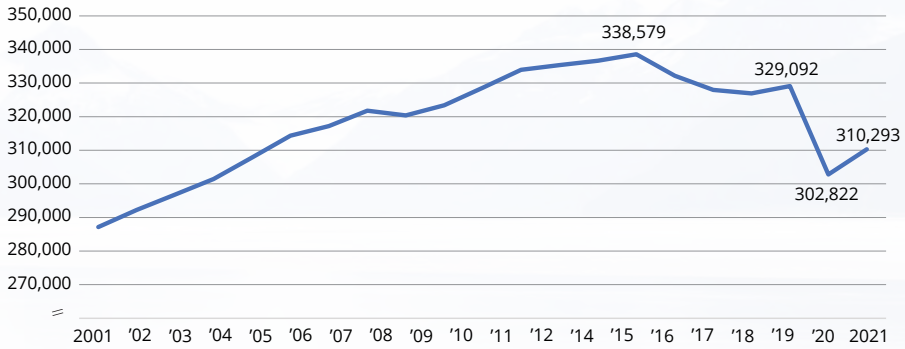
10-year industry projections

Growth looks different when we figure in pandemic job recovery

By PAUL MARTZ

More than two years after the pandemic began, Alaska is still recovering our pre-pandemic job counts, and we aren't alone in our slow recovery. In the first half of 2022, only 18 states had more jobs than they'd had in the first half of 2019. (See the table on the next page.) Our recovery ranked 47th through that period.

Total Alaska job count, 2001 to 2021



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

Recovery drivers are complex and variable; supply chain problems, worker shortages, inflation, and COVID-19 spikes have affected states differently. Most states that recovered quickly had been growing faster before the pandemic.

The pandemic has complicated almost everything, and the job projections are no exception. Projections use Alaska's historical trends to look ahead, so with the upheaval of the last few years, putting this release's base year in context required some adjustments. Because the lows of 2020 aren't a representative benchmark, we have included 2019's job numbers to clarify the gains and losses we anticipate through 2030 and to separate regular job growth from pandemic recovery.

Uncharted territory: How 2020 as starting point skews the numbers

The magnitude and speed of the losses in 2020 were a first for Alaska — we lost 26,270 jobs in a single year. For context, the previous recession (from 2015-2018) cost the state roughly 11,600 jobs, and the 1986-1987 recession eliminated 20,500.

At the lowest pandemic point in May 2020, Alaska was down 45,717 jobs from the previous May. The largest comparable decline during the 1980s recession was 18,500 jobs in September 1986. September was also the peak loss month for the 2015-2018 recession (-9,900).

Here's an example of how one hard-hit sector's projected job growth differs if we use 2020 as the starting point instead of 2019, which shows why we need a stable period for comparison.

With 2019 as the base year, total projected growth for the accommodation and food services sector — one of the biggest pandemic losers — is 3.4 percent (1,082). But if we start from 2020, projected growth is a whopping 38.4 percent (9,061). That's because the 2020 start date figures in recovery of all the jobs the sector lost that year, which form the bulk of its projected decade growth.

Growth rates in the 20s and beyond are rare in Alaska, especially in large, well-established industries.

Marijuana will carry agriculture

Agriculture is one of the few sectors that didn't lose jobs during the pandemic because the marijuana industry continued to grow. (Marijuana cultivation

falls under greenhouse, nursery, and floriculture production). The still-small industry added 73 jobs from 2019 to 2020. That was slower than it grew the year before, but that it grew at all in 2020, when big losses were the norm, is notable.

The marijuana industry has boomed since 2016, the year businesses got a foothold after legalization, growing 524 percent. While we expect growth to continue, some markets may be approaching saturation. For now, ample tourist dollars and continued expansion into smaller markets throughout the state continue to generate job growth.

We project the broader agriculture sector will add 657 new jobs from 2020 to 2030, with 578 of those in greenhouses — a massive 86.4 percent growth rate for greenhouses and 42.9 percent for agriculture overall.

Very slow recovery for oil and gas

The oil and gas industry lost 2,046 jobs from 2019 to 2020 and another 1,489 in 2021. These losses followed declines from 2015 through 2018, then a brief uptick in 2019 before the pandemic hit.

From peak employment in 2015 through 2021, the combined oil and gas industries lost 8,406 jobs. Given the long streak of losses, we project they'll be slow to recover and settle slightly above pre-pandemic job counts in 2030.

