

## 2. Alternatives

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### 2.1 Introduction

This chapter discusses various alternatives related to renewal of the Federal Grant for the TAPS ROW. Three alternatives are discussed in detail: to renew the Federal Grant for 30 years (proposed action), to renew the Federal Grant for less than 30 years (less-than-30-year-renewal or time-dependent alternative), and to not renew the Federal Grant (no-action alternative). The impacts of these alternatives are analyzed in detail in Chapter 4. This chapter describes other alternatives that were considered, and explains why they were not analyzed further.

At this stage, the BLM has identified the proposed action as its preferred alternative. The agency's ultimate decision will be defined in the ROD that will follow this EIS and may include a mix of studied elements as the final decision.

### 2.2 Proposed Action — Renew Federal Grant for 30 Years

The proposed action would be to grant the TAPS Owners' application to renew the existing Federal Grant for the TAPS ROW for 30 years. The renewed Federal Grant would cover not only the original TAPS ROW issued under two serial numbers (F-12505 and AA-5847), but also the rights associated with the Federal Grant and pipeline system, which include (1) the fuel gas pipeline that provides gas from Prudhoe Bay south to PS 4, (2) access roads authorized under numerous serial numbers, (3) oil spill contingency plan sites authorized through a Memorandum of Understanding (MOU) issued in June 1991, (4) a prospective power and communication line running to the Prospect Airport, and (5) a communication site and access road near the Gulkana River crossing of the TAPS (see the "line list" furnished as part of the TAPS Owners' application for renewal, as amended [[www.tapsrow.com](http://www.tapsrow.com)] or contact the Joint Pipeline Office's (JPO's) Renewal Team for a description of all ROWs in

the application). The proposed action reflects the TAPS Owners' application.

Land titles for the TAPS and all related facilities originally and subsequently granted to the TAPS Owners by the United States and the State of Alaska were examined and coordinated between Alaska and the United States to ensure that the entire TAPS was reauthorized by either Alaska or the United States. Amendments will be made as necessary to correct any errors or omissions.

The terms and conditions of the Federal Grant, as modified or supplemented by special requirements (See Appendix G) through the date of any ROD on the proposed action, would continue under the proposed action. (See Appendix B for the version of the Grant proposed for renewal.) Both the Federal Grant and Section 203(e) of TAPAA (43 USC §1652(e)), 43 CFR 2881.1-1(f) give the BLM broad authority to impose additional requirements at any time as necessary for safety and to protect the environment. The BLM has exercised this authority from time to time since issuance of the original Federal Grant. (See Section 4.1.1.2 of this EIS.) Therefore, the obligations of the Federal Grant as it is proposed to be renewed, include requirements placed upon the TAPS Owners in writing by the BLM's Authorization Officer (AO) for TAPS in accordance with the Federal Grant and TAPAA.

#### 2.2.1 Projected TAPS Operation

The TAPS Owners' application sets forth details of how the TAPS would operate if renewed. The TAPS Owners are not proposing any specific changes to the system in their renewal application. However, they recognize that the system's configuration and operation would continue to evolve to meet changing oil throughput, respond to changes in environmental conditions, and take advantage of new technology. The applicants anticipate that six pump stations would move oil through the pipeline at the beginning of the

renewal period. The TAPS Owners state in their application that throughput variation and the cost of drag reducing agent, which increases the efficiency of oil movement, might prompt intermittent shutdown of one of the six pump stations — PS 12 north of Thompson Pass — in the early renewal years, and, in later years, these factors might eventually lead to discontinuing the use of both PS 12 and PS 7 north of Fairbanks. In addition to the pump stations that push oil through the line, one pump station would operate only for pressure relief. The applicants anticipate that they would continue to use drag reducing agent to facilitate oil movement.

The application posits that Berths 4 and 5 would be used for the majority of oil loading at the Valdez Marine Terminal during the renewal period. Berths 1 and 3 would furnish additional capacity, although one or both of these berths might be demobilized if loading demand declines.

Throughout the renewal period, the TAPS Owners would be required to monitor, maintain, and repair the system. In their application, the TAPS Owners noted several of the more significant potential inspection and repair operations, including these:

- Gathering corrosion data through instrumented-pig runs, digging up belowground pipe where necessary, examining it, and, if necessary, replacing corroded pipe;
- Upgrading the cathodic corrosion protection system and/or excavating and recoating the pipeline;
- Inspecting and repairing belowground valves;
- “Sleeving” damaged pipeline or replacing sections of pipeline that cannot be more economically repaired by sleeving;
- Monitoring and maintaining the aboveground pipe supporting systems, including VSMSs, and, if necessary, replacing nonperforming VSMSs;
- Repairing and upgrading armored banks and designed embankments; and
- Mining gravel and rock from existing or new quarries (TAPS Owners 2001, pages 1.1-2 and 4.1-1 through 4.1-4).

## 2.2.2 Requirements and Responsibilities under the Federal Grant

The application for the ROW renewal does not ask for any changes to the Federal Grant’s terms. Under the proposed action, the Federal Grant would encompass the modifications and supplementations made to it by special requirements through the date of any ROD on the proposed action. Additional mitigation measures, such as those discussed in Section 4.8.4, might be adopted at the time of the ROD.

The Federal Grant defines the relationship between the TAPS Owners and the federal government and contains provisions addressing technical, environmental, employment, and subsistence issues related to the TAPS. The Federal Grant places obligations on the TAPS Owners. Provisions related to the operation, maintenance, and termination of the TAPS also are requirements binding on the TAPS Owners’ common agent (as defined in Stipulation 1.4.2), APSC. The following paragraphs describe some of the salient obligations and responsibilities imposed by the Federal Grant. The entire Federal Grant as it is proposed to be renewed is reproduced in Appendix B; more information on the relationship among the TAPS Owners, APSC, and the federal government can be found in Section 4.1 of this EIS.

**Administrative:** The Federal Grant describes the lands conveyed by the ROW and the ROW’s location, width, and duration. The Federal Grant obligates the TAPS Owners to comply with applicable federal laws and regulations and lawful orders of the Secretary of the Interior and AO. It provides that the AO has the authority to require modifications to the TAPS and to the Federal Grant. The Federal Grant states that the Secretary can suspend or terminate the ROW if the TAPS Owners fail to comply substantially with requirements of the MLA, TAPAA, or Federal Grant. It requires that before the permittees begin significant ground-disturbing construction or modification of the TAPS, that they submit an application for a Notice to Proceed (NTP) and the documentation needed to enable the AO to assess whether the work conforms to appropriate engineering criteria. The TAPS Owners are further obligated to reimburse the federal government for

the expenses incurred by the DOI in processing applications related to the TAPS and in monitoring the system. The DOI is to avoid “unnecessary employment of personnel and needless expenditure of funds”(Section 12.E, Federal Grant). The TAPS Owners have the right to audit the DOI’s records of expenditures, subject to all existing privacy and disclosure laws, and the DOI has the right to examine all TAPS records.

**Technical:** The Federal Grant requires design standards that guard against hazards associated with earthquakes, tsunamis, erosion, flooding, permafrost, glacial surges, and corrosion. It requires shutoff valves along the pipeline, and it requires dikes or other oil spill containment structures at pump stations and the Valdez Marine Terminal. It specifically names certain industry and government technical standards that the pipeline operator must meet or exceed, and it authorizes the AO to impose additional standards to address Alaska’s subarctic and arctic environments.

**Human and Natural Environment:** The Federal Grant requires the TAPS Owners to have a surveillance and maintenance plan and a quality assurance (QA) program that can detect and prevent damage to the natural environment, maintain the pipeline’s physical integrity, and provide for public health and safety. The TAPS Owners are to promptly abate hazards to public health or worker safety and threats that could cause serious and irreparable harm or damage to the environment. The TAPS Owners are also responsible for rehabilitating natural resources damaged or destroyed by their operation of the TAPS, to the satisfaction of the AO, and/or for paying money damages for such loss. There are specific requirements addressing pollution control; oil spill detection, control, and cleanup; use of pesticides, herbicides, and other chemicals; waste management; erosion control; fish, wildlife, and habitat protection; paleontological, archaeological, and historic sites; aesthetics; and public and worker health and safety. The AO may temporarily suspend any and all TAPS operations if, in the AO’s judgment, suspension is necessary to protect public health and safety or the environment. The Federal Grant also states that when the TAPS Owners terminate their use of the pipeline, they must remove all improvements and equipment and rehabilitate the environment, except as otherwise approved by the AO.

**Employment:** The Federal Grant mandates that the TAPS Owners assure that no person is denied workplace opportunities on the grounds of race, creed, color, national origin, or sex. In addition, they are to conduct pre-employment and on-the-job training for Alaska Natives and “do everything practicable” to secure employment for Alaska Natives who successfully complete the training program. They are further required to enter into an agreement with the DOI regarding Alaska Native recruitment, training, and employment. The current agreement is provided in Appendix F.

**Subsistence:** The TAPS Owners are to avoid damage to subsistence resources and, upon the order of the Secretary of the Interior, shall provide emergency subsistence and other aid to those whose subsistence resources are impacted.

**Discretionary Authority:** The Federal Grant provides significant discretion to the AO in exercising authority to correct problems. It enables the AO to change requirements to respond to changing situations. For example, in 2001, the AO and the Alaska Department of Natural Resources (ADNR) State Pipeline Coordinator (SPC), who has analogous authority for the State TAPS ROW, under the authority of the Federal Grant and State Lease, jointly imposed new or modified design requirements. These requirements were related to (1) the stability of slopes along the pipeline; (2) monitoring for fault movements and glacial surges; (3) fill for certain portions of the buried pipeline; (4) brushing restrictions; (5) a limit on the amount of time allowed between the time when a deviation from the design criteria for a critical aboveground facility (e.g., a VSM that supports aboveground pipe) is discovered and the time when an appropriate engineering correction is made; (6) proper restoration of lands disturbed by TAPS activity; and (7) intervention criteria to be used to determine when the pipeline, because of curvature or deformation, requires corrective maintenance.

