

Community Oversight Panel Update

Construction Workforce Analysis 2022

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06/08/2022



Why we are here

- To provide updated information regarding the availability of construction workers for ST capital construction projects.
- To provide information regarding pandemic impacts on the regional construction industry.
- To provide Information on Historic and Projected Construction Apprenticeships

Regional Public Owners Construction Workforce Analysis 2022 Update

DISCUSSION DRAFT

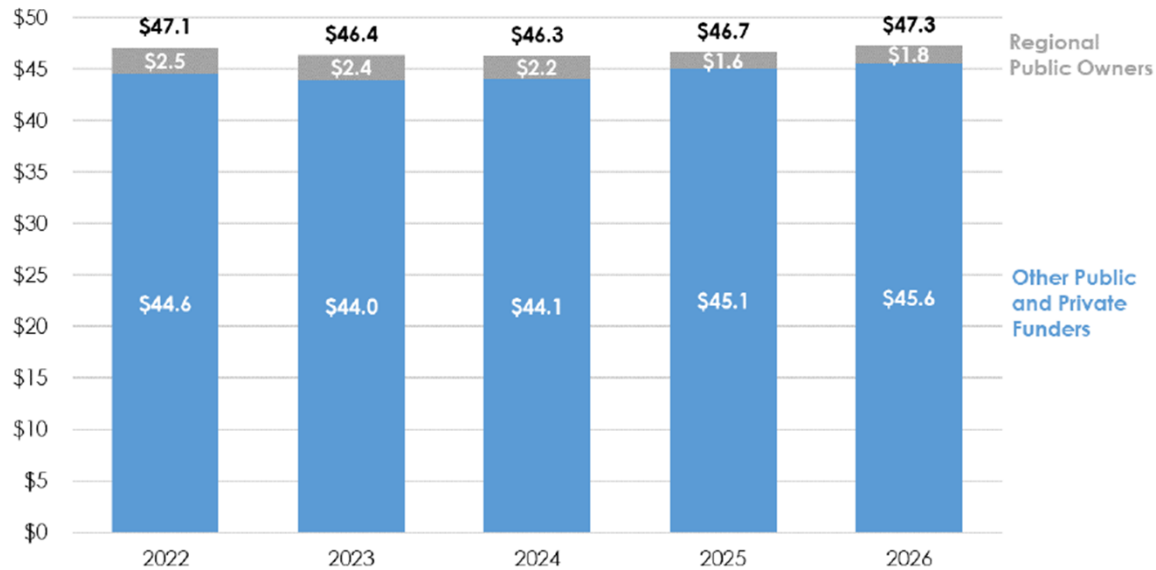
May 3, 2022



Regional Construction Demand, Supply and Occupational Gaps

Projected Construction Spending

Projected Construction Spending By Year, Billions \$, King, Pierce and Snohomish Counties, 2022-2026



Sources: RPO Agencies, 2022; Washington State Employment Security Department, 2022; Washington State Economic and Revenue Forecast Council, 2022; Washington State Department of Revenue, 2022; Community Attributes Inc., 2022.

Projected regional construction spending is comprised of predominately non-RPO sources. On average, regional public owner spending represented **4.5% of region-wide spending** from 2022 to 2026.

Regional spending forecasts follow construction employment forecasts, which foresee a slight decrease in construction employment through 2024, before rising again in 2025 and 2026.

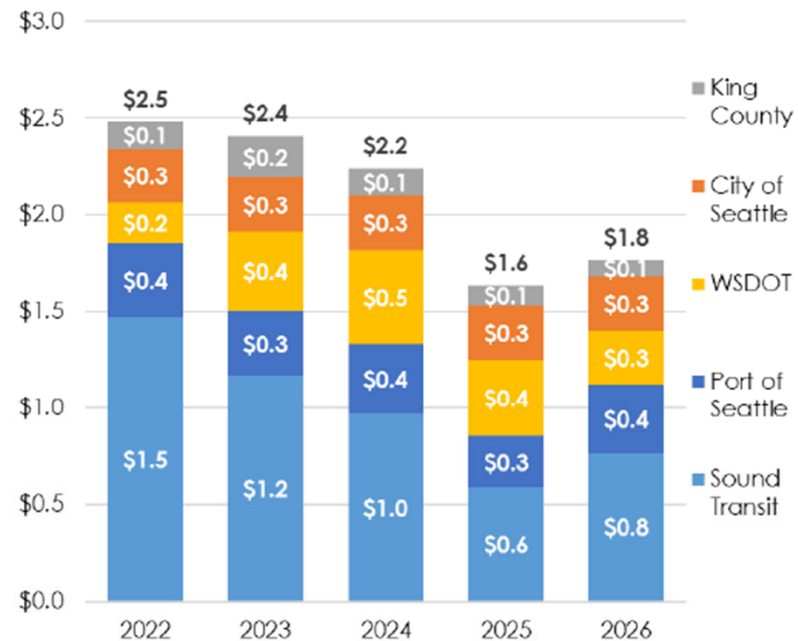
RPO Construction Spending Forecast

Projected RPO Construction Spending

The RPO agencies are projected to spend **\$10.5 billion** on construction projects over the period from 2022 to 2026. The spending is expected to be highest in 2022 at \$2.5 billion and drop to \$1.6 in 2025 before increasing to \$1.8 in 2026. Due to data limitations for RPO projections, there is less certainty for RPO construction expenditures beyond 2024, which could be the reason for the decrease in 2025 and 2026.

