

A Supply of Alaska Workers for the Gas Line

By Andrew Wink,
Economist

How ready is Alaska's work force?

Thirty years ago two welders finished the final weld on the trans-Alaska oil pipeline, a 20th century engineering marvel that has pumped billions of barrels of oil to market and billions of dollars into Alaska's economy. Next month's anniversary comes in the midst of negotiations and planning for another pipeline – the gas line to ship natural gas from the North Slope, at least partly along the same route as the oil pipeline.

The oil pipeline has been a technical and economic success, but as a young state with a relatively small population, Alaska had nowhere near the number of skilled or unskilled workers to take full advantage of the high wages that

came with such a big project operating on a compressed timeline.

The numbers were overwhelming: Total construction jobs in the state nearly quadrupled from less than 8,000 in 1973 to more than 30,000 in 1976 (see Exhibit 1) and some 70,000 people worked on the pipeline project during its two-year construction phase. Not surprisingly, a significant number of those workers came from outside Alaska and, although some stayed and made Alaska their home, many left when the project was completed.

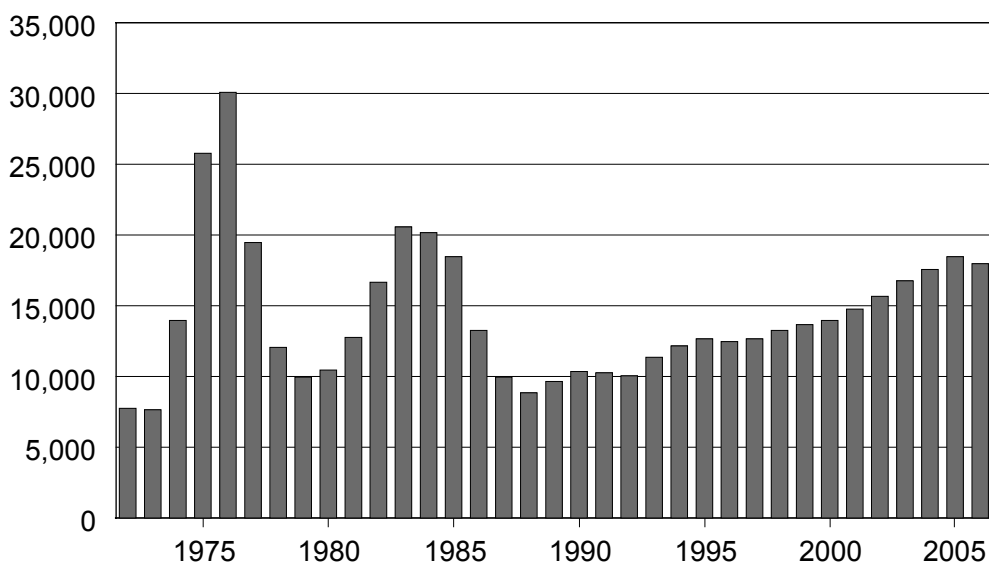
With more lead time, a larger population, and a more mature resource-based economy that has generated a lot of workers with relevant experience, there's an opportunity for things to be different with the gas line. But to maximize resident hire on the gas line it's necessary to first assess the state's current supply of experienced workers and then evaluate the ability of existing training programs to supplement that supply.

Analysis focuses on supply

This article is not an attempt to answer how many workers will be needed for the gas line, as it is too early to pin down that number.¹ The demand for workers, whatever it turns out to be, will of course have a major impact on the state's ability to provide a large share of any gas line work force. High wages will naturally attract more

1 Construction Employment in Alaska 1972 to 2006

Average Annual Employment



Note: The 2006 average annual employment is preliminary and subject to revision.
Source: Alaska Department of Labor and Workforce Development, Research and Analysis Section (Quarterly Census of Employment and Wages and Current Employment Statistics)

¹ The number of workers needed will depend on a number of factors, including route, design, size, technology and segmentation.

Gas Line Occupations Occupations involved in building the gas line 2

experienced Alaskans to the project and the prospect of high wages will encourage Alaskans to seek relevant training in the months and years leading up to the project.

Rather than demand, however, this article focuses on the other side of the equation, the supply side. It looks first at the existing resident work force employed in occupations most likely to be called on to build the gas line.

Next, it looks at a group that is easy to forget about: workers who have experience in gas line occupations but who aren't currently working in those occupations. After more than 30 years of operating major oil fields and transportation systems, and all the public and private construction projects related to a young, growing economy, there is now a significant number of Alaskans with relevant experience.

The final group consists of the Alaska residents who can be trained between now and the beginning of any gas line project. Again, the number that will be required is unknown; what is known is the state's current capacity to train workers in specific occupations, which will allow the state to quickly assess shortfalls when more specifics about work force demands become available.

What occupations will be required to build a gas line?

Nine occupational groups² made up of 27 occupations were selected as being especially relevant to the construction of a gas line. (See Exhibit 2.) Using employee wage records that nearly all employers are required to file under

Occupational Group	Occupation Title
Management	Construction managers Civil engineers First-line supervisors of laborers First-line supervisors of transportation workers First-line supervisors of construction and extraction workers
Inspectors	Inspectors, testers, sorters, samplers and weighers Occupational health and safety specialists and technicians
Operating engineers	Operating engineers and other construction equipment operators Excavating, loading machine and dragline operators
Pipefitters and welders	Plumbers, pipefitters and steamfitters Welders, cutters, solders and brazers Welding, cutting, soldering and brazing machine operators
Survey workers	Surveyors Surveying and mapping technicians
Haulers	Truck drivers, heavy and tractor-trailer Truck drivers, light or delivery services
Laborers	Laborers and freight, stock and material movers Construction laborers Helpers for production workers Helpers for extraction workers
Maintenance and mechanics	Bus and truck mechanics and diesel engine specialists Mobile heavy equipment mechanics General maintenance and repair workers Machinery maintenance workers Industrial machinery mechanics
Carpenters and electricians	Carpenters Electricians

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

state unemployment insurance laws,³ we were then able to determine the size of the existing work force in those occupations and also to count the workers who had previously worked in those occupations and then moved on. The most recent complete year for which data were available was 2005, although the numbers are unlikely to have changed dramatically since then.