### 2.2.3 Projected BLM Oversight

Under the proposed action, the BLM would continue to assure compliance with TAPAA, the MLA, and the Federal Grant as part of its responsibilities. Through its authority to issue NTPs and temporary use permits for TAPS-associated actions, the BLM would continue to

exercise control over significant ground-disturbing actions and alterations of the TAPS. It is anticipated that during the renewal period, the BLM would continue to exercise its TAPS monitoring responsibilities through coordinated efforts with other federal and state pipeline regulatory agencies collocated in the JPO.

The BLM and a dozen other federal and state agencies located in the JPO cooperate in the oversight and monitoring of the TAPS to identify deficiencies and compel corrective actions. The JPO facilitates a coordinated oversight of the TAPS. The JPO member agencies receive their individual authority through federal and state laws and regulations. In addition, the BLM and ADNR have broad oversight authority under the Federal Grant and the State Lease.

Although specific approaches to allow the BLM to carry out responsibilities under the MLA and TAPAA might change in order to better respond to changing conditions, it is anticipated that the following processes would prevail. The BLM would continue to learn about concerns about the pipeline in the following ways:

**JPO Field Investigations and Record Reviews:** JPO employees detect problems or concerns during the course of conducting “surveillances” in the form of field investigations of TAPS facilities or reviews of APSC records. These surveillances would be conducted to verify conformance with Federal Grant and regulatory requirements as part of the JPO’s Comprehensive Monitoring Program.

**TAPS Owners’ Quality Assurance and Monitoring Programs:** APSC is the common agent that the TAPS Owners incorporated in August 1970 to construct and operate the pipeline. As agent for the TAPS Owners and in accordance with the requirements of the Federal Grant, APSC would continue to conduct QA and monitoring programs to detect problems, which it would then report to the BLM.

**TAPS Employees:** TAPS employees and contractors would be able to find problems and report concerns to the BLM, independently from APSC’s QA and monitoring programs.

**Incident:** Sometimes an accident or other incident may occur on the TAPS that would draw

the JPO’s attention to a previously undetected problem.

The JPO agencies would continue to use a risk-based approach to overseeing operations. They would calibrate their response to a problem to match the risk inherent in the problem. Some discrepancies spotted during surveillances or as part of APSC’s internal quality and monitoring programs would be fixed on the spot. JPO inspectors would then note the deficiency and the subsequent correction for the record, and subsequent surveillances would assure that the problem would not recur. Some solutions might be relatively obvious and straightforward, and the JPO and APSC would readily orally agree to an appropriate, prompt response. If a problem that was immediately identifiable as being serious arose, and if the solution was apparent, the JPO may formally give written notice of a deficiency finding to APSC and direct the pipeline operator to take remedial action by a specified time. If a problem that required in-depth scientific or engineering study was identified, or if an analysis to determine whether a noted deficiency is symptomatic of a wider problem was appropriate, the JPO would produce a technical, engineering, or assessment report. These reports may result in findings of failure to conform to the Federal Grant. A failure to conform could precipitate the development of a memorandum of agreement (MOA) with APSC to correct the problem, an order to be issued by the JPO to APSC, or, if correction does not occur, the hiring of a contractor by the AO and paid for by the TAPS Owners to perform the corrective task. The JPO would subsequently monitor APSC’s implementation of corrective actions through surveillances and other follow-up actions.

The JPO and APSC would continue a program to anticipate ways that the TAPS could cause safety or environmental problems and to assure that the TAPS Owners would take steps to avoid these problems. The current strategy to achieve this goal is through a reliability-centered maintenance (RCM) program in which both APSC and the JPO participate. In this process, the JPO and APSC employees jointly examine, through a structured analysis, ways in which the TAPS’ critical systems could fail to properly perform their functions. The joint team, which is focused on employees working directly with the systems,

identifies the potential consequences of such failures. It then identifies appropriate monitoring and maintenance steps to preclude each system's failure. If such a failure cannot be prevented solely by monitoring and maintenance, the JPO and APSC experts determine what modifications to hardware, procedures, or training are needed to eliminate the potential for the identified failure. (For more on RCM, see Section 4.1.1.7.) Although the precise structure of this proactive program may change over the term of a new Federal Grant, such a preventive monitoring, maintenance, repair, and replacement system would remain in force through the life of the 30-year renewal period. The BLM retains the authority to require any necessary action without the agreement of APSC.

### **2.3 Time-Dependent Alternative: Renew Federal Grant for Less Than 30 Years**

This alternative proposes renewal of the Federal Grant for a period of less than 30 years. The less-than-30-year renewal alternative would not functionally change or modify the federal government's implementation of its responsibilities (e.g., mitigating factors, laws, regulations, oversight) from its implementation under the proposed alternative.

The time-dependent alternative is presented as a basis for documenting environmental, social, cultural, economic, or operational issues that can be shown to have a potential time-dependent effect over the proposed action period associated with a 30-year renewal period. The analysis addresses both linear and nonlinear time-dependent factors. If time dependency is not an important characteristic of the impacting factor or receptor, the analysis presented in this FEIS under the proposed action would apply.

### **2.4 No-Action Alternative: Do Not Renew Federal Grant**

Under the no-action alternative, the BLM would deny the application to renew the TAPS

ROW. It would require that the TAPS ROW be restored to a condition similar to the condition that existed prior to construction unless the AO provides otherwise. The TAPS Owners would be obliged to pay for removal of, or themselves remove, all improvements and equipment, except as otherwise approved by the BLM AO. The BLM would undertake appropriate NEPA review of any demobilization decision. It is anticipated that the AO's decision would be made in consultation with the SPC. A range of restoration steps are possible and are described generally in Chapter 4. Steps could include cleaning all aboveground and belowground piping and pump stations, removing all aboveground piping, removing all equipment, and completely removing roads and workpads or recontouring them. Other options could also be considered; the most notable options would be removing the buried piping, leaving some or all of the roads and workpads in place, and leaving some aboveground pipe and other structures for alternative uses. Final decisions on the removal and restoration of TAPS and its associated components would involve an extensive analysis to ensure that all closure decisions would meet rigorous engineering and environmental considerations. Thus, the analysis presented in this EIS discusses one general scenario, which is not necessarily the final AO's decision on demobilization of the TAPS.

This no-action alternative would impact North Slope oil exploration, development, and production. In this EIS, the direct and indirect economic impacts on the Alaska economy (public and private) from stopping North Slope oil production are considered. Other issues related to North Slope oil production are addressed in the cumulative analysis.

### **2.5 Alternatives and Issues Considered but Eliminated from Detailed Analysis**

The public brought forward a number of suggestions related to the future of the TAPS. Although the suggestions summarized below do not generally meet the criteria for TAPS renewal alternatives, the BLM has considered all of them. This EIS addresses some of the suggestions heard

during scoping to help the public understand why these alternatives have not been analyzed in detail. One reason common to several of the suggested alternatives is that the BLM does not require additional authority to achieve the purpose of the suggested alternatives. Because of the broad authority granted in TAPAA, the BLM could undertake some of the following suggested alternatives under its current authority at any time. The BLM, for example, could establish advisory committees or conduct audits at any time based upon authority provided by statute, regulation, and the Federal Grant.

The law's requirements on what sort of alternatives are appropriate for the BLM to consider provide additional explanation for why the following alternatives were not analyzed in detail. The BLM is required by law to select alternatives in its NEPA analysis that foster "informed decision-making and informed public participation."<sup>1</sup> NEPA does not require the analysis of alternatives "whose effect cannot be reasonably ascertained, and whose implementation is deemed remote and speculative."<sup>1</sup> Nor must an agency analyze alternatives that are infeasible, ineffective, or inconsistent with the basic policy objectives for the management of the area.<sup>1</sup> In other words, alternatives not responsive to policy objectives of management plans need not be analyzed. Finally, NEPA does not require a separate analysis of alternatives that are not significantly distinguishable from alternatives actually analyzed, or that have substantially similar consequences.<sup>2</sup>

Thus, the BLM considered the following 12 alternatives but eliminated them from detailed analysis for the reasons described below.

**1. Transfer Ownership of the TAPS to Another Entity.** The BLM determined not to analyze in detail in this EIS an alternative that would transfer ownership of the TAPS ROW. Such an alternative would have had ownership of the TAPS ROW denied to some or all of the current owners. This alternative would have the BLM granting the ROW to a new mix of owners or to a single company.

**Historical Background:** On October 28, 1968, eight months after oil was discovered at Prudhoe Bay, three oil firms active in Alaska North Slope oil exploration—ARCO, British Petroleum (BP), and Humble (renamed Exxon in 1972) – formed an organization called the Trans-Alaska Pipeline System to pipe North Slope crude to market. On June 6, 1969, this organization applied for ROWs to build and operate a pipeline from Prudhoe to Valdez Harbor (Mead 1978; Coates 1993). In January 1970 BP swapped its North Slope oil leases for eventual control of Sohio. Thus, in August 1970, when a consortium of oil companies formed APSC to represent their joint interest in building a pipeline across Alaska, the consortium consisted of ARCO, Sohio, and Humble, as well as more minor North Slope leaseholders – Mobil, Phillips, Union, and Amerada Hess (Mead 1978). These seven companies agreed to coordinate their applications for a ROW for the TAPS, to incur the costs for building the TAPS, and to apportion rights to pass oil through the pipeline in proportion to their contribution to construction costs.

In January 1974, after intense study in a pioneering EIS, federal enabling legislation, and complex and lengthy legal battle, the DOI granted the seven oil companies a ROW on which to build the TAPS. In May 1974, the State of Alaska provided a similar ROW over state land. Once it had acquired the rights to build the TAPS on federal, state, and private land, the TAPS Owners initiated construction of their facilities on the ROW. By the time the oil companies completed construction, they had spent approximately \$8 billion to build TAPS (Mead 1978). The oil companies also have maintained and upgraded their TAPS facilities over the last 25 years. For example, the TAPS Owners spent more than \$100 million between 1994 and 1997 on a tanker vapor-control system at the Valdez Marine Terminal (VMT) and nearly \$38 million between 1997 and 2000 to upgrade controls and repair of four pipeline valves.

<sup>1</sup> *Headwaters v. BLM*, 914 F.2d 1174, 1180 (9th Cir. 1990).

