

# *Project Summary*

*For a*

## *Proposed Gas Pipeline Project*

**Submitted to:**

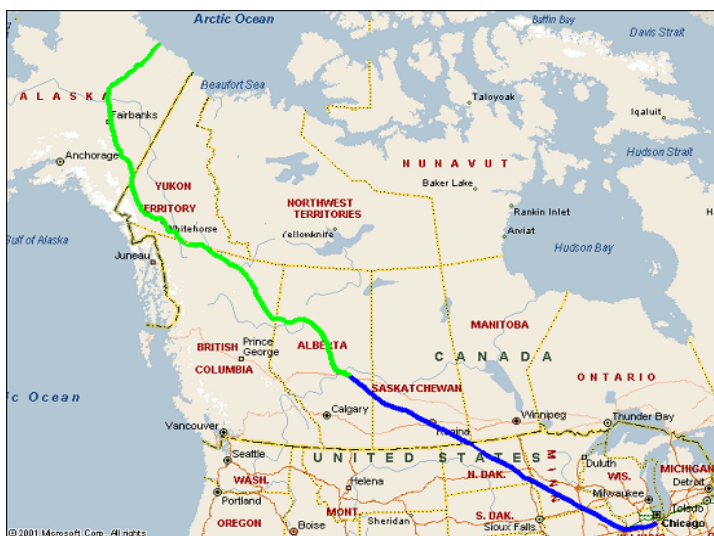
**William Corbus  
Commissioner, Department of Revenue  
State of Alaska**



# Project Summary

## 1.0 Project Overview

BP, ConocoPhillips and ExxonMobil (collectively “the Participants”), either directly or through affiliates or through affiliated interests in subsequently created legal entities, have developed a preliminary plan to build a natural gas pipeline and related facilities, which would have a design capacity to transport approximately 4 Bcfd of gas from the Alaska North Slope to markets in Alaska, Canada and the Lower 48 States. The pipeline and related facilities will be designed such that the future capacity could be increased by approximately 1 Bcfd with additional investments. While specific details of the project design are likely to change as additional engineering studies are conducted and market information is gained through the initial open season, the project is expected to consist of a large diameter, large volume pipeline delivering Alaska gas to North American markets. The major components forming the Alaska Gas Pipeline Project are:



- gas transmission pipelines from upstream facilities to the Gas Treatment Plant (Gas Transmission Pipelines),
- a Gas Treatment Plant (GTP),
- a pipeline in Alaska (Mainline),
- a pipeline from Alaska to Alberta (Alaska to Alberta Pipeline),
- potential Natural Gas Liquids (NGLs) extraction facilities, and
- a potential pipeline from Alberta to Chicago (Alberta to Lower 48 Pipeline).

The GTP would be located on the Alaska North Slope and would be designed to remove carbon dioxide (CO<sub>2</sub>), hydrogen sulfide (H<sub>2</sub>S) and other impurities from the natural gas stream to meet the Mainline specifications. These pipeline specifications would also require that the gas be compressed and chilled.

The Mainline would be an approximately 730 mile long, large diameter pipeline that extends from the GTP on the Alaska North Slope to the Alaska/Canada border. The Alaska to Alberta Pipeline, which would be a continuation of the Mainline, would be an approximately 1,400 mile long pipeline that extends from the Alaska/Canada border into

Alberta. The conceptual design for the Mainline and the Alaska to Alberta Pipeline was developed by the Participants during a 2001-02 conceptual engineering study ("2001-02 Joint Study"). That pipeline design consisted of 52-inch buried pipe operating at approximately 2,500 pounds per square inch (psi). Compressor stations would be placed at required intervals to maintain gas flow rates. In regions susceptible to permafrost, the gas would be chilled to manage the mechanical strains on the pipe and mitigate potential impacts on frozen soils.

NGLs are expected to be transported in the pipeline along with the natural gas. These "light" NGLs cannot be blended with crude oil for delivery through the Trans Alaska Pipeline System (TAPS) because of their higher vapor pressure. NGL extraction may be undertaken in order to recover hydrocarbon liquid products and/or to condition the natural gas to meet market specifications. This NGL extraction could be achieved through a new-build plant, through utilization of existing plant capacity, or some combination. While a new-build plant could be located anywhere along the pipeline route, the 2001-02 Joint Study concluded that the most likely location would be in Alberta or possibly Chicago, due to the existing infrastructure and proximity to markets.

