

# State tells FERC of problems with Mat-Su Borough's proposed site at Port MacKenzie

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Constructing the gas liquefaction plant and marine terminal at the Port MacKenzie site proposed by the Matanuska-Susitna Borough does not eliminate the challenges of building on the property across Knik Arm from Anchorage instead of the project's preferred site 60 miles to the south on Cook Inlet, the Alaska Gasline Development Corp. (AGDC) told federal regulators.

The state team this month filed several lengthy packages of information in response to a list of requests Oct. 2 from the Federal Energy Regulatory Commission (FERC), which is just three months away from its scheduled release of the proposed Alaska LNG project's draft environmental impact statement (EIS). The review will look at multiple project alternatives — including the LNG plant site.

AGDC's Nov. 20 filing included answers to FERC questions about the suitability of building at what the Mat-Su Borough calls the "optimal site" at Port MacKenzie, which borders other locations at the port already reviewed and rejected by the state team. Since 2013, the project's preferred choice has been to construct the LNG terminal in Nikiski.

The state team told FERC that building at the borough's recommended site would not resolve many of the overall drawbacks of Port MacKenzie that include: rebuilding the existing barge dock; removing the existing deep-water dock; widening and lengthening the haul road from the waterfront, and rebuilding the road to reduce its steep incline; and likely construction delays because the wider tidal range and the stronger tidal currents and ice movement at Port MacKenzie compared to Nikiski would slow down deliveries and offloading of project material.

The Mat-Su Borough has long advocated industrial development for the property upland from its money-losing port, promoting its road access, existing barge facility, and deep-water dock.

In January, the borough filed as an intervenor in FERC's proceedings, challenging the fairness and accuracy of the project's earlier analysis of the Port MacKenzie alternative. That prompted the Kenai Peninsula Borough in August to file its own intervenor motion to protect Nikiski as the project location.

AGDC is pushing hard to provide all the information requested by FERC to stay on schedule for the draft EIS in February 2019, with a final impact statement in November 2019 and possible commission decision on the project application by February 2020.

## AGDC LISTS PROBLEMS WITH PORT SITE

After further review of the Mat-Su Borough's recommended site, the state project team in its Nov. 20 filing reaffirmed that it would need to remove the port's existing deep-water dock to make room

for significant expansion of the barge dock for offloading of construction material, production modules and other plant components.

AGDC also said it would need to widen from 45 feet to 150 feet the port's haul road to the upland property to accommodate transportation of large components to the site. In addition to widening the road, it would require regrading and lengthening to bring it down to a 3 percent maximum grade. The bluff at Port MacKenzie is higher than at the Nikiski site, requiring more cut and fill to build the haul road, AGDC said.

The state team said it had not calculated how much rock, dirt, and other material it would need to move for the widened heavy haul road but said it would exceed the 1.3 million cubic yards it would need to move in Nikiski.

Building the plant in Nikiski would require construction of a temporary freight offloading facility specifically designed for construction deliveries and a permanent deep-water dock for berthing and loading LNG carriers during operations.

The state team also reported it would be harder to find oceangoing heavy-lift vessels — for delivering the plant modules — that could handle the ice and tidal extremes at Port MacKenzie, which would “increase cost and decrease practicability” of the site. Building a case for “practicability” is important because federal law requires that an EIS consider not only the applicant's preferred construction plans but also any economically feasible alternatives, referred to as the “least environmentally damaging practicable alternative.”

The state has been leading development of the North Slope natural gas project since oil-and-gas producers ExxonMobil, BP, and ConocoPhillips in late 2016 declined to spend the substantial funds that would be needed for the federal EIS, permitting, and engineering to reach a final investment decision. However, AGDC, which is entirely state funded, appears likely to run out of funds by late 2019 unless the Alaska Legislature next year appropriates more money or the state corporation can entice private investors to buy into the venture.

AGDC continues to work toward making its pitch to potential investors early next year, while it also needs to sign up buyers for the LNG, negotiate firm gas supply contracts with the North Slope producers and arrange financing if it hopes to meet its self-promoted schedule of starting construction in 2020.

## **ALASKA LNG NOT THE FIRST ATTEMPT**

Alaska has long wanted to find a big project that could monetize its natural gas resources, but market conditions, global competition, and high project costs have thwarted those plans.

In 1995, FERC issued a final EIS and authorized Yukon Pacific Co. to construct a gas pipeline from the North Slope to Valdez, with an LNG terminal in the Prince William Sound community. The project never was able to assemble a gas supply, LNG customers, and financing, and FERC in 2010 denied the company's request for another extension, canceling the authorization.

