PORT MACKENZIE: UNLEASHING ALASKA'S EXTRAORDINARY RESOURCE POTENTIAL AND INCREASING AMERICAN MINERAL PRODUCTION

Ria Hanson, Ted Stevens Center for Arctic Security Studies

19 Sept 2025

Resource development in Alaska, the United States' portion of the Arctic, is slowed by insufficient transportation and export capacity. The region's energy, mineral, and maritime assets are of growing strategic importance, but development is hindered by inaccessibility. Recent executive orders by President Trump, particularly the January 20, 2025 Executive Order 14153, "Unleashing Alaska's Extraordinary Resource Potential" (EO14153), and March 20, 2025 Executive Order 14241, "Immediate Measures to Increase American Mineral Production" (EO 14241), highlight the national imperative of advancing Arctic resource projects and improving associated infrastructure.[i] **Among the most critical investments to achieve these objectives is the completion of the Port MacKenzie rail extension and the expansion of the port itself.** These projects would provide reliable, year-round access for resource extraction, reduce logistical costs, and open efficient pathways to global markets. Advancing the rail extension and port will not only accelerate economic opportunities for Alaska but also strengthen U.S. resilience and security in the Arctic domain.

BACKGROUND

Executive Order 14153, "Unleashing Alaska's Extraordinary Resource Potential," emphasizes several objectives related to developing Alaska's resources "to the fullest extent possible."[ii] These objectives include economic and national security, trade imbalances, global energy, and energy security in the face of geopolitical conflict. To achieve these objectives, the EO calls for the U.S. to "fully avail itself of Alaska's vast lands and resources for the benefit of the Nation" and maximize development and production of natural resources, including Liquified Natural Gas (LNG) in the state.

Executive Order 14241, "Immediate Measures to Increase American Mineral Production," emphasizes that U.S. economic and national security are "acutely threatened by our reliance upon hostile foreign power's mineral production."[iii] The EO calls for the U.S. to take action to facilitate domestic mineral production to the maximum extent possible.

A key infrastructure component to achieving the goals of both EOs is the further development of Port MacKenzie and completion of the Port MacKenzie rail extension.[1]

Port MacKenzie is a port in early-stage development. It sits in the Matanuska-Susitna Borough, across Knik Arm from the Port of Alaska in southcentral Alaska. Port MacKenzie is the only port in the U.S. Arctic with year-round accessibility and extensive development potential. It has unique characteristics to support resource development including a deep-draft dock, barge dock, 15 acres of wharf, a conveyor belt, terminal building and paved access road.[iv] It is surrounded by 9,000 acres of adjacent land available for commercial and industrial development or staging. Port MacKenzie can handle the world's largest bulk cargo vessels, like the ones that transport commodities through the Panama Canal, around the Cape of Africa and across the Pacific Ocean.

Port MacKenzie also has a partially completed rail extension connecting the port to the Alaska Railroad mainline and the heavily mineralized areas of Interior Alaska. The estimated cost to complete the rail line is $300 million, in addition to the $184 million (over $255 million in 2025 dollars) already contributed by the State of Alaska.[v] This rail extension must be completed to maximize the economic and national security benefits of Port MacKenzie.

ANALYSIS

With the completion of the rail extension, Port MacKenzie can help achieve the development of Alaska's LNG potential.

Section 3. Part (a)(ii) of EO 14153 emphasizes the importance of necessary LNG pipeline infrastructure. Completion of an LNG pipeline from the North Slope of Alaska will require the transportation of key development cargo from tidewater to inland locations. This cargo includes pipe, compressor station construction materials, compressor components, construction equipment, fuel, and construction camps and camp components. One gallon of fuel can move one ton of freight 130 miles by truck or 480 miles by train, making trucking miles a major expense relative to rail transport.[vi] Thus, transportation by rail is the most cost-effective way to transport the materials needed for LNG pipeline construction. Port MacKenzie, with its ample staging space and a completed rail extension, could be specifically used to transport pipe and materials for construction of the northern portion of the LNG pipeline. The southern end of the pipeline will likely be supported by the Port of Valdez.

