

Forgotten Nikiski LNG proposal had full environmental review

The plans called for a new liquefied natural gas plant along the industrial strip at Nikiski, Alaska.

Teams of scientists sampled soils, measured historic tsunamis, unfurled maps of seismic faults and described how to place a pipeline across Alaska's roiling Cook Inlet to feed the export plant with natural gas.

Engineers detailed how to build an LNG plant and dock safely, and calculated probabilities of a tanker accident.

The project wasn't the ConocoPhillips LNG plant that exists today at Nikiski. That plant was built years before.

And it isn't the multibillion-dollar Alaska LNG export project that the big three North Slope oil and gas producers are working toward today.¹

This plant was called the Western LNG Project. It looked south, not west, for its customers. The ConocoPhillips plant sent Cook Inlet gas to Japan. Western LNG would send Cook Inlet gas — a lot of it — to California.

And although it was the sort of mega-project that causes Alaska economic boosters to salivate — it would have cost more than \$1 billion in 1970s dollars and was in play for a half dozen years or so in an infrastructure-starved state — few Alaskans seem to recall ever hearing of it.

That's likely because an even bigger Alaska gas project eclipsed Western LNG during its life: the \$7 billion Alaskan Northwest proposal to pipe North Slope gas through Canada to Lower 48 consumers.² Western LNG was the scrawny kid brother of the star high school quarterback.

The Western LNG and bigger Alaskan Northwest projects almost exactly overlapped in time. Both were born in the mid-1970s. Both died by the early 1980s. They sprang from the same perceived need: A shortage of North American natural gas supplies. They withered under the same merciless economic force: Price deregulation that pumped competing, less-expensive gas production from other fields into Lower 48 utilities.

But in its day, Western LNG got something no other proposed large-scale U.S. liquefaction plant had ever received: Full environmental impact study scrutiny under the then-new National Environmental Policy Act.³ (The existing ConocoPhillips plant was built in the 1960s before NEPA became law.)

The proposed \$45 billion to \$65 billion producer-led Alaska LNG project also is targeting Nikiski for its LNG plant site. It plans to be much more ambitious than the Western LNG project — more expensive, more production, more footprint at Nikiski.

It also would need an environmental impact statement before proceeding to construction.

EIS writing has evolved since the 1970s. New laws, court rulings, more data about the environment and the experiences of those drafting them all have tended to make the documents longer and more detailed to cover more issues and to head off challenges that they are incomplete.

But the core goal of NEPA remains intact: Federal agencies should understand, consider and disclose the environmental consequences of their decisions.

And the Western LNG EIS is an instructive glimpse into whether there are any obvious environmental tripwires ahead for siting Alaska LNG's plant at Nikiski.

STARVED FOR GAS?

Western LNG was conceived by California utilities fretting over future natural gas supplies.

In the early 1970s, an energy crisis of oil embargoes, soaring prices and lines at gasoline stations surprised and stressed Americans. Although natural gas production was peaking, the industry and its pricing were regulated stiffly. Exploration stagnated and reserves shrank. The experts' consensus: Brace for shortages.

On Nov. 11, 1974, Pacific Alaska LNG Co. filed with the Federal Power Commission for authority to build the project. As part of it, they separately filed to build terminals in California to receive Alaska LNG as well as gas from Indonesia, which was then developing its first LNG export plant.

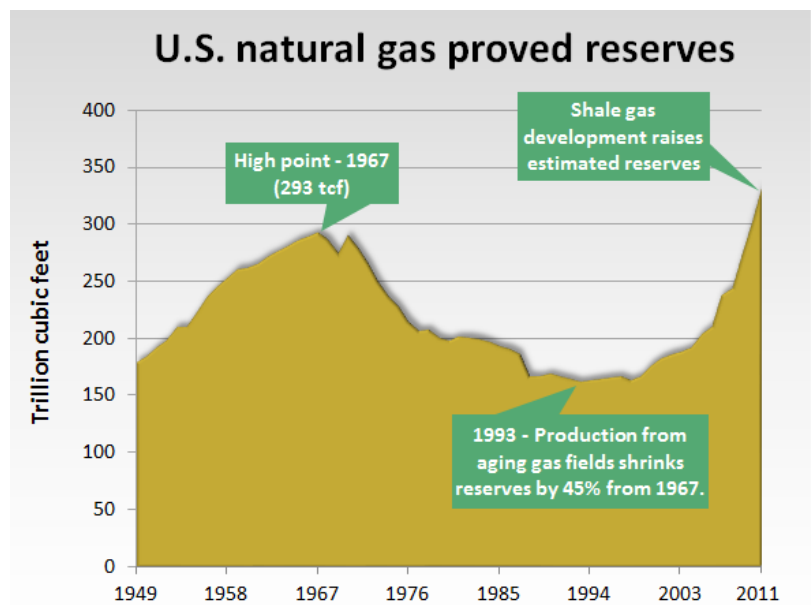
The Alaska plan evolved over the ensuing several years. The changes included a new governing body in 1977, when the FPC segued into the Federal Energy Regulatory Commission, which

today oversees construction and operation of LNG plants. But basically here was the deal:

