

The economic impact of the Liberty Oil Project  
A focus on employment and wages during the  
construction phase

By

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## Summary

We analyze the employment and wages effects that will stem from the construction phase of the Liberty project in Alaska. These economic impacts were generated using inputs provided by Hilcorp. We used a standard input output model –IMPLAN– to estimate the ripple effects from the employment and wages directly associated with the project. We find the following:

- - Direct employment peaks in 2020 at around 300 annualized jobs.
- - Direct wages also peak in 2020 at 40 million dollars.
- - Total direct employment from 2017 to 2023 is 1,019 jobs.
- - Total direct wages from 2017 to 2023 are about 141 million dollars.
- - Total direct wages including benefits and burdens are about 201 million dollars. <sup>1</sup>
- - The total employment- including direct, indirect, and induced- from the Liberty project between 2017 and 2023 is expected to be close 2,700.
- - The total wages-indirect and induced- in 2017 dollars from the construction phase add up to 247 million dollars.
- - Our results focus on the onsite construction phase of the project and therefore only provide a partial picture of the full range of effects. For example, prolonging the life of the pipeline has broad effects on revenues and employment that we do not try to address.
- - We also do not look at the engineering and construction and transportation of drilling and production facilities, of which some portion may be constructed in Alaska.

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<sup>1</sup> Our analysis is a short term economic impact analysis. Therefore, we do not use employee benefits (i.e., pension, medical insurance, etc.) to calculate our economic impacts given as we do not know if they are spent in the Alaska economy. We rely instead on the raw wages.

## ***l)* Introduction**

Hilcorp Alaska, LLC proposes to develop the Liberty Project in federal waters approximately five miles offshore of the North Slope coastline in Foggy Island Bay, east of Prudhoe Bay. According to the federal EIS, Hilcorp has determined that the Liberty Prospect contains approximately 120 million barrels of recoverable crude oil. The project would be constructed as a self-contained, offshore gravel island on which drilling and production facilities would be located. Developing the project requires building the 9-acre island in 19 feet of water. The EIS provides that up to 16 wells would be located on the island designed to “produce up to 65,000 barrels of crude oil and 120 million standard cubic feet of natural gas per day. The life of the proposed Liberty Prospect is anticipated to be approximately 15-20 years.<sup>2</sup>”

In this paper, we focus our attention on the construction jobs and associated earnings that will be gained by Alaska residents<sup>3</sup>. We used the jobs directly associated with the project construction to calculate ripple effects through the economy between 2017 and 2023. The paper does not include the jobs and earnings for post-construction operation of the project or potential economy wide effects from extending the life of the pipeline.

### ***la) Methodology***

Hilcorp Alaska, LLC provided ISER with detailed, monthly employment projections for the construction of the Liberty Project, from July 2017 through December 2023, six and a half years. The data included job title, monthly pay rate in 2017 dollars, and the proportion of the time spent on the Liberty Project (i.e. full time, half time).<sup>4</sup> Summing this information by month and year provided the number of jobs and direct employment spending for construction of the project.

The direct spending and jobs will create spinoff effects because companies need to buy materials from other Alaskan firms and workers will spend their income on goods and services sold by Alaskan companies. These spinoffs effects are classified as indirect and induced.

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<sup>2</sup> Liberty Development Project, Draft Environmental Impact Statement. July 2017. Abstract.

<sup>3</sup> We are assuming that the jobs added in the construction phase will be held by Alaskans. This information was obtained from Hilcorp.

<sup>4</sup> Table 6 in the Appendix provides this detailed employment data by month and by phase of the project.

**Indirect effects** are the changes in jobs with in backward-linked industries in Alaska. In other words, businesses that supply goods and services to the firms directly involved in the construction and operation of the field. For example, construction companies purchase a variety of materials in the state in order to build the island. Each business that provides goods or services to the construction companies indirectly benefits from the Liberty Project.

**Induced effects** are the changes in Alaskan jobs resulting from household spending of income earned either directly or indirectly from the Liberty Project. Employees in construction firms and backward-linked industries spend their income in the state creating additional sales and economic activity. Given these jobs high wages, these effects are substantial. Increase income in the state results in increased spending that will affect retain stores and other businesses that depend on household spending.