Sound Transit forecasts they will spend roughly **\$5 billion** on construction projects between 2022 and 2026, the most of all RPO members. The four largest projects that make up almost 70% of the five-year estimated spending include the Federal Way Link Extension, Lynnwood Link Extension, Downtown Redmond Link Extension, and I-405 Bus Rapid Transit.

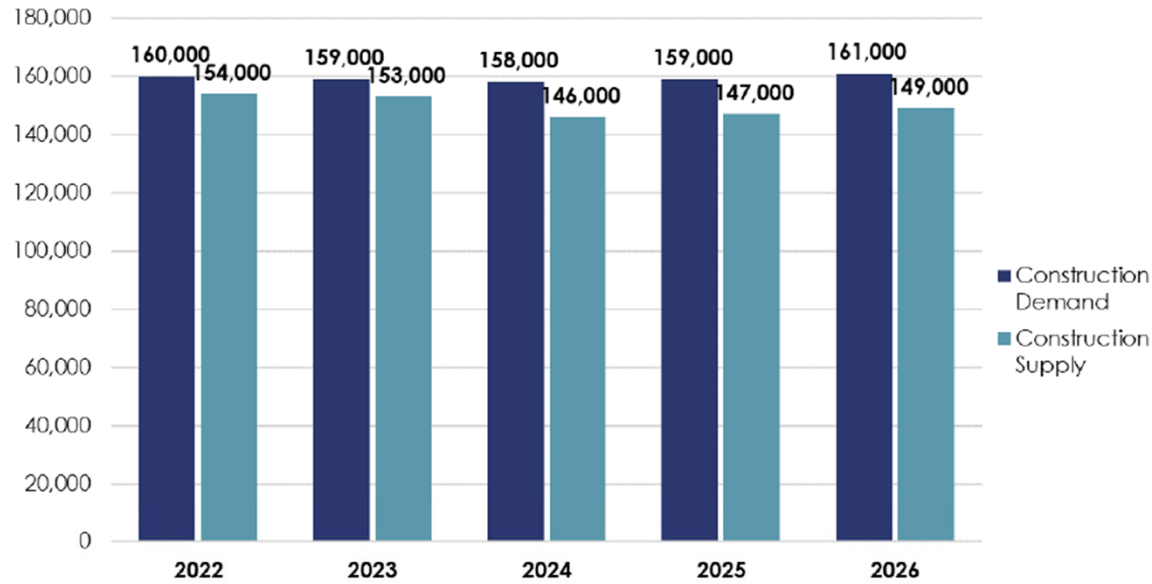
Projected RPO Construction Spending By Year, Billions \$, King, Pierce and Snohomish Counties, 2022-2026



Sources: RPO Agencies, 2022; Washington State Employment Security Department, 2022; Community Attributes Inc., 2022.

Projected Construction Demand and Supply

Projected Construction Employment Demand and Supply, King, Pierce and Snohomish Counties, 2022-2026



Sources: Washington State Employment Security Department, 2022; NCES IPEDS, 2022; Community Attributes Inc., 2022.

Region-wide construction supply is projected to fall short of demand from 2022 through 2026. **Supply shortages during this time period range from 6,000 to 12,000 workers.**

Demand is projected to stay relatively constant from 2022 to 2026, while supply is projected to decrease.

Projected Occupational Gaps

Construction Employment and Talent Pipeline, King, Pierce and Snohomish Counties, 2022-2026

Occupation	% in Const Industry	Average Annual Demand	Average Annual Openings	Average Annual Supply (UI+Grads)	Average Annual Gap	Gap as a % of Avg Annual Demand
Construction Laborers	90%	24,600	2,460	730	(1,730)	(7%)
Carpenters	86%	19,200	1,390	690	(700)	(4%)
Painters	94%	9,700	640	200	(440)	(5%)
First-Line Supervisors of Construction Trades	88%	9,500	820	100	(720)	(8%)
Electricians	85%	8,800	820	450	(370)	(4%)
Construction Managers	85%	8,500	670	390	(280)	(3%)
Plumbers	86%	4,500	410	200	(210)	(5%)
Roofers	100%	4,500	390	120	(270)	(6%)
Operating Engineers	84%	4,100	400	290	(110)	(3%)
Cement Masons and Finishers	99%	4,000	340	110	(230)	(6%)
Drywall and Ceiling Tile Installers	98%	4,000	240	70	(170)	(4%)
HVAC Installers	79%	3,900	320	110	(210)	(5%)
Cost Estimators	60%	2,300	170	240	70	3%
Tapers	100%	2,100	100	60	(40)	(2%)
Sheet Metal Workers	67%	1,600	140	150	10	1%
Welders, Cutters, Solderers, and Brazers	34%	1,400	120	60	(60)	(4%)
Tile and Marble Setters	100%	1,200	70	30	(40)	(3%)
Fence Erectors	86%	1,100	100	0	(100)	(9%)
Brickmasons	98%	1,000	90	70	(20)	(2%)
Glaziers	94%	1,000	100	70	(30)	(3%)
Ironworkers	97%	1,000	100	150	50	5%
Heavy Equipment Mechanics	34%	800	70	10	(60)	(8%)
Paving Equipment Operators	96%	700	70	60	(10)	(1%)
Insulators	99%	600	40	10	(30)	(5%)
Lineworkers	53%	600	40	10	(30)	(5%)
All Other Construction Occupations		38,300	3,890	1,220	(2,670)	(7%)
Total		159,000	14,000	5,600	(8,400)	(5%)