While many of the gas line occupations are most commonly found in the construction industry,

² For simplicity, we'll refer to the nine occupational groups as the gas line occupations in the rest of the article. More occupations may be needed to actually build the gas line, depending on the construction processes planners decide to employ.

³ Wage and salary workers who aren't covered by state unemployment insurance include agricultural workers, self-employed workers, some employed students, most fishermen, full-commissioned sales workers, private railroad workers, and elected and appointed officials. Federal workers are covered by federal unemployment insurance; therefore, they aren't included in Alaska's wage records and aren't part of this article's analysis.

workers can easily have the same occupation while working for a company that operates in a different industry. Mining companies, for example, employ many operating engineers, and transportation companies also employ many workers in gas line occupations.

More than 47,000 resident workers in gas line occupations

In 2005, nearly 57,000⁴ workers were employed in gas line occupations. (See Exhibit 3.) About 83 percent of those workers, 47,290, were Alaska residents. Laborers made up a large part of the total with 23,268 workers; the other occupations combined to employ 33,556.

The average laborer made \$6,171 per quarter in 2005, while all the other gas line occupations had average wages of \$12,440 per quarter. All told, workers in the gas line occupations made \$1.55 billion in 2005, or 14 percent⁵ of Alaska's total wages.

Escalated nonresident hire rates often indicate a shortage of resident labor for that occupation. Inspectors, plus pipefitters and welders had the

⁴ This figure represents an unduplicated count of workers who were employed in any gas line occupation for any length of time in 2005.

⁵ Based on total wage figures listed in *Nonresidents Working in Alaska 2005*, published in January 2007. For a copy, go to Research and Analysis' Web site at almis.labor.state.ak.us or call (907) 465-4500.

highest rates of nonresidents, at 24 percent and 21 percent, respectively, in 2005. Haulers had the lowest percentage of nonresidents with 12 percent.

Median age of 39 is likely to creep higher

The median age for workers in the gas line occupations in 2005 was 39, or about three years older than the state average. (See Exhibit 4.) Laborers were the only occupation that had a lower median age than the state average. A large percentage of workers in every other gas line occupation were in their 50s and will be nearing retirement age in the next 10 years. Those workers are unlikely to be available in large numbers to help with a gas line project.

Overall, Alaska's population is also expected to grow older over the next 20 years. The state's median age is expected to increase from 33.4 years to 35.8 years between 2005 and 2029, according to recent Department of Labor projections.⁶

The same pattern is visible when comparing the age of the gas line occupation work force in 2001 to the same occupational work force in 2005. Looking at the differences in age distributions for the gas line occupations in 2001

⁶ See *Alaska Economic Trends*, February 2005. For a copy, see Page 2.

3 The Labor Supply for Gas Line Occupations Alaska, 2005

	Resident Workers	Total Number of Workers	Total Wages	Percentage of Nonresident Workers	Percentage Who Worked All Four Quarters	Percentage Who Worked Two Quarters or Less	Average Quarterly Wage
Management	3,664	4,422	\$232,760,083	17.1%	48.2%	37.0%	\$18,182
Inspectors	446	590	\$24,558,791	24.4%	48.8%	34.9%	\$14,139
Operating engineers	4,740	5,692	\$208,373,743	16.7%	35.4%	43.6%	\$13,586
Pipefitters and welders	2,854	3,530	\$123,412,359	20.5%	41.4%	43.2%	\$12,560
Survey workers	846	1,005	\$33,628,614	15.8%	40.0%	41.0%	\$12,058
Haulers	5,594	6,355	\$164,254,146	12.0%	37.5%	44.8%	\$9,633
Laborers	19,586	23,268	\$294,984,065	15.8%	15.6%	69.1%	\$6,171
Maintenance and mechanics	6,476	7,534	\$186,536,861	14.0%	38.8%	48.2%	\$9,471
Carpenters and electricians	8,653	10,526	\$283,085,561	17.8%	30.2%	52.5%	\$10,797
Total	47,290 ¹	56,824 ¹	\$1,551,594,223	16.8%	35.0%	47.5%	\$10,426

¹ These totals represent a count of workers who were employed in any gas line occupation for any length of time in 2005. Some workers are counted in more than one occupation, but are only counted once in the total.

Source: Alaska Department of Labor and Workforce Development, Research and Analysis Section (*Occupational Database and Alaska Permanent Fund Dividend records*)

versus 2005,⁷ it's easy to see the challenge it presents. (See Exhibit 5.) In 2005, there were more gas line workers over 50 and fewer workers in the 35- to 45-year-old range compared to 2001.

Work in gas line occupations is quite seasonal

The work force for gas line occupations, as well as the construction industry in general, tends to spike in the summer months, as it did in 2005. (See Exhibit 6.)