<sup>2</sup> *Northern Plains Resource Council v. Lujan*, 874 F.2d 661, 666 (9th Cir. 1989)

The ownership of the TAPS infrastructure and the legal rights afforded the owners through the federal and state ROWs have changed hands since issuance of the grant 28 years ago. Oil company mergers and the desire of some companies to sell their interest in the TAPS have changed the list of TAPS owners and have altered the proportion of ownership among the companies. Section 22 of the grant requires that the Secretary approve any transfer of ownership. Current ownership in the TAPS is as follows: BP Pipeline (Alaska), Inc. (46.9263% share); Phillips Trans Alaska, Inc. (26.7953%); ExxonMobil Pipeline Company (20.3378%); Williams Alaska Pipeline Co. (3.0845%); Amerada Hess Pipeline Corp. (1.5000%); and Unocal Pipeline Company (1.3561%). Additional changes in ownership could occur in the future, consistent with existing statutory authority and the Federal Grant.

**Discussion:** The scope of this EIS is limited to determining whether to renew the current ROW for the TAPS with its current owners and what different conditions, if any, should be applied to the ROW. This FEIS responds to an application for renewal from the current holders of the ROW. No other entity has applied for the ROW; thus, the BLM has no application from others to which to respond.

Federal laws and regulations provide certain rights to renewal to holders of pipeline ROWs. The MLA (30 USC §185(n)) states that the Secretary of the Interior “shall renew any right-of-way, . . . so long as the project is in commercial operation and is operated and maintained in accordance with all of the provisions of this section.” Regulations (43 CFR 2881.1-1(f)) state that ROWs such as the TAPS “shall be renewed if the pipeline is being operated and maintained in accordance with all provisions of the right-of-way grant, these regulations and the Act.” The determination of whether the TAPS and the current ROW holders are in compliance shall be made at the time the ROD is issued.

If they are in compliance as required by law and regulation, the BLM will adopt one of the two renewal alternatives described above. If they are not in compliance, the BLM will adopt the no-action alternative and reject the applicants’ renewal application. If the BLM rejects the renewal application, a new applicant could submit a request for a ROW to continue operations of the

TAPS. The BLM would process that application in accordance with applicable laws, regulations, and policies.

**2. Transfer Operation to Another Common Agent.** The BLM determined not to analyze in detail in this EIS an alternative that would require a new common agent for the TAPS Owners. This alternative would require that the TAPS Owners no longer use APSC as their common agent. Rather, the BLM would require the TAPS Owners to authorize one of the TAPS Owner companies or another company other than APSC to act as the common agent for all of the TAPS Owners.

**Historical Background:** Prior to creation of APSC in 1970, the oil companies with North Slope oil leases attempted to advance the construction of the TAPS through a committee of the parties. This proved unwieldy. Secretary of the Interior Walter Hickel complained of its inefficiency, stating that, “by the time all the principals could be telephoned in Texas, New York, California, and London, it could take weeks just to get an agreement on what color to paint the toilets in the construction camps.” Hickel also said that the consortium had “more consultants than a psychiatric ward, more colonels than Kentucky, and not a general in the place” (Coates 1993). APSC was created to avoid these inefficiencies.

In 1974, the TAPS Owners in the Federal Grant affirmed an earlier commitment that APSC would design and construct the TAPS. The TAPS Owners also indicated that they intended to appoint APSC to operate, maintain, and terminate the TAPS. APSC oversaw TAPS construction of the TAPS and has served as the common agent for the TAPS Owners since its creation. It has maintained operations and maintenance staff along the pipeline and at the Valdez Marine Terminal. In 1989, it created the Ship Escort/Response Vessel System (SERVS) to provide escorts through Prince William Sound to help avoid oil spills and to provide response in case a spill should occur. APSC currently employs more than 900 workers as well as hundreds of contractors at pump stations along the full length of the TAPS, at the Valdez Marine Terminal, with SERVS, and at its offices in Anchorage, Fairbanks, and Valdez.

**Discussion:** The TAPS ROW grant as it is proposed for renewal requires the TAPS Owners to appoint a common agent. Stipulation 1.4.2 states: "Permittees shall maintain a common agent for the construction, operation, maintenance and termination of the Pipeline System at all times during this Agreement." Defects in actions by the agent are the responsibility of the TAPS Owners and can be remedied through government oversight under the provisions of the proposed renewal of the grant, regardless of who is acting as common agent. Changing the agent in and of itself, in contrast, would not ensure improved operation. Indeed, changing agents could, to the extent that the new agent relied on different personnel, cause significant disruptions. To the extent that the new agent would rely on current personnel, this alternative would have the same environmental effects and is therefore the same as the proposed action.

**3. Require Payment of the Exxon Valdez Oil Spill Settlement.** The BLM determined not to analyze in detail in this FEIS an alternative that would require ExxonMobil Corporation to pay a \$5 billion jury award for punitive damages stemming from the *Exxon Valdez* oil spill before renewing that corporation's TAPS ROW.

On March 24, 1989, the *Exxon Valdez* ran aground in Prince William Sound, spilling approximately 11 million gallons of North Slope crude oil and causing extensive environmental, economic, and social harm. Exxon (since merged to become ExxonMobil) reached a settlement with the federal government and Alaska in 1991 for criminal charges as well as civil claims brought by the federal and state governments for recovery of natural resources. This settlement included a criminal fine of \$150 million (\$125 million of it remitted to the company in recognition of Exxon's cooperation in cleaning up the spill and paying certain private claims), \$100 million in criminal restitution payment, and \$900 million (in annual payments of \$90 million) as part of a civil settlement. The settlement has a "reopener window" from September 1, 2002, to September 1, 2006, in which the federal and state governments may make claims for up to an additional \$100 million.

Private parties, including many fishermen and other coastal entities, pursued their own civil

lawsuit. In 1994, a jury at the U.S. District Court in Anchorage awarded the plaintiffs \$5 billion. Exxon appealed to the 9th Circuit Court of Appeals. In November 2001, the appeals court ruled that the \$5 billion award was excessive and recommended that the District Court set a lower penalty. The case remains before the District Court for a decision based upon the appeals court direction.

**Discussion:** The BLM determined not to analyze this alternative in detail. This alternative would not help the BLM meet the purpose and need of this FEIS described in Chapter 1.

**4. Give the BLM the Authority to Fine the TAPS Owners.** The BLM determined not to analyze in detail in this FEIS an alternative that would have provided the BLM with the authority to fine the TAPS Owners. Under such an alternative, the BLM would have authority to fine the TAPS Owners for a variety of reasons, including failure to implement orders from the BLM in a timely fashion; failure to abide by the agreement for Alaska Native employment outlined in the Federal Grant; violations of Federal Grant provisions that protect pipeline integrity, worker safety, human health, or the environment; substantiated harassment or intimidation to prevent whistle-blowing by employees; and retaliation against whistle-blowers.

The BLM has assessed damages against APSC for extracting mineral materials without proper authorization. Other agencies within JPO, including the U.S. Department of Transportation (DOT) and the State Departments of Fish and Game, Labor, and Environmental Conservation have fined the TAPS Owners for violation of their respective regulations.

Section 18 of the Federal Grant also provides that if the TAPS Owners fail to comply with an order from the AO to perform certain actions, the federal government has the right to perform the actions at the sole expense of the TAPS Owners. Under the provisions of Stipulation 1.7.1.3, the AO may also require the TAPS Owners to stop a project to protect or maintain the stability of geologic material, protect or maintain the integrity of the TAPS, prevent serious and irreparable harm to the environment, or remove hazards to public health and safety. The AO has not taken any of these measures to date.



Discussion: New rule making and perhaps new legislation would be required to give the BLM the authority to levy fines for this wide range of actions of the TAPS Owners. In addition, a separate process, including NEPA review, would be required to adopt such regulations. Adopting such a rule making could be undertaken at any time; it does not have to occur at the time of renewal. Consideration of such regulations is outside the scope of this FEIS.

The Oil Pollution Act of 1990 gives the Secretary of the Interior the authority to impose civil penalties on the TAPS Owners or APSC for any discharge of oil from the pipeline or at its terminal (43 USC § 1656 [2002]). While this penalty authority is limited, it is still one method the Secretary has at her disposal to discourage these types of problems.

**5. Establish an Advisory Committee Funded by the TAPS Owners.** The BLM determined not to analyze in detail in this FEIS an alternative that would have established an advisory or oversight committee. Such a committee could take in all aspects of the TAPS or focus on specific aspects, such as Native-related issues or subsistence. Such a committee could be entirely voluntary or could have funding of various levels from the BLM or from the TAPS Owners. It might be authorized and sponsored by the BLM alone, or be authorized and sponsored by the various agencies within the JPO. It might be composed of local officials and tribal leaders representing the communities along or near the TAPS. Alternatively, it could be structured more broadly such as with the Regional Citizens' Advisory Councils (RCACs) for Prince William Sound and Cook Inlet established pursuant to the Oil Pollution Act of 1990.

The federal and state governments have long overseen the TAPS. To oversee construction, the Department of the Interior designated an AO and the state appointed a SPC in January 1974 (Mead 1978). The federal government and its contractors alone employed 150 people to monitor construction. Following construction, oversight staffing was reduced until 1990 when the BLM and the ADNRC formed the JPO. Additional federal agencies — Department of Transportation's Office of Pipeline Safety, U.S. Environmental Protection Agency, U.S. Coast Guard, U.S. Corps of Engineers, and the Minerals Management Service

— and state agencies — Department of Environmental Conservation, Department of Fish and Game, Department of Labor, Department of Transportation and Public Facilities, Division of Governmental Coordination, and Fire Marshal's Office — joined the JPO in subsequent years. Combined under the JPO umbrella, these agencies provide coordinated oversight with a wide variety of expertise and extensive authority. In addition, the JPO can, and has in the past, contracted with independent firms to conduct audits of TAPS operations. The TAPS Owners pay for these audits, as they have for federal and state monitoring activities through the JPO. (See Section 4.1.1 of this EIS for a description of JPO's oversight.) The following discussion of past audits describes why the BLM has not analyzed an alternative in detail that would require periodic audits.

The public has numerous means of directly advising the JPO and its member agencies. The JPO has an Executive Council composed of the agency heads of its constituent offices. That group meets periodically to review important JPO issues and provides policy-level guidance. Those meetings are open to the public, and opportunity for public comment is provided in the agenda.

