

Jobs and Wages and Nonresidents, Oh My

Alaska Department of Labor and Workforce Development Data and Analysis Relevant to the Oil & Gas Competitiveness Review Board's Mission

Presented to Oil & Gas Competitiveness Review Board
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Research and Analysis Section

First for context ...



“The balance sheet of Alaska history is simple: One Prudhoe Bay is worth more in real dollars than everything that has been dug out, cut down, caught, or killed in Alaska since the beginning of time.”

Terrence Cole, Alaska Historian

What you asked for:

- Statistics on the status of the oil and gas industry labor pool living in AK
- Statistics on the status of the oil and gas industry labor pool living outside AK but working in the state
- Description of oil and gas industry workforce development efforts/programs supported by the State of AK

What you asked for:

- What occupations are we strong in and what occupations are in high demand?
- How do our labor costs compare to other oil and gas jurisdictions?
- Do we have programs that are supported financially by industry? If not, how can we encourage such efforts?
- How will workforce development efforts be affected by current budget environment?

What you asked for:

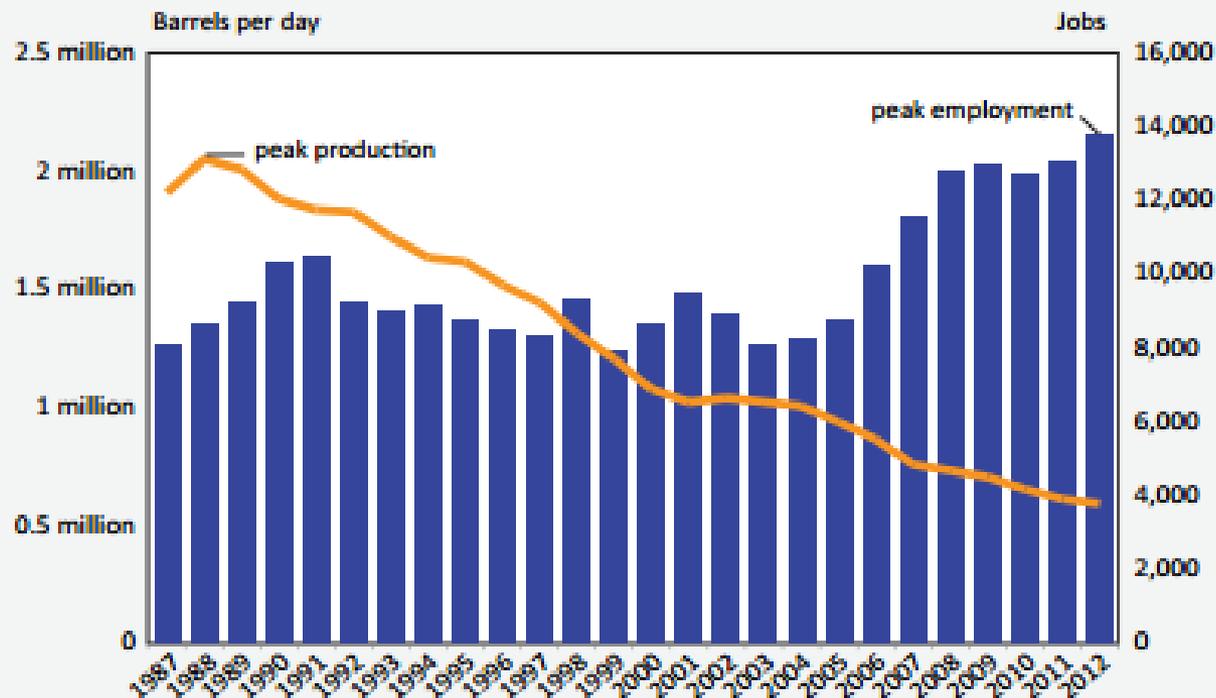
- Statistics on skilled labor as opposed to college graduates?
- How many *potential* workers are in the pipeline (technical training programs, university programs, etc.)
- Is there a better breakdown of jobs into operations, maintenance, construction, drilling, etc.
- How do we compare to other states in data and workforce development programs?

What you asked for:

First a look at what we have “off the shelf”
(regularly produced data, reports, etc.)