To put it another way, Hilcorp Alaska LLC has employees and contractors that build the Liberty Project. These are direct jobs, and the wages are direct employment wages in Alaska. However, their work is associated with firms in Alaska that supply goods and services to them – bring up the fuel, fly them to the site, supply equipment they use, etc. The Alaska employees that provide these goods and services are Alaskan indirect effects – indirect jobs and indirect employment spending. When the Alaskan employees go to their homes, they spend their wages at the grocery store, at the car dealer, and elsewhere. This spending creates additional employment and employment income. This is the induced jobs and wages in Alaska caused by the Liberty Project.

To estimate the indirect and induced jobs and wages created by the Liberty Project, we used a standard economic technique known as “economic impact modeling” and a commonly used model known as “IMPLAN.” This approach and this model are widely used in Alaska and elsewhere.

### ***1c) Important Assumptions***

This analysis, using the IMPLAN model, includes some important assumptions.

- When Hilcorp Alaska, LLC provided us the employment figures, we were told that these were their estimate of Alaskan employment. Consistent with that information, the calculations in this report assume that the employees used for the model lived in Alaska. If some of them live elsewhere, then when they go back to their home state, they would take the induced economic effects back to that state.

- The IMPLAN model assumes the certain statistical linkages or interdependencies between each sector and the rest of the economy. That is, to calculate the indirect/induced employment effects, IMPLAN assumes that the link between Liberty Employment and indirect/induced employment effects are similar to the average linkages of the non-residential Alaskan construction sector (see Table 5 in the appendix). To the extent that the Liberty Project effects are different – that they create more or less employment than the average of this sector – then the model will calculate effects that are different than the true effects. This assumption is an important reason why economic models provide *estimates* of the true effect.
- We used only the direct wages in the IMPLAN model. That is, Hilcorp reports the direct wages, and it also reports that an additional 40% of wages are paid for employees “benefits and burden.” This additional 40% is a real cost to the employer and pays for an employee’s health care, pension, and overhead (costs of an office, workers compensation, etc.). Most of these expenses do not provide direct and immediate employment benefits to Alaska. That is, the pension is a real cost to the employer, but is not spent immediately in Alaska, and therefore does not create indirect and induced effects. To the extent that some of the 40% benefit and burden is spent in Alaska – for example, some of the health care expenses might be spent within the state – excluding them from the IMPLAN calculations means that the model underestimates the true effect to some extent.
- This report examines only the employment effects from construction. It does not include the effects of the 15-20 year operation of the Liberty Project, nor of the effects of dismantling and reclaiming the project.

***1b) Other federal, state, and private effects created by the Liberty Project***

The construction employment effects are important, but they are not the only effects. Liberty is outside the state’s jurisdiction on federal land and waters. It is not subject to Alaska royalty or taxes. However, the project will still pay taxes on the infrastructure that occurs within the state’s boundary, and will pay lease fees for facilities on state lands such as pipelines. The federal Bureau of Ocean and Energy

Management estimates that over the operating life of the project, it would generate nearly \$1.5 billion in lease and royalty payments to the federal government – in 2015 dollars. The state of Alaska’s share of that revenue would be approximately \$400 million with another \$15 million in state corporate income taxes and \$3 million in state property taxes from onshore facilities. It also estimates that the North Slope Borough would receive about \$35 million in estimate property taxes.<sup>5</sup>

In addition, Liberty would add approximately 13% to the TAPS oil flow.<sup>6</sup> The additional flow will lower transportation costs for all other oil flowing through TAPS, which will increase the value of that oil, resulting in more royalty and taxes paid to the state.

These additional revenues are not included in the direct, indirect, and induced employment effects estimated in this report.

## **II) The direct employment effects of the Liberty project on Alaskans**

As we explain above, we obtained employment and wage data for workers who will be affiliated with the Liberty project during the construction phase<sup>7</sup>. Table 1 shows the annualized employment numbers. By annualized, we mean the number of 12 month jobs. For example a job that only lasts for 6 months counts as one half of a job. We can see from the table below that resident employment peaks in 2020 at 299 full time annual workers. The total wages associated with those jobs in 2020 is about \$39.5 million. Employment starts slow with only 8 full time equivalent positions in 2017 and 2018 but then accelerates in 2019 and remain high for the next four years. The jobs span multiple categories but are all high paid as they average between 120,000 and 235,000 dollars.