BLM-Alaska has a legally authorized (under the Federal Advisory Committee Act — FACA) Resource Advisory Council (RAC) that meets regularly to discuss land management issues in Alaska. The RAC is composed of a diverse cross-section of citizens representing industry, conservation, dispersed recreation, elected officials, Alaska Natives, and the public at large. They provide advice to the BLM through a collaborative setting. The meetings (generally held quarterly) are public and are noticed in the *Federal Register* and in BLM news releases and public service announcements to local media. The BLM keeps the RAC informed of the renewal process throughout the processing of the TAPS Owners' application. The RAC chooses the issues on which it wishes to focus. It may form subgroups, comprised of a membership that extends beyond that of the RAC itself, to advise the RAC on specific issues. For example, in the 1990s the RAC formed a subgroup that focused on and provided advice to the BLM on small-scale placer mining on the Wild and Scenic Fortymile River.

The public also has input into oil spill contingency planning. APSC oil spill contingency plans for the TAPS undergo review by the Alaska Department of Environmental Conservation (ADEC) every three years. The ADEC conducts a public review and takes written comments to stay abreast of the public's views on current issues and other matters of concern related to the TAPS. The BLM participates in this process and so is apprised of the public's concerns when conducting its own annual reviews of the spill contingency plans. The ADEC completed its most recent pipeline contingency plan public review in 2001 and is currently reviewing the Valdez Marine Terminal plan.

**Discussion:** Establishment of a citizens' oversight committee for TAPS operations and maintenance is generally outside the scope of the EIS process for the renewal of the Federal Grant of Right-of-Way. The BLM and other federal and state agencies have statutory authority to provide regulatory oversight for TAPS operations and maintenance activities. (See Section 4.1 for descriptions of federal and state oversight.) This authority and responsibility cannot be displaced, shared, or abdicated. Agencies that operate within the framework of the JPO also derive their oversight responsibilities from specific statutes and regulations. As with the BLM, these authorities form a legally binding regulatory responsibility on the agency. An additional layer of oversight would not increase authority over the TAPS, nor relieve the agencies of their statutory obligations.

Citizen participation and citizen input have and will continue to be fundamental components of the government's responsibility to ensure safe and environmentally protective TAPS operations. Nothing prohibits the BLM from establishing an advisory group at any time. At this time, however, the agency believes that a citizens' advisory committee is unnecessary because, as noted above, there are several processes and advisory committees currently seeking public input, and a new advisory committee would be redundant and would potentially cause public confusion as to which committee is most suitable for any given topic.

**6. Conduct Periodic Audits.** The BLM determined not to analyze in detail this alternative that would require periodic audits of the operation of the TAPS. Under such an alternative, the TAPS

Owners would be required to fund an independent audit of TAPS at specified intervals, for example, every five years. Under this alternative, continued authorization of the TAPS ROW would be contingent upon the results of these periodic audits.

**Historical Background:** The TAPS Owners currently fund federal and state oversight of the TAPS. This includes JPO's Comprehensive Monitoring Program (CMP) and RCM program. These two programs are described briefly below. For a more comprehensive description of them and all aspects of JPO's oversight programs, see Section 4.1.1 of this EIS.

Surveillance is the most frequent and routine CMP function and normally involves physical inspections as well as reviews of critical operating and monitoring data. JPO has data from more than 1,300 surveillances of the TAPS. The CMP process also includes assessment reports and technical and engineering reports. An assessment report usually combines the results of several related surveillance actions and of related and independently conducted engineering surveys to identify discrete compliance deficiencies as well as trends. Technical and engineering reports address issues of a highly technical nature for which scientific or engineering judgment and documentation of calculations or rationale for professional opinion are required. CMP Reports, now numbering 12 since 1996, provide an overview of the findings and conclusions of monitoring occurring under the CMP.

RCM is an ongoing system-by-system analytical audit that determines function, failure modes, consequences, and preventive maintenance of critical systems. RCM identifies maintenance strategies necessary to preserve operational safety and reliability. The RCM process describes actions, including monitoring, necessary to prevent a particular failure or reduce the likelihood and consequences of its occurrence. For example, the JPO has issued a special requirement for slope stability monitoring that formally incorporates static and dynamic factor performance standards. RCM is widely used in the airline and other industries as the standard tool for reducing risk of failure to critical system components. The BLM is committed to RCM and believes that this process represents a proactive approach to oversight and regulation of the TAPS. APSC has similarly committed in a June

2002 MOA with the JPO to a maintenance program consistent with RCM and has modified its maintenance manuals to adopt the RCM strategy.

In addition to JPO's own direct oversight, the BLM and APSC have contracted with private experts to conduct a series of TAPS audits. In 1993, the BLM contracted with Quality Technology Company to investigate the physical condition of the TAPS and the management of operations provided by APSC and its contractors. In the early 1990s, the TAPS Owners conducted or contracted for more than 40 studies that addressed specific aspects of TAPS operation, such as corrosion, leak detection, and solid waste management. In 1993, the TAPS Owners contracted with Arthur D. Little to provide a comprehensive independent assessment of TAPS' operations (GAO 1995). Other audits and inspections include BLM's 1996–1997 audit of the TAPS Employee Concerns Program, JPO's 1997 audit of Section 29 compliance, and Alaska Occupational Safety and Health Division's inspection of electrical systems. These audits resulted in thousands of "audit action items" that APSC and the JPO have tracked to assure that deficiencies identified by the audits are appropriately addressed. All audit action items have been resolved.

**Discussion:** The BLM does not see a need to conduct an immediate independent audit of TAPS facilities and the associated management and operation processes, or to conduct a continuing series of third-party audits at predetermined intervals. As noted above, audits are one of the tools that the BLM and the agencies of the JPO commonly use to evaluate and regulate TAPS operations and maintenance. The BLM has existing discretion and authority under the Federal Grant to conduct or contract for independent reviews and audits as appropriate and needed. Consequently, this alternative was eliminated from detailed analysis because it is already available to the BLM under current operating practices so it is effectively analyzed by the analysis presented in the proposed action.

### **7. Establish an Escrow Account for TAPS Removal and ROW Rehabilitation.**

The BLM determined not to analyze in detail in this EIS an alternative that would require the TAPS Owners to establish an escrow account that could be drawn upon to remove the TAPS and rehabilitate the ROW after the TAPS has been

terminated. Such an escrow account would be readily available to the government, independent of any action by the TAPS Owners, to assure that TAPS removal and rehabilitation are conducted promptly and satisfactorily following completion of the use of the TAPS.

**Historical Background:** The TAPS ROW grant imposed an obligation on the TAPS Owners to properly remove the TAPS and rehabilitate the ROW following termination of operations. Federal Grant Stipulation 1.10 (Completion of Use) (See Appendix B) states that owner companies "shall promptly remove all improvements and equipment, except as otherwise approved in writing by the Authorized Officer, and shall restore the land to a condition that is satisfactory to the Authorized Officer or at the option of Permittees pay the cost of such removal and restoration."

The grant also included two sections designed to assure that the ROW holders are financially capable of meeting their obligations, including that for removal of the TAPS and restoration of the ROW. (Both these sections remain unchanged in the proposed renewed grant. See Appendix B.) Section 15 required each TAPS Owner to provide an "unconditional guaranty of the full and timely payment of all liabilities and obligations" to the United States. Such guaranty must be satisfactory to the Secretary of the Interior. (See Appendix H for an example of the current guarantees.) Section 22 provided additional assurance that the TAPS Owners are capable of meeting their financial obligations. It required that before ownership in the TAPS can transfer to a new owner, the proposed new owner (Transferree) must "demonstrate, to the satisfaction of the Secretary, that the Transferree is capable of performing all of the liabilities and obligations of the Transferor relating to the interest to be transferred." The section authorizes the Secretary to have access to all relevant documents, including financial records, to assure that the proposed new owner is technically and financially capable of meeting its liabilities and obligations.

In 1982, the federal government promulgated regulations (43 CFR 2883.8) that require a holder of a pipeline ROW to "remove such structures and improvements and restore the site to a condition satisfactory to the Authorized Officer." If the grant holder fails to meet those requirements, the structures and improvements become the property

of the United States, but the grant holder remains “liable for the cost of removal of the structures and improvements and for restoration of the site.”

Funds for dismantling, removal, and restoration (termination) are factored into the pipeline’s tariff. The oil company’s taxes and royalty payments to Alaska are calculated at the refinery price of the oil produced in the state, minus transportation costs. When oil began flowing through the TAPS, the methodologies for calculating transportation costs for royalties and taxes had not been established. After protracted litigation before the Federal Energy Regulatory Commission, however, the state and the oil companies reached a settlement in 1985. As part of the settlement, the TAPS Owners were allowed to collect a charge that by 2011 would be sufficient to cover the then projected costs of termination, that is, to fulfill the requirements of the federal grant’s Stipulation 1.10 and the analogous state lease provision. Adding termination to the tariff calculation provided substantial savings on royalties and taxes to the oil companies. Considering the TAPS Owners to be financially able to meet the legal obligations of the grant and lease to remove TAPS and restore the land, the state’s attorneys did not seek to force the oil companies to place the termination funds in an escrow account. Critics of the decision not to require escrowing termination funds have argued that termination has amounted to a financial windfall for the TAPS Owners, and that without an escrowed account, there is less assurance that removal and restoration will be carried out properly (Fineberg 1992–2002).

**Discussion:** Proper removal of the TAPS and rehabilitation of the TAPS ROW are valid concerns. The BLM believes that the legal commitments in regulations and the guarantees provided by the TAPS Owners constitute adequate assurances to ensure full-cost recovery from the TAPS Owners for the DR&R of the ROW upon the termination of TAPS. In addition, prior to renewing the ROW the Secretary, pursuant to the Mineral Leasing Act (Section 28(j), 30 U.S.C. § 185(j)) will determine whether the TAPS Owners have “the technical and financial capability to . . . terminate the project.” Renewal cannot proceed without such a determination. Therefore, evaluating this alternative is redundant as the environmental effects would be the same as the proposed action.

**8. Establish an Escrow Account to Fund Emergency Aid for Loss of Subsistence or Economic Benefit Because of TAPS Activities and Permit Individuals to Sue for Such Aid.** The BLM determined not to analyze in detail in this EIS an alternative that would require the TAPS Owners to establish an escrow account from which subsistence users and others could be compensated for loss because of the TAPS. The BLM also determined not to analyze in detail an alternative that would allow individuals to sue the TAPS Owners to obtain emergency subsistence and other aid.