In mid-August 2022, oil and gas companies Santos and Repsol announced their Pikka project will move into phase 1. This project will create a slew of temporary jobs but a much smaller number of permanent jobs, in line with what we project for this decade.

The other potential North Slope development, ConocoPhillips' Willow project, is moving through a supplemental environmental review process with a decision due later this year or in early 2023. If approved, this project will follow Pikka's development trend, bringing a wave of short-term construction jobs followed by fewer permanent jobs operating the field.

Mining growth mainly through existing projects

From 2020, mineral mining will add a projected

Text continues on page 8

Pandemic job recovery by state

	2019*	2022*	Change	Pct chg
Idaho	750,900	811,067	60,167	8.0%
Utah	1,543,467	1,652,767	109,300	7.1%
Montana	479,083	501,433	22,350	4.7%
Texas	12,716,383	13,240,667	524,283	4.1%
Arizona	2,916,383	3,030,300	113,917	3.9%
Florida	8,922,083	9,269,983	347,900	3.9%
North Carolina	4,554,583	4,708,817	154,233	3.4%
Georgia	4,590,450	4,743,117	152,667	3.3%
Tennessee	3,100,033	3,195,183	95,150	3.1%
Colorado	2,763,017	2,831,983	68,967	2.5%
Arkansas	1,278,417	1,306,950	28,533	2.2%
Nevada	1,407,967	1,436,683	28,717	2.0%
South Dakota	436,533	443,050	6,517	1.5%
Washington	3,437,150	3,464,183	27,033	0.8%
South Carolina	2,177,250	2,193,817	16,567	0.8%
Indiana	3,147,600	3,158,683	11,083	0.4%
California	17,316,633	17,357,833	41,200	0.2%
Nebraska	1,021,433	1,022,300	867	0.1%
Kentucky	1,932,750	1,931,650	-1,100	-0.1%
Alabama	2,067,817	2,066,617	-1,200	-0.1%
Mississippi	1,155,783	1,154,917	-867	-0.1%
Missouri	2,901,283	2,894,767	-6,517	-0.2%
New Jersey	4,167,433	4,153,650	-13,783	-0.3%
Maine	627,883	625,533	-2,350	-0.4%
Oregon	1,942,617	1,934,300	-8,317	-0.4%
Virginia	4,034,667	4,017,117	-17,550	-0.4%
New Hampshire	679,883	676,050	-3,833	-0.6%
New Mexico	848,800	842,600	-6,200	-0.7%
Massachusetts	3,666,367	3,617,867	-48,500	-1.3%
Iowa	1,580,433	1,558,483	-21,950	-1.4%
Oklahoma	1,699,367	1,671,767	-27,600	-1.6%
Wyoming	287,117	281,650	-5,467	-1.9%
Delaware	463,117	454,150	-8,967	-1.9%
Kansas	1,418,550	1,390,767	-27,783	-2.0%
Illinois	6,084,550	5,961,433	-123,117	-2.0%
Wisconsin	2,970,950	2,905,850	-65,100	-2.2%
Rhode Island	499,767	488,467	-11,300	-2.3%
Maryland	2,755,183	2,692,017	-63,167	-2.3%
Ohio	5,560,083	5,427,200	-132,883	-2.4%
Pennsylvania	6,030,050	5,884,583	-145,467	-2.4%
Minnesota	2,961,150	2,880,350	-80,800	-2.7%
Michigan	4,422,767	4,300,483	-122,283	-2.8%
West Virginia	719,083	698,867	-20,217	-2.8%
Connecticut	1,688,000	1,637,200	-50,800	-3.0%
North Dakota	438,183	423,283	-14,900	-3.4%
New York	9,724,950	9,342,100	-382,850	-3.9%
Alaska	**325,033**	**311,367**	**-13,667**	**-4.2%**
Louisiana	1,993,667	1,903,967	-89,700	-4.5%
Vermont	315,650	297,333	-18,317	-5.8%
Hawaii	657,717	602,917	-54,800	-8.3%

Note: Compares first six months of 2019 to first six months of 2022; data subject to revision

