning segment, job dichotomy, or time interval), and higher on industrial-commercial land in particular. Industrial jobs vastly outnumber non-industrial jobs on core industrial land, and industrial employment has consolidated on core industrial land during this period (industrial job growth on core land surpasses regional industrial job growth). Industrial jobs account for 43% of job growth on core industrial lands, compared to 12% on industrial-commercial lands, and 2% regionally). Industrial jobs now represent only a third of employment on industrial-commercial land.

Exhibit 4.7. Industrial and Non-Industrial Jobs on Core and Industrial-Commercial Land

				1995-2012		2000-12	
	1995	2000	2012	Change in Jobs	CAGR	Change in Jobs	CAGR
Industrial Jobs	457,300	534,300	464,800	7,500	0.1%	-69,500	-1.2%
Core Lands	222,700	255,700	248,100	25,400	0.6%	-7,600	-0.3%
IC Lands	30,300	37,100	35,400	5,100	0.9%	-1,700	-0.4%
Non-industrial Jobs	937,400	1,128,600	1,271,700	334,300	1.8%	143,100	1.0%
Core Lands	55,400	75,200	88,900	33,500	2.8%	13,700	1.4%
IC Lands	36,700	56,300	74,500	37,800	4.3%	18,200	2.4%

Source: PSRC, 2015.

The extent to which industrial activities concentrate on industrial land has also changed. Between 2000 and 2012, private sector Transportation, Distribution & Logistics, which includes terminal operators, warehousing, trucking businesses, and freight forwarders, experienced a reduction in its share of activities resident on industrial lands from 66.3% to 58.1%. Manufacturing conversely experienced an increase, though this may be largely due to overall increases in aerospace employment, with the majority of these gains occurring at Boeing facilities (or expansion of existing facilities) already located on industrial lands (**Exhibit 4.8**).

Exhibit 4.8. Share of Sector Jobs on Industrial Lands, 1995, 2000-2012

Activity	1995	2000	2008	2012	Change, 1995-2012
Construction	32.4%	33.3%	36.9%	40.9%	7.5%
Manufacturing*	73.0%	72.2%	80.0%	79.6%	7.5%
Transportation, Distribution & Logistics	64.0%	66.3%	67.5%	58.1%	-8.2%
Warehousing & Wholesale	54.9%	54.7%	57.3%	61.7%	7.0%
Other Industrial Activities	21.7%	23.7%	32.1%	34.7%	11.0%
Government (ex. Education and PSNS)	12.2%	18.7%	16.4%	16.5%	-2.3%
All Industrial Activities	40.5%	41.5%	43.1%	43.1%	1.5%
Non-Industrial Activities	11.2%	12.2%	12.9%	14.7%	2.5%

*Including Puget Sound Naval Shipyards.
Sources: PSRC 2014; Community Attributes Inc., 2014.

Across the central Puget Sound region, the largest share of industrial lands jobs by industry grouping in 2012 were in Transportation Equipment Manufacturing (92,400), followed by Wholesaling (45,500), and Transportation, Distribution & Logistics (29,700). Within Transportation Equipment Manufacturing, approximately 70,900 jobs were based in one of five Boeing facilities across the region, with an estimated 5,900 jobs based in other aerospace firms on industrial lands. Ship & Boat Building, Repair, and Maintenance, which includes local private sector businesses such as Kvichak Marine and Vigor Industrial in Seattle and the Puget Sound Naval Shipyard in Bremerton, collectively employed an estimated 13,600 workers on industrial lands. Other transportation activities, such as truck manufacturing, employed another 2,000 workers on industrial lands (**Exhibit 4.9**).

Boeing activities constituted the largest share of Transportation Equipment Manufacturing activities, with 70,900 workers employed at sites on industrial lands regionwide in 2012 (**Exhibit 4.10**). Other Aerospace activities include some, but not all, aerospace suppliers. For example, avionics firms are included in this grouping, but many types of aerospace suppliers, such as Toray Composites, fall under such categories as Refining, Chemicals, and Plastics Manufacturing. Ship and Boat Building, Maintenance, and Repair activities totaled 13,600 workers, the largest share of this operating out of the Puget Sound Naval Shipyard.

Exhibit 4.9. Detailed Breakout Industrial Employment on Industrial Lands, Central Puget Sound Region, 2012, Regionwide[3]

Rank	Industrial Grouping	Jobs on Industrial Lands	Share of Sector Jobs on Industrial Lands
1	Aerospace Manufacturing	76,800	83.5%
2	Wholesaling	45,500	60.3%
3	Transportation, Distribution & Logistics	29,700	58.1%
4	Builders & Contractors	26,700	40.1%
5	Ship and Boat Building, Repair, and Maintenance	13,600	96.5%
6	Electronics & Components Manufacturing	13,100	77.5%
7	Printing & Publishing	13,100	37.3%
8	Other Manufacturing	10,900	71.5%
9	Metals & Fabrication Manufacturing	10,900	87.9%
10	Food & Bev Processing	9,900	61.2%
11	Building & Grounds Services	7,400	26.7%
12	Refining, Chemicals & Plastics Manufacturing	6,000	91.7%
13	Telecom, Broadcasting & Video Production	6,000	27.3%
14	Warehousing & Storage	5,800	75.3%
15	Machinery Manufacturing	5,500	83.3%
16	Wood & Paper Products Manufacturing	5,100	83.7%
17	Heavy & Civil Construction	4,100	46.8%
18	Industrial Services	3,700	63.2%
19	Waste Management & Remediation	3,200	65.8%
20	Other Industrial	2,700	38.7%
21	Textiles, Apparel & Leather Manufacturing	2,100	70.9%
22	Other Transportation Equipment Manufacturing	2,000	83.3%
23	Utilities	1,300	51.7%
	Total	**305,100**	**60.3%**

Sources: PSRC, 2014; Community Attributes Inc., 2014.

Exhibit 4.10. Transportation Equipment Jobs on Industrial Lands, 2012

Employment Source	Employment, 2012
Boeing	70,900
Other Aerospace	5,900
Ship and Boat Building, Repair, and Maintenance	13,600
Other Transportation Equipment	2,000
TOTAL	**92,400**

Sources: PSRC 2014; Community Attributes Inc., 2014.

Wage estimates come from customized private sector wage outlay estimates from PSRC and additional augmentations to account for Puget Sound Naval Shipyard activities. In 2012, total wages paid out by industrial activities on industrial lands summed to $24.4 billion (**Exhibit 4.11**). Aerospace was the single largest source among industrial activities for wages paid ($7.5 billion), followed by Transportation, Distribution & Logistics ($3.4 billion), and Wholesaling ($3.2 billion). Printing & Publishing activities paid the highest average wages on industrial lands ($149,800), due in part to publishing activities associated with software, followed by Transportation, Distribution & Logistics ($114,600). Overall,

annual earnings for industrial jobs on industrial lands averaged $80,000 in 2012 (**Exhibit 4.12**). By comparison, the average wage across the four-county central Puget Sound region in 2012 was $59,700. Retail Trade, one of the largest segments of the regional work force, supported an average wage of $36,300, while Finance and Insurance paid an average wage of $86,900.[4]

In 2012, total wages paid across the four-county central Puget Sound region and across all industries totaled more than $105.2 billion. Wages associated with industrial jobs on industrial lands thus equaled 23.2% of all wages paid out across the region in 2012.

Exhibit 4.11. Total Wages Paid Out by Industrial Activities on Industrial Lands, 2012

Rank	Industrial Category	Wages (mils $)
1	Aerospace	7,486.3
2	Transportation, Distribution & Logistics	3,398.9
3	Wholesaling	3,217.6
4	Printing & Publishing	1,957.6
5	Builders & Contractors	1,406.6
6	Electronics & Components	1,191.1
7	Ship and Boat Building, Repair, and Maintenance	1,018.2
8	Metals & Fabrication	578.7
9	Other Manufacturing	572.1
10	Telecom, Broadcasting & Video Production	565.1
11	Food & Bev Processing	507.1
12	Machinery Mfg	354.2
13	Refining, Chemicals & Plastics	336.4
14	Heavy & Civil Construction	300.7
15	Warehousing & Storage	278.5
16	Wood & Paper Products	263.3
17	Building & Grounds Services	227.2
18	Industrial Services	196.1
19	Waste Management & Remediation	176.7
20	Utilities	109.4
21	Other Industrial	106.0
22	Other Transportation Equipment Mfg	91.2
23	Textiles, Apparel & Leather	82.6
	Total	**24,421.5**

Sources: PSRC 2014; Community Attributes Inc., 2014. Estimates do not include benefits and other forms of compensation.

Exhibit 4.12. Average Wages among Industrial Activities on Industrial Lands, 2012

Rank	Industrial Category	Wages ($)
1	Printing & Publishing	149,800
2	Transportation, Distribution & Logistics	114,600
3	Aerospace	97,500
4	Telecom, Broadcasting & Video Production	94,400
5	Electronics & Components	91,000
6	Utilities	83,300
7	Ship and Boat Building, Repair, and Maintenance	74,900
8	Heavy & Civil Construction	73,000
9	Wholesaling	70,800
10	Machinery Mfg	64,400
11	Refining, Chemicals & Plastics	55,900
12	Waste Management & Remediation	54,700
13	Industrial Services	53,700
14	Metals & Fabrication	53,200
15	Builders & Contractors	52,700
16	Other Manufacturing	52,300
17	Wood & Paper Products	52,100
18	Food & Bev Processing	51,000
19	Warehousing & Storage	48,000
20	Other Transportation Equipment Mfg	45,600
21	Textiles, Apparel & Leather	40,200
22	Other Industrial	38,700
23	Building & Grounds Services	30,600
	Overall Average	**80,000**

Sources: PSRC, 2014; Community Attributes Inc., 2014.
Note: Overall average represents the weighted average across all industrial jobs on industrial lands activities.

By county, the largest number of industrial jobs on industrial lands in 2012 were in King County, followed by Snohomish County. King County accounted for 54.9% of all industrial jobs on industrial lands across the region (**Exhibit 4.13**).

Exhibit 4.13. Industrial Jobs on Industrial Lands by County, 2012

County	Jobs	Share of Total
King	167,600	54.9%
Kitsap	18,300	6.0%
Pierce	43,100	14.1%
Snohomish	76,000	24.9%
Total	**305,100**	**100.0%**

Sources: PSRC, 2014; Community Attributes Inc., 2014. Note: Total does not exactly sum due to rounding.

BUSINESS REVENUES

Industrial businesses on industrial lands directly generated more than $155 billion in business revenues in 2012 (**Exhibit 4.14)**. The largest sources of business revenues were Wholesaling activities ($49.8 billion), followed by Aerospace manufacturing ($41.8 billion) and Refining, Chemicals, and Plastics manufacturing ($13.3 billion).

Exhibit 4.14. Estimated Business Revenues among Industrial Activities on Industrial Lands, 2012

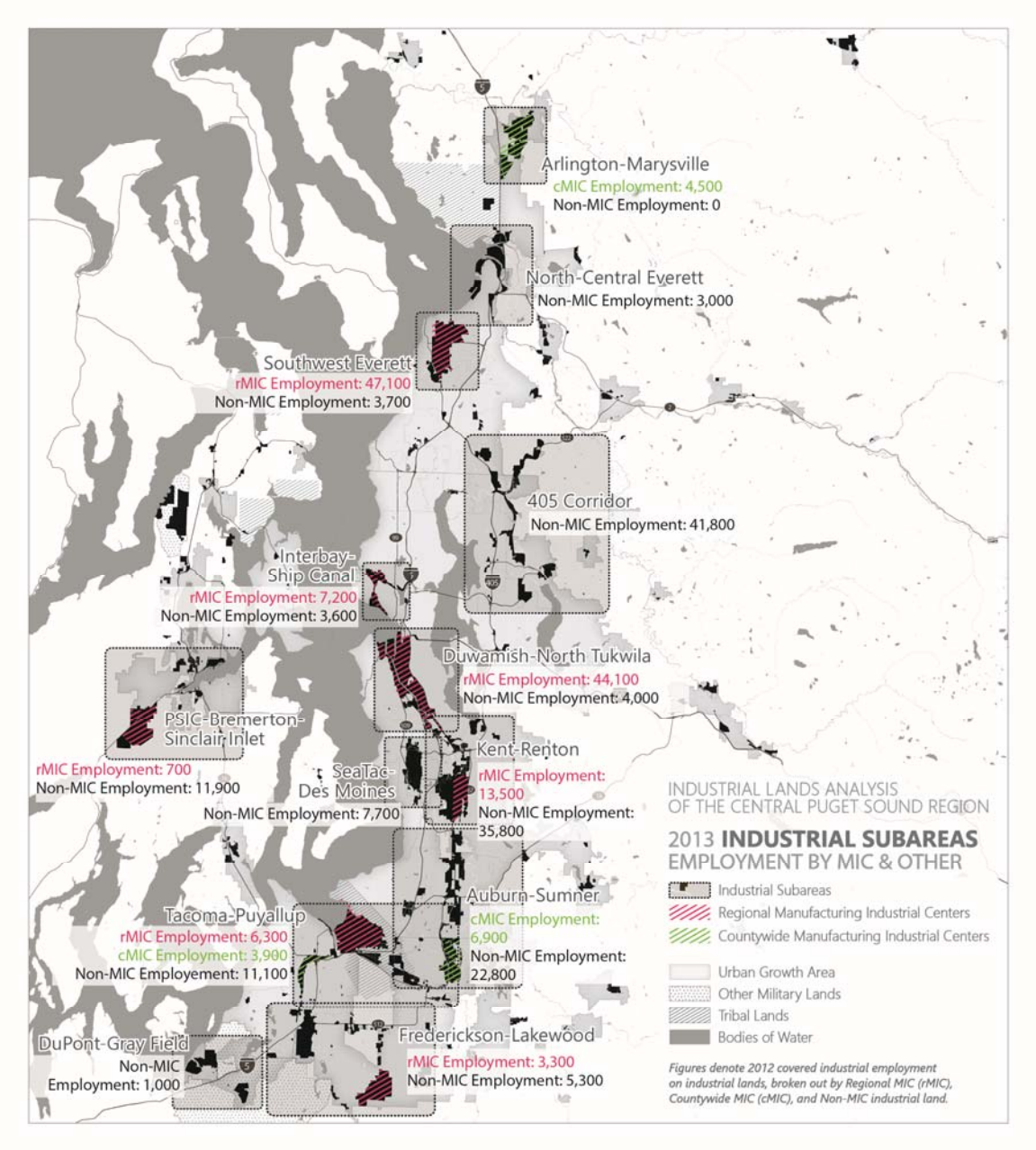
Rank	Industrial Category	Revenues (mils $)
1	Wholesaling	49,839
2	Aerospace	41,765
3	Refining, Chemicals & Plastics	13,332
4	Builders & Contractors	7,251
5	Electronics & Components	6,346
6	Printing & Publishing	5,989
7	Metals & Fabrication	3,888
8	Food & Bev Processing	3,468
9	Wood & Paper Products	3,429
10	Transportation, Distribution & Logistics	3,365
11	Other Manufacturing	3,292
12	Telecom, Broadcasting & Video Production	2,327
13	Machinery Mfg	2,267
14	Industrial Services	1,439
15	Other Transportation Equipment Mfg	1,391
16	Ship and Boat Building, Repair, and Maintenance	1,231
17	Heavy & Civil Construction	1,202
18	Utilities	866
19	Waste Management & Remediation	764
20	Building & Grounds Services	544
21	Textiles, Apparel & Leather	504
22	Warehousing & Storage	386
23	Other Industrial	263
	Total	**155,148**

Sources: PSRC, 2014; Washington State Department of Revenue, 2014; Washington State Employment Security Department, 2014; IMPLAN, 2014; Community Attributes Inc., 2014.
Note: Total does not exactly sum due to rounding.

Subarea Jobs and Business Revenues

Seventeen distinct industrial subareas have been identified (**Exhibit 4.15**) for more detailed analysis, based on contiguity and general character of each area (as explored throughout this chapter and the next). Metrics discussed below include jobs and business revenues; the latter metric refers to gross business receipts attributable to industrial activities on industrial lands.