**Historical Background:** The TAPAA (Section 204(a)(1)) imposed a liability on the holder of the TAPS ROW, with certain limited exceptions, for damage along or in the vicinity of the ROW to “fish, wildlife, or biotic or other natural resources relied upon by Alaska Natives, Native organizations, or others for subsistence or economic purposes.” The law also stated that the ROW holder shall, upon the order of the Secretary, “provide emergency subsistence and other aid” to those who claim such damage.

The TAPAA also created a Trans-Alaska Pipeline Liability Fund funded by collections of 5 cents per barrel loaded on tankers at the Valdez Marine Terminal. This fund was to be available to pay for cleanup and compensation for damages caused by discharge of oil from a tanker. This fund is now administered by the U.S. Coast Guard, but it is still available as a fund to provide relief to those who have been harmed by the TAPS.

Section 30 of the Federal Grant requires permittees to give special attention to the protection of subsistence resources in the vicinity of the TAPS, as well as to comply with any additional requirements the Secretary may impose to protect the interests of people in the area who rely on subsistence resources. The section also incorporated the liability, damage claim, and emergency aid provisions of TAPAA. It stated that the Secretary may order permittees to provide emergency subsistence or other aid, pursuant to claims submitted under Section 204(a) of the TAPAA.

Native groups have initiated three filings for damages under Section 30, though none have been resolved. In 1997 and 1998, Stevens Village and Ahtna, Inc., respectively, filed claims with the

Secretary. The BLM's State Director responded on behalf of the Secretary. The State Director asked for "evidence of causation between the operation of the Federal pipeline right-of-way and damage to your subsistence resources." Such information has not been received. In July 2002, the Native Village of Eyak wrote to the Secretary requesting damages. The letter cited "loss of access to subsistence and economic resources in Prince William Sound in the areas of the tanker lanes." The Department is studying this request and will make a determination once all the information has been adequately reviewed.

**Discussion:** The BLM determined not to analyze this alternative in detail because the obligations placed on the TAPS Owners by law and the Federal Grant assures compensation for loss of subsistence resources as well as expedited aid. Nothing in law or policy would prevent affected individuals from suing TAPS Owners or the federal government for harms caused by operation of the TAPS. Consequently, this alternative does not substantially differ from the proposed action.

### **9. Establish an Escrow Account to Fund Studies of Impacts of the TAPS on Rural Alaska and to Address Those Impacts.**

The BLM determined not to analyze in detail in this FEIS an alternative that would require the TAPS Owners to establish an escrow account to fund studies of impacts of the TAPS on rural Alaska and to address those impacts. Some rural Alaskans contend that TAPS has had enormous impacts on rural Alaska, though the scope of these impacts is not well understood. Studies might determine what impacts on rural Alaska stem from the pipeline. On the basis of the better understanding the studies would provide on this issue, the escrow account would also fund remedies to rural problems.

**Historical Background:** This EIS provides an overview of the past and potential future impacts of the TAPS on rural Alaska based on existing studies and public input received while conducting this FEIS. For this overview, see the Subsistence and Sociocultural sections of Chapters 3 and 4, particularly Sections 4.3.20 and 4.3.21, and Appendix D.

**Discussion:** The BLM has the ability to fund any studies it finds necessary in the course of its monitoring of the TAPS and can oblige the TAPS Owners to fund such studies. If additional specific

studies of such impacts are considered necessary, the BLM, under all the alternatives, may conduct them or hire an appropriate contractor to do them. Consequently, this alternative does not substantially differ from the proposed action.

**10. Require Maintenance of 20% Native-Hire Employment and Allow Natives to Bring Suit for Failure to Achieve That Goal.** The BLM determined not to analyze in detail in this EIS an alternative that would specifically require that 20% of employees working on the TAPS be Natives. The agency also determined not to analyze in detail an alternative that would grant Natives the ability to sue the TAPS Owners for failure to achieve that percentage.

**Historical Background:** Alaska Natives raised the issue of jobs on the TAPS soon after oil companies began to plan a pipeline to bring North Slope oil to market. During the summer and fall of 1969, the oil companies reached agreements with Native groups in which the Natives relinquished title claims to lands needed for the pipeline project in return for promises of contracts, training, and jobs during construction and operation. The DOI's stipulations for the pipeline being drafted that fall reflected this arrangement. The DOI included language mandating training and employment of Natives during construction. A promise by the TAPS Owners through their agent, APSC, to provide jobs for Natives was part of an agreement in 1972 which induced five Native villages to voluntarily dismiss with prejudice a lawsuit impeding pipeline construction (APSC 1972).

The TAPS grant incorporated a provision—Section 29—that required the TAPS Owners to enter into an agreement with the Secretary of the Interior "regarding recruitment, testing, training, placement, employment, and job counseling of Alaska Natives." A plan of action approved by the DOI required APSC to provide 3,500 training or employment opportunities to Alaska Natives during the construction of the TAPS. APSC exceeded this goal, hiring 5,770 Alaska Natives during construction, though most of the Natives hired worked eight or fewer weeks.

The TAPS Owners also committed in 1974 to train and employ Alaska Natives so that within two years after TAPS began operating, Alaska Native's percentage in the work force would be equivalent

to or greater than their proportion of Alaska's population. Their proportion was then estimated at 20%. In 1976, APSC altered its Alaska Native employment goal to 16%, though the DOI did not approve this revision. The TAPS Owners failed to meet the 20% goal, and by 1994 Alaska Native employment on TAPS had slipped to less than 5%.

Audits and a generally elevated interest by the government in regulatory oversight of the TAPS prompted a letter from the JPO to APSC stating that the government considered the lack of Alaska Native employment on TAPS "a serious breach of a long-standing agreement to provide recruiting and permanent placement for Alaska Natives." The letter requested that APSC provide the JPO with a plan to achieve full compliance with its commitments.

The JPO, APSC, and the Alaska Federation of Natives discussed how to reach an agreement acceptable to the Native community. These discussions culminated in an Alaska Native Utilization Agreement (ANUA) signed in October 1995. The ANUA described hiring goals that would gradually increase Alaska Native employment to a goal of 20% by 2004. The ANUA allowed credits toward employment goals for Alaska Natives receiving an APSC-funded scholarship or enrolled in an APSC intern program. APSC drafted an Initial Plan of Implementation, which the BLM approved in April 1996. The Initial Plan of Implementation broadly described the activities and strategies APSC and its contractors would undertake to implement the ANUA.

In September 1997, the JPO issued an audit on the progress made by the APSC and its contractor to implement the ANUA. It concluded that APSC was making progress on increasing Native employment and that it was in compliance with the ANUA's major terms. The audit recommended adopting such "gateway" employment opportunities as apprenticeships and co-op student programs, investigating vocational-education opportunities, establishing consistent procedures for routinely verifying Alaska Native tribal enrollment status, establishing a clear link between scholarship funding and the expectation of future employment on the TAPS or in Alaska's oil and gas industry, and expanding the list of contractors required by the TAPS Owners to participate in the Section 29 program.

In conformance with a provision in the ANUA, it has been reviewed at three-year intervals. (The 2001 ANUA is reproduced in Appendix F.) The 1998 ANUA adopted the recommendations of the 1997 audit. The 2001 ANUA more fully realized some of the recommendations put forward in the audit, including expanding the number of contractors covered by the agreement.

Employment of Alaska Natives has increased substantially since the signing of the 1995 ANUA. Alaska Natives comprised 8.8% of the TAPS work force in 1996, 12.8% in 1998, and 16.9% in 2000. By the fourth quarter of 2001, Alaska Natives composed 18.2% of the work force; credits for education and training raised the percentage to 19.8%. As of June 30, 2002 these percentages had risen to 20% and 21.4%, respectively.

**Discussion:** The authority in the renewal grant is sufficient to assure Alaska Native hire goals, as is demonstrated by the recent success of TAPS Owners to meet Alaska Native employment goals. Consequently, the BLM determined not to analyze this alternative in detail. The BLM already has the authority to require that the TAPS Owners reach their Native Alaskan employment objectives; thus, this alternative is substantially similar to the proposed action analyzed in detail in this EIS.

**11. Close the Dalton Highway or Restrict Access along the Highway.** The BLM determined not to analyze in detail in this EIS an alternative that would close or restrict access along the Dalton Highway, which parallels the TAPS from near Livengood north to the Prudhoe Bay oil fields. This alternative would have allowed only oil-related traffic or access by oil-related traffic and local residents. Traffic on the highway may impact migrating animals, including caribou that are important for local subsistence. In addition, anglers and hunters from other areas can use the highway to access this remote part of Alaska, thus competing with local residents for fish and game and potentially subtly changing the local culture.

**Historical Background:** The Dalton Highway was built to support construction of TAPS. In 1969, when oil companies attempting to build the TAPS applied for the pipeline ROW, they also applied for a ROW for a parallel road from Livengood to Prudhoe Bay. Following Congressional approval of a modification to Secretary Stewart Udall's land

freeze, the oil companies that summer built a 53-mile road from Livengood to the Yukon River. The companies were required to build the road to meet state secondary highway standards and to turn the road over to the state. The state received control of the road in 1972 and began maintenance of it at that time.

Construction of the rest of the road was a top priority once the TAPS grant and lease were signed by the DOI and the state in early 1974. That summer, the APSC built the road from the Yukon River to Prudhoe Bay at a cost of \$180 million. The federal government provided \$25 million for construction of the bridge over Yukon River. The state gained control of, and assumed responsibility for maintaining, the highway on October 15, 1978. In 1980, the state legislature authorized opening the road north to Dietrich Camp in the southern Brooks Range. Beginning the following summer, the state opened the road to nonpipeline and oil field traffic in the summer to Dietrich Camp (Coates 1993; Mead 1978; Ott 2002). In 1994, the state opened the entire highway to all traffic. By opening the road, the state became eligible to obtain federal highway funding for reconstruction and repair work. The state remains responsible for all road maintenance.