Sixty-five percent of the workers in gas line occupations in 2005 weren't employed in all four quarters. (See Exhibit 7.) Not including laborers – the most seasonal of the gas line occupations – almost a third of the workers in gas line occupations were employed for two quarters or less. Maintenance and mechanics, management, and pipefitters and welders were the least seasonal occupations.

If gas line construction during the harsh Alaska winter is possible, many workers who normally work only in the spring, summer and fall might be available to work on the gas line project during the winter months without quitting their pre-gas line jobs.

Slower construction growth may free some workers

Looking at current trends, there is some indication that a portion of the existing work force may become available for other projects. Growth in construction employment – which includes all nine gas line occupations – was strong from 2001 to 2005, but 2006 estimates show a decline and several factors suggest weaker growth or slight declines in the near future.

High turnover leads to a larger potential work force

Turnover, the churning of workers entering and exiting an occupation, creates a pool of

⁷ For simplicity, we looked at the second quarter for both years. The second quarter is usually the second-busiest season for gas line occupations.

Age Patterns Differ by Occupation Alaska, 2005 **4**

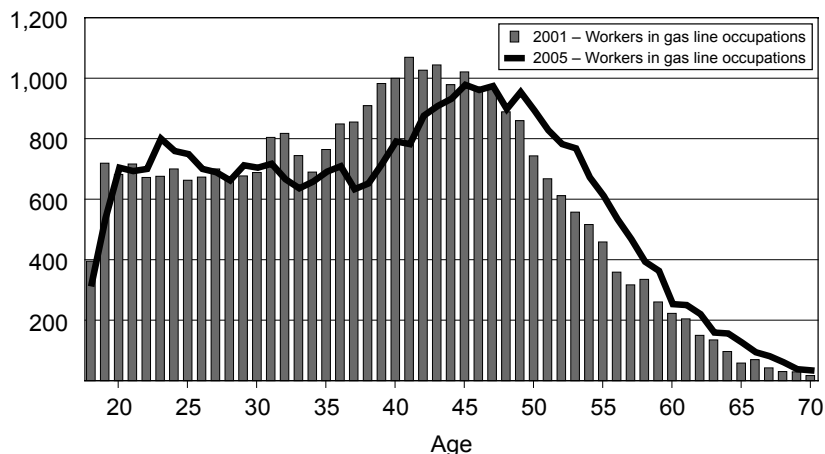
	Age Groups for Resident Gas Line Workers ¹						Median Age ¹
	0-20	20-29	30-39	40-49	50-59	60+	
Management	1.2%	10.8%	18.7%	33.3%	27.7%	8.4%	46
Inspectors	1.8%	18.6%	18.2%	28.3%	25.6%	7.6%	44
Operating engineers	1.5%	15.3%	19.8%	33.4%	24.3%	5.7%	44
Pipefitters and welders	2.5%	24.6%	26.1%	27.3%	16.3%	3.2%	38
Survey workers	3.2%	27.0%	18.6%	24.2%	22.0%	5.1%	40
Haulers	2.3%	21.5%	23.7%	27.2%	19.2%	6.2%	41
Laborers	9.5%	34.6%	20.4%	21.7%	11.2%	2.7%	32
Maintenance	4.1%	18.2%	18.2%	30.7%	22.6%	6.2%	43
Carpenters and electricians	2.9%	26.5%	23.9%	27.0%	16.1%	3.7%	38
Total	5.4%	25.5%	20.9%	26.3%	17.3%	4.6%	39

¹ Based on workers' ages as of Dec. 31, 2005.

Source: Alaska Department of Labor and Workforce Development, Research and Analysis Section (Occupational Database and Alaska Permanent Fund Dividend records)

The Work Force is Aging Workers in gas line occupations, 2001 and 2005 **5**

Number of Alaska Resident Workers



Note: This exhibit compares the data from the second quarter in both years.

Source: Alaska Department of Labor and Workforce Development, Research and Analysis Section (Occupational Database and Alaska Permanent Fund Dividend records)

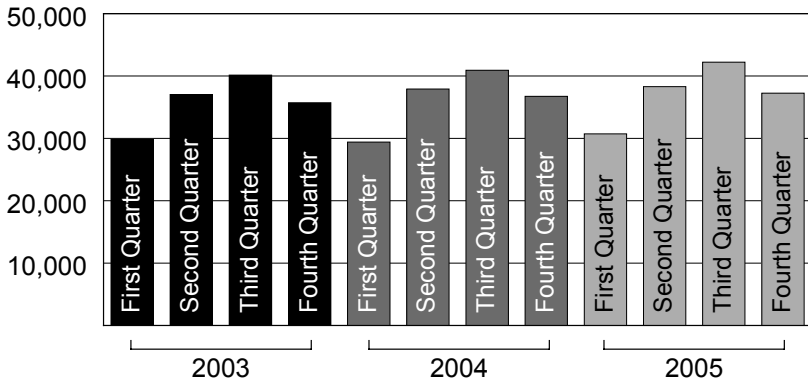
experienced workers who could return to their former occupation.

Overall, 19,600 entered gas line occupations between 2004 and 2005 and roughly 18,700 left during that period. (See Exhibit 8.) Turnover rates were similar in earlier years.

Some of those who left were never residents, some were residents who left the state and some were short-term hires working simple jobs. There's a substantial number, though, who stayed in the state and took work in other occupations.

