

INDUSTRIAL LANDS ANALYSIS

AUGUST 2024



Puget Sound Regional Council



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Industrial Lands Analysis Update

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1. Introduction

Economic activity on industrial land is a significant contributor to the region's prosperity and growth. These lands are home to various land-intensive activities, often involving atypical patterns of noise, light and hours of operation. Industrial uses include manufacturing, transportation, warehousing, freight terminals, railroad operations and laboratories.

This report provides an updated assessment of economic activity on the region's industrial land, 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.

A previous regional Industrial Lands Analysis was published in 2015. The purpose of the prior report was to provide an analysis of industrial land supply and demand in the central Puget Sound region through 2040. Since the release of the regional Industrial Lands Analysis in 2015, both VISION 2050 and the Regional Economic Strategy were developed and adopted. Both identified the need to update the analysis to reflect changes that have occurred in the region.

The 2024 Industrial Lands Analysis seeks to update certain components of the 2015 regional Industrial Lands Analysis rather than recreate the report in total. Focus areas include providing an updated regional industrial lands inventory, publishing current industrial employment numbers, examining the impact of COVID-19 on the region's industrial sector and identifying regional trends related to industrial lands and employment.

Stakeholder Outreach

PSRC staff performed stakeholder outreach beginning in early 2022 to identify trends in regional industrial lands and gather insights into the development of the Industrial Lands Analysis Update. The outreach consisted of an Industrial Trends Survey, a series of community stakeholder discussions, and discussions with PSRC boards and committees. Additional outreach was conducted in late 2023 to solicit feedback on the industrial lands inventory and to validate the previously identified industrial trends. A complete summary of outreach activities is included in Appendix A of this report.



Data Analysis

PSRC staff used data from federal, state, and local partners and private business sources to conduct the data analysis in the Industrial Lands Analysis Update. Public sources were used to analyze areas of interest, such as demographics, employment and land inventory. Data from CoStar, a provider of information, analytics and marketing services to the commercial property industry, was used to analyze the industrial space inventory.



2. Regional Industrial Lands

This report includes an updated inventory of industrial lands in the region. It provides an overview of the land that is critical to industrial and manufacturing activities in the region and the land available for economic development. The report provides data and analysis intended to serve a broad range of land use and economic development planning needs and interests.

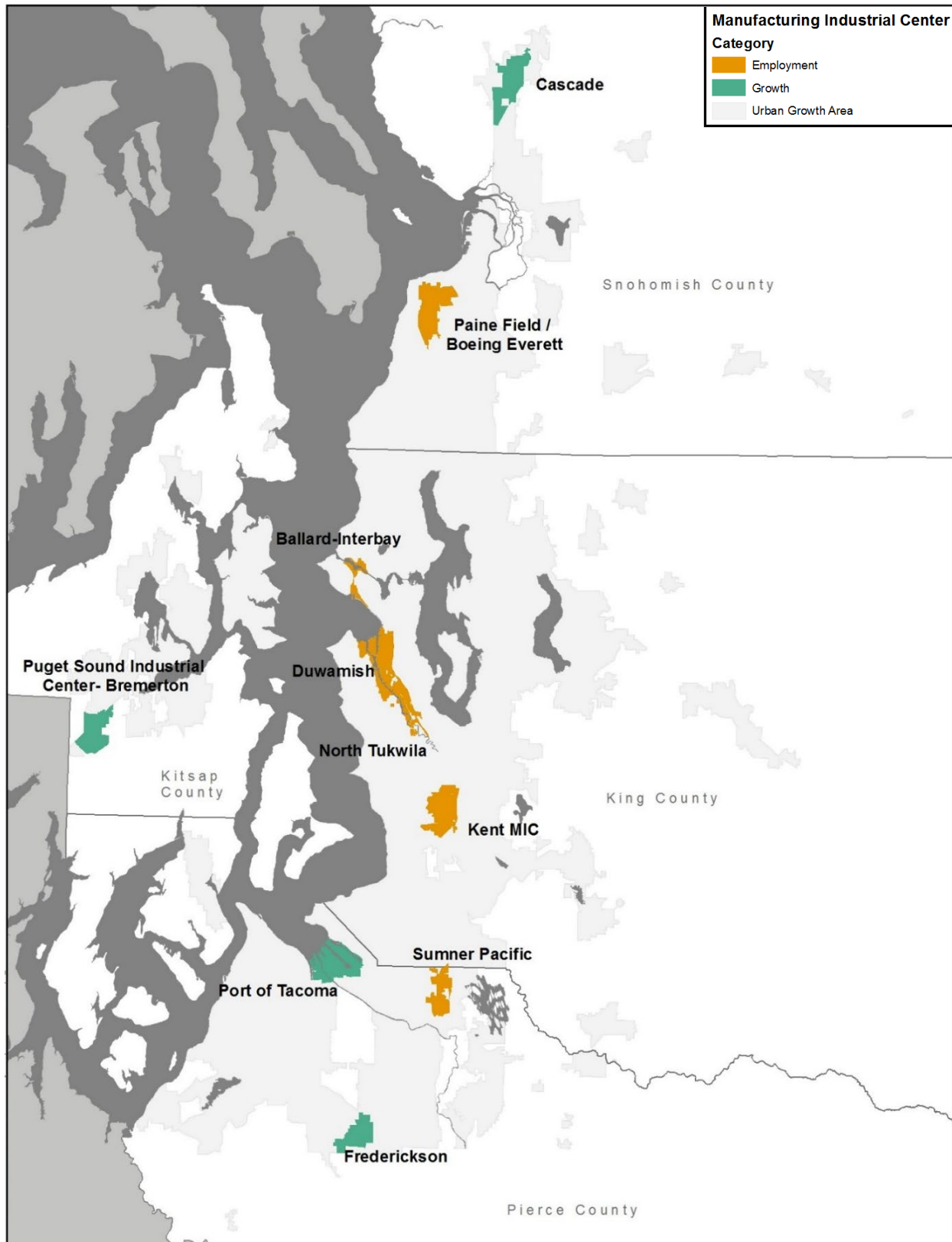
Manufacturing/Industrial Centers (MICs)

Manufacturing/industrial centers (MICs) are designated employment areas in the region with intensive, concentrated manufacturing and industrial land uses that cannot be easily mixed with other activities. These areas form a critical regional resource that provides economic diversity, supports national and international trade, generates substantial revenue for local governments, and offers higher-than-average wages. There are currently 10 designated MICs in the central Puget Sound region as seen in Figure 2.1.

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. VISION 2050's Regional Growth Strategy calls for regional centers to accommodate a significant share of the region's growth. Profiles for each of the region's MICs, including data on land type, employment, transportation and other information, are available on PSRC's Centers Monitoring dashboard.



Figure 2.1: Map of Regional Manufacturing Industrial Centers (MICs)





Inventory Methodology

The 2015 Industrial Lands Analysis inventory included an accounting of gross industrial lands, which refers to all industrial land, including active sites, areas suitable for redevelopment and vacant land. It also included net industrial land supply, which refers to a subset of the gross supply that may be available for growth. The net supply included vacant land and land that is prime for redevelopment. The industrial lands inventory looks at long-term capacity of lands and is not intended to be used for near-term activities such as real estate development.

The primary industrial inventory intends to reflect all land in the region where manufacturing and industrial uses are welcome to occur without conditional permits or special applications. The updated inventory defines industrial lands based on allowed use as reflected in local zoning codes. This study relies on PSRC's 2019 Future Land Use dataset, a compilation of jurisdictional zoning codes and geometries. Additional detail was added for industrial zones where data provided in the future land use dataset was not adequately granular. The resulting draft inventory was reviewed for accuracy and cross-compared with the 2015 inventory and with local zoning maps and codes. The draft inventory was shared with local jurisdictions and other stakeholders to review for accuracy.

Definitions

The updated industrial inventory includes the primary inventory categories that were defined in the previous analysis:

Core Industrial: Includes lands with zoning designations that support a broad range of manufacturing and traditional industrial uses. Examples include:

- Regional deepwater ports
- SODO in Seattle
- North of Paine Field in Snohomish County



Core Industrial lands host intensive industrial activities across the central Puget Sound region. (Source: PSRC)



Airport Operations: Includes land devoted to aviation operation areas, such as runways and taxiways, not including airport terminals and adjacent airport-related uses. Examples include:

- Seattle-Tacoma International Airport
- King County International Airport
- Paine Field
- Bremerton National Airport



Airport Operations land includes runways and taxiways across the region. (Source: PSRC)

Military Industrial: Includes lands within federal military bases with industrial-related uses. Examples include industrial lands within:

- Joint Base Lewis-McChord in Pierce County
- Bangor Trident Base in Kitsap County



Military Industrial lands support base operations and the maintenance of military vessels and other assets. (Source: U.S. Navy, photo by Thiep Van Nguyen II, PSNS & IMF photographer)



Industrial-Commercial: Includes lands that have zoning designations that support both industrial and commercial uses. Examples include:

- Commercial areas around Sea-Tac Airport
- Auburn commercial areas
- Commercial and warehousing area at 348th in Federal Way
- Commercial area off Highway 3 in Bremerton



The Industrial-Commercial corridor off Highway 3 in Bremerton features industrial uses like this distribution center adjacent to retail uses such as car lots and wholesale grocery stores. (Source: CoStar)

The updated inventory more closely adheres to the intended use allowed by the zoning in place, so the categorization of some areas shifted in comparison to the 2015 inventory. Other adjustments are due to zoning changes adopted by local jurisdictions.

The updated inventory also introduces a new supplemental category of lands where limited or conditional industrial uses are permitted.

Limited Industrial: Includes lands in zones that support a range of commercial and mixed uses throughout the region and allow some, often restricted, manufacturing or industrial activities. While Limited Industrial areas are not a replacement for more intense industrial areas, they serve an important economic role in the region.



Portions of downtown Tacoma allow for Limited Industrial activities, such as breweries, to operate. (Source: CoStar)



Limited Industrial areas can be important locations for start-up businesses, craft manufacturing and smaller scale industrial uses, including those associated with larger commercial uses. They can typically be located closer to employment and residential areas than traditional industrial land. Examples include:

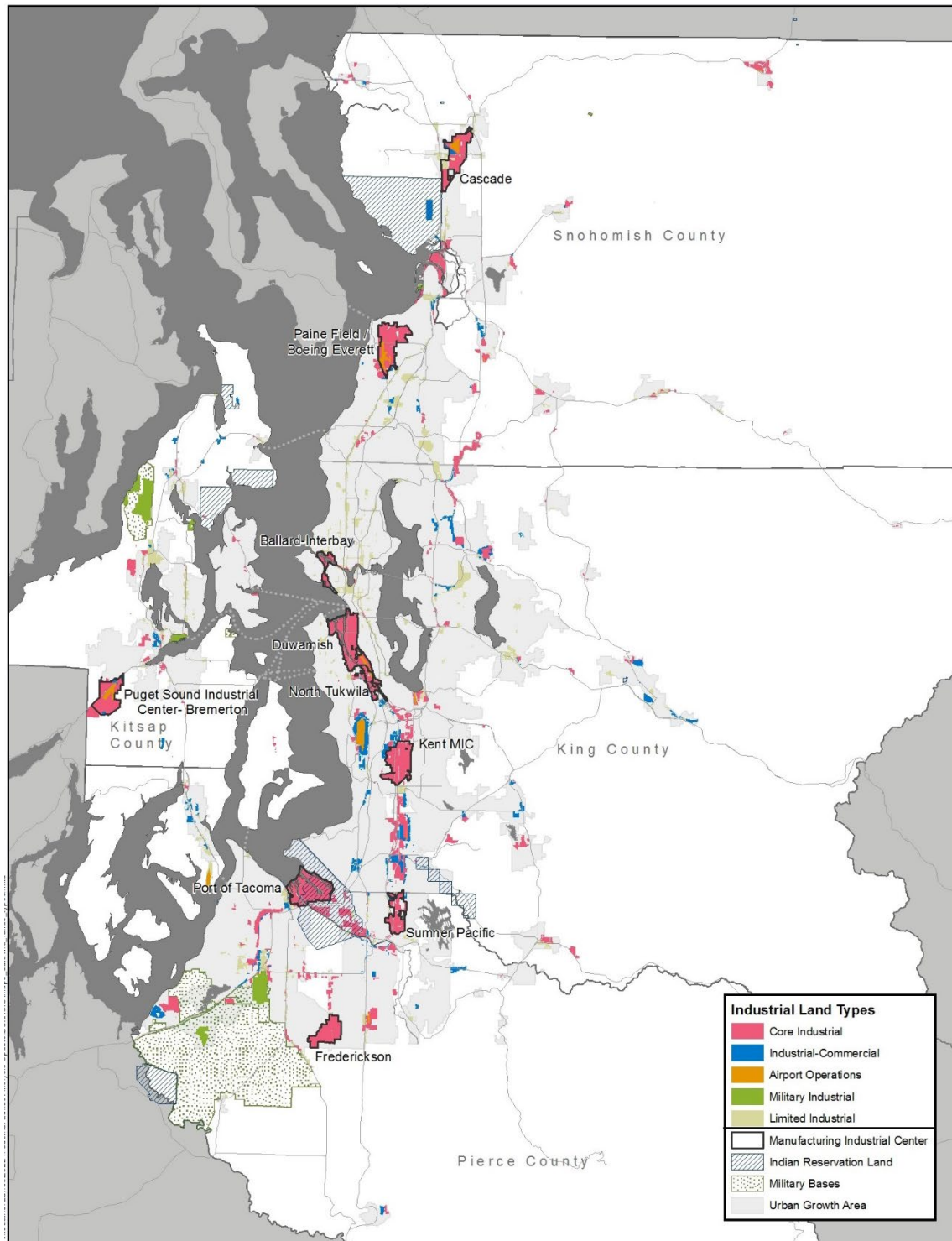
- Mixed-use zones along Highway 99
- South Lake Union in Seattle
- Canyon Park business park
- Certain parts of downtown Tacoma



Map

The industrial land categories as defined above are identified across the region in Figure 2.2. Additional county-level maps are available in Appendix B.

Figure 2.2: Map of Regional Industrial Lands Inventory





Gross and Net Supply

For the purposes of this report, industrial land supply is characterized as either gross supply or net supply.

Gross supply: All industrial land, including active sites, vacant land and physically redevelopable land. Gross supply does not include the supplemental Limited Industrial category.

Net supply: A subset of the gross supply that may be available for growth, including vacant land, and land that is potentially redevelopable.

Gross Supply

The updated inventory uses a more detailed and precise examination of local zoning than the 2015 report. As seen in Figure 2.3, the region has about 75,900 acres of land zoned for industrial activity with the supply spread across each county, not including Limited Industrial areas.