About 20 years before Yukon Pacific made a move on the Valdez project, a consortium of California gas and electric utilities put together a venture called Pacific Alaska LNG and applied for federal authorization to build an LNG terminal in Nikiski. In 1978, FERC issued its final EIS for the project, called Western LNG, proposed for about the same site as Alaska LNG's preferred location. The Western LNG project would have used Cook Inlet gas, more than 400 million cubic feet per day, about one-eighth the volume of the Alaska LNG venture that would turn about 3 billion cubic feet of gas per day into 20 million tonnes of LNG per year.

Like Yukon Pacific, the Western LNG project failed the economic viability test and ended up as an EIS in the library.

As Alaska LNG works to finish answering FERC's questions to stay on schedule for its EIS, only a small number of information requests remain open — some of which will require field work in 2019 and which FERC will accept between the draft and final EIS.

### **AGDC FILINGS RANGE FROM 1 to 297 PAGES**

November's filings cover impacts to permafrost, noise levels during construction and operation, monitoring of nearby public and private water wells, impacts to people's health, and other temporary and permanent effects from the \$43 billion construction project that would stretch from the North Slope to Cook Inlet.

Some of the answers were a single page, while others were far lengthier. AGDC's updated restoration and revegetation plans totaled 297 pages, including more information on preventing invasive species from getting a foothold in the state.

The project team told FERC on Nov. 26 that it had decided to use "direct microtunneling" instead of horizontal directional drilling to install the pipe under waterways in areas of continuous and discontinuous permafrost. It said tunneling "is better suited for boring into and through" such river crossings. AGDC cited several reasons for the switch:

- Directional drilling requires successive passes to create a large enough path for the 42-inch-diameter pipe, whereas the pipe can be installed after one pass of the tunneling machine.
- Less drilling mud is required for tunneling.
- Tunneling instead of drilling does not require temporary casings for the bore hole.
- And tunneled holes are less susceptible to collapse.

In microtunneling, a laser-guided machine is lowered into a pit to start digging its way under the waterbody. It can cost more than directional drilling but offers advantages of accuracy and dependability, according to industry reports.

### **COMPREHENSIVE TABLE LISTS ALL WATER CROSSINGS**

Also on Nov. 26, AGDC provided FERC with a comprehensive table of more than 600 waterbodies that would be crossed by the 62-mile Point Thomson-to-Prudhoe pipeline and the 807-mile mainline to Nikiski, including ditches, ponds, creeks, and rivers. The Excel spreadsheet lists the milepost location for each crossing, the waterbody's name (if it has one), whether the crossing is planned for winter or summer construction, the length of the crossing and width of the bank, the proposed construction method (open-cut or frozen-cut to dig and bury the pipe, trenchless by tunneling or drilling beneath the waterway, or aerial crossing over a couple of rivers), and whether blasting would be required for the work. The entire Point Thomson line would be constructed aboveground on vertical supports.

The table also lists which species of fish live in each waterbody, whether any species overwinter in the waterway and whether salmon spawn upriver. The thorough data summary also lists whether the waterway supports commercial or subsistence fisheries.

The report lists the same information for construction access road water crossings.

### **AGDC ANSWERS QUESTIONS OF COOK INLET CROSSING**

AGDC this month provided further details of its plan to tunnel and/or trench the buried pipeline from the west side of Cook Inlet far enough out in the water so that the pipe-laying barge could take over and set the concrete-coated pipeline on the seafloor to reach the other side, where trenching and/or tunneling would resume to bring the pipe ashore at Nikiski.

AGDC said it prefers open-cut trenching for pipeline installation in the transition zones on both sides of Cook Inlet but could change the plan to tunneling as it learns more during the project's detailed engineering stage. In its data request to AGDC, federal regulators noted that the project did not conduct geotechnical soil borings in the full transition zone on either side of Cook Inlet, limiting the data available to decide between tunneling and open-cut trenching.

The pipeline would be buried with a minimum soil cover of three feet in the shoreline approach up to a water depth of 12 feet below mean lower low water (the average height of the lowest tide).

In deeper water, where the pipeline is on the seafloor with no soil cover, AGDC said the 3.5 inches of concrete coating would protect the steel pipe from any damage from fishing gear, anchors, or boulders. "The pipeline is safe without burial," AGDC said. Separate from the FERC-led EIS, approval of the pipeline construction plan across Cook Inlet will be up to the U.S. Pipeline and Hazardous Materials Safety Administration and its regulations.

