



ALASKA MEGAPROJECT UPDATE

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This analysis updates the 2003 publication of A History of Alaska’s Mega Projects and Selected Boondoggles (Fay, 2003). The projects covered in the 2003 analysis include energy, agriculture, a seafood processing facility, and a petrochemical facility, and are a subset of Alaska megaprojects. Collectively in 2003 these projects represented \$6.4 billion in lost opportunities had the funds been invested in the Alaska Permanent Fund or more wisely utilized. Similar to the 2003 analysis, this one includes only a subset of Alaska megaprojects.

Unfortunately, not much has changed since the 2003 analysis.

Since statehood, state leaders have consistently chosen to forego the market test of large expensive projects in support of the “build it and they will come” philosophy.

By and large, Alaska industries sell into the world market. As a result, world market conditions dictate prices. If a project is financially feasible it can be a success in bringing outside dollars and economic activity into Alaska. If a project is not financially feasible, subsidizing it with public money to try to make a bad project feasible, is poor and unsustainable public policy. This is especially true if the money is not paid back to the public and produces insufficient economic activity through jobs and wages to Alaskans.

In addition to promoting bad projects, Alaska policy makers have failed to recognize the fiscal impacts on State and local government of good projects. Successful projects create jobs and cause population growth, which in turn increases the demand for schools and other public services (Goldsmith, S. and Huskey, L., 1978). Alaska, alone among U.S. states, still lacks a broad-based tax or any other mechanism to pay for these costs of successful development. This is the so-called “Alaska Disconnect”.

In addition, State megaproject spending reduced what Alaska could save from the windfall revenues of the 1970’s and early 1980s. Those savings are needed now as Alaska oil fields and revenues diminish. Alaska failed to consider this opportunity cost of project spending (Fay, 2003) and continues to do so.

The bulk of the projects undertaken in the 1970s and 1980s and covered in the 2003 report were agriculture, energy, an oil refinery and a value-added seafood processing facility. Since then, Alaska megaprojects shifted more towards mining, road and bridge projects with the intent of facilitating resource development.

The Alaska Department of Transportation and Public Facilities (ADOT&PF) “Roads to Resources” Program Initiative (R2R) works with state agencies including the Alaska Industrial Development and Export Authority (AIDEA), resource developers, and other interested parties, including local governments, and Native corporations, to design and build projects that support development of natural resources in the oil and gas, alternative energy, mining, timber, fisheries, and agriculture industries. (ADOT&PF, 2021).

By now focusing on “Roads to Resources”, Alaska is exacerbating the disconnect problem, unsustainable development, and lost opportunity costs. AIDEA has a lead role in R2R road and bridge projects.

Alaska’s fiscal and taxation policy toward mining is archaic and allows the extraction of finite public resources by foreign multinational corporations with insufficient benefits to Alaskans to justify the export of Alaska mineral wealth in the form of raw materials and corporate profits.



\$30.2 B

Lost opportunity
had the funds been
invested wisely,
1970- 2021

In addition, in the mining sector that is now the focus of AIDEA's Roads to Resources, 35.9 percent of wages statewide go to nonresidents and thus leave Alaska--\$115.2 million in 2019.

In the Southeast region where AIDEA is funding two projects, the percentage of nonresident workers in metal mining is 51 percent. In the Interior North region where the \$1.5 billion (lifecycle cost) Ambler Mining Road is an AIDEA project, 42.4 percent of metal mining workers are nonresidents (Alaska Department of Labor and Workforce Development, 2021b).

In addition to exporting Alaska's mineral wealth in the form of nonresident wages, Alaska's fiscal policy and taxation of mining allows mineral wealth to also leave in the form of ore and multinational corporation profits.

Of the \$1.8 billion in mineral export value in 2017, the State of Alaska collected \$41.4 million in mineral taxes or 2.30% of the value of mineral production. Essentially, Alaska is subsidizing a huge giveaway of its public resources.

Table 1 summarizes expenditures and opportunity costs of the projects covered in this 2021 analysis. In addition, the table contains the findings of the 2003 analysis updated to 2021. Wasting money in the 70s and 80s is especially costly. Compound interest raises the foregone value of the projects reviewed in 2003 (Table 2) to \$27.8 billion today (Table 1). In total, the 2003 and 2021 projects represent \$30.5 billion in opportunity costs. The opportunity costs of this subset of Alaska megaprojects are 37 percent of the Permanent Fund's value of \$81.9 billion as of June 30, 2021.

AIDEA investment expenditures or loans funded from bond proceeds do not directly lead to foregone opportunity costs. However, when projects are unsuccessful some of these investments and loans may be written off by AIDEA. Yet, AIDEA's bonds must still be repaid, assuming default is not an option. Thus, somewhat circuitously, bad projects, even though funded with bond proceeds, can lead to use of AIDEA's net assets to pay off bonds. In that case, AIDEA and the State would bear opportunity costs for bond-funded projects.

Table 1. Summary of Selected Megaproject Expenditures and Opportunity Costs

Project	Total Appropriations/ Expenditures	June 30, 2021 Cumulative Value if Invested in Permanent Fund
Juneau Access Improvement	\$ 244 million	\$ 762 million
Knik Arm Bridge	\$ 234 million	\$ 753 million
Ketchikan Shipyard	\$ 170 million	\$ 810 million
Ambler Mining Road	\$ 62 million	\$ 51.5 million
Alberta to Alaska Railroad	\$ 10.7 million	\$ 38.9 million
2003 Projects Updated to 2021	\$ 1,259 million	\$ 27,794 million
Total	\$ 1,981 million	\$ 30,210 million
Ucore & Niblack Contingent Liability	\$ 270 million	\$ 270 million
Total Opportunity Cost & Contingent Liability	\$ 2,251 million	\$ 30,480 million

"Essentially, Alaska is subsidizing a huge giveaway of its public resources."

To address this issue, Table 1 shows expenditures and opportunity costs with and without the Ucore and Niblack mining projects that the Alaska Legislature authorized AIDEA to sell bonds to support. No bonds have been sold at this point. Nevertheless, given the status of these projects and the risks involved in their development, they are a \$270 million contingent liability AIDEA could face in the future.

Major portions of the Juneau Access Improvement, Knik Arm Bridge, and Ketchikan shipyard project expenditures shown in Table 1 are federal funds. Even so, there are opportunity costs to spending federal dollars, particularly on bad projects.

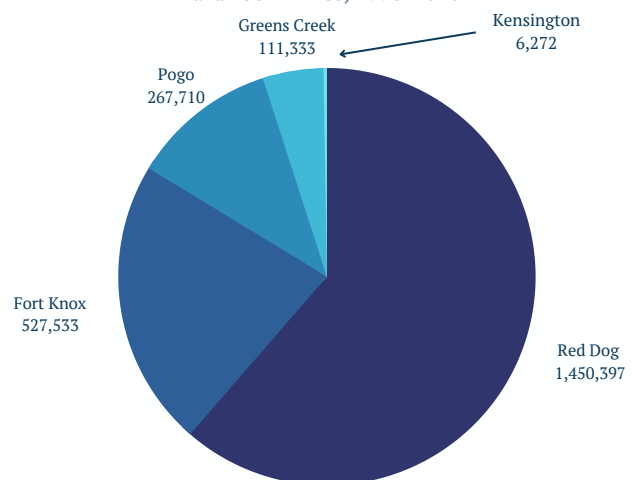
Table 2. Summary of 2003 Megaproject Expenditures and Opportunity Costs (assumes 8% average annual rate of return)

Project	Total Appropriations/ Expenditures	June 30, 2003 Cumulative Value if Invested in Permanent Fund
Agriculture	\$112 million	\$657 million
Susitna Dam	\$227 million	\$1,439 million
Four Dam Pool	\$370.4 million	\$2,174 million
Bradley Lake	\$180 million	\$719 million
Railbelt Interties	\$150 million	\$599.4 million
Healy Clean Coal	\$35 million	\$95.2 million
Alaska Seafood	\$125 million	\$269.9 million
Alpetco	\$60 million	\$443.8 million
Total	\$1,259 million	\$6,399 million

Source: Fay, G., 2003.

In addition to the foregone opportunity costs of megaprojects, a recent study found that the Alaska mine permitting process grossly underestimates the frequency of and volume of spills from the five largest operating mines in Alaska: Red Dog, Pogo, Kensington, Greens Creek and Fort Knox (Lubetkin, S., 2022). None of the mines’ Environmental Impact Statement/ Environmental Assessment had quantitative spill predictions for anything other than transportation-related spills, and these were severely underestimated. Transportation was predicted to cause 4.3 spills during the mines’ operational lives while in reality the Alaska Department of Environmental Conservation (ADEC) database documents that more than 8,150 total spill incidents, releasing >2,360,000 gallons and >1,930,000 pounds of hazardous materials since 1995 for these five mines (Figure 1).