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<sup>5</sup> Liberty Development Project, Draft Environmental Impact Statement. July 2017. Table 4.4.2-5, Page 4-244.

<sup>6</sup> According to Alyeska Pipeline Service Company (<http://www.alyeska-pipe.com/TAPS/PipelineOperations/Throughput>), the 2016 TAPS throughput was 517,868 barrels per day. The Proposed Liberty production of 65,000 barrels per day is approximately 13% of that volume.

<sup>7</sup> Appendix A provides detailed employment figures by stage.

<b>Table 1: Direct employment and wages by year</b>								
	<b>2016</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>2022</b>	<b>2023</b>
Direct Annualized Jobs		2.3	5.67	166.50	299.83	223.22	179.50	142.5
Direct Annualized wages		1,080,000	1,350,000	23,363,000	39,500,000	30,617,500	25,410,000	19,574,000
Direct Annualized wages + benefits		1,512,000	1,890,000	32,708,200	55,300,000	42,864,500	35,574,000	27,403,600
CPI (using the 2010-2016 average)	217.83	221.811	225.86	229.99	234.19	238.48	242.84	247.27
Wages in 2017 dollars		1,080,000	1,325,765	22,531,711	37,410,667	28,477,435	23,209,650	17,558,050
Average wages		234,782.61	233,958.53	133,325.59	124,771.54	127,582.31	129,301.67	128,945

During the construction phase -2017 to 2023- we calculate 1,019 direct annualized jobs that will have wages equaling \$140,894,500. They will be distributed among the construction phases of the project in the following way:

<b>Table 2: Employment by phase</b>	
<b>Phase</b>	<b>Resident Jobs (2017-2023)</b>
Project/Operations Management	47.25
Permitting/Compliance	31.6
Other office-based support	21.5
Island Design, Construction	226.83
Pipeline Design, Construction	92.25
Facility Design, Construction	232
Infrastructure (Camp, etc.)	80.83
Drilling Support Facilities Design	28.89
Drilling Operations	264.4
<b>Total</b>	<b>1,019.5</b>

As we can see from above, 54% of the created jobs will be construction related with another 26% in drilling operations.

The direct spending and jobs will create spinoff effect because companies need to buy materials from other Alaska firms and workers will spend their income on goods and services sold by Alaska companies. These spinoff effects are classified as indirect and induced. It is important to note that we assume these jobs will be held by Alaskans and therefore the worker spending will occur within the state and therefore will create jobs in sectors dependent on household spending (for ex: retail stores). This is an important assumption because the induced effects are very sensitive to residency of workers.

### **III) The indirect and induced effects of employment and wages**

To analyze the indirect and induced jobs/wages created from the initial activity associated with the Liberty project, we used a standard economic technique known as “economic impact modeling” and a commonly used model known as “IMPLAN.” This approach and this model are widely used in Alaska and elsewhere. The technique allows us to estimate how a change in spending/employment attributable to a particular industry “ripples” through the economy as a result of further changes in spending flows between industries and households. This, however, does not account for potential behavioral adjustments in spending, wage rates, prices, or migration to and from Alaska. The best way to interpret our estimates is to say that they reflect immediate job gains resulting from additional money circulating in the economy. Table 5 in the appendix shows the multipliers in a number of construction related sectors which show the interdependency between our sectors of interest and the rest of the economy. An important takeaway is that the multipliers are relatively similar which shows that they have similar