Figure 2.3: Gross Supply of Industrial Land in Acres, 2023

	Core Industrial	Airport Operations	Military Industrial	Industrial-Commercial	Total Industrial	Limited Industrial
King County	19,300	1,300	-	7,100	27,700	9,300
Kitsap County	4,900	400	3,600	1,100	10,000	2,700
Pierce County	16,700	300	2,500	2,700	22,200	4,300
Snohomish County	12,800	1,000	100	2,000	16,000	6,000
Region	53,700	3,000	6,300	12,900	75,900	22,300

Source: PSRC, 2023 Industrial Lands Inventory

Broadly, there have been few changes to the overall amount of land zoned for industrial uses across the region since the 2015 report. The region continues to maintain large industrial areas, such as the Duwamish Valley, Paine Field, Kent Valley and Port of Tacoma. In some cases, zoning has shifted to reaffirm industrial uses, such as in Frederickson. Traditionally, industrial zoning has been the most permissive of zoning regulations, often allowing a wide range of uses. Over time, several jurisdictions have narrowed allowed uses to prevent incompatibilities with industrial activity. Others have adjusted the allowed uses to better reflect economic opportunities. Some have increased allowance for non-industrial uses, such as retail storefronts, gas stations and restaurants, which can be important components of industrial areas. The City of Seattle has studied how allowing limited amounts of office and residential uses in select locations near transit may support continued



industrial and manufacturing activity. In these cases, the primary intent of the zone remains industrial, and the purpose of the change is to allow uses that support the economic potential of manufacturing uses.

There are also cases where zoning shifts away from traditional manufacturing as jurisdictions work to support economic potential. For example, Redmond adopted the Marymoor Design District to allow for living, employment and retail in proximity to Marymoor Park and the future light rail station. Kenmore's zoning reflects a potential evolution of a waterfront site previously used for concrete production. In cases where the intent of the zone is moving away from industrial use, PSRC has reclassified the land to characterize its intended use more accurately.

Net Supply

Net supply in this report is an estimate of industrial land that has little to no current improvement value and is potentially redevelopable in the future. This estimate includes parcels that are vacant, as well as parcels with limited improvements as a calculation of improvement value per land square foot.

The land included in the estimate of net supply is not a reflection of parcels that are currently available on the market for redevelopment. Some of this land could include parcels that have little to no improvement value, but could be home to current economic activity, such as a necessary laydown area for nearby industrial activities. In the medium- and long-term, however, growing demand for industrial spaces in the region may increase likelihood that these lands are developed for more intensive, higher-value uses.

Regionwide, an estimated 38% of the lands in the core industrial inventory are potentially developable in the medium- and long-term. However, areas close to the denser urban core of the region appear to be more constrained, have greater competition of uses and may have more involved permitting challenges.

As shown in figure 2.4, King County has the lowest rate of potentially redevelopable industrial land in the region, with an estimated 32% of gross supply. Snohomish and Pierce County both have the highest, at 42%. As shown in Figure 2.5, MICs with the lowest rates of vacant or redevelopable land in the region include Kent (17%), Duwamish (19%) and Paine Field/Boeing Everett (26%). Representatives from these



MICs report having few vacant parcels left to develop for industrial use.¹ Vacant land in MICs nearing capacity is often less than five acres, limiting the industrial uses that can be developed there.² Future growth within these MICs will likely be in the form of redevelopment, which can have higher cost and complexity, and include remediation requirements.

Figure 2.4: Estimated Share of County Industrial Land that Is Vacant or Redevelopable, 2023

	Total Gross Acreage of Industrial Land	Estimated % Vacant or Redevelopable
King	27,700	32%
Kitsap	10,000	41%
Pierce	22,200	42%
Snohomish	16,000	42%
Region	75,900	38%

Source: PSRC, 2023 Industrial Lands Inventory

Figure 2.5: Estimated Share of MIC Industrial Land that Is Vacant or Redevelopable, 2023

	Total Gross Acreage of Industrial Land	Estimated % Vacant or Redevelopable
Ballard-Interbay	900	31%
Cascade	3,600	40%
Duwamish	4,900	19%
Frederickson	2,600	42%
Kent MIC	3,800	17%
North Tukwila	900	33%
Paine Field / Boeing Everett	4,100	26%
Port of Tacoma	3,900	59%
Puget Sound Industrial Center-Bremerton	3,100	61%
Sumner Pacific	1,900	32%
MIC Total	29,700	36%

Source: PSRC, 2023 Industrial Lands Inventory

In general, more net land is available in industrial areas outside of King County. MICs with the highest share of vacant or redevelopable land include Puget Sound Industrial Center-Bremerton (61%), the Port of Tacoma (59%), Frederickson (42%) and

¹ City of Seattle Office of Economic Development. (2017). *Industrial Lands Land Use and Employment Study*. <https://www.portseattle.org/sites/default/files/2020-05/Seattle%20Industrial%20Lands%20Land%20Use%20and%20Employment%20Study%20%282017%29.pdf>; City of Kent. (2020). *Rally the Valley Subarea Plan*. <https://www.kentwa.gov/home/showpublisheddocument/14989/637302336766600000>

² City of Kent. (2020). *Rally the Valley Subarea Plan*. <https://www.kentwa.gov/home/showpublisheddocument/14989/637302336766600000>



Cascade (40%). Although some MICs have a larger amount of available land, they may face other challenges to development such as access to transportation corridors, limited infrastructure, proximity to workforce, and other amenities.



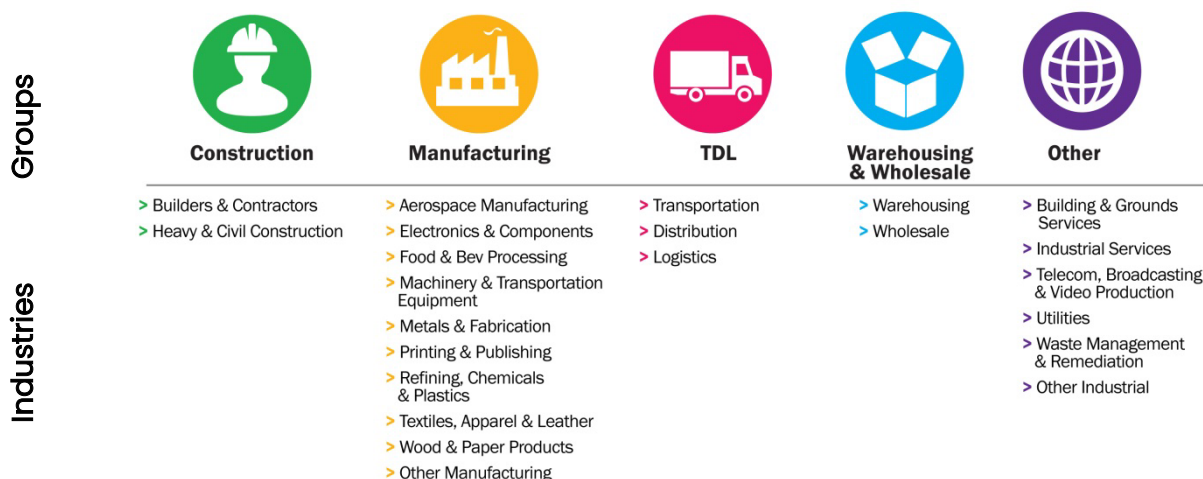
3. Industrial Employment

This section provides an updated assessment of industrial employment activity in the central Puget Sound region between 2015 and 2022. Special attention is given to the impacts of the COVID-19 pandemic on industrial jobs and workers. Analysis in this section is built on PSRC’s covered employment data, which is derived from the Quarterly Census of Employment and Wages (QCEW) data program from the Washington State Employment Security Department (ESD). The data is supplemented with data from the Office of Washington Superintendent of Public Instruction (OSPI), local governmental units in the central Puget Sound region and select regional employers.

Industrial Employment Definitions

Industrial employment, as defined in this report, includes a range of activities that have been traditionally housed on industrial lands. For the sake of this analysis, these jobs are organized into groups covering industries in Construction, Manufacturing, Transportation, Distribution & Logistics, Warehousing & Wholesale and Other Industrial activities as shown in Figure 3.1. Utilizing these definitions, industrial jobs accounted for 28% of all jobs in the region in 2022.³

Figure 3.1: Industrial Employment Groups



³ PSRC Covered Employment



Industrial Employment Trends

Between 2015 and 2020, industrial jobs in the region increased by 9.7%. Over the same period, non-industrial employment grew by 14.4%. As shown in Figure 3.2, regional employment for most industrial groups grew over this period. Construction added the most jobs, growing by 26.9%. Manufacturing jobs shrunk by 2.5% over the same period. However, employment in Manufacturing did show a positive trend over a longer period, growing 10.8% between 2010 and 2020.

Figure 3.2: Industrial Group Employment Changes, 2015–2020

	# Change	% Change
Construction	27,600	26.9%
Manufacturing	-5,000	-2.5%
Transportation, Distribution & Logistics	10,700	14.5%
Warehousing & Wholesale	8,700	9.8%
Other Industrial	11,600	14.6%

Source: PSRC Covered Employment

Impacts of COVID-19 on Industrial Employment

The COVID-19 pandemic created major workforce disruptions across manufacturing and industrial sectors, which led to a loss of 42,400 industrial jobs in the central Puget Sound region between March 2020 and March 2021.⁴ Although the level of non-industrial jobs in the region have surpassed pre-pandemic levels, the recovery of industrial jobs is still ongoing, particularly in the Manufacturing macro group.⁵

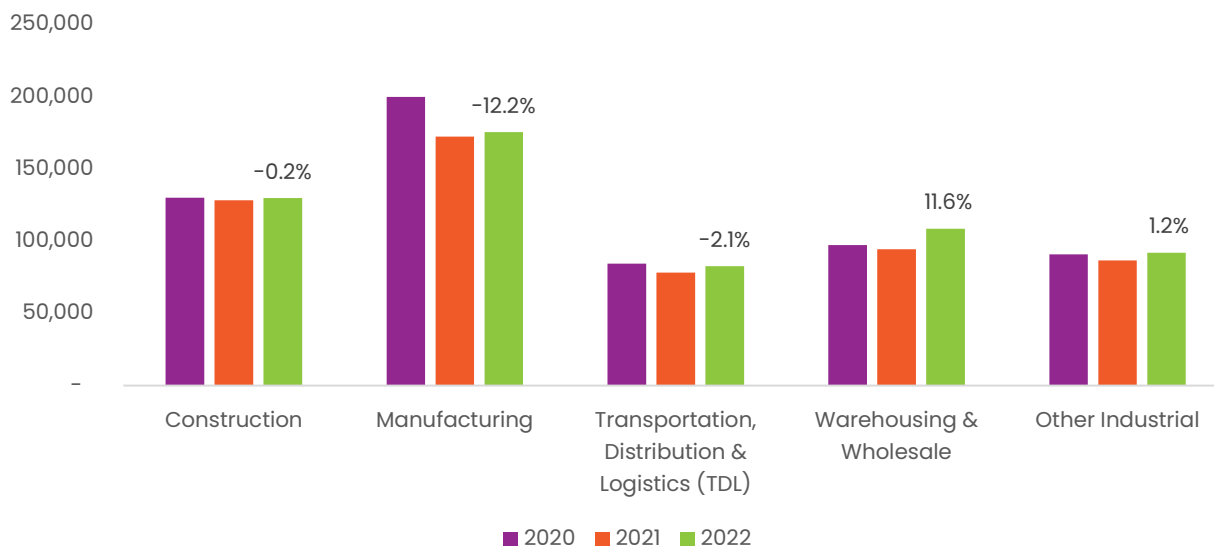
All industrial macro groupings experienced a drop in employment between 2020 and 2021 and then an increase in employment between 2021 and 2022. However, the aggregate changes over this two-year period varied across these groupings. As shown in Figure 3.3, Manufacturing experienced an overall drop in employment of 12.2% between 2020 and 2022, the largest of the industrial groups. Conversely, jobs in Warehousing and Wholesale grew by 11.6% over the period, the largest increase observed among the industrial groups.

⁴ PSRC Covered Employment

⁵ PSRC Covered Employment; Basnet, N. (2023). *A look at Seattle's jobs recovery by industry*. Puget Sound Business Journal. <https://www.bizjournals.com/seattle/news/2023/08/30/seattles-job-market-recovery-uneven.html>



Figure 3.3: Industrial Group Employment Changes, 2020-2022



Source: PSRC Covered Employment

Detailed Industrial Employment Changes

Looking deeper into the industries that make up the macro groupings provides more detail into the major drivers for employment shifts that occurred between 2020 and 2022. Figure 3.4 details the changes in employment across all industrial sectors between 2020 and 2022.

Jobs in the Warehousing & Wholesale industrial group increased 11.6% between 2020 and 2022. The Wholesaling sector, which made up 87% of the jobs in this industrial group in 2020, grew at a modest 0.7% over the two-year period. The main driver of employment growth in the industrial group came from the Warehousing & Storage sector, which grew 84.5% over the period. This growth resulted from a significant increase in online retail and home delivery services during the pandemic.

The largest driver for the 12.2% decline in Manufacturing jobs was the Machinery & Transportation Equipment sector, which lost 19,300 jobs, a drop of 17.4%. These losses accounted for nearly 80% of the jobs lost in Manufacturing during that time. An important driver for these losses was a series of planned reductions in staff by Boeing due, in part, to travel impacts of the pandemic.⁶ In 2020, the company shared plans to reduce staff through buyouts, attrition and layoffs. By mid-2021, the

⁶ McIntosh, A. (2020). *Boeing slashes Dreamliner and 777/777X production, will cut 16,000 from workforce*. Puget Sound Business Journal. <https://www.bizjournals.com/seattle/news/2020/04/29/boeing-slashes-dreamliner-777-777x-production-jobs.html>



company began to roll back the planned reductions, and jobs were added in Washington in 2022. Employment in the Machinery & Transportation Equipment sector saw a slight uptick between 2021 and 2022 of 1.3%.

Figure 3.4: Industrial Employment Changes, 2020-2022

		2022 Employment	Change 2020-2022
Construction	Builders & Contractors	116,300	0.7%
	Heavy & Civil Construction	13,500	-7.2%
Manufacturing	Electronics & Components	13,300	-9.1%
	Food & Beverage Processing	20,700	1.1%
	Machinery & Transportation Equipment	92,100	-17.4%
	Metals & Fabrication	11,900	-14.8%
	Other Manufacturing	6,100	-13.1%
	Printing & Publishing	7,500	-0.4%
	Refining, Chemicals & Plastics	2,100	-16.1%
	Textiles, Apparel & Leather	5,700	1.2%
	Wood & Paper Products	16,000	-3.9%
Transp., Dist. & Logistics (TDL)	Transportation, Distribution & Logistics	82,500	-2.1%
Warehousing & Wholesale	Warehousing & Storage	23,300	84.5%
	Wholesaling	85,200	0.7%
Other Industrial	Building & Grounds Services	41,600	5.7%
	Industrial Services	7,000	-0.1%
	Telecom, Broadcasting & Video Production	16,600	-11.9%
	Utilities	6,500	0.0%
	Waste Management & Remediation	10,100	11.9%
	Other Industrial	10,000	-0.1%

Source: PSRC Covered Employment



Employment Forecasts

With help and review by technical staff from state and local government, PSRC developed a Macroeconomic Forecast for the region's households, persons, jobs and other economic and demographic variables through the year 2050. This forecast is used as an input to PSRC's land use and travel forecasting and provides the growth assumptions used in the regional growth strategy.