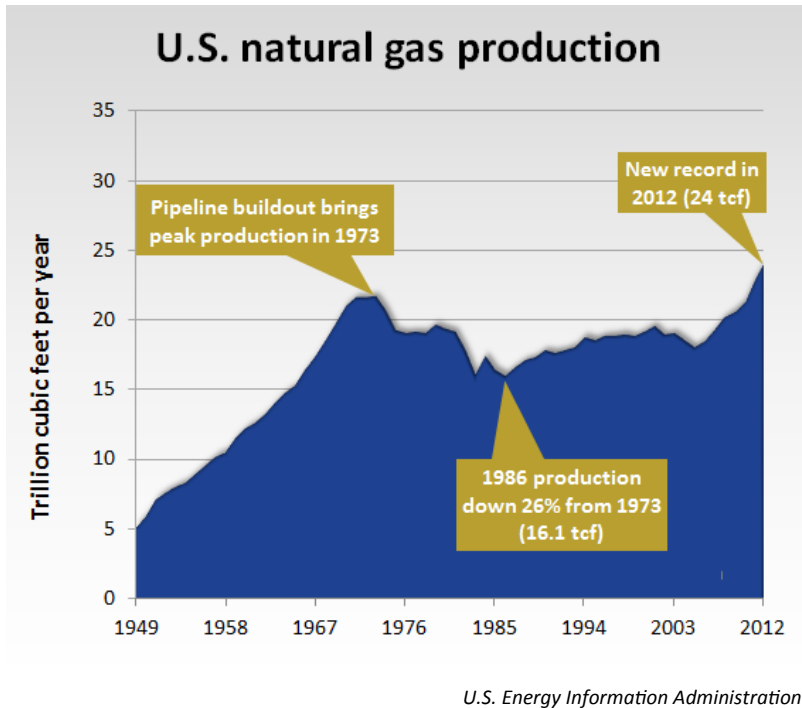
Pacific LNG was a partnership of Pacific Lighting, a major Southern California utility, and Pacific Gas and Electric Co., a major Northern California utility.

The partnership would:

- Buy 431 million cubic feet a day of natural gas from about two dozen existing and still-to-be-developed Cook Inlet-area fields. This is about double the amount of natural gas Southcentral Alaska utilities consume today.
- Install a 292-mile pipeline network from the fields to its Nikiski LNG plant.
- Build a two-production-train plant that would make about 3 million metric tons per year of LNG, the equivalent of about 400 million cubic feet a day of gas once it had been warmed back into a vapor in California. (Some of the purchased gas would get consumed in making LNG.) The plant would be located on a 59.3-acre site just south of the existing ConocoPhillips LNG plant at Nikiski; a fertilizer plant would stand immediately between them. But the Western LNG plant would be bigger, capable of producing twice as much LNG as the



U.S. Energy Information Administration



largest natural gas reservoirs. Nothing about the 9-year-old state was the same after wildcatters struck this bonanza.

By 1974, Prudhoe's dazzling potential was becoming tangible to Alaskans.

That spring, crews broke ground on the trans-Alaska oil pipeline's three-year construction. Almost simultaneously, two gas-pipeline groups filed competing proposals to pipe Prudhoe Bay gas to Lower 48 markets. (That was even before Western LNG and Alaskan Northwest plans surfaced. These earlier entrants also failed.)

Well over \$10 billion in oil and gas projects circled the state waiting for turns to land. This in a place whose entire gross state product — the value

of all its goods and services — was \$3 billion in 1973. Thousands of workers rushed into Alaska to lay roads, dig trenches, weld pipe, drive trucks, cook food and perform myriad other jobs related to spending all those billions.

Alaska was in full play. And at the end of that historic year, Western LNG proposed its LNG plant down at Nikiski ... on the Cook Inlet bluff ... far away from the oil-pipeline axis.

At just about any other time in Alaska's previous history, such a \$1.2 billion development could have been expected to make noise.

But Western's buzz got lost as the Prudhoe Bay cacophony echoed through Alaska.

A DIFFERENCE OF SCALE

The environmental impact statement comprised three volumes totaling 1,600 pages.

The first, 334-page volume focused exclusively on the Alaska project.⁴ The other two volumes covered the California LNG receiving terminal, public comments and backup studies.

Some big differences in scale between the

ConocoPhillips plant made in its heyday.

- Construct two 130,000-cubic-meter tankers to ferry LNG between Nikiski and a receiving terminal the partners would build at Point Conception, Calif., northwest of Santa Barbara.

\$1.2 billion – The price tag for the project's Alaska portion, plus tankers.