The final portion of the project would be the Alberta to Lower 48 Pipeline. This pipeline would ship natural gas from Alberta to markets in the Lower 48 States. One option considered during the 2001-02 Joint Study was a "new-build" pipeline from Alberta to Chicago. This pipeline would originate at the point of termination of the Alaska to Alberta Pipeline and be routed generally parallel to the existing Alliance Pipeline right-of-way, continuing 1,500 miles into the Chicago gas hub. However, more cost-effective alternatives may ultimately be developed, for example, utilizing existing pipeline capacity made available by decline from existing natural gas sources, expansion of existing pipeline systems, or installation of other "new-build" pipeline concepts.

## **2.0 Description of Work Accomplished**

Numerous Alaska natural gas development projects have been proposed, planned and studied since oil and gas were first discovered in Prudhoe Bay in 1968. The options have included, among other things; various gas pipeline, liquefied natural gas (LNG), and gas to liquids (GTL) concepts. None of the gas development projects studied were commercially viable at the time, and therefore were not advanced. Although gas sales were delayed, a series of very large gas-related investments were made in Prudhoe Bay and other Alaska North Slope fields. These investments, costing billions of dollars and generating thousands of jobs, resulted in an increase in oil recovery of more than 3 billion barrels of oil from the Prudhoe Bay field alone.

For the Participants, all of the previous work on gas development concepts was superseded by the 2001-02 Joint Study. As the major Alaska North Slope gas producers, the Participants completed this comprehensive conceptual study to assess the feasibility of constructing a pipeline to deliver Alaska gas to North American markets.

This study assessed the cost, technology, regulatory and environmental issues associated with the project. Approximately \$125 million was spent on this study, which involved 110 owner company representatives and over one million staff-hours (including contractors). While this study represented a significant engineering effort, design details (including design capacity, pipeline size, compressor location, etc.) are likely to change as engineering, open season, and permitting work progresses.

In addition to the technical aspects of the pipeline project, the 2001-02 Joint Study also identified significant issues that would need to be resolved to reduce cost and schedule risks in order to attract necessary capital investments.

Following the conclusion of the 2001-02 Joint Study, the primary focus of Participant activity has shifted to addressing the necessary government frameworks needed for a successful project. This work has included pursuit and passage of U.S. Federal enabling legislation, support of the reauthorization of the Stranded Gas Development Act in Alaska, and progressing a Fiscal Contract with the State of Alaska. Further technical work has continued to evaluate potential cost reduction ideas including field trials of high efficiency trenching machines, a study of the feasibility of using high strength steel in the pipeline, the application of automatic welding machines, and evaluation of potential transportation infrastructure improvements.

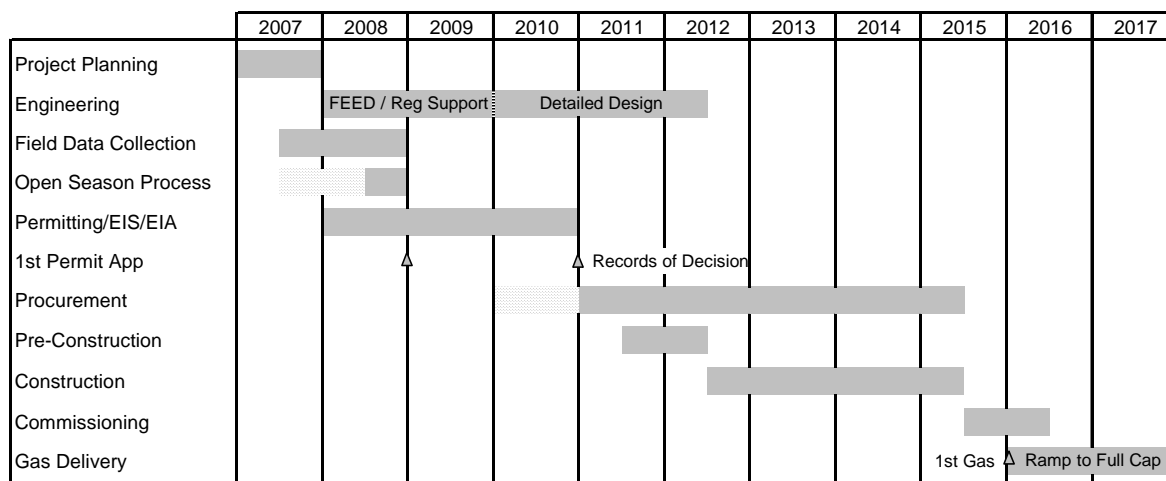
### **3.0 Estimated Project Schedule / Proposed Development Activities**