This table shows occupations with an average annual demand of 600 workers or more between 2022 and 2026 and with more than a third of all regional employment for that occupation within the construction industry.

Sources: RPO Agencies, 2022; Washington State Employment Security Department, 2022; Washington State Department of Revenue, 2022; NCES, 2022; Bureau of Labor Statistics, 2022; Community Attributes Inc., 2022.
Note: Construction laborers includes flaggers.

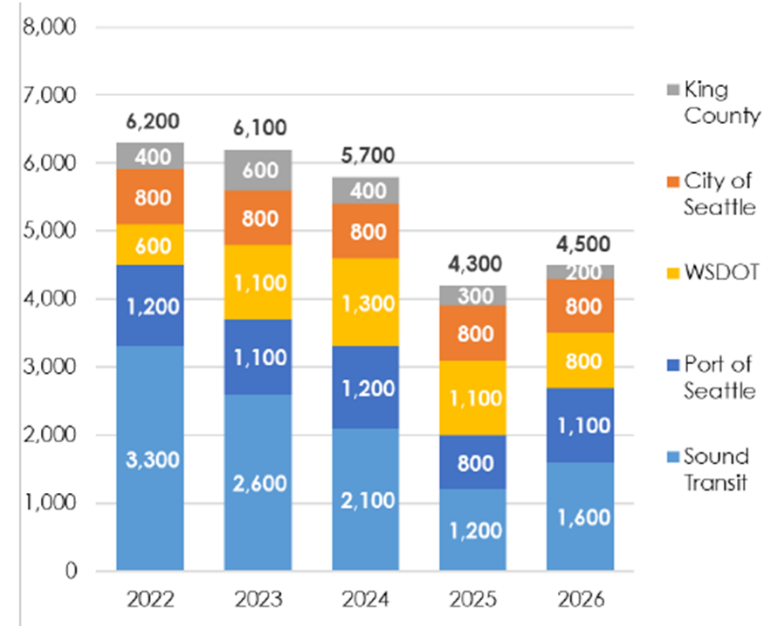
RPO Construction Demand Forecast

Projected RPO Construction Employment

RPO construction projects are projected to require **6,200 construction workers in 2022 and average 5,400 workers per year to 2026**. From 2022 to 2026, employment demand for RPO projects ranges from 6,200 to 4,300.

Sound Transit's share of the total annual RPO demand decreases from 52% in 2022 to 29% in 2025. Sound Transit is projected to demand roughly 2,200 workers on average from 2022 through 2026. Port of Seattle average the next highest demand with 1,080 workers, followed by WSDOT with 970 workers.

Projected RPO Construction Employment Demand By Year, King, Pierce and Snohomish Counties, 2022-2026



Sources: RPO Agencies, 2022; Washington State Employment Security Department, 2022; Washington State Department of Revenue, 2022; Community Attributes Inc., 2022.

Note: Employment demand represents a headcount of employees.

RPO Construction Demand Forecast

Projected RPO Construction Occupational Demand

Between 2022 and 2026, construction laborers, carpenters, and operating engineers are projected to have the highest demand from RPO agencies. Construction demand projections by occupation for RPO members are driven by the types of projects funded by each agency.

Other occupations with an average annual demand lower than 100 jobs between 2022 and 2026 can be found in the appendix.

Projected RPO Construction Occupational Demand By Year, King Pierce and Snohomish Counties, 2022-2026

Occupation	2022	2023	2024	2025	2026	Average 2022-2026
Construction Laborers	1,600	1,600	1,500	1,100	1,100	1,400
Carpenters	1,000	1,000	1,000	700	700	900
Operating Engineers	900	1,000	900	600	700	800
Electricians	600	600	600	500	500	600
Ironworkers	400	300	300	300	300	300
Truck Drivers	400	300	300	200	200	300
Plumbers	200	200	200	200	200	200
Cement Masons and Finishers	200	200	200	100	100	200
Sheet Metal Workers	100	100	100	100	100	100
Painters	100	100	100	100	100	100
Other Occupations	700	700	500	400	500	500
Total Demand	6,200	6,100	5,700	4,300	4,500	5,400

Sources: RPO Agencies, 2022; Washington State Employment Security Department, 2022; Washington State Department of Revenue, 2022; Community Attributes Inc., 2022.

