



# 2040 Portland Freight Plan

## Portland Freight: Demographics, Equity & Environmental Justice - Part 2

Examining the Intersections of Freight and Economic Wellbeing.



**PBOT**  
PORTLAND BUREAU OF TRANSPORTATION

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## Executive Summary

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This analysis explores how the freight industry affects Portland by focusing on the economic and employment trends of freight-related industries that include transportation, warehousing, and distribution.

### Key Findings

- **The Portland Metro region's economy is heavily trade-dependent and is anchored by six key industries**, including: sporting equipment, apparel, and design; clean technology; software and media; computers and electronics; metals and machinery; and health sciences and technology. Local industries require a reliable goods movement system to operate efficiently and maintain profitability.
- Meeting local freight needs creates transportation, warehousing, and distribution jobs within the region. Collectively, **freight-related occupations employ around 15% of the Portland workforce**.
- **Most freight-related industry employees earn 13-18% less** than the average annual income in the Portland region (median- \$52,000, mean- \$63,027).
- **Black, Indigenous, and People of Color (BIPOC) communities are underrepresented in Freight-related occupations yet are represented at comparable rates within a subset of freight jobs (Transportation and Material Moving Operations).**
- **Women are underrepresented in nearly every freight-related industry and job category**
  - Gender disparities are especially stark within road-freight related industries, which are 82% male and 18% female.
- **Freight-related jobs are an important source of employment for those the majority of the Portland workforce (those with a high school diploma or a General Education Development (GED) degree), often employing them at higher rates than the rest of the economy. Those without a high school diploma are employed at almost double the rate in freight-related jobs than they are in other Portland economy jobs**
- **Union coverage and membership is significantly higher in freight and transportation and material moving occupations than at the national, state, or local level.**
- **People living with disabilities tend to be more likely to work in transportation and material moving occupations than those living without a disability.**

## Background

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The freight industry a source of jobs and economic activity in Portland. Analyzing the impacts of freight through an economic lens is helpful to understand the opportunities, risks, and tradeoffs inherent in this complex industry. As part of the City of Portland's Freight2040 planning process, this report examines the economic and employment characteristics of the freight industry in Portland.

In an increasingly globalized economy reliant on trade and the movement of goods and services, freight is the glue that binds the modern world. In 2015, the US logistics industry moved more than 49.5 million tons of goods worth nearly \$52.7 billion every day, translating to more than 56 tons of freight per-person per-year.<sup>1</sup> Oregon is the ninth most trade-dependent state in the United States, with the success of many industries relying on participation in domestic and international markets. In the Portland region, local projections estimate that by 2040, the region's goods movement system will need to meet the needs of an additional 670,400 residents (around a 27% increase from 2020) and 420,000 jobs. The boost in consumption of goods and services associated with increased residents and jobs is expected to nearly double current local freight volumes to 600 million tons of annual goods movement.<sup>2</sup>

As consumption patterns shift and supply chains become more complex, goods are transported over longer distances and the footprint of the freight industry continues to increase. Approximately 75% of freight movement relies on trucks, with potential for significant impacts on Portland's transportation facilities and residents.<sup>3</sup> Further, as e-commerce expands and the freight industry adjusts to meet the needs of a higher volume of smaller, demand-responsive shipments, there is likely to be increased conflict in the right-of-way with other road users. Mounting congestion and capacity issues on several freight modes, including freight rail and trucking corridors, could impede local goods movement and affect the Portland region's ability to compete regionally and globally.<sup>4</sup>

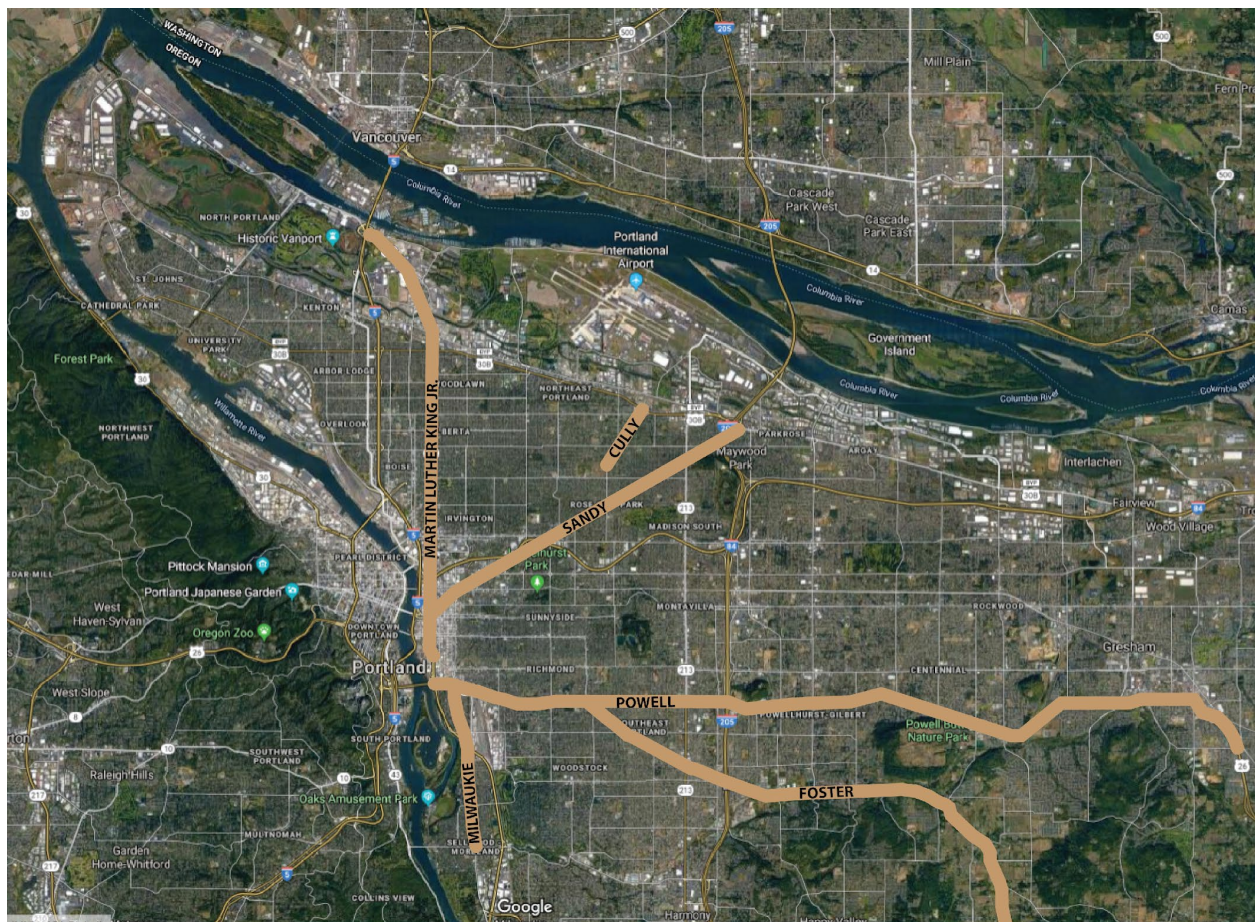
Currently, one in ten jobs in Oregon is transportation-related.<sup>5</sup> However, despite increasing freight activity, employment in transportation and transportation-related industries is decreasing. In the United States, the industries combine to employ over 13.3 million people, accounting for 9.1% of workers in 2018, down from 11.3% in 1990.<sup>6</sup> As technological advancements continue to automate freight industry jobs, the City of Portland must work with employers to consider ways to help freight employees transition to other jobs and industries.

### History of Trade in the Portland Region

The history of trade and transportation in the Portland region is one that is intertwined with race and discrimination. The history section of this report, though not complete, tries to capture some of the problems with early trading and construction of various transportation facilities that continue to be used for goods movement today.

The Portland metro area rests on traditional village sites of Multnomah, Wasco, Cowlitz, Kathlamet, Clackamas, Bands of Chinook, Tualatin, Kalapuya, Molalla, and many other tribes.<sup>7</sup> For 15,000 years, Indigenous groups settled seasonally along the banks and wetlands of the Columbia and Willamette Rivers, maintaining trading villages where they caught and traded fish from the rivers.<sup>8, 9</sup> Figure 1 shows some of the major walking trails used by Indigenous people, all of which are now designated as major freight routes in Portland's Transportation System Plan (TSP) that support local, national, and international distribution of goods and services.<sup>10, 11</sup>

**Figure 1 | Historic Indigenous Walking Trails in Portland Remain Major Freight Corridors**



**Source:** Map developed by PBOT Staff based on information about indigenous walking trails, as presented in: Dotterer, S. 2010. "History of Portland Transportation 2010 with audio files (part 1)." <https://www.portlandoregon.gov/transportation/article/214784>.