A picture's worth a 1,000 words:

2 More Jobs Despite Production Decline Alaska oil production and employment, 1987 to 2012

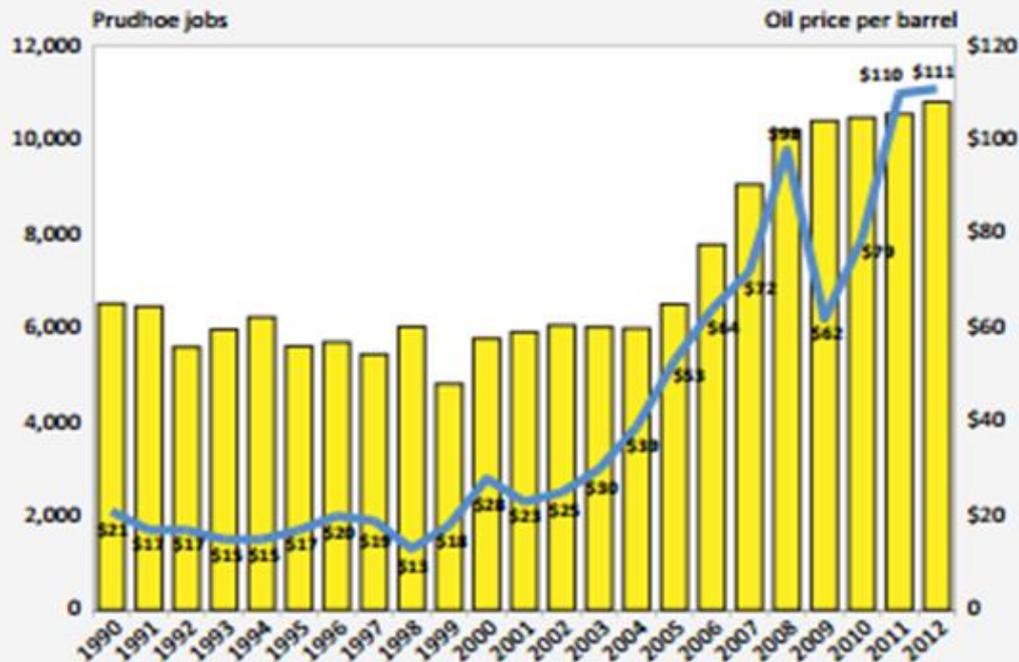


Sources: U.S. Department of Revenue; and Alaska Department of Labor and Workforce Development, Research and Analysis Section

... another thousand:

4 Record Employment in Prudhoe Bay

Jobs and oil prices per barrel, 1990 to 2012



Sources: Alaska Department of Labor and Workforce Development, Research and Analysis Section; and Alaska Department of Revenue

Sharpening the point ...

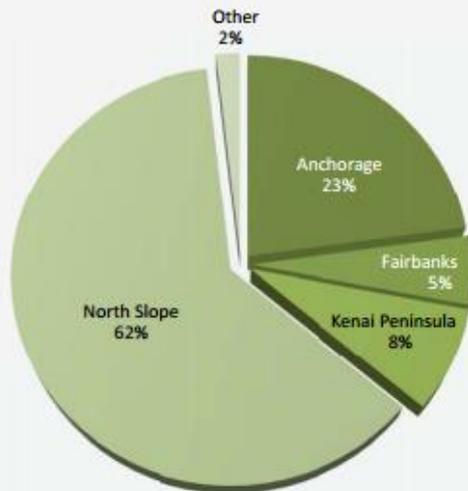
- Oil and gas employment in Alaska went from about 8,000 in 2004 to 15,000 in 2014.
- Oil and gas wages rose from about \$800 million in 2004 to around \$1.9 billion in 2004.

Which brings us to one of our themes:

- DOLWD, Research and Analysis, can tell you quite a bit about how many jobs and how much is being paid in wages; we have that key macroeconomic data (DOR has the higher profile revenue and production data)

What else do we have?