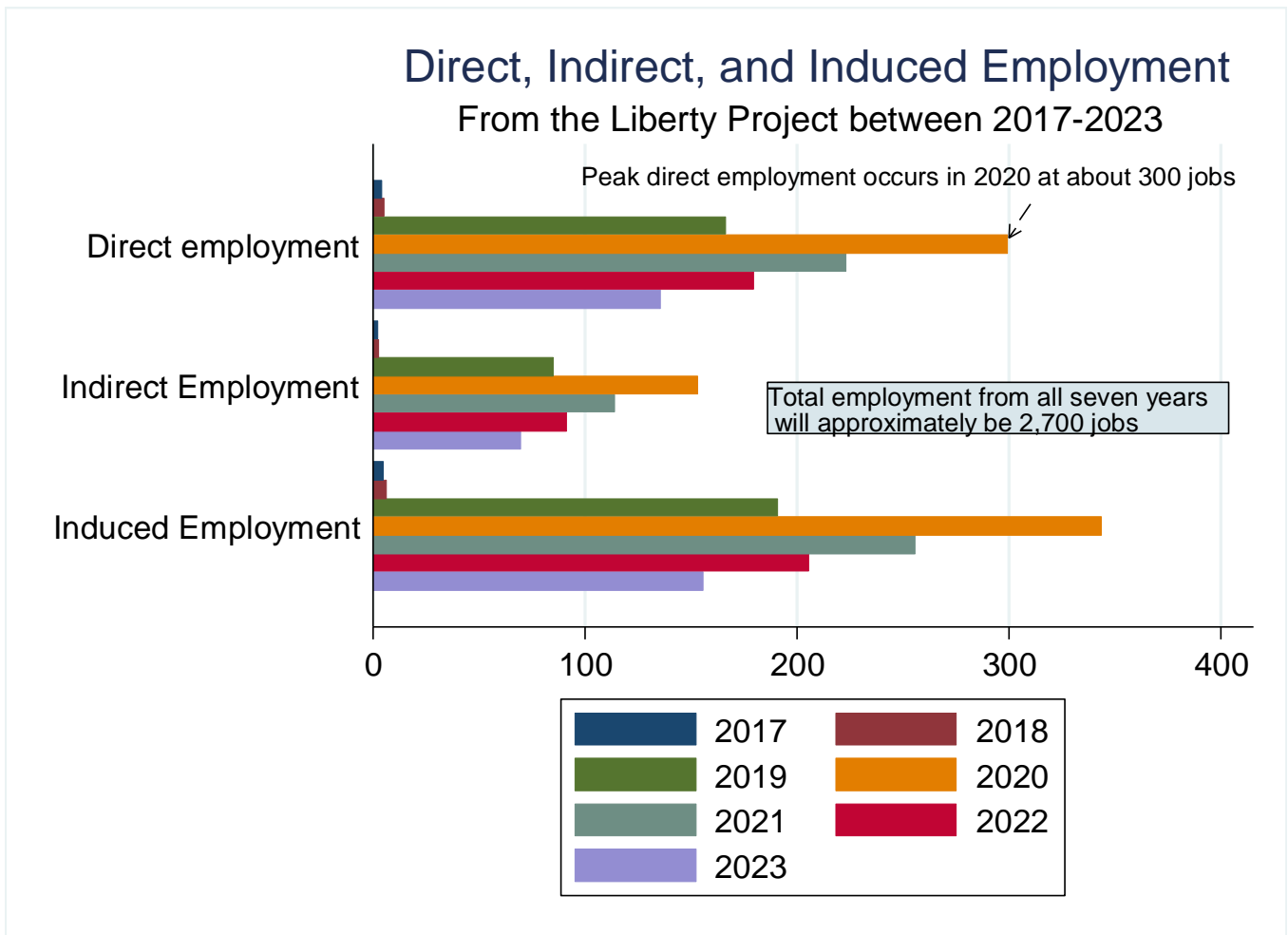
levels of leakage. The relationship between a job created in a given construction sector<sup>8</sup> and the rest of the sectors allows us to estimate the number of indirect jobs added to the statewide economy from an initial shock. In general, projects which purchase more of their inputs from within the state will have a higher indirect effect.

<b>Table 3: Indirect and induced employment and wages by year</b>								
	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>2022</b>	<b>2023</b>	<b>Total</b>
<b>Jobs</b>								
Indirect	1.17	2.89	85.04	153.14	114	91.68	69.55	517.47
Induced	2.64	6.5	191.02	343.99	256.08	205.93	156.22	1162.38
<b>Wages (dollars)</b>								
Indirect	\$234,496	\$287,858	\$4,892,235	\$8,122,853	\$6,183,210	\$5,039,434	\$3,812,321	\$28,572,407
Induced	\$712,831	\$875,043	\$14,871,587	\$24,692,132	\$18,795,938	\$15,319,046	\$11,588,825	\$86,855,402

On average, for every job directly associated with Liberty, there is another 1.65 jobs created in the rest of the state through both backward linkages (firms supplying the construction companies) and the added spending by direct and indirect workers. Graph 1 shows the direct, indirect, and induced employment by year. Peak resident direct employment is reached in 2020 at about 300 jobs. In that year, there are 344 induced jobs from additional worker spending, and another 144 jobs from suppliers hiring workers to meet the demand of the construction and operation companies. These results tell us that employment and wage related economy wide benefits go well beyond the construction sectors and spread to other sectors. These “new” jobs will be distributed across a wide range of sectors including household spending sectors such as retail.