Figure 1 presents a conceptual timeline for planning and constructing the natural gas pipeline and related facilities. The overall timeline spans ten (10) years, from the start of Project Planning to mechanical completion, commissioning and commencement of commercial operations (first gas deliveries). This is a success-case schedule, i.e., it is based on the assumption that each major activity will be successfully completed in a timely manner. The key underlying premises to this schedule are that:

- commercial negotiations with the State of Alaska are successfully concluded and key agreements are executed in 2006 to allow the Project Planning phase to commence by January 1, 2007;
- there are no unanticipated delays in receiving access and key permits/approvals for all components of the project scope; and
- project sanction, which triggers most procurement and construction spending, is contingent on receiving access and key permits/approvals.

If issues arise or unanticipated delays occur, the schedule would be extended accordingly. During Project Planning, the Participants will do additional work to establish a more definitive project timeline.

**Figure 1 – Conceptual (Success-Case) Project Schedule**



The following provides a description of each item in the timeline.

### 3.1 Project Planning

During the Project Planning phase, the Participants will:

- conduct additional technical studies to facilitate selection of a preliminary project design basis,
- develop project cost estimates and schedules for all project phases,
- update economic analyses,
- prepare the work scope, staffing plan and cost estimates for the next project phase,
- select contractors for the next project phase,
- develop plans for access and regulatory/permit applications for both the U.S. and Canada, and
- establish commercial structure and tariff principles to guide project development.

### 3.2 Engineering

After completion of Project Planning, Front-End Engineering Design (FEED) would be undertaken to develop the necessary project definition to support preparation of permit applications, analysis of project economics, specification of long-lead equipment, and preparation of work scopes and bid contracts for detailed engineering. FEED is often referred to as Preliminary Engineering. Following FEED, technical support would be provided during the agency review of the permit application and during the U.S. Environmental Impact Statement (EIS) and Canadian Environmental Impact Assessment (EIA) processes.

After securing the major permits and authorizations with acceptable conditions, detailed engineering would be completed to generate the deliverables necessary for project construction.

### *3.3 Field Data Collection*

Field data would need to be collected during all four seasons of the year to support the design and permitting process. More than twelve months may be needed to collect the field data required.

### *3.4 Open Season Process*

The open season process is an established regulatory mechanism with the purpose of allocating pipeline capacity without undue discrimination. This process has been in place in the U.S. and Canada for many years, and the Participants' open season process would conform to all applicable FERC and NEB regulations. After the specific aspects of the open season process are defined, adequate notice would be given to all potential shippers. The actual open season would be of sufficient duration for shippers to make the necessary commitments to a proposed project. Additional time would be needed following the close of the open season to allow the Participants to evaluate the submissions and, if necessary, update the pipeline design to accommodate the committed gas volume. This updated design basis would support the development of the initial regulatory applications. The Participants would file the necessary certificate applications with the FERC and NEB after the close of the open season and the updating of the project design.

### *3.5 Permitting / EIS / EIA*

The permitting phase includes preparation and submittal of project permit applications, along with support for the U.S. and Canadian environmental processes (i.e., EIS and EIA, respectively). The primary goal is acceptable NEPA (National Environmental Policy Act) / CEEA (Canadian Environmental Assessment Act) decisions and receipt of FERC (Federal Energy Regulatory Commission) / NEB (National Energy Board) approvals. These final approvals are known as Certificates of Public Convenience and Necessity, and provide regulators' approval to construct the project.