Exhibit 4.15. Employment by Industrial Subarea & MIC, 2012



The largest of these by employment, Southwest Everett, employed an estimated 50,800 workers in 2012, of which an estimated 45,000 were employed in Manufacturing. The Duwamish-North Tukwila subarea had the largest number of Transportation, Distribution & Logistics jobs (6,600), with another 8,700 workers employed in Warehousing & Wholesale activities. The largest number of Warehousing & Wholesale jobs in 2012 were in the Kent-Renton subarea, which was also home to 24,700 Manufacturing jobs (**Exhibit 4.16**).

Dispersed lands are segmented by county. These areas are not large enough to constitute their own subareas, but are still home to important industrial activities. In 2012, industrial lands in Snohomish County not associated with a defined subarea were home to 6,900 jobs, while employment on dispersed lands in King County summed to 6,300.

Exhibit 4.16. Industrial Lands Employment by Industrial Subarea, 2012

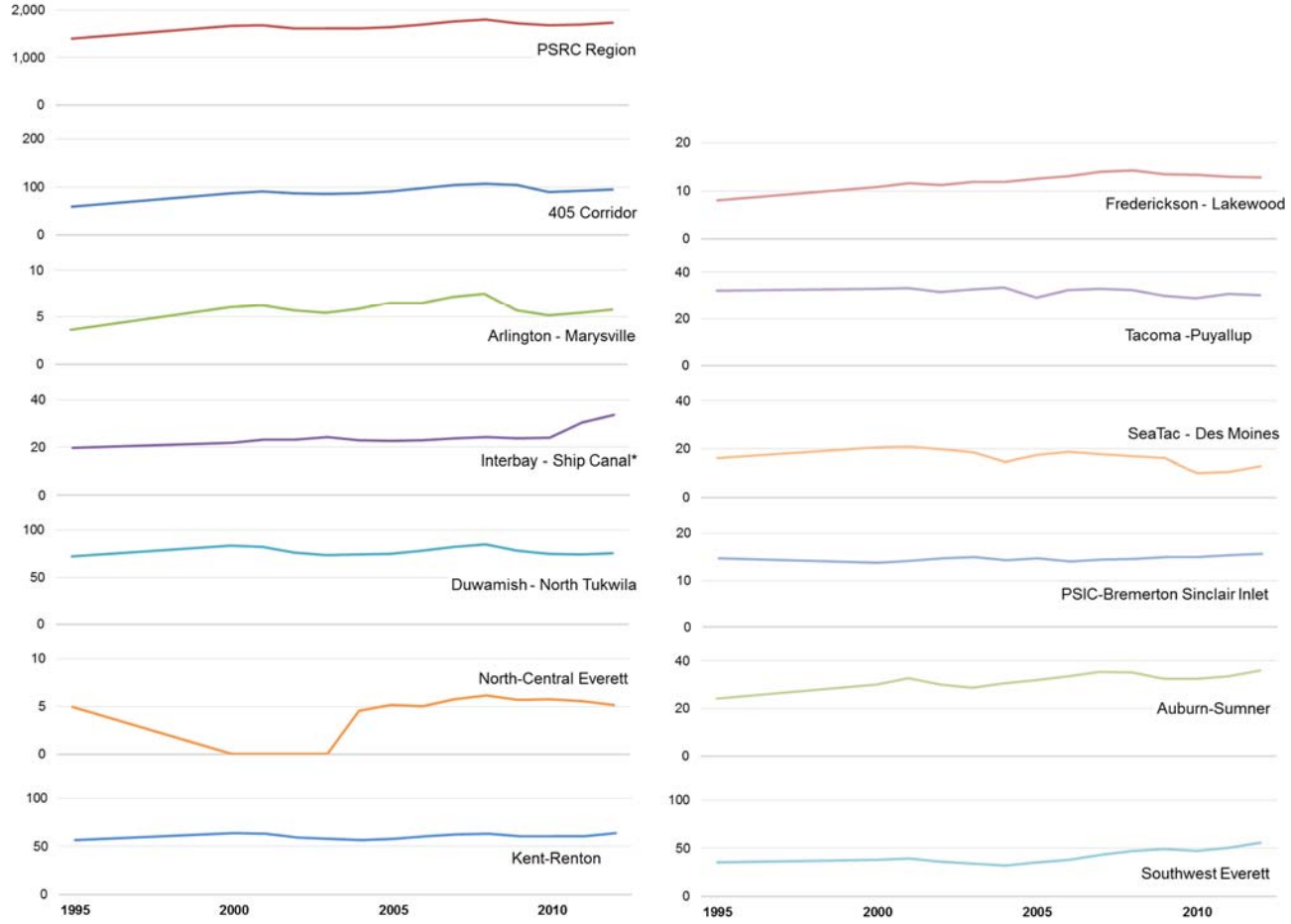
		Macro Sector					
Subarea	Total Industrial Emp	Construction	Manufacturing	Transportation, Distribution & Logistics	Warehousing & Wholesale	Other	Non-industrial
405 Corridor	41,800	4,900	23,200	1,500	5,400	6,800	53,500
Arlington-Marysville	4,600	500	3,000	300	600	200	1,100
Auburn-Sumner	29,700	3,900	12,400	3,400	8,300	1,700	6,300
DuPont-Gray Field	1,000	100	800	-	-	-	2,200
Duwamish-North Tukwila	48,100	6,900	21,500	6,600	8,700	4,500	27,300
Frederickson-Lakewood	8,600	1,200	3,700	1,300	1,400	900	4,300
Interbay-Ship Canal	10,700	1,400	6,200	1,200	1,200	700	22,800
Kent-Renton	49,300	3,500	24,700	5,500	12,800	2,800	14,500
North-Central Everett	3,000	500	1,700	400	400	100	2,100
PSIC-Bremerton-Sinclair Inlet	12,600	400	11,400	200	300	200	3,000
SeaTac-Des Moines	7,700	100	400	6,100	400	600	5,300
Southwest Everett	50,800	1,700	45,000	800	2,100	1,200	5,000
Tacoma-Puyallup	21,300	2,600	7,100	2,000	6,600	3,000	8,900
DISPERSED INDUSTRIAL LANDS							
Dispersed-King County	6,300	1,200	2,200	300	1,900	800	1,900
Dispersed-Kitsap County	1,500	400	700	-	200	200	2,800
Dispersed-Pierce County	1,100	300	500	100	100	200	1,600
Dispersed-Snohomish County	6,900	1,100	4,300	200	900	500	6,000
Industrial Employment on Industrial Lands (rounded to 100)	**305,100**	**30,700**	**168,700**	**29,800**	**51,200**	**24,400**	**168,500**

Sources: PSRC, 2014; Community Attributes Inc., 2014.
Note: The Interbay-Shipyard Canal subarea includes a nine-block area belonging to the South Lake Union area. This area was zoned industrial in 2012, but has since been rezoned as non-industrial. Non-industrial employment numbers above this reflect approximately 8,500 jobs within this area.

Total covered employment throughout the Puget Sound region has had continuous and relatively steady growth from 1995 through 2012 (**Exhibit 4.17**). This pattern is also consistent throughout most of the subareas as well. However, the 405 Corridor saw a more pronounced time period of employment growth and decline between 2006 and 2010, compared to the Puget Sound region as a whole and compared to other subareas. Additionally, Southwest Everett has seen the most pronounced trend in total covered employment growth between 1995 and 2012. The overall trend in total covered employment in the central Puget Sound region subareas has been relatively flat over time.

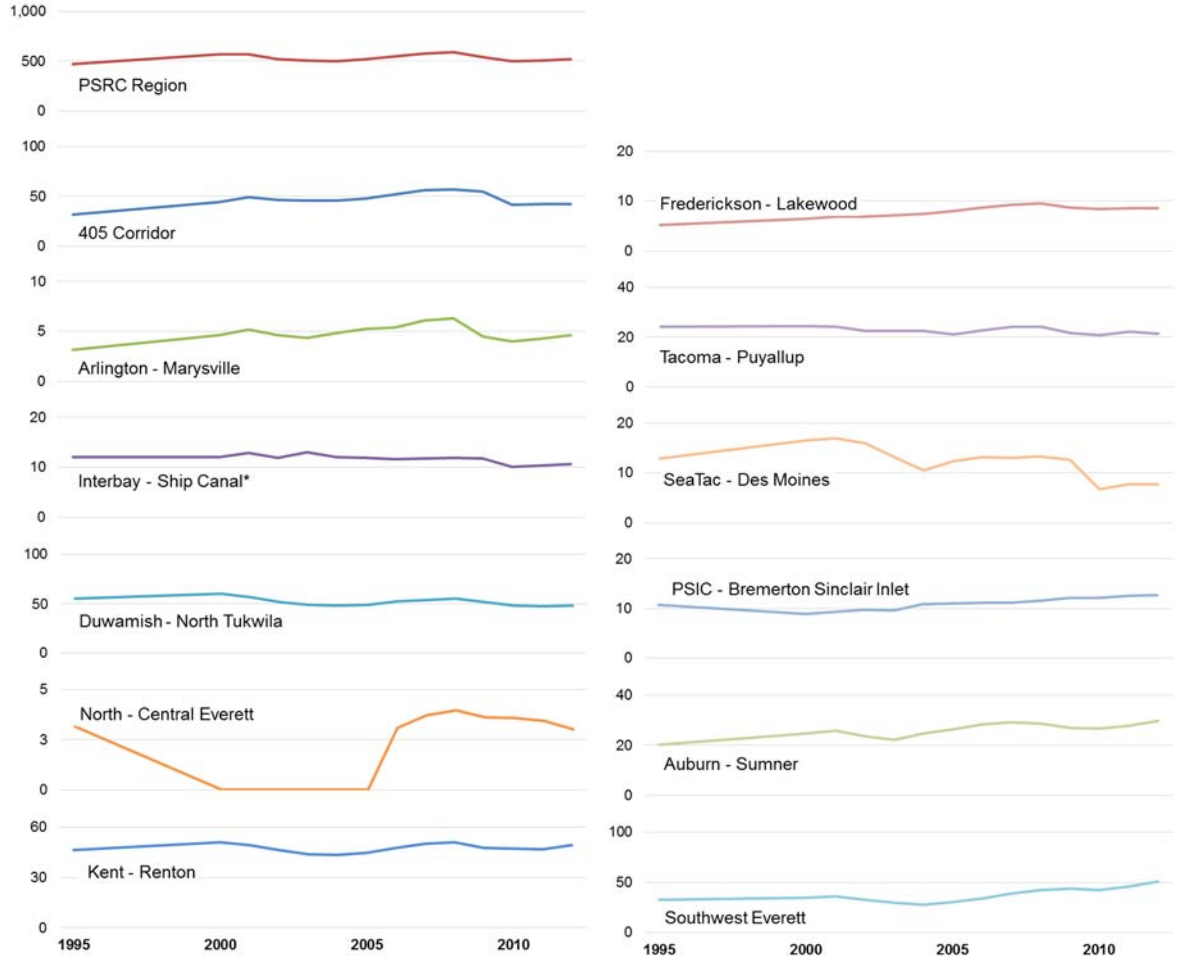
Industrial employment in the central Puget Sound region has seen some pronounced peaks and valleys between 1995 and 2012, (**Exhibit 4.18**). The Duwamish-North Tukwila subarea has had the highest industrial employment over time, but the Southwest Everett subarea has had very pronounced growth, and as of 2012 had more industrial employment than any other subarea. Also, the 405 Corridor subarea saw a dramatic drop in industrial employment starting in 2009. Most of the subareas throughout the Puget Sound region have seen relatively flat industrial employment between 1995 and 2012.

Exhibit 4.17. Total Covered Employment by Industrial Subarea and Region, 1995-2012 (Thousands of Workers)



Sources: PSRC, 2014; Community Attributes Inc., 2014. Note: The DuPont-Gray Field subarea is excluded due to confidentiality concerns in the PSRC data from the Washington State Employment Security Department for the years of 1995 through 2005. The region's dispersed industrial lands are also excluded as data was unavailable for 1995.
*The Ballard-Interbay subarea includes a nine-block area belonging to the South Lake Union area. This area was zoned industrial in 2012, but has since been rezoned as non-industrial. Non-industrial employment numbers above this reflect approximately 8,500 jobs within this area.

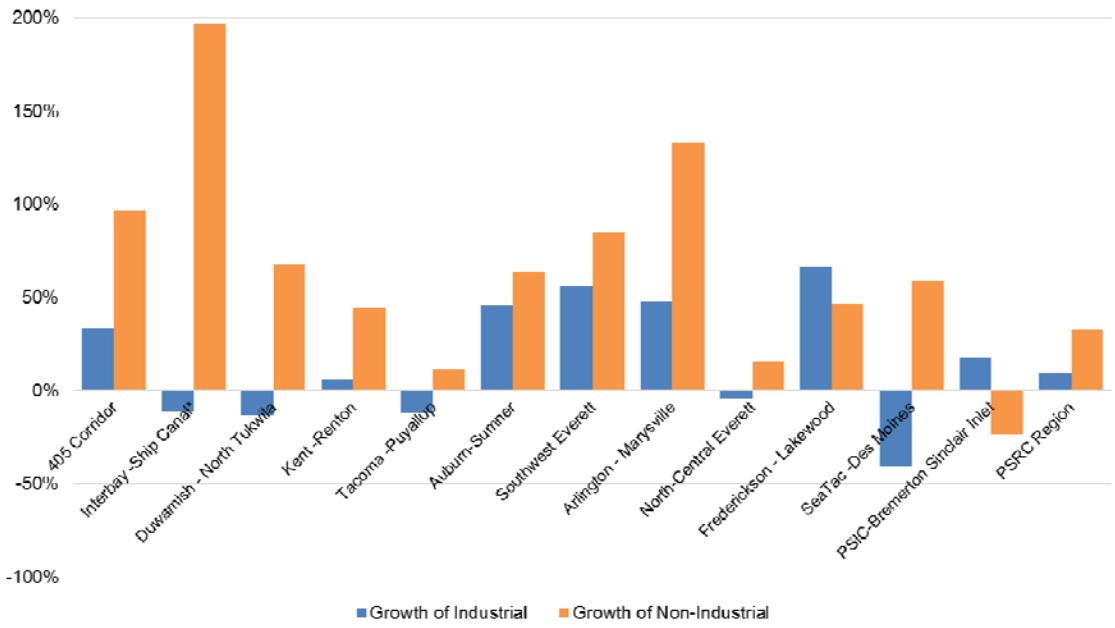
Exhibit 4.18. Industrial Employment by Industrial Subarea and Region, 1995-2012 (Thousands of Workers)



Sources: PSRC, 2014; Community Attributes Inc., 2014. Note: The DuPont-Gray Field subarea is excluded due to confidentiality concerns in the PSRC data from the Washington State Employment Security Department for the years of 1995 through 2005. The region's dispersed industrial lands are also excluded as data was unavailable for 1995.
*The Ballard-Interbay subarea includes a nine-block area belonging to the South Lake Union area. This area was zoned industrial in 2012, but has since been rezoned as non-industrial. Non-industrial employment numbers above this reflect approximately 8,500 jobs within this area.

Industrial and non-industrial employment growth rates have been low, but positive in the central Puget Sound region between 1995 and 2012 (**Exhibit 4.19)**. Five subareas saw growth in non-industrial jobs, but decline in industrial jobs over this time period. These subareas include Ballard-Interbay, Duwamish-North Tukwila, Tacoma-Puyallup, North-Central Everett, and SeaTac-Des Moines. Many of the subareas have seen very pronounced growth in non-industrial jobs; most pronounced are Interbay-Ship Canal, Arlington-Marysville, and the 405 Corridor. The PSIC-B-Sinclair Inlet subarea saw a decline in non-industrial jobs and a simultaneous increase in industrial jobs between 1995 and 2012, the only subarea that saw this growth pattern.

Exhibit 4.19. Comparison of Growth of Industrial and Non-Industrial Employment by Industrial Subarea and Region, 1995-2012



Sources: PSRC, 2014; Community Attributes Inc., 2014. Note: The DuPont-Gray Field subarea is excluded due to confidentiality concerns in the PSRC data from the Washington State Employment Security Department for the years of 1995 through 2005. The region's dispersed industrial lands are also excluded as data was unavailable for 1995.
*The Interbay-Ship Canal subarea includes a nine-block area belonging to the South Lake Union area. This area was zoned industrial in 2012, but has since been rezoned as non-industrial. Non-industrial employment numbers above this reflect approximately 8,500 jobs within this area.