According to the forecast data shown in Figure 3.5, total jobs in the region are expected to grow by 45% between 2022 and 2050, to a total of 3,391,800. The forecast also includes estimated growth of jobs in the region organized by high-level standard North American Industry Classification System (NAICS) codes. Over this period, jobs in the Services sector are forecast to add the most jobs, at 723,100, increasing by 62%. Retail jobs are forecast to have the highest percentage change over the period, with a growth of 103%, adding 197,300 jobs. The Manufacturing sector, which experienced the highest level of job losses across the high-level sectors in recent years, is expected to grow by 1% through 2050. These forecast changes in jobs consider recent losses during the pandemic and include an expectation of recovery through 2050. Jobs in the Construction sector added the most jobs and grew by the largest percentage between 2015 and 2020, while minimizing job losses between 2020 and 2022. Looking ahead, jobs in this sector are forecast to drop by 4% through 2050.

Figure 3.5: Forecast Regional Job Growth: 2022 to 2050

	2050	Change	%
Construction & Resources	165,200	-6,900	-4%
Finance, Insurance & Real Estate (FIRE)	149,600	31,200	26%
Manufacturing	165,500	2,200	1%
Retail	388,400	197,300	103%
Services	1,880,200	723,100	62%
Wholesale Trade, Transportation & Utilities (WTU)	209,300	19,300	10%
Government	235,400	15,200	7%
Education	198,100	68,000	52%
Total	3,391,800	1,049,500	45%

Source: PSRC 2018 Macroeconomic Forecast, Total Employment Estimates



Industrial Jobs on Industrial and Non-Industrial Lands

Industrial activities and the jobs associated with them are dependent on industrial lands to different degrees. In 2022, 57% of all jobs in the identified industries were located on industrial lands, a drop from 2015 when 60% of industrial jobs were located there. There is notable variation between the industrial sectors. In some cases, nearly all jobs in an industry are located on industrial lands. As shown in Figure 3.6, jobs in Machinery & Transportation Equipment were highly dependent on industrial lands, with 93% located there in 2022. Industrial lands were also home to a high percentage of jobs in the Wood & Paper Products Industry (92%), and Warehousing & Storage (91%) in 2022.

Figure 3.6: Share of Industrial Jobs on Industrial Lands, 2015-2022

		2015 Share	2022 Share	Basis Point Change 2015-2022
Construction	Builders & Contractors	39%	39%	0%
	Heavy & Civil Construction	49%	52%	3%
Manufacturing	Electronics & Components	57%	51%	-6%
	Food & Beverage Processing	63%	63%	1%
	Machinery & Transportation Equipment	89%	93%	4%
	Metals & Fabrication	87%	86%	-1%
	Printing & Publishing	45%	41%	-3%
	Refining, Chemicals & Plastics	85%	72%	-13%
	Textiles, Apparel & Leather	78%	77%	-2%
	Wood & Paper Products	91%	92%	0%
	Other Manufacturing	67%	65%	-1%
Transp., Dist. & Logistics (TDL)	Transportation, Distribution & Logistics (TDL)	58%	53%	-5%
Warehousing & Wholesale	Warehousing & Storage	79%	91%	12%
	Wholesaling	61%	56%	-5%
Other Industrial	Building & Grounds Services	25%	23%	-2%
	Industrial Services	67%	72%	5%
	Telecom, Broadcasting & Video Production	21%	12%	-9%
	Utilities	35%	36%	2%
	Waste Management & Remediation	60%	43%	-17%
	Other Industrial	41%	44%	3%
Total Industrial		60%	57%	-3%

Source: PSRC Covered Employment. Share does not include jobs on Limited Industrial lands.



In other industries, the share of industrial jobs is much lower. Only 40% of jobs in the Builders & Contractors industry were tied to job sites on industrial lands in 2022. The employment locations for these companies on record with the Employment Security Department are often office locations that house administrative support activities, while the construction activities themselves take place at changing job sites throughout the region. The industries with the lowest share of jobs on industrial lands fell into the Other Industrial macro category, with Telecom, Broadcasting & Video production showing the lowest rate of jobs on industrial lands, at 12% in 2022.

The shares of jobs on industrial lands in some industries have shifted over time. These shifts are due to changes in employment both on and off industrial lands. In some cases, job growth is occurring in an industry sector on both types of lands but at different rates, or job losses are occurring but at different rates. In other instances, there is a divergence, with job losses or gains happening on one classification of land, and the opposite happening on the other. This variation could reflect the shifting nature of the jobs within the industries, with certain subsectors growing while others recede.

Between 2015 and 2022:

- Warehousing and Storage jobs became more concentrated on industrial lands, increasing from 79% of jobs located on industrial lands in 2015 to 91% in 2022.
- The vast majority of Waste Management & Remediation job growth took place on Limited Industrial and non-industrial lands, lowering the concentration of these jobs on industrial lands by 17 percentage points.
- Telecom, Broadcasting & Video Production lost jobs both on and off industrial lands, with just over half of the job losses occurring on industrial lands.
- Refining, Chemicals & Plastics experienced an overall loss of jobs. However, this was driven by a loss of jobs on industrial lands with a smaller increase in jobs on non-industrial lands.
- Electronics & Components saw a decrease in the overall number of jobs in the period and a drop in the concentration of jobs on industrial lands. All the job losses occurred on industrial lands, with no change in job totals on non-industrial lands.



Total Jobs on Industrial Lands

There are a variety of non-industrial activities located on industrial lands in the region, resulting in a mixture of industrial and non-industrial employment in these areas. As shown in Figure 3.7, non-industrial jobs have been growing at quicker rates than industrial jobs across the multiple categories of industrial lands classified in this report.

Figure 3.7: Industrial and Non-Industrial Jobs on Industrial Lands, 2015–2022

	Core Industrial/Airport Operations/Military Industrial		
	2015	2022	% Change
Industrial Jobs	289,100	289,000	0.0%
Non-Industrial Jobs	94,900	102,000	7.5%
	Industrial-Commercial		
	2015	2022	% Change
Industrial Jobs	46,100	50,100	8.7%
Non-Industrial Jobs	93,800	112,700	20.1%
	Limited Industrial		
	2015	2022	% Change
Industrial Jobs	60,200	63,800	6.0%
Non-Industrial Jobs	303,700	356,700	17.5%

Source: PSRC Covered Employment

All land categories saw job growth between 2015 and 2022, although more of this growth came from non-industrial jobs. The breakdown of growth between industrial and non-industrial jobs varies significantly by land type. Notably, there was no overall growth of industrial jobs on the combined Core Industrial/Airport Operations/Military Industrial lands over this period, while non-industrial jobs on those lands increased by 7.5%. Industrial-Commercial lands saw increases in both industrial and non-industrial employment, but non-industrial jobs grew by 20.1%, more than double the rate of growth of industrial jobs. Limited Industrial lands saw an increase in non-industrial jobs of 17.5%, compared to a 6.0% rate of increase in industrial jobs.

Jobs in Manufacturing/Industrial Centers

The region's 10 manufacturing/industrial centers represent some of the most productive and intensely developed manufacturing and industrial land in the Pacific Northwest. The centers are characterized by intense manufacturing and industrial development, warehouse and distribution activities, major port facilities, commercial fishing and related waterfront uses. The region's most heavily developed waterfront



lands, with major piers, wharfs, shipping berths and marine terminals, are included in the current centers, along with long-standing and emerging manufacturing, warehousing and industrial uses.

The MIC designation recognizes strategically located concentrations of industrial activity as essential resources for the regional economy. The designation also seeks to preserve the industrial land base for the long term and protect critical freight infrastructure.

MICs are home to 29% of the region's industrial employment and 11% of the region's overall employment. Total employment within these centers varies significantly, from 67,000 jobs in the Duwamish MIC to 1,300 jobs in the Puget Sound Industrial Center-Bremerton. The average employment across all MICs is 22,500 jobs.

Roughly 75% of the jobs located in the region's MICs in 2022 were in industrially classified industries, a figure that has stayed relatively constant between 2005 and 2022. Analyzing jobs supported by the region's ten designated MICs reveal that those closer to the urban core see higher shares of non-industrial employment. As seen in Figure 3.8, however, the ratio of industrial to non-industrial jobs varies greatly across individual MICs. The ratio of industrial jobs to non-industrial jobs on MICs is lowest within Seattle, with industrial jobs accounting for 37% and 66% of total employment in the Ballard-Interbay and Duwamish MICs, respectively. This contrasts with Paine Field and PSIC-Bremerton, where industrial jobs represent nearly 95% of total employment on each MIC. This may indicate that MICs closer to the urban core are at greater risk of losing their industrial focus than those further out.



Figure 3.8: Share of Industrial and Non-Industrial Jobs by MIC, 2005-2022



Source: PSRC Covered Employment



4. Drivers of Demand for Industrial Spaces

This section examines the national and local factors that affect industrial activity in the central Puget Sound region.

National Drivers of Demand

At the national level, supply chain issues highlighted throughout the COVID-19 pandemic made bringing jobs and production activities back to U.S. soil an attractive option for many companies.⁷ This has been made even more enticing by the strong political support for reshoring manufacturing and industrial jobs. Funding in the form of the Bipartisan Infrastructure Law, the CHIPS and Science Act of 2022 and the Inflation Reduction Act of 2022 have provided billions of dollars in capital and tax incentives to spur manufacturing and industrial growth across the country.

Notable national funding awards and opportunities have reached the region. This includes the Pacific Northwest Hydrogen Association's PNWH2 Hub designation as a Regional Clean Hydrogen Hub and port infrastructure funding via the Port Infrastructure Development Program funded by the Bipartisan Infrastructure Law.⁸ The Inflation Reduction Act is due to deliver sustainable aviation fuel funding and renewable energy tax credits that could spur industrial growth in the region.⁹ Additionally, the CHIPS and Science Act will help develop the region's workforce with funding for semiconductor workforce development and a research grant awarded to the University of Washington.¹⁰

⁷ Shih, W. (2020). *Bringing Manufacturing Back to the U.S. Is Easier Said Than Done*. Harvard Business Review. <https://hbr.org/2020/04/bringing-manufacturing-back-to-the-u-s-is-easier-said-than-done>; Rabouin, D. (2022). *U.S. Companies on Pace to Bring Home Record Number of Overseas Jobs*. Wall Street Journal; The Wall Street Journal. <https://www.wsj.com/articles/u-s-companies-on-pace-to-bring-home-record-number-of-overseas-jobs-11660968061> xz

⁸ Washington State Department of Commerce. (2023). *U.S. Dept. of Energy Selects Pacific Northwest for Regional Clean Hydrogen Hub - Washington State Department of Commerce*. <https://www.commerce.wa.gov/news/us-dept-of-energy-selects-pacific-northwest-for-regional-clean-hydrogen-hub/>; The Northwest Seaport Alliance. (2024). *A Strong Finish to 2023 for the NWSA*. <https://www.nwseaportalliance.com/newsroom/strong-finish-2023-nwsa>

⁹ Maria Cantwell United States Senator for Washington. (2022). *Inflation Reduction Act Delivers Wins for Washington State | U.S. Senator Maria Cantwell of Washington*. <https://www.cantwell.senate.gov/news/press-releases/inflation-reduction-act-delivers-wins-for-washington-state>

¹⁰ U.S. National Science Foundation. (2023). *U.S.-Japan University Partnership for Workforce Advancement and Research & Development in Semiconductors (UPWARDS) for the Future*. https://www.nsf.gov/awardsearch/showAward?AWD_ID=2329784



Regional Drivers of Demand

Industrial employment in the region has historically been strong, with all industrial groups experiencing growth from 2010–2020. As discussed in Chapter 3, COVID-19 disrupted this trend, resulting in employment losses from 2020–2021. Most industrial groups saw recovery in 2022, although Manufacturing continues to lag.

At the local level, the region’s industrial activities remain strong in part due to traditional industries in the region such as the aerospace, information technology, e-commerce and maritime sectors. During outreach efforts, regional stakeholders noted that these industries continue to drive interest in industrial spaces and business growth from domestic and international businesses.

Stakeholders reported shifts in the types of industrial activities that are vying for industrial space in the region. In addition to continued strength in the region’s historical industry clusters, newer industrial sectors like space and the green economy are contributing to industrial expansion.¹¹ This includes the growth of industrial activities that have fewer community and environmental impacts, such as smaller scale manufacturing, maker spaces, design and prototyping. Another factor decreasing negative environmental impacts is the trend towards electrification of support activities, away from traditional fossil fuels. This shift to lighter industrial uses and manufacturing is more compatible with non-industrial activities and is less dependent on core industrial lands.

In response to these emerging industrial activities, some jurisdictions in the region are updating policies related to industrial lands to encourage newer types of industrial activity, such as information technology or research and development. The proliferation of these emerging industrial activities drove the creation of the new supplemental Limited Industrial land category in this report’s analysis. Identifying areas that may allow smaller craft manufacturing or where industrial activity is part of commercial use is important to get an accurate picture of industrial activity across the region.

COVID-19 brought new opportunities in the regional industrial market, especially related to warehousing and distribution. Online shopping was growing steadily

¹¹ Nall, M. (2023). *Growing space sector bolsters industrial demand in Kent, Redmond*. Puget Sound Business Journal; Puget Sound Business Journal. https://www.bizjournals.com/seattle/news/2023/07/20/space-tech-industrial-lease-demand.html?utm_source=st&utm_medium=en&utm_campaign=me&utm_content=PS&ana=e_PS_me&j=32151181&senddate=2023-07-21



before 2020, but as highlighted in data collected by the University of Washington, the pandemic accelerated its adoption as people attempted to limit their exposure to COVID-19.¹² In response to this trend, new warehousing and distribution space was added across the region in record numbers to accommodate the increase in last-mile goods movement.¹³

¹² Diaz-Gutierrez, J. M., Mohammadi-Mavi, H., & Ranjbari, A. (2023). COVID-19 Impacts on Online and In-Store Shopping Behaviors: Why they Happened and Whether they Will Last Post Pandemic. *Transportation Research Record*, 03611981231155169. <https://doi.org/10.1177/03611981231155169>

¹³ Fahey, A. (2022). *As Amazon, others rethink warehouse and consumer needs, how will that reshape US industrial market?* Puget Sound Business Journal; Puget Sound Business Journal. <https://www.bizjournals.com/seattle/news/2022/07/27/industrial-warehouse-needs-retailer-space.html>



5. Supply of Industrial Spaces

Industrial space refers to physical spaces that house industrial activity and is understood using commercial real estate indicators like vacancy rates, square footage under construction and market rent data. This differs from the industrial lands inventory explored in Chapter 2 which captures allowed land use based on zoning. Analyzing industrial space gives a sense of current market conditions and overall demand for industrial uses in the region.