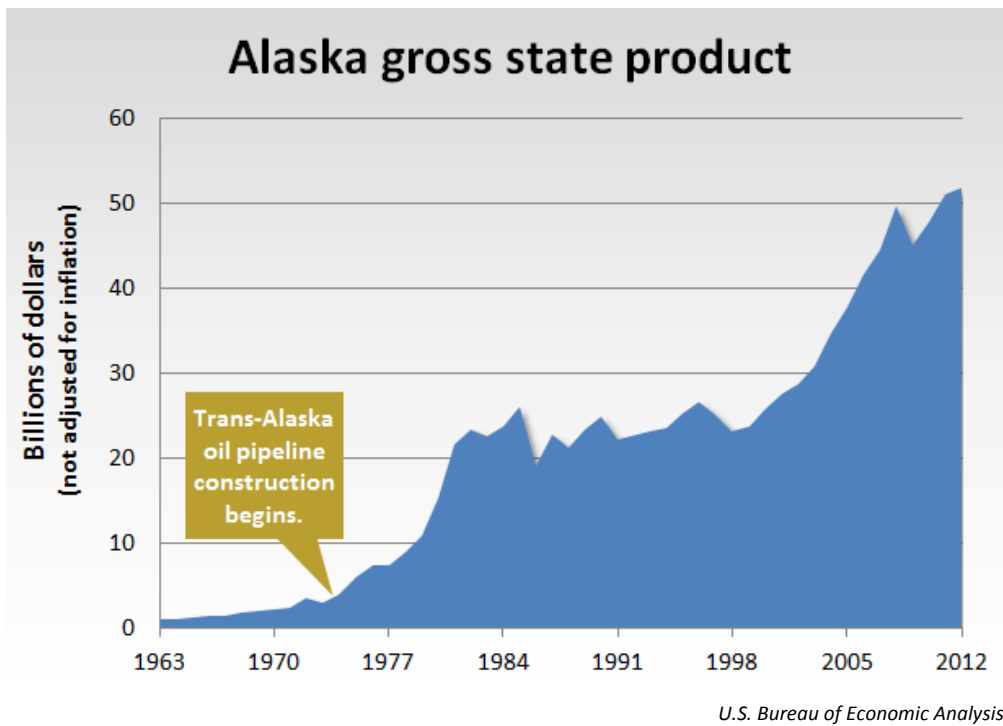
Early 1982 – Estimated date for the first tanker shipment of LNG. Full production about a year later.

FERC published its final environmental impact statement for Western LNG in October 1978. The commission concluded: The project would have "limited adverse impact on the environment," especially if Pacific Alaska met 24 environmental stipulations.

AN ECONOMY IN PLAY

The Western LNG project arose as Alaska's economy transformed from sleepy to sensational almost as fast as you can say "oil gusher."

The spark was the 1968 discovery of Prudhoe Bay, North America's largest oil field and one of its



AN INDUSTRY FINDING ITS WAY

In October 1978, when the Federal Energy Regulatory Commission completed its Western LNG environmental impact statement, the EIS-crafting industry was in its infancy.

Federal agencies, environmentalists and the courts were still sorting out how to assess and disclose environmental impacts of federal actions adequately.

Western LNG project as proposed in 1978 and the Alaska LNG project as conceived today become evident right away when reading the EIS.

First, Western LNG's project involved a nearly 300-mile regional pipeline network that would feed the LNG plant from 20-plus Cook Inlet fields arrayed to the north, west, south and east. Much of the EIS discusses the impacts of this network, its pipes crossing many rivers, streams and wetlands. By contrast, Alaska LNG contemplates a single, 42-inch trans-Alaska mainline from the North Slope directly to its plant — though much longer at 800 miles.

Another key difference is the LNG plant itself. Western LNG planned to process about 400 million cubic feet per day of Cook Inlet natural gas at a plant occupying a 59.3-acre site. Alaska LNG preliminarily is planning to process five to six times that volume — 2 billion to 2.4 billion cubic feet a day of North Slope gas — at a plant site more than 10 times that size — 600 to 800 acres.

Also, out in Cook Inlet, Western LNG would have built a jetty that could dock one tanker at a time. Alaska LNG is planning for a two-berth terminal.

Congress passed the legislation that mandated environmental studies — the National Environmental Policy Act — in 1969. President Nixon signed it into law on Jan. 1, 1970, calling it a "particularly fitting" first official act for the new decade.

Through the 1960s, Americans had soberly discovered that pesticides that improved crop yields also poisoned rivers, western dams that stored water for farms and made electricity for cities also flooded once glorious canyons, factories that created jobs also belched toxins from their smokestacks.

Satirist Tom Lehrer put it this way in his mid-1960s song "Pollution":

"The breakfast garbage that you throw into the bay

"They drink at lunch in San Jose."

NEPA was one of a string of reforms Congress enacted in that era to try to redress the nation's environmental abuse.

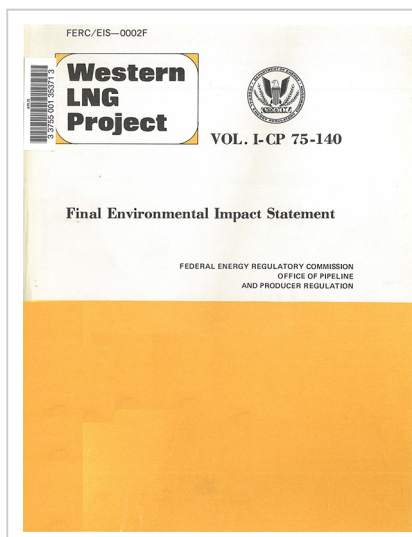
For the first years of NEPA, agencies were kind of on their own in structuring environmental reviews,

using the law itself as their guide on what to consider.

NEPA created the Council of Environmental Quality in the White House to formulate "national policies to promote the improvement of the quality of the environment." In November 1978 — one month *after* FERC completed the Western LNG EIS — the council finally issued its first regulations that agencies must follow for their environmental reviews. FERC published its detailed NEPA regulations used today in 1987.

Still, even without CEQ's detailed guidance, the Western LNG statement followed the basic EIS format used today, including description and discussion of:

- How the project might affect soils, vegetation, wildlife, wetlands and waterways, communities, economies, recreation areas and other land use, archaeological and historical sites, air quality and so on.
- How the LNG plant, tanker terminal and pipeline could be damaged by earthquakes, tsunamis and Cook Inlet's notoriously wicked tides, currents and ice floes.
- Steps that could mitigate potential environmental problems.