In 2012, activities in the Kent-Renton subarea supported an estimated $30.3 billion in business revenues, split between Warehousing & Wholesale and Manufacturing activities (**Exhibit 4.20**). The Southwest Everett subarea generated an estimated $29.1 billion in revenues in 2012, primarily due to aircraft final assembly at the Boeing Everett facility.

Exhibit 4.20. Estimated Business Revenues from Industrial Activities by Subarea, 2012 (mils $)

Subarea	Construction	Manufacturing	Transportation, Distribution & Logistics	Warehousing & Wholesale	Other	Total
405 Corridor	1,429.04	8,916.20	181.45	6,158.85	2,072.57	18,758
Arlington-Marysville	146.06	1,534.19	41.96	619.40	45.31	2,387
Auburn-Sumner	1,149.52	6,687.28	412.81	7,123.54	311.93	15,685
DuPont-Gray Field	25.40	407.00	1.99	17.53	9.52	461
Duwamish-North Tukwila	2,009.18	10,154.41	789.82	9,724.26	903.24	23,581
Frederickson-Lakewood	360.24	1,889.24	152.15	1,504.40	259.77	4,166
Interbay-Ship Canal	402.43	2,342.26	145.28	1,263.88	171.68	4,326
Kent-Renton	1,014.97	13,826.07	659.73	14,060.90	759.59	30,321
North-Central Everett	152.12	837.20	42.92	378.22	34.06	1,445
PSIC-Bremerton-Sinclair Inlet	124.70	227.96	28.45	328.29	68.41	778
SeaTac-Des Moines	33.48	215.86	737.97	427.10	187.03	1,601
Southwest Everett	503.10	25,837.03	90.78	2,224.11	436.58	29,092
Tacoma-Puyallup	759.49	6,061.92	244.26	5,955.42	912.03	13,933
DISPERSED INDUSTRIAL LANDS						
Dispersed-King County	349.92	1,109.54	36.17	2,018.61	230.90	3,745
Dispersed-Kitsap County	116.64	353.03	-	212.49	57.73	740
Dispersed-Pierce County	87.48	252.17	12.06	106.24	57.73	516
Dispersed-Snohomish County	320.76	2,168.64	24.11	956.19	144.31	3,614
Total Revenues	**8,985**	**82,820**	**3,602**	**53,079**	**6,662**	**155,148**

Sources: PSRC, 2014; Washington State Department of Revenue, 2013; Community Attributes Inc., 2014.

Business revenues estimates are derived by use of statewide ratios of gross business income to worker by industrial sector, with additional augmentation for activities that are not fully represented in statewide gross business income data. Because revenues represent private sector activities, no business revenues are attributed to the Puget Sound Naval Shipyard, despite the large role of the shipyards as a major employer and, to a lesser extent, procurer of local contracts and materials. Furthermore, because business revenues are not reported at the regional level, data reported in **Exhibit 4.20** represent estimated revenues attributable to industrial employment by major sector and subareas.

ECONOMIC IMPACTS

Activities on industrials lands make significant contributions to the regional economy. This in large part is due to the very nature of certain industrial activities as highly tradable, such as manufacturing. These activities are net exporters of output (i.e., net importers of income) to other parts of the U.S. and world, resulting in significant revenue infusions into the region.

Indirect impacts refer to additional jobs, wages, and business revenues supported through business-to-business transactions, in this case rooted in industrial activities located on industrial lands. Industrial activities paid an average annual wage of $80,000, more than 34% above the four-county average for 2012. A large share of these higher wages are spent throughout the regional economy, supporting additional economic activity, or what is commonly referred to as "induced" impacts. Together, these two types of impacts constitute the total economic impact of industrial activities on industrial lands, or what is referred to below as "multiplier" effects.

In 2012, industrial activities on industrial lands supported, through direct and multiplier effects, 744,200 jobs, $220.6 billion in business revenues, and $45.5 billion in labor income. In other words, for each job in an industrial business on industrial land in the region, an additional nearly 1.5 jobs are supported elsewhere throughout the economy. Likewise, for every dollar of business revenue among these firms, on average another $0.45 is supported among other businesses, and every dollar of income supports $1.00 in additional income throughout the region. For every dollar in sales (final demand) among these businesses, 4.9 jobs are supported across the central Puget Sound region (**Exhibit 4.21**).

Exhibit 4.21. Industrial Land Industrial Activities Economic Multipliers, 2012

Measure	Multiplier
Total output per $ final demand	1.45
Total jobs per direct job	2.44
Total labor income per $ direct income	2.00
Total jobs per $ mil final demand	4.90

Sources: Washington State Office of Financial Management, 2013; PSRC, 2014; Community Attributes Inc., 2014.

In terms of jobs, the 305,100 direct industrial jobs on industrial lands supported an additional 439,100 jobs throughout the region through indirect and induced effects. These impacts manifest across all sectors of the economy. For instance, industrial activities on industrial lands supported 58,100 jobs among other retail activities, 39,900 among restaurants and bars, and 36,200 jobs among administrative and employment support services (**Exhibit 4.22**).

Exhibit 4.22. Top 10 Sector-Based Secondary Employment Impacts of Industrial Activities on Industrial Lands, 2012

Rank	Sector	Employment Impacts
1	Other Retail	58,100
2	Food Services and Drinking Places	39,900
3	Administrative/Employment Support Services	36,200
4	Waste Management/Other, and Agriculture Services	33,500
5	Wholesale	28,900
6	Real Estate and Rental and Leasing	25,800
7	Legal /Accounting and Bookkeeping /Management Services	25,500
8	Nursing and Residential Care Facilities, Social Assistance	25,000
9	Ambulatory Health Care Services	22,300
10	Other Construction	22,100
	All other sectors	*121,800*
	Total, All Sectors	**439,100**

Sources: Washington State Office of Financial Management, 2013; Community Attributes Inc., 2014.

TAX REVENUES

Tax revenues include both local and state payments. Direct state tax payments are based on B&O rates (a gross receipts tax) and sales tax rates, while local revenues are calculated based on the industrial activities resident in jurisdictions with retail and B&O tax rates. The B&O is a significant source of income for many local jurisdictions, in some places greater than local sales tax revenues.

In some cases, jurisdictions are home to significant amounts of industrial lands-based business revenues, but those revenues are not subject to local sales and B&O taxes. In other cases, industrial activities do not generate business revenues because the activities are federal, such as with the Puget Sound Naval Shipyard in Bremerton. However, even these activities support tax revenues indirectly through earned income spent in the regional economy.

In 2012, industrial activities on industrial lands made estimated direct B&O tax payments to the state of $455.7 million, sales tax payments of

$610.3 million, and $124.4 million in other taxes, such as utility fees and use taxes. These payments summed to nearly $1.2 billion. Secondary impacts represent tax revenues drawn from additional economic activity supported through indirect and induced effects throughout the central Puget Sound region. In 2012, an estimated $376.1 million in additional state B&O tax revenues was supported by industrial activities on industrial lands. State sales tax revenues, through direct and secondary (multiplier) impacts, summed to nearly $1.2 billion (**Exhibit 4.23**).

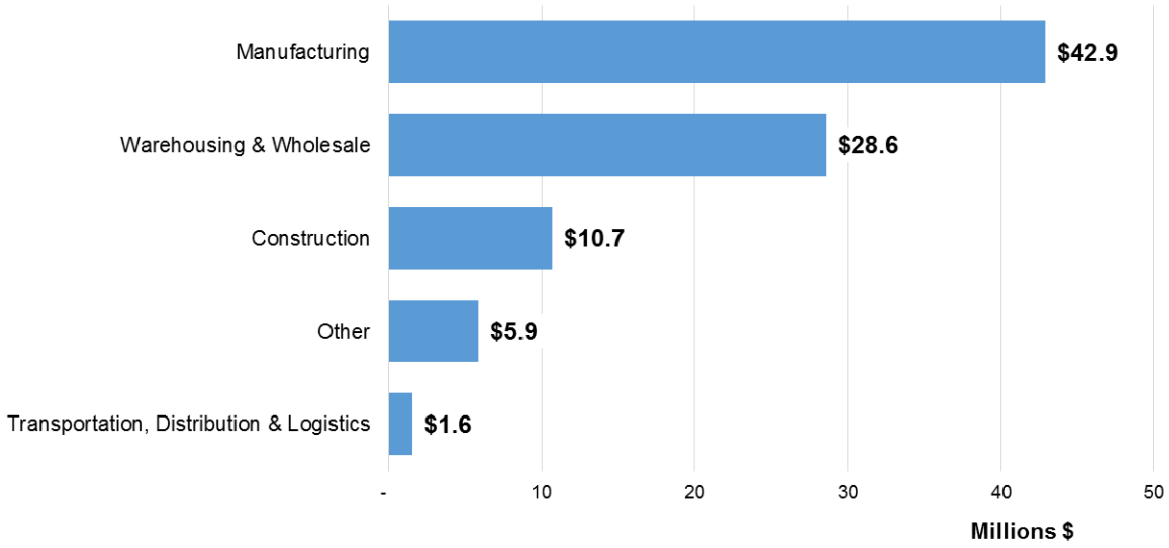
Exhibit 4.23. Estimated State Tax Revenues Generated by Industrial Activities on Industrial Lands (mils $)

Tax Category	Direct Payments	Secondary Impacts	Total Impact
B&O Tax Revenues	455.7	376.1	831.8
Sales Tax Revenues	610.3	571.8	1,182.1
Other Taxes (e.g., use taxes, utility)	124.4	109.1	233.5
Total	**1,190.5**	**1,057.0**	**2,247.5**

Sources: Washington State Office of Financial Management, 2013; Washington State Department of Revenue, 2013; Community Attributes Inc., 2014.

Local B&O tax revenues in 2012 summed to an estimated $89.6 million (**Exhibits 4.24 and 4.25**). Manufacturing activities paid an estimated $42.9 million in taxes to local governments, followed by Warehousing & Wholesaling ($28.6 million). Some jurisdictions, such as SeaTac and Arlington, impose no additional B&O tax, whereas cities that do, such as Everett, received an estimated $20.2 million in direct tax payments. The majority of Everett's B&O tax ($17.3 million) came from manufacturing activities in the Southwest Everett subarea. Industrial activities in the Duwamish-North Tukwila subarea directly paid an estimated $32.8 million in local B&O tax revenues, of which $13.0 million were paid by Manufacturing and $11.2 million by Warehouse businesses. The largest payments were in King County, with $56.6 million in payments (**Exhibit 4.26**).

Exhibit 4.24. Estimated Local Government B&O Tax Receipts from Industrial Activities on Industrial Lands



Sources: Washington State Office of Financial Management, 2013; PSRC, 2014; Washington State Department of Revenue, 2013; Community Attributes Inc., 2014.

Exhibit 4.25. Local Direct B&O Tax Revenues by Industrial Activities on Industrial Lands, 2012 (est. $)

Rank	City	Tax Payments
1	Seattle	40,470,400
2	Everett	20,228,900
3	Kent	15,424,300
4	Tacoma	11,948,800
5	Darrington	358,100
6	Bellevue	340,600
7	North Bend	299,200
8	DuPont	232,200
9	Algona	144,500
10	Bremerton	105,100
11	Bainbridge Island	70,700
12	Roy	4,200
Total		**89,627,000**

Sources: Community Attributes Inc., 2014; Washington State Department of Revenue, 2013; Association of Washington Cities, 2013.

Exhibit 4.26. Local B&O Tax Revenues by County Paid by Industrial Activities on Industrial Lands, 2012 (est.,mils $)

County	Total Business Revenues	Local B&O Revenues, mils $
King	84,608.2	56.6
Kitsap	4,191.7	0.2
Pierce	25,049.6	12.2
Snohomish	41,298.8	20.6
Total	**155,148.3**	**89.6**

Sources: Community Attributes Inc., 2014; Washington State Department of Revenue, 2013; Association of Washington Cities, 2013.

Secondary Fiscal Impacts of Industrial Activities on Industrial Lands

The economic impacts discussed earlier in this chapter extend to fiscal impacts. The fiscal impacts include, for example, additional sales tax revenues generated by the spending of income among activities supported by industrial activities, and the tax revenues drawn from these transactions. Additional revenues supported by industrial activities on industrial lands provide further tax revenues for local jurisdictions when local B&O and sales tax rates exist.

The approach to calculating additional fiscal revenues uses the distribution of economic activities by industry sector and city across the central Puget Sound region. For instance, if a jurisdiction has 20% of all manufacturing activity, then that jurisdiction would be credited with 20% of all additional manufacturing revenues supported by industrial lands' industrial activities. If the jurisdiction in question has a local B&O tax, that rate would then be applied to these additional manufacturing revenues.

The advantage of these additional calculations is to illustrate the broader fiscal benefits regionwide, even if these benefits are not equal. For example, some industrial workers on industrial lands in Everett may actually live in Bellevue. These workers may spend a large share of their disposable income in Bellevue due to their residence, with the City of Bellevue receiving the largest share of sales tax revenues as a result, even if the wages were earned outside the city. In another example, an aerospace supplier located in Kent but on non-industrial lands earns income through its contracts with Boeing Commercial in Renton; these revenues are thus subject to the applicable local B&O taxes, resulting in industrial lands-supported fiscal revenues for Kent, and not Renton.

Based on these estimates, local governments across the central Puget Sound region received an additional $102.2 million in local tax revenues

based on local B&O tax rates in 2012 (**Exhibit 4.27**). The largest recipients were Seattle ($71.4 million), Tacoma ($11.8 million), and Bellevue ($8.2 million). Industrial activities on industrial lands thus supported, directly and via multiplier effects, $191.8 million in local government B&O tax revenues. Moreover, this total excludes property taxes and statewide tax revenues that are re-invested in the region.

Exhibit 4.27. Local B&O Revenues from Industrial Activities on Industrial Lands, 2012 (est. $)

City	Direct Tax Revenues	Secondary Tax Impacts	Total Impact
Seattle	40,470,400	71,372,600	111,843,000
Tacoma	11,948,800	11,777,800	23,726,600
Bellevue	355,100	8,156,700	8,511,800
Kent	15,424,300	4,243,100	19,667,400
Everett	20,228,900	3,208,300	23,437,200
Bremerton	105,100	1,094,600	1,199,700
Issaquah		780,200	780,200
Pacific		249,600	249,600
North Bend	299,200	239,400	538,600
Burien		234,100	234,100
Bainbridge Island	70,700	226,500	297,200
DuPont	232,200	209,700	441,900
Snoqualmie		157,300	157,300
Lake Forest Park		127,400	127,400
Pacific		69,500	69,500
Algona	144,500	44,800	189,300
Ruston		4,900	4,900
Darrington	358,100	4,000	362,100
Roy	4,200	1,800	6,000
Total	**89,641,500**	**102,202,300**	**191,843,800**

Source: Washington State Office of Financial Management, 2013; Washington Association of Cities, 2013; Community Attributes Inc., 2014.
Note: Secondary impacts refer to the combined effects of indirect and induced impacts.

Impacts of Streamlined Sales Tax Policy

For most activities on industrial lands, tax revenues are directly levied by the jurisdiction where the industrial activity takes place. A major exception is sales tax levied on wholesaling activities. According to the streamlined sales tax (SST) policy, goods that are sold over the Internet or by phone are subject to the sales tax levy at the place of final destination. In the case of many Wholesaling & Warehousing activities, the immediate implication of this rule is that jurisdictions that are home to many Wholesaling and Warehousing jobs may not see a direct fiscal revenue stream associated with these activities.

To illustrate these impacts, local sales tax revenues were calculated for Wholesaling & Warehousing activities on industrial lands. These activities, across all industrial lands region wide, generate an estimated $49.8 billion in business revenues. Of this, an estimated 6.2% is in the form of final demand sales, and thus subject to a sales tax levy. Sales transacted within the region account for an estimated 95% of total sales (the remainder representing sales to customers outside the central Puget Sound region), resulting in total regional taxable retail sales of $2.9 billion in 2012.