**Discussion:** The Dalton Highway is a federal aid highway under the jurisdiction of the State of Alaska Department of Transportation. The BLM does not have the authority to regulate access to the Dalton Highway. Moreover, the highway is an integral part of the infrastructure needed not only to maintain and operate the TAPS, but also to provide numerous other public benefits, including tourism, sight-seeing, security or law enforcement access, and hunting and fishing. This alternative does not allow the BLM to accomplish its purpose and need for this EIS.

**12. Increase Oil Spill Response Capabilities by Training, Hiring, and Equipping Additional Local Oil Spill Response Crews.** The BLM determined not to analyze in detail in this EIS an alternative that would involve training, hiring, and equipping additional local oil spill response crews. The intent of such crews would be increased oil spill response capabilities and additional employment opportunities for communities along the TAPS.

**Historical Background:** The TAPS Owners have produced spill plans for the pipeline approved by the AO in accordance with Stipulation 2.14 since prior to TAPS startup. These plans placed spill response crews and response equipment at all pump stations. In 1990 and 1991, the TAPS Owners substantially upgraded their pipeline response capability. They added additional equipment, placing some at remote storage sites along the TAPS. They added front-line spill response supervisors and staff and formed an incident command system to mobilize and coordinate pipeline spill response. And they improved access along the pipeline to facilitate quick spill response. In the course of subsequent spill contingency plan reviews, changes have been made to readjust and relocate personnel and equipment to react to pump station closings, to meet the requirements of ADEC regulations promulgated in the 1990s, and to adapt to reorganizations within APSC. The TAPS Owners have also provided training for spill response crews in Rampart and Stevens Village. These arrangements are separate from the spill response plan.

**Discussion:** Oil spill prevention and response planning are central to the BLM's and other agencies' missions within the JPO. The oil spill planning and prevention effort in the JPO is a large-scale, multiagency endeavor. Each of five participating agencies [BLM, ADEC, EPA, ADNR, and the DOT's Office of Pipeline Safety] has a particular focus, but these are all considered collectively in the JPO TAPS oil spill response and planning group.

Oil spill response planning involves a separate process and is not part of the decision on the application to renew the Federal Grant. APSC submits oil spill contingency plans for the TAPS to the BLM and other federal and state agencies within the JPO that have regulatory authority over the pipeline. These oil spill plans address the training, hiring, and equipping of oil spill response crews. The BLM reviews these plans annually and participates in the triannual reviews of such plans by the ADEC. The ADEC's reviews incorporate public reviews of the plans. The BLM completed its most recent review in April 2002, and the ADEC completed its most recent review in November 2001. In addition, the EPA completed its review of spill response plans for oil storage facilities in

1998 and participated in ADEC's review in the fall of 2001. Also, the DOT completed a review of the TAPS spill response plan in September 2000. None of these reviews indicated a need to train, hire, or equip additional local oil spill response crews. Future reviews, however, may reexamine that question.

Readers should note that this EIS discusses ongoing mitigation measures for the proposed action that address impacts described in the DEIS and by the public in commenting on the DEIS. These mitigation measures may be adopted in the ROD. Mitigation measures are discussed in Section 4, and particularly in Section 4.8.4.

## 2.6 Comparison of Alternatives

Table 2-1 summarizes the impacts of the three alternatives.

## 2.7 References for Chapter 2

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**TABLE 2-1 TAPS ROW Renewal FEIS Summary of Direct and Indirect Effects**

Proposed Action (Renew for 30 Years)	Less-Than-30-Year Renewal Alternative (Renew for Less Than 30 Years)	No-Action Alternative (Do Not Renew)
<b><i>Physiography and Geology</i></b>		
<b>Soils and Permafrost</b>		
<p><i>Action Impacts:</i> Geologic processes associated with the TAPS are expected to be confined to localized areas near the TAPS. Destruction of vegetation cover, erosion, and siltation would be localized and would not increase over levels seen historically during TAPS operations. An increase in oil throughput could expand thaw bulbs and result in ground settlement near the TAPS. A reduction in throughput could result in frost heaves.</p>	<p><i>Action Impacts:</i> The types of impacts on geology during the renewal period would be similar to those of the proposed action. Excavation associated with pipeline maintenance (e.g., rerouting of pipeline, valve replacements, corrosion digs) and spill cleanup and heat transfer associated with oil throughput would impact soil and permafrost similarly to such activities under the proposed action. However, such activities may be fewer and cease sooner under a shorter-term renewal.</p>	<p><i>Action Impacts:</i> The impacts on geology during the first two years of termination activities would be comparable to those of the proposed action, though the risk of impacts from spill cleanup would be reduced. Dismantlement and removal of the TAPS would cause minor change in geological processes and the removal of some geologic material.</p>
<p><i>Cumulative Impacts:</i> Oil and gas activities, as well as other construction activities and human habitation would impact soils and permafrost in local areas. Travel on gravel roads would generate road dusts, which would facilitate thawing of permafrost along roadways. If the current warming trend in Alaska would continue to occur, permafrost changes would occur with time. The TAPS would be a minor contributor to cumulative effects.</p>	<p><i>Cumulative Impacts:</i> Impacts for this renewal period would be similar to those under the proposed action, depending upon the level of North Slope petroleum activities. Thereafter, if an additional renewal period were approved, impacts would be similar to those described for the proposed action. If an additional renewal period were not requested or were not approved, then subsequent impacts would be similar to those described for no action.</p>	<p>During the first 2 years of preparatory work for termination activities, the impacts on soils and permafrost would be about the same as those from the proposed action. Increased traffic, movements of heavy equipment, and ground disturbance during the dismantlement and removal phase would degrade previously stabilized permafrost. These impacts would be limited to areas adjacent to the aboveground portions of the pipeline and access roads. An estimated 4,525 acres would be disturbed. Activities associated with the restoration of disturbed land would temporarily increase soil erosion and siltation in nearby water bodies. In addition, the dismantlement and removal of TAPS components would redisturb the thermal regime of the surface soil, possibly resulting in thermokarst topography. The impact on soils from the decrease in heat flow in the belowground pipeline, once the crude oil stopped flowing, would be local and minor. With time, the belowground pipeline segments left in place would become corroded and collapse. Ground depressions might be created above such collapses.</p>

**TABLE 2-1 (Cont.)**

Proposed Action (Renew for 30 Years)	Less-Than-30-Year Renewal Alternative (Renew for Less Than 30 Years)	No-Action Alternative (Do Not Renew)
<b>Soils and Permafrost (Cont.)</b>		<p><i>Cumulative Impacts:</i> If the operation of the TAPS was terminated, there would be no impacts from new oil development on the North Slope; however, geologic impacts would continue with gas development and production and construction of a new buried natural gas pipeline. There could still be impacts from gas development, including both additional drilling pads and associated roads and construction of a gas pipeline.</p> <p>Termination activities would temporarily increase soil disturbance and increase generation of dusts from roads, which would affect permafrost in the vicinity of the pipeline and in the vicinity of oil production facilities being dismantled. Longer-term impacts to soils would be reduced due to reduced petroleum activities and less oil-related traffic on unpaved roads. Other construction activities and human habitation would continue to impact soils and permafrost. The current warming trend in Alaska would continue to occur, compounding permafrost effects with time.</p>

**TABLE 2-1 (Cont.)**

Proposed Action (Renew for 30 Years)	Less-Than-30-Year Renewal Alternative (Renew for Less Than 30 Years)	No-Action Alternative (Do Not Renew)
<b>Sands, Gravels, and Quarry Resources</b>		
<p><i>Action Impacts:</i> Less than 100,000 yd<sup>3</sup>/yr of sand, gravel, and quarry stone would be extracted for maintenance.</p>	<p><i>Action Impacts:</i> Less than 100,000 yd<sup>3</sup>/yr of sand, gravel, and quarry stone would be extracted for maintenance during the renewal period.</p>	<p><i>Action Impacts:</i> Field activities in the first 2 years of termination activities might use more of these resources than the proposed action (i.e., less than 100,000 yd<sup>3</sup>/yr). These materials would not be needed after the preparatory phase of the termination activities; therefore, subsequent impacts on these resources would be much smaller than for the proposed action.</p>
<p><i>Cumulative Impacts:</i> Oil and gas development, mining, urban development, and logging would require sand, gravel, and quarry resources, primarily from local sources. Quarry stones would be transported to the North Slope from the Brooks Range. TAPS operation would be a minor contributor to requirements for these resources.</p>	<p><i>Cumulative Impacts:</i> Impacts for this renewal period would be similar to those under the proposed action, depending upon the level of North Slope petroleum activities. Thereafter, if an additional renewal period were approved, impacts would be similar to those described for the proposed action. If an additional renewal period were not requested or were not approved, then subsequent impacts would be similar to those described for no action.</p>	<p><i>Cumulative Impacts:</i> Following an initial demand during facility removal, use of these resources would decline with the decline in oil exploration, development, and production. Other uses, such as requirements for a buried natural gas transportation pipeline, road building, mining, and urban development would continue.</p>

**TABLE 2-1 (Cont.)**

Proposed Action (Renew for 30 Years)	Less-Than-30-Year Renewal Alternative (Renew for Less Than 30 Years)	No-Action Alternative (Do Not Renew)
<b>Paleontology</b>		
<p><i>Action Impacts:</i> Renewal of the Federal Grant would be unlikely to adversely affect paleontological resources. There is a very low potential for contamination of nonpetrified paleontological materials by an oil spill.</p>	<p><i>Action Impacts:</i> Renewal of the Federal Grant would be unlikely to adversely affect paleontological resources. There is a very low potential for contamination of nonpetrified paleontological materials by an oil spill.</p>	<p><i>Action Impacts.</i> Although no adverse effects on paleontological resources are anticipated under the no-action alternative, there is a very small potential that ground disturbance during dismantlement could damage or obscure paleontological resources. Following termination activities, the potential for impacts from TAPS would cease.</p>
<p><i>Cumulative Impacts:</i> Depending on the local presence or absence of fossil-bearing deposits, ground-disturbing activities, such as construction, have the potential to impact paleontological resources, and these resources would require mitigation or protection on a case-by-case basis. TAPS operation would be a small contributor to the risk of impacts to paleontological resources.</p>	<p><i>Cumulative Impacts:</i> Depending on the local presence or absence of fossil-bearing deposits, ground-disturbing activities, such as construction, have the potential to impact paleontological resources, and these resources would require mitigation or protection on a case-by-case basis. TAPS operation would be a small contributor to the risk of impacts to paleontological resources. Impacts for this renewal period would be similar to those under the proposed action, depending upon the level of North Slope petroleum activities. Thereafter, if an additional renewal period were approved, impacts would be similar to those described for the proposed action. If an additional renewal period were not requested or were not approved, then subsequent impacts would be similar to those described for no action.</p>	<p><i>Cumulative Impacts:</i> Depending on the local presence or absence of fossil-bearing deposits, ground-disturbing activities have the potential to impact paleontological resources, and these resources would require mitigation or protection on a case-by-case basis. There is a very small potential that ground disturbance during TAPS facility dismantlement could damage or obscure paleontological resources. However, reduced oil exploration, development, and production would reduce the overall risks to paleontological resources from disturbance.</p>