Figure 1. Spill volumes in gallons from five Alaska hard rock mines, 1995-2020



Source: Lubetkin, S., 2022, Alaska Mining Spills: A comparison of the predicted impacts described in permitting documents and spill records from five major operational hard rock mines, April 2022.

An analysis of transportation construction costs worldwide found that actual road project costs were 20 percent higher, railroad were 47 percent higher, and bridges and tunnels 34 percent higher than estimated. Alaska conditions mean the underestimation would most likely be greater. Problems identified “include a lack of transparency to the public, flawed contracts that put government agencies at the mercy of contractors and a failure to attract enough private investment to bear some of the project’s risk.” (Vartabedian, 2021)

Introduction

This analysis updates the 2003 publication of *A History of Alaska's Mega Projects and Selected Boondoggles* (Fay, 2003). The projects covered in the 2003 analysis include energy, agriculture, a seafood processing facility, and a petrochemical facility. Collectively in 2003, these projects represented \$6.4 billion in lost opportunities had the funds been invested in the Alaska Permanent Fund or more wisely utilized.

Unfortunately, not much has changed since the 2003 analysis. Since statehood, state leaders have consistently chosen to forego the market test of large expensive projects in support of the “build it and they will come” philosophy.

By and large, Alaska industries sell into the world market. As a result, world market conditions dictate prices. If a project is financially feasible it can be a success in bringing outside dollars and economic activity into Alaska. If a project is not financially feasible, subsidizing it with public money to try to make a bad project feasible, is poor and unsustainable public policy. This is especially true if the money is not paid back to the public and produces insufficient economic activity through jobs and wages to Alaskans.

In addition to promoting bad projects, Alaska government has ignored the negative impacts good projects have on its finances. Successful projects create jobs and cause population growth, which in turn increases the demand for schools and other public services (Goldsmith, S. and Huskey, L., 1978). Alaska still lacks a broad-base tax or any other mechanism to capture the revenue necessary to pay for these costs of successful development from both private and public spending-induced growth—a part of the so-called “Alaska Disconnect”. In addition, the windfall revenues of the 1970s and early 1980s could have increased Alaska’s savings rate and current reserves, which are needed now as Alaska oil fields and revenues diminish. Alaska failed to consider this opportunity cost of project spending (Fay, 2003) and continues to do so.

The bulk of the projects undertaken in the 1970s and 1980s and covered in the 2003 report were agriculture, energy, an oil refinery and a value-added seafood processing facility. Since then, Alaska megaprojects shifted more towards mining, road and bridge projects with the intent of facilitating resource development.

By now focusing on “Roads to Resources”, Alaska through AIDEA and other road and bridge projects is exacerbating the disconnect problem, unsustainable development, and the growing total of lost financial opportunities. Alaska’s fiscal and taxation policy toward metal mining is archaic and allows the extraction of finite and non-renewable public resources, often by foreign multinational corporations. The limited benefits to Alaskans fall short of justifying the much larger public subsidies to the export of Alaska’s mineral wealth.

In addition, Alaska like many states in the American west, have a history of the mining companies taking the ore and the profits and leaving the mess. Alaska’s coal and non-coal abandoned historic mines were broadly inventoried in 1983, and 340 sites were identified (Ireys, J., 2015). The National Park Service has identified 750 abandoned mine sites on Park lands in Alaska (Stromquist, L., 2017). A complete and more recent inventory of abandoned mine sites in Alaska has not been completed since 1983. There is a history of exporting the mineral wealth while leaving the abandoned mine sites to be reclaimed by the public after mining companies move on or declare bankruptcy.

Methods

This update includes some of the mines in AIDEA's current project portfolio and some of the more well-known road, bridge, port and railroad projects; it is not an inclusive set of Alaska megaprojects. The selection of projects was largely driven by the ability to obtain accurate fiscal information.¹ Project cost information was primarily obtained from the Alaska State Legislature, Legislative Finance Agency that provided annual state appropriations by project since Alaska state fiscal year 1990. Additional project funding information was obtained through an extensive review of appropriation bills, news articles, project websites, agency websites and articles, AIDEA annual financial reports, board agenda packet information/matrices/ fact sheets, and Alaska Legislative audits. These sources were also used to develop project narratives. However, it is likely that not all bonds and loans provided by AIDEA to projects that did not go through the legislative appropriation process are accounted for; as a result, the project expenditure estimates are probably low and conservative.

To calculate the foregone opportunity costs of project funding, the annual rate of return of the Alaska Permanent Fund was used. While not all funds that were spent on projects could be invested in the Permanent Fund—for example federal funds—the rate of return on the Permanent Fund serves as a proxy for the potential investment of these funds for other, potentially more worthy, projects and uses.

All public funding is finite, so each expenditure involves a tradeoff with all other public expenditures. Without knowing what each of these tradeoffs entails, the tradeoff of foregoing investment in the Permanent Fund does have a known cost. That cost may be a conservative estimate of the opportunity cost of foregoing any other public expenditure, in favor of spending on megaprojects.

Absent a benefit-cost analysis, other public expenditures may be presumed to provide more benefits than investing the money in the Permanent Fund. The appropriations process implicitly drives deliberations, debate, and vetoes towards assuring public expenditures are worth their opportunity costs. It can sometimes do so explicitly in terms of foregone Permanent Fund earnings.

Mining

Metal Mines

The Alaska mining industry includes exploration, mine development, and production, and it continues to provide Alaskans with jobs and millions of dollars of personal income. Alaska's six large operating mines—Fort Knox, Greens Creek, Kensington, Red Dog, Usibelli, and Pogo—provided 2,400 full-time jobs of the state's nearly 4,500 mining industry jobs in 2018. In all, there were 9,200 direct and indirect mining industry jobs in 2018, and those jobs provided \$715 million in payroll. Development spending in 2018 was \$170 million and the export value from Alaska production was \$1.8 billion. Mineral exports accounted for 36 percent of Alaska's export total in 2017 (Joyal, 2019). From that \$1.8 billion in export value, the State of Alaska collected \$41.4 million in mineral taxes or 2.3% of the value of mineral production (Alaska Department of Revenue, Tax Division, 2018).

Five of the six large mines operating in Alaska extract metal. Fort Knox Mine, located about 20 miles outside Fairbanks, is the state's largest surface gold mine having produced 381,100 ounces of gold in

¹ This was a challenge since AIDEA was not willing to supply project funding information. Many of their project summaries and information sheets do not include complete or fully transparent information on project costs.

2017. Pogo is an underground mine about 130 miles from Fairbanks that produced 271,300 ounces of gold in 2017. About 80 miles from Kotzebue is Red Dog Mine, which has one of the largest open-pit zinc deposits in the world. Red Dog produced 7.7 million ounces of silver, 122,700 tons of lead, and 597,300 tons of zinc in 2017. Like Red Dog, Greens Creek Mine produces silver, lead, and zinc, in addition to gold. Greens Creek, which is located on Admiralty Island about 18 miles from Juneau, produced 8.4 million ounces of silver, 50,900 ounces of gold, 18,000 tons of lead, and 52,500 tons of zinc in 2017. Kensington Mine is an underground gold mine 45 miles north of Juneau that produced 115,100 ounces of gold in 2017 (Joyal, 2019).

Alaska ranked in the top ten globally for known gold, lead, silver, and zinc deposits in 2017. Alaska ranks ninth globally for known gold deposits, with 40 percent of the gold produced used for jewelry, 35 percent for electrical and electronic products, and 20 percent for coins (Joyal, 2019).

With the exception of the access road to the Red Dog Mine facility and the export terminal, all these major producing metal mines have been developed and are producing largely without the direct funding from the State of Alaska. Red Dog is a sufficiently rich deposit that it may well have met the market test for development without the subsidy of the road and port developed by the State of Alaska.

Who receives Alaska’s mining payroll?

According to the Alaska Department of Labor and Work Force Development most recent study of nonresidents working in Alaska, 20.8 percent of those working in all industries in Alaska in 2019 were nonresidents. The total number of people working in metal mining, or the extraction of gold, silver, copper, lead, and rare earth elements was 3,630 in 2019; they earned \$321 million in wages. Of those employed in metal mining, 38.6 percent were nonresidents (Table 1) (Alaska Department of Labor and Workforce Development, 2021). As a result, of this \$321 million in wages in 2019, \$115 million (35.9%) went to nonresidents and largely left Alaska.