The cover of the Western LNG final environmental impact statement

- Alternatives to the project that might be undertaken instead.

The EIS process also included soliciting input from affected groups and agencies, circulating to the public a draft of the impact statement for

purposes of collecting public comment, and publishing the feedback received.

SURPRISE AT THE NIKISKI SITE

The impact statement found the Western LNG project to be environmentally manageable.

Some of the biggest concerns pertained to the nearly 300 miles of pipelines popping in and out of streambeds and rivers. Bank erosion and instability could be worrisome if those crossings were done haphazardly, in the wrong locations or at the wrong time for spawning salmon, the EIS said.

The pipeline network from the 20-plus gas fields targeted in Cook Inlet would have made about 94 crossings of 65 watercourses, large and small, the impact statement said. As was mentioned, that's far more stream crossings than the proposed Alaska LNG single pipeline from the North Slope to Nikiski would make in the area.

Most impacts to soils, vegetation and wildlife would have come from pipeline construction, and most could have been managed by routing around problems, carefully choosing stream crossings and trenching the ground and burying the pipe during winter when the ground is frozen, the EIS said.

The LNG plant and its proposed site was a more focused topic than the far-flung pipeline network.

Interestingly, after FERC started the EIS, the Western LNG sponsors bulldozed the site. That probably wouldn't happen today before environmental approval. Here's what the EIS said:

"The proposed 59.3-acre LNG plant site located on the northwestern coast of the Kenai Peninsula was vegetated until recently with 40 acres of spruce-hardwood forest. The remainder of the site had been cleared by a previous owner. Since the DEIS [draft environmental impact statement, dated April 1978] was issued, it has come to the attention of the environmental staff that the site has been completely cleared and surfaced with gravel. Only a smattering of spruce trees remains around the periphery of the site."

FERC had few seismic concerns, as long as the plant was designed well. No known earthquake fault scars the site.

During Alaska's powerful 1964 earthquake, some "cracking of the ground surface due to lurching or compaction of unconsolidated sediments was common within the Kenai Lowland." The nearest was about two miles from the plant site. "Most of this type of disturbance is restricted to a relatively thin surface layer and would have little or no effect upon the facility. ... Ground rupture of any kind is not considered to be a significant hazard at the proposed LNG plant site."

However, the 1964 earthquake shook a wide area of Alaska, and critical portions of the proposed plant should be designed to withstand the possibilities (sparing readers the EIS's geotechnical terminology): A nearby magnitude 6.5 earthquake with extreme ground movement, or a farther away magnitude 8.5 earthquake with intense ground movement.

A big quake might cause some slides on the Cook Inlet bluff, but the plant would be far enough back and unaffected, the impact statement said. The transfer pipelines and trestles leading to the tanker berth would have been fine, too, "if properly anchored." A tsunami wouldn't have been a problem for the dock because any tanker berthed there would have enough warning to set sail. "The same is not necessarily true for waves generated due to faulting in the inlet, but there is no evidence that such waves have occurred to date."

For the most part, the EIS foresaw little environmental impact from the project provided proper precautions were taken. The words "minimal" or "minimally" appear 15 times in the document.

THE COAST GUARD'S ANXIETY

Among agencies, only the Coast Guard seemed to get its pulse rate racing over the Western LNG project. But only for a while before it, too, signed off.

In October 1975, the Federal Power Commission staff wrote to the Coast Guard asking questions about the safety hazards of ice, tides and currents at the Nikiski port and the wisdom of putting a second LNG terminal there.

On Nov. 14, 1975, the blunt response came from Rear Adm. J.B. Hayes, commander of the 17th Coast Guard District, which patrols the vast Alaska coast.

"The addition of any other LNG facility in this location will substantially increase the risk to life, property and the environment," Hayes wrote. "Nikiski is quite frankly, a poor choice. I strongly recommend that cognizant officials of your agency visit Nikiski during winter conditions before any decision is made in this matter."