Key fishing locations included Celilo Falls on the Columbia River and Willamette Falls on the Willamette River by Oregon City, both of which ultimately were commandeered by white settlers and dammed to meet the growing needs of Portland residents (timber, wool, electricity, etc.).<sup>12</sup>

British and American fur traders entered the area beginning in the 1810s, by which time the number of Indigenous people who lived in the Portland Basin had plummeted due to fatal diseases introduced by white settlers, such as measles and smallpox.<sup>13</sup>

In the 1850s, white settlers constructed the Great Plank Road to connect productive agricultural communities in the Willamette and Tualatin Valleys to Portland. The Great Plank Road, which is now Canyon Road/US 26, was lined with sixteen-foot-long, three-inch-thick wooden planks that enabled farmers to haul larger loads at faster speeds than traditional rock and dirt roads that were nearly impassable in adverse weather conditions and the rainy winter months. The Great Plank Road offered an improved route from agricultural communities to Portland and its large market.<sup>14</sup> Plank roads (often referred to as “farmers railroads”) were less expensive to construct and far less durable than railroads; nevertheless, Portland’s Great Plank Road enabled Portland to establish its dominance as a port city, with trade in and out of Portland initially exceeding that of Seattle.<sup>15</sup>

In the late 1800’s and early 1900’s, interurban rail lines and transcontinental railways expanded, strengthening connections to Seattle in the north, California to the south, and Midwest and East Coast markets to the east. Construction of the Oregon & California (O&C) Railroad led to the migration of large numbers of Chinese laborers to build the line from Portland to Roseburg in the early 1870s. By 1890, Oregon was home to the second largest Chinese population in the United States. However, anti-Chinese sentiment emerged early on, with threats against Chinese workers occurring in every Oregon town along the O&C line. White workers expelled and murdered Chinese workers and the Oregon Constitution denied Chinese Americans citizenship. When Congress passed the Chinese Exclusion Act in 1882, Japanese immigrants began to take the place of Chinese workers in railroad construction and other labor-intensive industries; facing similar violence and hostility as Chinese immigrants who came before them.<sup>16</sup>

The completion of the transcontinental railroad facilitated the first large influx of Black people to Oregon. The railroad industry was the predominant employer of Black workers in Portland, employing 98.6% of Black men by 1941, many of whom worked as porters, cooks, and dining-car waiters.<sup>17</sup>

Shipping also played a considerable role in shaping Portland. In the 1840s, the west side of the Willamette River began to develop around the first docks. The wheat trade brought shipping to Portland and wheat grew to become Portland's largest export in the late 19th century, connecting Portland to ports all over the world.<sup>18</sup> Exports of grain and flour from Portland, at least in large quantities, were initially hampered by the difficult wave-, wind-, and current-ridden passage of the Columbia River Bar at the mouth of the Columbia River by Astoria, OR. Further, the shallow depth of the Columbia and Willamette river channels limited the size of shipping in and out of the Portland harbor.<sup>19</sup> The Portland District of the US Army Corps of Engineers was established in 1866, with the charge of building upon work that had begun under the direction of the City of Portland to improve the navigation of the Willamette and Columbia rivers for larger, ocean-going ships, by dredging (removing silt and gravel to deepen the waterways, and snag removal) and



eliminating hazards (such as huge logs embedded in the mud or silt at the bank or bottom of the rivers) that narrowed the waterways.<sup>20</sup> Efforts to improve the navigability of the Columbia and Willamette rivers benefited the Port of Portland throughout the end of the 19<sup>th</sup> century and beyond.

During World War II (1939-1945), shipping employment boomed and marked huge demographic shifts in the state's population. In Oregon, shipyards undergirded the state's economic growth through the shipment of goods for both wartime and domestic purposes. Prior to World War II, there were very small numbers of Black people in Oregon. In the 1920 census, for every Black person there were 150 white people.<sup>21</sup> The war changed that rapidly. In 1940 the first federal orders for ships came in; in 1941, Henry Kaiser built the first of his shipyards.<sup>22</sup> Oregon's Black population increased tenfold around WWII as companies filled in the white male labor that was siphoned off into the war fields with "non-traditional" sources of labor (i.e., women and people of color, particularly Black people).<sup>23</sup> The shipbuilding industry bought 15,000 Black workers mostly from Arkansas, Louisiana, Oklahoma, and Texas. In fact, Kaiser sent trains to the South and eastward to recruit migrant workers, and in less than 3 years, Black population grew from 2,000 to more than 20,000.<sup>24</sup> In addition to the thousands of Black workers coming from the South, the shipyards also attracted Indigenous people who had left reservations to work there.

Portland's first major commercial airport was on Swan Island from 1927-1940 until the Portland-Columbia Airport (now Portland International Airport) opened in 1940 atop 700 acres of marshy riverside land along the Columbia River.<sup>25</sup>

The passage of the Federal-Aid Highway Act (FHWA) in 1956—formally known as the National Interstate and Defense Highways Act—ushered in the era of the interstate in Portland.<sup>26</sup> Now critical to the movement of goods to and through Portland, the construction of freeways through Black communities, combined with urban renewal efforts, erased BIPOC histories by destroying their neighborhoods, gathering places, and bustling business districts.

## Portland Industry

Portland's access to abundant waterways including the Pacific Ocean via the Willamette and Columbia Rivers, as well as to rich agricultural lands to the east, south, and west created the region's original economic successes. Early success endures as Portland remains a trade hub with connections to broader regional, national, and international markets.

Compared to other US metropolitan areas of similar size, Portland's competitiveness is largely dependent on the region's role as a gateway and distribution center for domestic inland and international markets.<sup>27</sup> Overall, the Oregon transportation system carried \$300 billion worth of goods in 2012, around 72% (\$205 billion) of which is carried by truck.<sup>28</sup> At the state level, more

than 346,000 jobs (nearly 20% of all statewide jobs) are considered transportation-related or transportation-dependent. Although not all transportation-related and -dependent jobs are in the Portland metro area, almost all either distribute products or need to pass through Portland to get to other destinations, highlighting the important need for Portland to maintain an efficient transportation network.<sup>29</sup>

The Portland region's traded sector industries, those that provide goods and services outside of Oregon and bring money back into the local economy, are anchored by six core clusters that could locate elsewhere, but are attracted to Portland because of its advantageous trading position, they include:<sup>30</sup>

- **Clean Technology & Green Cities:** Manufacturing, energy production, design, and waste disposal industries related to sustainability and resilience.
- **Computers & Electronics:** Establishments that manufacture computers, computer peripherals, semiconductors, communications equipment, and similar electronics products.
- **Health Sciences & Technology:** Advanced medical device manufacturers, plus related research and development establishments; does not include local hospitals.
- **Metals & Machinery:** Broad array of goods-producing establishments working with heavy metals, ranging from foundries to pump makers to ship builders.
- **Software & Media:** Service establishments writing software, planning and managing computer systems, hosting data, and producing and distributing video and sound recordings.
- **Sporting Equipment, Apparel, & Design:** A unique collection of global apparel companies, personal hardware manufacturers, and various design establishments.

Businesses that choose to locate in the Portland region require a reliable and efficient goods movement system to sustain smooth operations and profitability. Many businesses, however, report that they are nearing the limits of what a business can do to overcome transportation congestion before it becomes a severe issue.<sup>31</sup> Transportation networks must also be seismically sound as many businesses report high vulnerability to an earthquake if transportation links are disrupted, with many localized businesses projecting an inability to sustain themselves in the event of a long-term transportation system failure.<sup>32</sup> Given this, Portland's transportation networks must be both reliable on a daily basis and resilient to natural disasters and other disruptions in the short and long term.

### Future of Urban Delivery

As the urban population continues to grow, the demand for the transportation goods and services to homes and businesses in urban areas will increase. Urban delivery includes both on-demand delivery services, such as instant or same-day food, goods, and grocery deliveries, and



more traditional parcel delivery services, where goods are shipped and transported from a central warehouse to homes or businesses by truck, van, car, and sometimes bike. Vehicles may be owned or leased by companies themselves or logistics businesses may employ a contractor-based model where those doing deliveries use their own privately-owned or leased vehicle.