Table 3. Resident and Nonresidents Working in Alaska Metal Mining, 2019

Workers			Wages				
Residents	Nonresidents	Percent nonresident	Resident wages	Nonresident wages	Percent nonresident	Resident wages per quarter	Nonres wages per quarter
2,230	1,400	38.6%	\$206,000,000	\$115,000,000	35.9%	\$24,789	\$27,295

Source: Alaska Department of Labor and Workforce Development, 2021.

The Alaska Department of Labor and Workforce Development also tracks the number of nonresidents working in Alaska who become residents the following year. Approximately a quarter of nonresidents working in the health care field in 2018 became residents in 2019, the highest percentage among industry sectors. In contrast, all mining, including oil and gas, nonresident workers had one of the lowest rates of becoming residents in 2019, 4.3 percent (Alaska Department of Labor and Workforce Development, 2021).

Nonresidents working in mining varied across Alaska in 2019 as follows:

- In the Southeast Alaska region, all mining, which includes the Greens Creek and Kensington mines, had 1,159 total workers, of whom 51 percent were nonresidents (Alaska Department of Labor and Workforce Development, 2021).

- All mining employed 985 workers in the Rural Interior in 2019, 14.4 percent of whom were locals. The largest share were nonresidents — 52.7 percent — with the remainder being nonlocal Alaskans. Many other industries in the region had high percentages of nonresidents, which is typical for highly seasonal or remote work.
- Fairbanks is home to Fort Knox Gold Mine, a major mining employer. Nonresidents made up 17.8 percent of all mining workers in Fairbanks in 2019. Nonlocal Alaskans made up another 2.7 percent, with locals representing the majority.
- Alaska’s Northern Region includes the North Slope and Northwest Arctic boroughs and the Nome Census Area. The mining industry, which includes workers at Red Dog Mine in the Northwest Arctic Borough as well as North Slope oil workers, is the region’s largest at 8,714 workers in 2019. Just 2.7 percent of workers in the Northern Region mining industry were locals, and 55 percent were nonlocal Alaskans. Nonresidents made up 42.4 percent. The Northern Region had the state’s lowest percentage of local workers. Table 4 shows the breakout of resident, nonresident, and nonlocal Alaskans working in the private sector in the Northwest Arctic Borough in 2019. The private sector includes the Red Dog mine as well as tribal offices, Native corporations, utilities and transportation, and health clinics sectors, to name a few.

Table 4. Northwest Arctic Borough Private Employment, 2019

Workers				Wages (millions of dollars)			
Locals	Nonlocal Alaskans	Nonresidents	Percent nonres	Local wages	Nonlocal AK wages	Nonres wages	Percent nonres
1,741	892	771	22.6%	\$75.70	\$73.20	\$55.00	27.0%

Source: Alaska Department of Labor and Workforce Development, 2021.

Niblack

Niblack is an advanced mineral exploration project for the development of an underground copper-gold-zinc-silver mine on Prince of Wales Island in southeast Alaska, 27 miles southwest of Ketchikan (Figures 1 and 2). The Niblack project includes 6,200 acres of federal and state mineral claims, 250 acres of

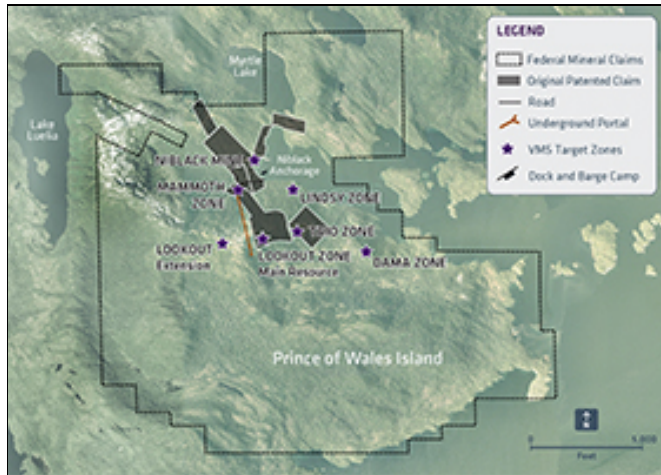
Figure 2. Location of Niblack mine in Southeast Alaska



Source: Heatherdale Resources LDT, 2021

patented (private) lands and related mineral exploration permits, equipment and infrastructure. On-site infrastructure includes 3,300 feet of underground development, a water treatment plant and discharge system, a dock and barge camp as well as 1.5 miles of road (Heatherdale Resources LTD, 2021). Initial mining at the site occurred from 1905-1908 when the initial stakes were claimed.

Figure 3. Niblack mine complex



Source: Heatherdale Resources LDT, 2021

Heatherdale Resources, a Canadian mining company based in Vancouver, B.C., purchased the project in 2009 following more than \$50 million spent at Niblack and work done by other mine exploration companies. Since 2009, Heatherdale has spent approximately \$37 million drilling over 200,000 feet of core. This work has substantially increased the known mineral resources of this copper-gold-zinc-silver project (Heatherdale Resources LTD, 2021). In 2014, the Alaska Legislature, SLA 2014 authorized AIDEA, at its discretion, to issue up to \$125 million dollars in AIDEA bonds to finance the infrastructure and construction costs at Niblack (Alaska State Legislature, 2021).

It is anticipated that the ore from the mine will be transported to another site for milling. Heatherdale's analysis of ore milling sites identify the criteria for selection of a suitable offsite milling location include:

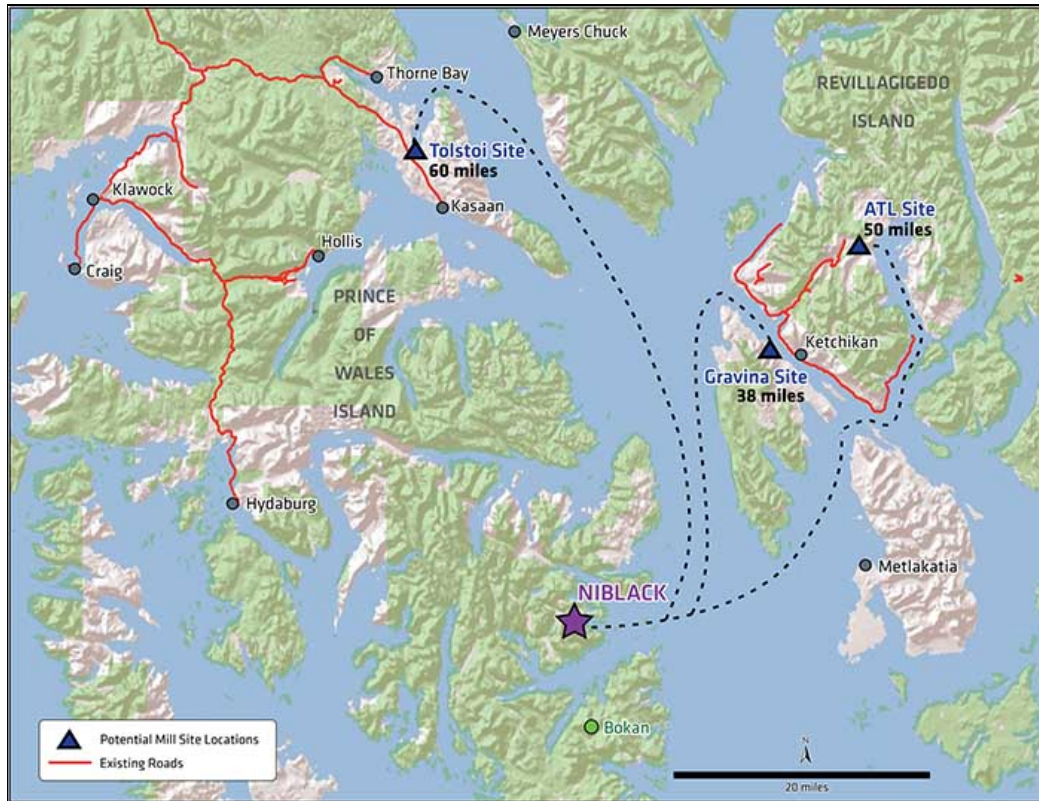
- Existing power infrastructure, near tidewater with deep draft port;
- Accessibility to local workforce; and
- Location in SE Alaska.

Several private and public entities approached Heatherdale with available sites; the top three under consideration include (Figure 3):

- Gravina Island Industrial Complex, which was brought to the company by the Ketchikan Gateway Borough;
- ATL site on Alaska State Mental Health Trust lands; and
- Tolstoi site on Sealaska Native Corporation lands.