Port MacKenzie and the completed rail extension contribute to developing mineral resources in Alaska that will reduce reliance on foreign mineral production.

The Railbelt corridor has significant mineral deposits with development potential, if production is economic.[vii] Figure 3 in the Appendix approximates the location of many of these mineral occurrences within a 100km buffer of the Railbelt. Dr. Paul Metz, a registered professional geologist, completed a two-phase economic analysis of future rail extension cargo operations.[viii] His analysis, in combination with information provided by local entrepreneurs, the Port Director and Borough staff, concluded that completion of the rail extension alongside increased Port investment would open the corridor along the Railbelt and into Interior Alaska for new exploration and development. This development could lead to the extraction of strategic minerals including lead, zinc, copper, molybdenum, lime, silver and antimony.[ix]

The mineral development that Port MacKenzie and the rail extension could stimulate will directly contribute to national security.

The Department of Defense uses approximately 750,000 tons of minerals annually.[x] Many of the mineral deposits along the Railbelt in Alaska are particularly important to the U.S. military. Lead is a major component of

[1] See Figures 1 and 2 in the Appendix for map visualizations.

ammunition; copper is used to make military vehicles including aircrafts and ships; copper combined with lead and nickel is used to make body armor; and molybdenum is a primary ingredient in stainless steel, lending strength and durability to structures.[xi] Molybdenum is also used in armored vehicles, missiles and aircrafts. Silver is used in the construction of C17s and Apache helicopters, as well as many other defense tools.

Particularly important is the potential development of antimony mines. There are currently no antimony mines in the U.S. and 60 percent of antimony used in the U.S. comes from China.[xii] Antimony is a critical mineral used in a wide array of military applications including bullet manufacturing, night vision goggles, laser sighting, nuclear weapons and production, communications equipment and more.[xiii] In the last year, Great Land Minerals, a U.S. Antimony subsidiary, acquired three claims for exploration in Interior Alaska. Two of these claims are near the Alaska Railroad. U.S. Antimony plans to truck the ore from Alaska to its processing plant in Montana – the only such plant in the U.S. "We can't get that antimony from Alaska to Montana fast enough," Joe Bardswich, U.S. Antimony's chief mining officer, stated.[xiv] The rail access to tidewater at Port MacKenzie, paired with shipping instead of trucking, can significantly reduce transport cost of getting antimony to Montana.

Port MacKenzie can contribute to ameliorating U.S. trade imbalances.

Alaska has a six-day shipping advantage to Asia, relative to ports in British Columbia and the Pacific Northwest.[xv] Companies including Fort Knox Gold, Shorty Creek Copper, Livengood Gold, Usibelli Coal and Prospect Copper have, in the past, expressed interest in seeing the port and rail extension developed for their use as a tidewater hub.[xvi] Previously, Usibelli Coal Mine trucked coal to export through Port MacKenzie. If Port MacKenzie and the rail extension can increase shipping directly to and from our international allies and partners, it will further boost the economy, signaling stability and resilience to U.S. adversaries.

The completion of the Port MacKenzie rail extension will contribute to improving cost ratios of new mines, increasing development potential and capacity for mineral export.

The completion of the Port MacKenzie rail extension would reduce the distance to port from Interior Alaska by approximately 147 miles compared to the Port of Seward, Alaska's other deep water, bulk commodities port. That distance is approximately 30% of the full length of the rail line in Alaska.[xvii] Transporting goods to the Port of Seward requires travelling uphill stretches through mountain passes that limit train load and speed.[xviii] The Port MacKenzie rail extension would provide an alternative to that route for bulk commodity export. Additionally, the Port MacKenzie rail extension would bypass the congested areas of Anchorage and Wasilla, further reducing shipping time and expense for producers.[xix]

Port MacKenzie and the rail extension will support timber development.