Jurisdictions with the largest number of Wholesaling & Warehousing activities employment and associated business revenues include Kent ($9.5 billion), Seattle ($8.6 billion), Tacoma ($4.6 billion), Renton ($3.6 billion), and Auburn ($2.5 billion). If sales tax levies were restricted to the origin of sale (and not destination), the City of Kent would collect, based on the above estimates, more than $16.8 million in sales tax revenues in 2012. However, the SST lowers this total to $4.1 million, a hypothetical net loss of $12.7 million (**Exhibit 4.28**). Conversely, the City of Seattle, which under an origin-based sales tax would directly collect $15.1 million in sales tax revenues generated by Warehousing & Wholesaling activities, under the SST collects an estimated $25.4 million, a difference of $10.3 million.

Exhibit 4.28. Cities with Largest Absolute Change in Wholesaling & Warehousing Sales Tax Due to SST, 2012, (est., Mils. $)

Rank	City	W&W Revenues	Sales Taxes Collected if no SST	Estimated Actual Sales Taxes Collected	Loss or Gain in Local Sales Tax Revenues
1	Kent	9,517	16.8	4.1	-12.7
2	Seattle	8,562	15.1	25.4	10.3
3	Bellevue	102	0.2	6.0	5.8
4	Renton	3,632	6.4	2.4	-4.0
5	Tacoma	4,631	8.2	5.2	-3.0
6	Sumner	2,155	2.9	0.5	-2.4
7	Auburn	2,451	4.3	2.6	-1.7
8	Lynnwood	50	0.1	1.2	1.1
9	Kirkland	383	0.7	1.7	1.0
10	Bremerton	34	0.0	0.9	0.8

Source: Washington Association of Cities, 2013; Washington State Department of Revenue, 2014; Community Attributes Inc., 2014.
Note: Loss of gain estimates may not exactly equal differences across other columns due to rounding.

Washington's streamlined sales tax policies went into effect on July 1, 2008, nearly seven years ago. Some cities, such as Kent, may now be questioning the fiscal benefits of accommodating warehousing activities, since state laws for municipal taxes so heavily favor retail sales with points of sale locally. Warehousing is a critical component of the regional economy, however, and the local economic benefits of warehousing do

not hinge on SST alone. The local economy, local residents' job opportunities, and the city's role in the regional economy factor heavily into the relationship between local zoning and economic impacts, among other considerations.

---

[1] Covered employment refers to jobs reported to the state in accordance with the Washington State Employment Security Act. The Act exempts unincorporated self-employed, uniformed military, corporate officers, elected officials, religious workers and railroad personnel. Covered employment accounts for approximately 90% of all jobs.

[2] Estimates of industrial employment presented in this report reflect private sector industrial employers; due to limitations of the source dataset, it is difficult to determine which government workplaces are industrial in nature and which are not. The scale of such public-sector industrial employment is typically small in comparison with the private sector, but a clear exception is the Puget Sound Naval Shipyard, which employs a regionally significant number of civilian personnel in manufacturing, maintenance and repair work. An estimate of Federal ship and boat building, maintenance, and repair activities (NAICS 3366) for this geography was thus added to the prior estimates of industrial employment.

[3] Note: totals include private sector covered employment plus Puget Sound Naval Shipyard's public sector employment, but do not include other public sector activities.

[4] Data source: Washington State Employment Security Department, Quarterly Census of Employment and Wages, 2015.

5 Regional & Subarea Employment Forecasts

Chapter 5. Regional and Subarea Employment Forecasts

CHAPTER INTRODUCTION

This section examines industrial and non-industrial employment growth through analysis of the PSRC's employment forecasts for the region and the region's industrial subareas.

PSRC'S UrbanSim Land Use Model

PSRC utilizes a land use model known as UrbanSim. This model was developed in collaboration between PSRC and Dr. Paul Waddell, now at the University of California, Berkeley. UrbanSim is designed to be a dynamic, capacity-constrained model for land development. The model incorporates interactions between households, firms, and governments, as well as the real estate market, the transportation system and development patterns. Statistical models approximate the behavior of developers, households, and employers, based on detailed data specific to the region in question. A key feature is its detailed and explicit recognition of development regulations (including, but not limited to, zoning). UrbanSim then apportions regional growth to individual parcels regionwide (published at an aggregated level for small areas that cover the region).

In July 2013 PSRC published the initial public release of land use forecasts generated with UrbanSim—the Land Use Baseline product. The maintenance release that followed in April 2014 is used in this report. The Land Use Baseline scenario matches PSRC's regional economic forecast in aggregate and reflects currently adopted development regulations. Note the forecasts represent merely one potential future among a range of possible scenarios that reconcile supply and demand for industrial land in the central Puget Sound region.

Chapters 6 and 7 discuss changes in development patterns that mathematically must happen to accommodate the forecasts.

REGIONAL EMPLOYMENT FORECAST

PSRC's regional employment forecasts incorporate national and local variables to show plausible growth for planning purposes. The PSRC regional employment forecasts represent projections of total jobs (including both covered workers and the self-employed), presented in **Exhibit 5.1**.

Note that the standard industry sectors published in the PSRC forecasts do not neatly align with industrial activity groupings as defined and discussed in **Chapter 4**. To account for these differences, this analysis applies the 2013 ratio of custom

sectors (identified by Community Attributes) by forecast sector, to 2040 forecast sectors.

Exhibit 5.1. Employment Forecast by PSRC Major Sector and County, Central Puget Sound Region, 2010-2040

County-Sector	2010	2020	2030	2040
King				
Manufacturing - WTU	202,443	237,488	243,363	268,840
Retail - Food Services	187,391	220,241	251,138	294,531
FIRE - Services	559,446	745,070	863,414	1,033,671
Government / Higher Education	129,634	128,680	130,251	135,380
Education K-12	44,680	57,551	62,749	68,649
Construction-Resource	57,943	78,590	76,144	96,190
	1,181,537	1,467,620	1,627,059	1,897,261
Kitsap				
Manufacturing - WTU	14,929	17,895	18,733	20,834
Retail - Food Services	17,343	19,313	20,606	24,320
FIRE - Services	33,969	40,457	44,775	52,783
Government / Higher Education	19,877	20,055	20,835	21,275
Education K-12	6,498	8,743	9,732	10,660
Construction-Resource	4,801	5,049	5,029	6,395
	97,417	111,512	119,710	136,267
Pierce				
Manufacturing - WTU	38,591	46,633	49,943	60,920
Retail - Food Services	52,803	60,797	68,152	79,211
FIRE - Services	107,369	149,714	173,018	213,240
Government / Higher Education	78,393	87,215	88,135	89,355
Education K-12	20,335	25,957	28,539	30,908
Construction-Resource	20,383	22,680	22,473	28,007
	317,874	392,996	430,260	501,641
Snohomish				
Manufacturing - WTU	65,440	70,356	72,932	82,710
Retail - Food Services	48,793	64,135	73,834	89,243
FIRE - Services	91,498	121,896	145,117	182,192
Government / Higher Education	27,603	27,553	27,788	28,538
Education K-12	15,239	20,029	21,811	23,661
Construction-Resource	20,013	24,528	24,272	30,331
	268,586	328,497	365,754	436,675
4-County Regional Total	**1,865,414**	**2,300,625**	**2,542,783**	**2,971,844**

Source: PSRC, 2014.

SMALL-AREA EMPLOYMENT FORECASTS

Forecast Growth on Industrial Lands

Sub-regional forecasts of employment demand and land use represent one scenario that may occur under existing conditions, including local land use, markets, transportation, and other conditions. If the supply of industrial land changes, the results presented below will change.

PSRC's Land Use Baseline forecasts show industrial jobs on industrial lands increasing from **305,100 in 2012 to 389,000 by 2040.** This represents an addition of 83,900 jobs regionwide through 2040, which yields a compound annual growth rate of 0.9%. This is lower than the 1.6% CAGR for PSRC's regional employment forecast across all sectors and land types.

Critically, the proportion of industrial to non-industrial jobs is forecast to experience a pronounced change—total non-industrial jobs are projected to grow from 35.6% of total jobs on industrial lands in 2012 to 43.6% by 2040 **(Exhibit 5.2)**.

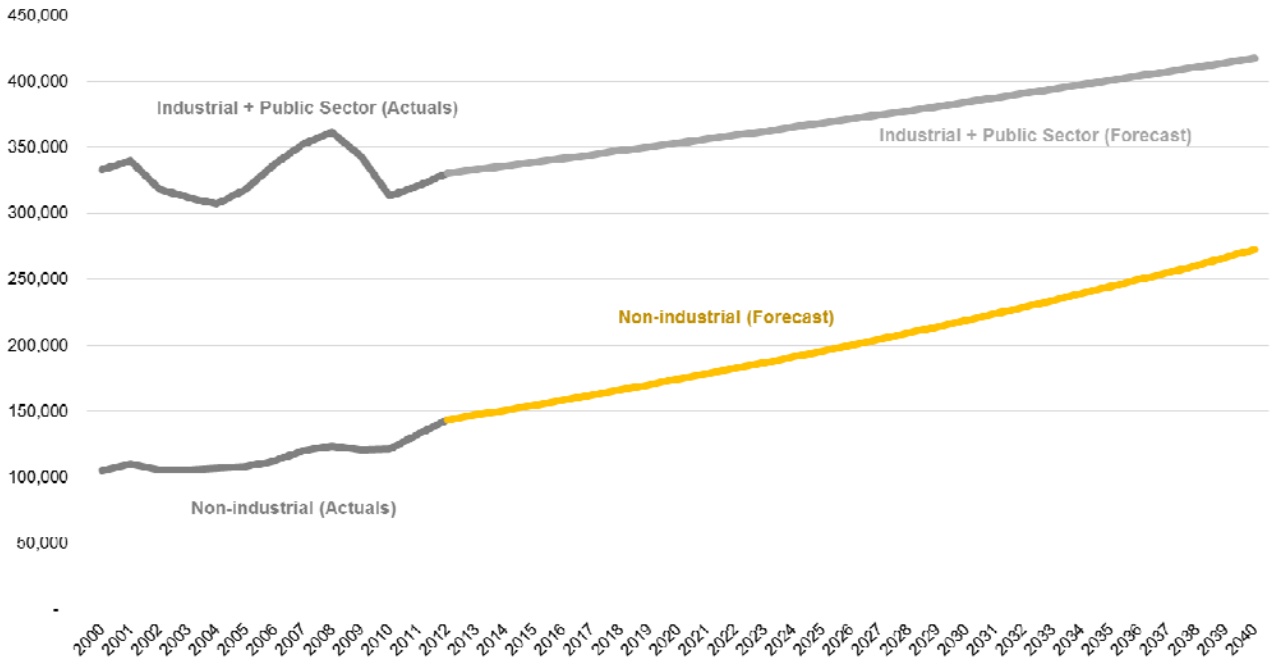
Exhibit 5.2. Share of Industrial versus Non-Industrial Employment on Industrial Lands, Central Puget Sound Region, 2012-2040

	2012	2040
Industrial	64.4%	56.4%
Non-industrial	35.6%	43.6%

Sources: PSRC, 2014; Community Attributes Inc., 2014.

Between 2012 and 2040, these non-industrial jobs on industrial lands are forecast to grow at a compound annual growth rate of 2.3%, compared with 0.9% for industrial jobs and 0.5% for other public sector jobs on industrial lands (less the Puget Sound Naval Shipyard; **Exhibit 5.3**).

Exhibit 5.3. Historic and Forecast Industrial and Non-Industrial Jobs on Industrial Lands, Regionwide (Covered Employment)



Sources: PSRC, 2014; Community Attributes Inc., 2014.

Exhibits 5.4 and 5.5 show growth across all industrial sectors on industrial lands, though growth rates vary by activity. The PSRC-derived forecasts show the greatest job growth occurring in Warehousing & Wholesaling, with 30,000 new jobs by 2040 (1.7% CAGR). Other industrial activities follow, with a net jobs increase of 26,500—a projected compound annual growth rate of 2.7% per year between 2012 and 2040. Manufacturing jobs are forecast to grow just 0.2% on industrial lands through 2040; Aerospace jobs are forecast to decline slightly during this period.

Non-military public sector industrial activities on industrial lands include public education, public vehicle depots, public sector utilities, and similar government functions. These activities are forecast to add an additional 3,600 jobs between 2012 and 2040, but with a smaller growth rate of 0.5% per year.[1]

Exhibit 5.4. PSRC Industrial Jobs Forecast by Macro Sector on Industrial Lands, Central Puget Sound Region, 2012 – 2040 (Covered Employment)

			Change 2012 - 2040	
Macro Sector	**2012 (baseline)**	**2040**	**Jobs**	**CAGR**
Construction	30,800	44,900	14,100	1.4%
Manufacturing	168,700	178,900	10,200	0.2%
Transportation, Distribution & Logistics	29,800	33,000	3,200	0.4%
Warehousing & Wholesale	51,200	81,200	30,000	1.7%
Other Industrial	24,500	51,000	26,500	2.7%
Subtotal, Industrial Jobs	*305,100*	*389,000*	*83,900*	0.9%
Public Sector (less PSNS)	25,000	28,600	3,600	0.5%
Total Industrial Jobs + Public Sector	330,100	417,600	87,500	0.8%

Sources: PSRC, 2014; Community Attributes Inc., 2014.
Note: macro sector totals do not perfectly sum to subtotal for industrial jobs due to rounding.

Variable growth among different industrial subsectors could usher in changes in the composition of employment on industrial lands. The Warehousing & Wholesale sector is projected to grow as a share of total industrial jobs on industrial lands (including public sector jobs) from 17% in 2012 to 21% in 2040, while the share of Manufacturing jobs is expected to decline (55% in 2012 to 46% in 2040).

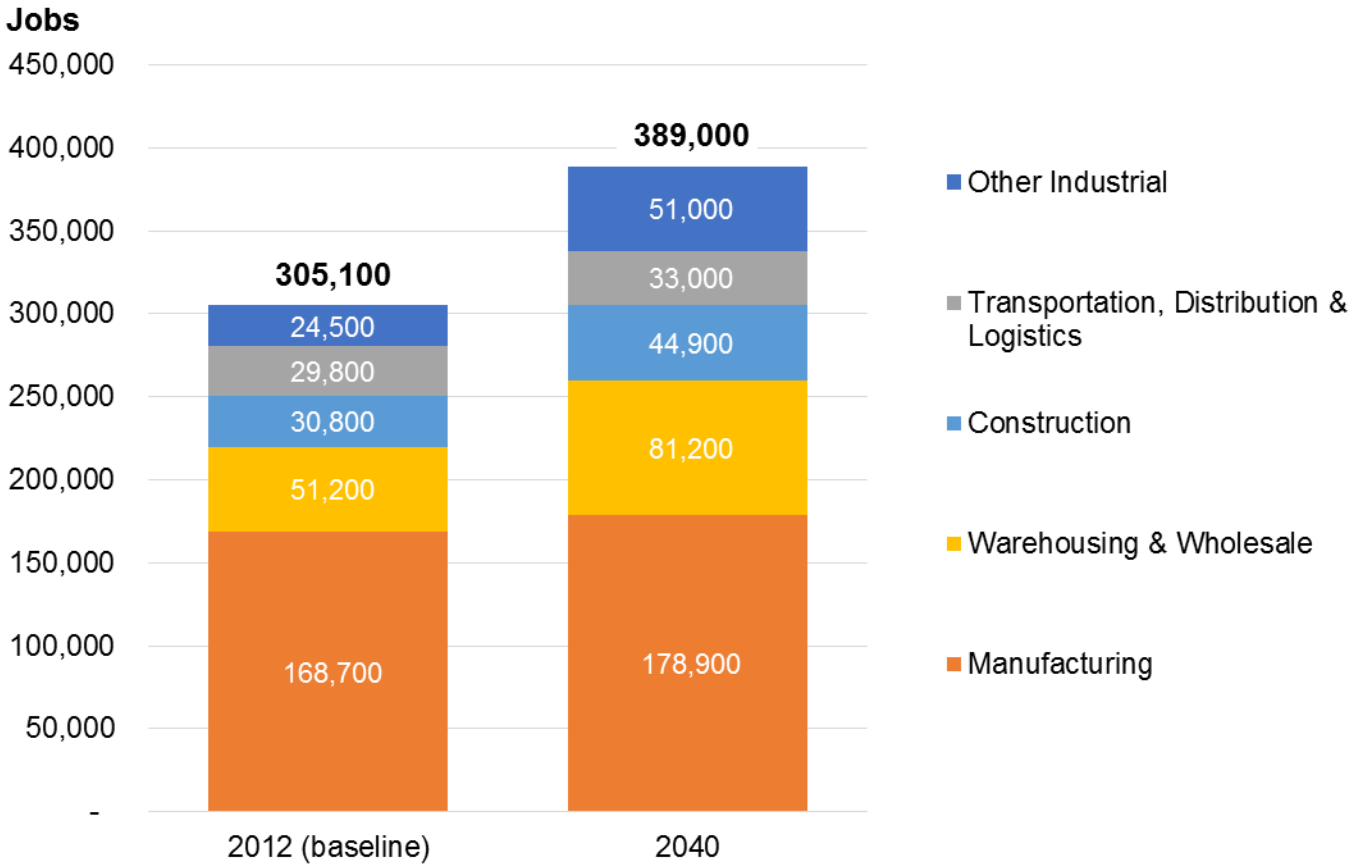
Other industrial activities—largely composed of Industrial Services[2]—have the highest forecast growth rate and are projected to increase as a share of total industrial jobs from 8% to 13% by 2040.