Source: U.S. Bureau of Labor Statistics, Current Employment Statistics

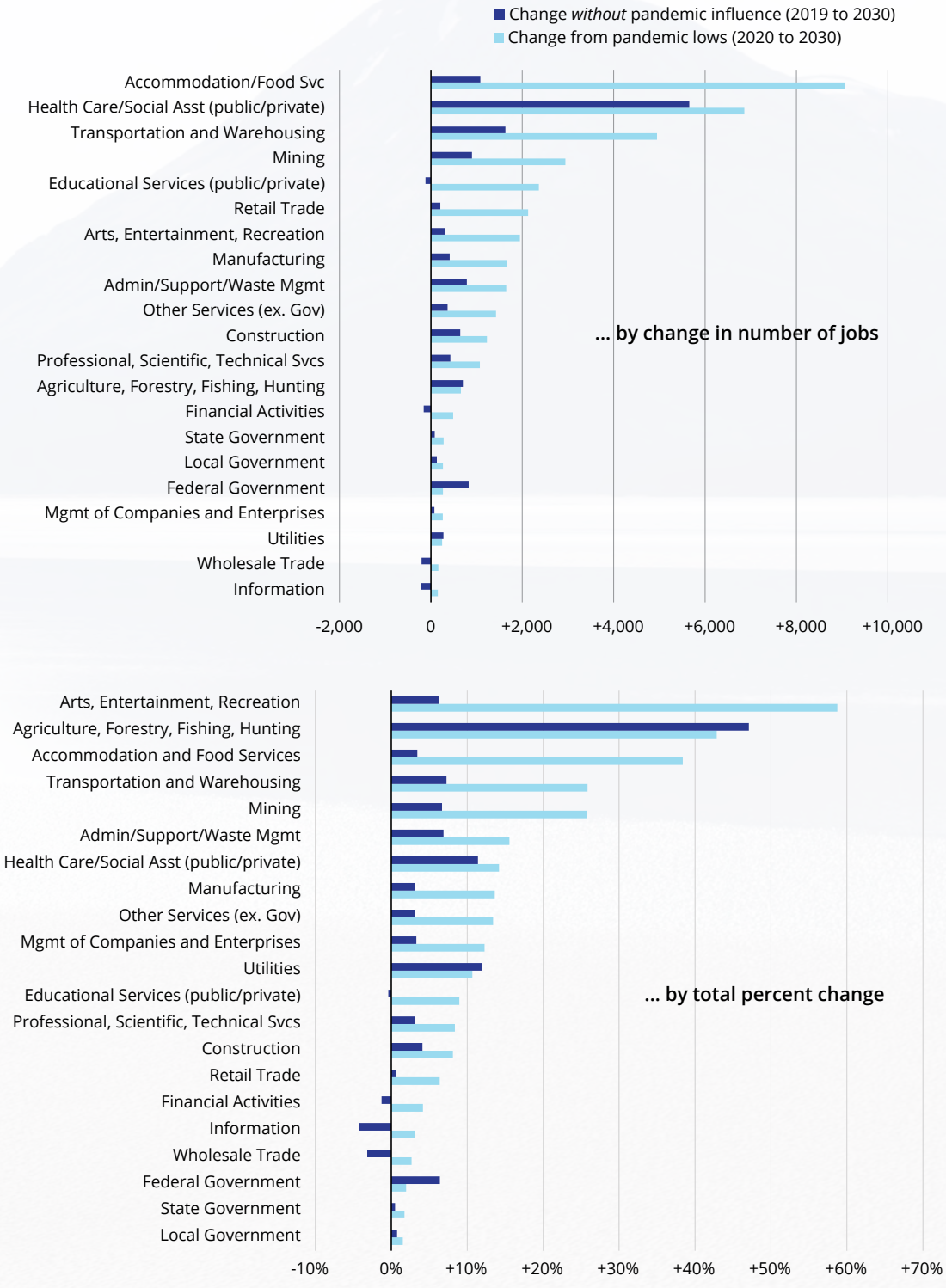
Alaska industry[1] projections, 2019 and 2020 to 2030

