

Alaska women in construction

Women a small slice of an industry facing growing demand

By KARINNE WIEBOLD

The U.S. construction industry is adding jobs at a faster clip than the overall economy, and its job openings are at a data series high. Estimates for 2024 show U.S. construction outperforming total employment growth at 3 percent over the year compared to 1.8 percent, and the industry had 434,000 open positions.

Construction openings are only available at the national level, but it's reasonable to assume Alaska is also at a high point. Alaska's job openings across all industries put us above the national rate as well as our neighboring states.

Alaska's construction job count hit an eight-year peak in 2023. The pandemic's damper on the industry was brief, with 2020's job losses just half as severe as all industries combined. Despite supply chain snarls, construction resumed adding jobs the next year and then boomed in 2023 with an additional 1,000 jobs. (For an overview of the industry in Alaska, see the sidebar on page 9.)

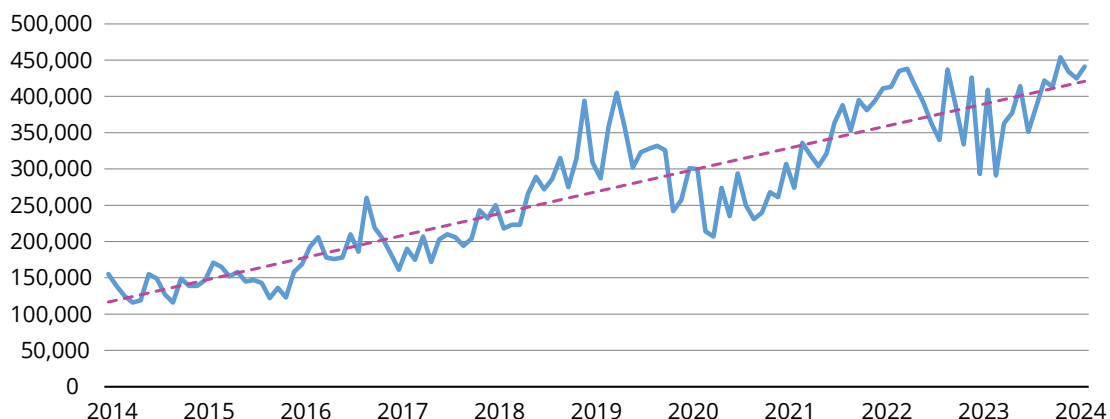
Federally supported infrastructure and broadband projects are getting started and oil activity is up on the North Slope, which will juice employment for at least the next several years.

We forecast an additional 1,100 jobs in 2024, and the Associated General Contractors of Alaska's annual construction industry spending report anticipates 2024 will be \$810 million higher than 2023, with growth in both public and private spending.

The federal and oil project spending windows are limited, however — the federal infrastructure projects will wrap up around 2031 and Willow and Pikka are set to produce before 2030 — so the demand for workers will be high and Alaska will compete for workers as other states carry out similar infrastructure projects. Even in a typical year without that additional demand, nearly 20 percent of construction workers come from out of state and work primarily in the summer.

The growing need for construction workers comes amid an already tight labor market, driven by

National construction job openings are on a long upward trajectory



Note: Seasonally adjusted

Source: U.S. Bureau of Labor Statistics, Job Openings and Labor Turnover Survey

The top 15 occupations for women in Alaska construction industry, 2022

Occupation	Women	Avg wage	Avg age	Pct women	Pct of wages	Earnings ratio*
Construction Laborers	410	\$34,860	37	11%	10%	82%
Bookkeeping, Accounting, and Auditing Clerks	279	\$51,608	47	85%	82%	84%
Office and Admin Support Workers, All Other	227	\$46,929	41	66%	57%	68%
Office Clerks, General	216	\$41,507	42	74%	66%	69%
Secretaries/Admin Assts (exc Legal, Medical, Exec)	153	\$38,784	41	87%	86%	96%
Operating Egrs/Other Const Equip Operators	129	\$61,575	39	8%	6%	75%
Chief Executives	68	\$48,055	36	13%	11%	80%
Carpenters	68	\$32,429	36	3%	2%	57%
1st-Line Supervisors of Office/Admin Support	64	\$55,790	43	77%	66%	57%
Receptionists and Information Clerks	58	\$31,564	42	89%	92%	142%
Executive Secretaries and Admin Assistants	57	\$48,862	46	85%	92%	203%
Electricians	56	\$49,094	31	5%	3%	72%
Helpers, Construction Trades, All Other	52	\$34,902	36	15%	15%	100%
Construction and Related Workers, All Other	51	\$33,690	39	9%	6%	59%
Construction Managers	48	\$78,758	46	9%	6%	67%

Office jobs

Field jobs

*The earnings ratio is women's average annual earnings as a percentage of men's.