5 Most Jobs on North Slope Alaska oil industry, 2012



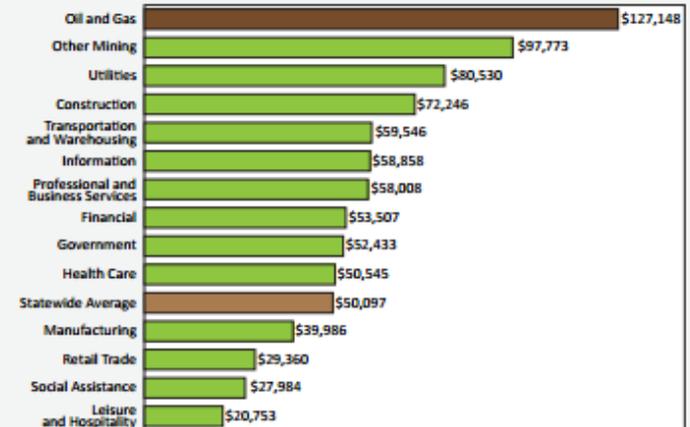
Source: Alaska Department of Labor and Workforce Development, Research and Analysis Section

7 Oil Industry Earnings Resident workers by area, 2011

By borough/census area with 10 or more workers

Borough or census area	Workers	Earnings
Anchorage, Municipality of	4,900	\$573,509,637
Kenai Peninsula Borough	2,886	\$261,181,653
Matanuska-Susitna Borough	2,444	\$222,790,362
Fairbanks North Star Borough	711	\$56,828,382
Valdez-Cordova Census Area	173	\$12,539,129
North Slope Borough	69	\$2,585,915
Yukon-Koyukuk Census Area	68	\$4,767,207
Southeast Fairbanks Census Area	61	\$4,660,955
Lake and Peninsula Borough	20	\$1,156,242
Kodiak Island Borough	20	\$1,340,859
Dillingham Census Area	15	\$666,944
Denali Borough	13	\$920,695
Juneau, City and Borough of	12	\$880,538
Nome Census Area	10	\$665,847
Bethel Census Area	10	\$445,892
Sitka, City and Borough of	10	\$694,257
Ketchikan Gateway Borough	10	\$941,422

8 Oil Industry Earnings Are High Alaska yearly averages, 2012



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

What about residency of workers?

- About 1/3 of the people who work in the oil and gas industry are nonresidents (using the PFD eligibility criteria for residency)
- The percentage is up in recent years: was 28 percent in 2009.
- But remember that growth in nonresident workers almost always comes with growth in resident workers (i.e., it's not a fixed pie)

From our annual report: “Residency of Alaska Workers”

7 Oil Industry, High Nonresident Occupations

Select occupations, Alaska, 2012

Occupation title	Total workers	Percent nonres	Avg quarterly res wages	Avg quarterly nonres wages
Roustabouts, Oil and Gas	1,392	24.3%	\$15,570	\$16,308
Service Unit Operators, Oil, Gas, and Mining	1,260	42.2%	\$23,793	\$22,237
Operating Engineers and Other Construction Equipment Operators	1,203	30.7%	\$19,011	\$19,438
Production Workers, All Other	905	35.0%	\$37,250	\$38,188
Electricians	654	38.2%	\$23,927	\$25,907
Managers, All Other	518	43.2%	\$56,155	\$93,987
Plumbers, Pipefitters, and Steamfitters	498	44.8%	\$20,601	\$21,469
Heavy and Tractor-Trailer Truck Drivers	478	33.9%	\$19,990	\$18,959
Supervisors of Construction and Extraction Workers	368	37.2%	\$35,490	\$35,818
Construction Managers	335	38.5%	\$27,160	\$27,954

Note: Includes occupations in oil and gas extraction and related oilfield services. Occupation totals include only workers in this industry. Additional workers in these occupations may be found in other industries.