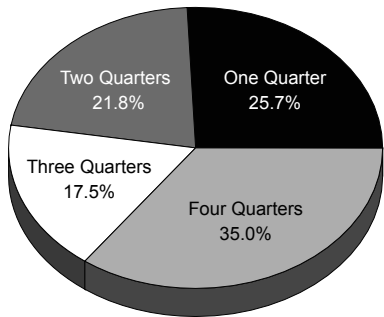
6 Employment Booms in Summer Alaska, 2005

Number of Workers Employed Each Quarter in Gas Line Occupations



Source: Alaska Department of Labor and Workforce Development, Research and Analysis Section (Occupational Database)

7 Nearly Half Work Less than Six Months Alaska, 2005



There were 56,824 people employed in gas line occupations at least one quarter in 2005.

Source: Alaska Department of Labor and Workforce Development, Research and Analysis Section (Occupational Database)

8 Turnover in Gas Line Occupations Alaska, 2003 to 2005

	2005			2004			2003		
	Total Workers	New Workers	Workers Who Didn't Return from 2004	Total Workers	New Workers	Workers Who Didn't Return from 2003	Total Workers	New Workers	Workers Who Didn't Return from 2002
Management	4,422	1,543	1,283	4,162	1,256	1,303	4,209	1,315	1,436
Inspectors	590	195	218	613	199	299	713	292	345
Operating engineers	5,692	1,929	1,809	5,572	1,930	1,815	5,457	1,879	2,086
Pipefitters and welders	3,590	1,348	993	3,235	1,092	1,244	3,387	1,274	1,265
Survey workers	1,005	377	305	933	348	315	900	335	341
Haulers	6,355	2,450	2,398	6,303	2,582	2,250	5,971	2,206	2,824
Laborers	23,268	11,874	12,045	23,439	12,194	11,465	22,710	11,613	13,181
Maintenance and mechanics	7,534	2,964	3,000	7,570	3,072	3,126	7,624	3,290	3,456
Carpenters and electricians	10,526	4,115	3,936	10,347	4,042	4,268	10,573	4,567	4,407
All Gas Line Occupations ¹	56,824	19,600	18,727	55,951	19,368	18,637	55,220	18,968	20,978

¹ The totals represent a count of workers who were employed in any gas line occupation for any length of time in 2005. Some workers are counted in more than one occupation, but are only counted once in the total.

Source: Alaska Department of Labor and Workforce Development, Research and Analysis Section (Occupational Database)

For the right opportunity – say the construction of a gas line – they could return, bringing their experience and training with them.

An invisible supply of trained workers

Assessing the potential number of current Alaska residents who might be available to benefit from a major gas line project is a complicated matter. In addition to all the people currently working in gas line occupations, there are thousands who have recently worked in those occupations but are currently working in other fields. Perhaps, for the right incentives, these workers could be enticed back into gas line occupations.

To estimate the size of this potentially available work force we used wage records from 2002 to 2005 to identify workers who had some previous experience in gas line occupations and who were still in Alaska during 2005.

We defined “workers with some experience” as those who had at least four quarters of experience in any of the gas line occupations during the previous three years, but for whatever reason were not employed in any of the gas line occupations during a particular quarter in 2005.

To estimate the number who might be willing to work on the gas line, we narrowed the selection criteria to only include those workers with some experience who were under 50 years of age in 2005, because by the time construction begins many of these workers will be either retired or very near retirement.

Potentially available workers fall into four categories: (1) workers who were underemployed because they were making less than they could have made if they were employed in the gas line occupation where they have experience; (2) workers who were unemployed and collected unemployment benefits; (3) workers who were not employed in wage and salary jobs⁸ and didn't receive unemployment benefits; and (4) workers who moved on to other wage and salary jobs paying a higher or roughly equivalent wage.

Exhibits 10, 11 and 12 show the number of potentially available workers by quarter. Fewer workers were available in the summer months (quarters 2 and 3) due to seasonality.

Overall, there were roughly 14,700 workers who could have been available for gas line employment in at least one quarter during 2005. Even during the third quarter – the busy season – there were 7,822 potentially available workers.

In looking at operating engineers specifically, most were available in the first quarter during the winter. (See Exhibit 11.)⁹ Their availability dropped off, though, in the second, third and fourth quarters (43 percent, 48 percent and 38 percent, respectively).

Of the potentially available operating engineers, carpenters and electricians, and laborers,¹⁰ 38 percent, 25 percent and 22 percent, respectively, were unemployed and received unemployment benefit checks during the first and fourth quarters.

Labor supplies were tightest for pipefitters, operating engineers, and survey workers. They had the fewest number of potentially available workers compared to the number of employed workers in those occupations. (See Exhibit 13.)

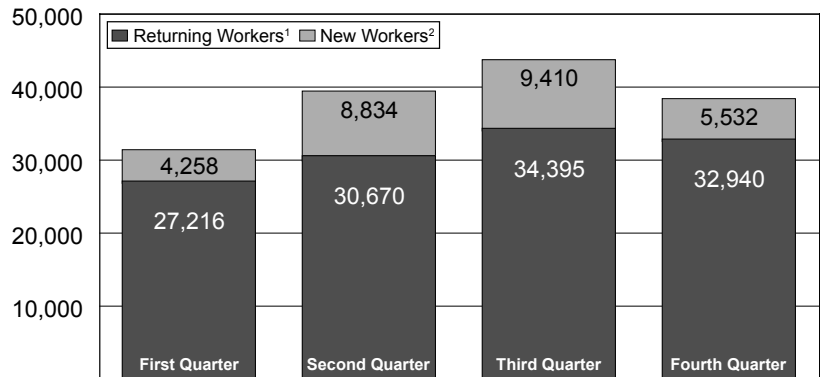
⁸ It's unknown how many of these workers may be self-employed, employed by the federal government or out of the labor force, either voluntarily or otherwise. See footnote No. 3 for further details on who is covered.