Port MacKenzie has already been used for the bulk export of birch, aspen and spruce chips to South Korea, Taiwan and Japan.[xx] With completion of the rail, the economics of transporting wood products from Interior Alaska to tidewater are measurably improved, compared to transport of wood chips to port via truck.

RECOMMENDATIONS

Port MacKenzie, with the completed rail extension, will directly contribute to domestic resource development and facilitate trade to enhance U.S. economic and national security. These projects are becoming more imperative as interest grows in developing warfighter presence in Alaska and between the Arctic and Pacific regions. The port and rail can support the development of an LNG pipeline, stimulate new and existing mines in Interior Alaska, and improve cost ratios of accessing and transporting other resources and materials. **Continued development of Port MacKenzie and completion of the Port MacKenzie rail extension are concrete, cost-effective goals that will move Alaska and the United States toward more robust economic and national**

security as laid out by EO 14153 and EO14241. To take advantage of this valuable infrastructure for "developing [Alaska's] resources to the fullest extent possible," high priority should be placed on:

1. **Completion of the Port MacKenzie Rail Extension**
    a. The rail extension will reduce transport costs for resource exports.
    b. The rail connection will provide tidewater access to new resource sites.
    c. The rail extension will increase mineral transport capacity and capability.
2. **Continued improvement of infrastructure at Port MacKenzie**
    a. Investment is required to handle increasing volumes of imports and exports.
    b. Investment is required to handle a broader variety of materials and resources.
3. **Developing partnerships with resource development entities to increase and secure domestic mineral use and export via Port MacKenzie**
    a. Mineral development in new locations depends on confidence in available transport infrastructure.
    b. Port development must occur in conjunction with demonstrated demand.
    c. Establishing public-private partnerships can achieve the above-mentioned conditions.

Author's Disclaimer: The views expressed in this Brief are those of the author and do not reflect the official policy or position of the U.S. Department of Defense or of the U.S. Government.

