

Pipeline route is probed to detail environmental impacts

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Squads of scientists this summer have joined the caribou and Dall sheep, eiders and eagles, moose and muskrat, salmon and grayling that inhabit the proposed natural gas pipeline route through Alaska.

The scientists are there to catalog, cross-check and verify the exact nature of that route — from the animals to the permafrost and faults — before the first trench can be carved for the major pipeline from Alaska through Canada.

The data gathering this field season is a massive effort, a centerpiece in the most expensive push in years for the decades-long quest to bring the flush North Slope natural gas reserves to consumers and industry inside and outside the state.

The field season will document the soils, vegetation, streams, lakes, wetlands, water quality, wildlife and fish along a roughly 200-foot-wide, 745-mile pipeline corridor from Prudhoe Bay to the Canadian border. A similar effort is under way for the pipeline's 966-mile run through Canada.

Related efforts afoot now or planned for the next year include:

- Studying how building the \$32 billion to \$41 billion pipeline project would affect Alaska itself, from new jobs and housing needs to school and police systems strained by a population bulge during construction.
- Analyzing how Alaskans who rely on fish, game and other subsistence resources found along the pipeline corridor would be affected.
- Understanding and identifying how ancient Alaskans used the corridor and what traces they left behind.
- Mapping earthquake faults and other geological hazards the pipeline would cross.
- Refining the design of the pipeline itself as well as the



Cultural resources crew members work north of Tok during summer of 2011. Photo courtesy of the Alaska Pipeline Project.

estimated \$12 billion gas treatment plant at Prudhoe Bay that would remove water, carbon dioxide and other impurities, then compress the raw gas before it enters the pipeline.

- Detailing the noise and air pollution emissions of the Prudhoe gas treatment plant and the eight compressor stations positioned along the pipeline in Alaska.
- Determining how much to deepen an offshore shipping channel to the Prudhoe cargo dock as well as where to dispose of dredged sediment.

Humming in the background during this summer's field season work are two looming deadlines and a landmark 42-year-old law — the National Environmental Policy Act — that transformed how federal agencies approach development projects across the United States.

The first deadline hits the pipeline sponsor, TransCanada and ExxonMobil (known as the Alaska Pipeline Project), in just 14 months.

A state license for the project gives them until October 2012 to apply for a Federal Energy Regulatory Commission certificate of public convenience and

necessity. In exchange, the state is reimbursing the venture for some of its development costs. The companies need that FERC certificate to build and operate their pipeline.

The second deadline comes next: FERC will have 18 months to finalize the environmental impact statement for the Alaska project. Congress imposed that tight deadline in 2004 to hurry along approval of the Alaska pipeline — an EIS for other epic projects can take years to complete.

Both the project sponsor and FERC hope that thorough, air-tight work by the field season scientists will help jump-start the critical environmental impact statement.

In the field

The general overseeing this summer's field season is Myron Fedak.

Fedak is a career ExxonMobil employee who has been headquartered in a Midtown Anchorage office building for the past two years. His official title is U.S. environment, regulatory and land manager for the Alaska Pipeline Project. He and his team are compiling 11 dense and detailed "resource reports" FERC wants filed with the certificate application in October 2012. The resource reports will form the foundation of the environmental impact statement FERC prepares later.

Before Alaska, Fedak did similar work for other big ExxonMobil development projects.