Source: Alaska Department of Labor and Workforce Development, Research and Analysis Section

changing demographics — an older population nationwide and fewer people at the prime working ages.

One possible way for the industry to broaden its worker pool is to recruit from a large group vastly underrepresented in its numbers: women.

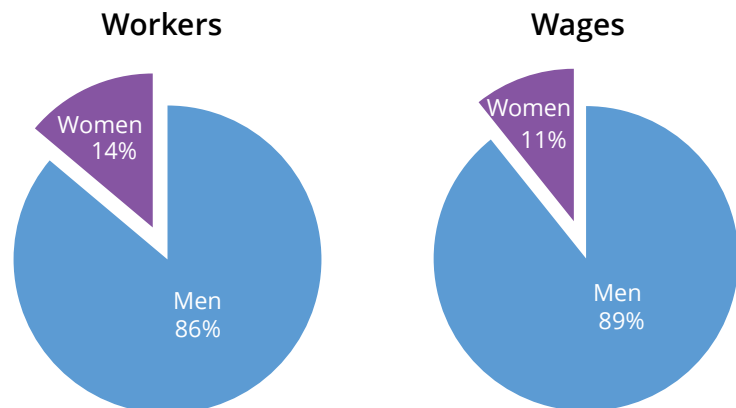
What might make a difference?

Women work in construction in Alaska, but you might not see it when driving past work sites. That's because they represent just 14 percent of the state's construction workers, and most of them work in the office.

Making construction more attractive to women could benefit the industry beyond filling open positions. Multiple national reports show women bring a range of complementary qualities to the work site.

For example, a 2023 study conducted by the National Center for Construction Education and Research found that women are team-oriented on-site and cautious with materials and machinery. The disparity in strength and size is less of an issue with modern tools such as hydraulic lifts and

Gender breakdown in Alaska construction, 2022



Source: Alaska Department of Labor and Workforce Development, Research and Analysis Section

cranes — and one of the reasons women are less likely to get hurt on the job is they are more likely to use assistive tools than rely on strength.

Another possible benefit in the coming years could come through competitive federal contracts, which offer preference to women-owned construction businesses. With billions in federal funding coming into the state for infrastructure projects, an advantage like that could provide a leg up on the competition.

The most compelling reason to hire more women may simply be that the industry needs more workers, and women are another potential source.

Women and men in the largest construction occupations, 2022

	Total wkrs	Men	Men's avg wage	Women	Women's avg wage	Percent women	Earnings ratio*
Construction Laborers	3,576	3,166	\$42,665	410	\$34,860	11%	82%
Carpenters	2,039	1,971	\$56,542	68	\$32,429	3%	57%
Operating Egrs/Other Const Equip Opers	1,698	1,569	\$82,638	129	\$61,575	8%	75%
Electricians	1,230	1,174	\$68,569	56	\$49,094	5%	72%
Plumbers, Pipefitters, Steamfitters	892	874	\$69,971	18	\$32,961	2%	47%
Construction Managers	553	505	\$117,839	48	\$78,758	9%	67%
Construction and Related Wkrs, Other	541	490	\$56,650	51	\$33,690	9%	59%
Painters, Construction/Maintenance	530	488	\$37,460	42	\$28,560	8%	76%
Chief Executives	506	438	\$60,308	68	\$48,055	13%	80%
Heavy/Tractor-Trailer Truck Drivers	478	443	\$64,190	35	\$55,370	7%	86%

*The earnings ratio is women's average annual earnings as a percentage of men's.