Notes: Employment demand represents a headcount of employees. Construction laborers includes flaggers.

RPO & Regional Occupational Demand

Projected RPO and Regional Construction Occupational Demand

Regional demand for construction workers for all RPO occupations is projected at about 100,000 workers per year on average between 2022 and 2026. Of this demand, RPO agencies are projected to represent about 5,400, or 5% of total regional demand.

Of the most highly demanded occupations by RPO agencies, RPO demand for ironworkers, truck drivers, and operating engineers represents the largest proportion of regional demand. RPO demand for the two largest occupations regionally - construction laborers and carpenters - represents 6% and 5% of projected regional demand, respectively.

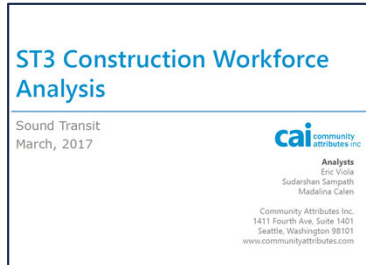
Projected Construction Demand by Occupation, King, Pierce and Snohomish Counties, 2022-2026

Title	Average Annual Demand 2022-2026		% of Regional Demand	Annual Average Gap
	RPO	Regional		
Construction Laborers	1,400	24,600	6%	(1,730)
Carpenters	900	19,200	5%	(700)
Operating Engineers	800	4,100	20%	(100)
Electricians	600	8,800	7%	(370)
Ironworkers	300	1,000	30%	50
Truck Drivers	300	1,300	23%	(100)
Plumbers	200	4,500	4%	(210)
Cement Masons and Finishers	200	4,000	5%	(230)
Sheet Metal Workers	100	1,600	6%	10
Painters	100	9,700	1%	(440)
Other Occupations	500	21,600	2%	(970)
Total Demand	5,400	100,400	5%	(4,790)

Sources: RPO Agencies, 2022; Washington State Employment Security Department, 2022; Washington State Department of Revenue, 2022; NCES, 2022; Bureau of Labor Statistics, 2022; Community Attributes Inc., 2022.

Note: Construction laborers includes flaggers. Total demand represents demand for the occupations required by RPO agencies, this does not include the total list of occupations included in the regional construction industry.

Regional Workforce Deficit Over Time



2017

“For 2018-2023, Sound Transit can expect an average local labor shortage of **10%** for the occupations it will need to execute ST3.”



2019

“From 2019-2023, Sound Transit can expect a local labor deficit of **6.2%** for the occupations needed to complete ST2 and ST3.”



2022

“Overall, the projected average annual gap for the Tri-County region is about 8,400 workers or **5.6%** of average annual construction supply.”

Historic and Projected Construction Apprenticeships

Historic Construction Apprenticeships

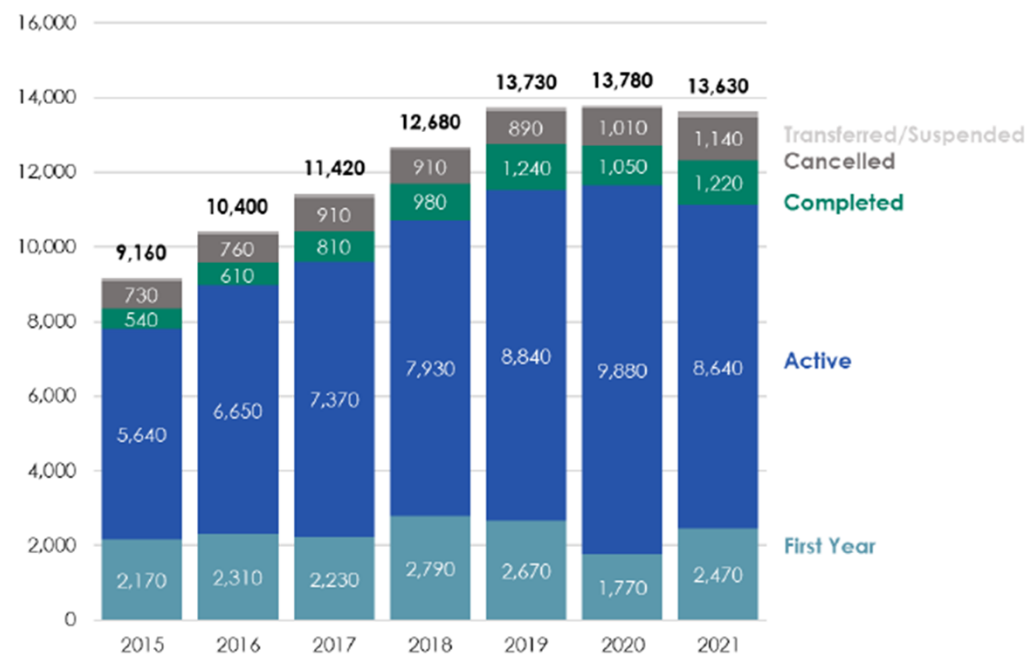
Apprenticeships by Status

In the past 6 years, **active apprentices among RPO occupations reached a peak of 9,880 in 2020**. Active apprentices saw a steady rise during this period, increasing from 5,640 to 9,880 in 2020, before falling slightly in 2021 to 8,640.