	2019 est jobs[2]	2020 est jobs[2]	2030 projected	Change, 2020-30	Change, 2019-30	% change, 2020-30[3]	% change, 2019-30[3]
Total Employment[4]	**329,092**	**302,822**	**342,955**	**40,132**	**13,862**	**13.3%**	**4.2%**
Goods-Producing	44,100	40,274	46,758	6,484	2,658	16.1%	6.0%
Natural Resources and Mining	14,973	12,975	16,575	3,599	1,601	27.7%	10.7%
Agriculture, Forestry, Fishing and Hunting	1488	1532	2189	657	701	42.9%	47.1%
Mining	13,485	11,443	14,386	2,943	900	25.7%	6.7%
Oil and Gas[5]	10,225	8,179	10,311	2,132	85	26.1%	0.8%
Oil and Gas Extraction	3,528	3,208	3,491	284	-37	8.9%	-1.0%
Mining (except Oil and Gas)	2,988	3,058	3,663	605	674	19.8%	22.6%
Support Activities for Mining	6,969	5,178	7,232	2,054	263	39.7%	3.8%
Construction	15,736	15,152	16,381	1,229	645	8.1%	4.1%
Construction of Buildings	4,598	4,570	4,884	315	287	6.9%	6.2%
Heavy and Civil Engineering Construction	3,762	3,474	3,894	419	131	12.1%	3.5%
Specialty Trade Contractors	7,376	7,108	7,603	495	227	7.0%	3.1%
Manufacturing	13,391	12,147	13,802	1,655	412	13.6%	3.1%
Food Manufacturing	9,660	8,660	9,822	1,162	162	13.4%	1.7%
Seafood Product Preparation and Packaging	9,075	8,124	9,112	988	37	12.2%	0.4%
Manufacturing, All Other	3,731	3,487	3,980	494	249	14.2%	6.7%
Services-Providing	284,916	262,490	296,067	33,577	11,151	12.8%	3.9%
Trade, Transportation, and Utilities	66,524	60,947	68,434	7,487	1,910	12.3%	2.9%
Wholesale Trade	6,451	6,084	6,247	163	-204	2.7%	-3.2%
Retail Trade	35,315	33,393	35,522	2,129	207	6.4%	0.6%
Transportation and Warehousing[6]	22,460	19,144	24,092	4,948	1,631	25.8%	7.3%
Air Transportation	6,345	5,246	6,451	1,205	107	23.0%	1.7%
Water Transportation	1214	1090	1250	161	37	14.7%	3.0%
Truck Transportation	2,680	2,583	2,655	72	-25	2.8%	-0.9%
Transportation and Warehousing, All Other	12,222	10,226	13,735	3,510	1,513	34.3%	12.4%
Utilities	2,298	2,326	2,574	248	276	10.7%	12.0%
Information	5,311	4,933	5,085	152	-226	3.1%	-4.3%
Financial Activities	12,409	11,762	12,251	489	-158	4.2%	-1.3%
Finance and Insurance	6,656	6,418	6,428	10	-228	0.2%	-3.4%
Real Estate and Rental and Leasing	5,753	5,345	5,823	479	70	9.0%	1.2%
Professional and Business Services	27,240	25,545	28,528	2,983	1,288	11.7%	4.7%
Professional, Scientific, and Technical Services	13,485	12,836	13,910	1,074	425	8.4%	3.2%
Management of Companies and Enterprises	2307	2122	2383	261	76	12.3%	3.3%
Admin, Support and Waste Mgmt/Remediation Svcs	11,449	10,587	12,235	1,648	786	15.6%	6.9%
Education and Health Services	78,370	74,689	83,910	9,221	5,540	12.3%	7.1%
Educational Services, Public and Private[7]	28,823	26,345	28,707	2,362	-116	9.0%	-0.4%
Elementary and Secondary Schools, Public/Private	20,476	18,797	20,299	1,502	-178	8.0%	-0.9%
Educational Services, Public and Private, All Other	8,346	7,548	8,408	860	61	11.4%	0.7%
Health Care and Social Assistance, Public and Private[8]	49,547	48,344	55,203	6,859	5,656	14.2%	11.4%
Ambulatory Health Care Services	22,107	21,543	24,733	3,190	2,627	14.8%	11.9%
Hospitals	14,666	14,517	16,757	2,240	2,091	15.4%	14.3%
Health Care and Social Assistance, All Other	12,774	12,284	13,712	1,429	938	11.6%	7.3%
Leisure and Hospitality	36,539	26,919	37,929	11,010	1,390	40.9%	3.8%
Arts, Entertainment, and Recreation	4,958	3,318	5,267	1,949	309	58.7%	6.2%
Accommodation and Food Services	31,580	23,601	32,662	9,061	1,082	38.4%	3.4%
Accommodation	8,930	5,541	9,831	4,290	900	77.4%	10.1%
Food Services and Drinking Places	22,650	18,060	22,831	4,771	181	26.4%	0.8%
Other Services (Except Government)	11,704	10,643	12,069	1,426	365	13.4%	3.1%
Total Government	46,819	47,053	47,862	809	1,043	1.7%	2.2%
Federal Government[9]	12,922	13,486	13,750	264	828	2.0%	6.4%
State Government[10]	16,405	16,208	16,488	280	83	1.7%	0.5%
Local Government[11]	17,492	17,359	17,624	265	132	1.5%	0.8%