⁹ Similar charts for each of the gas line occupations are available online at www.labor.state.ak.us/research/trends/apr07indgraph.pdf.

¹⁰ See the online charts referenced in the last footnote.

Turnover in Gas Line Occupations Alaska, 2005 **9**

Number of Workers Employed in Gas Line Occupations



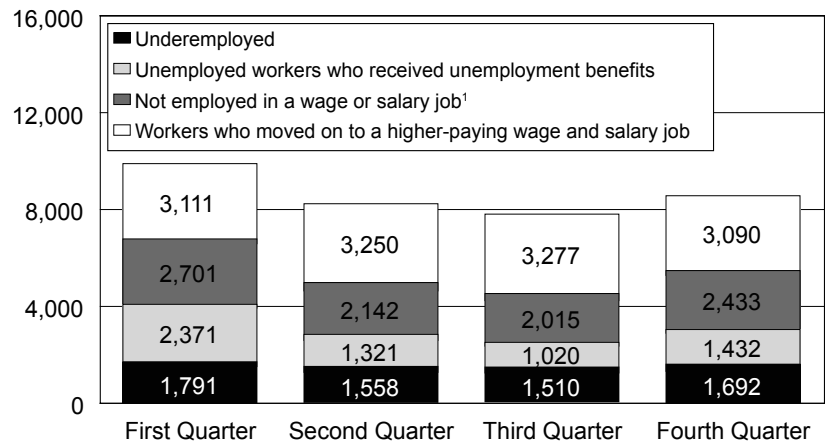
¹ Returning workers are those who were employed in the same gas line occupation in at least one of the previous four quarters.

² New workers are those who were not employed in the same gas line occupation during the previous four quarters.

Source: Alaska Department of Labor and Workforce Development, Research and Analysis Section (Occupational Database)

Potentially Available Workers Alaska, 2005 **10**

Number of Potentially Available Workers for the Gas Line



There were roughly 14,700 workers who were potentially available for gas line employment during at least one quarter in 2005.

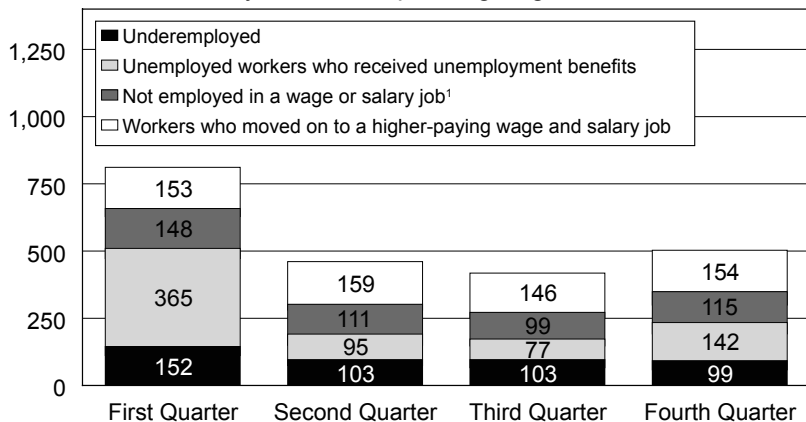
Note: Potentially available workers are defined as Alaska residents who were under the age of 50 in 2005 and who worked at least four quarters in any of the gas line occupations during the previous three years but who were not employed in any of the gas line occupations during the referenced quarter. A person might be counted in more than one quarter but is not counted more than once in the same quarter.

¹ It's unknown how many of these workers may be self-employed, employed by the federal government or out of the labor force, either voluntarily or otherwise. See footnote No. 3 in the article text for further details on who is covered.

Source: Alaska Department of Labor and Workforce Development, Research and Analysis Section (Occupational Database)

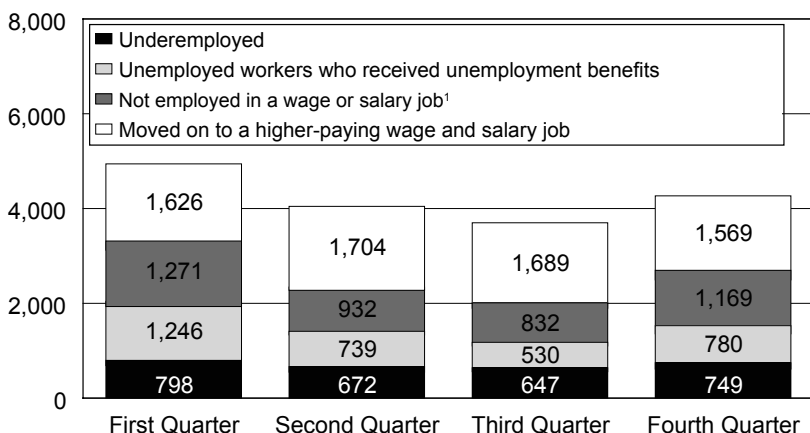
11 Operating Engineers Alaska, 2005

Number of Potentially Available Operating Engineers



12 Laborers Alaska, 2005

Number of Potentially Available Laborers



Notes and footnote for Exhibits 11 and 12

Note: Potentially available workers are defined as Alaska residents who were under the age of 50 in 2005 and who worked at least four quarters in any of the gas line occupations during the previous three years but who were not employed in any of the gas line occupations during the referenced quarter. A person might be counted in more than one quarter but is not counted more than once in the same quarter.