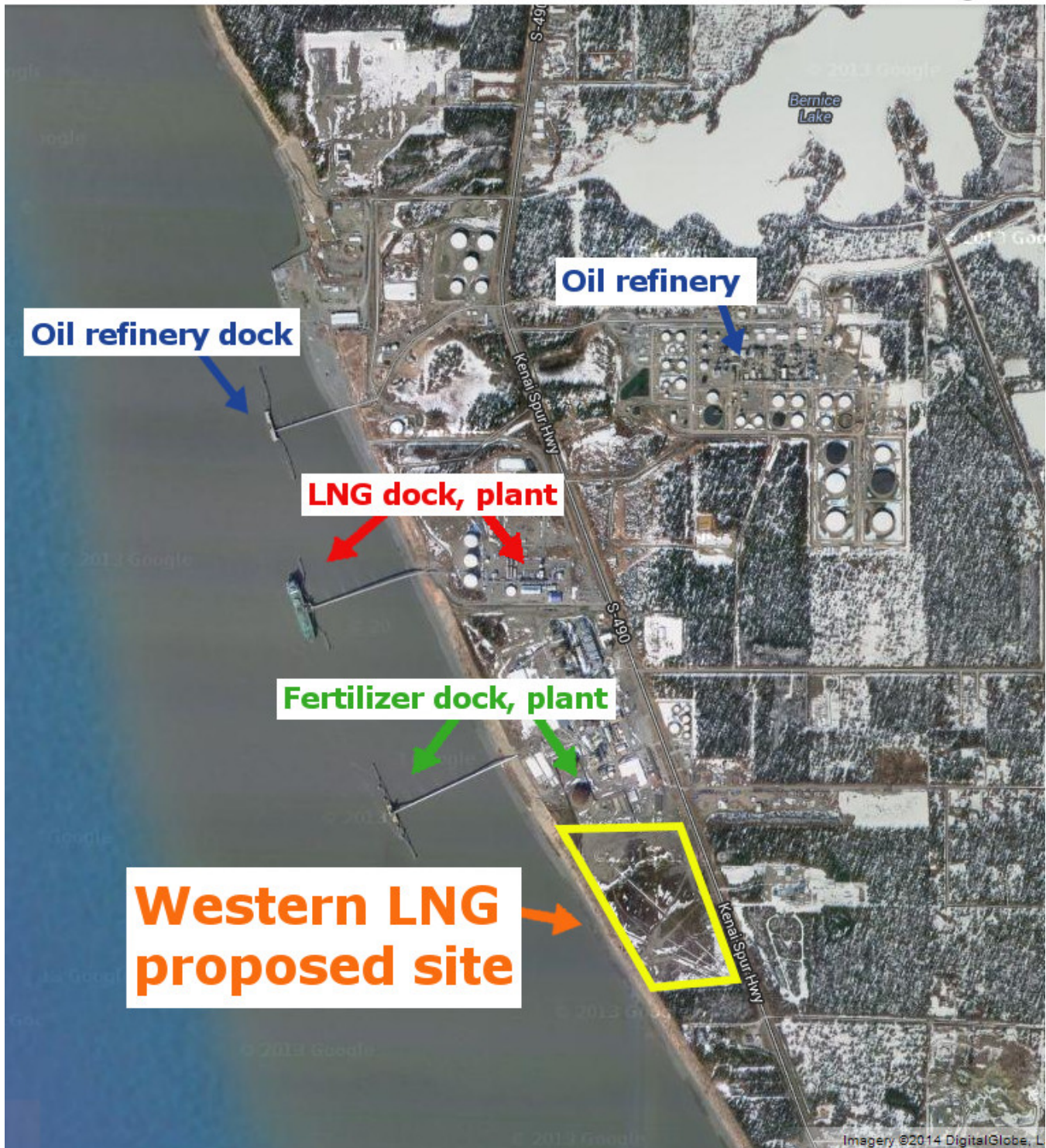
Here's the deal, Hayes wrote. Incoming tides — called flood tides — typically sweep up the east side of Cook Inlet. That's where the three existing docks are, for the fertilizer plant, ConocoPhillips LNG plant and oil refinery, in that order from south to north. A strong flood tide can flow at up to 7 knots. When pushed by brisk southwest winds, the flow can near 11 knots. In the presence of winter ice cakes — some a half-mile wide moving at or near surface-current velocities — and when two or more ships are docked, the potential for trouble is high.

"The ultimate danger is that of a large cake of ice or a buildup of smaller cakes and brash striking a moored vessel and causing it to break away from its mooring," Hayes wrote. "The primary hazard is the inability of the vessels torn away from their loading berth or executing emergency break away procedures, to maneuver in heavy ice so as to prevent collision with other pier facilities or vessels in the area."

Putting another dock at the southern end of this line of dominos seems unwise, Hayes suggested.

To support his point, the admiral attached a letter from the LNG tanker Polar Alaska's captain concerning an incident 10 months earlier, on Jan. 8, 1975.

Nikiski, Alaska, industrial strip



Source: Google Maps, Office of the Federal Coordinator Research

The proposed Western LNG plant would have added a fourth shipping dock to the Nikiski port, initially causing Coast Guard safety concerns when the plant was proposed in the mid-1970s.

An oil tanker, docked north of his LNG ship, broke loose and started drifting toward the LNG pier, the captain wrote in the letter to his boss. At that moment, the Polar Alaska was loading LNG. They swiftly shut off the LNG flow. "The entire crew of the SS 'Polar Alaska' was immediately alerted for an emergency cast off." Before the ship could leave, though, the runaway oil tanker gained engine and steering controls. It skirted "dangerously close" past the LNG ship without hitting it. Especially in winter, "there is a constant danger when two or more ships are moored at Nikiski Pier and I beg you to take all the steps to avoid a situation which jeopardize the ships and their crews," the LNG tanker captain wrote.

Hayes also attached a series of log reports of ice problems Nikiski ships endured in the frigid winter of 1971.

The Western LNG sponsors got busy.

They developed emergency-response plans. They got all Nikiski port users to agree to port protocols when ice danger is high, including closing the port if necessary. Then they invited Coast Guard officials for a show-and-tell of the new safety culture.

The Coast Guard was mollified.

"Since November 1975 a number of significant changes have taken place," Hayes wrote to the power commission on March 9, 1977. "These include formation of the Nikiski Operators' Safety Committee, the adoption of voluntary operating procedures by the Committee, the upgrading of existing facilities at the port complex, and further studies by Pacific Alaska Company regarding currents and ship breakaways. As a result of these steps, and under existing Coast Guard regulatory authority, I am now convinced that present and future Nikiski operations can be conducted safely, though perhaps under conditions of considerable economic burden to the operators."

UNCHANGING TIDES

Ferocious tides, currents and ice surges remain a hazard at Nikiski today, even though shippers have had an additional three decades of experience with Cook Inlet.