Urban delivery and e-commerce are accelerating at a rapid pace. From 2014 to 2019, e-commerce sales nearly tripled globally, a trend that continues to accelerate during the COVID-19 pandemic, driven by a sharp increase in online shopping.<sup>33, 34</sup> In the first nine months of 2020, online retail sales increased by 40.5%, compared to just 1.7% for in-store sales, following years of sustained growth prior to the pandemic.<sup>35, 36</sup> According to the World Economic Forum, if these trends continue, central cities can expect an estimated 36% more delivery vehicles by 2030, which could increase delivery emissions in the top 100 cities globally by 32% and increase traffic congestion by 21% or about 11 minutes of commute time per day.<sup>37</sup> Particularly important for urban street networks is last-mile delivery trends, which refers to how goods are transported from warehouses to their final destinations: people's homes and businesses. Same-day and instant deliveries are the fastest growing segments of last-mile trips, growing at rates of 36% and 17% a year, respectively.<sup>38</sup>

Business-to-consumer (B2C) delivery services offer several benefits and opportunities, while simultaneously raising concerns that must be carefully considered. By delivering directly to the customer's chosen location, a high level of personal convenience is provided by allowing customers to summon delivery services from their phones and computers. They can also expand accessibility for people with mobility devices but who live farther from transportation options, jobs, shops, or services, or may have mobility restrictions. This increase in accessibility could potentially reduce the need to own a car for some people.

Growing and transforming alongside consumer demand is a burgeoning workforce, including drivers, warehouse workers, technicians, and operations and logistics employees. On one hand, new job opportunities can be seen as a positive development, making it easier for people to find flexible opportunities to earn money. On the other hand, the "gig" nature of many of these jobs, which often don't include benefits or job security, generates scrutiny and debate among labor advocates.<sup>39, 40, 41</sup> The staggering growth of urban delivery services also places significant pressure on the limited space of the urban street network. Because of this, many transportation agencies are looking specifically at strategies for managing commercial services in the right-of-way as they consider how to effectively address traffic congestion, improve safety, reduce overall vehicle miles traveled (VMT) and cut transportation emissions.

## Freight Industry, Employment, & Wage Analysis

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Meeting the freight needs of local businesses, large and small, creates important freight- and transportation-related jobs within the Portland region. The following analysis explores some of the occupation and wage trends of the freight industry in Portland.

### Methodology

To understand the composition of freight workers in Portland, PBOT staff collaborated with an economic analyst at the State of Oregon Employment Department (OED) to obtain and analyze local freight data.

Economic data is collected on a regular basis by the Bureau of Labor Statistics (BLS), a federal agency that measures labor market activity, working conditions, price changes, and productivity in the US economy to support public and private decision-making.<sup>42</sup> To make sense of and compare trends across the various job industries across the US, BLS employs a standardized classification system, known as the Standard Occupational Classification (SOC), that classifies workers into occupational categories for the purpose of collecting, calculating, and disseminating data.<sup>43</sup> All workers are classified into one of 867 detailed occupations according to their occupational definition. To facilitate classification, detailed occupations are combined to form 459 broad occupations, 98 minor groups, and 23 major groups.<sup>44</sup>

Table 1 enumerates all the occupations identified as “Freight-Related” for the purposes of this analysis. A subset of freight-related occupations that fall under SOC 53, Transportation and Material Moving Occupations, are isolated and used as a proxy to reflect freight jobs most directly related to and dependent on the transportation sector (Table XX).

Table 1 | **Freight-Related Occupations**

<b>Standard Occupational Classification (SOC) Codes</b>	<b>Occupations Related to the Freight Industry</b>
<b>SOC 11</b>	<b>Management Occupations</b>
111021	General and Operations Managers
112022	Sales Managers
<b>SOC 41</b>	<b>Sales &amp; Related Occupations</b>
414010	Sales Representatives, Wholesale and Manufacturing
<b>SOC 43</b>	<b>Office &amp; Administrative Support Occupations</b>
431011	First-Line Supervisors of Office and Administrative Support Workers
433031	Bookkeeping, Accounting, and Auditing Clerks
434051	Customer Service Representatives

434181	Reservation and Transportation Ticket Agents and Travel Clerks
435011	Cargo and Freight Agents
435032	Dispatchers, Except Police, Fire, and Ambulance
435051	Postal Service Clerks
435052	Postal Service Mail Carriers
435053	Postal Service Mail Sorters, Processors, and Processing Machine Operators
435071	Shipping, Receiving, and Inventory Clerks
436014	Secretaries and Administrative Assistants, Except Legal, Medical, and Executive
439061	Office Clerks, General
<b>SOC 49</b>	<b>Installation, Maintenance, &amp; Repair Occupations</b>
493011	Aircraft Mechanics and Service Technicians
493031	Bus and Truck Mechanics and Diesel Engine Specialists
<b>SOC 53</b>	<b>Transportation &amp; Material Moving Occupations</b>
531000	First-Line Supervisors of Transportation and Material Moving Workers, Except Aircraft Cargo Handling Supervisors
532010	Airline Pilots, Copilots, and Flight Engineers
532031	Flight Attendants
533030	Driver/Sales Workers and Truck Drivers
533052	Bus Drivers, Transit and Intercity
533099	Passenger Vehicle Drivers, Except Bus Drivers, Transit and Intercity
537051	Industrial Truck and Tractor Operators
537062	Laborers and Freight, Stock, and Material Movers, Hand
537064	Packers and Hand Packagers, Hand
537065	Stockers and Order Fillers

Occupational wage data is calculated from pooled survey data for 2015 through 2019 from the US Census, American Community Survey (ACS). The ACS includes 80 replicate weights for each individual sample which allow for standard error and confidence interval estimates to be generated for testing statistical significance using the successive difference replication method.

For geography, public use microdata areas (PUMAs) covering the entirety of Clackamas, Multnomah, Washington, and Clark counties are used as a proxy for the Portland Metropolitan region. Despite Portland's freight infrastructure serving the needs of beneficiaries that stretch well beyond local workers and businesses, the geographic scope of this analysis is limited to workers in the Portland metro region.

The analysis is limited to full-time workers by including only those who indicated that they met the following criteria: currently working, worked 52 weeks within the past year, usually worked 40 or more hours per week, and had \$5,000 or more in wage income in the past 12 months. Despite the reality that many freight job workers may work part time or seasonally, the structure of the ACS does not enable respondents to provide the nuance of multiple jobs or sources of

income in a year. The parameters listed were applied to the dataset in an effort to generate a sample universe that most accurately approximates the characteristics of freight jobs and workers.

Mean wage is the sum of the wages of full-time workers divided by the number of full-time workers, applying the Census provided weights. The median wage is the 50<sup>th</sup> percentile of wage income among full-time workers, applying the Census provided weights.

### Caveats & Limitations

Comparing the findings of this analysis with other economic analyses of the region reveals how methodological differences in approach can yield divergent findings. Differing data sources, groupings of occupational categories, geographic study areas, years, definition of workers, mean or median incomes, wage categorizations, means of splicing educational attainment, tests for statistical significance, and ultimately, approaches to analyzing the selected data can produce differing results. Given this understanding, the 2040Freight Plan team intends to undertake follow-on analysis at a future date in an attempt to blend differing approaches to economic analysis and determine whether and how the findings in this report may be confirmed and/or refuted.