APPENDIX

Figure 1: Port MacKenzie Transportation Infrastructure

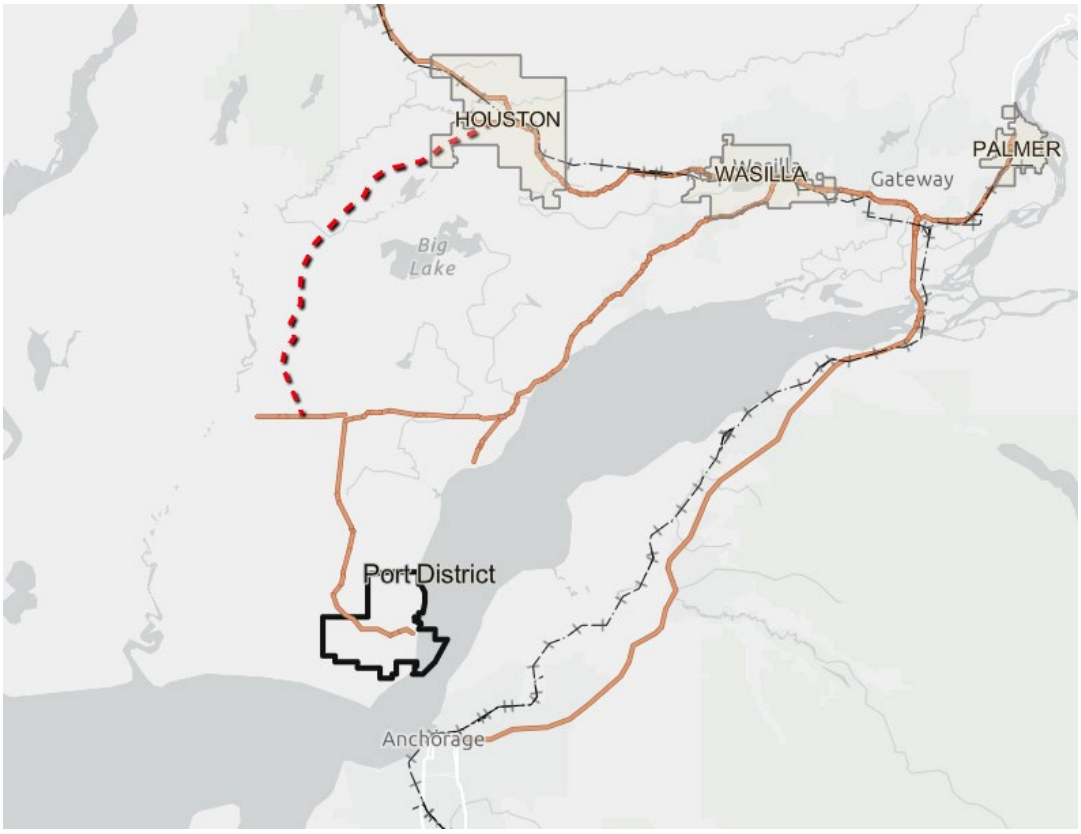

Figure 1: This map shows access infrastructure to Port MacKenzie: the orange lines indicated existing roadways, the black crosses indicate the Alaska Railroad mainline, and the red dashed indicates the general route of the rail extension, which, when complete, will connect Port MacKenzie to the mainline at Houston. The rail extension continues from the red dashed line to within the Port District.

Source: Matanuska-Susitna Borough, "Point MacKenzie Access," ArcGIS StoryMaps, June 4, 2025, https://storymaps.arcgis.com/stories/0b1cd52f4c47482d955a99e85f8af22c.