The Gravina Island Industrial Complex is currently the leading contender for off-site processing and the permanent storage of associated tailings. In October 2012, Heatherdale and the Ketchikan Gateway Borough reached a Memorandum of Understanding to define the process by which both parties would investigate the suitability of the Gravina Island site for this land use (Heatherdale Resources LTD, 2021).

Figure 4. Potential sites for Niblack mine ore processing facility



Source: Heatherdale Resources LDT, 2021

Bokan Mountain

Bokan Mountain mine is located in Southeast Alaska on Prince of Wales Island 33 miles southeast of the village of Hydaburg and 37 miles southwest of Ketchikan. The Canadian mining company Ucore Rare Metals began rare earth element (REE) mining operations at Bokan Mountain in 2007. This project is expected to extract 5.3 million tons of rare earth elements, namely dysprosium, terbium and yttrium from the largest, rare-earth deposit in the U.S. over its 11 to 15 year lifespan. The project area ranges across 9,500 acres of federal mining claims in the Tongass National Forest, along with 640 acres of state mining claims (Bentzen, et al., 2013). Currently 90% of rare earth metals are mined and developed in China, which controls the market. As a result, there is considerable interest in developing sources in the U.S.

Bokan Mountain is the site of the historic Ross-Adams mine that initially produced uranium ore from an open pit and subsequently from underground workings from 1957 until 1971. Mine waste rock and contaminated soil remain on the site, adjacent to the current exploration area. A preliminary assessment and site inspection conducted under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) revealed that hazardous substances in concentrations exceeding normal background levels for arsenic, lead, and uranium exist in the waste rock and soil, and radiation emissions in levels exceeding background are occurring (USFS, 2010). The area was designated a Superfund site. In August 2020, the United States Forest Service (USFS) and Newmont USA Limited and Dawn Mining Company — part of the original mining at the site in the 1960s and 70s — reached an agreement to finance a \$7 million clean-up of the Ross-Adams mine site.

The Ucore Bokan Mountain project consists of two components, the Alaska Strategic Metals Complex (SMC) in Southeast Alaska and the long-term development of the REE resource located at Bokan Mountain on Prince of Wales Island, Alaska. The processing component includes:

- the development, licensing, and commercial deployment of Innovation Metals Corporation's (IMC's) RapidSX™ technology for separating specific metals used in electric vehicle (EV) batteries and other technology from REE ore; and,
- the development of the Bokan Project's Alaska SMC separation and purification plant in Southeast Alaska, referred to as Alaska 2023 (Ucore, 2021).

IMC is a private Canadian company acquired by Ucore in 2020. Ucore holds 100% of the interests of both IMC and its RapidSX technology and the Alaska SMC plant that would use the RapidSX technology.

As part of a joint armed forces effort to establish a domestic source of rare earths, the U.S. Army sent memos to Ucore and other companies that are advancing potential U.S.-based rare earth processing plants requesting information on the costs to develop separation facilities that can produce heavy rare earths. Heavy REE tend to be the least abundant but most highly prized of the 17 elements that fall into the REE category. Ucore's plan to develop a mine at Bokan Mountain leans toward the heavy REE's the Pentagon is looking for and envisions an associated heavy rare earth separation facility located in Ketchikan, a port town about 30 miles away from Bokan.

Semiconductors and rare earth elements are two of four product areas in which the United States relies on imports. President Biden signed an executive order in February 2021 requiring a 100-day review of critical supply chains (Rogers, K. and Plumer, B., 2021). This resulted in considerable federal dollars available for projects including \$160 million in U.S. Department of Energy loans. The Pentagon already designated at least \$150 million under the Defense Production Act for funding rare earth projects through 2021, with two companies receiving funding in April 2021. None of the DoD funding went to Ucore (Montague, 2021).

In 2014, the Alaska Legislature, in Chapter 29, SLA 2014 authorized AIDEA, at its discretion, to issue up to \$145 million dollars in AIDEA bonds to finance the infrastructure and construction costs of the Bokan-Dotson Ridge rare earth element project, which is owned by Ucore. In addition to the bonds authorized by the Alaska State Legislature, AIDEA also has the ability to provide financing to Ucore by issuing conduit bonds to potentially support financing the construction of a processing plant. Conduit bonds are issued on the basis of the revenue produced by a financed project

Tetra Tech conducted an economic evaluation of the project, incorporating all the relevant capital, operating, working, sustaining costs, and royalties. The evaluation was based on a pre-tax financial model and was calculated in US dollars. For the 11-year mine life and 5,175,889 LOM tons mined, the following pre-tax financial parameters were calculated using the base case prices:

- 43% IRR
- 2.3-year payback on \$221 million capital
- \$577 million NPV at a 10% discount value.

After China caused a surge in rare earth prices by constricting supply in 2010, a raft of investors and companies popped up in search of commercially viable ways to build a rare earths business in the United

States. But China quickly reversed course, causing prices to plummet, and undercutting efforts to build an American industry (Montague, Z., 2020). UCore's profit projections completed by Tetra Tech are based on REE prices from 2010-2011, when REE prices were artificially inflated. After the 2010 price spike, the project has not attracted much private investment (Goyal, 2020).

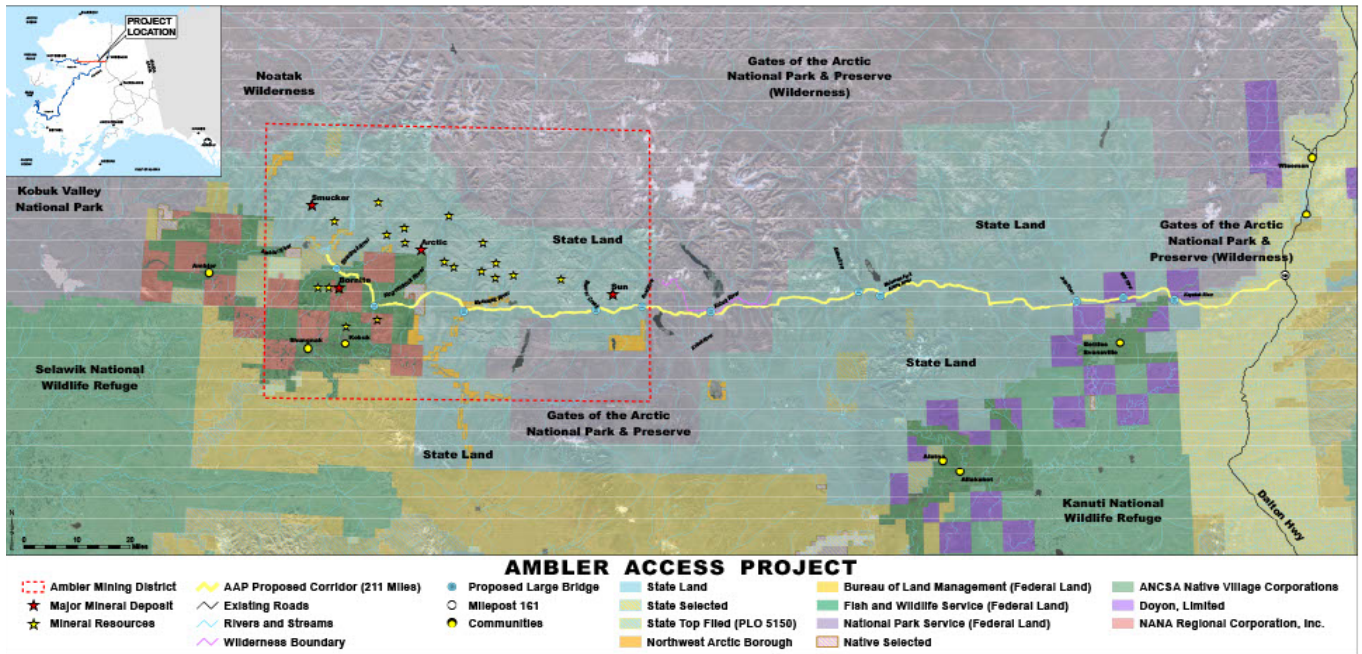
Ambler Road

In 2009, the Alaska Department of Transportation and Public Facilities (ADOT&PF) began evaluating multiple road and railroad routes that could provide access to the Ambler Mining District (Figure 4). Access to the District was assessed for both east and west alignments. As a result of these studies, a potential corridor was identified that would connect the Dalton Highway to the Ambler Mining District crossing the Gates of the Arctic National Preserve. Access to and from the Ambler Mining District for resource development is guaranteed in Section 201(4) of ANILCA.