The following divergent methods and decisions around defining the data universe may affect the results of an economic analysis (Table 2):

Table 2 | **Data Parameters- Options & Potential Impacts on Analysis**

Parameter	Options	Potential Impacts
<b>Data Source</b>	Public Use Microdata Sample (PUMS) American Community Survey (ACS) Occupational Employment & Wage Statistics (OEWS)	ACS and PUMS data are required to link wage and occupational data with demographics. OWES offers more disaggregated wage data and can be used to highlight wage percentiles.
<b>Standard Occupational Codes (SOC)</b>	SOC 43- Office & Administrative Support SOC 49- Installation, Maintenance, and Repair SOC 53- Transportation & Material Moving  Analyses can use broad two-digit SOC categories and/or combinations of more refined occupations, down to six-digit SOCs	As each occupation has different wage and demographic compositions, the selection of occupations to include or omit as freight-related can affect overall findings. This analysis aims to highlight freight transportation, rather than industrial occupations as a whole.
<b>Geography</b>	Portland Region: 4 County Portland Metro Area 7 County Portland Metro Area	Smaller geographic areas of consideration may be more relevant for the City of Portland freight plan;

Parameter	Options	Potential Impacts
	Pacific Northwest: Oregon, Washington, Idaho	however, they may result in limited sample sizes with margin of error issues. Expanding the geography to the Pacific Northwest region may help confirm or refute regional-level findings.
<b>Years</b>	One year- most recent data available (e.g., 2019) Multiple years/time series (e.g., 2010, 2015, 2016, 2017, 2018, 2019)	Analyzing data over multiple years can help elucidate occupational and wage trends over time. Efforts should be made to incorporate the most recent data available.
<b>Worker Classifications</b>	Work Hours Full-time (40 hours or more) Part-time (32 hours or more) Employment Duration Year-round Seasonal Reported Income Thresholds (e.g., > \$5,000) Age Range (e.g., > 18, >25 years old)	The structure of survey questions on the ACS makes collection of part-time and seasonal worker wage data challenging. Omitting workers that work less than 40 hours per week and/or don't work year-round can help improve the accuracy of annual wage estimates included in analysis. Setting minimum wage and age thresholds can also help limit the inclusion of data that may not reflect annual wages/income.
<b>Wages</b>	Median Mean	Mean wages can sometimes be skewed by extremely high and/or low outliers. Median wage data is not always available, in which case inclusion of mean wages can prove more useful than its omission.
<b>Wage Categories</b>	Median Family Income (MFI) Thresholds Self-Sufficiency Standard Wage Percentiles	Methods to define and evaluate living wages consider different variables, such as household size and living expenses. Each of these frameworks for understanding wages may affect how wage data is interpreted and understood.
<b>Education Categories</b>	Groupings of Educational Attainment Some High School, No Diploma High School Graduate, Diploma or Equivalent (e.g., GED) Some College, No Degree Trade/Technical/Vocational Training	Levels of education can be grouped in various ways. Different combinations of educational attainment affect how the data is spliced and may affect overall findings and data interpretation.

Parameter	Options	Potential Impacts
	Associate Degree Four-year Degree (e.g., Bachelor's Degree) Master's Degree Professional Degree Doctorate Degree	
<b>Statistical Significance/ Margin of Error</b>	Statistical Significance <ul style="list-style-type: none"> <li>Statistically significant difference <ul style="list-style-type: none"> <li>p-value &lt; 0.05</li> <li>95% confidence interval (critical value/z-score = 1.96)</li> </ul> </li> <li>99% confidence interval (critical value/z-score = 2.576)</li> <li>No statistically significant difference <ul style="list-style-type: none"> <li>p-value &gt; 0.05</li> </ul> </li> </ul> 90% confidence interval (critical value/z-score = 1.645)	Setting thresholds of statistical significance helps ensure that there are sufficient sample sizes and differences in findings are statistically significant.
<b>Analysis</b>	Potential types of analysis with the above datasets: <ul style="list-style-type: none"> <li>Compare employment &amp; wages for each occupation or occupational category to average for broader category (e.g. median wage for SOC 53 vs. median wage for all jobs) <ul style="list-style-type: none"> <li>Occupational category</li> <li>By race &amp; occupation</li> <li>By gender &amp; occupation</li> <li>By education &amp; occupation</li> <li>By education &amp; occupation</li> </ul> </li> <li>Wage comparison to median family income (MFI) for 1 &amp; 4 person families</li> <li>Wage comparison to Self-Sufficiency Standard</li> <li>Wage &amp; Education distribution of occupational categories</li> <li>Wage distribution of occupational categories</li> <li>Trajectory of wage categories (low, med, high) over time compared to cost of living</li> <li>Income by race compared to average median income</li> <li>Employment by race, compare across wages/industries</li> </ul>	Type of analysis undertaken affects how data may be grouped, manipulated, and interpreted. Analyses undertaken may affect overall findings.

Parameter	Options	Potential Impacts
	<ul style="list-style-type: none"> <li>• Wage distribution by race &amp; education</li> <li>• Educational attainment of workers by industry- focusing on middle wage jobs</li> <li>• Union membership of workers</li> </ul> Persons living with a disability employment trends	

## Key Findings

Examining occupational and wage data across freight and transportation and material moving occupations and comparing them to those of the broader Portland economy, key findings are identified across the total workforce and by various disaggregate categories, including by race and ethnicity, gender, education, union membership, and presence of disabilities, as presented below.

### Total Workforce

#### *Occupations*

The universe of employees working full-time, year-round and with an annual salary of at least \$5,000 in the Portland workforce is around 748,000 workers. Of those workers, **Freight occupations employ around 15%** (115,399 workers) of the workforce and **Transportation & Material Moving occupations employ around 6%** (46,033 workers) of the Portland workforce (Table 3).



Table 3 | Employment in Freight-related Occupations, Portland, OR (2019)

Standard Occupational Classification (SOC) Codes	Occupation	Total Employed	Proportion Employed
111021	General and Operations Managers	8,676	1.2%
112022	Sales Managers	3,803	0.5%
414010	Sales Representatives, Wholesale and Manufacturing	10,858	1.5%
431011	First-Line Supervisors of Office and Administrative Support Workers	7,096	0.9%
433031	Bookkeeping, Accounting, and Auditing Clerks	5,898	0.8%
434051	Customer Service Representatives	14,604	2.0%
434181	Reservation and Transportation Ticket Agents and Travel Clerks	534 *	0.1% *
435011	Cargo and Freight Agents	332 *	0.0% *
435032	Dispatchers, Except Police, Fire, and Ambulance	1,273	0.2%
435051	Postal Service Clerks	525 *	0.1% *
435052	Postal Service Mail Carriers	1,417	0.2%
435053	Postal Service Mail Sorters, Processors, & Processing Machine Operators	360 *	0.0% *
435071	Shipping, Receiving, and Inventory Clerks	4,057	0.5%
436014	Secretaries & Admin Assistants, Except Legal, Medical, & Executive	11,263	1.5%
439061	Office Clerks, General	4,436	0.6%
493011	Aircraft Mechanics and Service Technicians	758	0.1%
493031	Bus and Truck Mechanics and Diesel Engine Specialists	1,388	0.2%
531000	First-Line Supervisors of Transportation and Material Moving Workers, Except Aircraft Cargo Handling Supervisors	1,418	0.2%
532010	Airline Pilots, Copilots, and Flight Engineers	1,120	0.1%
532031	Flight Attendants	508 *	0.1% *
533030	Driver/Sales Workers and Truck Drivers	15,170	2.0%
533052	Bus Drivers, Transit and Intercity	1,099	0.1%
533099	Passenger Vehicle Drivers, Except Bus Drivers, Transit and Intercity	264 *	0.0% *
537051	Industrial Truck and Tractor Operators	2,457	0.3%
537062	Laborers and Freight, Stock, and Material Movers, Hand	9,312	1.2%
537064	Packers and Packagers, Hand	1,456	0.2%
537065	Stockers and Order Fillers	5,317	0.7%
TOTAL	<b>Transportation &amp; Material Moving Occupations (SOC 53)</b>	46,033	6.2%
TOTAL	<b>Freight-Related Occupations</b>	115,399	15.4%
TOTAL	<b>All Occupations</b>	747,560	100%

\* insufficient sample size to draw firm conclusions. Values are based on small sample sizes that may include large margins of error.