Active apprentices have represented between 62% and 72% of total apprentices since 2015, while **first year apprentices have represented between 13% and 24%**. First year apprentices peaked in 2018, reaching 2,790.

Completed apprenticeships have also seen a steady rise since 2015, peaking in 2019 but remaining above 1,000 per year through 2021.

Apprentices by Status, RPO Occupations, King, Pierce, and Snohomish Counties, 2015-2021



Sources: Washington State Department of Labor and Industries, 2022; Community Attributes Inc., 2022.

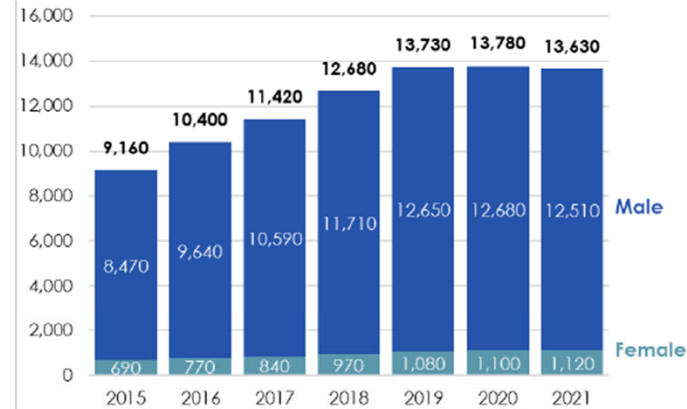
Historic Construction Apprenticeships

Apprenticeships by Gender and Race

Male apprentices represented a disproportional number of total apprentices from 2015 to 2021. During this period, **92% to 93% of total construction apprentices were male.**

Similarly, a large proportion of apprenticeships have been held by white workers. However, from 2015 to 2021 the share of white apprentices has steadily declined from 75% to 68%. During this time period, **Hispanic apprentices have garnered a larger share, growing from 10% in 2015 to 15% in 2021.**

Apprentices by Gender, RPO Occupations, King, Pierce and Snohomish Counties, 2015-2021



Apprentices by Race, RPO Occupations, King, Pierce and Snohomish Counties, 2015-2021

Race	Share of Construction Apprentices						
	2015	2016	2017	2018	2019	2020	2021
White	75%	73%	72%	71%	70%	70%	68%
Hispanic	10%	11%	12%	13%	13%	14%	15%
Black or African American	6%	7%	7%	7%	7%	6%	7%
Native Hawaiian or Pacific Islander	2%	2%	3%	3%	3%	3%	3%
Asian	2%	2%	2%	3%	3%	3%	3%
American Indian or Alaska Native	3%	3%	2%	3%	3%	2%	2%
Not specified or elsewhere classified	1%	2%	2%	2%	2%	2%	2%

Sources: Washington State Department of Labor and Industries, 2022; Community Attributes Inc., 2022.

Projected Construction Apprenticeships

Projected Apprentices by Status

Construction electricians, carpenters, and laborers are projected to have the highest number of average annual first-year, active and completed apprentices from 2022 through 2026, in the tri-county region.

These three occupations represent 44% of projected first-year apprentices, 45% of active apprentices and 43% of completions annually.

On average, a projected 2,680 apprentices are expected to join annually between 2022 through 2026.

During this period, active apprentices are projected at 9,160 annually. Apprentice completions are projected to total 950 annually between 2022 and 2026.

Sources: Washington State Department of Labor and Industries, 2022; Community Attributes Inc., 2022.

Projected Apprentices by Status, RPO Occupations, King, Pierce and Snohomish Counties, 2022-2026

Occupation	Average Annual Apprentices (2022-2026)		
	First-Year	Active	Completed
Construction Electrician	440	2,090	170
Carpenter	330	1,080	130
Laborer	400	990	110
Residential Sheet Metal Worker	130	630	60
Plumber	110	610	40
Ironworker	160	530	50
Sprinkler Fitter	60	480	30
Lathing Acoustical Drywall Systems Installer	170	340	40
Electrician Constructor	40	330	30
Construction Equipment Operator	60	260	30
Elevator Constructor Mechanic	80	260	40
Cement Finishers	160	220	30
Machinist	60	220	40
Roofer	120	140	20
Painter and Decorator	80	130	20
Piledriver Bridge Dock & Wharf Builder	20	110	9
Asbestos Worker	10	110	9
Commercial Glazier	40	110	20
Refrigeration Mechanic	40	100	10
Millwright	6	70	3
Brick Layer	40	70	8
Boilermaker	6	60	5
Plasterer	30	40	3
Heavy Duty Repair Mechanic	10	30	7
Tile/Terrazzo/Marble Finisher	30	30	6
Heating/Air Conditioning Installer & Servicer	9	30	2
Insulation Applicator	30	20	10
All Other Occupations	9	70	18
Total	2,680	9,160	950

Projected Construction Apprenticeships

Projected RPO Construction Apprenticeship Demand

Apprenticeship demand for RPO construction occupations is projected at about 1,000 apprentices per year on average between 2022 and 2026. This is roughly a 19% apprentice utilization rate.