Industrial Real Estate Indicators

The region's industrial market has historically performed well, with the market rent of industrial spaces increasing year-over-year at a higher rate than regional office and retail markets. Industrial spaces saw a market rent per square foot rate of \$13.95 at the end of 2023, compared with \$7.38 in Q1 2015.¹⁴ This represents an 89.0% increase since the release of the previous Industrial Lands Analysis. Market rent for retail spaces in the region increased 40.3% over the same period, while office market rent rose only 25.6%.¹⁵

Demand for industrial space in the region remained strong throughout the pandemic. As seen in Figure 5.1, the sharpest increase in industrial market rents took place between 2021 and 2023. The pipeline of industrial spaces under development was also at an all-time high in the central Puget Sound region from 2021 to 2023. As seen in Figure 5.2, the square footage of industrial space under construction in the region soared during the pandemic.

The surge in construction was largely driven by the development of warehousing and distribution spaces, which made up 68.4% of the industrial construction from 2021–2023.¹⁶ In contrast, the production of new manufacturing space comprised only 6.4% of construction during the same period.¹⁷ As noted in Chapter 4, beginning in 2020 there was an increase in e-commerce activity as people tried to limit their exposure to COVID-19.

¹⁴ CoStar, Market Rent

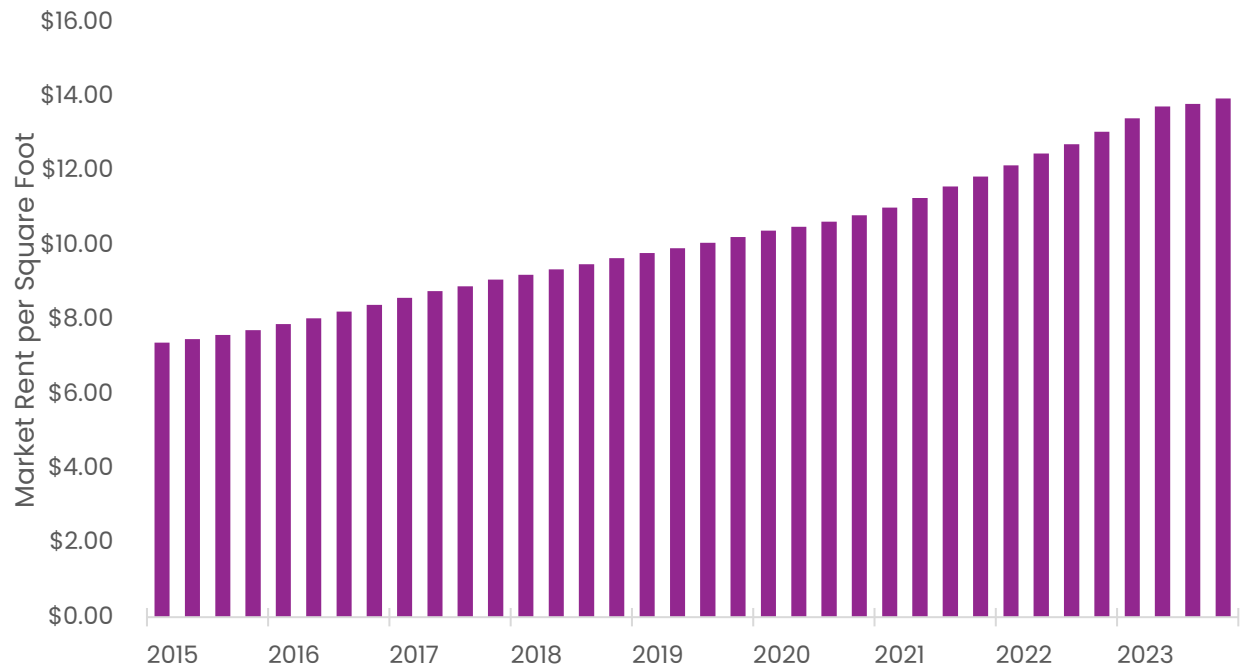
¹⁵ CoStar, Market Rent

¹⁶ CoStar, Square Footage under Construction

¹⁷ CoStar, Square Footage under Construction

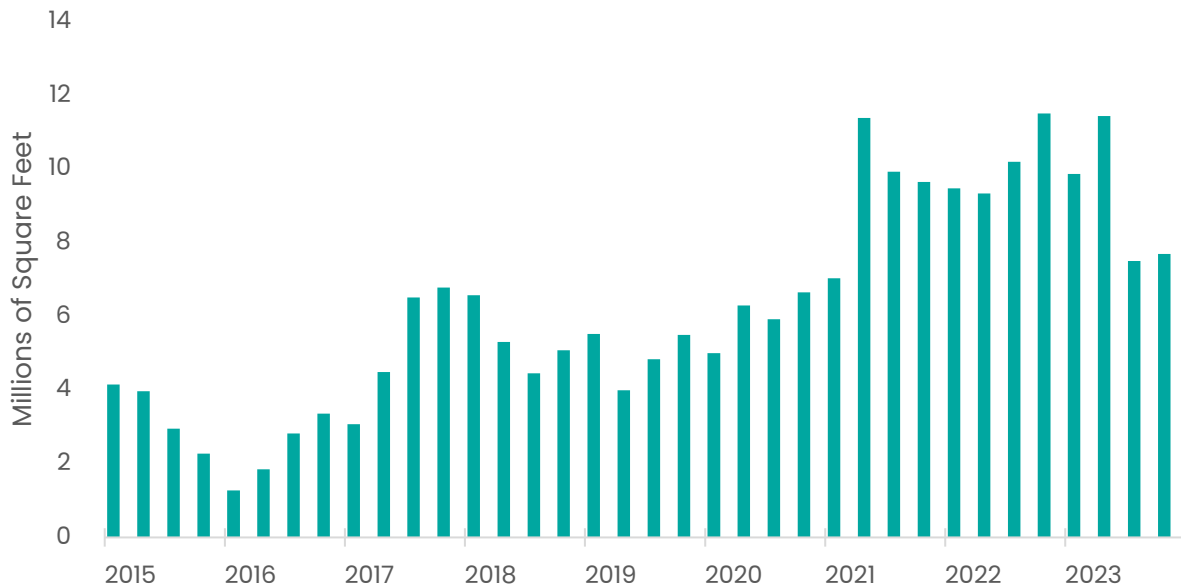


Figure 5.1: Industrial Market Rent in the Central Puget Sound Region, 2015-2023



Source: CoStar

Figure 5.2: Industrial Construction Pipeline in the Central Puget Sound Region, 2015-2023



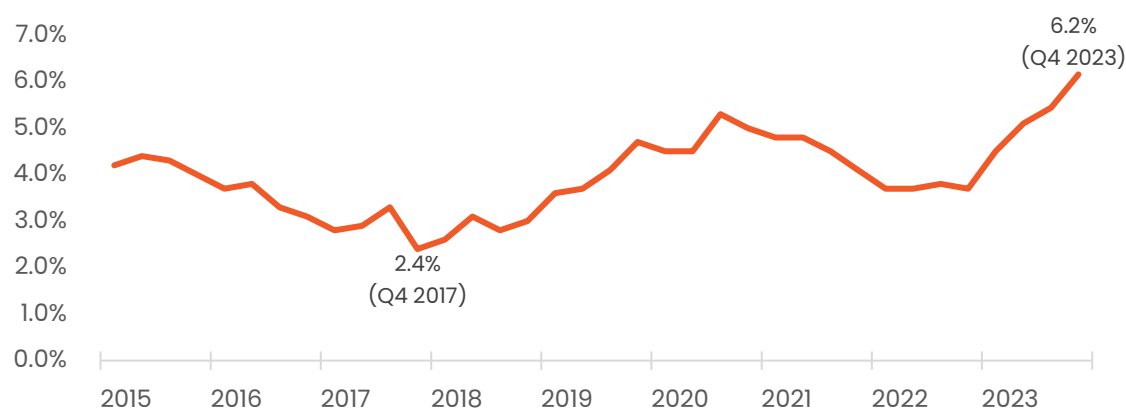
Source: CoStar



New warehouse and distribution sites were added across the region to accommodate increased online shopping. New building typologies like mega warehouses and multistory warehouses were developed in response to this uptick. Prologis Georgetown Crossroad, a leading example of multistory warehousing in the United States, was completed in Seattle in 2018.¹⁸ Two more multistory warehouses had been developed in the area as of September 2023, and more are expected in the future.¹⁹

Vacancy rates for industrial spaces have been somewhat volatile in recent years. As seen in Figure 5.3, after hitting a low point of 2.4% in Q4 2017, vacancy rates rose through Q3 2020. Vacancy rates fell again through the end of 2022, before jumping to 6.2% at the end of 2023. The recent increases in vacancy rate are likely linked to the large amount of industrial space that has come on the market following the construction surge. The region's increased vacancy rate mirrors trends seen in the national industrial market.²⁰ There was a national uptick in industrial vacancy in Q3 2023 as a record amount of construction was delivered. It remains to be seen if there will be sufficient demand for the increased inventory of warehouse and distribution space in the long term.

Figure 5.3: Industrial Vacancy Rate in the Central Puget Sound Region, 2015-2023



Source: CoStar

¹⁸ Morris, K., & Smith, J. (2019). *Amazon's New Multistory Warehouse Aims to Cut Delivery Times*. The Wall Street Journal. <https://www.wsj.com/articles/amazons-new-multistory-warehouse-aims-to-cut-delivery-times-11568113201>

¹⁹ Stiles, M. (2023). *First look: Ryan Cos. opens rare multistory warehouse in Sodo*. Puget Sound Business Journal. <https://www.bizjournals.com/seattle/news/2023/08/03/rare-multistory-warehouse-opens-seattle-sodo.html>

²⁰ Fahey, A. (2023). *US industrial market continues to slow as record amount of construction delivers*. Puget Sound Business Journal. <https://www.bizjournals.com/seattle/news/2023/10/09/industrial-market-slows-record-supply-delivers.html>



The market appears to be cooling after the construction surge of the past few years. Net absorption, defined as the amount of physical space that became occupied minus the amount of space that became vacant in a given time period, indicates the warehouse construction boom brought on by the pandemic may have peaked. After seeing positive net absorption each quarter from the beginning of the pandemic through the end of 2022, 2023 saw three quarters of negative net absorption.²¹ This indicates that the supply of industrial spaces in the region may outpace the current demand.

Regional logistics companies are experiencing challenges given recent volatility in the industry. Seattle based company Flexe was founded in 2013 to offer on-demand warehouse and fulfillment services. The company reached a high-water mark in July 2022 when it raised \$119 million in funding at a valuation of more than \$1 billion. In September 2023, Flexe laid off 33% of its employees and in January 2024 laid off another 38% due to cooling in the market.²²

Convoy was founded in 2015 to offer a digital brokerage that connected shippers and carriers. The company reached a valuation of \$3.8 billion in 2022 after raising \$260 million in funding. In October 2023, the company suspended operations due to lower freight demand. Convoy has gone through several rounds of layoffs over the previous 18 months that had cut its workforce down from a peak of around 1,500 to around 500 before the closure.²³

Supply Challenges

The supply of industrial spaces emerged as a significant stakeholder concern. Respondents noted the limited availability of prime land for future development including shovel-ready sites. The industrial construction boom from 2021–2023, as well as the acquisition of industrial lands for non-industrial uses, may have led to limited options for new industrial spaces in certain areas.

The tight industrial market appears to be pushing developers towards sites that have previously been passed over. In 2023, Vector Development Company announced the

²¹ CoStar, Net Absorption

²² Morgan, R. (2023). *Logistics company Flexe lays off one-third of its employees*. Puget Sound Business Journal. <https://www.bizjournals.com/seattle/news/2023/09/26/flexe-layoffs-logistics-seattle-warehouse.html>; Morgan, R. (2024). *Logistics company Flexe cuts 38% of staff in new wave of layoffs*. Puget Sound Business Journal. <https://www.bizjournals.com/seattle/news/2024/01/08/flexe-layoffs-2024-seattle-logistics-warehouse.html>

²³ Young, L., & Berger, P. (2023). *Digital Startup Convoy Is Winding Down Its Freight Business*. The Wall Street Journal. <https://www.wsj.com/articles/digital-startup-convoy-is-winding-down-its-freight-business-e84b987c>



development of a less-than-ideal site located within the flood plain in Frederickson.²⁴ Also in 2023, Bridge Industrial made known its plans to develop an industrial campus on a former federal Superfund cleanup site in Tacoma.²⁵

Sizing of available sites was identified as a challenge, with a need to encourage more small- and mid-size spaces to support manufacturing. There is a premium on land for manufacturing, especially large sites, and a mismatch between the size of available land and the businesses that can occupy them. Stakeholders noted that there may be opportunities for smaller industrial areas across the region outside of the MICs to help meet demand for industrial spaces and allow for increased connectivity to housing.

Some stakeholders identified a lack of accessible funding rather than lack of space as the primary inhibitor of industrial development. Investment in infrastructure and increased connection to major transportation corridors will be necessary to maximize industrial development in these more remote areas.

Naval Base Kitsap

Recent efforts by the U.S. Navy highlight the lack of available industrial space in Kitsap County. The Navy is spending at least \$21 billion to optimize its four aging naval shipyards in Norfolk, Portsmouth, Puget Sound and Pearl Harbor under a Shipyard Infrastructure Optimization Program (SIOP). A recent Congressional Budget Office (CBO) report says that the Navy will need more than \$3 billion to address the deferred maintenance backlog for the buildings at Naval Base Kitsap alone.²⁶ Renovation and modernization work slated to be done at Naval Base Kitsap will require that facilities and land be temporarily vacated and operations be relocated offsite. Because of limited space available on the market, the Navy released a Request for Interest (RFI) in October 2023 to help locate space within 40 miles that could be made available to house various operations as the spaces needed were

²⁴ De La Rosa, S. (2023). *Industrial developer: Finding Pierce County sites “a bigger struggle.”* Puget Sound Business Journal. <https://www.bizjournals.com/seattle/news/2023/02/15/vector-development-land-use-challenges.html>

²⁵ De La Rosa, S. (2023). *Bridge Industrial clears permit hurdle for giant Tacoma development.* Puget Sound Business Journal. <https://www.bizjournals.com/seattle/news/2023/04/24/tacoma-oks-25m-industrial-project-in-nalley-valle.html>

²⁶ Lin, P. (2023). *Report: Nearly \$3B needed for maintenance, renovation on Naval Base Kitsap buildings.* Kitsap Sun. <https://www.kitsapsun.com/story/news/local/navy/2023/12/20/naval-base-kitsap-maintenance-renovations/71816334007/>



not readily available on the market.²⁷ The 14 general space needs identified in the RFI include warehousing, heavy and light industrial, and laydown areas, as well as administrative and office space activities with size requirements up to 61,000 square feet. The Navy received more than 80 responses to the RFI and is in the process of reviewing the proposals.