<sup>8</sup> Sectors 56, 58, 62, and 64 from Table 7 are the ones most reflective of the activity that will take place during the construction phase of the liberty project.

Graph 1: Employment effects



Graph 2: Wage effects

Graph 2 summarizes the direct, indirect, and induced wages by year. Similar to Graph 1, direct wages peak in 2020 at 36.5 million dollars. The overall wages that will be earned between 2017 and 2023 are 247 million dollars (2017 dollars)

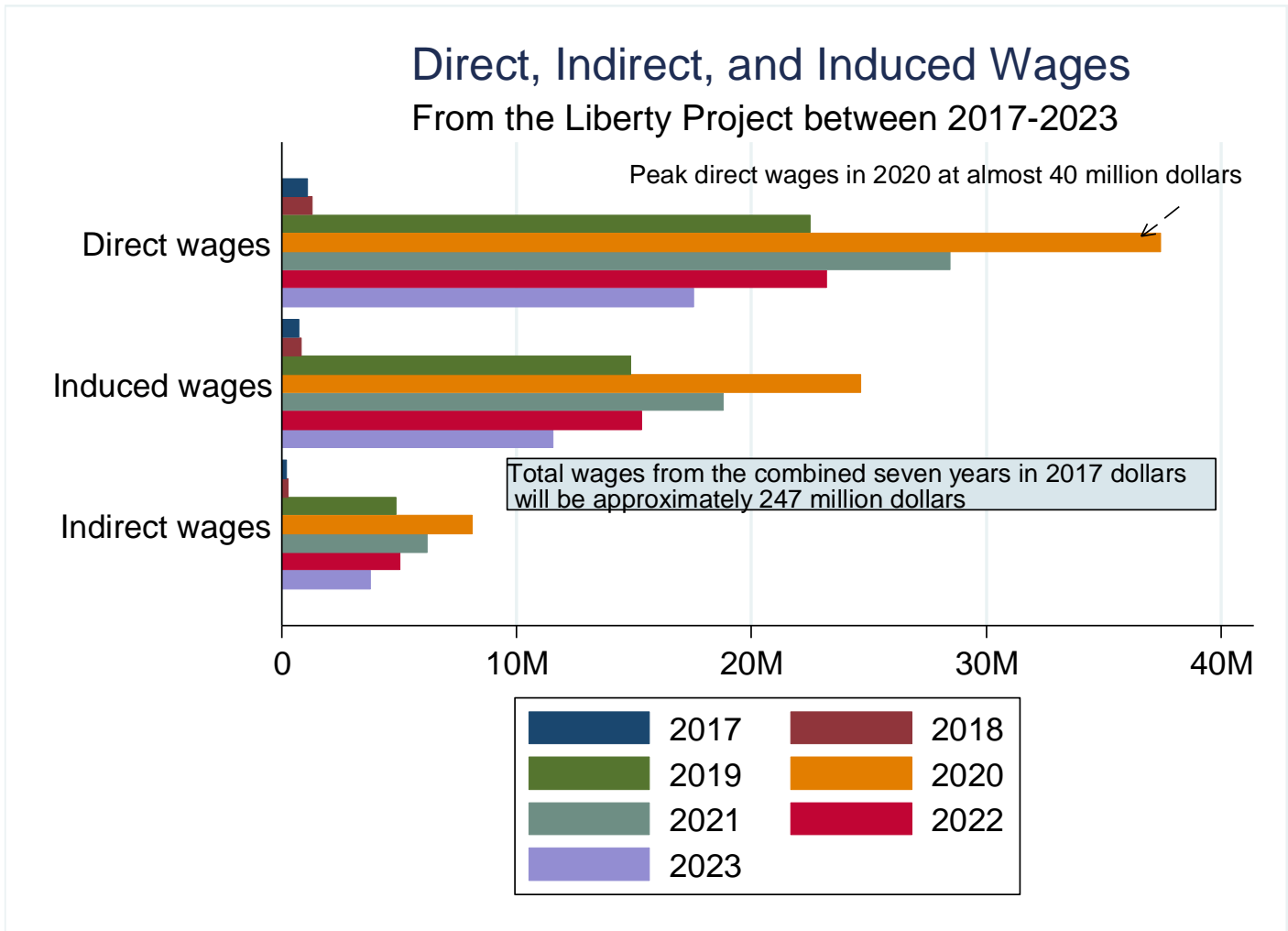


Table 3 adds us the direct, indirect, and induced employment and wages by year. In 2020, for example, the Alaska economy can expect an additional almost 800 jobs due to the Liberty project (directly and indirectly). The direct and indirect jobs will be high paying positions while the induced jobs are typically retail, lower wages positions.

<b>Table 4: Total employment and wages by year</b>								
	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>2022</b>	<b>2023</b>	<b>Total</b>
All employment	6.11	15.06	442.56	796.95	593.29	477.11	368.27	2699.35
All wages	\$2,027,328	\$2,488,667	\$42,295,534	\$70,225,653	\$53,456,584	\$43,568,130	\$32,959,197	\$247,021,093

In Table 4, we show the overall employment and wage effects associated with the construction phase of the Liberty project between 2017 and 2023. After taking the direct, indirect, and induced effects the Liberty project will add almost 2,700 jobs to the Alaska economy. These jobs will result in wages amounting to 247 million dollars.

<b>Table 5: Overall employment and wages</b>	
All annualized employment	2,699
All wages in 2017 dollars	247,021,096

**Conclusion:**

We evaluate the employment and wage effects of the construction phase of the Liberty project. We find that between 2017 and 2023 it has the potential of generating 2,700 jobs after accounting for indirect and induced jobs. These jobs are associated with wages of 247 million dollars. Employment and wage effects peak in 