[1]Industry categories differ from other data sets we publish, largely because these combine public and private employment.
[2]May not sum to total employment due to rounding
[3]Percent change may be inconsistent with employment change due to employment rounding.
[4]Excludes self-employed workers, fishermen, domestic workers, unpaid family workers, and nonprofit volunteers
[5]Includes oil and gas exploration and oilfield services
[6]Includes U.S. Postal Service employment
[7]Includes local and state government education employment
[8]Includes public sector hospital employment
[9]Excludes uniformed military, postal service, and hospital employment
[10]Excludes university, railroad, and hospital employment
[11]Excludes public school and hospital employment

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

Projected job change by industry, 2019 and 2020 to 2030 comparisons

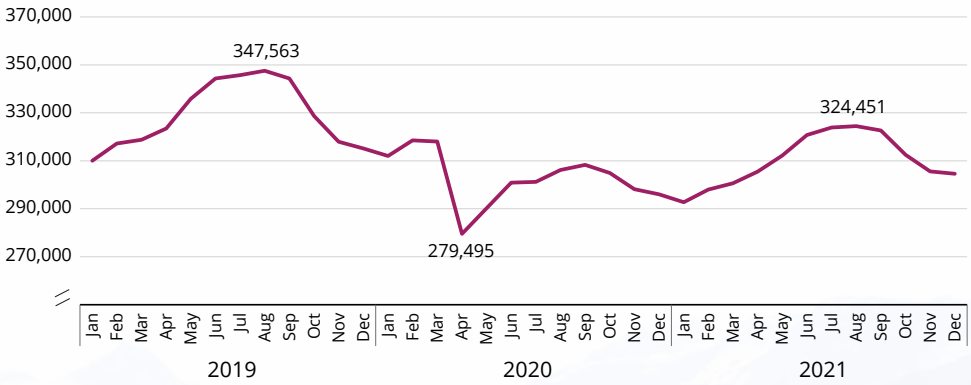


Source: Alaska Department of Labor and Workforce Development, Research and Analysis Section

19.8 percent, or about 600 jobs, through 2030. Mining continued to grow during COVID, adding 70 jobs in 2020 and 197 in 2021.

Most of the growth will probably come from ongoing exploration and expansion of existing operations. One example is the Fort Knox mine spreading into nearby areas. The newest plan is to extend the current mills' reach via truck, around 240 miles south of Fairbanks, to the Manh Choh Mine. That mine is on land leased from the Native Village of Tetlin. While this project's expected life is just five years, it's the type of project that can pop up when existing infrastructure is within reach.

Alaska's monthly job count, 2019 to 2021



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

Red Dog is another example. Current resources will allow the mine to operate into the early 2030s, and Red Dog plans to expand north to two zinc deposits, Aktigiruq and Anarraaq. Connecting will require some new transportation infrastructure, but expansions often increase a mine's longevity.

Pogo, Greens Creek, and Kensington are also engaged in exploration or expansion.

These projections don't figure in any new mines, although the Donlin Creek Gold Project is the most likely candidate for a new large-scale mine. The project completed the federal permitting process in August 2018 and is advancing through state permitting. This project is far from certain, though, and it likely has years of exploration and legal challenges before any final decision.

Because of long lead times and high uncertainty, we don't include potential projects in the projections until they are near-certain. This applies to all large-scale projects, some of which are talked about for decades with little or no progress.

Modest rebound for construction

The construction sector lost 584 jobs in 2020, but we project it will recover those and add 645 more by 2030.

Residential building bounced back between 2019 and 2020 after tepid growth during the 2015-2018 recession. The bump was probably temporary, driven by earthquake repairs and surging pandemic demand. We expect employment will level out just above the long-term average: 1,523 total jobs by 2030. That would be a decline of 96 jobs from 2020 but even with 2019.

We project nonresidential construction will add 285 jobs from 2019 to 2030, which includes recovery of the 126 jobs lost in 2020.

Specialty trade contractors shed 268 jobs in 2020 after losing almost 1,000 during the prior recession. We project the industry will grow 3.1 percent between 2019 and 2030 — all the jobs lost during COVID and an additional 227.

Most of the heavy and civil engineering categories shed jobs in 2020, for an overall loss of 288 (-7.7 percent). We project they will recover all losses and add 131 more by 2030 for a growth rate of 3.5 percent.

The Infrastructure Investment and Jobs Act will boost heavy and civil engineering during the next few years, but the jobs will be temporary and will probably wrap up by 2030.