²⁷ Lin, P. (2023). *Navy researching properties around shipyard to lease for major renovation project*. Kitsap Sun. <https://www.kitsapsun.com/story/news/2023/11/08/navy-looking-for-buildings-and-land-near-bremerton-for-project/71397093007/>



6. Incompatible and Undesired Uses

Industrially zoned lands are intended to facilitate vibrant manufacturing hubs across the region, but certain non-industrial uses are free to operate in these zones as well. In some cases, this flexibility can disrupt the intended purpose of industrial zones. Incompatible and undesired uses, such as big box retail, mini storage or residential uses, reduce the amount of space available for industrial use on industrial lands. Regional real estate factors, such as housing shortages or demand for other commercial uses, can put pressure on these lands for non-industrial uses.

Industrial land is typically priced lower than land zoned for retail and commercial purposes, making it profitable for non-industrial uses to locate there. As examined in Chapter 3, non-industrial job growth outpaced industrial job growth in the region.²⁸ VISION 2050 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.

Jurisdictions in the region are working to curb unintended uses through policy change. This is supported by VISION 2050, which calls for cities and counties to preserve industrial lands and limit incompatible land uses in MICs. Examples include preventing big box stores in core industrial areas by reducing maximum size of use limits in various categories or prohibiting mini storage facilities in all industrial zones.

Warehousing

The growing demand for warehousing and distribution, particularly in urban areas, was reported as a key concern by regional stakeholders. As previously examined, warehousing jobs and the construction of warehousing and distribution spaces skyrocketed during the pandemic. Compared to manufacturing, warehousing activities may elevate traffic impacts while offering fewer jobs, lower job density, lower average wages and limited supply chain economic impacts.

Housing

The region continues to experience a significant housing shortage, which could result in incompatible residential uses in core industrial areas. PSRC's 2022 Regional Housing Needs Assessment found that the central Puget Sound region currently has a shortage of 46,000 housing units. A total of 810,000 new housing units will be

²⁸ PSRC Covered Employment



needed to accommodate the population in 2050. Industrial lands, especially those in key urban locations, could be viewed as potential locations to add new housing units. Stakeholders emphasized the importance of zoning categories that protect the intended use of industrial lands, limiting housing development, especially as jurisdictions continue their work to address the region's housing shortage.

Transit Expansion

The central Puget Sound region is currently undergoing one of the most aggressive transit expansions in the United States, planning to invest \$300 billion in transportation through 2050.²⁹ Over \$100 billion of that investment is earmarked for high-capacity transit.³⁰ Public transit investments have the potential to improve industrial activity in the region by better connecting workers to industrial hubs. Some MICs in the region are already served by high-capacity transit such as the Sound Transit's SODO Link Station, which is located within the Duwamish MIC.

Industrial lands present unique challenges for high-capacity transit, which can result in relatively low ridership. In 2023, the SODO Station saw the second lowest ridership of all Link 1 Line stations, averaging 1,659 boardings per day.³¹ The relatively low employment densities of industrial lands, as well as the prevalence of shift work requiring workers to travel outside of peak commuting hours, adds complexity to planning for the high-capacity transit serving industrial lands.

Additional Link Light Rail service in or adjacent to MICs is planned in the coming years, including:

- Paine Field/Boeing Everett MIC, served by the Everett Link Extension ³²
- Ballard-Interbay MIC, served by the Ballard Link Extension ³³
- Northwest portion of Duwamish MIC, served by the West Seattle Link Extension ³⁴

²⁹ PSRC Regional Transportation Plan: 2022–2050

³⁰ PSRC Regional Transportation Plan: 2022–2050

³¹ Sound Transit. (2023). *Performance Tracker: Link Ridership* [Data set]. <https://www.soundtransit.org/ride-with-us/system-performance-tracker/ridership>

³² Sound Transit. (2023). *Everett Link Extension*. <https://www.soundtransit.org/system-expansion/everett-link-extension>

³³ Sound Transit. (2016). *West Seattle Link Extension and Ballard Link Extension*. <https://www.soundtransit.org/system-expansion/west-seattle-ballard-link-extensions>

³⁴ Sound Transit. (2016). *West Seattle Link Extension and Ballard Link Extension*. <https://www.soundtransit.org/system-expansion/west-seattle-ballard-link-extensions>



- North Tukwila MIC, served by the Boeing Access Road Station ³⁵
- Port of Tacoma, served by the Tacoma Dome Link Extension ³⁶

Regional stakeholders have highlighted the potential benefits and challenges to the region's industrial lands of high-capacity transit investments. Introducing high-capacity transit into industrial areas will increase access to employment opportunities yet could also increase pressure for incompatible uses. Transit-oriented development (TOD) around light rail stations typically focuses on integrating housing and mixed-use development, which is less compatible with industrial areas. The addition of high-capacity transit stops in or near these industrial areas could lead to increased demand for these incompatible uses. Conversely, stakeholders noted that these investments could help meet regional equity goals by providing more equitable access to the jobs in these locations.

VISION 2050 calls for transit-oriented development near stations located in or near MICs to function differently, with different uses than other centers, to maintain a focus on protecting industrial zoning, jobs and the region's overall economic vitality. MICs have different characteristics and mobility needs than regional growth centers due to their unique characteristics. High-capacity transit may not be viable for all MICs, while identifying transportation demand management strategies, including carpools, vanpools, mobility on demand and other flexible options, can help reduce congestion and increase accessibility to industrial employment centers.

³⁵ Sound Transit. (2024). *Boeing Access Road Station*. <https://www.soundtransit.org/system-expansion/boeing-access-road-station>

³⁶ Sound Transit. (2016). *Tacoma Dome Link Extension*. Soundtransit.org. <https://www.soundtransit.org/system-expansion/tacoma-dome-link-extension>



7. Industrial Workforce

Industrial lands are crucial hubs of employment in the region and during stakeholder outreach, respondents consistently emphasized the importance of a strong workforce for the success of industrial activities in the region. According to a recent report from the U.S. Chamber of Commerce, there could be as many as 2.1 million industrial and manufacturing jobs unfilled nationwide from 2020–2030 due to skill gaps in the workforce.³⁷

Wages

Overall, workers in industrial occupations earn higher wages compared to workers in non-industrial sectors. The median income for industrial workers in 2021 was about \$62,000, while the non-industrial median income was \$45,000.³⁸ In fact, 26.9% of industrial workers earned \$100,000 or more, compared to 20.8% of non-industrial workers, as seen in Figure 7.1.³⁹

Figure 7.1: Wages for Industrial and Non-Industrial Workers, 2021

	Industrial	Non-Industrial
Under \$25,000	19.0%	29.6%
\$25,000–\$49,999	21.9%	23.7%
\$50,000–\$74,999	18.9%	16.3%
\$75,000–\$99,999	13.3%	9.6%
\$100,000 or more	26.9%	20.8%

Source: American Community Survey 5-Year Public Use Microdata Sample, 2017–2021

There are significant variations in pay between different industrial sectors, as seen in Figure 7.2. More than 35% of those employed in Manufacturing and Other Industrial earned over \$100,000 in 2021. By contrast, most workers in the Construction, Transportation, Distribution & Logistics, and Warehousing & Wholesale macro groupings earned \$25,000 to \$49,999. The steep job growth of the Warehousing & Wholesale macro grouping between 2020 and 2022, and its lower pay, could drive down the overall median wage of industrial workers over time.

³⁷ Ferguson, S. (2024). *Understanding America's Labor Shortage: The Most Impacted Industries*. U.S. Chamber of Commerce. <https://www.uschamber.com/workforce/understanding-americas-labor-shortage-the-most-impacted-industries>

³⁸ American Community Survey 5-Year Public Use Microdata Sample, 2017–2021

³⁹ American Community Survey 5-Year Public Use Microdata Sample, 2017–2021



Figure 7.2: Wages for Industrial Groupings, 2021

	Construction	Manufacturing	Transportation, Distribution & Logistics (TDL)	Warehousing & Wholesale	Other Industrial
Under \$25,000	20.9%	10.8%	18.3%	26.3%	21.6%
\$25,000–\$49,999	23.2%	17.3%	27.2%	27.3%	19.3%
\$50,000–\$74,999	22.5%	18.5%	22.8%	19.0%	13.3%
\$75,000–\$99,999	14.2%	16.6%	10.6%	11.8%	10.4%
\$100,000 or more	19.3%	36.8%	21.0%	15.6%	35.4%

Source: American Community Survey 5-Year Public Use Microdata Sample, 2017–2021

Educational Attainment

Industrial jobs generally have lower educational requirements than other sectors of the regional economy. Roughly two-thirds of the industrial workforce reported having attained less than a bachelor’s degree, compared with just over half of non-industrial workers.⁴⁰

Figure 7.3: Industrial and Non-Industrial Workers by Educational Attainment, 2021

	Industrial	Non-Industrial
Less than high school diploma	8.3%	6.5%
High school diploma/GED	25.3%	16.8%
Some college	33.1%	30.1%
Bachelor’s degree	23.4%	28.1%
Postgraduate degree	9.9%	18.5%

Source: American Community Survey 5-Year Public Use Microdata Sample, 2017–2021

This difference in educational attainment is larger in some industrial employment groupings. As shown in Figure 7.4, workers in the Construction industry were most likely to have less than a bachelor’s degree (82.6%), with Warehousing & Wholesale workers being the second highest (75.2%).

The high salaries of industrial jobs, paired with relatively limited educational requirements, make an attractive career path for many residents in the central Puget Sound region.

⁴⁰ American Community Survey 5-Year Public Use Microdata Sample, 2017–2021



Figure 7.4: Educational Attainment by Industry Macro Grouping, 2021

	Construction	Manufacturing	Transportation, Distribution & Logistics (TDL)	Warehousing & Wholesale	Other Industrial
Less than high school diploma	14.4%	4.6%	7.6%	7.3%	6.9%
High school diploma/GED	33.4%	21.4%	25.6%	29.7%	16.8%
Some college	34.8%	32.7%	33.8%	38.2%	26.7%
Bachelor's degree	14.3%	28.0%	26.1%	19.7%	30.6%
Postgraduate degree	3.1%	13.4%	6.9%	5.1%	19.0%

Source: American Community Survey 5-Year Public Use Microdata Sample, 2017–2021

Workforce Characteristics

Race and Ethnicity

People of color are somewhat underrepresented in the central Puget Sound region's industrial workforce. As shown in Figure 7.5, the share of white industrial workers was 4.9 percentage points higher than the region's share of white residents in 2021. Conversely, those who identified as two or more races were underrepresented by 2.7 percentage points when compared to the regional population. Smaller variations between the region's industrial workforce and population were seen for other racial and ethnic groups.

Figure 7.5: Industrial Workers and Regional Population by Race and Ethnicity, 2021

	Industrial Workforce	Regional Population
American Indian or Alaskan Native Alone	0.5%	0.5%
Asian Alone	13.2%	14.6%
Black or African American Alone	5.4%	5.8%
Hispanic or Latinx	10.5%	10.8%
Native Hawaiian and Other Pacific Islander Alone	1.0%	0.7%
White Alone	64.2%	59.3%
Some Other Race Alone	0.4%	0.7%
Two or More Races	4.8%	7.5%

Source: American Community Survey 5-Year Public Use Microdata Sample, 2017–2021; ACS 5-Year Estimates, 2017–2021

There are greater discrepancies when comparing demographics in the industrial employment groups to the region's population. Black or African American workers are employed in 13.0% of the Warehousing & Wholesale jobs, while making up only 5.8% of the region's population. The Manufacturing workforce is made up of higher



levels of white (68.2%) and Asian (16.0%) workers, with underrepresentation of Black or African American (3.9%) and Hispanic or Latinx (6.4%) employees. The Construction workforce has the highest share of white workers and Hispanic or Latinx workers, with the lowest share of Asian and Black or African American workers.

Figure 7.6: Race and Ethnicity of Workers by Industry Macro Grouping and Regional Population, 2021

	Construction	Manufacturing	Transportation, Distribution & Logistics (TDL)	Warehousing & Wholesale	Other Industrial	Regional Population
American Indian or Alaskan Native Alone	0.6%	0.4%	0.5%	0.4%	0.4%	0.5%
Asian Alone	4.6%	16.0%	13.3%	12.6%	20.5%	14.6%
Black or African American Alone	2.6%	3.9%	4.6%	13.0%	4.6%	5.8%
Hispanic or Latinx	17.2%	6.4%	9.6%	7.6%	10.9%	10.8%
Native Hawaiian and Other Pacific Islander Alone	0.7%	0.5%	1.0%	2.5%	0.8%	0.7%
White Alone	69.6%	68.2%	65.7%	57.8%	57.4%	59.3%
Some Other Race Alone	0.4%	0.4%	0.5%	0.4%	0.3%	0.7%
Two or More Races	4.3%	4.3%	4.8%	5.7%	5.1%	7.5%

Source: American Community Survey 5-Year Public Use Microdata Sample, 2017–2021

Age

Over a quarter of the regional industrial workforce is nearing or at retirement age. Workers over the age of 55 comprise 25.7% of the industrial workforce, compared to 23.1% of the non-industrial workforce in the region. Simultaneously, those under the age of 25 are underrepresented in the regional industrial workforce, making up only 8.0% compared to 13.8% of the non-industrial workforce.

In the coming years it will be crucial to increase the pipeline of workers to replace those who age out of the workforce. This is especially true for the Manufacturing industrial group. As seen in Figure 7.8, while 32.6% of the Manufacturing workforce is aged 55 and older and nearing retirement, only 4.8% of the workforce is under the age of 25. This represents the highest share of older workers and lowest share of younger workers out of any industrial group.



Figure 7.7: Industrial and Non-Industrial Workers by Age, 2021

	Industrial	Non-Industrial
16-24	8.0%	13.8%
25-54	66.4%	63.1%
55-64	18.3%	14.9%
65+	7.4%	8.2%

Source: American Community Survey 5-Year Public Use Microdata Sample, 2017-2021

Figure 7.8: Age of Workers by Industry Macro Grouping, 2021

	Construction	Manufacturing	Transportation, Distribution & Logistics (TDL)	Warehousing & Wholesale	Other Industrial
16-24	9.0%	4.8%	9.1%	8.0%	9.7%
25-54	68.5%	62.6%	63.4%	62.5%	73.0%
55-64	15.9%	24.0%	19.2%	20.8%	12.0%
65+	6.6%	8.7%	8.3%	8.6%	5.3%

Source: American Community Survey 5-Year Public Use Microdata Sample, 2017-2021

Gender

Women are less likely to hold an industrial job, making up less than 30% of the national industrial workforce in 2021.⁴¹ In the region, only 24% of the industrial workforce is female, compared to 55% of non-industrial workers.

Figure 7.9: Industrial and Non-Industrial Workers by Sex, 2021

	Industrial	Non-Industrial
Female	24%	55%
Male	76%	45%

Source: American Community Survey 5-Year Public Use Microdata Sample, 2017-2021

As seen with other workforce characteristics, the employment of female industrial workers varies across the industrial groups. As seen in Figure 7.10, the share of female workers ranges from 33% in Warehousing & Wholesale to only 13% in Construction.