Source: Alaska Department of Labor and Workforce Development, Research and Analysis Section

About the data

This article refers to both workers and jobs. Those numbers differ because a single job can be held by more than one worker over a specific period, and one worker can hold multiple jobs.

For jobs data, we used the Quarterly Census of Employment and Wages and the Current Employment Statistics. For workers, we matched worker data the Department of Labor and Workforce Development collects through the state's unemployment insurance program with demographic data from Alaska Permanent Fund Dividend applications.

Because we included only those who were eligible for unemployment insurance and applied for a dividend, this analysis doesn't capture most nonresidents, who make up about 18 percent of the state's construction workforce. It also excludes those who didn't specify a gender, the self-employed, and federal civilian and military workers. We assigned workers with multiple jobs to the industry and occupation where they earned the most money.

The difference between women's and men's wages is influenced by many factors, including experience, training, education, hours worked, job and industry choice, and discrimination. Multiple studies have attempted to measure and explain the reasons for the wage gap. While that type of analysis is mostly outside the scope of this article, the data shown here suggest where further research could be promising.

The challenges of making these jobs more accessible to women

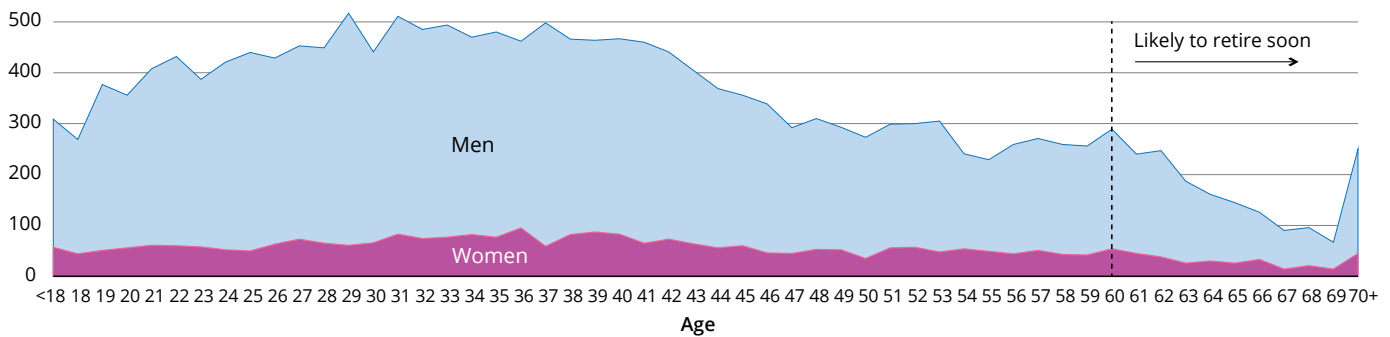
Unlike most major Alaska industries, where men and women work in fairly equal numbers, construction has long been the realm of men; only oil and mining are similarly tilted. Some of the reasons, such as simple occupational preference, are less likely to change, but addressing practical barriers to women working in construction could narrow the gap.

For example, women need appropriate personal protective gear such as hard hats, work gloves, and ear and eye protection. For a long time, "shrink it and pink it" was the approach to outfitting female construction workers — that is, take whatever personal protective gear men use and make it smaller and more feminine-looking. The Occupational Safety and Health Administration has confirmed what women already knew, though, that women are not just smaller versions of men, and equipment should be specific to their needs and proportions.

Worksites also need secure and designated bathrooms and an inclusive and safe culture. That includes protection from obvious harassment and discrimination, but women in construction also report feeling uncomfortable bringing problems to management's attention because they are indirectly or directly punished for doing so. Some remedies besides training include formal complaint processes and whistleblower protections.

Other obstacles affect all workers, but disproportionately women. Remote work sites and long

Men in construction are younger, but far more are headed for retirement, 2022



Source: Alaska Department of Labor and Workforce Development, Research and Analysis Section

shifts discourage women with caretaking responsibilities, for example. The ability to take leave on short notice, paid or unpaid, is important to many women as they carry more of the burden with household interruptions from school, child care, or medical care.

While short seasons, tight timelines, and long commutes are often the nature of the work, increased flexibility when possible makes these occupations more accessible to women.