In the July 2020 U.S. Bureau of Land Management (BLM) and U.S. Army Corps of Engineers (Corps) Final Environmental Impact Statement (FEIS), Joint Record of Decision, Appendix B, Errata, AIDEA confirmed the most recent (October 2019) estimated construction cost for the selected Alternative A is \$501.9 million. Alternative B is \$582.2 million (DOI, BLM, July 2020) . Alternative A's cost including \$60.0 million of reclamation costs would be \$561.9 million. The annual maintenance costs for Alternatives A and B are \$9.2 million and \$9.8 million, respectively (Appendix C, DOI, BLM, FEIS, March 2020). The FEIS' 50-year lifecycle cost for Alternative A is \$1.537 billion. The cost for Alternative B is estimated to be \$1.682 billion for the life of the road (a difference of over \$144 million) (DOI, NPS, July 2020). A National Park Service-requested Alternative C, which would not cross Gates of the Arctic National Park, has a construction cost estimate of \$992.2 million (Appendix C, DOI, BLM, FEIS, March 2020). .

In 2013, the project was transferred from DOT&PF to AIDEA. The Ambler Road project is now being proposed and developed by AIDEA under the Roads to Resources program. In its current configuration, the project would construct a new 211-mile roadway along the southern flanks of the Brooks Range, extending west from the Dalton Highway to the south bank of the Ambler River. The road is designed as an industrial access road to provide surface transportation to the Ambler Mining District. The proposed road would not be designed or open for public access. It would be open only to industrial traffic to support expanded exploration, mine development, and mine operations at mineral prospects throughout the Ambler Mining District. The proposed project is named the Ambler Mining District Industrial Access Project. This road will cross 2,900 streams, 11 major rivers, and 1,700 acres of wetlands. These waters are home to whitefish, sheefish, salmon, pike, burbot, grayling, and more. The road intersects with the migratory routes of three caribou herds, including the Western Arctic Caribou Herd (Alaska Wildlife Alliance, 2019).

Figure 5. Proposed Ambler Mining District Industrial Access Project Location



Source: AIDEA, 2021, <https://ambleraccess.org/>

AIDEA submitted a consolidated application with the BLM, National Park Service, U.S. Coast Guard, and U.S. Army Corps of Engineers for rights-of-way, permits, and related authorizations for the proposed project. Because approximately 26 miles (Alternative A) of the proposed road would pass through a conservation system unit, the Gates of the Arctic National Preserve, the entire application process is subject to the provisions of Title XI of the Alaska National Interest Lands Conservation Act (ANILCA).

The BLM developed an EIS identifying and analyzing concerns and issues associated with the AIDEA's proposal to build a road originating at the Dalton Highway and ending at the Ambler Mining District. The proposed road would cross state lands (61%), Native corporation lands (15%), and federal lands (24%) managed by the BLM and the National Park Service.

The start of the road would be on BLM-managed public lands within the Dalton Highway Utility Corridor. The road would then extend across State-owned lands, Gates of the Arctic National Preserve, lands privately owned by Alaska Native corporations, and isolated BLM-managed parcels. The proposed road would cross roughly 24 miles of BLM-managed public lands in total. BLM completed the National Environmental Policy Act (NEPA) review process and issued a Record of Decision for the Ambler Road on July 23, 2020 (DOI, BLM 2020). The final Environmental and Economic Assessment for that portion of the road which would cross the Gates of the Arctic National Preserve was completed by the National Parks Service in July 2020 (DOI, NPS 2020). A 50-year Right-of-Way permit for the full length of the Ambler Road was signed by the National Park Service (NPS), BLM, and AIDEA on January 6, 2021. As of March 2022, a lawsuit challenging the BLM issued right-of-way permit and NEPA review is pending in the Alaska District Court (Partlow, 2022). In February 2022, BLM asked the court to remand the case to BLM for additional analysis, and BLM will suspend the ROW permit while the analysis is conducted (Partlow, 2022).

A NovaGold spin-off, NovaCopper, which changed its name to Trilogy Metals, owns half of Ambler Metals LLC, AIDEA’s partner in the Ambler Road development project. NovaGold’s CEO, who is involved in the Ambler project, is facing multiple lawsuits, not tied to the Ambler Road project, for “defrauding investors in connection with their material misrepresentations and omissions concerning the economic feasibility” of mining projects including the NovaGold Resources Inc. Securities Litigation settled September 10, 2010. It is described as the largest securities settlement at the time under Canada's class action laws. The case involved allegations that NovaGold misled its investors regarding the economic feasibility of its largest mining project, Galore Creek. As a result of the news of the settlement, NovaGold's common stock price dropped by over fifty percent (Labaton Sucharow, 2021). In the case of the Ambler Road project, the State of Alaska is the key investor should the mining company go bankrupt or not be able to pay tolls to cover the cost of the road construction, maintenance and operation.

Table 5. Ambler Mining Road (thousands of dollars)

Annual Appropriation	Fiscal Year	Permanent Fund Nominal Rate of Return	June 30 Cumulative Value if Invested in Permanent Fund
\$ 8,500.0	FY14	15.5%	\$ 9,819.2
\$ 8,500.0	FY15	4.9%	\$ 19,218.7
\$ -	FY16	1.0%	\$ 19,414.7
\$ 10,000.0	FY17	12.6%	\$ 33,112.1
\$ -	FY18	10.7%	\$ 36,668.4
\$ -	FY19	6.3%	\$ 38,985.8
\$ -	FY20	2.0%	\$ 39,769.4
\$ -	FY21	29.7%	\$ 51,592.9
\$ 35,000.0	FY 22		
\$ 62,000.0	Total appropriations		
\$ 561,900.0	Estimated construction cost		

Sources: Alaska State Legislature, Legislative Finance, 2021; Anchorage Daily News, 03012017; DOI, BLM, 2020; www.alaskajournal.com/2021-02-16/aidea-split-70m-ambler-access-work; Alaska Permanent Fund Corporation, Personal Communication, P. Swanson to G. Erickson, Oct. 26, 2021.

Bridges, Road Extensions, Ports and Railroads

Ketchikan Shipyard

The Alaska Department of Transportation and Public Facilities (ADOT&PF) spent approximately \$30 million to construct the Ketchikan shipyard during the 1980s to provide maintenance for Alaska Marine Highway System ferries that historically underwent annual drydock maintenance in the Puget Sound area. Under an agreement with the state, the City of Ketchikan subleased operation and management of the shipyard to private contractors. Each operator experienced operational and financial difficulties. In 1991, the State canceled the lease and closed the shipyard for two years. In November 1993, ADOT&PF awarded an operating contract to reopen the shipyard and manage AMHS overhaul projects. In 1997,

AIDEA purchased the shipyard for \$80 million and entered into an operating agreement with Alaska Ship and Drydock (ASD). Vigor Industrial purchased the shipyard operator, ASD, in March 2012. In 2013 ASD's name changed to Vigor Alaska (Figure 5) (AIDEA, 2020). AIDEA has also matched Ketchikan Borough contributions to the repair and replacement fund (AIDEA, 2020).

Figure 6. Ketchikan Shipyard



Source: Vigor Alaska Industrial, 2021.

Table 6. Ketchikan Shipyard (thousands of dollars)