**Source:** United States Census Bureau. 2019. American Community Survey Public Use Microdata Sample (PUMS). Five-year estimates (2015-2019). Accessed March 2021. <https://www.census.gov/programs-surveys/acs/microdata/access.html>

## *Wages*

Examining mean and median wages across the Portland economy, **Freight workers earn around 13-18% less than the average worker** in Portland (Table 4). Freight workers earn a mean of \$56,530 and median of \$45,000, compared to a mean of \$69,134 and median of \$52,000 for the average Portland worker. **Transportation and Material Mover workers earn 23-31% less than the average Portland worker**, as they earn a mean of \$47,811 and median of \$40,000.<sup>45</sup>

In general, some freight occupations have **disproportionately higher wages**, including:

- Airline Pilots, Copilots, and Flight Engineers
- Sales Managers
- General and Operations Managers
- Sales Representatives, Wholesale and Manufacturing

In general, some freight occupations have **disproportionately lower wages**, including:

- Hand Packers and Packagers
- Passenger Vehicle Drivers (Except Bus Drivers, Transit and Intercity)
- Cargo and Freight Agents
- Hand Laborers and Freight, Stock, and Material Movers
- Shipping, Receiving, and Inventory Clerks
- Industrial Truck and Tractor Operators
- Stockers and Order Fillers

Table 4 | **Wages (Mean & Median) by Occupation, Portland, OR (2019)**

<b>Standard Occupational Classification (SOC) Codes</b>	<b>Occupation</b>	<b>Wages (Median)</b>	<b>Wages (Mean)</b>
111021	General and Operations Managers	\$ 75,000	\$ 96,431
112022	Sales Managers	\$ 85,000	\$ 109,506
414010	Sales Representatives, Wholesale and Manufacturing	\$ 65,000	\$ 85,375
431011	First-Line Supervisors of Office and Administrative Support Workers	\$ 51,000	\$ 58,907
433031	Bookkeeping, Accounting, and Auditing Clerks	\$ 42,000	\$ 44,722
434051	Customer Service Representatives	\$ 38,000 *	\$ 45,577 *
434181	Reservation and Transportation Ticket Agents and Travel Clerks	\$ 34,200 *	\$ 65,852 *
435011	Cargo and Freight Agents	\$ 28,000	\$ 32,620
435032	Dispatchers, Except Police, Fire, and Ambulance	\$ 36,000	\$ 45,020
435051	Postal Service Clerks	\$ 53,000 *	\$49,112 *
435052	Postal Service Mail Carriers	\$ 56,000	\$ 53,258
435053	Postal Service Mail Sorters, Processors, & Processing Machine Operator	\$ 48,000 *	\$ 43,934 *
435071	Shipping, Receiving, and Inventory Clerks	\$ 32,000	\$ 37,809
436014	Secretaries & Admin Assistants, Except Legal, Medical, & Executive	\$ 40,000	\$ 44,095
439061	Office Clerks, General	\$ 36,000	\$ 38,923
493011	Aircraft Mechanics and Service Technicians	\$ 65,000	\$ 62,051
493031	Bus and Truck Mechanics and Diesel Engine Specialists	\$ 55,000	\$ 51,494
531000	First-Line Supervisors of Transportation and Material Moving Workers, Except Aircraft Cargo Handling Supervisors	\$ 55,000	\$ 65,583
532010	Airline Pilots, Copilots, and Flight Engineers	\$ 118,000	\$ 172,928
532031	Flight Attendants	\$ 44,300 *	\$ 51,120 *
533030	Driver/Sales Workers and Truck Drivers	\$ 48,000	\$ 52,986
533052	Bus Drivers, Transit and Intercity	\$ 46,000	\$ 49,087
533099	Passenger Vehicle Drivers, Except Bus Drivers, Transit and Intercity	\$ 27,000 *	\$ 32,745 *
537051	Industrial Truck and Tractor Operators	\$ 32,000	\$ 37,156
537062	Laborers and Freight, Stock, and Material Movers, Hand	\$ 31,000	\$ 35,524
537064	Packers and Packagers, Hand	\$ 25,000	\$ 28,751
537065	Stockers and Order Fillers	\$ 33,000	\$ 36,009
<b>TOTAL</b>	<b>Transportation &amp; Material Moving Occupations (SOC 53)</b>	<b>\$ 40,000</b>	<b>\$ 47,811</b>
<b>TOTAL</b>	<b>Freight-Related Occupations</b>	<b>\$ 45,000</b>	<b>\$ 56,530</b>
<b>TOTAL</b>	<b>All Occupations</b>	<b>\$ 52,000</b>	<b>\$ 69,134</b>

\* insufficient sample size to draw firm conclusions. Values are based on small sample sizes that may include large margins of error.

**Source:** United States Census Bureau. 2019. American Community Survey Public Use Microdata Sample (PUMS). Five-year estimates (2015-2019). Accessed March 2021. <https://www.census.gov/programs-surveys/acs/microdata/access.html>

The **City of Portland** defines **low-income** individuals, households, and tenants as those in the seven-county Portland metropolitan statistical area (MSA) with a gross household income below **50% of the median family income (MFI)** (Table 5). For an individual in 2019, low income is defined as individuals earning less than \$30,800, or those earning less than \$43,950 for a family of four.<sup>46,</sup>

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Based on the median wages of freight occupations in Portland, around **81% of freight occupations earn below the MFI (\$61,530)** and **11% are considered low-income for an individual** (earning less than \$30,800). **For families of four with a single breadwinner, 96% of freight jobs earn below the MFI (\$87,900) and 48% of freight jobs are considered low-income** (earning less than \$43,950)

Table 5 | **Median Family Income Percentages by Household Size, Portland, OR, 2019**

**Median Income Percentages 2019 (effective 4/24/2019)**

Household Size	30%	40%	45%	50%	55%	60%	65%	80%	100%	120%
1	\$18,480	\$24,640	\$27,720	<b>\$30,800</b>	\$33,880	\$36,960	\$40,040	\$49,280	\$61,530	\$73,836
2	\$21,120	\$28,160	\$31,680	<b>\$35,200</b>	\$38,720	\$42,240	\$45,760	\$56,320	\$70,320	\$84,384
3	\$23,760	\$31,680	\$35,640	<b>\$39,600</b>	\$43,560	\$47,520	\$51,480	\$63,360	\$79,110	\$94,932
4	\$26,370	\$35,160	\$39,555	<b>\$43,950</b>	\$48,345	\$52,740	\$57,135	\$70,320	<b>\$87,900</b>	\$105,480
5	\$28,500	\$38,000	\$42,750	<b>\$47,500</b>	\$52,250	\$57,000	\$61,750	\$76,000	\$94,932	\$113,918
6	\$30,600	\$40,800	\$45,900	<b>\$51,000</b>	\$56,100	\$61,200	\$66,300	\$81,600	\$101,964	\$122,357
7	\$32,700	\$43,600	\$49,050	<b>\$54,500</b>	\$59,950	\$65,400	\$70,850	\$87,200	\$108,996	\$130,795
8	\$34,830	\$46,440	\$52,245	<b>\$58,050</b>	\$63,855	\$69,660	\$75,465	\$92,880	\$116,028	\$139,234

**Notes:**

(1) 2019 Income levels have increased based on HUD's calculations for the Portland-Vancouver-Hillsboro, OR-WA MSA. The income schedule above is to be used for projects that DO NOT qualify for the HERA and are not funded with CDBG or HOME.

(2) Other 2019 MFI levels are based on the 4-Person Income Limit of \$87,900. The 1-Person family Income Limit is 70% of the 4-Person Income Limit, the 2-Person family Income Limit is 80% of the 4-Person Income Limit, the 3-Person family Income Limit is 90% of the 4-Person Income Limit. Each family size larger than four (4) is calculated by an 8% increase per HH member to the 4-Person Income Limit. (i.e., 5-Person = 108%; 6-Person = 116%; 7-Person = 124%; 8-Person = 132%, and so on.

(3) The incomes limits listed above are based on income limits published by HUD on April 24, 2019.

**Source:** Portland Housing Bureau. 2019. "2019 Income and Rent Limits."

<https://www.portland.gov/sites/default/files/2020-04/2020-ami-rents-phb.pdf>.

## Race & Ethnicity

### Occupations

Black, Indigenous, and People of Color (BIPOC) workers represent around 27% of all workers in the Portland regional economy and are **represented at comparable rates among Transportation and Material Moving Operations occupations (27%)**. However, **BIPOC are less-well-represented in Freight occupations, accounting for around 21% of workers** (Table 6).

Concerningly, BIPOC workers appear to be **disproportionately represented (53%) among some lower-paying freight occupations**, most notably warehousing jobs, such as hand packers and packagers that are estimated to earn a median wage of around \$25,000 per year (Table 6). Additionally, BIPOC workers tend to be under-represented (9%) in some of the highest paying freight occupations, such as Airline Pilots, Copilots, and Flight Engineers, who are estimated to earn a median wage of around \$118,000 per year. These freight industry employment trends may serve to further existing and long-standing income disparities between families in different racial and ethnic groups.