In the frigid predawn of Feb. 2, 2006, a surging tide and ice floes pressed against the docked tanker Seabulk Pride as it loaded fuel oil and gasoline from the Tesoro oil refinery. Mooring lines snapped along its hull until the ship drifted away. The tanker finally beached a half-mile north of the dock.

The Coast Guard investigation concluded the port's severe-ice rules were adequate, the ship's crew just didn't follow them.⁵ The vessel and its engine room were inadequately manned. The crew members weren't trained for dealing with heavy ice. They didn't know how to moor a ship for the strain it would endure.

A 2007 study of ways to make the Nikiski port safer in light of the Seabulk Pride accident concluded that in many ways the docks there are models of proper design.⁶ The authors found it interesting that mooring-line failures have occurred at the refinery and fertilizer dock but not the LNG dock between them.

"It may be that ConocoPhillips, because they employ only two identical ships whose crew have extensive experience in Cook Inlet and working with the facility dock force, have substantially reduced the risk from the 'human element,'" the report said.

The report noted the absence of tugs to back up tankers at Nikiski, an unusual omission among northern-latitude ports worldwide studied. Four months later, the Tesoro refinery announced it would deploy a tractor tug year-round to help tankers arriving and leaving its dock.



Source: U.S. Coast Guard

The Seabulk Pride beached along Cook Inlet north of the Tesoro oil refinery dock after pressure from ice and a surging tide snapped lines mooring the tanker to the refinery's pier in 2006.

ALTERNATIVES TO NIKISKI

As mandated by NEPA, the impact statement considered alternatives to building the Western LNG plan:

- Other Cook Inlet sites had inferior geologic, climatic or oceanographic qualities, or had technical problems, the study concluded. The alternate getting closest scrutiny was Cape Starichkoff, farther south Cook Inlet's east bank, near the town of Anchor Point. Fewer ice problems there, the study found. But a plant there would be more conspicuous than in industrial Nikiski, and it would be more likely to clash with the local salmon industry.
- Expanding the ConocoPhillips plant sounded good on paper. But the plant would have to be redesigned and updated, requiring it to be

shut down for a time, interrupting its ongoing contract to deliver LNG to Tokyo utilities. Besides, the plant owners might be unwilling.

- Cook Inlet gas instead could be piped north to Fairbanks or northeast to Tok, where it could feed into the big proposed Alaskan Northwest gas pipeline project from Prudhoe Bay to the Lower 48. Each idea had its problems, particularly landsliding and faulting on the route to Tok, where the environmental impact would be greater.
- Always an option is to do nothing, to build no project. "Inasmuch as there is a need for natural gas, this alternative would appear to be unacceptable," the study said.

Impact statements then, and today, also discuss what unavoidable environmental changes would



Photo courtesy of ConocoPhillips

The ConocoPhillips LNG plant operated continuously from 1969 through 2012 and is currently idle. For a time in the 1970s and early 1980s, a larger Western LNG plant was proposed for just south of the ConocoPhillips site.

Some involved pipeline routing. Some concerned safety designs, emergency plans and timing of report filings. Several specified how to avoid damaging streams or disturbing nesting birds during construction — such as via winter construction. For fuel, the tankers should burn LNG that has revaporized — called boil-off gas — when docked or approaching Nikiski rather than more polluting bunker-C oil, the impact

occur if a project gets built.

For Western LNG, most were pretty obvious:

The pipeline corridors would be stripped of trees. The LNG plant site would have buildings and paving where none existed before; surface water would run off differently. Land would not revegetate naturally. Some of the nearby bluff would be excavated for an access road to deliver plant modules. The plant would solidify the neighborhood as an industrial center and further discourage nearby land use for recreation and homes. More ships at Nikiski "would largely preclude boating activities in the tanker mooring area" and "would interfere with set net fishermen who have previously utilized the immediate area."

For the project, the FERC staff recommended Pacific Alaska take 24 actions to mitigate environmental impacts.

statement said.

WHAT'S DIFFERENT TODAY

Much has changed since the late 1970s in understanding of Cook Inlet tides and navigation, as was mentioned, as well as in the ships that carry LNG.

In January 2014, Steve Butt, senior project manager for Alaska LNG, told an Alaska business group he's confident tankers calling at the liquefaction plant will handle the Inlet's worst. His team has been consulting with ship pilots who deal with the world's most treacherous tides and currents, and it has planted a buoy in the Inlet to harvest contemporary data on ebbs and flows there.

The tankers calling at Nikiski for Alaska LNG will be larger and more powerful than the 1970s-era tankers. But they shouldn't draw much more of a

draft.

The Western LNG EIS said the shipping channel then would need a minimum depth of 42 feet — 47 to 57 feet where the wave action is lively. The tankers Western LNG was looking to build would have sailed with perhaps a 35-foot draft when loaded. Although larger, the Alaska LNG tankers likely would have drafts of less than 40 feet, based on what's getting built today.⁷ A small increase in draft can allow a lot more breadth and capacity in the ships. The world's largest LNG tankers — the Q-Max ships sailing out of Qatar and far larger than what Alaska LNG proposes — have about a 40-foot draft.⁸

Much also has changed in how government agencies scrutinize large development projects.

More now is known about the soils, wetlands, water quality and water bodies, vegetation, air, wildlife, geologic hazards, archeological sites, other land uses and other environmental facets of the Cook Inlet region. That is because over the years more information has been collected about them — all for studies of other projects.