Forecast Growth by Subarea

Forecast growth rates by subarea between 2012 and 2040 range from 0.5% per year (Southwest Everett) to 2.4% (Frederickson-Lakewood and SeaTac-Des Moines; **Exhibit 5.6**). Dispersed industrial lands, covering land parcels across all four counties, are forecast to experience a net industrial jobs increase of 9,100 between 2012 and 2040. Within this grouping, the largest gains are projected to occur in Snohomish County, with a net increase of 3,900 jobs. However, the fastest growth among dispersed lands by county is expected within Pierce County, with a compound annual growth rate between 2012 and 2040 of 3.3%.

Due to a lower growth forecast, the Southwest Everett subarea is projected to drop in rank from the largest subarea in 2012 (50,800 jobs) to second largest by 2040 (61,600), dropping below Duwamish-North Tukwila (1.0% CAGR, 63,500 industrial jobs by 2040) and ahead of the Kent-Renton subarea (55,900 industrial jobs by 2040).

Exhibit 5.5. Industrial Jobs Forecasts by Macro Sector on Industrial Lands, Central Puget Sound Region, 2012 – 2040 (Covered Employment)



Sources: PSRC, 2014; Community Attributes Inc., 2014.

Exhibit 5.6. Industrial Jobs Forecasts by Subarea, 2012 – 2040 (Covered Jobs)

			Change 2012 - 2040	
Subarea	**2012**	**2040**	**Jobs**	**CAGR**
405 Corridor	41,800	46,200	4,400	0.4%
Arlington-Marysville	4,600	8,700	4,100	2.3%
Auburn-Sumner	29,700	33,000	3,300	0.4%
DuPont-Gray Field	1,000	1,200	200	0.7%
Duwamish-North Tukwila	48,100	63,500	15,400	1.0%
Frederickson-Lakewood	8,600	16,600	8,000	2.4%
Interbay-Ship Canal	10,700	14,000	3,300	1.0%
Kent-Renton	49,300	55,900	6,600	0.4%
North-Central Everett	3,000	4,000	1,000	1.0%
PSIC-Bremerton-Sinclair Inlet	12,600	15,900	3,300	0.8%
SeaTac-Des Moines	7,700	14,900	7,200	2.4%
Southwest Everett	50,800	61,600	10,800	0.7%
Tacoma-Puyallup	21,300	28,500	7,200	1.0%
DISPERSED INDUSTRIAL LANDS				
Dispersed-King County	6,300	8,400	2,100	1.0%
Dispersed-Kitsap County	1,500	3,000	1,500	2.5%
Dispersed-Pierce County	1,100	2,700	1,600	3.3%
Dispersed-Snohomish County	6,900	10,800	3,900	1.6%
Industrial Employment on Industrial Lands (rounded to 100)*	**305,100**	**389,000**	**83,900**	**0.9%**

Sources: PSRC, 2014; Community Attributes Inc., 2014.
*Estimates for 2040 do not sum exactly to regional total due to rounding.
Note: in order to maintain consistency between base year (2012) industrial job estimates—reported as covered employment—and 2040 forecasts for industrial jobs, PSRC's customized forecasts for 2040 by subarea, which were reported in total jobs (including proprietors), were adjusted to reflect only covered industrial jobs for 2040. However, given the very low share of industrial jobs that are not covered, the difference between total industrial jobs and covered industrial jobs for 2040 is very small.

[1] Non-military public sector activities include public schools, bus depots, and other public sector operated activities.
[2] Industrial Services include services activities that either support industrial activities, such as commercial and industrial equipment repair, or services activities that require industrial space, such as industrial launderers and appliance equipment maintenance and repair. Industrial Services belong to the larger macro category of Other Industrial Activities. For a more a detailed description, see Chapter 4.

6 Growth Capacity for Industrial Lands in the Central Puget Sound Region

Chapter 6. Growth Capacity for Industrial Land in the Central Puget Sound Region

CHAPTER INTRODUCTION

This chapter presents an assessment of industrial subarea capacity relative to the forecasts in jobs through 2040. This section asks the question: to what extent can the industrial subareas discussed throughout this analysis accommodate the forecast increase in jobs through 2040? How would these subareas need to change to accommodate the forecast increase in jobs? Importantly, PSRC forecasts rely on existing land use policies. Industrial land management policy may change as planners continue to manage land use needs in their jurisdictions.

APPROACH

Forecasting land use in the region's industrial subareas through 2040 can theoretically take one of two approaches: (1) examine trends on each subarea and extrapolate those trends to 2040 to develop jobs and land use forecasts for each subarea, or (2) examine jobs forecasts for each subarea and analyze how land use patterns must evolve to accommodate those forecasts. These two approaches are not mutually exclusive and this analysis utilizes each approach. This chapter starts with the latter of the two approaches, by taking the Land Use Baseline forecasts for subareas as an analytic input, along with land capacity data, to analyze how land utilization could evolve to accommodate the forecasts.

The PSRC Land Use Baseline employment forecasts presented in Chapter 5 reflect regionwide trends in land use, automation, markets and capacity. PSRC's UrbanSim implementation models some of these variables explicitly (as in the case of land capacity and market data), and in some cases these variables are inherently addressed through historic trends (as is the case with automation). In applying the Land Use Baseline forecasts as a measure of demand, a key caveat should be noted - that the UrbanSim job forecasts by subarea, used here as a measure of demand, are constrained by an estimate of available land supply. As noted earlier, an interpretation of development capacity under existing land use regulations is a primary input to UrbanSim's developer model, which then simulates factors such as shrinking vacant land supply, increasing prices, parcel redevelopment, and competition among alternative sites. Job forecasts therefore do not exceed the modeled capacity, which implies that demand might scale up if additional capacity were available. Consequently, as noted below, the UrbanSim forecast was acknowledged as a starting point input to the analysis, along with other suppositions in the approach:

- Regional employment growth by 2040 is forecast and accepted.

- PSRC's land use and employment forecasts provide a useful starting point to analyze where jobs are expected to increase.
- The PSRC forecasts show jobs growing in and around the industrial subareas, and as such the forecasts for the subareas are sufficient starting points in the analysis.
- Job growth will be absorbed throughout the region and the subareas on a combination of existing vacant land, redevelopable land and through infill opportunities.
- Each industrial subarea differs in its absorption forecast, depending on trends in industry sector use and will follow a combination of the following patterns:
    - In some areas, vacant land and infill areas may generally accommodate forecast job growth.
    - In some areas, employment densities must change to accommodate growth.
        - Some of these areas will experience changes in industrial versus non-industrial split of jobs.
        - The way densities must change to accommodate industrial jobs varies by subarea.
        - The way densities must change to accommodate non-industrial jobs varies by subarea.

INDUSTRIAL ABSORPTION CONSIDERATIONS

Industrial absorption trends differ substantially from all other categories because of the vast diversity of land uses that are allowed in industrial areas. Commercial and residential analyses benefit from assumptions of built space square footage (s.f.) per employee or average housing unit sizes, but no such assumption fits industrial uses. Some of the real complexities of industrial absorption that affect analysis are as follows:

- **Variety of Uses.** Industrial zoning is essentially a "miscellaneous" category in the region. The designation accommodates uses that cannot be accommodated by residential and commercial zones, which includes anything that requires noise, smells and other impacts. Ancillary support services are included, too. As a result, the vast array of uses challenges uniform absorption assumptions, such as s.f. of built space per job, floor area ratios (FARs) and other metrics otherwise useful for analyses.
- **Range of densities within the same use.** Within the industrial definitions, some uses are naturally higher density than others (small scale manufacturing versus warehousing, for example). The scale of the operations matter in most cases, and jobs densities are not uniform among similar activities of different sizes (often due to storage needs, for

example). Changes to work patterns and/or technology would be necessary in order for the same industrial activity to increase job density.

- **Construction headquarters accommodate equipment, but not many workers.** Construction jobs are included as industrial jobs, but many construction workers do not report to the main office. Rather they work at the construction site. Therefore employment forecasts of construction jobs do not serve as a good driver of industrial land use patterns.
- **Services and amenities may increase with more non-industrial jobs.** As non-industrial jobs increase in an area, they bring more demand for restaurants, convenience shopping and more. Their higher densities allow for amenities to locate near office sites. Industrial work patterns (including sites, time schedules, and vehicular reliance) result in fewer amenities in the immediate vicinity.
- **Non-industrial jobs densities can increase in traditional ways.** Examples include more stories of workers, additional work shifts, structured parking, and more jobs per built s.f.

The variety of industrial uses requires a nuanced assessment of each subarea's trends and needs to understand the regionwide outlook of industrial land capacity. The following section works through each subarea to assess forecasts and land use trends, followed by a regionwide summary of the absorption analysis.

FORECASTS AND ABSORPTION BY SUBAREA

405 Corridor

Exhibit 6.1. Employment Forecasts and Land Area, 405 Corridor Subarea, 2012-2040

Jobs	2012	2040	2012-2040
Industrial	41,800	46,200	4,400
Non-Industrial	53,500	73,300	19,800
Total	95,300	119,500	24,200
Land Area			
Total Area (acres)	4,405		
Tier A Vacant	661		
Tier B Underutilized	454		

Forecasts for employment in the 405 Corridor subarea show that most of the growth (77%) is anticipated to occur in non-industrial jobs. This job growth fits the tech industry nature of non-industrial jobs in this subarea.

The 4,400 industrial jobs would be expected to serve a range of light-industrial technology needs to match existing uses in the area. The industrial job growth could require between 65 and 100 acres of land (built at a jobs density ranging from 500 s.f. to 750 s.f., per employee, which fits the land uses in the subarea).

Accommodating non-industrial job growth at modest densities for this area (300 s.f. per job, FARs of 1.0) would require an additional 130 acres of land. The 661 vacant acres along with potential redevelopment of 454 acres should accommodate these forecasts with little change in development patterns in the subarea.

Conclusion: The 405 Corridor subarea has adequate land capacity to absorb employment forecasts with current development trends.

Arlington-Marysville

Exhibit 6.2. Employment Forecasts and Land Area, Arlington-Marysville, 2012-2040

Jobs	2012	2040	2012-2040
Industrial	4,600	8,700	4,100
Non-Industrial	1,200	8,100	6,900
Total	5,800	16,800	11,000
Land Area			
Total Area (acres)	3,303		
Tier A Vacant	849		
Tier B Supply	542		

Forecasts for employment in the Arlington-Marysville subarea show a fairly balanced mix of growth in industrial and non-industrial jobs. The area's current mix of warehousing and manufacturing would be expected to grow in number while non-industrial uses will expand to the area as overall employment and population increase in the region.

The 4,100 industrial jobs would be expected to serve additional manufacturing business. Planned growth around the airport will also support additional warehousing and logistics jobs. The industrial job growth could require between 280 and 375 acres of land (built at a jobs density ranging from 750 s.f. to 1,000 s.f., per employee, reflecting the types of uses in the subarea).

Accommodating non-industrial job growth at more modest densities (500 s.f. per job, FARs of .25) would require an additional 320 acres of land. The more modest density reflects lower-density development patterns in the area and its relatively more remote location. Non-industrial job growth will be influenced by both the airport as well as companies wishing to locate near or adjacent to I-5. The 849 vacant acres along with potential redevelopment of 542 acres represent enough land to accommodate both the growth in industrial jobs as well as growth in non-industrial jobs, even at the modest densities assumed for the area.

Conclusion: The Arlington-Marysville subarea has adequate capacity to absorb employment forecasts, provided non-industrial growth occurs with the modest densities of current trends.

Auburn-Sumner

Exhibit 6.3. Employment Forecasts and Land Area, Auburn-Sumner, 2012-2040

Jobs	2012	2040	2012-2040
Industrial	29,700	33,000	3,300
Non-Industrial	6,300	7,400	1,100
Total	36,000	40,400	4,400
Land Area			
Total Area (acres)	6,037		
Tier A Vacant	1,328		
Tier B Supply	629		

Forecasts for employment in the Auburn-Sumner subarea show an increase in industrial employment. Currently, the subarea is predominantly industrial, characterized by warehousing, transportation and logistics, as well as construction companies.

The 3,300 industrial jobs would be expected to serve additional warehousing and logistics companies (referred to as transportation, distribution and logistics). The industrial job growth could require between 200 and 300 acres of land (built at a jobs density ranging from 750 s.f. to 1,000 s.f., per employee, reflecting the types of uses in the subarea).

Accommodating non-industrial job growth at relatively modest densities (300 s.f. per job, FARs of .25) would require an additional 30 acres of land. The density of such uses is projected to be low to reflect the current mix of auto-oriented development in the area and the densities that have been historically achieved in the corridor. Non-industrial job growth will be influenced by the area's growing population and expanding commercial centers. The 1,328 vacant acres along with potential redevelopment of 629 acres represent more than enough land for the anticipated job growth.

Conclusion: The Auburn-Sumner subarea has an overall surplus of land available to absorb employment forecasts.

DuPont-Gray Field

Exhibit 6.4. Employment Forecasts and Land Area, DuPont–Gray Field Subarea, 2012-2040

Jobs	2012	2040	2012-2040
Industrial	960	1,210	250
Non-Industrial	2,220	2,940	720
Total	3,180	4,150	970
Land Area			
Total Area (acres)	1,916		
Tier A Vacant	882		
Tier B Underutilized	116		

Employment forecasts for the DuPont-Gray Field subarea project almost 1,000 new jobs between 2012 and 2040. Of those jobs, just 26% are expected to be industrial. Currently, the industrial sector in this subarea is characterized by low-FAR buildings housing manufacturing uses, many of which relate to the military presence at Joint Base Lewis-McChord.

Manufacturing uses tend to have lower employment densities when compared to some other industrial uses and most commercial uses. At 1,000 s.f. of built space per employee for these uses in DuPont, the industrial job growth could require 23 acres of land in the subarea (at average FAR of 0.25 for industrial uses, which is consistent with current development patterns).

Commercial uses in the subarea include a mix of offices and retail businesses. Accommodating forecast growth in these non-industrial segments at realistic employment densities for this subarea (300 s.f. per job, average FAR of 0.75) would require just seven acres of land. Even absent redevelopment of existing buildings, the 882 acres of vacant industrial land is more than sufficient to accommodate both the growth in industrial and non-industrial jobs.

Conclusion: The DuPont-Gray Field subarea has a surplus of land available to absorb employment forecasts with current development trends.

Duwamish-North Tukwila

Exhibit 6.5. Employment Forecasts and Land Area, Duwamish-North Tukwila Subarea, 2012-2040

Jobs	2012	2040	2012-2040
Industrial	48,149	63,485	15,336
Non-Industrial	27,261	37,758	10,497
Total	75,410	101,243	25,833
Land Area			
Total Area (acres)	5,497		
Tier A Vacant	725		
Tier B Supply	749		

Forecasts for employment in the subarea show that most of the growth (59%) is anticipated to occur in industrial jobs. As one of the region's largest concentrations of prime industrial land and the location of the Port of Seattle's lands, this job growth fits the core industrial nature of this subarea.