Figure 2: Port MacKenzie Current and Proposed Access

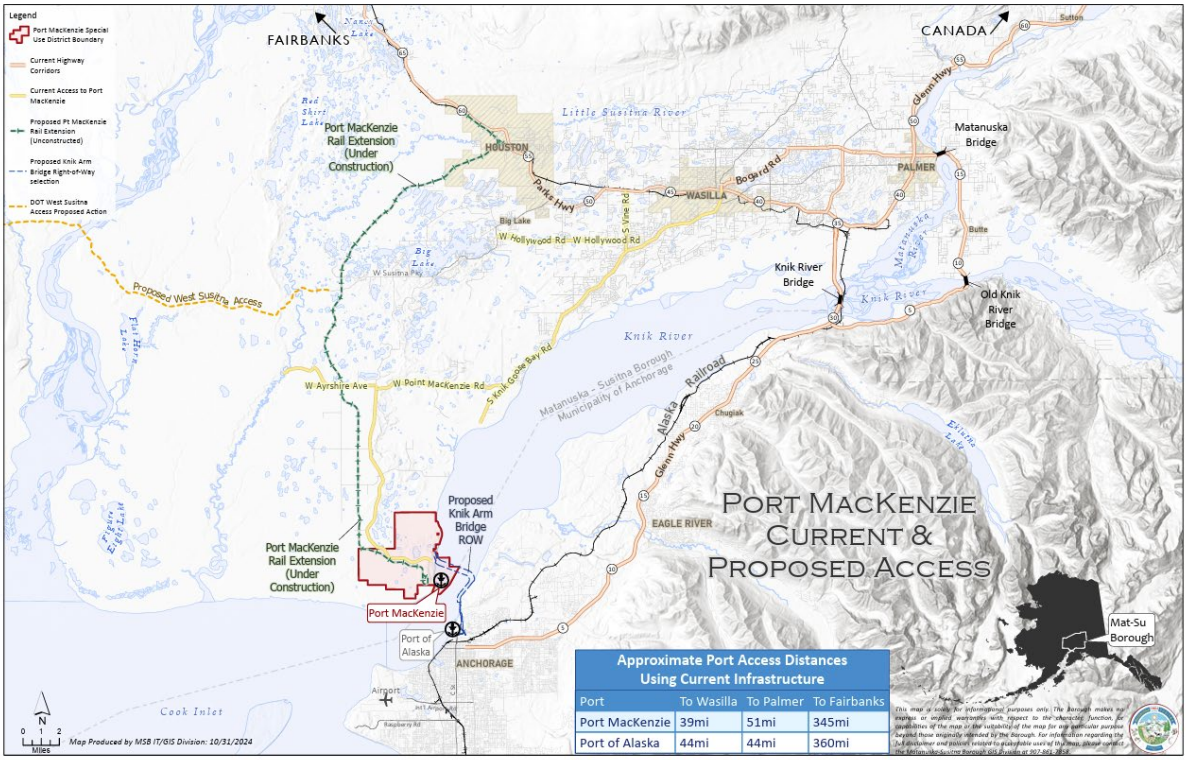

Figure 2: This map, current as of October 31, 2024, shows the location of Port MacKenzie and the route of the partially constructed rail extension relative to other major existing and proposed infrastructure in the region. Source: Matanuska-Susitna Borough, "Port MacKenzie | Planning," accessed September 16, 2025, https://portmackenzie.matsugov.us/pages/57ac92e23e784dd19ec8f302ce65e801.