Finally, more women might consider construction if they are encouraged to enter training programs and apprenticeships and believe hiring procedures

will give them a fair shot. Employers can have blind application processes to avoid the distraction of name and gender when assessing an applicant. They can also guard against inadvertently limiting their female workers by automatically giving them the physically easier jobs.

A look at the women already working in construction

Even though Alaskan women are scarce in construction, almost 3,000 worked in the industry in 2022 and earned a combined \$136 million. (For

The top 20 federally funded infrastructure projects in Alaska

Location	Project	Amount
Statewide	National Highway Performance Program	\$362,707,359
Nome	Port of Nome	\$250,000,000
Statewide	Rural Ferry Service	\$209,000,000
ALCAN Border	ALCAN Border Station	\$187,000,000
Seward	Lowell Creek	\$185,000,000
Statewide	Surface Transportation Block Grant Program	\$176,452,228
Kodiak	USCG Base Kodiak Fuel Pier Upgrade	\$130,000,000
North Pole	Moose Creek Dam	\$88,000,000
Statewide, Anc, Fbx	FTA FY22 Apportionment	\$77,401,427
Statewide	Denali Commission	\$75,000,000
Anchorage	Port of Alaska	\$68,700,000
Calista Region	Calista for fiber across 10 villages	\$52,600,000
Statewide	Bridge Formula Program	\$45,000,000
Bethel, Platinum, Eek, Napaskiak, Oscarville	Bethel Native Corporation for fiber network	\$42,000,000
Kodiak	USCG Base Kodiak Housing	\$40,000,000
Kodiak	USCG Base Kodiak Childcare Development Facility	\$40,000,000
Statewide	Highway Safety Improvement Program	\$39,902,549
Statewide	Alaska Marine Highway System, FHWA Ferry Boat Program	\$35,625,580
Bristol Bay Region	Deploy fiber for the Bristol Bay region	\$34,885,420
Haines Borough, Hoonah Angoon Census Area, Skagway	Alaska Telephone Company fiber-to-premises network	\$33,017,636

Source: Office of U.S. Sen. Lisa Murkowski, projects funded by the Infrastructure Investment and Jobs Act

worker and occupational data, 2022 is the most recent full year available.)

Overall, women's wages in construction are about 75 percent of men's. Roughly half of the women work office jobs, where women earn more than men. However, the disparity in wages for nonoffice construction jobs — those in the field — is large enough to pull women's average wage in the industry down to the 75 percent level.

We found women in more than 171 construction-related occupations, but they were concentrated in a few. (See the tables on pages 5 and 6.) Two-thirds worked in 15 occupations, with almost all of the other occupations — 126 out of 156 — having fewer than 10 women each.

Of the top five construction jobs for women, four are in the office and just one is in the field: construction laborer.

Wage trends and the pay gap

The top jobs list also shows that when women make up the majority of an occupation's workers, the wage gap shrinks or even disappears. This is also the case in other industries, but the phenomenon is dramatic in construction.

Several types of jobs pay women more than men, but the earnings ratio was 73 percent for the top 15 occupations combined in 2022 — slightly less than for the overall industry. (The earnings ratio is the percentage of men's average wage that women earn for the same types of work. It's sometimes expressed as "women in construction make 75 cents on a man's dollar.") Occupations with a large pay gap and significant numbers of men — for example, carpenters, construction workers, and construction managers — pull down the female earnings ratio for the top 15 jobs.

Eight of the top 15 jobs for women paid more than average for women in construction overall, which was \$46,095 a year. These include physically

demanding jobs such as operating engineers, electricians, and construction managers.

Women working as construction managers made \$78,758 on average and operating engineers (think heavy equipment operators) brought in \$61,575. Although women in these positions made the most money, the construction managers earned just 67 percent of what men made in that job and operating engineers earned 75 percent.

Women made a relatively strong showing as construction laborers (410 workers), operating engineers (129), carpenters (68), and electricians (56), but they still only represented between 3 and 11 percent of those occupations.

What the age distribution shows

Women in construction are slightly older than men on average (40.4 years and 39.3, respectively, in 2022), with the disproportionate number of office workers pulling up women's average age. However, it isn't just office workers. Construction laborer was the largest occupation overall for both men and women, and the women averaged 2.2 years older.