¹ It's unknown how many of these workers may be self-employed, employed by the federal government or out of the labor force, either voluntarily or otherwise. See footnote No. 3 in the article text for further details on who is covered.

Source: Alaska Department of Labor and Workforce Development, Research and Analysis Section (Occupational Database)

There were relatively more workers potentially available for jobs as laborers, carpenters and electricians and inspectors.

The Anchorage/Matanuska-Susitna Borough area had the most potentially available workers of any region in 2005, but people living in that area made up less than half the potentially available labor pool. (See Exhibit 14.) In other words, there were more potentially available workers per capita outside the Anchorage and Mat-Su area in 2005.

People in training programs

People who have completed a training program for a gas line occupation or have at least received some training also represent a potential source of labor. We identified more than 300 training programs offered by Alaska schools and training providers that teach skills needed for gas line occupations.¹¹ We received detailed data for 110 of those.

The training ranges from short-term on-the-job training (for some laborer and hauler jobs) to a bachelor's degree (for some management and inspector jobs). (See Exhibit 16.)

About 1,300 people completed the 110 training programs during 2005 and federal fiscal year 2005,¹² according to information Alaska training providers submit to the state and federal Departments of Labor. (See Exhibit 16.) The 1,300 represents 57 percent of the 2,300 people who exited training programs during that period; the remainder didn't complete their programs.

Nearly 200 Alaska workers completed their apprenticeship training in a construction trade during the 2005 federal fiscal year, according to the U.S. Department of Labor's Office of Apprenticeship, the agency that oversees

¹¹ A list of the programs used in this analysis is available online at www.labor.state.ak.us/research/trends/apr07indtrain.pdf. For other apprenticeship programs for gas line and other occupations, go to the U.S. Department of Labor's Office of Apprenticeship's Web site at oa.doleta.gov/bat.cfm. For more information, call John Hakala, the Office of Apprenticeship's state director, at (907) 271-5035 or email him at hakala.john@dol.gov. (The Office of Apprenticeship was formerly the Bureau of Apprenticeship and Training.)

¹² The 2005 federal fiscal year runs from Oct. 1, 2004, to Sept. 30, 2005.

Potentially Available Workers for Gas Line Occupations Alaska, 2005

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	Quarter 1		Quarter 2		Quarter 3		Quarter 4	
	Number of Current Workers	Number of Potentially Available Workers	Number of Current Workers	Number of Potentially Available Workers	Number of Current Workers	Number of Potentially Available Workers	Number of Current Workers	Number of Potentially Available Workers
Management	2,905	526	3,190	518	3,360	502	3,347	517
Inspectors	383	110	441	84	464	90	449	85
Operating engineers	2,867	818	4,182	468	4,433	425	3,855	510
Pipefitters and welders	2,176	389	2,457	366	2,616	342	2,577	333
Survey workers	555	121	718	97	778	107	738	99
Haulers	3,787	933	4,557	763	4,504	806	4,203	835
Laborers	8,693	4,941	12,390	4,047	15,019	3,698	11,696	4,267
Maintenance	4,590	1,000	5,060	892	5,200	891	4,845	936
Carpenters and electricians	5,518	1,591	6,509	1,354	7,431	1,225	6,762	1,357
Total ¹	30,843	9,974	38,364	8,271	42,275	7,822	37,333	8,647

Note: Potentially available includes Alaska residents under the age of 50 who worked at least four quarters in any of the gas line occupations during the previous three years but who were not employed in any of the gas line occupations in 2005.

¹ These totals represent a count of workers who were employed in any gas line occupation for any length of time in 2005. Some workers are counted in more than one occupation, but are only counted once in the total.

Source: Alaska Department of Labor and Workforce Development, Research and Analysis Section (Occupational Database)

apprenticeships. The number of workers entering those apprenticeship programs has been rising significantly in recent years, from 510 entrants in federal fiscal year 2003 to 849 in federal fiscal year 2006. The most recent data show 1,936 active construction apprentices in federal fiscal year 2006.

In the last three years, 232 people have completed a two-week Alaska Pipeline Joint Crafts Training Program course in Fairbanks, which prepares entry-level workers and pipefitter apprentices for pipeline work in the arctic.

It's important to note that some workers with experience or training in occupations related to gas line construction will still require additional training. Not all the workers or trainees in these occupations could perform all the tasks required if construction on the gas line started tomorrow.

People who could be trained

Broadening the scope to include all Alaska residents, wage records show that more than half the state's residents ages 18 to 49 were either unemployed or were "low-wage earners" in 2005 – more than 158,000 in all. For this study, we defined the low-wage earners as those who worked less than six months (two quarters) in 2005 or who had an average quarterly wage below \$3,000.

Potentially Available by Area Alaska, 2005

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Borough or Census Area	Number of Potentially Available Resident Workers for Gas Line Occupations
Aleutians East Borough	58
Aleutians West Census Area	121
Anchorage, Municipality of	4,428
Bethel Census Area	730
Bristol Bay Borough	40
Denali Borough	60
Dillingham Census Area	136
Fairbanks North Star Borough	1,918
Haines Borough	44
Juneau Borough	501
Kenai Peninsula Borough	1,216
Ketchikan Gateway Borough	257
Kodiak Island Borough	252
Lake and Peninsula Borough	98
Matanuska-Susitna Borough	1,949
Nome Census Area	378
North Slope Borough	272
Northwest Arctic Borough	294
Prince of Wales-Outer Ketchikan Census Area	169
Sitka Borough	150
Skagway-Hoonah-Angoon Census Area	117
Southeast Fairbanks Census Area	203
Valdez-Cordova Census Area	256
Wade Hampton Census Area	409
Wrangell-Petersburg Census Area	121
Yakutat Borough	32
Yukon-Koyukuk Census Area	388
Unknown	100
Total	14,697

Note: Potentially available includes Alaska residents under the age of 50 who worked at least four quarters in any of the gas line occupations during the previous three years but who were not employed in any of the gas line occupations in 2005.