Table 6 | **Employment and Wage Trends by Race & Ethnicity, Portland, OR (2019)**

Occupation	Wages (Median)	Wages (Mean)	BIPOC ** Wages (Mean)	BIPOC Proportion
General and Operations Managers	\$ 75,000	\$ 96,431	\$ 80,739	17%
Sales Managers	\$ 85,000	\$109,506	\$111,869	11%
Sales Representatives, Wholesale and Manufacturing	\$ 65,000	\$ 85,375	\$ 66,801	13%
First-Line Supervisors of Office & Administrative Support Workers	\$ 51,000	\$ 58,907	\$ 51,360	18%
Bookkeeping, Accounting, and Auditing Clerks	\$ 42,000	\$ 44,722	\$ 38,864	20%
Customer Service Representatives	\$ 38,000	\$ 45,577	\$ 41,300	21%
Reservation and Transportation Ticket Agents and Travel Clerks	\$ 34,200	\$ 65,852	\$ 30,298 *	51%
Cargo and Freight Agents	\$ 28,000	\$ 32,620	\$ 33,000 *	5%
Dispatchers, Except Police, Fire, and Ambulance	\$ 36,000	\$ 45,020	\$ 72,673	8%
Postal Service Clerks	\$ 53,000	\$ 49,112	\$ 53,131 *	53%
Postal Service Mail Carriers	\$ 56,000	\$ 53,258	\$ 57,760	19%
Postal Service Mail Sorters, Processors, and Processing Machine Operators	\$ 48,000	\$ 43,934	\$ 46,748 *	73%
Shipping, Receiving, and Inventory Clerks	\$ 32,000	\$ 37,809	\$ 37,262	34%
Secretaries and Administrative Assistants, Except Legal, Medical, and Executive	\$ 40,000	\$ 44,095	\$ 41,923	16%
Office Clerks, General	\$ 36,000	\$ 38,923	\$ 34,355	18%
Aircraft Mechanics and Service Technicians	\$ 65,000	\$ 62,051	\$ 40,000	1%

Occupation	Wages (Median)	Wages (Mean)	BIPOC ** Wages (Mean)	BIPOC Proportion
Bus and Truck Mechanics and Diesel Engine Specialists	\$ 55,000	\$ 51,494	\$ 39,941	12%
First-Line Supervisors of Transportation and Material Moving Workers, Except Aircraft Cargo Handling Supervisors	\$ 55,000	\$ 65,583	\$ 56,000	17%
Airline Pilots, Copilots, and Flight Engineers	\$118,000	\$172,928	\$ 71,810	9%
Flight Attendants	\$ 44,300	\$ 51,120	\$ 53,483 *	25%
Driver/Sales Workers and Truck Drivers	\$ 48,000	\$ 52,986	\$ 58,171	17%
Bus Drivers, Transit and Intercity	\$ 46,000	\$ 49,087	\$ 58,572	29%
Passenger Vehicle Drivers, Except Bus Drivers, Transit & Intercity	\$ 27,000	\$ 32,745	\$ 23,990 *	20%
Industrial Truck and Tractor Operators	\$ 32,000	\$ 37,156	\$ 31,188	35%
Laborers and Freight, Stock, and Material Movers, Hand	\$ 31,000	\$ 35,524	\$ 33,670	36%
Packers and Packagers, Hand	\$ 25,000	\$ 28,751	\$ 25,134	53%
Stockers and Order Fillers	\$ 33,000	\$ 36,009	\$ 36,193	28%
<b>TOTAL Transportation &amp; Material Moving Occupations (SOC 53)</b>	<b>\$ 40,000</b>	<b>\$ 47,811</b>	<b>\$ 40,171</b>	<b>27%</b>
<b>TOTAL Freight-Related Occupations</b>	<b>\$ 45,000</b>	<b>\$ 56,530</b>	<b>\$ 46,959</b>	<b>21%</b>
<b>TOTAL All Occupations</b>	<b>\$ 52,000</b>	<b>\$ 69,134</b>	<b>\$ 58,089</b>	<b>27%</b>

\* insufficient sample size to draw firm conclusions. Values are based on small sample sizes that may include large margins of error.

\*\* BIPOC reflects Black, Native American, Asian, and Hispanic workers

**Source:** United States Census Bureau. 2019. American Community Survey Public Use Microdata Sample (PUMS). Five-year estimates (2015-2019). Accessed March 2021. <https://www.census.gov/programs-surveys/acs/microdata/access.html>

## Wages

When examining the average wages of BIPOC workers (\$58,089), compared to those of overall workers (\$69,134) in the Portland economy, **BIPOC workers earn around 16% less than the average Portland worker**. Similar wage disparity trends extend to freight (\$46,959) and transportation and material moving (\$40,171) occupations, with **BIPOC freight workers earning between 16-17% less than the average freight worker** (\$56,530 & \$47,811) in each of these industries. Among racial and ethnic groups for which sufficient data exists for disaggregated analysis, it appears that racial wage disparities are more pronounced across all occupations and that the **racial wage gap is narrower among freight-related occupations**. For example, Black workers on average earn \$54,921, roughly 21% less than the average Portland worker (\$69,134), however within freight-related and Transportation and Material Moving occupations, the racial

wage gap is narrower, with Black freight workers earning between \$42,308 - \$47,019, 12-17% less than the average wage for those occupational categories, still significant, but less pronounced than across other industries and occupations. Hispanic workers, on average, tend to earn (\$45,896), 34% less than the average Portland worker; however, within freight-related and Transportation Material Moving occupations, the wage gap is between 16-21% less (\$40,065 - \$44,724) (Table 7).

Among certain disaggregated racial and ethnic groups for which sufficient data exists, wage disparities between freight-related occupations and average wages across all occupations are smaller than among the broader population and BIPOC workers as a whole, for whom Freight-related and Transportation and Material Moving occupations earn between 18-31% less than workers in other occupations. Among Black workers, Freight (\$47,019) and Transportation & Material Moving (\$42,308) workers earn between 14-23% less than the average Black worker (\$54,921). Among Hispanic workers, freight (\$44,724) and transportation & material moving (\$40,065) workers earn between 3-13% less than the average Hispanic worker (\$45,896). However, while less pronounced pay gaps between freight jobs and average wages across all occupations are encouraging, they may be reflective of depressed wages and wage ceilings faced by BIPOC workers. Regardless, the smaller wage gap between freight jobs and other occupations for Black and Hispanic workers may make freight jobs relatively more appealing to those workers because of their pay.

**Table 7 | Wages by Race & Ethnicity, Aggregated & Disaggregated, Portland, OR (2019)**

<b>Occupation</b>	<b>Wages (Median)</b>	<b>Wages (Mean)</b>	<b>BIPOC ** Wages (Mean)</b>	<b>Black Wages (Mean)</b>	<b>Hispanic Wages (Mean)</b>
<b>Transportation &amp; Material Moving Occupations (SOC 53)</b>	<b>\$ 40,000</b>	<b>\$ 47,811</b>	<b>\$ 40,171</b>	<b>\$ 42,308</b>	<b>\$ 40,065</b>
<b>Freight-Related Occupations</b>	<b>\$ 45,000</b>	<b>\$ 56,530</b>	<b>\$ 46,959</b>	<b>\$ 47,019</b>	<b>\$ 44,724</b>
<b>All Occupations</b>	<b>\$ 52,000</b>	<b>\$ 69,134</b>	<b>\$ 58,089</b>	<b>\$ 54,921</b>	<b>\$ 45,896</b>

\*\* BIPOC reflects Black, Native American, Asian, and Hispanic workers

**Source:** United States Census Bureau. 2019. American Community Survey Public Use Microdata Sample (PUMS). Five-year estimates (2015-2019). Accessed March 2021. <https://www.census.gov/programs-surveys/acs/microdata/access.html>



## Gender

Analyzing gender on a binary male-female basis fails to represent the entire spectrum of gender identity. However, despite the shortcomings of federal data collection, occupational trends present among male and female workers may reflect working conditions that affect people of other gender identities that are worth considering.