2020 but remain steady until the end the phase in 2023. The jobs directly associated with Liberty have high average wages between 120,000 and 235,000. Our results are sensitive to purchasing patterns, and residency of the workers. Therefore, they are best to be thought of as estimates of the economic impact of the construction phase. Our results are also not exhaustive of all

the ways the project will affect the Alaska economy through jobs generated in the operations phase, extending the life of the pipeline, and the taxes the state will generate.

**Appendix:**

In table 5, we show the multipliers in a variety of construction sectors. One of the takeaways is the similarity in multipliers across industries.

- -The direct effect column shows the number jobs associated with 1 million dollars in each of these sectors.
- -The indirect effect column shows the number of indirect jobs created as a result of the 1 million dollars of spending.
- -The induced effect column shows the number induced jobs created as a result of the 1 million dollars in spending.
- -The total shows the overall jobs associated with a 1 million dollars of spending.
- -The column titled Type 1 multiplier shows the overall job changes due to direct and indirect activity from a one job change. In other words, 1 new job in the construction of new healthcare structures results in 1.32 jobs in the state of Alaska from direct and indirect linkages. The Type SAM column shows the overall number of jobs after accounting for direct, indirect, and induced linkages. This means for that same sector a one job change in the construction of new health care structure industry 1.42 other jobs are created for a total of 2.42.

<b>Table 5: Multiplier effects from construction related sectors.</b>							
Industry code	Description	Direct effect	Indirect effect	Induced effect	Total	Type 1 Multiplier	Type SAM Multiplier
52	Construction of new health care structures	4.20	1.35	4.63	10.18	1.32	2.42