Construction laborers, carpenters, electricians, and operating engineers are projected to experience the greatest demand for apprentices between 2022 and 2026.

Together, these occupations account for nearly 75% of all projected RPO apprenticeship demand.

Projected RPO Construction Apprenticeship Demand by Occupation, King, Pierce and Snohomish Counties, 2022-2026

Occupation	2022	2023	2024	2025	2026	Average 2022-2026
Construction Laborers	340	310	290	210	220	300
Carpenters	230	210	200	140	160	190
Electricians	180	170	160	110	130	150
Operating Engineers	120	120	110	80	80	100
Ironworkers	90	80	80	60	70	80
Plumbers	50	40	40	30	40	40
Cement Masons and Finishers	40	40	30	20	30	30
Sheet Metal Workers	20	20	20	10	20	20
Painters	10	20	20	10	10	10
<i>Other Occupations</i>	130	120	120	110	100	90
Total	1,210	1,130	1,070	780	860	1,010

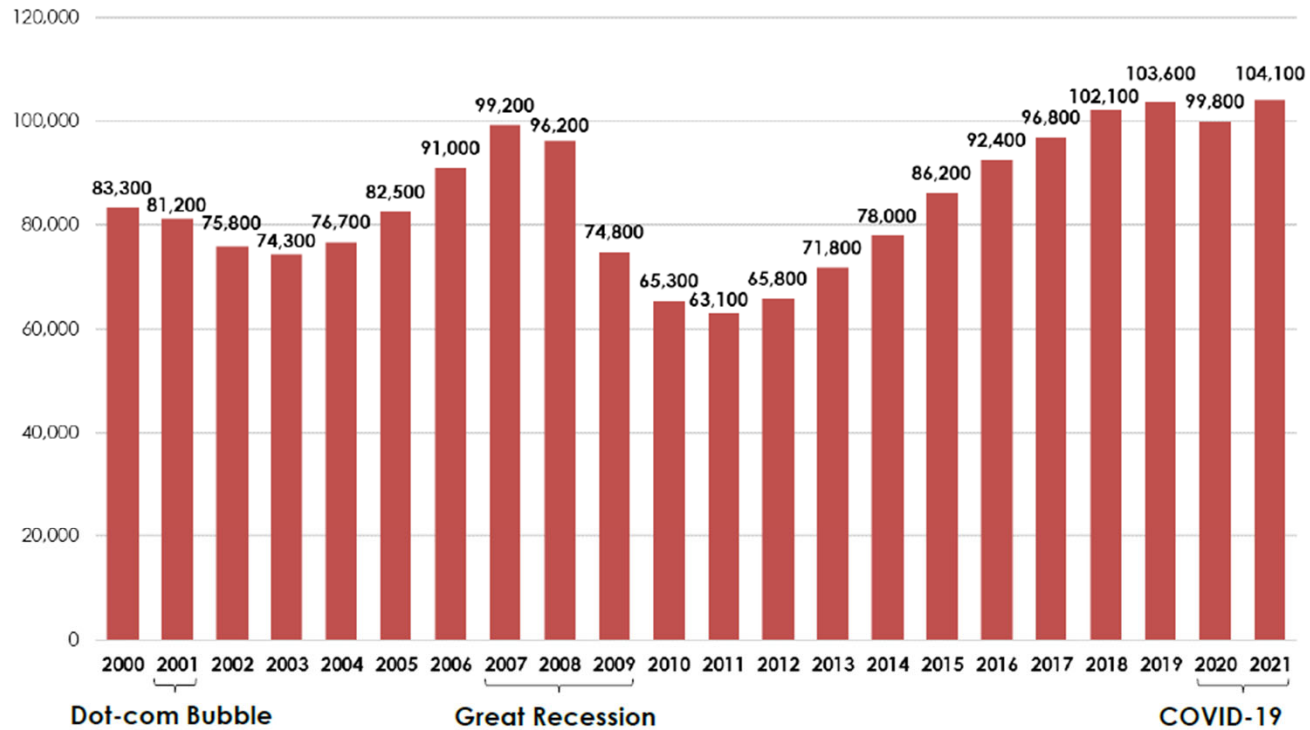
Sources: RPO Agencies, 2022; Washington State Employment Security Department, 2022; Washington State Department of Revenue, 2022; Community Attributes Inc., 2022.

Note: Construction laborers includes flaggers.

Pandemic Impacts on Regional Construction Industry

Pandemic Impacts

Average Construction Employment, King, Pierce, and Snohomish Counties , 2000 – 2021



Sources: Washington State Employment Security Department, 2022; Community Attributes Inc., 2022.

Since 2000, construction employment in the tri-county region has fluctuated between 63,100 and 104,100 workers. Following the Great Recession, construction employment hit its lowest point since 2003 before steadily increasing until 2020. Average employment in 2020 totaled 99,800. Employment quickly recovered to pre-pandemic levels in 2021.