Source: Alaska Department of Labor and Workforce Development, Research and Analysis Section (Occupational Database and Alaska Permanent Fund Dividend records)

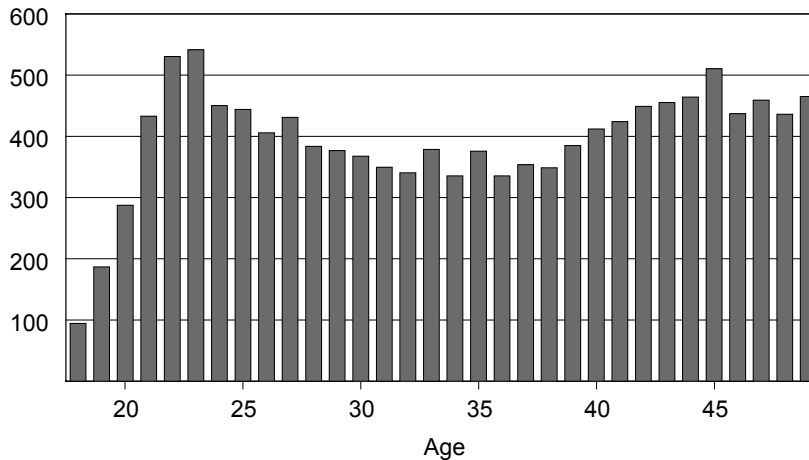
The 158,000 represents a broad sweep – it includes everyone ranging from people who couldn't work due to a disability or other reason to those who opted to be a stay-at-home parent and those who were self-employed or worked in another occupation not covered by unemployment insurance. But the 158,000 also includes people who were looking for work or a better job.

Roughly 86,000 of the 158,000 residents weren't employed in wage and salary jobs at all in 2005.

Areas with the highest percentage of unemployed workers and low-wage earners in 2005 include the Wade Hampton Census Area (69 percent), Yukon-Koyukuk Census Area (65 percent) and Lake and Peninsula Borough (65 percent). (See Exhibit 17.) The areas with the lowest percentage of unemployed workers and low-wage earners in 2005 include the Aleutians West Census Area (33 percent), Juneau (44 percent) and Anchorage (47 percent).

15 Potentially Available Workers are All Ages Alaska, 2005

Number of Workers



Source: Alaska Department of Labor and Workforce Development, Research and Analysis Section (Occupational Database)

It's impossible to know the exact depth of skills and experience without surveying the 158,000 about their construction background, but, given the sheer numbers, there should be no shortage of people who could be trained.

Summary

Governor Palin's proposed Alaska Gasline Inducement Act, along with past proposals, requires gas line contractors to

16 Training Programs for Gas Line Occupations People in Alaska who exited programs, 2005

	Exited in 2005		Training Requirements
	Didn't Complete Program	Completed Program	
Management	289	219	Moderate-term on-the-job training to bachelor's degree
Inspectors	137	183	Moderate-term on-the-job training to bachelor's degree
Operating Engineers	0	24	Moderate-term on-the-job training to bachelor's degree
Pipefitters and Welders	26	62	Long-term on-the-job training
Survey Workers	64	34	Moderate-term on-the-job training to bachelor's degree
Haulers	5	25	Short-term to moderate-term on-the-job training
Laborers	1	0	Short-term to moderate-term on-the-job training
Maintenance and Mechanics	40	54	Moderate-term to long-term on-the-job training
Carpenters and Electricians	58	452	Long-term on-the-job training
All Construction Apprenticeships ^{1,2}	360	181	Long-term on-the-job training with related instruction
Alaska Pipeline Joint Crafts Training Program course	N/A	97	
Total	980	1,331	

¹ The "all construction apprenticeships" category is based on the federal fiscal year.

² Occupational classifications of federal data weren't available for this article; as a result it's possible that some of these apprenticeship programs aren't related to jobs needed for the gas line.

Source: Alaska Department of Labor and Workforce Development, Research and Analysis Section; and the U.S. Department of Labor, Office of Apprenticeship