Industrial uses in the subarea include the port's marine shipping areas, with deep water berths, wharfs, piers, shipyards, drydocks, container cranes, container yards, cargo distribution and warehousing, oil and petroleum storage facilities, and major railroad yards. Almost all of the 15,336 new industrial jobs would be expected to occur within the core industrial lands currently in the area (99%). Vacant land alone cannot accommodate the forecasted growth in industrial jobs. Land use management strategies will be necessary or the forecasted growth will need to be accommodated elsewhere. (At 700 to 1000 s.f. per job, which fit the land uses in the area, industrial growth would require 800 to 1,200 acres of land.)

Accommodating non-industrial job growth at modest densities for this area (300 s.f. per job, FARs of 1.0) would require an additional 72 acres of land. Nearly all (94%) non-industrial jobs are forecasted to locate on core industrial lands. Relatively few of the non-industrial jobs (667 jobs) are forecasted for the industrial commercial and industrial buffer zoned lands (representing non-core industrial lands), where up to 2.5 FAR development is allowed. Vacant land totals for this subarea, even more than other subareas, likely overestimate the amount available for new uses. They include land that appears vacant but may be used for staging or outdoor storage.

Conclusion: The Duwamish-North Tukwila subarea requires strategies to accommodate growth forecasts, given the very low vacancy rates today and very strong employment growth forecasted for core industrial lands in the area. Strategies will need to address how to accommodate anticipated industrial and non-industrial jobs.

Frederickson-Lakewood

Exhibit 6.6. Employment Forecasts and Land Area, Frederickson-Lakewood Subarea, 2012-2040

Jobs	2012	2040	2012-2040
Industrial	8,600	16,600	8,000
Non-Industrial	4,300	17,800	13,500
Total	12,900	34,400	21,500
Land Area			
Total Area (acres)	7,264		
Tier A Vacant	1,597		
Tier B Supply	907		

Aerospace jobs lead the industrial sector in the Frederickson-Lakewood subarea, followed by a balance of manufacturing, construction, transportation, distribution and logistics and warehousing and wholesale employment. Forecasts indicate that the non-industrial share of total employment in the subarea will increase from 33% in 2012 to 52% in 2040.

High forecast growth in non-industrial employment suggests significant demand for land to accommodate these commercial uses. Assuming 450 built s.f. per commercial job and an average commercial FAR of 0.5, the 13,500 new non-industrial jobs would require about 279 acres of land.

Industrial job growth, at 750 built s.f. per employee and an average FAR of 0.25, would require about 551 acres. The subarea currently has 1,597 acres of vacant land, and about 907 acres of redevelopable land; the subarea should therefore have sufficient land to accommodate the combined 830 acres required by industrial and non-industrial job growth, assuming development patterns facilitate the employment and building densities described above.

Conclusion: The Frederickson-Lakewood subarea has adequate land capacity to absorb employment forecasts with current development trends, though by 2040 the forecast jobs growth will draw vacancies down sufficiently to then change the real estate market.

Interbay-Ship Canal

Exhibit 6.7. Employment Forecasts and Land Area, Interbay-Ship Canal Subarea, 2012-2040

Jobs	2012	2040	2012-2040
Industrial	10,679	14,002	3,323
*Non-Industrial	14,301	18,675	4,374
Land Area			
Total Area (acres)	1,251		
Tier A Vacant	205		
Tier B Underutilized	395		

* PSRC forecast adjusted to reflect rezoning of nine-block area of South Lake Union which was zoned industrial and since rezoned to mixed-use. A Community Attributes estimate of 8,500 jobs in 2012 and 11,100 jobs in the 2040 forecast were subtracted from the PSRC number for non-industrial jobs.

Forecasts for the subarea show that more than half (57%) of the forecasted job growth is anticipated to occur in non-industrial jobs. This reflects the diverse mix of uses within this small, urban subarea. Maritime and aerospace-related manufacturing and supply businesses are the main industrial uses in the subarea, but some of the largest employers include grocery and retail stores. The 3,323 new industrial jobs would be expected to continue to serve the industrial uses. The industrial job growth could require between 127 and 190 acres of land (built at a jobs density ranging from 500 s.f. to 750 s.f., per employee, reflecting the types of uses in the subarea). 40% of the forecasted industrial jobs are expected to be on core industrial lands with the remainder on non-core industrial-commercial zoned lands.

In addition to grocery and retail stores, the subarea contains a growing cohort of high-tech and bio-tech firms, and office-related uses in the city's (industrial commercial) zone. Accommodating non-industrial job growth at moderate densities for this area (300 s.f. per job, FARs of 1.0) would require an additional 30 acres of land. More specifically, industrial commercial lands are anticipated to absorb 100% of non-industrial jobs potentially resulting in 15 to 40 acres of redeveloped non-core industrial land (compared to 72 acres of vacant industrial commercial zoned land). The vacant and redevelopable acreage would mathematically accommodate the forecasts for both industrial and non-industrial jobs, but parcel consolidation and location of vacant parcels would be expected challenges to overcome.

Conclusion: The Interbay-Ship Canal subarea requires strategies to accommodate growth forecasts, given the strong demand for both core industrial and non-core industrial land by a diverse number of users.

Kent-Renton

Exhibit 6.8. Employment Forecasts and Land Area, Kent-Renton Subarea, 2012-2040

Jobs	2012	2040	2012-2040
Industrial	49,300	55,900	6,600
Non-Industrial	14,500	40,700	26,200
Total	63,800	96,600	32,800
Land Area			
Total Area (acres)	5,970		
Tier A Vacant	870		
Tier B Underutilized	408		

Forecasts for employment in the Kent-Renton subarea show that most of the growth (80%) is anticipated to occur in non-industrial jobs. This growth reflects a shift from the current industrial jobs mix to a more balanced mix of industrial and non-industrial jobs.

The 6,600 industrial jobs would be expected to serve additional warehousing, distribution and logistics facilities as well as high tech manufacturing, if the new jobs followed current uses. The industrial job growth could require between 150 and 300 acres of land (built at a jobs density ranging from 500 s.f. to 1,000 s.f., per employee, reflecting the types of uses in the subarea).

Accommodating non-industrial job growth at realistic densities for this area (300 s.f. per job, FARs of 0.5) would require an additional 360 acres of land. Projected non-industrial densities reflect a mix of both higher density office developments as well as lower density retail and auto-oriented uses prevalent in the area. The 870 vacant acres along with potential redevelopment of 408 acres represent enough land to mathematically accommodate both the growth in industrial jobs and shift towards a higher concentration of non-industrial jobs. However, this absorption would also lead to very tight vacancy rates that in turn would be expected to lead to intensification of development patterns over time, especially given dispersed parcels and relative market interest in vacant parcels.

Conclusion: The Kent-Renton subarea will require strategies to accommodate growth forecasts, given the very strong non-industrial employment growth forecast for the area. Strategies will likely require intensification of industrial land uses.

North-Central Everett

Exhibit 6.9. Employment Forecasts and Land Area, North-Central Everett Subarea, 2012-2040

Jobs	2012	2040	2012-2040
Industrial	3,000	4,000	1,000
Non-Industrial	2,100	4,000	1,900
Total	5,100	8,000	2,900
Land Area			
Total Area (acres)	2,507		
Tier A Vacant	610		
Tier B Supply	461		

The North-Central Everett subarea includes industrial activity in maritime, timber, aerospace and military-related uses. Non-industrial jobs account for a smaller share (about 41%) of all employment in the subarea. Forecasts suggest that higher growth in non-industrial employment will diversify the subarea to the point where industrial and non-industrial jobs are about even.

The industrial uses in the subarea are currently located in buildings with higher than average FARs for industrial uses. If this development pattern holds for new development (average industrial FAR of 0.5), and assuming that each new job requires, on average, 750 s.f. of built space, the industrial job growth could require about 34 acres of land in the subarea.

Accommodating forecasted growth in non-industrial job segments at realistic employment densities for this subarea (500 square feet per job; average FAR of 0.5) would require 44 acres of land. The 610 acres of vacant land in the subarea are sufficient to accommodate the 78 acres of land that combined industrial and non-industrial forecasted job growth may require.

Conclusion: The North-Central Everett subarea has adequate land capacity to absorb employment forecasts with current development trends.

PSIC-Bremerton-Sinclair Inlet

Exhibit 6.10. Employment Forecasts and Land Area, PSIC-Bremerton-Sinclair Inlet Subarea, 2012-2040

Jobs	2012	2040	2012-2040
Industrial	12,640	15,906	3,266
Non-Industrial	3,039	4,305	1,266
Total	15,679	20,211	4,532
Land Area			
Total Area (acres)	5,526		
Tier A Vacant	2,414		
Tier B Supply	197		

Forecasts for employment in the PSIC-Bremerton-Sinclair Inlet subarea show that the majority of the growth (72%) is anticipated to occur in industrial jobs. This forecast reflects anticipated growth more than the redevelopment of existing industrial space since the subarea is currently largely undeveloped with a significant amount of vacant land, as well as forest lands and wetlands. It is also currently served by few transportation facilities.

The 3,266 new industrial jobs could require 210 to 300 additional acres of land (built at a jobs density ranging from 700 s.f. to 1,000 s.f., per employee, which fits the land uses anticipated in the area.)

Accommodating non-industrial job growth at modest densities for this area (300 s.f. per job, FARs of 0.5) would require an additional 17 acres of land. The 2,414 vacant acres could easily accommodate these forecasts with little change in development patterns in the subarea.

Conclusion: The PSIC-Bremerton-Sinclair Inlet subarea has a surplus of land beyond that required to accommodate forecasts.

SeaTac-Des Moines

Exhibit 6.11. Employment Forecasts and Land Area, SeaTac-Des Moines Subarea, 2012-2040

Jobs	2012	2040	2012-2040
Industrial	7,700	14,900	7,200
Non-Industrial	5,400	9,100	3,700
Total	13,100	24,000	10,900
Land Area			
Total Area (acres)	2,648		
Tier A Vacant	446		
Tier B Supply	99		

The SeaTac-Des Moines subarea is anchored by the Seattle-Tacoma International Airport, and the industrial employment in the subarea reflects the presence of the airport and its dependents. Jobs in transportation, distribution and logistics account for the bulk of the jobs in this subarea. Forecasts for the subarea project significant job growth in traditional industrial segments and in non-industrial employment alike. Transportation, distribution and logistics jobs generally occur at lower employment densities, and the facilities to support transportation, distribution and logistics uses also tend to have low building densities. As a result, industrial job growth could require 661 acres of land if employment densities average 1,000 built s.f. per worker and facilities are constructed at an average FAR of 0.25.

The presence of a regional transportation hub is attractive for non-industrial employers as well. Retail and services jobs often occur at lower densities, but office and hotel uses, especially in transit-oriented developments, may show higher employment and building densities than many other commercial uses. Accommodating forecasted new non-industrial jobs at 400 built s.f. per job and an average FAR of 0.75 would require 45 acres of land.

The SeaTac-Des Moines Subarea has only 446 acres of vacant land, and 545 acres of combined vacant and redevelopable land (which includes noise-impacted former residential property). This supply is insufficient to accommodate the forecasted growth in industrial and non-industrial jobs unless all uses occur at higher densities than currently exist in the subarea.

Conclusion: The SeaTac-Des Moines subarea requires strategies to accommodate growth forecasts, given the very low vacancy rates today and very strong employment growth forecast for the area.

Southwest Everett

Exhibit 6.12. Employment Forecasts and Land Area, Southwest Everett Subarea, 2012-2040

Jobs	2012	2040	2012-2040
Industrial	50,800	61,600	10,800
Non-Industrial	4,967	6,812	1,845
Total	55,767	68,412	12,645
Land Area			
Total Area (acres)	4,449		
Tier A Vacant	948		
Tier B Supply	390		

Forecasts for employment in the Southwest Everett Subarea show that the majority of the growth (85%) is anticipated to occur in industrial jobs. As the region's largest concentration of aerospace manufacturing, this job growth fits the industrial aviation operations nature of this subarea.

As the location of Boeing's manufacturing facility and Snohomish County's busiest airport in Paine Field, most of the activity here is aviation-related, including uses such as aircraft production, maintenance, testing, flight training, business and corporate aviation and military aviation. The 10,800 new industrial jobs would be expected to occur within these activities currently in the area. This industrial job growth could require 750 to 1,000 additional acres of land (built at a jobs density ranging from 750 s.f. to 1,000 s.f., per employee, reflecting the types of uses in the subarea).

Accommodating non-industrial job growth at modest densities for this area (400 s.f. per job, FAR of 0.50) would require an additional 34 acres of land. The 948 vacant acres along with potential redevelopment of 390 acres could potentially accommodate these forecasts in the subarea with little changes in development patterns in the subarea.

Conclusion: The Southwest Everett subarea has adequate capacity to absorb employment forecasts, provided industrial and non-industrial growth occurs with employment and building densities consistent with current development patterns. Demand for land within this subarea, however, is strong enough to merit management strategies.

Tacoma-Puyallup

Exhibit 6.13. Employment Forecasts and Land Area, Tacoma- Puyallup Subarea, 2012-2040

Jobs	2012	2040	2012-2040
Industrial	21,300	28,500	7,200
Non-Industrial	8,900	26,000	17,100
Total	30,200	54,500	24,300
Land Area			
Total Area (acres)	7,594		
Tier A Vacant	2,182		
Tier B Supply	1,327		

Forecasts for employment in the Tacoma-Puyallup subarea show higher growth in non-industrial jobs, with such jobs representing 70% of all job growth in the subarea. Currently, the subarea is predominantly industrial, anchored by Port of Tacoma facilities as well as access to I- 5.

The 7,200 industrial jobs would be expected to serve existing port facilities as well as manufacturing and distribution companies. The industrial job growth could require between 160 and 250 acres of land (built at a jobs density ranging from 500 s.f. to 750 s.f., per employee, reflecting the types of uses in the subarea). The growth in non-industrial jobs will represent a relative shift for the subarea.

Accommodating non-industrial job growth at relatively higher densities on average (300 s.f. per job, FARs of 0.75) would require an additional 160 acres of land. The urban location of the subarea and potential growth in land values suggests that higher-density commercial development is likely. Non-industrial job growth will be influenced by both access to I-5 as well as growth in nearby commercial centers, such as downtown Tacoma. The 2,182 vacant acres along with potential redevelopment of 1,327 acres represent enough land to accommodate both the growth in industrial jobs as well as growth in non-industrial jobs.

Conclusion: The Tacoma-Puyallup subarea has adequate land capacity to absorb employment forecasts with current development trends. However, some pockets within this area, such as the more densely developed urban areas in Tacoma, will require management strategies

Dispersed-King County

Exhibit 6.14. Employment Forecasts and Land Area, Dispersed-King County, 2012-2040

Jobs	2012	2040	2012-2040
Industrial	6,300	8,400	2,100
Non-Industrial	1,900	12,100	10,200
Total	8,200	20,500	12,300
Land Area			
Total Area (acres)	2,835		
Tier A Vacant	1,273		
Tier B Underutilized	535		

Employment forecasts for Dispersed-King County show that the vast majority of growth (83%) is expected to occur in non-industrial jobs, representing a substantial shift from current employment patterns where industrial jobs dominate. This job growth fits the general trend whereby an increasing number of non-industrial jobs are located on industrial lands.

The forecast 2,100 industrial jobs would likely be in manufacturing and warehousing & distribution, the current areas of specialization. These types of uses typically have lower employment densities than commercial or other industrial activities. Based on this assumption, projected industrial job growth could require between 140 and 200 acres of land (built at a jobs density ranging from 750 s.f. to 1,000 s.f., per employee at an average FAR of .25, reflecting the types of uses in the subarea).

Accommodating non-industrial job growth at moderate densities (at 500 s.f. per job and an average 0.25 FAR) would require an additional 468 acres of land. The 1,273 vacant acres, along with potential redevelopment of 535 acres, should accommodate this growth with little changes in development patterns on these lands. Industrial lands in this category are widely scattered on relatively small parcels, resulting in data suppression. Thus, attributing this growth to any particular area within the county is not possible.

Conclusion: Dispersed industrial lands in King County have adequate capacity to absorb employment forecasts, provided industrial and non-industrial growth occurs with moderate employment and building densities.