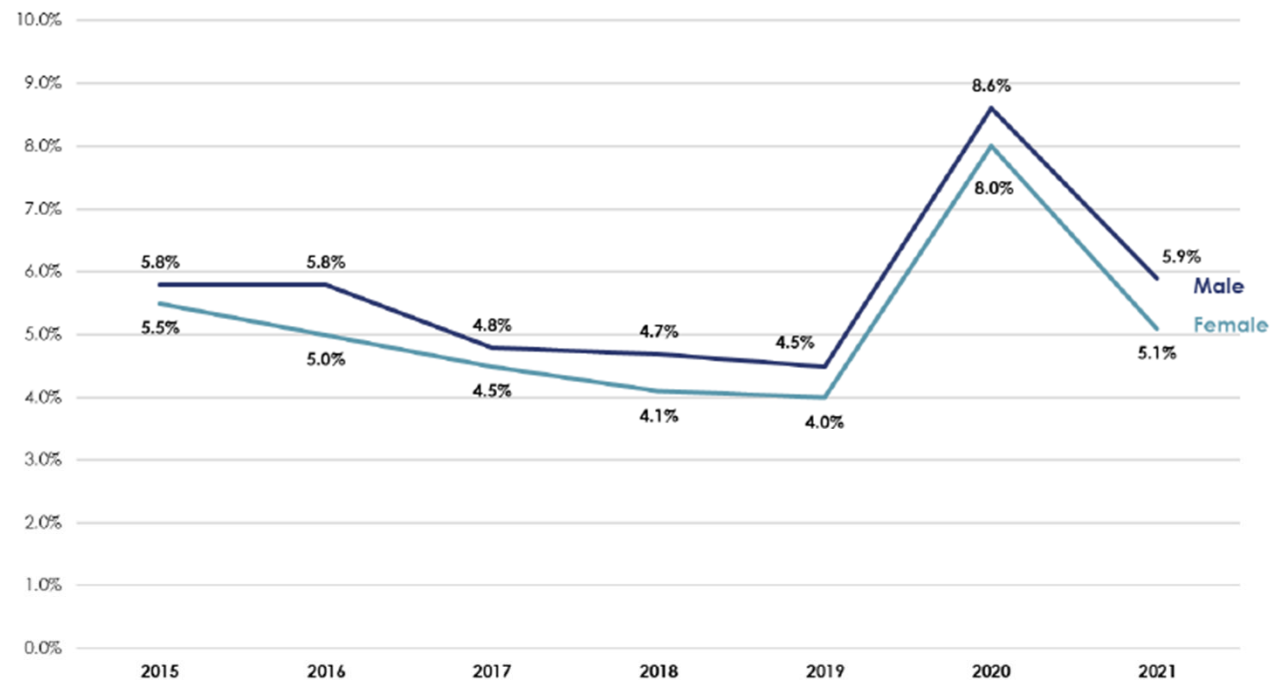
Pandemic Impacts

Unemployment Rate by Gender

Historically, the statewide unemployment rate among **men working across all industries has been slightly higher than women.**

In 2020, the average unemployment rates for men and women peaked at 8.6% and 8.0%, respectively.

Unemployment Rate by Gender, All Industries, Washington State, 2015 - 2021



Sources: Bureau of Labor Statistics, 2022; Community Attributes Inc., 2022.