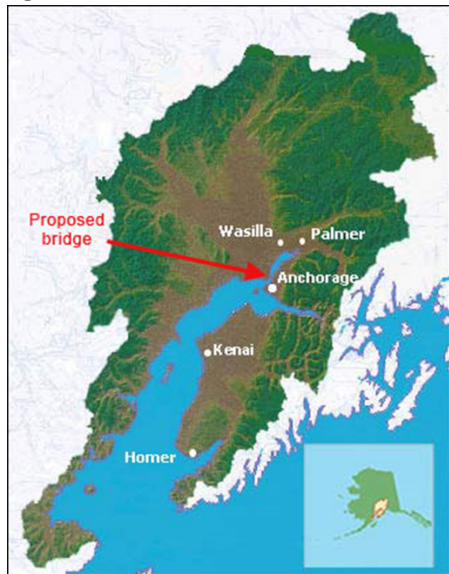
Annual Appropriation	Fiscal Year	Permanent Fund Nominal Rate of Return	June 30 Cumulative Value if Invested in Permanent Fund
\$ 165.0	FY89	12.2%	\$ 185.1
\$ -	FY90	9.3%	\$ 202.2
\$ -	FY91	9.2%	\$ 220.7
\$ -	FY92	11.5%	\$ 246.1
\$ -	FY93	12.7%	\$ 277.2
\$ -	FY94	1.5%	\$ 281.3
\$ 1,000.0	FY95	14.5%	\$ 1,467.2
\$ -	FY96	13.4%	\$ 1,664.3
\$ 80,000.0	FY97	17.1%	\$ 95,604.4
\$ -	FY98	16.4%	\$ 111,235.7
\$ 3,000.0	FY99	9.5%	\$ 125,076.7
\$ -	FY00	9.2%	\$ 136,558.7
\$ -	FY01	-3.3%	\$ 132,106.9
\$ 1,000.0	FY02	-2.2%	\$ 130,125.3
\$ 400.0	FY03	4.5%	\$ 136,346.7
\$ 1,500.0	FY04	14.2%	\$ 157,462.3
\$ -	FY05	10.4%	\$ 173,885.6
\$ 10,000.0	FY06	11.0%	\$ 204,076.3
\$ 45,240.0	FY07	17.1%	\$ 291,849.6
\$ 8,000.0	FY08	-3.6%	\$ 289,055.0
\$ 3,000.0	FY09	-18.0%	\$ 239,601.9
\$ 2,000.0	FY10	11.7%	\$ 269,917.7
\$ -	FY11	20.6%	\$ 325,412.8
\$ 2,000.0	FY12	0.0%	\$ 327,380.0
\$ 10,000.0	FY13	10.9%	\$ 374,255.7
\$ -	FY14	15.5%	\$ 432,340.2
\$ 1,180.0	FY15	4.9%	\$ 454,806.0
\$ 2,500.0	FY16	1.0%	\$ 461,970.5
\$ -	FY17	12.6%	\$ 520,040.2
\$ -	FY18	10.7%	\$ 575,892.5
\$ -	FY19	6.3%	\$ 612,288.9
\$ -	FY20	2.0%	\$ 624,595.9
\$ -	FY21	29.7%	\$ 810,288.3
\$ 170,985.0	Total appropriations		

Sources: Alaska State Legislature, Legislative Finance, 2021; AIDEA, 2020; Alaska Permanent Fund Corporation, Personal Communication, P. Swanson to G. Erickson, Oct. 26, 2021.

Knik Arm Crossing

The Knik Arm Bridge and Toll Authority's (KABATA) bridge project is known as the Knik Arm Crossing (KAC) Project. KABATA was created in 2003 by the Alaska State Legislature as an independent authority housed within the Alaska Department of Transportation and Public Facilities (ADOT&PF). The bridge is intended to connect Anchorage with Point McKenzie in the Matanuska-Susitna Borough, across Cook Inlet from Anchorage (Figure 6).

Figure 7. Location of the Knik Arm Crossing Bridge



Source: <https://knikbridgefacts.org/>

The KAC project includes a 9,200-foot (1.74 miles) toll bridge and approximately 18 miles of two-to-four-lane approaches, connector roads, associated facilities, and an approximately 800-foot, cut-and-cover tunnel through Anchorage's Government Hill community. Phase 1 of the project includes a two-lane approach road on each end of the bridge, a six-lane, cut-and-cover tunnel through Government Hill, and the bridge structure. The Phase I bridge structure will have a four-lane foundation but only a two-lane build out. By 2030, KABATA estimates that traffic growth would warrant the completion of Phase II expansion that widens the bridge and the approaches to four lanes (Curtis, K., 2013).

Figure 8. Artist's rendition of the proposed Knik Arm Crossing bridge



Source: Alaskanewsource.com

Table 7. Knik Arm Bridge and Toll Authority (thousands of dollars)

Annual Appropriation	Fiscal Year	Permanent Fund Nominal Rate of Return	June 30 Cumulative Value if Invested in Permanent Fund
\$ 5,000.0	FY84	10.9%	\$ 5,544.5
\$ -	FY85	25.6%	\$ 6,962.8
\$ -	FY86	23.1%	\$ 8,568.4
\$ -	FY87	7.6%	\$ 9,221.3
\$ -	FY88	5.4%	\$ 9,723.0
\$ -	FY89	12.2%	\$ 10,907.2
\$ -	FY90	9.3%	\$ 11,917.2
\$ -	FY91	9.2%	\$ 13,007.6
\$ -	FY92	11.5%	\$ 14,500.9
\$ -	FY93	12.7%	\$ 16,335.3
\$ -	FY94	1.5%	\$ 16,577.0
\$ -	FY95	14.5%	\$ 18,982.4
\$ -	FY96	13.4%	\$ 21,531.7
\$ -	FY97	17.1%	\$ 25,207.2
\$ -	FY98	16.4%	\$ 29,328.5
\$ -	FY99	9.5%	\$ 32,111.8
\$ -	FY00	9.2%	\$ 35,059.7
\$ -	FY01	-3.3%	\$ 33,916.7
\$ 2,600.0	FY02	-2.2%	\$ 35,698.8
\$ -	FY03	4.5%	\$ 37,290.9
\$ 33,600.0	FY04	14.2%	\$ 80,978.7
\$ -	FY05	10.4%	\$ 89,424.8
\$ -	FY06	11.0%	\$ 99,243.6
\$ 93,000.0	FY07	17.1%	\$ 225,040.4
\$ -	FY08	-3.6%	\$ 216,938.9
\$ -	FY09	-18.0%	\$ 177,976.7
\$ -	FY10	11.7%	\$ 198,835.6
\$ -	FY11	20.6%	\$ 239,716.2
\$ -	FY12	0.0%	\$ 239,692.2
\$ -	FY13	10.9%	\$ 265,890.6
\$ -	FY14	15.5%	\$ 307,156.8
\$ 55,000.0	FY15	4.9%	\$ 379,938.7
\$ 45,300.0	FY16	1.0%	\$ 429,576.1
\$ -	FY17	12.6%	\$ 483,573.8
\$ -	FY18	10.7%	\$ 535,509.7
\$ -	FY19	6.3%	\$ 569,353.9
\$ -	FY20	2.0%	\$ 580,797.9
\$ -	FY21	29.7%	\$ 753,469.1
\$ 234,500.0	Total appropriations		
\$ 1,500,000.0	Estimated construction cost		

Sources: Alaska State Legislature, Legislative Finance, 2021; Curtis, K., 2013; Alaska Permanent Fund Corporation, Personal Communication, P. Swanson to G. Erickson, Oct. 26, 2021.

At the time of a 2013 legislative audit, KABATA's FY 03 through FY 12 expenses totaled \$70.4 million, and authorized funding totaled \$131 million. The project was expected to require an additional \$1.4 billion from a variety of sources including bonds, loans, grants, and private equity to be built. Approximately 52% of project costs were to be covered with bonds. Tolls from the bridge traffic were identified as the revenue source for bond payments (Curtis, K., 2013).

KABATA seemed to be a constant source of conflict. In October 2005, Alaska Senator Ted Stevens opposed diverting funding for the Gravina and Knik Arm Bridge projects to Louisiana to repair bridge damage from Hurricane Katrina. In his speech on the senate floor, Stevens threatened to quit Congress if the funds were taken from Alaska (Anchorage Daily News, 2005). KABATA again came under scrutiny in September 2006, when reports surfaced that its lead staff had received 20% to 30% raises at an executive session in August, raising upper staff pay to a salary of \$130,000 per year (Bauman, M., 2006).

But the biggest source of controversy and ultimate cause of the bridge's demise was the technical analyses of population and employment that underpinned the traffic projections, used to project toll revenues to repay bonds. As a result of the disagreements on these forecasts, the Alaska State Legislature requested the 2013 audit. The audit hired a contractor to evaluate the various forecasts. The audit concluded:

“that KAC toll and revenue projections are unreasonably optimistic, and the projected cash flows to the State are likely overstated as a result. These are important considerations for policymakers since the private-public-partnership (P3) compensation arrangement requires KABATA to make payments to the private partner regardless of the project's ability to generate toll revenues” (Curtis, K. 2013).

Meaning that if the traffic and tolls were not as projected, the State of Alaska and public money would be used to pay for the bonds to construct and operate the bridge. The partnership agreement left the downside risk of the project with the public, in the face of inadequate risk analysis on the project (Curtis, K., 2013).

On December 15, 2014, Governor Bill Walker presented a revised capital budget, cutting \$45 million for the project from the capital budget created by the previous administration under Governor Sean Parnell (Alaska State Legislature, 2014). In 2018, the Alaska Legislature included funding to restart the project, but the funding was again vetoed by Governor Walker (Alaska State Legislature, 2018). No additional funding has been put forward for the project.