And the people preparing the studies have gotten more sophisticated at understanding these topics in all their subtleties and nuances.

If a generalization can be made about environmental impact statements over time, it's that each new one raises the bar a little bit for all those that follow.

In contrast to the 334-page Western LNG environmental impact statement, the 2007 EIS for the proposed Knik Arm bridge ran more than 1,000 pages, not counting thousands more in appendices and technical reports attached to it.⁹

The Western LNG environmental impact statement makes only the briefest citation of the Marine Mammal Protection Act — in fact just a single mention. And it never mentions the Endangered Species Act. Both will play into permitting of the Alaska LNG project.

Cook Inlet hosts at least two endangered species,

beluga whales listed in 2008, and western Steller sea lions listed in 1997. (The sea lions have only a scant presence in the upper Inlet.) Under these laws, the Alaska LNG project likely would need a "biological opinion" — a study by federal agencies — that would consider whether the project would further jeopardize the belugas and sea lions or the whales' critical habitat in the Inlet. Under the Marine Mammal Act, the project would need a permit allowing an accidental harming or harassing of the mammals.

Biological opinions examining whether the endangered species will be OK are big deals.

When Apache Alaska Corp. wanted to conduct 3-D seismic surveys of its Cook Inlet oil and gas leases in 2013, the National Marine Fisheries Service and U.S. Army Corps of Engineers tackled the subject.¹⁰

The 137-page joint opinion was almost one-third as long as the entire Western LNG EIS circa 1978.

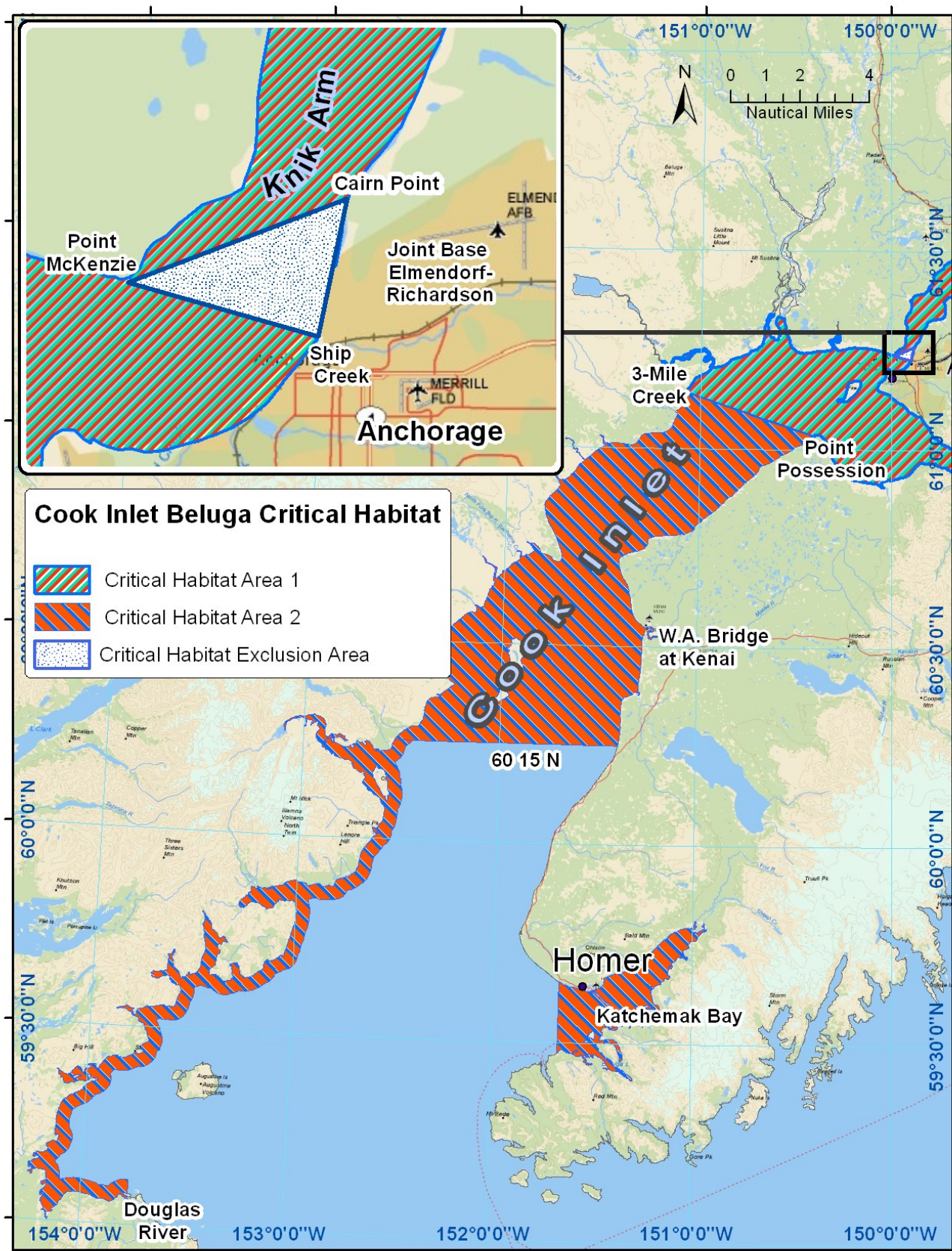
These studies and others would consider the cumulative impacts of the LNG project with other oil and gas development, fishing, tourism and various commercial activities in Cook Inlet. This collective look at how one project interacts with others on the Inlet's environment didn't really happen back in the 1970s.