In other field work, however, women working as operating engineers and carpenters averaged four years younger than the men. Among electricians, women were seven years younger. A significant age gap suggests women in these jobs are less experienced and may earn less as a result, but it also shows women are increasingly entering those fields.

In the oldest age group, those 60 and older, 85 percent of the 2,244 workers were men. That split is similar to the industry overall, but it's worth noting that 10 percent of the construction workforce is 60 or older, so the industry will continue to need a pipeline of younger workers of both genders to meet demand.

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An overview of Alaska's construction industry

The construction industry in Alaska represents just 5 percent of total jobs, similar in size to the oil and gas industry. Both are small but pay much higher-than-average wages. Alaska's average 2022 wage was \$64,706, and construction paid 31 percent more at \$85,035. (Oil and gas paid a whopping 140 percent more, at \$155,074 on average.)

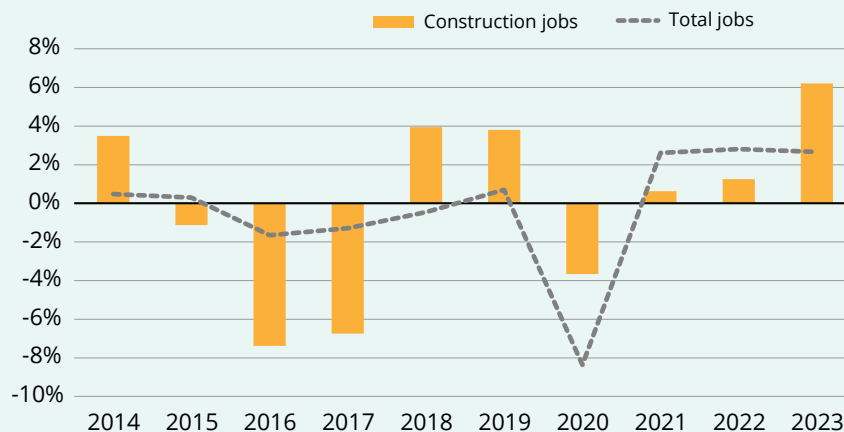
Construction's job count peaked in 2005 at 19,100, around the same time home building hit a high, although housing is just one category. In the most recent decade, 2014 was the high at 17,800 jobs.

The statewide recession that followed hit construction especially hard, but the industry also pulled out of the hole faster than the overall economy. In 2016 and 2017, construction's job losses were four and five times steeper than all industries combined, but growth resumed the following year with extra private spending in the oil and gas sector (the same sector that precipitated that recession). The next year, earthquake repairs in Southcentral added to the growth from oil and gas and national defense spending.

The industry lost 4 percent of its jobs when the pandemic hit in 2020, but it added back small numbers of jobs over the next two years and then boomed in 2023 to an eight-year employment high. (See the main article for more on recent job counts.) While 2024's forecast is similarly high — another 1,000 jobs and billions more in spending — the outlook further into the future, after the current infrastructure and extraction spending winds down, is muted.

The industry is split into three major categories: heavy and civil engineering construction (roads, bridges, dams, etc.), construction of buildings (residential and nonresidential), and specialty trade contractors

Construction hit during recession, less during COVID



Sources: Alaska Department of Labor and Workforce Development, Research and Analysis Section; and U.S. Bureau of Labor Statistics

(electric, plumbing, tile, etc.). Specialty trade contractor is by far the biggest group, with 7,271 jobs in 2022, followed by the construction of buildings with 5,094 jobs, and then heavy construction at 3,749.

The national distribution is similar but with a higher percentage of companies listed as specialty trade contractors, likely because Alaska companies act more as general contractors on projects.

Heavy construction pays the highest wages, followed by construction of buildings. That's because heavy construction is often at remote work sites, mainly outdoors, and relies on heavy equipment with a shorter season that often requires overtime.

July's construction job count is more than 40 percent higher than January's, and that seasonality combined with remote work and the need for specialized skills requires additional nonresident labor.

In recent years, nonresidents made up about 18 percent of the industry, bringing an additional 4,500 workers into the state each year. That percentage used to be higher, though, and it's likely to go up again over the next few years with the increase in projects and competition for more workers.