## *Occupations*

**In general, women are underrepresented in the workforce.** Despite making up 51% of the Portland region population in 2019,<sup>48</sup> women only represent 41% of workers (Table 8). Compared to the workforce as a whole, **women are proportionally represented in freight occupations (40%); however, are starkly underrepresented in transportation and material moving operations (14%).** Disparities are most pronounced among Industrial Truck and Tractor Operators (1%), Bus and Truck Mechanics and Diesel Engine Specialists (2%), and Driver/Sales Workers and Truck Drivers (4%) where women only represent a very small proportion of workers. Similar to BIPOC, women are also dramatically underrepresented among high-income freight-related occupations, including Airline Pilots, Copilots, and Flight Engineers (\$118,000), indicating those occupations, and corresponding high wages, are likely dominated by non-Hispanic white men. Additionally, as is well-documented across many industries, women are underrepresented in many managerial positions, such as General and Operations Manager positions (33%)

Table 8 | Employment Trends by Gender, Portland, OR (2019)

Standard Occupational Classification (SOC) Codes	Occupation	Wages (Median)	Wages (Mean)	Female Proportion
111021	General and Operations Managers	\$ 75,000	\$ 96,431	33%
112022	Sales Managers	\$ 85,000	\$ 109,506	29%
414010	Sales Representatives, Wholesale and Manufacturing	\$ 65,000	\$ 85,375	24%
431011	First-Line Supervisors of Office & Admin Support Workers	\$ 51,000	\$ 58,907	59%
433031	Bookkeeping, Accounting, and Auditing Clerks	\$ 42,000	\$ 44,722	85%
434051	Customer Service Representatives	\$ 38,000 *	\$ 45,577 *	57%
434181	Reservation & Transportation Ticket Agents & Travel Clerks	\$ 34,200 *	\$ 65,852 *	24%
435011	Cargo and Freight Agents	\$ 28,000	\$ 32,620	16%
435032	Dispatchers, Except Police, Fire, and Ambulance	\$ 36,000	\$ 45,020	39%
435051	Postal Service Clerks	\$ 53,000 *	\$ 49,112 *	46%
435052	Postal Service Mail Carriers	\$ 56,000	\$ 53,258	34%
435053	Postal Service Mail Sorters, Processors, and Processing Machine Operators	\$ 48,000 *	\$ 43,934 *	49%
435071	Shipping, Receiving, and Inventory Clerks	\$ 32,000	\$ 37,809	28%
436014	Secretaries and Administrative Assistants, Except Legal, Medical, and Executive	\$ 40,000	\$ 44,095	89%
439061	Office Clerks, General	\$ 36,000	\$ 38,923	83%
493011	Aircraft Mechanics and Service Technicians	\$ 65,000	\$ 62,051	5%
493031	Bus and Truck Mechanics and Diesel Engine Specialists	\$ 55,000	\$ 51,494	2%
531000	First-Line Supervisors of Transportation & Material Moving Workers, Except Aircraft Cargo Handling Supervisors	\$ 55,000	\$ 65,583	14%
532010	Airline Pilots, Copilots, and Flight Engineers	\$ 118,000	\$ 172,928	5%
532031	Flight Attendants	\$ 44,300 *	\$ 51,120 *	80%
533030	Driver/Sales Workers and Truck Drivers	\$ 48,000	\$ 52,986	4%
533052	Bus Drivers, Transit and Intercity	\$ 46,000	\$ 49,087	29%
533099	Passenger Vehicle Drivers, Except Bus- Transit & Intercity	\$ 27,000 *	\$ 32,745 *	27%
537051	Industrial Truck and Tractor Operators	\$ 32,000	\$ 37,156	1%
537062	Laborers and Freight, Stock, and Material Movers, Hand	\$ 31,000	\$ 35,524	16%
537064	Packers and Packagers, Hand	\$ 25,000	\$ 28,751	48%
537065	Stockers and Order Fillers	\$ 33,000	\$ 36,009	24%
TOTAL	<b>Transportation &amp; Material Moving Occupations (SOC 53)</b>	<b>\$ 40,000</b>	<b>\$ 47,811</b>	<b>14%</b>
TOTAL	<b>Freight-Related Occupations</b>	<b>\$ 45,000</b>	<b>\$ 56,530</b>	<b>40%</b>
TOTAL	<b>All Occupations</b>	<b>\$ 52,000</b>	<b>\$ 69,134</b>	<b>41%</b>

\* insufficient sample size to draw firm conclusions. Values are based on small sample sizes that may include large margins of error.

**Source:** United States Census Bureau. 2019. American Community Survey Public Use Microdata Sample (PUMS). Five-year estimates (2015-2019). Accessed March 2021. <https://www.census.gov/programs-surveys/acs/microdata/access.html>

## Education

### *Occupations*

**Within the Portland workforce, workers with a High School diploma or General Educational Development (GED) credential make up the majority of workers (68%).** Workers with comparable levels of education are **represented at higher rates in freight-related occupations (78%) and at lower rates among transportation and material moving operations (48%)** (Table 9).

Among workers with a High School Diploma or GED (68% of Portland's workforce), many freight-related jobs appear to be particularly well-suited for their educational qualifications, including the following, which all employ workers with High School Diplomas and GEDs at rates at least 10% above that of the Portland workforce:

- Aircraft Mechanics and Service Technicians
- Bus and Truck Mechanics and Diesel Engine Specialists
- Cargo and Freight Agents
- Driver/Sales Workers and Truck Drivers
- Hand Laborers and Freight, Stock, and Material Movers
- Industrial Truck and Tractor Operators
- Stockers and Order Fillers

**Freight-related jobs employ individuals without a high school diploma at almost double the rate (11%) of the overall Portland workforce (6%).** Freight-related jobs that employ those without a high school diploma at rates at least double the overall workforce include:

- Postal Service Clerks
- Shipping, Receiving, and Inventory Clerks
- First-Line Supervisors of Transportation and Material Moving Workers, Except Aircraft Cargo Handling Supervisors
- Industrial Truck and Tractor Operators
- Laborers and Freight, Stock, and Material Movers, Hand
- Packers and Packagers, Hand

In general, it appears some freight-related occupations require at least a High School Diploma, given that there is 0% employment among workers without a High School Diploma. These occupations include:

- Aircraft Mechanics and Service Technicians

- Airline Pilots, Copilots, and Flight Engineers
- Cargo and Freight Agents
- Flight Attendants
- Passenger Vehicle Drivers, Except Bus Drivers, Transit and Intercity
- Reservation and Transportation Ticket Agents and Travel Clerks
- Sales Managers

**Individuals with a four-year college degree are generally employed at much lower rates in freight-related occupations (9%), than within the overall Portland workforce (22%).** Certain freight-related occupations employ those with a four-year degree at higher rates at least 10% higher than the Portland workforce in general, including:

- General and Operations Managers
- Airline Pilots, Copilots, and Flight Engineers
- Passenger Vehicle Drivers, Except Bus Drivers, Transit and Intercity
- Reservation and Transportation Ticket Agents and Travel Clerks
- Sales Managers
- Sales Representatives, Wholesale and Manufacturing

Table 9 | **Occupational Trends by Education, Portland, OR (2019)**

Standard Occupational Classification (SOC) Codes	Occupation	Wage (Median)	Wage (Mean)	No High School Diploma Proportion	High School Diploma or GED Proportion	Four-Year College Degree Proportion
111021	General and Operations Managers	\$ 75,000	\$ 96,431	4%	51%	36%
112022	Sales Managers	\$ 85,000	\$109,506	0%	29%	57%
414010	Sales Representatives, Wholesale and Manufacturing	\$ 65,000	\$ 85,375	2%	48%	42%
431011	First-Line Supervisors of Office and Administrative Support Workers	\$ 51,000	\$ 58,907	2%	61%	29%
433031	Bookkeeping, Accounting, and Auditing Clerks	\$ 42,000	\$ 44,722	1%	78%	18%
434051	Customer Service Representatives	\$ 38,000	\$ 45,577	4%	63%	28%
434181	Reservation and Transportation Ticket Agents and Travel Clerks	\$ 34,200	\$ 65,852	0%	50%	47%
435011	Cargo and Freight Agents	\$ 28,000	\$ 32,620	0%	87%	5%
435032	Dispatchers, Except Police, Fire, and Ambulance	\$ 36,000	\$ 45,020	9%	67%	25%
435051	Postal Service Clerks	\$ 53,000	\$ 49,112	19%	50%	28%
435052	Postal Service Mail Carriers	\$ 56,000	\$ 53,258	3%	74%	18%
435053	Postal Service Mail Sorters, Processors, and Processing Machine Operators	\$ 48,000	\$ 43,934	5%	73%	22%