Seafood processing to stay down

Like industries linked to tourism, seafood processing has an outsized need for out-of-state workers — something the pandemic losses reflect. Seafood processing lost 951 jobs over that first year, a 10.5 percent hit.

With travel restrictions during the 2020 summer hiring season and heightened concern about illness in

remote areas, the industry quarantined employees before moving them around the state. This staved off even bigger cuts in 2020.

Peak 2019 employment was 20,209 in July, which fell to 15,986 in July 2020. The industry has remained down but is inching toward recovery. We project employment will level out near 2019 numbers by 2030, at 9,112 average monthly jobs.

Shift online limits retail, finance

Retail and wholesale trade followed similar trajectories during the pandemic. Wholesale employment dropped 5.7 percent and retail by 5.4 percent in 2020. Strong consumer spending fueled by federal pandemic relief payments softened the landing.

We expect the 2020 declines to swing back but wholesale trade to stay below 2019 job levels through the decade (ending at 6,247 total). Retail will recover but end up only 207 projected jobs over 2019, for a total of 35,522 in 2030.

Limited population growth and an ongoing shift to e-commerce will constrain retail long term. Worker shortages will also inhibit recovery in the short term, as we saw in 2021.

Consumers aren't just shopping online — they're also seeking finance and insurance services remotely. We anticipate that sector's pandemic job losses — about 238 — will be permanent.

Even with a boom in mortgage refinancing and surging demand for homes during the pandemic, banking institutions continued to shed jobs. The insurance industry managed to stay flat through 2021 but we project a 7.3 percent job loss through 2030.

Robust growth in transportation

Air transportation stalled in 2020, losing 1,099 jobs (-17.3 percent), but its long-term outlook is healthy.

Scheduled air transportation, which is mainly airlines, is set to recover the bulk of the decline over the decade (about 954 jobs) and level out to just under its 2019 count (4,973). This industry's losses have been sticky, as it regained just 56 jobs in 2021. Tourism's strong return is a positive sign, but worker shortages are an ongoing drag even with increased flight demand.

The pandemic effectively closed the 2020 and 2021 seasons for scenic and sightseeing transportation businesses. Land sightseeing took the biggest blow, losing 73.1 percent of its employment — a slide to just 307 total jobs in 2020 from 1,141 the year before. The 2021 season only brought back 75 jobs.

Water transportation losses weren't far behind, at a 61.9 percent loss for 2020 (-679) and a 30 percent partial recovery last year.

> Using 2020 makes projected growth look bigger than it is; most of what looks like growth is clawing back the ground lost the year before.

By 2030, the combined land and water categories are projected to recoup the losses and land 12 percent above pre-pandemic levels. (These industries are another example of how misleading 2020 can be as a base year. Using 2020 instead of 2019 bumps the 12 percent growth projection to 247 percent.)

At the opposite end of the spectrum, couriers and the warehousing and storage industry flourished with increased online shopping, growing 13 and 29 percent respectively from 2019 to 2021. We project that will continue, with double-digit percent gains for both.

Professional services will track with oil, transportation

Professional, scientific, and technical services tend to track with the industries they serve, and the decline in business in 2020 spurred a loss of 649 jobs. Half of those came from engineering and drafting services.

The infrastructure bill will fire up demand for those services, but the new jobs will be temporary. Similarly, any large-scale mining or oil and gas development would expand employment over the short-to-medium term.

Another consideration is which jobs can be performed outside Alaska and whether the increasing popularity of remote work will move more out of

the office — especially for large corporations wanting to reduce costs for projects in remote places.

Starting from 2019, we project 3.2 percent job growth for professional, scientific, and technical services through 2030 (425).

Education faces several obstacles

Public and private education took a -8.6 percent employment hit in 2020 (-2,478). We project most of those jobs will return slowly, and education will end up about 116 jobs below 2019 by 2030.

Elementary and secondary schools took the brunt of the losses and improved little in 2021. We expect employment to recover short-term but end up 0.9 percent lower by 2030, mainly because the number of 5-to-18 year-olds is projected to decline from 144,583 in 2022 to 135,837 in 2030.

The University of Alaska has absorbed a few years of budget cuts and falling enrollment.

Postsecondary education's projected increase from 2019 levels is just 0.7 percent (61 additional jobs). These schools started to recover in 2021 after a deep decline in 2020 and will likely continue to add jobs for a few years, but the long-term outlook is flat.