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

And from data we provided for O&G workforce development plan

FIGURE 2: 2006 AGE DISTRIBUTION OF OIL AND GAS WORKERS

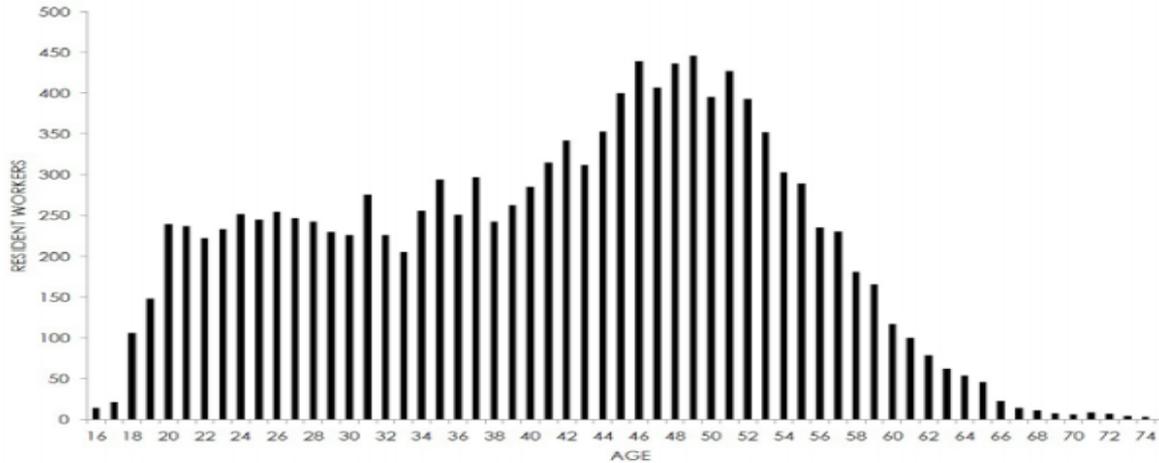


FIGURE 3: 2011 AGE DISTRIBUTION OF OIL AND GAS WORKERS

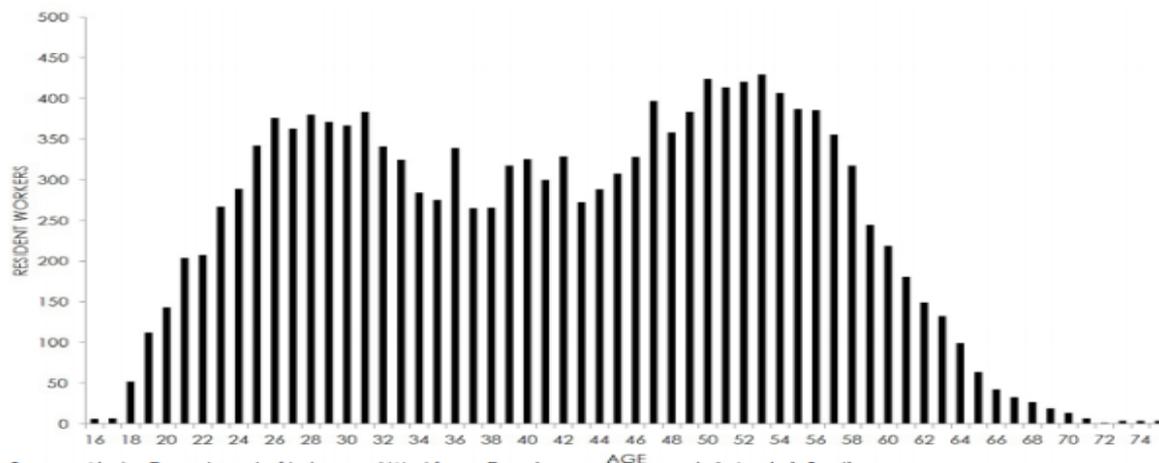


TABLE 5: TOP 25 OCCUPATIONS BY AVERAGE RESIDENT EARNINGS ALASKA STATEWIDE 2011

RANK	OCCUPATION TITLE	TOTAL WORKERS	RESIDENT WORKERS	% RESIDENT WORKERS	RESIDENT AVG. QUARTERLY WAGES
1	Engineering Managers	178	147	82.6	61,381
2	Geoscientists, Except Hydrologists and Geographers	177	124	70.1	53,586
3	Managers, All Other	501	313	62.5	49,276
4	Petroleum Engineers	432	327	75.7	48,360
5	First-Line Supervisors/Managers of Production and Operating Workers	241	172	71.4	45,008
6	General and Operations Managers	421	347	82.4	44,684
7	Engineers, All Other	609	428	70.3	38,109
8	Production Workers, All Other	855	556	65.0	36,262
9	First-Line Supervisors/Managers of Office and Administrative Support Workers	63	45	71.4	35,429
10	Installation, Maintenance, and Repair Workers, All Other	324	282	87.0	33,606
11	Financial Analysts	118	110	93.2	32,957
12	Petroleum Pump System Operators, Refinery Operators, and Gaugers	422	336	79.6	32,580
13	Electrical and Electronic Engineering Technicians	211	79	37.4	31,897
14	First-Line Supervisors/Managers of Construction Trades and Extraction Workers	409	259	63.3	31,743
15	Business Operations Specialists, All Other	183	160	87.4	31,597
16	Environmental Scientists and Specialists, Including Health	82	69	84.1	31,497
17	Inspectors, Testers, Sorters, Samplers, and Weighers	67	43	64.2	31,334
18	Computer Systems Analysts	93	71	76.3	31,057
19	Mechanical Engineers	71	60	84.5	30,165
20	Occupational Health and Safety Specialists	96	67	69.8	30,030
21	Electrical Engineers	69	56	81.2	29,609
22	Maintenance and Repair Workers, General	96	77	80.2	29,572
23	Cost Estimators	55	45	81.8	29,316
24	Construction Managers	359	226	63.0	29,020
25	Health and Safety Engineers, Except Mining Safety Engineers and Inspectors	208	139	66.8	28,833

Occupations with 50 or more workers

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

Looking ahead ...