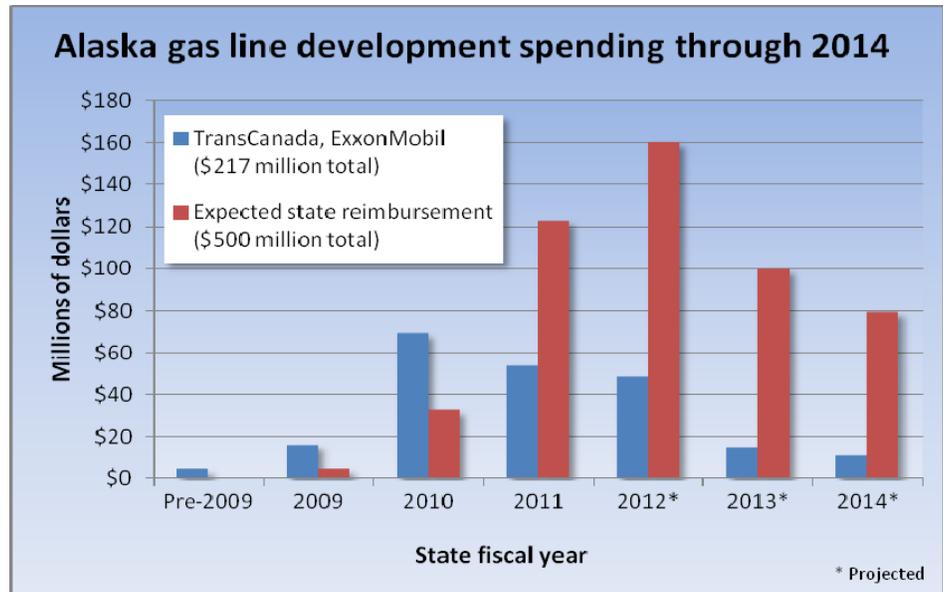
Those included the birth of a major oil industry in the northcentral African nation of Chad. Three new oil fields. A 665-mile pipeline strung through Chad and coastal Cameroon. An offshore marine terminal where tankers ingest the export oil. The first Chad oil flowed in 2003 and new oil fields launched in the ensuing years, similar to how starting the Prudhoe Bay field and trans-Alaska oil pipeline in 1977 sparked development of numerous nearby North Slope fields in the 1980s.

Fedak said he worked mainly from the ExxonMobil offices in Houston during Chad-Cameroon years, supervising environmental field work probing the plains,

plateaus and jungles of tropic Africa.

This time Fedak's work in Alaska has transported him far from the muggy Texas metropolis he formerly called home.

He oversees a crew of about 125 field workers plus perhaps 100 support workers. This is the second and bigger of the two major field seasons for the Alaska gas pipeline project.



Source: State of Alaska

This is the biggest year all around for the TransCanada/ExxonMobil project as the companies finalize their plans before filing with FERC next year. The companies had spent an estimated \$288 million on the Alaska Pipeline Project from inception through June. Their budget for the 12 months that started in July will add \$209 million to that total, the largest annual budget to date for the Alaska project. The field work is only a fraction of the spending. (Under a 2007 law, the state of Alaska is reimbursing the companies for up to \$500 million of their development work, a total expected to be reached in 2014. The companies estimate that for the current fiscal year's \$209 million budget, they will fund \$48 million and the state will reimburse them for \$161 million.)

The field workers include wildlife, fisheries and wetlands biologists; geologists and engineers; archeologists and anthropologists; marine surveyors and hydrologists.

They are deployed in boats in the Beaufort Sea north of Prudhoe Bay and scattered in small crews along the pipeline route to the Canadian border near where the

Alaska Highway crosses.

They've installed one temporary field camp, on an existing gravel pad in the Brooks Range's Atigun Pass. The camp for 18 people, including a cook and caretaker, consists of nine trailers — five for sleeping, one each for a kitchen, dining/recreation, toilets/showers and generator. From this station, the crews can deploy north or south for their field work.

Plugging holes

Much already is known about the pipeline route.

Most of it parallels the trans-Alaska oil pipeline, subject of extensive study over the years. Previous gas pipeline ventures, including one about a decade ago, compiled information. State and federal agencies have vast databases on the animals, fish, birds and vegetation along the route.

The soils at this point hold little mystery, Fedak said. Many bore holes have been drilled, "and the soil 20 feet down is not changed much," he said.

"There is a tremendous amount of information that is already available, with all the previous work that's been done, either on some variation on a theme of an Alaska natural gas pipeline going to the Lower 48 through work that's been done by operators in the Prudhoe Bay area, by TAPS along its right of way, which we in essence in rough terms parallel until we get to Delta Junction," Fedak said.

So the field season workers are focused on the gaps in required information, where available data is incomplete — such as finding all sites where drinking water is taken within three miles downstream of proposed pipeline crossings — or data might be old — such as identifying all sensitive wildlife habitats the pipeline would penetrate.