## HEALTH IMPACT ASSESSMENT IS WIDE RANGING

AGDC on Nov. 19 provided federal regulators with the project's health impact assessment, which looks at how construction and operations could affect the health of Alaskans — including subsistence lifestyle and food nutrition. The filing is 170 pages long. "The presence of outside workers could exacerbate social problems or stress and impact mental health ... particularly in smaller communities," the assessment said.

"Households impacted would be expected to adapt with some difficulty but could maintain pre-impact level of health with support from community, regionally based and existing federal support of Native health, public health programs. ... Potential construction impacts to subsistence during the construction phase are expected to be temporary in duration," the assessment said.

"Potential concern related to subsistence resources during construction is the possibility that workers might compete with subsistence users resulting in either diminished harvests or greater subsistence effort. The project will prohibit workers from hunting or fishing while on the job or when company transportation has been used to bring them to a remote site."

The assessment's subsistence section also raised the issue of invasive species. "The introduction of invasive species (both fish and/or aquatic plants) could impact fish habitat and/or productivity and impact fish availability to subsistence users. ... The introduction of invasive species could become a long-term impact if their spread is uncontrolled, thus potentially signaling a long term reduced fish availability for subsistence users and users downstream of the impacted areas."

In another section, the assessment said Railbelt and highway communities "would be expected to be impacted by the increase in traffic during construction, which could cause mental stress and anxiety regarding the real or perceived issues of safety and environmental health associated with the increased rail and truck traffic." Though it added, "Employment opportunities could alleviate family stress by improving family income and the local economy during construction."

And the assessment noted that local fire departments and emergency medical service squads could see higher call volume during construction, while also facing the potential loss of staff and volunteers moving to Alaska LNG project construction jobs. Payments to municipalities under the project's proposed impact aid grant program could help cover any added costs, AGDC told federal regulators. However, the project has yet to negotiate an impact aid program with the state and affected municipalities.

AGDC's November filings with FERC covered multiple other issues, including:

- AGDC defended its plan to use gravel fill for work areas in wetlands during construction. In answer to questions from FERC, the state team said timber mats, wood chips, or protective mats made of composite material would be too costly and impractical to deploy during construction. Wood or composite mats would cost two to four times as much as gravel fill, AGDC said.
- “Typically, gravel fill would be placed as a protective cover over thaw-sensitive areas along the right-of-way during construction and would not be removed during restoration because it would be difficult to avoid disrupting the thermal regime of adjacent, undisturbed areas,” AGDC reported to FERC.
- The project’s gravel sourcing and reclamation plan covers development of new sources of sand, gravel, and fill for construction, along with plans to store or dispose of unsuitable materials that would be removed from the site such as unusable topsoil, overburden, or frost-susceptible material.
- A revised table lists locations of potential deep and shallow landslides, slope creep, rock falls, rock avalanches, debris flows, and snow avalanches based on the project’s recently updated onshore geohazard assessment methodology and results summary.
- “If warming continues for the next 30 years, it could change local permafrost and groundwater conditions sufficiently to result in mechanically weaker soils,” AGDC told FERC. “In these areas, significant precipitation events as well as earthquakes might have substantial impact on soil stability and, thus, pipeline integrity.” The state team was responding to FERC’s Oct. 2 comment that “AGDC’s proposed mitigation for soil liquefaction ... and does not take into account areas that could become prone to liquefaction due to climate change and permafrost degradation.” The project responded that it would monitor and “apply mitigation techniques to minimize potential impacts from permafrost degradation along the pipeline.”
- “It is unlikely permafrost would be thermally affected” by blasting for pipeline trenching, AGDC said. “Blasted trench areas are easily controlled to limit the disturbed materials to within the frozen trench walls and accordingly would not result in a shift in soil makeup and the permafrost profile.”
- Thaw-sensitive soils cover a total of about 500 miles of the main pipeline route from Prudhoe Bay to Nikiski and the line from Point Thomson to Prudhoe.
- Traffic on a 5-mile stretch of the Parks Highway outside the Denali National Park and Preserve would be limited to one lane September through May during pipeline construction with brief closures (“hours, not days”) of both lanes. “Construction within this window would coincide with the off-season for tourism.” The project would try to limit the complete shutdowns to evening hours.
- AGDC presented its plans to monitor commercial, domestic, and public-supply water wells within 150 feet of the project — most of those wells are near the LNG plant site. The state team said it would test public water wells before and after construction to determine if the work affected the wells. Private wells would be tested at the landowners’ request.
- Pile driving would occur 12 hours a day, 7 days a week at the LNG plant construction site, while pile driving at the compressor station and heater station construction sites along the pipeline route would occur 24 hours per day. Dredging for the marine offloading terminal at the Nikiski site would occur 24 hours a day, 7 days a week.