⁴¹ U.S. Bureau of Labor Statistics. (2024). *Employed persons by detailed industry, sex, race, and Hispanic or Latino ethnicity*. <https://www.bls.gov/cps/cpsaat18.htm>; U.S. Department of Commerce. (2022). *Manufacturing Opens More Doors to Women*. <https://www.commerce.gov/news/blog/2022/10/manufacturing-opens-more-doors-women>



Figure 7.10: Sex of Workers by Industry Macro Grouping, 2021

	Construction	Manufacturing	Transportation, Distribution & Logistics (TDL)	Warehousing & Wholesale	Other Industrial
Female	13%	25%	27%	33%	31%
Male	87%	75%	73%	67%	69%

Source: American Community Survey 5-Year Public Use Microdata Sample, 2017–2021

Opportunities

Women and people of color have historically been underrepresented in industrial jobs, and organizations such as the National Association of Manufacturers are calling for action that will lead to a workforce reflective of the diversity of the national population by 2030.⁴² Expanding participation of people of color, women and youth in industrial jobs could help meet the workforce needs of regional employers as well as work toward meeting equity goals. Local jurisdictions are working toward a more diverse and inclusive workforce. Their approaches include pursuing investments in workforce training, creating mentorship programs, supporting workers in obtaining licensure and creating youth outreach initiatives.

⁴² National Association of Manufacturers. (2023). *NAM Pledge for Action*. <https://nam.org/pledge-for-action/>



8. Impacts to Communities

While industrial lands play an essential role in the region's economic development, traditional industrial activities can negatively impact the environment, endangering the surrounding residents and ecosystems. Environmental conditions affecting neighborhoods near industrial lands include air pollution, excessive noise, soil and water contamination. Communities next to industrial areas, including Tribes, raised concerns about the impact of industrial activities on housing, residential environments and local fish and wildlife.

Health Impacts

Traditional industrial activities and related transportation generate pollutants, including PM 2.5 and PM 10 emissions, sulfur dioxide, ozone causing chemicals, nitrogen dioxide and carbon monoxide. Exposure to air pollution causes cancer, cardiovascular and respiratory disease, and is responsible for up to 4.2 million premature deaths worldwide each year according to the World Health Organization.⁴³ Brownfield sites, such as abandoned, idle or underused industrial sites, are also a concern.⁴⁴ Toxic materials from past land uses can affect surrounding communities when wind and stormwater carry pollutants to population centers. These contaminants are linked to increased risk of respiratory problems, cardiovascular disease and cancer.⁴⁵

Communities in the central Puget Sound region are affected by industrial pollution. In 2023, the Washington State Department of Ecology identified 16 overburdened communities across the state which were highly impacted by air pollution. As seen in Figure 8.1, there is a significant overlap between regional industrial lands and the overburdened communities identified by the Department of Ecology in the central Puget Sound.

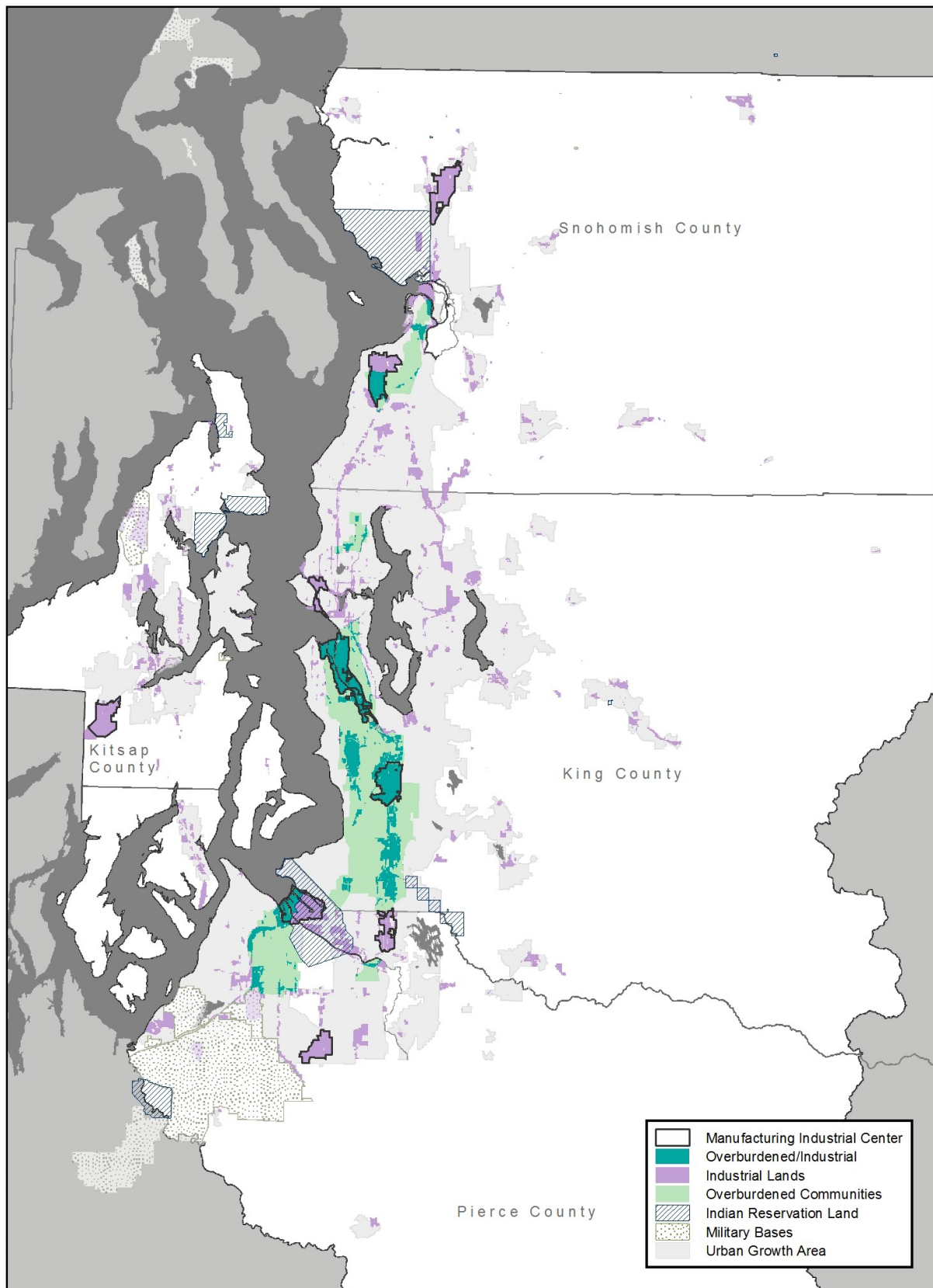
⁴³ World Health Organization. (2022). *Ambient (outdoor) air pollution*. Who.int; World Health Organization: WHO. [https://www.who.int/news-room/fact-sheets/detail/ambient-\(outdoor\)-air-quality-and-health](https://www.who.int/news-room/fact-sheets/detail/ambient-(outdoor)-air-quality-and-health)

⁴⁴ United States Environmental Protection Agency. (2019). *Past Property Uses May Result in a Brownfield Site*. https://www.epa.gov/sites/default/files/2019-10/documents/past_property_uses_may_result_in_a_brownfield_site.pdf

⁴⁵ United States Environmental Protection Agency. (2023). *Environmental Contaminants Often Found at Brownfield Sites*. <https://www.epa.gov/system/files/documents/2023-11/env-contaminants-found-often-at-brownfields-2023.pdf>; Washington State Department of Ecology. (2023). *Improving Air Quality in Overburdened Communities Highly Impacted by Air Pollution: 2023 Report*, pp. 128-182. <https://apps.ecology.wa.gov/publications/UIPages/documents/2302115.pdf>.



Figure 8.1: Map Comparing Industrial Lands and Overburdened Communities





Out of the six overburdened communities in the central Puget Sound region, four contain one or more MICs. The Paine Field/Boeing Everett MIC, Duwamish MIC, North Tukwila MIC, Kent MIC and the Port of Tacoma MIC are all located fully or partially within the identified areas.⁴⁶ The Department of Ecology reports that residents in these communities experience higher rates of asthma and lower life expectancies compared to the rest of Washington.⁴⁷

People of color are disproportionately affected by pollution, raising concerns about equity and environmental justice. Numerous studies at the national level have found that people of color are exposed to higher levels of air pollutants and heavy metals than their white peers.⁴⁸ Many point to the lingering effects of racist urban policy and redlining that resulted in the siting of undesirable uses in communities of color. Statewide data indicates that people of color have worse health outcomes than white residents.⁴⁹

Unfortunately, this serious issue affects the central Puget Sound region. A 2023 study of Seattle found that exposure to pollutants increased as the percentage of Black and Hispanic populations in a given census tract increased.⁵⁰ The same study compared present day pollution levels to historic Home Owners' Loan Corporation

⁴⁶ Washington State Department of Ecology. (2023). *Improving Air Quality in Overburdened Communities Highly Impacted by Air Pollution: 2023 Report*, pp. 128–182.

<https://apps.ecology.wa.gov/publications/UIPages/documents/2302115.pdf>.

⁴⁷ Washington State Department of Ecology. (2023). *Improving Air Quality in Overburdened Communities Highly Impacted by Air Pollution: 2023 Report*, pp. 131–132, 150–151, 161–162, 179–180.

<https://apps.ecology.wa.gov/publications/UIPages/documents/2302115.pdf>.

⁴⁸ Bell, M. L., & Ebisu, K. (2012). Environmental inequality in exposures to airborne particulate matter components in the United States. *Environmental health perspectives*, 120(12), 1699–1704. <https://doi.org/10.1289/ehp.1205201>; Jones, D. H., Yu, X., Guo, Q., Duan, X., & Jia, C. (2022). Racial Disparities in the Heavy Metal Contamination of Urban Soil in the Southeastern United States. *International journal of environmental research and public health*, 19(3), 1105.

<https://doi.org/10.3390/ijerph19031105>; Nigra, A. E., & Navas-Acien, A. (2021). Racial Inequalities in Drinking Water Lead Exposure: A Wake-Up Call to Protect Patients with End Stage Kidney Disease. *Journal of the American Society of Nephrology*, 32(10), 2419–2421. <https://doi.org/10.1681/asn.2021060793>; Liu, J., Clark, L. P., Bechle, M. J., Hajat, A., Kim, S. Y., Robinson, A. L., Sheppard, L., Szpiro, A. A., & Marshall, J. D. (2021). Disparities in Air Pollution Exposure in the United States by Race/Ethnicity and Income, 1990–2010. *Environmental health perspectives*, 129(12), 127005.

<https://doi.org/10.1289/EHP8584>; Kodros, J. K., Bell, M. L., Dominici, F., L'Orange, C., Godri Pollitt, K. J., Weichenthal, S., Wu, X., & Volckens, J. (2022). Unequal airborne exposure to toxic metals associated with race, ethnicity, and segregation in the USA. *Nature communications*, 13(1), 6329. <https://doi.org/10.1038/s41467-022-33372-z>.

⁴⁹ Booshehri, L. G., & Dugan, J. (2021). *Overcoming Barriers to Access Health Care: The Challenges Facing Minorities and Immigrants in Washington State*. University of Washington Center for Health Innovation and Policy Science.

⁵⁰ Bramble, K., Blanco, M. N., Doubleday, A., Gassett, A. J., Anjum Hajat, Marshall, J. D., & Sheppard, L. (2023). Exposure Disparities by Income, Race and Ethnicity, and Historic Redlining Grade in the Greater Seattle Area for Ultrafine Particles and Other Air Pollutants. *Environmental Health Perspectives*, 131(7). <https://doi.org/10.1289/ehp11662>.



(HOLC) redlining maps, finding higher levels of pollutants in areas where communities of color historically lived in Seattle.

People of color are also disproportionately located within a one-mile buffer of MICs in the region. While people of color made up 38% of the region's population in 2021, they represented 46% of those living within a one-mile buffer of MICs. As seen in Figure 8.2, this overrepresentation within a one-mile buffer was especially notable in the North Tukwila and Kent MICs where people of color represented 73% and 64% of the population respectively.

Figure 8.2: Share of Population Within a One-Mile Buffer of MICs by Race and Ethnicity, 2021

	American Indian and Alaska Native	Asian	Black or African American	Hispanic or Latine	Native Hawaiian and Other Pacific Islander	White	Other
Ballard-Interbay	0%	15%	2%	6%	0%	69%	7%
Duwamish	1%	23%	12%	11%	1%	46%	7%
Kent MIC	0%	22%	13%	17%	3%	36%	8%
North Tukwila	1%	29%	20%	17%	1%	27%	6%
Sumner Pacific	0%	7%	5%	15%	3%	63%	7%
Puget Sound Industrial Center-Bremerton	0%	5%	0%	7%	4%	72%	12%
Frederickson	0%	6%	9%	17%	4%	55%	9%
Port of Tacoma	2%	10%	10%	14%	2%	55%	9%
Cascade	1%	5%	1%	13%	0%	70%	8%
Paine Field / Boeing Everett	0%	15%	7%	17%	0%	54%	6%
All MICs	1%	16%	8%	12%	1%	54%	7%
Region	1%	14%	6%	10%	1%	62%	7%

Source: American Community Survey 5-Year Estimates, 2017-2021

Although there are currently no studies at the regional scale verifying a correlation between people of colors' health outcomes and pollution exposure, given the



connection between pollutants and adverse health outcomes, it seems likely that proximity to industrial lands is a contributing factor to the racial health inequities seen across the region.

Stakeholders, including regional Tribes, called for increased coordination and consultation from local jurisdictions and ports that are making industrial planning decisions that may impact surrounding communities.



9. Goods Movement

Industrial goods are moved throughout the central Puget Sound region by an extensive freight transportation system made up of marine, rail, air and road networks. Freight movement is different from urban goods delivery, such as package drop off. Although both result in moving items from one place to another, the scale, distance, reliance on industrial lands and purpose vary greatly.

The efficiency and maintenance of transportation infrastructure is crucial to the continued success and growth of the region's industrial supply chains. Key resources, like deepwater ports and rail freight interchanges, should be protected and well-maintained for the benefit of the region's industrial lands.

Regional Goods Movement

Deepwater Ports and Airports

Deepwater ports and airports provide the major gateways for freight delivery within the region. They are a critical component of the global supply chain, serving as the point of entry for goods coming into the region and the point of exit for distribution of agricultural and manufactured goods produced in the region. The global supply chain issues brought on by the COVID-19 pandemic affected the amount of freight handled by the region's ports.