The University of Alaska has absorbed several years of budget cuts and enrollment has fallen. An increase in the college-age population could boost enrollment, but that's unlikely because migration trends are downward for that age group.

Health care will expand a projected 12 percent

Health care and social assistance, public and private, fared well throughout the pandemic, losing just 2.4 percent that first year.

The largest health care category is ambulatory, which is mainly practitioners' offices. Demand for most in-person services tanked with stay-at-home orders starting in April 2020, putting that month about 3,000 jobs below the previous April for ambulatory health care. We project long-term growth, however, of 12 percent over 2019 levels by 2030 (2,627 additional jobs).

Hospitals only lost about 1 percent of their jobs in 2020, with the largest loss in July at 398 fewer jobs than in July 2019. The pattern was the opposite of what one might have predicted, with the first wave of job losses coinciding with the first wave of COVID-19 hospitalizations.

Vaccines weren't available then, patient outcomes were worse early on, and measures to avoid infection were strict. Reasons employment would fall amid increasing hospitalizations included burnout, difficulty hiring, and sickness among staff.

Overall, we project hospital employment will rise 14 percent, to 16,757. Most of the growth will come from expanding existing facilities and increasing care in rural Alaska, which remains underserved. Rural Alaskans typically rely on urban facilities for hospital and emergency care.

Nursing and residential care stayed mostly flat during the pandemic, with a slight uptick of 74 jobs in 2020 followed by a loss of 52 in 2021.

Employment in nonresidential individual and family services dropped 4.9 percent, however. These include jobs in adult day care facilities and nonmedical home and personal care. People caring for their own families and perceived risk reduced the need for these services, and some providers downsized. Since then, employment has trended back up, with a recovery of 106 jobs in 2021.

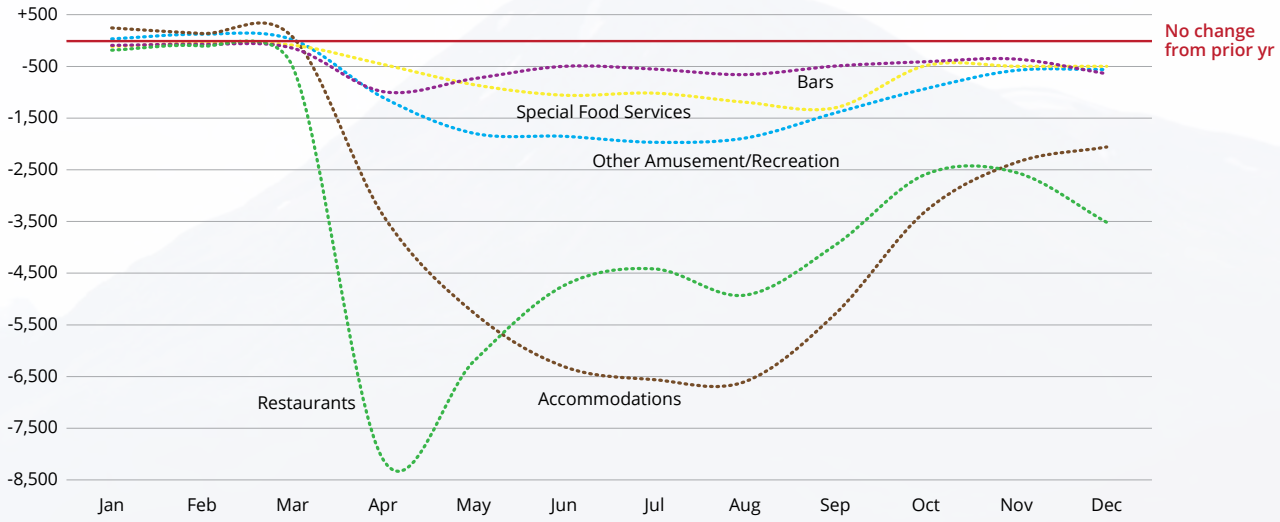
We project nursing and residential care to grow 13 percent by 2030 and the nonresidential portion to increase 8.7 percent — 508 and 403 new jobs, respectively. Nursing homes have been underrepresented in Alaska's health care mix for years, and the aging population will require even more staff.

The Alaska population 80 and older is projected to grow 68.8 percent between 2022 and 2030, to 28,465. So much demographic change in such a short time will spur job growth even if in-home care becomes more common or more seniors leave the state.