Government reviews today also take a sharper look at how development affects Native communities and their cultures, and on minorities and low-income populations. FERC now formally consults with nearby Native communities on a government-to-government basis to gain their input on projects.¹¹ That didn't happen in 1978.

Climate-change analyses and spill-response capabilities also are looming larger in environmental analyses.

And air-quality standards are stricter today ... plus they continue to evolve.

As one agency official involved in Alaska environmental studies put it: Compared to the 1970s, there's more data in the baseline, more baseline monitoring and more information to



Cook Inlet beluga whales critical habitat map



Photo courtesy of Western Copper and Gold

The listing of Cook Inlet beluga whales as endangered species in 2008 will add a regulatory step to permitting any new industrial development along the inlet, such as an LNG plant.

regurgitate in an environmental impact statement.

WESTERN LNG FADES AWAY

Ultimately, the Western LNG project died quietly, like the Alaskan Northwest project to pipe North Slope gas to Lower 48 markets through Canada.

With gas-industry price deregulation, drillers found and produced more low-cost natural gas. North America didn't need expensive Alaska gas.

Eventually, by the early 1980s, both projects' sponsors just stopped filing their paperwork with the regulators. (The lower one-third of the North Slope gas pipeline — from Alberta to the Lower 48 — actually was built and has been flowing Western Canada gas for 30 years.)

Even before markets killed it, the Western LNG project almost ran aground on a soap opera of local and state politics in California, where the gas would have been received and used.

Originally, three LNG receiving sites were proposed, including Point Conception northwest of Santa Barbara.¹² The California Coastal Commission had siting authority for LNG receiving terminals. But the panel's mission also included protecting the marine life, spectacular views and

other assets of Point Conception. Getting site approval for there would be no walk on the beach.

The other two proposed sites were to the south, in Oxnard and Los Angeles, where a lot more people lived. While some local leaders wanted the jobs and cited the industry's low safety risk, others noted the area's earthquake hazards and the thousands who could die in a worst-case disaster scenario.

To avert a stalemate and force a decision, the California Legislature in 1977 mandated a study to rank the best sites for LNG receiving terminals. Of 82 sites evaluated, Point Conception was one of only four that met all environmental criteria. Eventually, both the state and FERC sanctioned the site.

But by the time court appeals had been exhausted, "increasing domestic natural gas supplies had rendered the project uneconomic," as the California Energy Commission later put it.

Plans for the Western LNG project got stacked away on library shelves.

Notes

¹ Bill White, "The Alaska LNG Project," <http://www.arcticgas.gov/alaska-lng-project>.

² Bill White, "1971-1982: Alaska gas pipeline wars," <http://www.arcticgas.gov/Alaska-gas-pipeline-wars-1971-1982>.

³ U.S. Environmental Protection Agency, "Summary of the National Environmental Policy Act," <http://www2.epa.gov/laws-regulations/summary-national-environmental-policy-act>.

⁴ Federal Energy Regulatory Commission, "Western LNG Project: final environmental impact statement," <http://www.arlis.org/vufind/Record/1476135>.

⁵ U.S. Coast Guard, "Coast Guard Report of Investigation: Grounding of the Tank Vessel SEABULK PRIDE in Cook Inlet, February 2nd, 2006," http://www.pwsrca.org/wp-content/uploads/filebase/programs/oil_spill_response_operations/uscg_investigation_grounding_of_seabulk_pride.pdf.

⁶ Cape International, Inc., "Coot Inlet Mooring Study: Berth Design, Mooring Arrangements, and Port Management," <http://www.cookinletriskassessment.com/documents/MooringStudyfinalApril17.pdf>.

⁷ Danish Ship Finance, "LNG tanker segments," <http://www.shipfinance.dk/en/SHIPPING-RESEARCH/Tankskibe/LNG-Tankskibe/Segmenter>.

⁸ Qatargas, "Marine Transportation of LNG," http://www.marad.dot.gov/documents/DWP_--_Marine_Transportation_of_LNG.pdf.

⁹ Knik Arm Bridge and Toll Authority, "Final environmental impact statement," <http://knikarmbridge.com/library/project-documents/>.

¹⁰ National Marine Fisheries Services and U.S. Army Corps of Engineers, "Endangered Species Act: Section 7 Consultation Biological Opinion," <http://alaskafisheries.noaa.gov/protectedresources/whales/beluga/development/apache/bioprev121413.pdf>.

¹¹ Bill White, "Pipeline agency starts consultation with Alaska Natives," <http://www.arcticgas.gov/Pipeline-agency-starts-consultation-with-Alaska-Natives>.

¹² California Energy Commission, "Liquefied Natural Gas in California: History, Risks, and Siting," http://www.energy.ca.gov/reports/2003-07-17_700-03-005.PDF.



For more information, please visit our website: www.arcticgas.gov

Contact information:

Bill White, Researcher/Writer
(907) 271-5246
lpersily@arcticgas.gov

General Questions:

info@arcticgas.gov

Locations:

OFC Washington, DC
1001 G Street NW, Suite 800
Washington DC 20001
(202) 627-6862

OFC Alaska
188 W. Northern Lights Blvd., Suite 600
Anchorage, AK 99503
(907) 271-5209