The deepwater ports of the Northwest Seaport Alliance, including facilities at the Port of Seattle and Port of Tacoma, rank as the fourth-largest container gateway in North America. They connect the central Puget Sound region with the rest of the world via international trade. China, Japan, Vietnam and South Korea were the ports' top trading partners in 2022.⁵¹

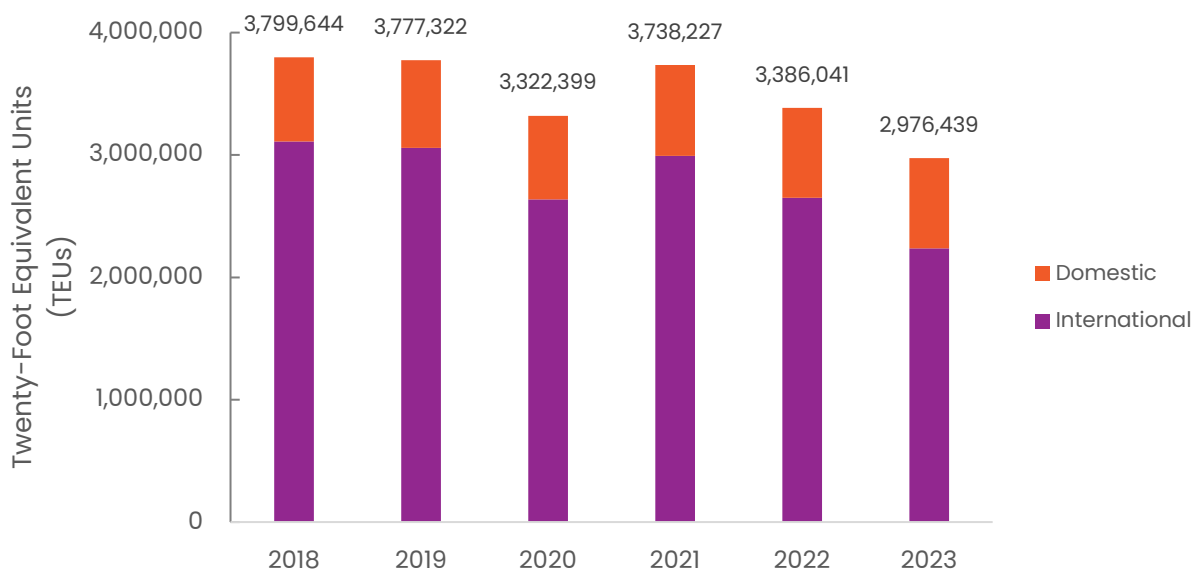
The COVID-19 pandemic had a significant effect on cargo activity in the region's seaports. After a steady total containerized volume pre-pandemic, 2020 saw a 12% drop. As seen in Figure 9.1, 2021 rebounded by 12.5% making up for the previous year's slump, but 2022 saw containerized volume fall by 9.4%. 2023 saw another reduction of 12.1%. Overall, there was a 21.7% decrease in containerized volume over the six-year

⁵¹ Northwest Seaport Alliance. (2022). 2022 Annual Trade Report. <https://s3.us-west-2.amazonaws.com/nwseaportalliance.com.if-us-west-2-or/2023-04/2022%20NSA%20Annual%20Cargo%20Report.pdf>



period.⁵² As seen in Figure 9.1, the drop in volume was driven by a reduction in international containerized cargo.

Figure 9.1: Regional Containerized Cargo Volume (International and Domestic), 2018–2023



Source: Northwest Seaport Alliance 5-Year Cargo Volume History, 2018–2023

Air cargo services also provide regional connections to international and domestic trade markets. Air cargo in the central Puget Sound region is generated primarily by activity at Seattle–Tacoma International Airport (Sea-Tac) and King County International Airport (KCIA). Combined, they account for over 85% of the total Washington state market. Sea-Tac handles over two-thirds of the cargo tonnage and has the greatest variety of cargo offerings in the central Puget Sound region, with a mix of domestic and international belly cargo, domestic and international freighter cargo, as well as integrator/express cargo generated by FedEx, DHL and Amazon Air.⁵³

Changes in air cargo volume from 2018–2022 were less extreme than containerized cargo. Air cargo tonnage in the region rose consistently from 2018 to 2020, before slowing to a crawl in 2021 and finally experiencing a 6.6% drop in 2022. Overall, air freight tonnage dropped less than 1% from 2018–2022.⁵⁴

⁵² Northwest Seaport Alliance. (2023). *5-Year Cargo Volume History*. <https://s3.us-west-2.amazonaws.com/nwseaportalliance.com.if-us-west-2-or/2023-08/NWSA-5-Year%20History%20Jul23.pdf>

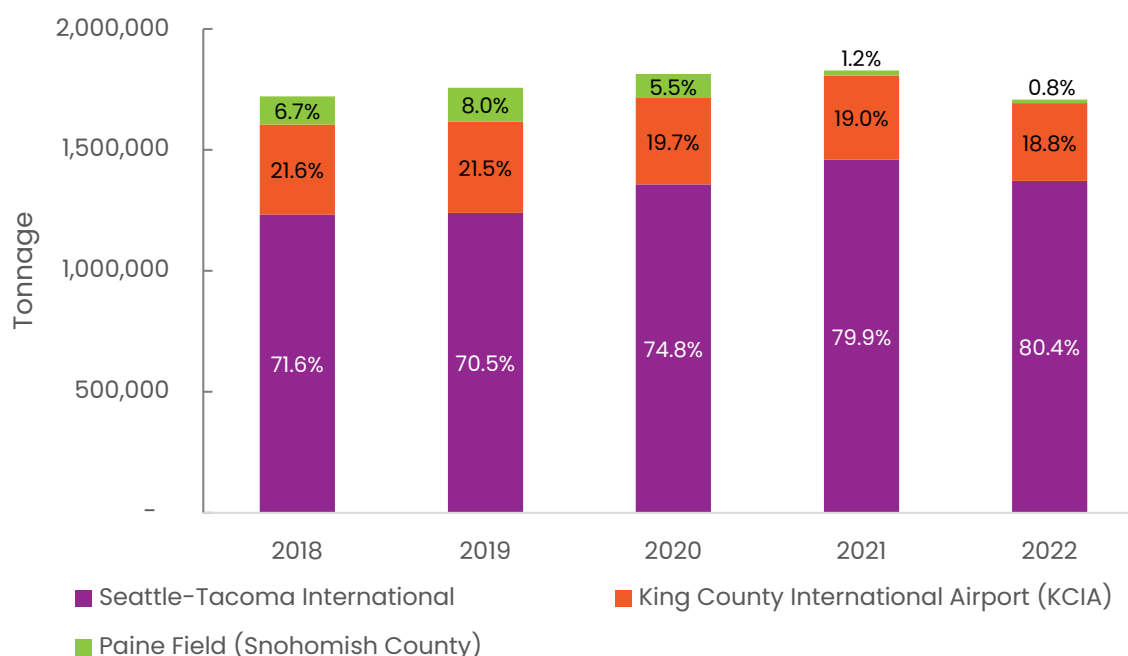
⁵³ PSRC Regional Aviation Baseline Study

⁵⁴ WSDOT. (2023). *Freight – Air freight* [Data set]. <https://wsdot.wa.gov/about/data/multimodal-mobility-dashboard/dashboard/freight/airfreight.htm>



Although the pandemic did not affect the tonnage of air cargo in a significant way, it did drive changes in its distribution across the region. As seen in Figure 9.2, the pandemic resulted in both KCIA and Paine Field reducing their share of regional air cargo, leaving Sea-Tac to shoulder over 80% of the region's air freight in 2022. Almost all the air cargo Paine Field processes is related to the aircraft assembly supply chain. The employment losses in the Machinery & Transportation Equipment employment sector touched on in Chapter 3 of this report bring important context to this reduction in tonnage.

Figure 9.2: Regional Air Freight Tonnage by Airport, 2018-2022



Source: WSDOT Freight Data Dashboard: Air Freight, 2018-2022

Continuing state and regional efforts are underway to identify solutions to future airport capacity challenges. The Regional Aviation Baseline Study conducted by PSRC in 2021 identified serious capacity problems for both commercial and air cargo traffic in the future. PSRC found that the central Puget Sound region will fall short of on-airport warehouse space beginning in 2027. A Commercial Aviation Work Group was formed in 2023 to identify solutions for the region's aviation capacity issues.

Freight Rail

Freight rail is a crucial component of regional goods movement. There are 440 miles of freight rail located within the region, mostly operated by BNSF Railway and Union



Pacific.⁵⁵ Over 65% of these rail lines are classified as R-1 by WSDOT's Freight and Goods Transportation System, meaning they transport more than 5 million tons of goods per year.⁵⁶ BNSF and Union Pacific railways directly serve the region's ports with intermodal facilities that provide critical connections between cargo ships and truck and rail networks.

Truck Freight

Trucks are a critical component of the freight transportation system. Heavy truck travel is most concentrated in the MICs and other industrial areas of the region. The intensity of heavy truck activity is dependent on what types of industrial uses are present. For example, analysis completed by PSRC in the 2022 Regional Transportation Plan found that over one-third of heavy truck trips in the region's industrial lands occur in the Kent Valley, corresponding to the high concentration of manufacturing and warehousing in that area.

The impact of increasing traffic to the region's supply chains was raised as a concern by stakeholders. Respondents noted that the region's industrial areas, including ports and airports, are an interdependent network, and more should be done to provide efficient goods movement between these areas.

Maintenance Costs

Industrial lands require well-maintained infrastructure to function effectively, but the maintenance and preservation of transportation infrastructure is underfunded across the region.⁵⁷ These needs often compete directly with other funding priorities, such as capacity investments, in the budgeting process. Constrained budgets mean that decision makers may choose to allocate fewer resources towards maintenance and preservation than is necessary. This can be especially problematic for industrial lands. Jurisdictions with a high concentration of freight routes traveled by heavy haul trucks often face a large backlog of pavement rehabilitation and reconstruction work that leaves little funding for proactive preventative maintenance.⁵⁸ This can create a negative feedback loop, which results in a continued maintenance backlog.

⁵⁵ WSDOT. (2023). *Freight Data Freight and Goods Transportation System – Rail corridors* [Data set]. <https://gisdata-wsdata.opendata.arcgis.com/datasets/WSDOT:wsdot-freight-data-freight-and-goods-transportation-system-rail-corridors/about>

⁵⁶ WSDOT. (2021). *Washington State Freight and Goods Transportation System (FGS) 2021 Update*. <https://wsdot.wa.gov/sites/default/files/2021-12/2021-FGTS-update.pdf>

⁵⁷ PSRC Regional Transportation Plan: 2022–2050

⁵⁸ PSRC Regional Transportation Plan: 2022–2050



Degraded streets can increase travel delays and reduce the reliability of freight delivery, while heavy truck travel can increase the rate at which streets in poor condition further degrade.

Regional stakeholders cited challenges related to the costs associated with the maintenance of industrial lands. Operational and maintenance impacts of heavy truck traffic are primarily addressed by the local jurisdictions in which truck-heavy land uses are located. Industrial land and jobs produce many benefits for the communities in which they are located, but also result in disproportionate impacts on local infrastructure, which can strain a jurisdiction's resources.



Appendix A: Stakeholder Outreach

PSRC staff performed stakeholder outreach beginning in early 2022 to help identify trends in regional industrial lands and gather insights into the development of the Industrial Lands Analysis Update. The outreach consisted of an Industrial Trends Survey, a series of community stakeholder discussions, and discussions with PSRC boards and committees. Additional outreach was conducted in late 2023 to solicit feedback on the industrial lands inventory and to validate the previously identified industrial trends.

Industrial Trends Survey

PSRC administered a survey of local jurisdictions and other governments with industrial land assets in February 2022 to gather their perspectives on trends that are impacting industrial lands. The survey asked about trends and issues related to industrial lands, improving equitable access to employment, relevant data and information, needed priorities for industrial lands and recent related work. Thirteen respondents participated in the survey, each identifying priorities for their jurisdiction or organization.

Stakeholder Interviews and Discussions

In early 2022, PSRC interviewed staff from regional cities, counties, ports and Tribal governments, as well as peer regional governments in California and British Columbia, to better understand recent trends impacting industrial lands. Staff also led a discussion with the Transportation Choices Coalition's Community Partners group to gather input on the topic.

In June 2022, PSRC held a virtual event focused on the Industrial Lands Analysis Update. Guest speakers from Everett, Seattle and Tacoma presented their local industrial lands planning projects. The event provided an opportunity to highlight local work on planning for industrial lands and to solicit feedback from attendees, who included local jurisdiction planners, private sector planners and others involved in planning for industrial lands. More than 60 people attended the event, with many tuning in from outside the region and state.

In late 2023, PSRC provided local jurisdictions and other key stakeholders with a draft industrial land inventory and an overview of the identified industrial trends for review. Staff met with stakeholders who had comments regarding these materials, and these conversations provided a final layer of feedback in the report.



PSRC Board and Committee Discussions

Throughout 2022, staff made presentations on the Industrial Lands Analysis Update to PSRC’s Growth Management Policy Board, Economic Development District Board, Freight Advisory Committee and the Regional Staff Committee. These board and committee engagements provided an opportunity to hear feedback from elected officials and local staff and receive input on priorities for the analysis. In late 2023, staff returned to these boards and committees to update them on progress and allow them another opportunity to offer feedback.

List of Participating Stakeholders

<ul style="list-style-type: none"> •PSRC Growth Management Policy Board •PSRC Economic Development District Board •PSRC Freight Advisory Committee •PSRC Regional Staff Committee •Transportation Choices Coalition: Community Partners •Association of Bay Area Governments •Northwest Seaport Alliance •Port of Seattle •Port of Tacoma •Port of Bremerton •Seattle Department of Transportation •Tacoma-Pierce County Health Department •Navy Region NW •City of Vancouver, B.C. •Puyallup Tribe of Indians •Tulalip Tribes 	<ul style="list-style-type: none"> •King County •Pierce County •Snohomish County •City of Arlington •City of Bonney Lake •City of Edgewood •City of Everett •City of Issaquah •City of Kent •City of Lakewood •City of Marysville •City of Redmond •City of Renton •City of SeaTac •City of Seattle •City of Tacoma
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Appendix B: County-Level Industrial Land Maps

Appendix B contains county-level maps of industrial lands in the central Puget Sound region. The following classifications are illustrated in each map:

Core Industrial: Includes lands that have zoning designations on lands that support a broad range of manufacturing and traditional industrial uses.

Airport Operations: Includes land devoted to aviation operation areas, such as runways and taxiways, not including airport terminals and adjacent airport-related uses.

Military Industrial: Includes lands within federal military bases with industrial-related uses.

Industrial-Commercial: Includes lands that have zoning designations on lands that support both industrial and commercial uses.

The updated inventory more closely adheres to the intended use allowed by the zoning in place and therefore, the categorization of some areas shifted in comparison to the 2015 inventory. Other adjustments are due to zoning changes adopted by local jurisdictions.