For oil and gas, our projections show ...

- Growth of about 2,500 jobs from 2012-2022, above average for the state (about 18 percent compared to 11 percent overall)
- Occupations with especially strong growth and higher than average wages (“top jobs”) include petroleum engineers, geological and petroleum technicians, welders, first-line supervisors, operating engineers, and pipefitters

Projections for “Top Jobs”

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Alaska’s Top Jobs

PROJECTED, 2012 TO 2022

	Employment			Openings 2012-2022			Wage quartile ¹
	2012	2022	Percent change	New	Repla- cement	Total openings	
Doctoral or Professional Degree							
Family and General Practitioners	399	495	24.1%	96	76	172	\$\$\$\$
Physical Therapists	400	492	23.0%	93	45	138	\$\$\$\$
Lawyers	1,019	1,010	-0.9%	0	188	188	\$\$\$\$
Master’s Degree							
Physician Assistants	376	472	25.5%	97	69	166	\$\$\$\$
Mental Health Counselors	349	423	21.2%	74	101	175	\$\$\$
Education Administrators, Elementary and Secondary School	517	566	9.5%	48	141	190	\$\$\$\$
Bachelor’s Degree							
Medical and Health Services Managers	949	1,137	19.8%	188	224	412	\$\$\$\$
Petroleum Engineers	539	622	15.4%	83	115	198	\$\$\$\$
Environmental Scientists and Specialists, Including Health	697	804	15.4%	108	162	270	\$\$\$
Captains, Mates, and Pilots of Water Vessels	608	701	15.3%	93	218	311	\$\$\$
Administrative Services Managers	1,818	2,084	14.6%	266	435	702	\$\$\$\$
Geoscientists, Except Hydrologists and Geographers	509	583	14.5%	75	118	193	\$\$\$\$
Construction Managers	1,044	1,183	13.3%	139	253	392	\$\$\$\$
Chief Executives	1,270	1,438	13.2%	169	184	353	\$\$\$\$
General and Operations Managers	3,350	3,752	12.0%	402	603	1005	\$\$\$\$
Sales Managers	657	732	11.4%	75	185	260	\$\$\$\$
Financial Managers	1,128	1,252	11.0%	124	200	324	\$\$\$\$
Middle School Teachers, Exc Spec and Career/Tech Ed	799	879	10.0%	79	170	250	\$\$\$
Elementary School Teachers, Except Special Education	2,797	3,068	9.7%	272	595	867	\$\$\$
Secondary School Teachers, Exc Spec and Career/Tech Ed	1,432	1,570	9.6%	138	379	517	\$\$\$
Accountants and Auditors	1,732	1,894	9.4%	162	360	522	\$\$\$\$
Civil Engineers	849	910	7.2%	62	167	228	\$\$\$\$
Probation Officers and Correctional Treatment Specialists	697	736	5.6%	39	146	185	\$\$\$
Airline Pilots, Copilots, and Flight Engineers	1,735	1,828	5.4%	92	504	597	\$\$\$\$
Compliance Officers	765	795	3.9%	30	148	179	\$\$\$
Zoologists and Wildlife Biologists	976	1,006	3.1%	30	213	243	\$\$\$
Computer and Information Systems Managers	907	912	0.6%	5	220	225	\$\$\$\$
Associate Degree or Postsecondary Nongraduate Award							
Dental Hygienists	571	730	27.8%	159	111	270	\$\$\$\$
Medical and Clinical Laboratory Technicians	355	437	23.1%	82	67	149	\$\$\$
Radiologic Technologists	441	539	22.2%	98	66	164	\$\$\$
Registered Nurses	4,979	5,973	20.0%	994	873	1867	\$\$\$\$
Geological and Petroleum Technicians	821	969	18.0%	148	231	378	\$\$\$
First-Line Supervisors of Production and Operating Workers	855	929	8.7%	74	166	239	\$\$\$\$
Aircraft Mechanics and Service Technicians	1,303	1,399	7.4%	96	316	412	\$\$\$
Air Traffic Controllers	549	554	0.9%	6	170	176	\$\$\$\$
High school diploma or equivalent							
Hazardous Materials Removal Workers	346	427	23.4%	81	117	198	\$\$\$
Welders, Cutters, Solderers, and Brazers	732	861	17.6%	129	189	318	\$\$\$
Inspectors, Testers, Sorters, Samplers, and Weighers	510	591	15.9%	81	107	189	\$\$\$
Supervisors of Construction and Extraction Workers	973	1,116	14.7%	142	217	360	\$\$\$\$
Bus and Truck Mechanics and Diesel Engine Specialists	697	793	13.8%	96	146	243	\$\$\$
Mobile Heavy Equipment Mechanics, Except Engines	981	1,112	13.4%	131	247	378	\$\$\$
Commercial Pilots	837	944	12.8%	107	284	391	\$\$\$
Operating Engineers and Other Const Equip Operators	3,225	3,632	12.6%	407	937	1344	\$\$\$
First-Line Supervisors of Office and Admin Support Workers	2,164	2,425	12.1%	262	561	822	\$\$\$
Carpenters	2,973	3,318	11.6%	345	610	956	\$\$\$
Plumbers, Pipefitters, and Steamfitters	1,670	1,830	9.6%	160	467	627	\$\$\$
First-Line Supervisors of Mechanics, Installers, and Repairers	721	789	9.4%	68	184	252	\$\$\$\$
Electricians	2,355	2,531	7.5%	176	615	791	\$\$\$\$
Purchasing Agents, Except Wholesale, Retail, and Farm	542	574	5.9%	32	141	173	\$\$\$
Correctional Officers and Jailers	883	924	4.6%	41	150	192	\$\$\$
Water and Wastewater Treatment Plant and Sys Operators	606	630	4.0%	25	152	176	\$\$\$
Police and Sheriff’s Patrol Officers	1,209	1,228	1.6%	19	316	335	\$\$\$\$
Less than high school							
Service Unit Operators, Oil, Gas, and Mining	892	1,058	18.6%	166	182	348	\$\$\$