53	Construction of new manufacturing structures	5.98	0.70	5.47	12.16	1.11	2.03
54	Construction of new power and communication structures	4.42	1.27	5.49	11.19	1.28	2.52
55	Construction of new educational and vocational structures	3.89	1.54	4.58	10.02	1.39	2.57
<b>56</b>	<b>Construction of new highways and streets</b>	<b>3.83</b>	<b>1.69</b>	<b>4.80</b>	<b>10.33</b>	<b>1.44</b>	<b>2.69</b>
57	Construction of new commercial structures, including farm structures	5.58	1.03	5.182	11.79	1.18	2.11
<b>58</b>	<b>Construction of other new nonresidential structures</b>	<b>4.89</b>	<b>1.69</b>	<b>5.25</b>	<b>11.84</b>	<b>1.34</b>	<b>2.42</b>
59	Construction of new single-family residential structures	5.15	2.36	5.62	13.14	1.45	2.54
60	Construction of new multifamily residential structures	4.41	3.44	5.35	13.21	1.78	2.99
61	Construction of other new residential structures	3.45	3.54	5.05	12.0	2.02	3.49
<b>62</b>	<b>Maintenance and repair construction of nonresidential structures</b>	<b>4.6</b>	<b>2.35</b>	<b>5.28</b>	<b>12.25</b>	<b>1.51</b>	<b>2.65</b>
63	Maintenance and repair construction of residential structures	4.4	3.08	5.24	12.72	1.69	2.89
<b>64</b>	<b>Maintenance and repair construction of highways, streets, bridges, and tunnels</b>	<b>4.60</b>	<b>1.98</b>	<b>5.54</b>	<b>12.14</b>	<b>1.43</b>	<b>2.63</b>

<b>Table 6: Employment by phase and job description between 2017 and 2023</b>												
						2017	2018	2019	2020	2021	2022	2023
Discipline	HAK Staff or Contract	Schedule	Monthly Wage	Plus benefit & burdens								
<b>Project/Operations Management</b>												
	Project Manager	H	5&2	\$25,000	\$25,000	0.50	1.00	1.00	1.00	1.00	1.00	1.00
	Project Scheduler	C	5&2	\$15,000	\$15,000	0.00	0.42	1.00	1.00	1.00	1.00	
	Project Controller	C	5&2	\$10,000	\$10,000	0.00	0.00	0.50	1.00	1.00	1.00	
	Engineers, Projects personnel	C	5&2	\$15,000	\$15,000	0.00	0.00	3.00	3.00	3.00	3.00	
	Other	C	5&2	\$15,000	\$15,000	0.00	0.00	4.00	4.00	4.00	4.00	
<b>Permitting/Compliance</b>												
	Permitting Professional	H	5&2	\$15,000	\$15,000	0.50	1.00	0.00	0.00	0.00	0.00	0.00
	Admin and Compliance	H	5&2	\$15,000	\$15,000	0.00	0.00	1.00	1.00	1.00	1.00	1.00
	Field Compliance	H	14&14	\$15,000	\$15,000	0.00	0.00	0.67	4.00	4.00	4.00	4.00
	Other	C	5&2	\$15,000	\$15,000	0.00	0.00	0.50	2.00	2.00	2.00	2.00
<b>Other office-based support</b>												
	Stakeholder Liaison	H	5&2	\$15,000	\$15,000	0.25	0.50	0.50	0.50	0.50	0.50	0.50

	Other	H	5&2	\$15,000	\$15,000	0.00	0.00	2.00	4.00	4.00	4.00	4.00
<b>Island Design, Construction</b>												
	Project Engineer	C	5&2	\$20,000	\$20,000	0.25	0.50	1.00	0.75	0.00	0.00	0.00
	Construction Engineers	C	5&2	\$17,000	\$17,000	0.00	0.00	0.67	0.75	0.00	0.00	0.00
	Construction Manager	H	5&2	\$18,000	\$18,000	0.00	0.00	0.33	0.75	0.00	0.00	0.00
	Construction Foreman	C	14&14	\$15,000	\$15,000	0.00	0.00	0.50	1.50	0.00	0.00	0.00
	Ice/Island Construction Workers	C	14&14	\$10,000	\$10,000	0.00	0.00	21.67	191.67	0.00	0.00	0.00
	Other, Offsite, etc.	C	14&14	\$10,000	\$10,000	0.00	0.00	1.67	4.58	0.00	0.00	0.00
<b>Pipeline Design, Construction</b>												
	Project Engineer	C	5&2	\$20,000	\$20,000	0.25	0.50	0.92	1.00	0.75	0.00	0.00
	Construction Engineers	C	5&2	\$20,000	\$20,000	0.00	0.00	0.00	0.42	0.75	0.00	0.00
	Construction Manager	C	14&14	\$20,000	\$20,000	0.00	0.00	0.00	0.50	1.17	0.00	0.00
	Construction Foreman	C	14&14	\$15,000	\$15,000	0.00	0.00	0.00	0.50	1.17	0.00	0.00
	Pipeline Construction Workers	C	14&14	\$10,000	\$10,000	0.00	0.00	0.00	13.00	66.08	0.00	0.00
	Other, Offsite, etc.	C	14&14	\$10,000	\$10,000	0.00	0.00	0.00	1.67	3.33	0.00	0.00
<b>Facility Design, Construction</b>												
	Project Engineer	C	5&2	\$20,000	\$20,000	0.25	0.50	2.00	2.00	2.00	0.83	0.00
	Construction Engineers	C	5&2	\$20,000	\$20,000	0.00	0.00	3.33	4.00	3.33	0.83	0.00