Juneau Access Improvements Project

Juneau, Alaska's capital, has a population of over 31,000 residents and is the largest community on the North American continent not connected to the continental highway system. As a result of this limited access, the Juneau access project in its various forms has been an often-repeated perennial megaproject.

The public surface transportation option available to Juneau residents and those travelling to Juneau is the Alaska Marine Highway System (AMHS), a state-owned ferry system that provides transportation to many of Alaska's southeast coastal communities (Alaska Department of Transportation and Public Facilities (ADOT&PF), 2021). However, this system has been largely gutted by the Alaska State Legislature and governor in recent years. According to the ADOT&PF, the purpose of and need for the

Juneau Access Improvements (JAI) Project is to provide improved transportation to and from Juneau within the Lynn Canal corridor that will reduce travel times, state, and user costs, while providing capacity to meet demand and improve the opportunity to travel (ADOT&PF, 2021).

The Juneau Access Improvement Project has a long history with a number of starts and stops. The following is a brief timeline of the project:

1993 to 1994: Earliest scoping for JAI Project began

1997: Draft EIS released and public hearings and comment period

2003: Scoping reinitiated for Supplemental Draft EIS

2006: Federal Highway Administration (FHWA) issued a Record of Decision (ROD) for Juneau Access Improvements Project, Alternative 2B

2006: Complaint filed against FHWA and U.S. Forest Service (USFS) in U.S. District Court

2009: District Court ruled Final EIS was not valid. State of Alaska filed an appeal with U.S. Court of Appeals for the Ninth District

2011: Court of Appeals upheld District Court decision

2011: ADOT&PF and FHWA announced intent to complete a Supplemental EIS for JAI Project

January 2012: Notice of Intent published

February 2012: Scoping period

Fall 2014: Draft SEIS released and public hearings and comment period

December 2016: Governor selects No Action Alternative as State's recommended preferred alternative

July 2018: Final SEIS released (ADOT&PF, 2021).

Alternative 2B, the most recent “build” preferred alternative is shown in Figure 8. The alternatives considered in the Supplemental EIS (HDR Alaska, 2012), include:

- the No Action (Alternative 1);
- the court-ordered alternative (now designated as Alternative 1B);
- East Lynn Canal Highway to Katzehin with marine shuttles to Haines and Skagway (Alternative 2B);
- West Lynn Canal Highway (Alternative 3); and,
- four marine alternatives that would construct new ferries specifically for the Lynn Canal corridor (Alternatives 4A-D).

Figure 9. Alternative 2B, the most recent preferred “build” alternative for the Juneau Access Improvements project

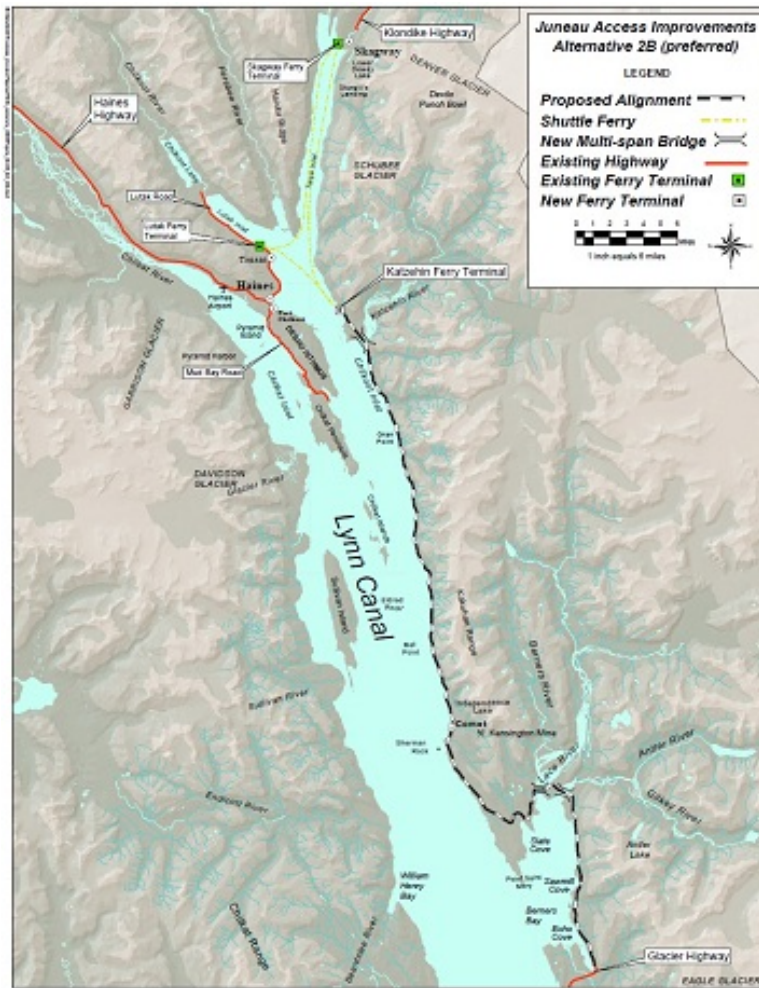


Figure 2-6
Alternative 2B (preferred): East Lynn Canal Highway to Katzeihin Ferry Terminal with Shuttles to Haines & Skagway

Source: Alaska Department of Transportation and Public Facilities, 2018.

By choosing the No-Build alternative, the project was put in limbo without the State of Alaska having to repay federal dollars spent in support of the project. It also allows a future Alaska administration or the Alaska State Legislature to resurrect the project.

However, doing so, and building the most recent preferred “build” alternative, Alternative 2B, would result in a future loss of \$350 million dollars. The JAI Project, Final SEIS, Revised Appendix FF, User Benefit, Life-Cycle Cost, and Total Project Life Costs Analyses estimated Alternative 2B would provide a present value of user benefits of \$128 million (2016 dollars) as of July 1, 2018, while costing an additional \$479 million, compared to not making any improvements. The difference between the benefits and incremental costs is \$350 million. The ratio, \$128 million/\$479 million, shows that only 27 cents in benefits would be created for every dollar spent.

Table 8. Juneau Access Improvements Project (thousands of dollars)

Annual Appropriation	Fiscal Year	Permanent Fund Nominal Rate of Return	June 30 Cumulative Value if Invested in Permanent Fund
\$ 100.0	FY90	9.3%	\$ 109.3
\$ 200.0	FY91	9.2%	\$ 337.6
\$ -	FY92	11.5%	\$ 376.3
\$ 200.0	FY93	12.7%	\$ 649.2
\$ 1,800.0	FY94	1.5%	\$ 2,485.5
\$ -	FY95	14.5%	\$ 2,846.1
\$ 1,000.0	FY96	13.4%	\$ 4,362.6
\$ -	FY97	17.1%	\$ 5,107.3
\$ -	FY98	16.4%	\$ 5,942.4
\$ -	FY99	9.5%	\$ 6,506.3
\$ -	FY00	9.2%	\$ 7,103.6
\$ 1,530.0	FY01	-3.3%	\$ 8,352.1
\$ -	FY02	-2.2%	\$ 8,165.1
\$ -	FY03	4.5%	\$ 8,529.2
\$ 5,000.0	FY04	14.2%	\$ 15,454.4
\$ 128,729.1	FY05	10.4%	\$ 159,221.9
\$ -	FY06	11.0%	\$ 176,704.4
\$ 35,842.6	FY07	17.1%	\$ 248,807.5
\$ -	FY08	-3.6%	\$ 239,850.5
\$ -	FY09	-18.0%	\$ 196,773.3
\$ -	FY10	11.7%	\$ 219,835.2
\$ -	FY11	20.6%	\$ 265,033.3
\$ -	FY12	0.0%	\$ 265,006.8
\$ -	FY13	10.9%	\$ 293,972.0
\$ 9,997.1	FY14	15.5%	\$ 351,145.1
\$ 35,000.0	FY15	4.9%	\$ 405,104.8
\$ 25,000.0	FY16	1.0%	\$ 434,491.9
\$ -	FY17	12.6%	\$ 489,107.5
\$ -	FY18	10.7%	\$ 541,637.7
\$ -	FY19	6.3%	\$ 575,869.2
\$ -	FY20	2.0%	\$ 587,444.2
\$ -	FY21	29.7%	\$ 762,091.3
\$ 244,398.8	Total appropriations		
\$ 680,255.0	Estimated construction cost		

Sources: Alaska State Legislature, Legislative Finance, 2021; ADOT&PF Juneau Access Improvement website, 2021; Juneau Access Improvement Project, Final SEIS, Appendix FF; Alaska Permanent Fund Corporation, Personal Communication, P. Swanson to G. Erickson, Oct. 26, 2021.