Notes: To rank as a “top job,” the occupation must: 1) rank in the top two wage quartiles; AND 2) have projected growth of at least 7% jobs and greater percentage growth than all occupations combined OR be one of the 50 occupations with the most projected openings (of those with wages in the top two quartiles).

¹Earnings \$\$\$ = \$54,370 to \$73,245 annually (\$26.14 to \$35.21 hourly), \$\$\$\$ = More than \$73,245 annually (\$35.21 hourly), based on 2013 OES estimates for Alaska.

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

Other questions not yet addressed:

How do our labor costs compare?

How do our labor costs compare?

- Texas: \$105,000 average annual wages*
- North Dakota: \$89,000 average annual wages
- Alaska: \$120,000 average annual wages

*Natural Resources and Mining

Source: U.S. Bureau of Labor Statistics

How do our labor costs compare?

- Cost of living is higher in Alaska
 - We are a remote state with a relatively small population that imports most of our consumer goods
 - *But* cost of living differential is smaller now than it used to be as our population grows, transportation options improve, etc.

Other questions not yet addressed:

How does our O&G workforce compare to other states?

How does our workforce compare?

- Texas: 348,000 jobs*
- North Dakota: \$30,000 jobs*
- Alaska: 18,000 jobs (note difference between previous job numbers*)