Dispersed-Kitsap County

Exhibit 6.15. Employment Forecasts and Land Area, Dispersed-Kitsap County, 2012-2040

Jobs	2012	2040	2012-2040
Industrial	1,500	3,000	1,500
Non-Industrial	2,700	6,200	3,500
Total	4,200	9,200	5,000
Land Area			
Total Area (acres)	4,856		
Tier A Vacant	598		
Tier B Underutilized	287		

Employment in Dispersed-Kitsap County is forecast to grow mainly (70%) in non-industrial jobs, which is largely consistent with the current situation where non-industrial jobs account for the majority of employment on these lands.

The 1,500 additional industrial jobs would be expected to serve a diverse range of manufacturing needs for both civilians and the military, due to the presence of Naval Base Kitsap. As manufacturing uses tend to have lower employment densities than commercial and other industrial activities, the industrial job growth could require between 100 and 140 acres of land, assuming 750 to 1,000 s.f. of built space per job and an average FAR of 0.25.

Accommodating non-industrial job growth at moderate densities for this area (500 s.f. per job at an average 0.25 FAR) would require around 161 acres of additional land. The 598 vacant acres along with potential redevelopment of 287 acres should provide more than enough land to accommodate these forecasts, with little change to current development patterns. Industrial lands in this category are widely scattered on relatively small parcels, resulting in data suppression. Thus, attributing this growth to any particular area within the county is not possible.

Conclusion: Dispersed industrial lands in Kitsap County have adequate capacity to absorb employment forecasts, provided industrial and non-industrial growth occurs with moderate employment and building densities.

Dispersed-Pierce County

Exhibit 6.16. Employment Forecasts and Land Area, Dispersed-Pierce County, 2012-2040

Jobs	2012	2040	2012-2040
Industrial	1,100	2,700	1,600
Non-Industrial	1,600	3,700	2,100
Total	2,700	6,400	3,700
Land Area			
Total Area (acres)	1,883		
Tier A Vacant	587		
Tier B Underutilized	342		

Forecasts for employment in Dispersed-Pierce County show that slightly more growth (57%) is expected to occur in non-industrial jobs. As these lands already have a smaller proportion of industrial jobs, the widening gap between the two categories may be due to general trends towards non-industrial jobs locating on industrial lands.

The forecasted 1,600 industrial jobs are anticipated to be engaged in manufacturing and construction activities already extant in the subarea. As manufacturing typically involves lower employment densities than commercial and other industrial activities, the industrial job growth could be expected to need between 110 and 150 acres of land at 750 to 1,000 s.f. of built space per job at an average 0.25 FAR, which fits the area's current land uses.

Accommodating non-industrial job growth at moderate densities for this area, assuming 500 s.f. per job at an average 0.25 FAR, would require around 96 acres of land. The 587 vacant acres along with potential redevelopment of 342 acres should accommodate these forecasts with little changes in development patterns on these lands. Industrial lands in this category are widely scattered on relatively small parcels, resulting in data suppression. Thus, attributing this growth to any particular area within the county is not possible.

Conclusion: Dispersed industrial lands in Pierce County have adequate capacity to absorb employment forecasts, provided industrial and non-industrial growth occurs with moderate employment and building densities.

Dispersed-Snohomish County

Exhibit 6.17. Employment Forecasts and Land Area, Dispersed-Snohomish County, 2012-2040

Jobs	2012	2040	2012-2040
Industrial	6,900	10,800	3,900
Non-Industrial	6,100	14,500	8,400
Total	13,000	25,300	12,300
Land Area			
Total Area (acres)	4,039		
Tier A Vacant	1,142		
Tier B Underutilized	779		

Forecasts for employment in Dispersed-Snohomish County show that much of the growth (68%) is expected to occur in non-industrial jobs, representing a shift from current employment patterns. Snohomish County has traditionally depended heavily upon natural resource-based jobs, and as these have declined, small communities have turned to more commercial and service-oriented jobs.

The forecasted 3,900 industrial jobs would be expected to fall mostly into a wide range of manufacturing activities, remaining largely consistent with existing employment. As manufacturing uses generally have lower employment densities than commercial and other industrial uses, the industrial job growth could require between 270 and 360 acres of land, assuming 750 to 1,000 s.f, of built space per job at an average 0.25 FAR, which fit the land uses in the area.

Accommodating non-industrial job growth at moderate densities for this area, at 300 s.f. per job and an average 0.25 FAR, would require approximately 386 acres of land. The 1,142 vacant acres along with the potential redevelopment of 779 acres should accommodate these forecasts with little changes in development patterns on these lands. Industrial lands in this category are widely scattered on relatively small parcels, resulting in data suppression. Thus, attributing this growth to any particular area within the county is not possible.

Conclusion: Dispersed industrial lands in Snohomish County have adequate capacity to absorb employment forecasts, provided non-industrial growth occurs with moderate employment and building densities.

REGIONAL SUMMARY OF EMPLOYMENT FORECASTS AND ABSORPTION IMPLICATIONS

The previous section demonstrated that the subareas vary in their capacity to absorb employment growth forecasted to occur in each subarea. While technically all, mathematically, have the capacity to absorb growth, considerations such as the desirability of existing vacant land will require strategies in some subareas to adapt to the demand for land in those areas. The subareas can be grouped into the following categories:

- **Strong demand/limited capacity.** For some subareas, strategies and planning will be required to accommodate growth. These include the Interbay-Ship Canal, Duwamish-North Tukwila, Kent-Renton, and SeaTac-Des Moines subareas.
- **Strong demand/adequate capacity.** In some subareas, capacity appears adequate, but demand is strong enough to merit management strategies. These include the Frederickson-Lakewood, Southwest Everett and Tacoma-Puyallup subareas.
- **Adequate capacity.** Some subareas have adequate land capacity to accommodate growth forecasts. These include the 405 Corridor, Arlington-Marysville, and North-Central Everett subareas, as well as the dispersed areas in all four counties.
- **Surplus capacity.** Some subareas have surplus land capacity beyond growth forecasts. These include the DuPont-Gray Field, PSIC-Bremerton-Sinclair Inlet, and Auburn-Sumner subareas.

Exhibit 6.18 provides a summary table of employment forecasts and land capacity, as analyzed for this study.

Exhibit 6.18. Summary of Employment Forecasts and Available Land, Industrial Subareas in Central Puget Sound Region, 2012 - 2040

	Jobs									Land Area (acres)		
	2012			2040			2012-2040					
Area	Industrial	Non-Industrial	Total	Industrial	Non-Industrial	Total	Industrial	Non-Industrial	Total	Total Area (acres)	Tier A Vacant	Tier B Underutilized
405 Corridor	41,800	53,500	95,300	46,200	73,300	119,500	4,400	19,800	24,200	4,405	661	454
Arlington-Marysville	4,600	1,200	5,800	8,700	8,100	16,800	4,100	6,900	11,000	3,303	849	542
Auburn-Sumner	29,700	6,300	36,000	33,000	7,400	40,400	3,300	1,100	4,400	6,037	1,328	629
DuPont-Gray Field	1,000	2,200	3,200	1,200	2,900	4,200	300	700	1,000	1,916	882	116
Duwamish -North Tukwila	48,100	27,300	75,400	63,500	37,800	101,200	15,300	10,500	25,800	5,497	725	749
Frederickson-Lakewood	8,600	4,300	12,900	16,600	17,800	34,400	8,000	13,500	21,500	7,264	1,597	907
Interbay-Ship Canal*	10,700	14,300	NA	14,000	18,700	NA	3,300	4,400	NA	1,251	205	395
Kent-Renton	49,300	14,500	63,800	55,900	40,700	96,600	6,600	26,200	32,800	5,970	870	408
North - Central Everett	3,000	2,100	5,100	4,000	4,000	8,000	1,000	1,900	2,900	2,507	610	461
PSIC-Bremerton-Sinclair Inlet	12,600	3,000	15,700	15,900	4,300	20,200	3,300	1,300	4,500	5,526	2,414	197
SeaTac-Des Moines	7,700	5,400	13,100	14,900	9,100	24,000	7,200	3,700	10,900	2,648	446	99
Southwest Everett	50,800	5,000	55,800	58,100	7,100	65,200	7,300	2,100	9,400	4,449	948	390
Tacoma-Puyallup	21,300	8,900	30,200	28,500	26,000	54,500	7,200	17,100	24,300	7,594	2,182	1,327
Dispersed - King County	6,300	1,900	8,200	8,400	12,100	20,500	2,100	10,200	12,300	2,835	1,273	535
Dispersed - Kitsap County	1,500	2,700	4,200	3,000	6,200	9,200	1,500	3,500	5,000	4,856	598	287
Dispersed - Pierce County	1,100	1,600	2,700	2,700	3,700	6,400	1,600	2,100	3,700	1,883	587	342
Dispersed - Snohomish County	6,900	6,100	13,000	10,800	14,500	25,300	3,900	8,400	12,300	4,039	1,142	779
Total	305,000	160,300	465,400	385,400	293,700	679,100	80,400	133,400	213,700	71,983	17,318	8,617

* PSRC forecast adjusted to reflect rezoning of nine-block area of South Lake Union which was zoned industrial and since rezoned to mixed-use. A Community Attributes estimate of 8,500 jobs in 2012 and 11,100 jobs in the 2040 forecast were subtracted from the PSRC number for non-industrial jobs.

Note: Total does not exactly sum due to rounding.

7 Policy & Zoning Strategies for Industrial Lands in the Central Puget Sound Region

Chapter 7. Policy and Zoning Strategies for Enhancing Industrial Land in the Central Puget Sound Region

CHAPTER INTRODUCTION

This chapter reviews potential policy and regulatory tools that cities, counties and other organizations can employ. The tools draw on research presented in the preceding chapters of the report, as well as best practices from other regions. Based on the understanding that land use policies are local, local jurisdictions are best positioned to develop them. Several jurisdictions in the region already have in place similar policies to those recommended below. In these cases, preservation of existing policies that protect industrial land may be sufficient.

LAND USE STRATEGIES FOR CONSIDERATION BY LOCAL JURISDICTIONS

Zoning codes throughout the region do not currently reflect a clear consensus on a set of uses that are industrial and need exclusively industrial-zoned land to operate. Identifying more clearly which uses are industrial, industrial-dependent (suppliers and infrastructure), and industrial-related (services directly to industrial uses and employees) can help jurisdictions analyze their industrial designations and policies. Core industrial districts could allow non-industrial uses only to the extent that they provide services in support of industrial businesses or otherwise encourage the viability of industrial corridors. At the core of this work would be recognizing compatibility issues between industrial and non-industrial uses. The region's Shoreline Master Programs offer an example of a system that identifies and prioritizes uses to ensure valuable waterfront is held for essential uses. In the program, land uses are categorized as water-dependent or water-related. The following are land use strategies that local jurisdictions should consider to preserve an adequate and appropriate supply of industrial land.

1. Ensure an Adequate Supply of Land for Industrial Uses

Core industrial land that is protected from incompatible uses is needed for future industrial development. Certain subareas show high demand and low vacancy of land zoned for industrial uses; others may encounter shortages in the future given current development patterns. Maintaining an adequate supply of industrial-zoned land will ensure that current and future industrial users will be able to operate effectively and expand if necessary. Considering compatibility issues will ensure that industrial uses to not negatively impact, or are impacted by, nearby land uses. The following policies and actions are examples of strategies that local jurisdictions should consider to protect existing land supply and, where necessary, to expand it.

A. Identify and Protect Priority Users of Industrial Lands

Port operations, rail operations, logistics, distribution, general and heavy manufacturing and other uses require industrial lands due to the impacts they generate and their unique infrastructure needs. These uses are keystones in the industrial ecosystem, since they generate demand for warehousing, transportation, resource extraction and other related industries. Some of these users, for example, the ports' container terminals, cannot be moved elsewhere in the region. Uses such as these are often called water or port-dependent/related uses. Similarly, uses that rely on access to freight rail can be identified as rail-dependent. Prioritizing these users over users who may enjoy space or agglomeration benefits only should be considered.

Several of the region's cities already have policies in place that prioritize and protect industrial uses. For example, the City of Everett zoned all of the land within the vicinity of Paine Field and in the noise footprint of its airport for industrial use, and prohibited housing in these areas. In the 1980s, the City of Everett formed large local improvement districts to extend roads and utilities into Southwest Everett to encourage industrial development of this large area. Property owners did not have the resources to take on large infrastructure investments needed to make the area ready for industrial development. In 1990 Everett revised its industrial zoning regulations and rezoned areas that previously had allowed a wide range of non-industrial uses under a pyramidal zoning code. This strictly limited non-industrial uses. In 1991, Everett approved a master plan amendment for the Boeing 777 expansion at the Everett plant, and required Boeing to provide $49 million in transportation impact mitigation. This funding was then leveraged into over $300 million in transportation improvements in the area, most of which went to state highway facilities and county arterials.

B. Limit Non-Industrial Uses on Industrial Land and Provide Adequate Non-Industrial Land for Non-Industrial Uses off Industrial Land

Often, non-industrial uses are allowed on industrial lands, particularly in industrial-commercial zones, because these locations are easier or less expensive to site. When cities allow non-industrial uses such as small retail, auto sales and repair, and offices on industrial-zoned land, the only restriction placed on them is often a size limitation. These uses compete with industrial uses in a number of ways. Some non-industrial uses are able to pay more for land or rent. In addition, these auto-oriented uses can create localized traffic congestion and other challenges for freight mobility. These are essential businesses in any city, but finding a place for them that minimizes competition for a jurisdiction's prime industrial land will create healthier industrial economies.

C. Increase the Supply of Land Zoned to Accommodate Low-Impact Industrial Uses

Jurisdictions can rezone land to allow industrial uses, as appropriate for the subarea and the neighborhood. These efforts may be most successful if pursued in combination with a reevaluation of industrial zoning paradigms, recognizing that Euclidean codes, which focus on the rigid separation of uses, are declining in utility. Where performance-based zoning paradigms are deemed appropriate, single-use and mixed-use commercial zoning designations may be able to accommodate low-impact industrial uses.

EXPLORE NEW ZONING

Manufacturing, a major component of core industrial uses, is going through a period of transformation, changing in character and impact. While large, complex, capital-intensive manufacturing uses are expected to remain important to the industrial ecosystem, there is a small, but growing component of manufacturing that is smaller-scale, and has needs and impacts that are similar to those of a small retail or home occupation use. These small-scale manufacturing uses could locate outside of prime industrial land and may even contribute to walkable, mixed-use environments and transit-oriented jobsites.

Current zoning codes in cities across the region do not yet reflect these trends and instead isolate most manufacturing uses in peripheral locations buffered from other parts of the city. If zoning strategies begin to take the changing face of some industrial uses into account, then industrial land supply could potentially be configured differently to maximize performance for core industrial users.

D. Retain Large Parcels for Large Industrial Needs

The availability of large parcels is a main consideration for industrial users. Large-scale industrial development typically seeks parcels larger than 5 acres. Unavailability of large parcels could be a limiting factor in site selection, limiting attraction of new firms to the region and not allowing existing firms to expand. Maintaining the availability of these types of parcels in industrial areas will ensure these uses continue to be viable.

E. Work with Industrial Businesses to Improve Space Efficiency and Land Utilization

Jurisdictions and regional organizations alike can interface with industrial users to innovate in land use policy and industrial business models; changes to the latter have the potential to increase the productivity of existing industrial lands. Some specific ideas include:

SEEK OUT INDUSTRIAL TENANTS THAT CAN OPERATE ON THE UPPER FLOORS OF EXISTING INDUSTRIAL BUILDINGS

In dense, urban subareas, one alternative to accommodating forecast jobs would be to increase employment densities. Attracting manufacturing businesses that can operate on the upper floors of multi-storied buildings would be one strategy.

In designated mixed-commercial and industrial districts, allowing small-scale manufacturing (i.e., artisanal and craft industrial users) to locate in mixed-use buildings alongside retail or office uses can also increase employment densities while reserving space in industrial districts for more intensive industrial uses.

REUSE OLD OR OBSOLETE SITES TO ACCOMMODATE EMERGING INDUSTRIAL USES

As industrial businesses outgrow their space, they sometimes leave underutilized land in their wake. When a similar tenant is unavailable, identifying ways that the space can accommodate another industrial user builds industrial vitality.