Original work also is occurring. This includes refining plans for keeping the pipe from breaking when it's buried in permafrost and perfecting plans to safely cross rivers. It includes understanding the earthquake risks at sites proposed for compressor stations. It includes pinpointing the amount of acreage needed for construction storage yards, the sources of water for ice roads and the sites where they will mine gravel. It includes marine surveys for deepening the Prudhoe Bay dock's shipping channel so the massive gas treatment plant modules can be sealifted in over three summers.

"We've got two groupings of teams, one doing biophysical investigations and one doing cultural

resources," Fedak said. "On the biophysical side, wildlife — couple teams go out in the spring up in the Brooks Range to look at Dall sheep. We have teams that are going out to do wetlands investigations. We've done a lot of office work looking at very detailed photographic data which we have characterized for the various types of uplands and wetlands, leveraging off prior field work that has been done by us and others and set up a program in line with U.S. Army Corps of Engineers State of Alaska protocols to validate."

For fish surveys, they follow state Fish & Game Department protocols, he said.

For archeological digs, they follow State Historic Preservation Office protocols. And so on.

The biophysical teams typically number three or four people — a senior scientist, a junior scientist, an assistant and sometimes a bear guard.

The archeological teams are larger, seven or eight people. These involve archeologists, with shovels in their backpacks, actually walking stretches of the route, looking for something visible — some sort of ground disturbance — that indicates a settlement might have existed there once. Settlement sites are more likely to be found along rivers, which would have served as transportation corridors and sources of water and fish. "We have found new sites," Fedak said. If necessary, the pipeline will be rerouted around a site.

Each crew stays in the field for a few weeks then returns for debriefing and rest.

Among the lessons from last year's field season: "We needed a better supply of replacement tires," Fedak said, referring to the punishing Dalton Highway and other rugged tracks their vehicles follow.

Understanding the impact

All of this work, this cataloging of the pipeline route to the minutest details — almost, but not quite, to a census of mosquitoes and no-see-ums — stems from a great gush of atonement that occurred roughly 40 to 50 years ago among a generation of Washington, D.C., leaders.

These leaders confronted some of the nation's chronic social and environmental problems: Civil rights, poverty, endangered species, air pollution, water pollution, hazardous waste.

The National Environmental Policy Act of 1969 was a product of this purge of past neglect.

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NEPA requires federal agencies to understand the environmental consequences of their decisions. One catalyst for Congress passing NEPA was the bulldozing of neighborhoods in the 1950s and 1960s to route interstate highways through cities.

For the Alaska gas pipeline project, Congress in its Alaska Natural Gas Pipeline Act of 2004 named FERC as lead for assembling the environmental impact statement, and instructed other federal agencies — the Environmental Protection Agency, Fish & Wildlife Service, Bureau of Land Management, etc. — to help FERC.

The same law also gave FERC one year to draft the impact statement after getting a completed certificate application from a pipeline builder, and then 180 days to issue a final environmental impact statement after the draft comes out.

The EIS will be one factor guiding the energy regulatory commission's decision on whether to issue a certificate for pipeline construction and operation. It will explore the positive and negative environmental effects, as well as alternatives to the project as proposed.

In advance of preparing the environmental impact statement, FERC requires the project sponsor to compile extensive resource reports — 11 of them for the Alaska project.

The Alaska Pipeline Project team already has posted two preliminary draft resource reports, a 189-page general project description and a 24-page consideration of alternatives. As expected, these are thin on many details, which should be covered in the December drafts.

The resource reports will become a key part of the public record on which FERC will base its environmental



Fish and hydro crew members work south of Delta Junction during summer of 2011. Photo courtesy of the Alaska Pipeline Project.

impact statement. FERC will verify the resource report information and expand the information if needed. FERC already has contracted with extra staff to help with its NEPA responsibilities for the Alaska project, and it plans meetings in Alaska soon after the first of the year to hear from the public on the draft resource reports.

Meanwhile, this year's field crews will continue to probe the pipeline route possibly into October, if the weather holds.

Then, after government agencies comment on the draft resource reports published in December, after other members of the public weigh in, it's likely a smaller field season will unfold next year. That effort will try to plug information holes before TransCanada and ExxonMobil finalize the reports and apply to FERC that fall for a construction certificate.



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