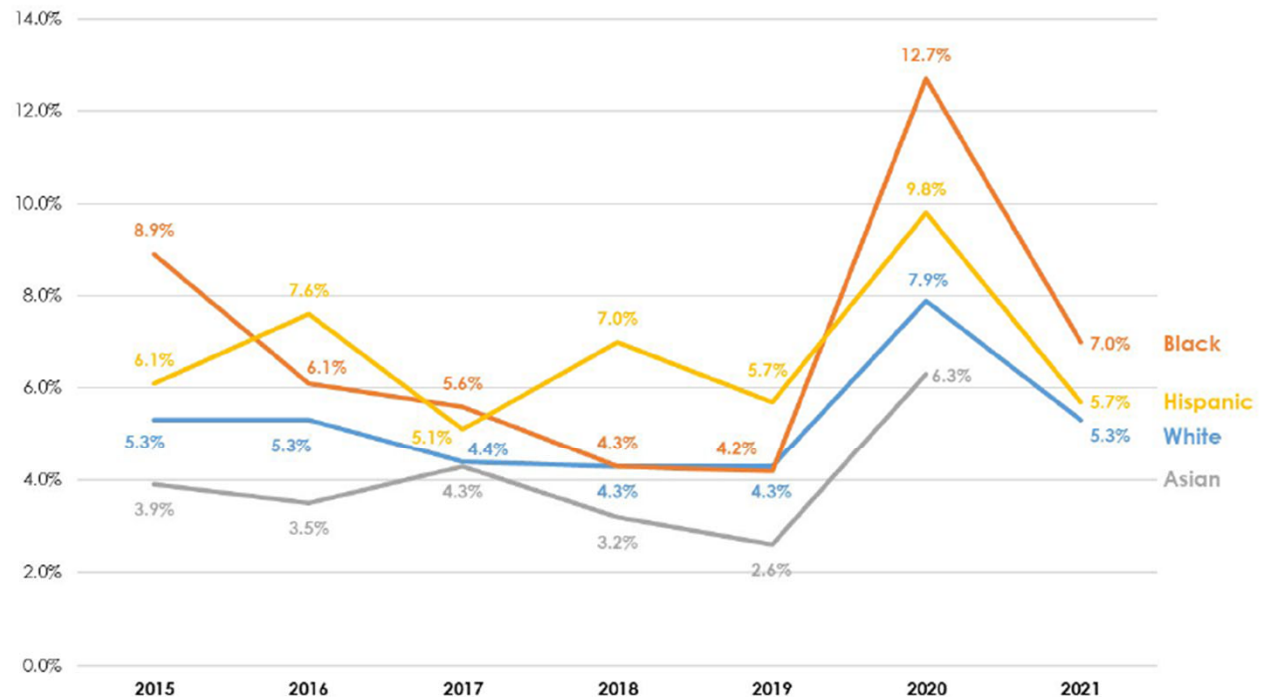
Pandemic Impacts

Unemployment Rate by Race

Washington's black workers suffered the **highest unemployment rate in 2020 with a rate of 12.7%**, despite recording rates near 4% in the two years leading into the pandemic.

Hispanic workers experienced the next highest rate of unemployment in 2020, **9.8%**, but returned to pre-pandemic levels in 2021.

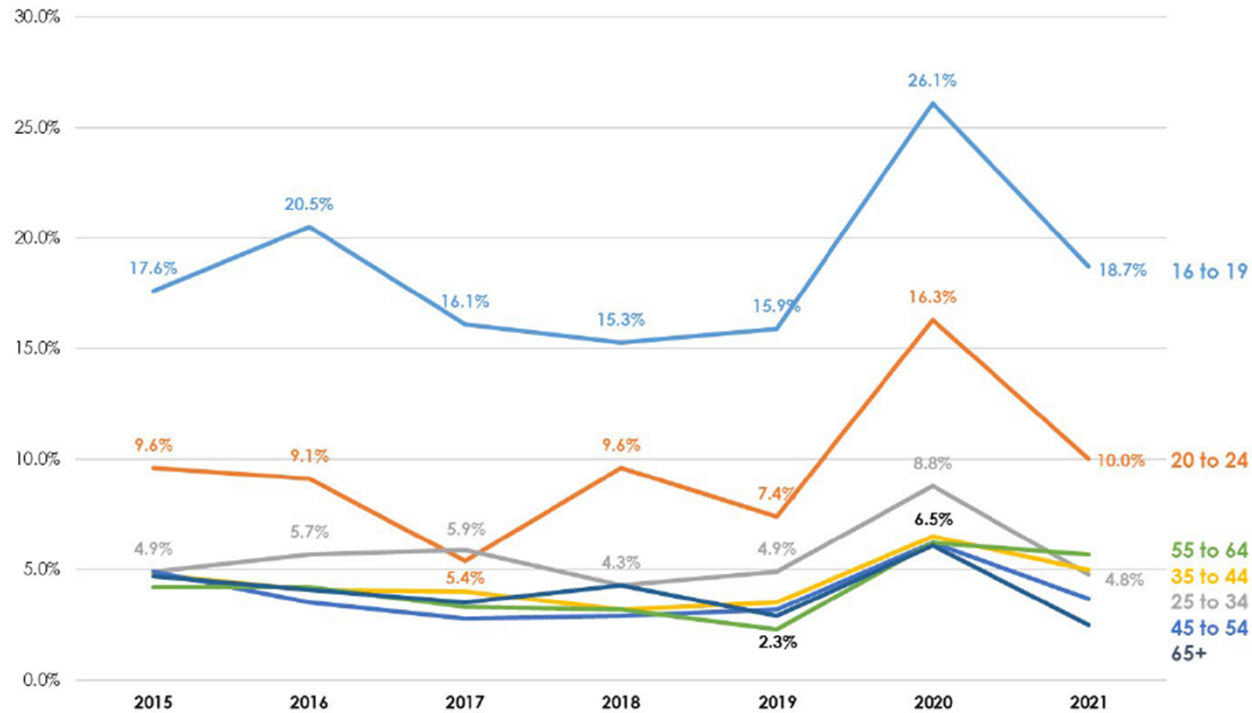
Unemployment Rate by Race, All Industries, Washington State, 2015 - 2021



Sources: Bureau of Labor Statistics, 2022; Community Attributes Inc., 2022.
Note: 2021 Unemployment data for the Asian demographic is currently unavailable.

Pandemic Impacts

Unemployment Rate by Age, All Industries, Washington State, 2015 - 2021



Sources: Bureau of Labor Statistics, 2022; Community Attributes Inc., 2022.

Younger workers, between the ages of 16 and 34, reported the highest rates of unemployment in 2020. Workers 35 and older experienced similar unemployment rates during 2020, peaking at about 6.5%, about 4% higher than pre-pandemic levels.

Thank you.



 [soundtransit.org](https://www.soundtransit.org)