Additional examples of ways to intensify existing industrial uses include 1) using the vacant portions of partially-developed parcels, 2) using existing building space more intensively, or by 3) adding stories to sprawling buildings as vacant land becomes scarcer.

2. Simplify Regulations to Improve Permitting Efficiency

As industrial needs and external land use challenges evolve, new regulatory tools may help preserve industrial land for industrial uses and improve the effectiveness of existing industrial districts. Planned-action ordinances and special zoning districts streamline the permitting process and provide predictability for industrial users.

3. Develop a Strategic Planning Framework for Industrial Subareas

Industrial lands vary in their location and mix of jobs and uses. Targeted area strategies, such as planned manufacturing districts or subarea plans, can address contexts more effectively. Other cities have combined these types of local area planning with evaluation matrices or criteria. Matrices or criteria may identify industrial lands for protection or in some cases conversion, and incentives for economic development.

4. Take Advantage of Industrial Revenue Development Bonds

Industrial Revenue Development Bonds (IRDBs) are administered by the Washington Economic Development Finance Authority (WEDFA)[1] and are used to provide low-interest tax-free loans to industrial development projects. Currently, the WEDFA issues IRDBs throughout the state and has been very successful within the central Puget Sound region. In addition, the Tacoma/Pierce County Economic Development Corporation established by Pierce County also issues such bonds within the county. This type of financing has thus been actively and successfully used in the region and could be used more widely.

Local, public economic development corporations, and ports are also eligible to issue IRDBs, and these organizations may be well-equipped to understand the needs of their respective areas. These bonds support the development of catalytic

industrial projects, and local jurisdictions should evaluate the feasibility of IRDB issuance.

BEYOND LOCAL LAND USE REGULATION: COLLABORATIVE STRATEGIES TO PROMOTE SUSTAINABLE INDUSTRY

Additional strategies to consider are listed below. PSRC should consider how the findings and strategies in this analysis might be incorporated as regional plans are updated, including Transportation 2040, the Regional Economic Strategy, and VISION 2040.

5. Facilitate Information Sharing of Best Practices

PSRC can convene planners in the region to share information on best practices for industrial land use policy, permitting, freight mobility, brownfields cleanup, industrial economic development, and other industrial land and development topics. One successful regional model for information sharing has been the Toolbox 2014 Peer Networking Series. For this Peer Networking Series, PSRC hosted monthly sessions where planners recognized for best practices in their jurisdiction and others with topical expertise shared information and resources on a variety of local planning and implementation topics. This series is continuing in 2015, and topics addressing industrial lands strategies could be added as sessions to the series.6. Update Regional Designations

6. Update Regional Designations

When next updating the regional MIC designation procedures, PSRC should consider changing the procedures to reflect that 1) the core industrial land designation protects industrial land more effectively than the industrial-commercial designation and 2) housing should not be allowed on core industrial land. In addition, PSRC should consider developing regional designation procedures and criteria for countywide MICs.7. Continue to Monitor Supply and Demand for Industrial Land

7. Continue to Monitor Supply and Demand for Industrial Land

The central Puget Sound region should continue to monitor and track the supply and demand for industrial land. In short intervals, PSRC could report on a small number of indicators. Examples of indicators that can be tracked in the short term include total employment, wages, and land vacancy rates. In longer intervals, comprehensive analysis similar to this study could be repeated. An industrial lands data viewer could be developed to interactively display information in this analysis. In addition, PSRC can consider how the distinctions among industrial zoning and land use designations might be incorporated into PSRC's Plan Review Program, particularly for MIC plans.

8. Align Infrastructure Planning with Industrial Land Policy

Industrial lands rely heavily on transportation and utility infrastructure. Infrastructure planning in the region is incorporated into capital facilities and transportation plans, which are not typically well coordinated with industrial land policy. Aligning and coordinating planning and policies at the local, regional, and state levels are key to an effective strategy and successful funding. One transportation funding consideration could be to give some funding preference to jurisdictions that are most affected by destination-based sales tax provisions in order to assist them in maintaining high-performing industrial land.

9. Provide Support for Brownfields Cleanup

Local jurisdictions can support brownfields cleanup and development by creating or updating inventories, prioritizing sites to be studied and remediated, and connecting landowners with technical assistance. As described in Chapter 3, state and federal agencies provide technical assistance and funding to both local jurisdictions and private landowners.

10. Provide Economic Development Support

Interviews and peer city analyses reveal the need for economic development strategies that go beyond land use regulation and support and incorporate workforce development, marketing, and business retention services to help small industrial businesses and foster entrepreneurship, and advocacy, especially branding and marketing. Cities can consider developing industrial incubator spaces to encourage innovation and start-up manufacturing firms. Regional and state support for many of these efforts is important because they cut across jurisdictional lines. PSRC can continue to provide assistance and connect jurisdictions to federal and state funding opportunities for industrial economic development.

---

[1] WEDFA. Financing Information. http://www.wedfa.org/financing-information.html.

Appendices

Appendices

APPENDIX A.

Methodology: Defining Industrial Lands: Step 1 – Zoning and Future Land Use Designation

This section details the methodology behind the initial selection process for industrial lands throughout the four-county study area.

The first step in attaining a useful selection of the region's industrial land base is to intersect lands ***designated for future industrial use*** in area Comprehensive Plans with lands ***currently zoned for industrial use*** in city and county zoning codes. Comprehensive Plan designations are useful because they represent a community consensus in jurisdictions where comprehensive planning has been undertaken.

But what designations and categories are "industrial?" In order to compare apples to apples, a ***translation*** of the myriad jurisdictions' native designations and categories into a ***common language*** is necessary to enable a systematic selection of industrial lands across the region.

Listed below are two discrete coding systems developed to translate two GIS datasets used to select regional industrial lands: ***Future Land Use (FLU) designations*** from city and county Comprehensive Plans; and, ***Zoning Code*** categories. Native FLU and Zoning Codes were first translated to this common system.

The compendium presents detailed crosswalk tables indicating the specific translations from each jurisdiction's native Comprehensive Plan designations and Zoning codes to the common system developed for this study.

Future Land Use (FLU) Lookup Table (based on PSRC regional land use coding system):

	AGR	Designated Agricultural
	COM1	Commercial
*	COM2	Commercial / Industrial Mixed Use, or business parks and employment centers if NOT primarily intended as industrial
	FOR	Designated Commercial Forestry
*	IND	Industrial, and business parks and employment centers if primarily intended as industrial
	MIX	Mixed Use including Residential
	POS	Park and Open Space

	RES	Residential
	ROW	Right of Way
	RSC	Resource Extraction
	TGM1	Tribal
	TGM2	Public, non-industrial (schools, hospitals, institutional, civic, other non-industrial public facilities)
*	TGM3	Public, industrial (such as transportation, communication, utilities)
*	TGM4	Military
	WTR	Water
	OTHER	Not defined above, including areas with little or no use restrictions

**Selected for Step 1 inclusion*

Zoning Lookup Table

*	IND	Industrial
*	MUIC	Mixed-Use Industrial and Commercial
	COM	Commercial
	INST	Institutional
	MURC	Mixed-Use Residential and Commercial
	RES	Residential
*	PUB-IND	Public – Institutional
	PUB	Public – Non-Industrial
	PUD	Planned Unit or Master Planned Development
	OTHER	Other

**Selected for Step 1 inclusion*

Future Land Use (Comprehensive Plan) Designation Translations

Legend

	AGR	Designated Agricultural
	COM1	Commercial
*	**COM2**	Commercial / Industrial Mixed Use, or business parks and employment centers if NOT primarily intended as industrial
	FOR	Designated Commercial Forestry
*	**IND**	Industrial, and business parks and employment centers if primarily intended as industrial
	MIX	Mixed Use including Residential
	POS	Park and Open Space
	RES	Residential
	ROW	Right of Way
	RSC	Resource Extraction
	TGM1	Tribal
	TGM2	Public, non-industrial (schools, hospitals, institutional, civic, other non-industrial public facilities)
*	**TGM3**	Public, industrial (such as transportation, communication, utilities)
*	**TGM4**	Military
	WTR	Water
	OTHER	Not defined above, including areas with little or no use restrictions

**Selected for Step 1 inclusion*

APPENDIX B. LIST OF INDUSTRY SECTORS INCLUDED IN INDUSTRIAL ACTIVITIES DEFINITION

CAI Category	NAICS Code	Industry Code Description
Utilities	221	Utilities
Construction	236	Construction of Buildings
	237	Heavy and Civil Engineering Construction
	238	Speciality Trade Contractors
Manufacturing	311	Food
	312	Beverage and Tobacco Product
	313	Textile Mills
	314	Textile Product Mills
	315	Apparel
	316	Leather and Allied Product
	321	Wood Product
	322	Paper
	323	Printing and Related Support
	324	Petroleum and Coal Products
	325	Chemical
	326	Plastics and Rubber Products
	327	Nonmetallic Mineral Product
	331	Primary Metal
	332	Fabricated Metal Product
	333	Machinery
	334	Computer and Electronics
	335	Electrical Equipment, Appliance, and Component
	336	Transportation Equipment
	337	Furniture and Related Product
	339	Miscellaneous
Wholesale Trade	423	Merchant Wholesalers (Durable)
	424	Merchant Wholesalers (Non-durable)
	425	Electronic Markets, Agents and Brokers
Retail Trade	4542	Vending Machine Operators
	454311	Heating Oil Dealers
Transportation and Warehousing	481	Air Transportation
	482	Rail Transportation
	483	Water Transportation
	484	Truck Transportation
	485	Transit and Ground Passenger Transportation
	486	Pipeline Transportation
	487	Scenic and Sightseeing Transportation
	488	Support Activities for Transportation
	491	Postal Service
	492	Couriers and Messengers
	493	Warehousing and Storage

CAI Category	NAICS Code	Industry Code Description
Information	511	Publishing Industries
	51211	Motion Picture and Video Production
	515	Broadcasting
	517	Telecommunications
Real Esate and Rental and Leasing	53113	Mini Warehouse and Self-Storage
	53212	Truck Rental and Leasing
	5324	Machinery/Equipment Rental and Leasing
Professional, Scientific and Technical	54138	Testing Laboratories
	54185	Display Advertising
Administrative and support and waste management and remediation services	561612	Security Guards and Patrol
	56162	Security Systems
	56171	Extermination and Pest Control
	56172	Janitorial
	56173	Landscaping
	56174	Carpet and Upholstery Cleaning
	56179	Other Services to Buildings and Dwellings
	56191	Packaging and Labeling
	562	Waste Management and Remediation
Health Care and Social Assistance	62191	Ambulance Services
	621991	Blood and Organ Banks
	62421	Community Food Services
Accommodation and Food Services	72232	Caterers
	72233	Mobile Food Services
Other Services	8113	Commercial and Ind. Equip Repair
	811412	Appliance Repair and Maintenance
	81233	Linen and Uniform Supply
	812332	Industrial Launderers

APPENDIX C. INPUT-OUTPUT ANALYSIS AND STATEWIDE MODEL FOR THE CENTRAL PUGET SOUND REGION

Economic Impacts

Economic impacts are estimated using an input-output approach. Economic impacts refer to indirect and induced impacts. Indirect impacts are additional employment, wages, and business revenues created by business-to-business transactions in support of final production of a good or service. Induced impacts are jobs, wages, and business revenues supported by the spending of household income that was in turn created by the production of goods and services. The total economic impact of a given economic activity refers to the sum of direct, indirect, and induced impacts. From these estimated impacts, multipliers are obtained by dividing the total impact by the direct activity being modeled, such as a change in manufacturing employment on industrial lands.

The Washington State Input-Output Model is the primary tool for estimating indirect and induced impacts of industrial activities on industrial lands. The model is produced at the statewide level and includes

52 sectors representing North American Industry Classification Codes (NAICS) codes at the 2, 3, and 4-digit level.

To apply the model to a sub-region—in this case the four-county central Puget Sound region—location quotients are employed to adjust the direct requirements matrix.[1] When the location quotient for a modeled sector is greater than one, the direct requirements coefficient in the statewide model is retained. However, when the location quotient is less than one, the location quotient is multiplied by the direct requirements coefficient to arrive at a new, adjusted coefficient. For example, in the statewide model, the food, beverage, and tobacco industry purchases approximately 3.6% of its total inputs (by value) from Washington-based crop producers. However, because the share of crop production in employment region-wide among the four Central Puget Sound counties is much lower than the state overall, the direct requirement—or estimated share of total purchases—made by the food, beverage, and tobacco industry within the region is adjusted downwards to 0.21%.

Fiscal Impacts

A further step is the calculation of tax receipts to state and local governments that were: 1) directly paid by firms engaged in industrial activity; and 2) tax payments generated through additional taxable economic activities supported by industrial activities through the abovementioned indirect and induced mechanisms of economic impact.

Direct B&O Tax Impacts

State tax receipts from industrial lands are based on effective B&O and sales tax rates, which are calculated by dividing actual tax payments by reported gross receipts. This method helps circumvent the need to determine deductions and resulting difference between taxable business & occupation revenues and total revenues to a business, which can vary widely by industry; this method also applies to sales tax revenues collected from final consumers and other taxes levied statewide (e.g., use taxes, utility taxes). The primary data source is the Washington State Department of Revenue.

Local tax revenues require additional steps to account for the distribution revenues from industrial lands-based industrial activities by jurisdiction across the region. To calculate B&O revenues, gross revenues are first calculated based on employment distributions. Revenues are estimated based on the statewide ratios of gross business income to worker by

[1] Direct requirements refer to inter- and intra-industry purchases—or intermediate business-to-business purchases—made by each industry sector included in the model as a share of total purchases (including intermediate purchases, labor and other value added, and imports). The direct requirements matrix is thus a matrix of percentages (A), which is then used to derive the Leontief Inverse Matrix of $(1\text{-}A)^{-1}$ of total requirement coefficients.

industry and then applied to each subarea macro sector employment total. A second step is then to distribute these subarea-based revenues further by jurisdiction; this is done by using the acreage-weighted shares of each forecast analysis zone (FAZ) overlapping with each subarea, based on the 2010 baseline estimates from the Puget Sound Regional Council's baseline economic forecast. Revenues are then adjusted downward to taxable B&O revenues by calculating the effective ratio of taxable B&O to gross receipts statewide by macro sector and then applying this rate to estimated industrial lands macro sector revenues. Local B&O rate categories are matched with macro sector categories and applied in jurisdictions with B&O tax rates; importantly in this analysis, not all jurisdictions levy B&O taxes, despite having industrial activities.

Local Sales Tax Estimates for Warehousing & Wholesaling

Local sales tax receipts were calculated for warehousing & wholesaling (W&W) activities to measure the effect of the streamlined sales tax (SST) on industrial lands activities. First, the share of total business revenues for warehousing & wholesaling designated taxable retail sales was calculated. This was done by applying the statewide average ratio of taxable retail sales to gross receipts in warehousing & wholesaling (6.1%) to region-wide industrial lands W&W revenues estimates, resulting in taxable retail sales of approximately $3.1 billion in 2012. The share of these sales retained within the 4-county region (and this subject to local levies) was calculated by using the employment-based location quotient for W&W activities, with Washington State as the benchmark. The four-county region's location quotient in 2012 was 1.055; the inverse of this statistic, 94.8%, can be interpreted as the share of total output satisfying local demand, with the remainder exported outside the region (and thus not subject to local city sales tax levies).

Unlike the B&O tax, the streamlined sales tax (SST) is levied at the point of final sale, which in the case of many online and remote transactions is applied to the residence of the consumer, not the seller. To account for this aspect to the SST, estimated taxable retail sales for W&W ($2.95 billion) region-wide are redistributed by jurisdiction based on the distribution of taxable retail sales for W&W across all land types in 2012. Local tax rates from the first quarter of 2012 are then applied to arrive at estimated direct sales tax estimates.

Tax Revenues from Indirect and Induced Effects

An additional step estimates tax receipts from economic activity supported through the economic impact mechanisms discussed above. Using the sector-based breakouts in the Washington State Input-Output Model, the same estimation procedure is applied for statewide taxes and local B&O to these additional business revenues across the economy

supported—either through indirect or induced effects—by industrial activity on industrial lands.