Unemployed and Underemployed Residents by Area 17 Alaska, 2005

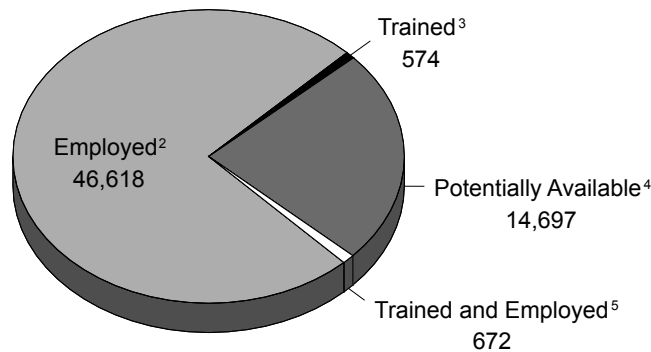
Borough or Census Area of Residence	Residents Ages 18 to 49	Employed ¹	Low-Wage Earners ²	Not Employed in Wage or Salary Job	Percentage of Residents
					Who Were Low-Wage Earners or Not Employed
Wade Hampton Census Area	3,186	2,564	1,589	622	69.4%
Yukon-Koyukuk Census Area	2,940	2,302	1,266	638	64.8%
Lake and Peninsula Borough	777	603	329	174	64.7%
Skagway-Angoon-Hoonah	1,431	1,037	495	394	62.1%
Wrangell-Petersburg Census Area	2,731	1,822	726	909	59.9%
Dillingham Census Area	2,115	1,565	714	550	59.8%
Haines Borough	1,023	737	325	286	59.7%
Prince of Wales-Outer Ketchikan Census Area	2,413	1,750	771	663	59.4%
Bethel Census Area	7,390	6,032	2,995	1,358	58.9%
Denali Borough	944	632	235	312	57.9%
Southeast Fairbanks Census Area	2,883	2,003	773	880	57.3%
Northwest Arctic Borough	3,247	2,438	1,043	809	57.0%
Aleutians East Borough	715	497	188	218	56.8%
Nome Census Area	4,172	3,413	1,580	759	56.1%
Kenai Peninsula Borough	23,464	16,485	5,979	6,979	55.2%
Yakutat Borough	289	233	103	56	55.0%
Kodiak Island Borough	6,068	4,139	1,402	1,929	54.9%
Valdez-Cordova Census Area	4,668	3,439	1,308	1,229	54.3%
Matanuska-Susitna Borough	36,903	25,264	8,109	11,639	53.5%
Fairbanks North Star Borough	42,562	29,456	9,461	13,106	53.0%
North Slope Borough	3,219	2,504	944	715	51.5%
Sitka Borough	4,114	2,985	925	1,129	49.9%
Ketchikan Gateway Borough	6,292	4,676	1,493	1,616	49.4%
Bristol Bay Borough	577	441	136	136	47.1%
Anchorage, Municipality of	129,906	94,518	25,817	35,388	47.1%
Juneau Borough	15,108	11,771	3,340	3,337	44.2%
Aleutians West Census Area	1,688	1,444	309	244	32.8%
Total	310,825	224,750	72,355	86,075	51.0%

¹ Employed represents resident workers ages 18 to 49 who were employed in unemployment insurance-covered wage-and-salary jobs at any time during 2005. (Therefore, federal workers or self-employed workers, such as fishermen, aren't included.)

² Low-wage earners represents workers who earned an average of less than \$3,000 per quarter in 2005, or were employed two quarters or less that year.

Source: Alaska Department of Labor and Workforce Development, Research and Analysis Section (Occupational Database and Alaska Permanent Fund Dividend records)

Resident Labor Pool for Gas Line Occupations¹ 18 Alaska, 2005



The total resident workers who were employed, potentially available or trained in gas line occupations in 2005: 62,561.

¹ The gas line occupations are defined in Exhibit 2.

² Employed includes Alaska residents who were employed in any of the gas line occupations at any time in 2005 and didn't receive training in 2005 or federal fiscal year 2005.

³ Trained represents the number of Alaska residents who completed training programs related to gas line occupations and weren't employed in or considered potentially available for any gas line occupation during 2005. This category includes the 97 trainees from the Alaska Pipeline Joint Crafts Training Program course. We didn't have individual data for those trainees, so, for the purpose of this exhibit, we assumed they weren't previously or currently employed in a gas line occupation.

⁴ Potentially available includes Alaska residents under the age of 50 in 2005 who worked at least four quarters in any of the gas line occupations during the previous three years but either (1) weren't employed in a wage and salary job for at least one full quarter in 2005, or (2) were employed in a non-gas line occupation for at least one full quarter in 2005.

⁵ Trained and employed represents Alaska residents who received gas line related training during 2005 and federal fiscal year 2005 and were employed in or considered potentially available for a gas line occupation during 2005.

Source: Alaska Department of Labor and Workforce Development, Research and Analysis Section; and the U.S. Department of Labor

make Alaska resident hire a priority. More than \$14 million in federal and state money has been authorized to date for gas line related job training, including funding for a pipeline training center in Fairbanks, and additional funding is likely.

Those dollars can only be spent to maximum effect if there is first a realistic assessment of our existing work force in gas line occupations. That work force includes workers who have relevant experience but have since moved on to other occupations or are not currently employed. The number of these experienced workers who choose to return to gas line occupations will depend largely on the wages and conditions of the jobs being offered, but it's helpful to know they're out there when

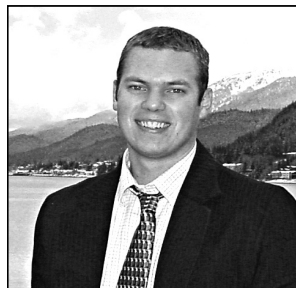
making decisions about where to spend training dollars.

All told, the data discussed in this article suggest that in 2005, Alaska had roughly 62,600¹³ resident workers who had some sort of current employment, previous experience or training in gas line occupations. (See Exhibit 18.)

It's clear that after looking at the number of current and potentially available workers in the gas line occupations, due to seasonality, turnover, training and unemployment, Alaska has the population size and maturity in the construction and petroleum industries to play a more central role in building this generation's pipeline.

¹³ The 62,600 represents the number of currently employed Alaska residents plus the number of potentially available workers and the number who completed training programs.

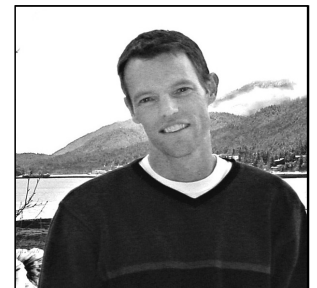
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