**TABLE 2-1 (Cont.)**

Proposed Action (Renew for 30 Years)	Less-Than-30-Year Renewal Alternative (Renew for Less Than 30 Years)	No-Action Alternative (Do Not Renew)
<b>Surface Water Resources</b>		
<p><i>Action Impacts:</i> Impacts to surface water from routine operations would be small and local, and not produce a large impact on any single water body. However, spills could produce substantial contamination if they occur over or near surface water.</p>	<p><i>Action Impacts:</i> On an annual basis, the number of small and local impacts and the risk of substantial impacts would be the same as in the proposed action. Total impacts over the period of renewal would be comparable to a similar duration under the 30-year renewal alternative.</p>	<p><i>Action Impacts:</i> Until the oil is removed from the pipeline in 2004, impacts and the risk of impacts would be the same as those under the proposed action. Subsequent impacts during termination would be small and local and cease at the conclusion of termination activities. Once termination activities are completed, there would be no further impacts from the TAPS until and unless corrosion caused the collapse of underground pipe, which could drain adjacent wetlands. This impact, however, would be negligible.</p>
<p><i>Cumulative Impacts:</i> The large amount of water required for ice roads for oil and gas development and production on the North Slope would be met from surface sources. Impacts on water quantity and quality in taliks would be small when winter withdrawals are limited by permit restrictions. There would be small, localized discharges to surface water from other actions. Impacts to surface waters would be localized unless an oil spill occurs, in which case impacts could be substantial. TAPS operation would have a very small effect on surface water quantity.</p>	<p><i>Cumulative Impacts:</i> As for the proposed action, during the renewal period, impacts to surface waters would be small and localized unless an oil spill occurs, in which case impacts could be substantial. Impacts for this renewal period would be similar to those under the proposed action, depending upon the level of North Slope petroleum activities. Thereafter, if an additional renewal period were approved, impacts would be similar to those described for the proposed action. If an additional renewal period were not requested or were not approved, then subsequent impacts would be similar to those described for no action.</p>	<p><i>Cumulative Impacts:</i> During the initial dismantlement period, local impacts on the quantity and quality of surface waters would continue, as ice roads would continue to be needed for facilities being dismantled and for gas exploration, development, and production. After the initial dismantlement period, surface water requirements and the risks of small oil spills would decline due to declining oil and gas development. The reduced need for ice roads would reduce potential local surface water impacts. Water requirements and discharges to surface water from other activities would continue.</p>

**TABLE 2-1 (Cont.)**

Proposed Action (Renew for 30 Years)	Less-Than-30-Year Renewal Alternative (Renew for Less Than 30 Years)	No-Action Alternative (Do Not Renew)
<b>Groundwater Resources</b>		
<p><i>Action Impacts:</i> Impacts to groundwater quality from routine operations would be small and local but an oil spill, depending on its size, location, and the effectiveness of response activities, could create local small to very large impacts.</p>	<p><i>Action Impacts:</i> The impacts from routine operations and the number and risk of spills would be the same on an annual basis as those described for the proposed action. Total impacts over the period of renewal would be comparable to a similar duration under the 30-year renewal alternative.</p>	<p><i>Action Impacts:</i> There would be negligible to minor local impacts to groundwater through completion of termination activities. Other water users might be impacted by dismantlement only along the southern portion of the TAPS, where there is a greater dependence on groundwater than on the North Slope. After completion of these activities, there would be no additional impacts to groundwater.</p>
<p><i>Cumulative Impacts:</i> Withdrawals from all activities would have small and local effects. Fairbanks and Valdez are the largest groundwater users. Municipal use would have minor impacts. However, an oil spill from the TAPS or oil development activities, could impact groundwater quality to a small to large extent, depending on the spill's size, location, and the effectiveness of response activities.</p>	<p><i>Cumulative Impacts:</i> Impacts for this renewal period would be similar to those under the proposed action, depending upon the level of North Slope petroleum activities. Thereafter, if an additional renewal period were approved, impacts would be similar to those described for the proposed action. If an additional renewal period were not requested or were not approved, then subsequent impacts would be similar to those described for no action.</p>	<p><i>Cumulative Impacts:</i> Impacts from dismantling the TAPS would be of a short duration and would occur along a substantial portion of the length of the pipeline. Impacts from dismantlement would be greater along the southern portion of the TAPS, where there is a greater dependence on groundwater than on the North Slope. Once oil development, production, and transportation ends with the shutdown of the TAPS, impacts from those activities on the southern portions of the pipeline would cease. On the northern portion, produced water injections to groundwater would be reduced with declining oil industry. Other groundwater uses would continue.</p>

**TABLE 2-1 (Cont.)**

Proposed Action (Renew for 30 Years)	Less-Than-30-Year Renewal Alternative (Renew for Less Than 30 Years)	No-Action Alternative (Do Not Renew)
<b>Physical Marine Environment</b>		
<p><i>Action Impacts:</i> Impacts from routine operations are expected to be no more than those in the past, that is, small and local. They may be less than those in the past because discharges are expected to be reduced from current volumes because of reduced throughput and the segregation of ballast water in new tankers. Discharges from routine operations would continue to comply with applicable regulations. Most spills from the Valdez Marine Terminal would be local and impacts short-lived. However, a very unlikely large spill from the Valdez Marine Terminal could have large impacts over up to 2 miles of shoreline.</p> <p><i>Cumulative Impacts:</i> Other activities could affect the marine environment from spills in oil and gas production areas reaching the Beaufort Sea and spills from tanker and other forms of marine transportation in Prince William Sound or along Pacific transportation routes. Reasonably foreseeable spills would be small and rapidly cleaned up and of local consequence. Larger, less probable spills might take longer to clean up and result in widespread contamination of the marine environment.</p>	<p><i>Action Impacts:</i> Impacts would be similar to those for the proposed action for the length of the renewal after the introduction of double-hulled tankers. Total impacts over the period of renewal would be comparable to a similar duration under the 30-year renewal alternative.</p> <p><i>Cumulative Impacts:</i> The type, magnitude, and risk of impacts on a per-year basis would be similar to those for the proposed action. These risks are not time-dependent; thus, a shorter renewal period would not reduce the per-year risk. However, a shorter renewal period would eliminate the risk at the end of the shorter renewal period compared to a 30-year renewal.</p>	<p><i>Action Impacts:</i> Impacts from Valdez Marine Terminal releases resulting from termination activities would generally be smaller than current TAPS impacts. However, while historical releases have been continuous, releases under the no-action alternative would be temporary and cease with the completion of termination activities. The impacts to physical marine resources from scrap metal transport would be short-lived and would cease with the completion of termination activities.</p> <p><i>Cumulative Impacts:</i> Impacts from oil-related spills in both the Beaufort Sea and Prince William Sound would decline as North Slope oil production and transportation of North Slope oil ends. However, impacts from spills due to other marine transport could increase without the presence of the oil industry's spill containment response apparatus and personnel.</p>

**TABLE 2-1 (Cont.)**

Proposed Action (Renew for 30 Years)	Less-Than-30-Year Renewal Alternative (Renew for Less Than 30 Years)	No-Action Alternative (Do Not Renew)
<b>Air Quality</b>		
<p><i>Action Impacts.</i> Air quality impacts from routine operations are generally expected to be local, temporary, and small, and within regulatory limits for the TAPS and federal and state air quality standards. Impacts on air quality from spills, including those associated with a spill involving a fire, would pose health risks for people within the immediate area of the spill. These impacts would rapidly diminish with distance from the spill and with time after the spill.</p> <p><i>Cumulative Impacts:</i> Little or no long-term or short-term impacts on air quality from the routine activities of all actions are anticipated. As stated above, impacts of a large spill involving a fire may have human health consequences.</p>	<p><i>Action Impacts:</i> Impacts and risks of impacts on air quality would be expected to continue as described for the proposed action. Total impacts over the period of renewal would be comparable to a similar duration under the 30-year renewal alternative.</p> <p><i>Cumulative Impacts:</i> Impacts for this renewal period would be similar to those under the proposed action, depending upon the level of North Slope petroleum activities. Thereafter, if an additional renewal period were approved, impacts would be similar to those described for the proposed action. If an additional renewal period were not requested or were not approved, then subsequent impacts would be similar to those described for no action.</p>	<p><i>Action Impacts:</i> Impacts would be the same as those under the proposed action while oil flows in the pipeline. Impacts would be less than those for the proposed action on an annual basis during the three years of peak dismantlement, removal, and restoration activities and substantially less during the last year of termination activities. Thereafter, the TAPS would not impact air quality.</p> <p><i>Cumulative Impacts:</i> Impacts from all activities on the North Slope and from marine transportation in Prince William Sound would decline with the termination of the TAPS and its associated oil production. Other impacts would be largely the same as for the proposed action.</p>