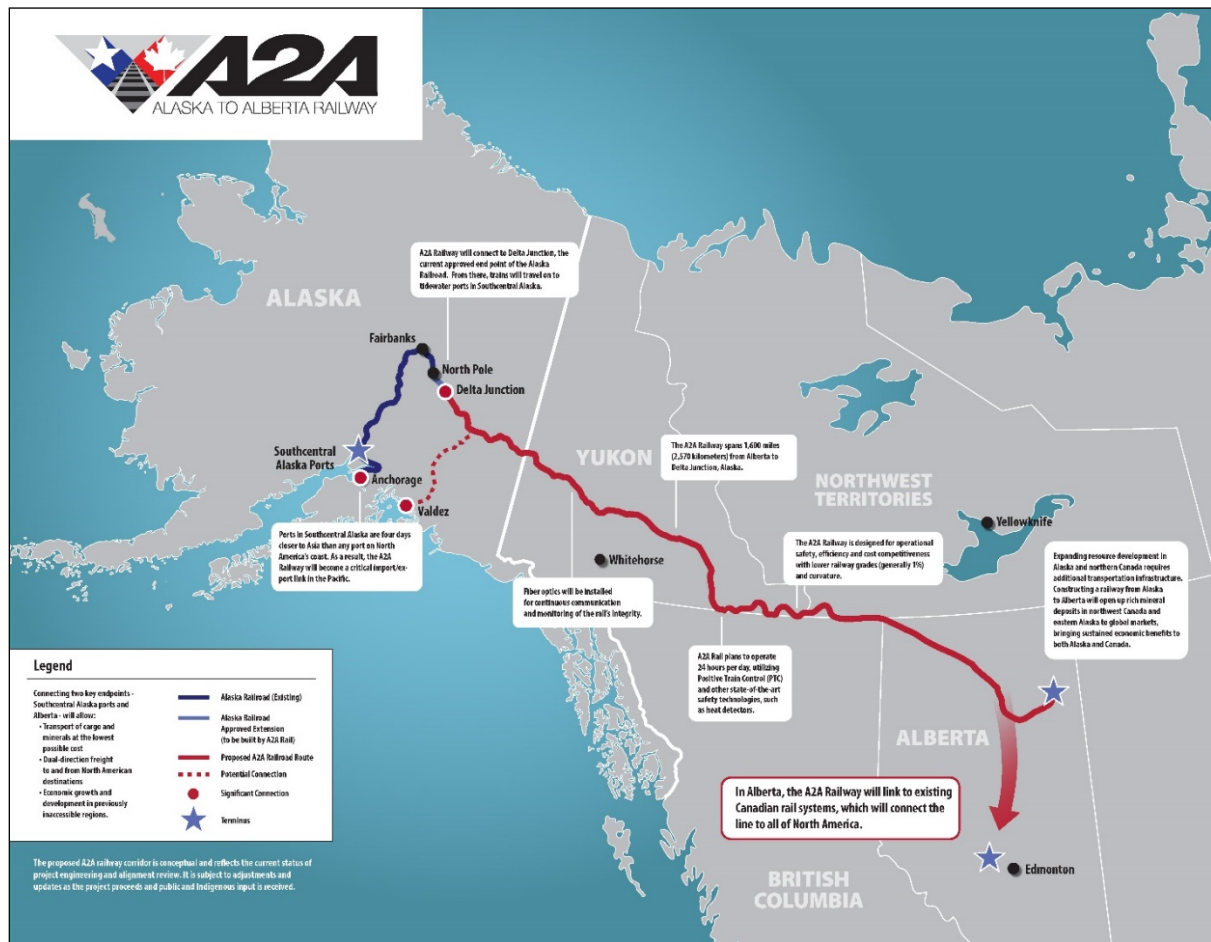
Table 8 shows that the amount of money appropriated or spent so far for JAI, \$244.4 million, would be worth \$819.2 million if it had been invested in the Permanent Fund. Thus, if Alternative 2B were to be built, it would be on other than economic grounds. The total cost to Alaskans would be the \$819 million opportunity cost of the money spent so far, plus the \$350 million that would be lost on the project in the future without any benefit, or \$1.2 billion.

Alberta to Alaska Railroad Extension

The Alaska-Alberta Railway Development Corporation, known as A2A Rail for short, proposes to build a 1,600-mile freight rail line between Delta Junction, Alaska, and Fort McMurray, Alberta. The rail link would be a way to get Alberta’s heavy tar sands oil to market and increase throughput of the southern portion of the Trans-Alaska Pipeline System (TAPS) line to Valdez. The estimated cost of the project is \$22-30 billion (Brehmer, 2016).

The idea of an intercontinental railway between the U.S. and Canada has been around since the 1960s. Governor Walter J. Hickel established the North Commission which completed significant research to support and bring the project to its current status today. In the early 2000s, Governor Frank Murkowski and the Alaska Legislature passed laws to connect the Alaska Railroad with Canada’s rail system through state lands.

Figure 10. Proposed route of the Alaska to Alberta Railway project



Source: Alaska to Alberta Railway, a2arail.com

From 2000 to 2006, the State of Alaska and U.S. federal funds provided approximately \$6 million for a study focused on rail connections through Alaska, the Yukon Territory, and Northern British Columbia. In 2007 State of Alaska provided \$4.7 million to the University of Alaska Fairbanks to begin preconstruction activities to support environmental analysis and data collection for railroad feasibility studies. From 2017 to 2020, A2A Rail ratified a master agreement with the Alaska Railroad Corporation and obtained the Presidential Border Crossing Permit from then-president Trump (Alaska to Alberta Railway, 2021).

This work led to Sean McCoshen, owner of Bridging Finance, Inc., a Toronto-based investment firm and one of Canada’s largest private lenders, investing \$100 million of his own money into the idea. The Alaska-Alberta Railway Development Corporation has relied on Bridging Finance for financing of the project. Now, Ontario financial regulators are investigating Bridging Finance for alleged improper use of investor funds to benefit the firm itself and its chief executive, David Sharpe. One allegation against Bridging Finance involves the founder and chairman of A2A Rail, Sean McCoshen. According to Ontario Securities Commission documents and news accounts, one of McCoshen’s companies paid \$19.5 million Canadian into Sharpe’s personal bank account around the time Sharpe’s firm lent the railway project more than \$100 million (Ruskin, 2021).

Table 9. Alberta to Alaska Railroad Project (thousands of dollars)

Annual Appropriation	Fiscal Year	Permanent Fund Nominal Rate of Return	June 30
			Cumulative Value if Invested in Permanent Fund
\$ 6,000.0	FY04	14.2%	\$ 6,853.80
\$ -	FY05	10.4%	\$ 7,568.65
\$ -	FY06	11.0%	\$ 8,399.69
\$ 4,700.0	FY07	17.1%	\$ 15,334.50
\$ -	FY08	-3.6%	\$ 14,782.45
\$ -	FY09	-18.0%	\$ 12,127.53
\$ -	FY10	11.7%	\$ 13,548.87
\$ -	FY11	20.6%	\$ 16,334.52
\$ -	FY12	0.0%	\$ 16,332.89
\$ -	FY13	10.9%	\$ 18,118.07
\$ -	FY14	15.5%	\$ 20,930.00
\$ -	FY15	4.9%	\$ 21,957.66
\$ -	FY16	1.0%	\$ 22,181.63
\$ -	FY17	12.6%	\$ 24,969.86
\$ -	FY18	10.7%	\$ 27,651.62
\$ -	FY19	6.3%	\$ 29,399.20
\$ -	FY20	2.0%	\$ 29,990.13
\$ -	FY21	29.7%	\$ 38,906.19
\$ 10,700.0	Total Appropriations		
\$22-30 billion	Estimated construction cost		

Sources: Alaska State Legislature, Legislative Finance, 2021; Alaska to Alberta Railway, a2arail.com; Alaska Permanent Fund Corporation, Personal Communication, P. Swanson to G. Erickson, Oct. 26, 2021.

The Alaska to Alberta Railway is currently the subject of formal restructuring proceedings under Canadian insolvency and restructuring statutes. The objective of these proceedings is to complete a sale and investor solicitation process for the sale of A2A or its assets and the opportunity for the completion of the project. Any sale will be dependent on the approval of A2A's primary lender, Bridging Finance Inc., that is also in bankruptcy proceedings, as well as the approval of the Court of Queen's Bench of Alberta (Alaska to Alberta Railway, 2021). A2A is currently distancing itself from Sean McCoshen who is no longer listed on their website (Ruskin, 2021).

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