Figure 3: Mineral Deposits Along the Alaska Railbelt

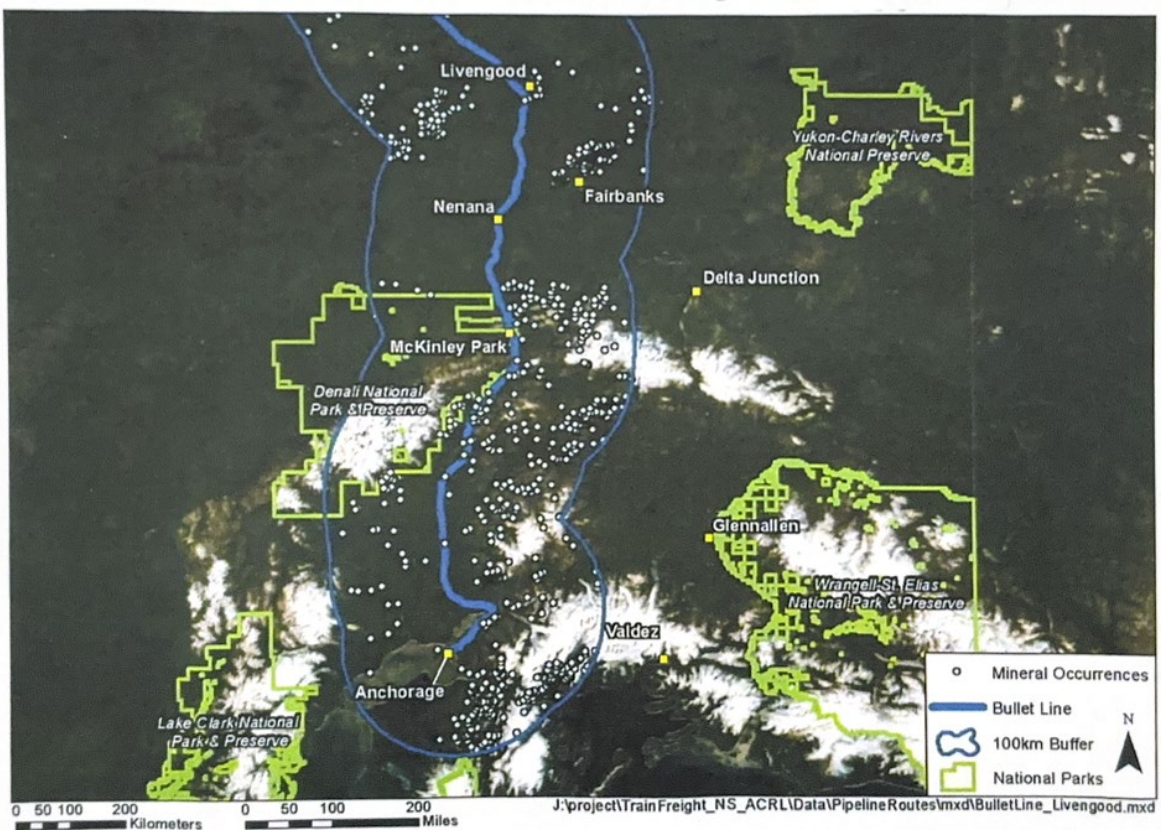

Figure 3: This map indicates known mineral deposits within 100 kilometers of the Alaska Railbelt. Some of these deposits hold critical minerals key to shoring up U.S. economic and national security.
Source: Paul Metz, *Economic Analysis of Rail Link Port MacKenzie to Willow, Alaska, Phase II* (2011).

End Notes

[i] President Donald Trump, "Unleashing Alaska's Extraordinary Resource Potential," Government, The White House, January 21, 2025, https://www.whitehouse.gov/presidential-actions/2025/01/unleashing-alaskas-extraordinary-resource-potential/; President Donald Trump, "Immediate Measures to Increase American Mineral Production," The White House, March 20, 2025, https://www.whitehouse.gov/presidential-actions/2025/03/immediate-measures-to-increase-american-mineral-production/.

[ii] President Donald Trump, "EO 14153."

[iii] President Donald Trump, "EO 14241."

[iv] Matanuska-Susitna Borough, "Port MacKenzie Website," Government, accessed August 24, 2025, https://portmackenzie.matsugov.us/.

[v] Matanuska-Susitna Borough, "Point MacKenzie Access," ArcGIS StoryMaps, June 4, 2025, https://storymaps.arcgis.com/stories/0b1cd52f4c47482d955a99e85f8af22c.

[vi] Matanuska-Susitna Borough, "Port MacKenzie Rail Extension: A Project of Statewide Significance and Benefit, Helping to Diversify the Alaskan Economy," 2011.

[vii] Matanuska-Susitna Borough, *Port MacKenzie Master Plan 2016 Update* (2016).

[viii] Paul Metz, *Economic Analysis of Rail Link Port MacKenzie to Willow, Alaska, Phase II* (2011).

[ix] Matanuska-Susitna Borough, *Port MacKenzie Master Plan 2016 Update*; Metz, *Rail Link Economic Analysis*.

[x] "Minerals and Metals Help Improve Our National Security," *National Mining Association*, February 3, 2017, https://nma.org/2017/02/03/minerals-and-metals-help-improve-our-national-security/.

[xi] Edelman, "The Top Eight Minerals That Support National Defense," *Minerals Make Life*, May 24, 2017, https://mineralsmakelife.org/blog/the-top-eight-minerals-that-support-national-defense/.

[xii] Max Graham, "Fueled by Trade Tensions and Foreign Wars, a Rush for an Obscure Mineral Heats up in Alaska," *Alaska Beacon, Northern Journal*, June 6, 2025, https://alaskabeacon.com/2025/06/06/fueled-by-trade-tensions-and-foreign-wars-a-rush-for-an-obscure-mineral-heats-up-in-alaska/.

[xiii] David Blackmon, "Antimony: The Most Important Mineral You Never Heard Of," accessed September 15, 2025, https://www.forbes.com/sites/davidblackmon/2021/05/06/antimony-the-most-important-mineral-you-never-heard-of/.

[xiv] Graham, "Fueled by Trade Tensions and Foreign Wars, a Rush for an Obscure Mineral Heats up in Alaska."

[xv] Matanuska-Susitna Borough, *Port MacKenzie Overview* (2010).

[xvi] Elizabeth Gray, "Response to Senator Hoffman, Co-Chair, Senate Finance Committee," personal communication, March 4, 2011.

[xvii] *Official State of Alaska Map*, n.d.

[xviii] Matanuska-Susitna Borough, *Port MacKenzie Overview*.

[xix] "Response to Ken Williamson, WorleyParsons Calgary," with David Hanson, Matanuska-Susitna Borough, December 1, 2010.

[xx] "Response to Ken Williamson, WorleyParsons Calgary."