*Natural Resources and Mining

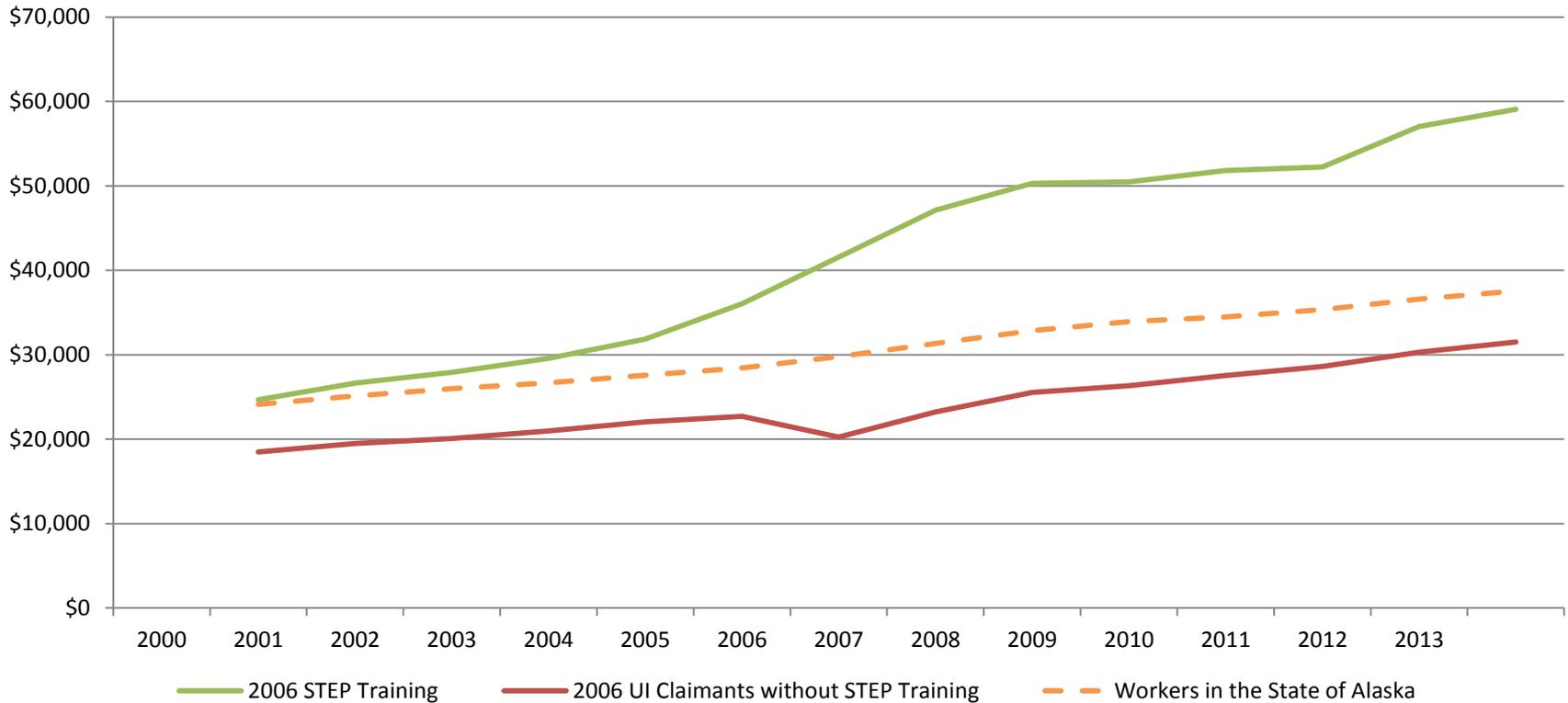
Source: U.S. Bureau of Labor Statistics

Questions Research and Analysis isn't best suited to answer:

- The ones whose answers depend on policy decisions:
 - What percentage of nonresident workers is acceptable?
 - How should workforce development efforts be prioritized (certain occupations, certain education levels, etc.)? We can help policy makers with this one, though, by looking at trends and projections
 - What does industry need and how much should they be expected to pitch in?

But a growing part of our work is helping policy makers see what's working:

2006 STEP Participants and UI Claimants Average Annual Wages



But a growing part of our work is helping policy makers see what's working:

- Fairly basic for us to identify training participants pre-training and post-training wages, percentage working before and after training (with details about whether they're working in an occupation related to their training)
- We – and everyone else – are looking for good methods to measure return on investment for public money spent on training

Information that usually has to come from the industry:

- What kind of work is being done (maintenance on existing fields, development of new fields; there's lots of anecdotal information, but little hard data)
- What types of workers are they having the hardest time finding? (which helps with promoting resident hire and prioritizing training)

So ... competitiveness advantages and disadvantages (preliminary thoughts from a workforce perspective)

- Positives
 - High wage
 - More stability?
 - Mature fields (compare ND)
 - Alaska!
- Negatives
 - Remote
 - Extreme conditions
 - Schedule?
 - Declining production?

Questions?

Sources for all data, unless otherwise noted:

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

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