Leisure and hospitality faces a big pandemic recovery first

The leisure and hospitality sector represented just over a third of all the jobs Alaska lost in 2020 (9,619 of the 26,270). That was -26.3 percent for the sector in a year. After recovering the lost jobs, leisure and

Some types of leisure and hospitality were hit harder in 2020*



*Change in employment is relative to the same month in 2019

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

hospitality will likely grow an additional 3.8 percent by 2030. (See the graph above.)

These businesses serve locals as well as tourists, and the largest category is restaurants, at nearly half the jobs. Alaska eateries averaged about 18,809 jobs in 2019, which dropped to 15,325 in 2020. When combined with bars and special food services (such as caterers and food trucks), the overall loss was 4,590 jobs in one year.

Travel demand plummeted and so did the need for hotels, RV parks, and other temporary accommodations. With fewer travelers, the accommodation sector shed 3,390 jobs in 2020. By 2030, we project the industry will recover pandemic losses and add another 900 jobs for a total growth rate of 10.1 percent.

Not much change for government

Federal, state, and local governments are all projected to grow slightly in the coming decade.

Federal employment (excluding military, postal service, and hospitals) grew 4.4 percent in 2020 with temporary hires for the 2020 Census and showed no noticeable decrease during the pandemic. We project a 2.0 percent gain (264) between 2020 and 2030.

Jobs in state government (excluding the railroad, University of Alaska, and hospitals) dipped by 197 jobs in 2020 but over 10 years is set to recover those jobs and grow another 0.5 percent.

We don't anticipate any protracted periods of elevated oil prices to drive up state employment, and the state is unlikely to use market earnings to expand government services. Finally, the population is projected to increase only slightly from 2022 to 2030, keeping the demand for public services at current levels.

Similar to state government, local government (excluding public schools and hospitals) recorded a slight decline in 2020 but is projected to recover and gain 132 more jobs through 2030 (0.8 percent growth). The population isn't likely to grow significantly and state support to local governments is unlikely to rise, keeping the employment outlook relatively flat.

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How we create 10-year industry and occupational projections

The Alaska Department of Labor and Workforce Development's Research and Analysis Section creates 10-year industry and occupational projections for Alaska every other year. These projections are the product of four steps:

Step 1: Project industry employment using a base year with solid data

We use data from the Quarterly Census of Employment and Wages to determine the number of jobs for each industry during the first year, or "base year," of the projection period. We used 2020 as the base year because it's important to begin with a solid set of numbers that won't be revised further rather than to use newer but preliminary data — however, for this set of projections we have included 2019 numbers for context, for the reasons explained on page 4.

Estimates and projections do not include self-employed workers, private household workers, most agricultural workers and fishermen (who are self-employed), and others not covered by the state's unemployment insurance program. We combine certain types of public sector employment — such as education, hospitals, rail transportation, and the U.S. Postal Service — with private sector industries because their underlying drivers differ from most government employment.

We create projections for each industry based primarily on historical trends, Alaska and U.S. population projections, and other industry-specific variables. The projections also factor in knowledge of specific projects, if certain, and observations of the current economic climate.

Step 2: Determine the occupational makeup, or staffing pattern, of each industry

To estimate base year employment for each occupation, we determine the occupational staffing pattern of each industry. Most industries have a variety of occupations. The staffing pattern is the breakdown of each occupation's share of the industry's total employment, referred to as "staffing ratios."

Employers in Alaska report their workers' occupations when they submit unemployment insurance quarterly contribution reports, which form the basis of Alaska's Occupational Database. We use an analysis of the data that corresponds to the projections' base year, the most recent Occupational Employment Statistics data available, and a baseline of historic industry staffing patterns to calculate occupational staffing ratios for the industries.

Step 3: Calculate base year and projected occupational employment

For each occupation, we multiply each industry's estimated base year employment by the staffing ratio, and then sum the results to get the base year estimate. We make some adjustments to staffing ratios within an industry, called "change factors." Change factors are multipliers that increase or decrease an occupation's estimated share of industry employment based on factors other than an industry's projected employment change. Examples include changes in consumer demand, technology, or business practices.

We then multiply each industry's projected employment by the adjusted staffing ratio for each occupation, and then sum the results by each occupation to get the projections.

Step 4: Estimate job openings

Job openings for an occupation result from new jobs and vacated positions, called separation openings. An occupation's growth openings are equal to its change over the projection period. Estimates of separation openings are based on rates provided by the U.S. Bureau of Labor Statistics that account for labor force exits and occupational transfers. For more on separations, see https://www.bls.gov/emp/documentation/separations-methods.htm.