Other key activities during this project phase would be the negotiation of agreements and securing of permits and approvals for land access for the pipeline right of way and securing the many other permits that will be required for construction and operation of related project facilities.

### *3.6 Procurement*

The procurement aspect of the project involves the preparation of specifications, and purchasing of services, materials and equipment for the project. Early procurement would focus on long-lead materials and equipment to ensure timely project execution. However, most financial commitments would not be made until after the major permit decisions and authorizations have been secured, including the certificates from FERC and NEB.

### *3.7 Pre-Construction*

Prior to arrival of pipe and the pipe-laying crews, extensive preparatory work would be required. For example, pipeline right-of-way and construction easements would be cleared, compressor sites and staging areas prepared, and construction camps set up. In addition, once pipe arrives, it must be coated and delivered to staging areas.

### *3.8 Construction*

The construction phase involves the fabrication, installation and construction of the project facilities, and would be dependent on seasonal conditions and availability of skilled resources. Project construction would cover the Gas Treatment Plant, Pipeline, Compressor Stations, and potentially an NGL Plant, with activities beginning with fabrication of equipment modules and stringing of pipe, and ending with final testing and functional checkouts leading to project commissioning.

### *3.9 Commissioning / Gas Delivery*

During the commissioning phase, project personnel would work closely with operations personnel to prepare the equipment and facilities for actual operation and eventual delivery of first gas with subsequent ramp-up to full capacity.

## **4.0 Description of Programs and Expenditures for Alaska Training**

The Alaska Gas Pipeline Project, given its scope and scale, would place significant demands on worldwide resources for materials, equipment and skilled labor. A large number of construction jobs would be created by the project providing an opportunity for both skilled and unskilled labor. The availability of skilled labor from across North America is a key concern to the Participants, and the Participants will work cooperatively with the State of Alaska Department of Labor and Workforce Development to help establish a plan that promotes development of a skilled Alaska workforce.

Following the Project Planning, permitting and procurement phases, the required workforce for the construction phase of a pipeline project would be expected to increase significantly. This increase would include a large seasonal workforce who would be housed mainly in construction camps associated with the physical construction of the pipeline and associated facilities. Additionally, workers supporting project logistics would be required on a year-round basis during the construction phase. Materials and equipment may enter Alaska through various ports both on the North Slope and in Southeastern and Southcentral Alaska and be transported by road and rail to be staged near the construction sites.

The Participants intend to fully comply with all valid federal, state, and municipal laws relating to hiring Alaska residents and contracting with Alaska businesses to work in the State on the pipeline project. To the extent Alaskans fill jobs associated with the three-year pipeline construction phase, additional labor resources would need to enter the Alaska workforce to fill vacated positions in the base economy.

### *4.1 Description of Programs and Expenditures*

The State and the Participants would have a number of training opportunities that may expand the skilled workforce in Alaska. Additionally, the U.S. Federal enabling legislation (Alaska Natural Gas Pipeline Act) provides grants for an Alaska pipeline training program to recruit and train Alaskans, including the design and construction of training facilities located in Fairbanks to support this training. The Participants would work with the State to develop these or other programs that could increase employment

opportunities for Alaska residents. The Participants would spend a combined total of five million dollars in funding those or other workforce training programs and activities in Alaska. The programs and activities could include:

- supporting the Alaska Department of Labor and Workforce Development in developing training standards for jobs that will be needed for the project; and
- assisting the Alaska Department of Labor and Workforce Development in its efforts to upgrade technology applications and provide equipment for training centers and schools to ensure training is relevant for jobs on the project;
- working with teachers in Alaska school districts in developing curricula for courses relevant to jobs on the project;
- informing students in Alaska school districts about jobs that will be needed for the project, how students can qualify for those jobs, and of available apprenticeship, mentoring, and internship opportunities to train or qualify for jobs;
- employing apprentices or interns;
- providing on-the-job training for employees hired.

Funding for these activities would begin when the initial FERC application is filed. Future updates of the Project Summary would describe the expenditures and programs implemented to date.

At the completion of Project Planning activities, the Participants would provide the Alaska Department of Labor and Workforce Development with a description of services, jobs and skills required for construction and operation phases of the project in Alaska.