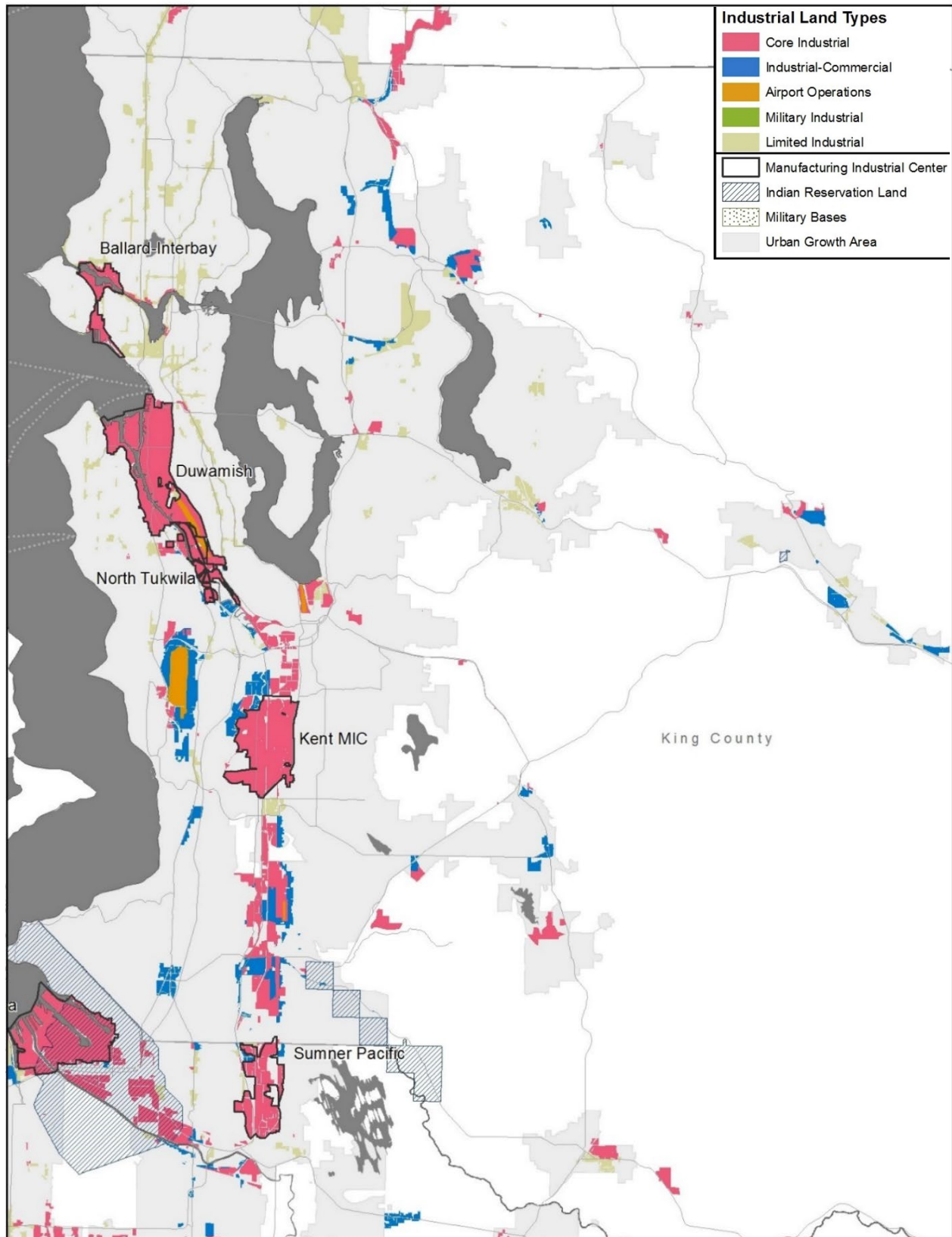
The updated inventory also introduces a new supplemental category of lands where limited or conditional industrial uses are permitted.

Limited Industrial: Includes lands in zones that support a range of commercial and mixed uses throughout the region and that allow some, often restricted, manufacturing or industrial activities. While Limited Industrial areas are not a replacement for more intense industrial areas, they serve an important economic role in the region. These areas can be important locations for start-up businesses, craft manufacturing and smaller scale industrial uses, including those associated with larger commercial uses. They can typically be located closer to employment and residential areas than traditional industrial land.

Additional information about the methodology of PSRC's industrial lands inventory is available in Chapter 2 of this report.

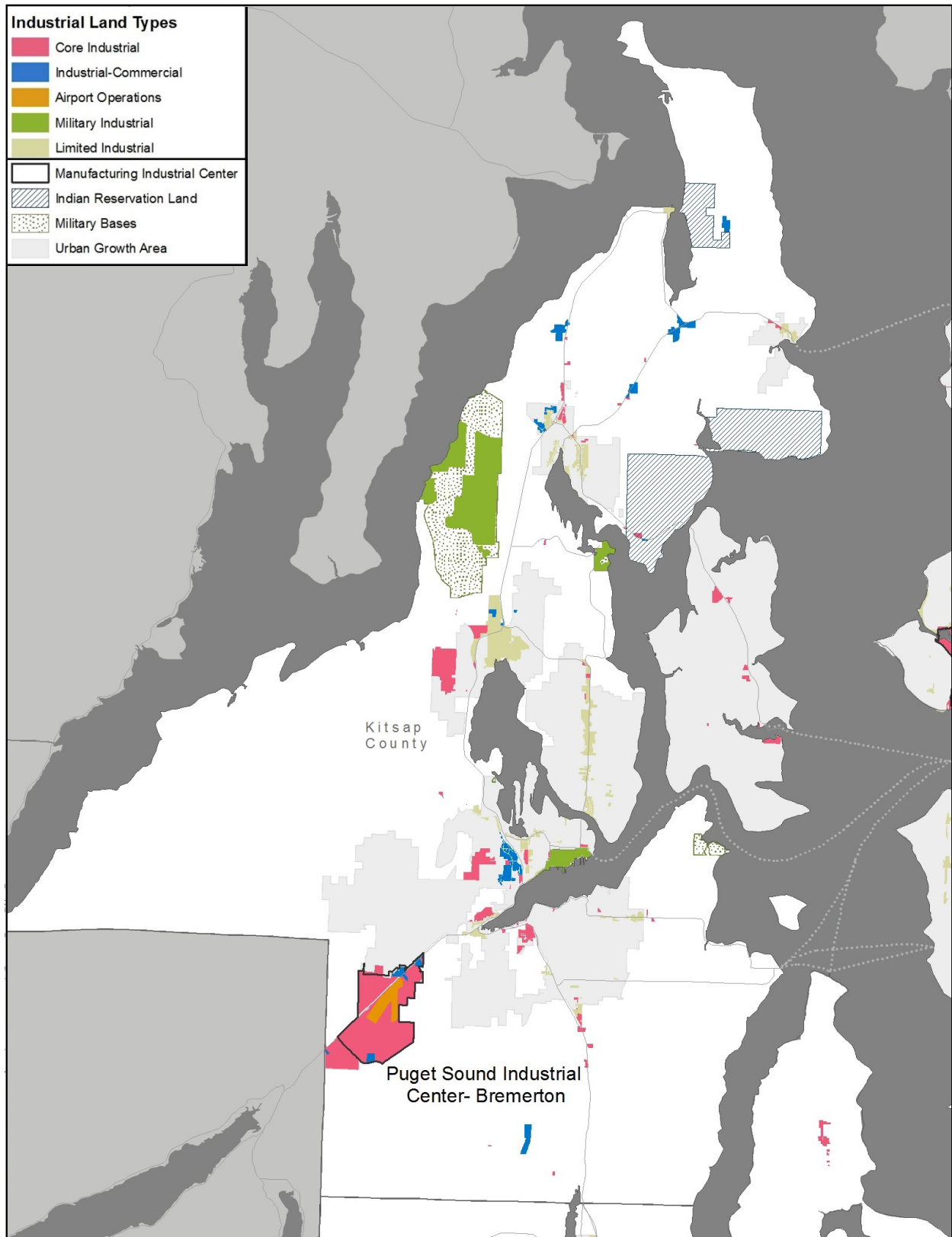


King County



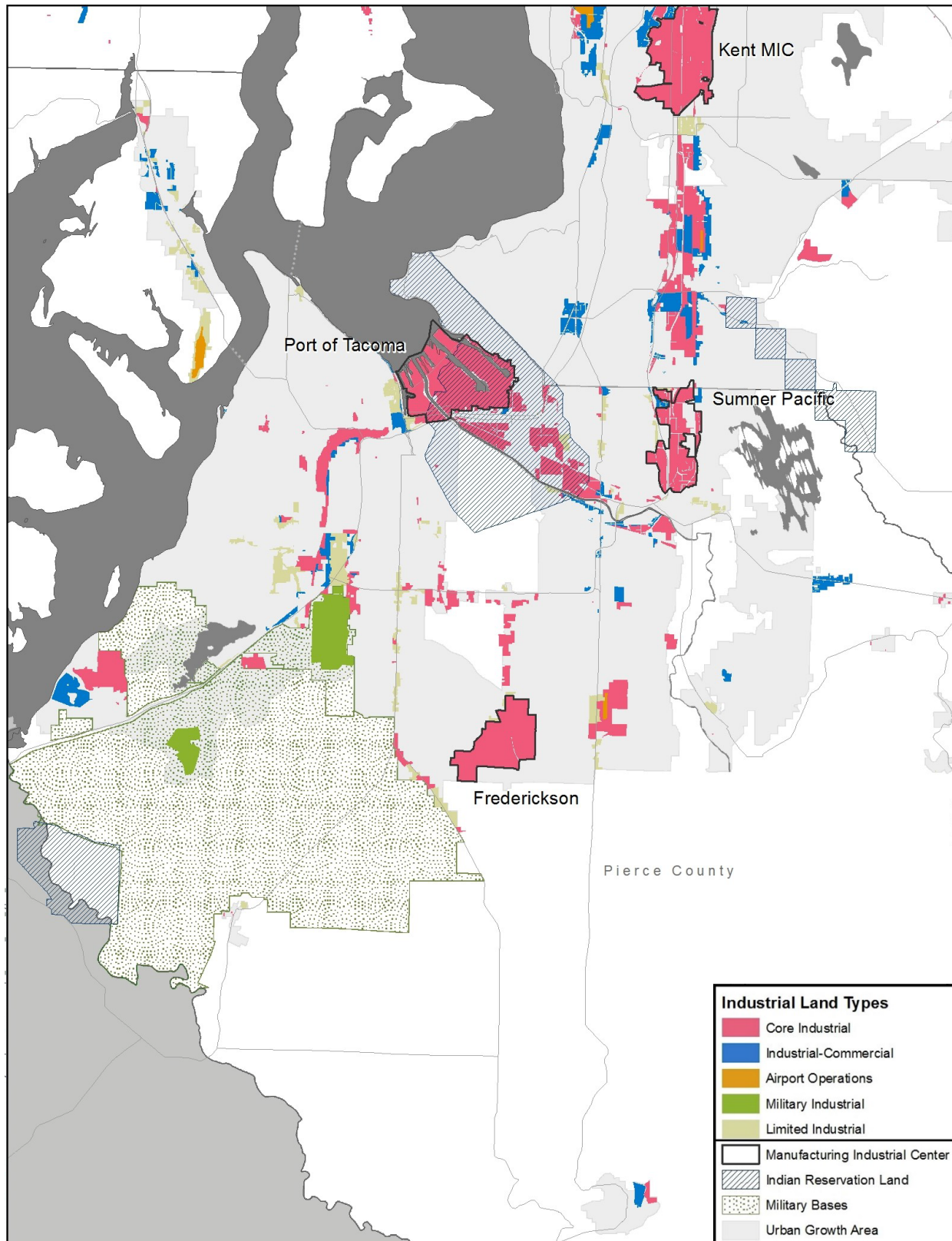


Kitsap County



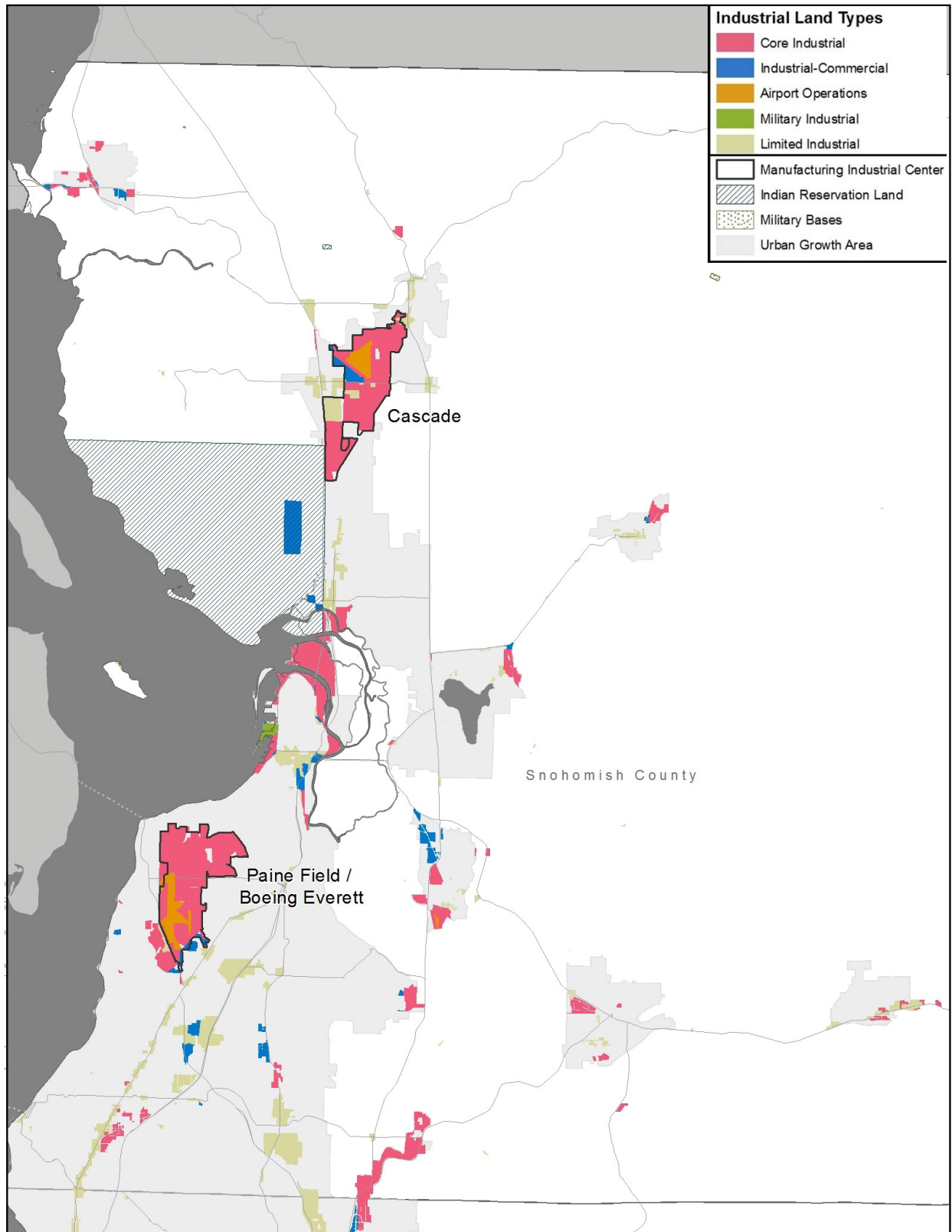


Pierce County





Snohomish County





Acknowledgments

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PSRC Boards and Committees

Central Puget Sound Economic Development District Board
Freight Advisory Committee
Growth Management Policy Board
Regional Staff Committee
Regional Transit-Oriented Development Committee