435071	Shipping, Receiving, and Inventory Clerks	\$ 32,000	\$ 37,809	16%	75%	7%
436014	Secretaries and Administrative Assistants, Except Legal, Medical, and Executive	\$ 40,000	\$ 44,095	1%	70%	25%
439061	Office Clerks, General	\$ 36,000	\$ 38,923	4%	70%	23%
493011	Aircraft Mechanics and Service Technicians	\$ 65,000	\$ 62,051	0%	91%	9%
493031	Bus and Truck Mechanics and Diesel Engine Specialists	\$ 55,000	\$ 51,494	8%	89%	2%
531000	First-Line Supervisors of Transportation and Material Moving Workers, Except Aircraft Cargo Handling Supervisors	\$ 55,000	\$ 65,583	14%	65%	18%
532010	Airline Pilots, Copilots, and Flight Engineers	\$118,000	\$172,928	0%	26%	53%
532031	Flight Attendants	\$ 44,300	\$ 51,120	0%	74%	19%
533030	Driver/Sales Workers and Truck Drivers	\$ 48,000	\$ 52,986	8%	84%	6%
533052	Bus Drivers, Transit and Intercity	\$ 46,000	\$ 49,087	8%	81%	8%
533099	Passenger Vehicle Drivers, Except Bus Drivers, Transit and Intercity	\$ 27,000	\$ 32,745	0%	62%	38%
537051	Industrial Truck and Tractor Operators	\$ 32,000	\$ 37,156	15%	83%	2%
537062	Laborers and Freight, Stock, and Material Movers, Hand	\$ 31,000	\$ 35,524	14%	80%	5%
537064	Packers and Packagers, Hand	\$ 25,000	\$ 28,751	19%	72%	7%
537065	Stockers and Order Fillers	\$ 33,000	\$ 36,009	10%	79%	11%
TOTAL	<b>Transportation &amp; Material Moving Occupations (SOC 53)</b>	<b>\$ 40,000</b>	<b>\$ 47,811</b>	<b>6%</b>	<b>48%</b>	<b>28%</b>
TOTAL	<b>Freight-Related Occupations</b>	<b>\$ 45,000</b>	<b>\$ 56,530</b>	<b>11%</b>	<b>78%</b>	<b>9%</b>
TOTAL	<b>All Occupations</b>	<b>\$ 52,000</b>	<b>\$ 69,134</b>	<b>6%</b>	<b>68%</b>	<b>22%</b>

**Source:** United States Census Bureau. 2019. American Community Survey Public Use Microdata Sample (PUMS). Five-year estimates (2015-2019). Accessed March 2021. <https://www.census.gov/programs-surveys/acs/microdata/access.html>

### *Wages*

In general, freight (\$56,530) and transportation and material moving (\$47,811) occupations earn between 18-31% less than the average Portland economy worker (\$69,134) (Table 10). When controlling for education, **Freight jobs are proportionally higher paying for those with lower levels of education, namely those without a high school diploma.** For example, for those with less than a high school diploma, freight jobs pay 14% more than other jobs available to those

with similar levels of education (\$42,220 compared to \$37,129). For other levels of education, such as those with a High School Diploma, GED, or a four-year college degree, freight and transportation and material moving occupations pay between 6-14% less than the average of those with comparable levels of education working in other occupations.

Table 10 | **Wages by Education, Portland, OR (2019)**

	Occupation	Wages (Mean)	No High School Diploma Wages (Mean)	High School Diploma or GED Wages (Mean)	Four-year College Degree Wages (Mean)
TOTAL	<b>Transportation &amp; Material Moving Occupations (SOC 53)</b>	<b>\$ 47,811</b>	<b>\$ 41,050</b>	<b>\$ 44,731</b>	<b>\$ 70,630</b>
TOTAL	<b>Freight-Related Occupations</b>	<b>\$ 56,530</b>	<b>\$ 42,220</b>	<b>\$ 48,717</b>	<b>\$ 75,194</b>
TOTAL	<b>All Occupations</b>	<b>\$ 69,134</b>	<b>\$ 37,129</b>	<b>\$ 51,984</b>	<b>\$ 80,619</b>

**Source:** United States Census Bureau. 2019. American Community Survey Public Use Microdata Sample (PUMS). Five-year estimates (2015-2019). Accessed March 2021. <https://www.census.gov/programs-surveys/acs/microdata/access.html>

## Union Workers

Unions bargain with employers to improve pay, working conditions, and decision-making in workplaces. Generally, higher rates of union membership within an industry, occupation, or geography indicates higher levels of union bargaining power and greater union leverage to negotiate terms of work that are favorable to union-represented employees.

Union membership rates, also known as union density, conveys the number of union members who are employees as a proportion of the total number of employees in a given industry, occupation, or geography. Union membership rates are usually lower than the collective agreement coverage rate, which refers to all people whose terms of work are collectively negotiated by a union.

Analysis of union membership and coverage at national, state, local, industry, and occupational levels indicates that **union coverage and membership is significantly higher in freight (20%) and transportation and material moving (22%) occupations than at the national (10%), state (14%), or local (14%) level** (Table 11). High union coverage and membership trends in freight and transportation and material moving occupations is consistent with the transportation and warehousing industry trend of higher union coverage and representation (22%).

Table 11 | Union Membership &amp; Freight Coverage among Workers (2019)

Category	Geography	Employment Total	Members Total	Covered Total	Membership Proportion	Coverage Proportion
USA	USA	2,779,734	285,621	321,077	10%	11%
Oregon	OR	1,772,418	254,959	277,031	14%	16%
Portland MSA	Portland	1,287,991	178,408	198,362	14%	15%
Transportation & Warehousing Industry	USA	6,638,122	1,465,551	1,596,766	22%	24%
<b>Transportation &amp; Material Moving Occupations (SOC 53)</b>	<b>USA</b>	<b>908,355</b>	<b>119,539</b>	<b>131,028</b>	<b>22%</b>	<b>23%</b>
<b>27 Freight Occupations</b>	<b>USA</b>	<b>872,899</b>	<b>85,092</b>	<b>94,821</b>	<b>20%</b>	<b>21%</b>
<b>All Occupations (Average)</b>	<b>USA</b>	<b>14,176,645</b>	<b>1,456,666</b>	<b>1,637,492</b>	<b>10%</b>	<b>11%</b>

**Source:** Union Membership and Coverage Database from the Current Population Survey. 2019.  
<http://unionstats.com/>.

### Workers with Disabilities

The US Bureau of Labor Statistics reports annually on the labor force characteristics of persons with a disability. The data on persons living with a disability are collected as part of the Current Population Survey (CPS), a monthly sample survey of around 60,000 households that provides statistics on employment and unemployment in the US.

In general, individuals living with disabilities are employed nationally at lower rates (19.3% compared to 66.3%) and unemployed at higher rates (7.3% compared to 3.5%) than persons without disabilities (Table 12). Additionally, workers with a disability are employed in part-time work at rates almost double those of workers without disabilities (32% compared to 17%). Given the higher proportion of part-time work among persons with disabilities, they may be underrepresented in the sample used for the economic analysis of freight workers in this report, given the narrowing of the data universe to focus on full-time and year-round employees.

Looking at freight-related occupations at the national level, **people living with disabilities tend to be more likely to work in transportation and material moving occupations than those living without a disability (8.1% compared to 6.3%)**, indicating that freight jobs are a relatively important source of employment for those with disabilities. Portland-specific data was not disaggregated for persons with and without disabilities as part of this report.



Table 12 | **Employment Characteristics of Persons with & without a Disability (USA, 2019)**

	<b>Persons with a Disability</b>	<b>Persons without a Disability</b>
<b>Employed</b>	19.3%	66.3%
<b>Unemployed</b>	7.3%	3.5%
<b>Employed Part-Time</b>	32%	17%
<b>Transportation &amp; Material Moving Occupations (SOC 53)</b>	8.1%	6.3%

**Source:** Bureau of Labor Statistics. 2020. "Persons with a Disability: Labor Force Characteristics—2019."  
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## Conclusion

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The freight industry is a significant source of employment for many who live and work in Portland. Freight industry jobs are especially important for those with less than a four-year college degree, who are employed in freight at substantially higher rates than the rest of the economy. However, employment rates are less favorable for women in freight, who are underrepresented, often quite dramatically, in nearly every freight-related job category. In general, wages are not keeping pace with living costs, a trend that freight workers are not spared from.

As the City and region plan for the future of freight, policies and plans should attempt, to the extent possible, to preserve freight jobs and address inequities employment and wage inequities that exist today.

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compared to mean household income since it is not skewed by a small number of extremely high- or low-income outlier households. As the mean household income is found to be greater than the median household income in this analysis, it indicates that there is significant income disproportionately concentrated in the wealthiest households of freight industry workers, reflecting increasing inequality on the high end of wages.

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