	Construction Manager	H	14&14	\$20,000	\$20,000	0.00	0.00	1.50	1.83	1.67	0.83	0.00
	Construction Foreman	C	14&14	\$15,000	\$15,000	0.00	0.00	2.67	3.33	3.33	1.67	0.00
	Facilities Construction Workers	C	14&14	\$10,000	\$10,000	0.00	0.00	35.83	29.17	70.00	25.00	0.00
	Other, Offsite, etc.	C	14&14	\$10,000	\$10,000	0.00	0.00	9.17	10.00	10.00	6.67	0.00
<b>Infrastructure (Camp, etc.) Design &amp; Construction</b>												
	Project Engineer	C	5&2	\$20,000	\$20,000	0.25	0.50	2.00	0.33	0.00	0.00	0.00
	Construction Engineers	C	5&2	\$20,000	\$20,000	0.00	0.00	3.33	0.67	0.00	0.00	0.00
	Construction Manager	H	14&14	\$20,000	\$20,000	0.00	0.00	1.50	0.33	0.00	0.00	0.00
	Construction Foreman	C	14&14	\$15,000	\$15,000	0.00	0.00	2.67	0.67	0.00	0.00	0.00
	Facilities Construction Workers	C	14&14	\$10,000	\$10,000	0.00	0.00	51.67	5.83	0.00	0.00	0.00
	Other, Offsite, etc.	C	14&14	\$10,000	\$10,000	0.00	0.00	9.17	1.67	0.00	0.00	0.00
<b>Drilling Support Facilities Design, Construction</b>												
	Drilling Engineer	C	5&2	\$25,000	\$25,000	0.00	0.25	0.25	0.25	0.79	0.00	0.00
	Construction Engr/Mgr	C	5&2	\$25,000	\$25,000	0.05	0.50	0.50	0.50	0.83	0.00	0.00
	Drill Rig, SM Engineers	C	5&2	\$25,000	\$25,000	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Drilling Foreman	H	14&14	\$25,000	\$25,000	0.00	0.00	0.00	0.00	2.00	0.00	0.00
	Construction Superintendent	C	14&14	\$20,000	\$20,000	0.00	0.00	0.00	0.00	0.83	0.00	0.00
	Facilities Construction Crew	C	14&14	\$10,000	\$10,000	0.00	0.00	0.00	0.00	13.33	0.00	0.00
	Hookup & Commission Crew		14&14	\$8,000	\$8,000	0.00	0.00	0.00	0.00	5.00	0.00	0.00
	Other, Offsite, etc.	C	14&14	\$10,000	\$10,000	0.00	0.00	0.00	0.00	2.92	0.83	0.00

<b>Drilling Operations</b>												
	Drilling Engineer	H	5&2	\$25,000	\$25,000	0.00	0.00	0.00	0.67	2.00	2.00	2.00
	Drilling Foremen	H	14&14	\$25,000	\$25,000	0.00	0.00	0.00	0.00	0.33	4.00	4.00
	Drilling Expeditor	C	14&14	\$10,000	\$10,000	0.00	0.00	0.00	0.00	0.50	2.00	2.00
	Drilling Crew	C	14&14	\$10,000	\$10,000	0.00	0.00	0.00	0.00	6.25	60.00	60.00
	Service Contractors	C	14&14	\$12,000	\$12,000	0.00	0.00	0.00	0.00	0.00	43.33	52.00
	Other, Offsite, etc.	C	14&14	\$10,000	\$10,000	0.00	0.00	0.00	0.00	3.33	10.00	10.00