**TABLE 2-1 (Cont.)**

Proposed Action (Renew for 30 Years)	Less-Than-30-Year Renewal Alternative (Renew for Less Than 30 Years)	No-Action Alternative (Do Not Renew)
<b>Noise</b>		
<p><i>Action Impacts:</i> Construction and maintenance activities are anticipated to generate short-lived and small noise impacts, which would be barely distinguishable above background noise beyond TAPS facility boundaries. No adverse impacts are anticipated from such activities. Air traffic, particularly helicopter pipeline surveillance, may disturb wildlife temporarily.</p> <p><i>Cumulative Impacts:</i> All activities would have the potential to produce local impacts on noise.</p>	<p><i>Action Impacts:</i> Impacts would be similar to those for the proposed action on an annual basis during the renewal period. Total impacts over the period of renewal would be comparable to a similar duration under the 30-year renewal alternative.</p> <p><i>Cumulative Impacts:</i> Impacts for this renewal period would be similar to those under the proposed action, depending upon the level of North Slope petroleum activities. Thereafter, if an additional renewal period were approved, impacts would be similar to those described for the proposed action. If an additional renewal period were not requested or were not approved, then subsequent impacts would be similar to those described for no action.</p>	<p><i>Action Impacts:</i> Impacts would be less than those under the proposed action in all years except for the third year of termination activities. In the third year, impacts would be comparable to current levels. At the end of the termination period, all noise and vibration due to TAPS-related activities would cease.</p> <p><i>Cumulative Impacts:</i> All activities would have the potential to produce local impacts on noise. Local noise generated by the TAPS and associated oil production facilities would be comparable to current levels, until after the termination period. Thereafter, these noise sources would be reduced or absent.</p>

**TABLE 2-1 (Cont.)**

Proposed Action (Renew for 30 Years)	Less-Than-30-Year Renewal Alternative (Renew for Less Than 30 Years)	No-Action Alternative (Do Not Renew)
<b>Transportation</b>		
<p><i>Action Impacts:</i> No adverse impacts are anticipated because the current transportation infrastructure is adequate to support continued TAPS operations at any anticipated throughput level.</p>	<p><i>Action Impacts:</i> No adverse impacts are anticipated.</p>	<p><i>Action Impacts:</i> Considerable road traffic would be generated by termination activities, particularly in the immediate vicinity of dismantlement. However, this level of traffic would be well within the current traffic borne by the road network. Air traffic to areas north of Fairbanks might increase slightly for up to several years during dismantlement to handle the transport needs of the increased workforce. After termination activities have been completed, air and highway traffic, particularly north of Fairbanks would greatly decrease.</p>
<p><i>Cumulative Impacts:</i> Anticipated increases in traffic volume from new or growing activities would not be large and could be accommodated by existing infrastructure. No increases in traffic would result from continued TAPS operations.</p>	<p><i>Cumulative Impacts:</i> Anticipated increases in traffic volume from new or growing activities would not be large and could be accommodated by existing infrastructure. No increases in traffic would result from continued TAPS operations during a shorter renewal period.</p>	<p><i>Cumulative Impacts:</i> Anticipated increases in traffic volume from new and existing actions and from termination activities and decline of oil production could be accommodated by existing infrastructure. After the termination period, traffic would decline. SERVS would not be available to provide services to the marine industry in Prince William Sound.</p>

**TABLE 2-1 (Cont.)**

Proposed Action (Renew for 30 Years)	Less-Than-30-Year Renewal Alternative (Renew for Less Than 30 Years)	No-Action Alternative (Do Not Renew)
<b>Waste Management</b>		
<p><i>Action Impacts:</i> Impacts on waste management from TAPS operation, including spill cleanup would be within acceptable limits as set by regulatory standards.</p>	<p><i>Action Impacts:</i> Impacts on waste management from TAPS operation, including spill cleanup, would be within acceptable limits as set by regulatory standards during a shorter renewal period.</p>	<p><i>Action Impacts:</i> Impacts on waste management from TAPS termination, including spill cleanup, would be within acceptable limits as set by regulatory standards.</p>
<p><i>Cumulative Impacts:</i> Impacts on waste management from all actions are expected to be within acceptable limits, as set by regulatory standards.</p>	<p><i>Cumulative Impacts:</i> Impacts on waste management from all actions are expected to be within acceptable limits, as set by regulatory standards for the renewal period.</p>	<p><i>Cumulative Impacts:</i> Impacts on waste management from termination of the TAPS and from declining oil production, as well as all other actions, are expected to be within acceptable limits as set by regulatory standards.</p>

**TABLE 2-1 (Cont.)**

Proposed Action (Renew for 30 Years)	Less-Than-30-Year Renewal Alternative (Renew for Less Than 30 Years)	No-Action Alternative (Do Not Renew)
<b>Human Health and Safety</b>		
<p><i>Action Impacts:</i> Over a 30-year renewal period, the total anticipated number of worker fatalities would be approximately six. The estimated annual numbers of recordable injuries would be 125–153, and lost time injuries would be 76–92. Health risk to the public would be small, though individuals who remain in the vicinity of a spill or fire or eat noticeably spill-impacted fish could be adversely affected.</p>	<p><i>Action Impacts:</i> There would be fewer anticipated fatalities and recordable injuries under a shorter renewal period.</p>	<p><i>Action Impacts:</i> The total number of fatalities over the 6-year termination period would be approximately one. The estimated annual number of recordable injuries (43–109) and lost time injuries (20–204) represent upper bound ranges on the physical hazard risks of injuries to TAPS workers during termination. Public health risks would essentially cease once oil no longer flows through the TAPS.</p>
<p><i>Cumulative Impacts:</i> Best management practices could reduce fatality and injury rates for all industries. Operating procedures could limit exposure to naturally occurring radioactive material (NORM). TAPS operation does not produce NORM.</p>	<p><i>Cumulative Impacts:</i> There would be fewer anticipated fatalities and recordable injuries under a shorter renewal period. After the renewal period, either a further renewal would be approved, with similar consequences as the proposed action, or the operations of the pipeline would be terminated, with impacts similar to no action.</p>	<p><i>Cumulative Impacts:</i> The types of impacts would be similar to those for the other alternatives; however, the contribution of the TAPS to those hazards would cease with the completion of termination actions.</p>
<p>No adverse health impacts would be expected from inhalation of industrial air emissions in the Valdez area. Valdez Marine Terminal operations contribute to, but are not the sole source of, organic air pollutant emissions in the Valdez area.</p>		
<p>Levels of polychlorinated biphenyls (PCBs) and mercury in tissues of Alaska Natives and others consuming contaminated natural food supplies would be elevated from past actions and global sources. There would be no impact from other actions or from TAPS operation.</p>		
<p>The general public would be exposed to more vehicle emissions over the next 30 years unless additional controls are placed on such emissions. Accidental releases of hazardous materials and spills into the marine environment also could have small impacts on public health.</p>		

**TABLE 2-1 (Cont.)**

Proposed Action (Renew for 30 Years)	Less-Than-30-Year Renewal Alternative (Renew for Less Than 30 Years)	No-Action Alternative (Do Not Renew)
<b><i>Terrestrial Vegetation and Wetlands</i></b>		
<p><i>Action Impacts:</i> Impacts, including variations in vegetation types compared with types outside the ROW and disturbance to vegetation (with subsequent restoration) from excavation, dust shadow, or spills, would be small and local.</p>	<p><i>Action Impacts:</i> Impacts would be similar to those under the proposed action on an annual basis during the renewal period. Total impacts over the period of renewal would be comparable to a similar duration under the 30-year renewal alternative.</p>	<p><i>Action Impacts:</i> Disturbances to terrestrial vegetation and wetland communities would continue during the 6-year termination period, as described for the proposed action. The ROW, pump station sites, and other TAPS areas would eventually become vegetated with stable terrestrial and wetland vegetative communities. These communities would have many similarities to adjacent undisturbed communities; however, differences in their structure and species composition would likely remain over the long term.</p>
<p><i>Cumulative Impacts:</i> The cumulative impacts of all the anticipated actions would be minor to negligible and local in extent.</p>	<p><i>Cumulative Impacts:</i> Impacts for this renewal period would be similar to those under the proposed action, depending upon the level of North Slope petroleum activities. Thereafter, if an additional renewal period were approved, impacts would be similar to those described for the proposed action. If an additional renewal period were not requested or were not approved, then subsequent impacts would be similar to those described for no action.</p>	<p><i>Cumulative Impacts:</i> A temporary increase in disturbance would result from removal of TAPS facilities. Declining oil exploration and development would reduce impacts. Following termination activities, there would be a small long-term recovery of vegetation communities.</p>

**TABLE 2-1 (Cont.)**

Proposed Action (Renew for 30 Years)	Less-Than-30-Year Renewal Alternative (Renew for Less Than 30 Years)	No-Action Alternative (Do Not Renew)
<b>Fish</b>		
<p><i>Action Impacts:</i> With the exception of the occurrence of a large oil spill under unfavorable circumstances, impacts to fish would be small and temporary, with no population-level effects. A major spill into a waterway could be severe and possibly long term, depending on the size of the receiving waterbody, the affected fish community, and the season of the year.</p> <p><i>Cumulative Impacts:</i> Habitat alternation would be minor and not substantially affect fish populations. Impacts of obstructions to fish passage would be low to moderate. Increased human access would have minor impacts. Impacts of small spills would be local and minor. Risks of large spills with large consequences would be low, as stated above. .</p>	<p><i>Action Impacts:</i> Impacts would be similar to those under the proposed action on an annual basis during the renewal period. Total impacts over the period of renewal would be comparable to a similar duration under the 30-year renewal alternative.</p> <p><i>Cumulative Impacts:</i> Impacts for this renewal period would be similar to those under the proposed action, depending upon the level of North Slope petroleum activities. Thereafter, if an additional renewal period were approved, impacts would be similar to those described for the proposed action. If an additional renewal period were not requested or were not approved, then subsequent impacts would be similar to those described for no action.</p>	<p><i>Action Impacts:</i> There would be an increased potential for short-term impacts to fish habitat during the pipeline removal phase because of localized increases in workers, traffic, and construction activity. Over the long-term, however, impacts would be less than those from the proposed action, though reductions in statewide employment and income could increase pressure on fish through sport, commercial, and subsistence fishing.</p> <p><i>Cumulative Impacts:</i> Impacts to fish would be reduced after TAPS termination and as North Slope oil development and production declined. The potential for accidental spills would decline on the North Slope, along the TAPS, and from tankers in Prince William Sound and Pacific transportation routes, as would the potential for introduction of nonnative organisms from tankers in Prince William Sound.</p>

**TABLE 2-1 (Cont.)**

Proposed Action (Renew for 30 Years)	Less-Than-30-Year Renewal Alternative (Renew for Less Than 30 Years)	No-Action Alternative (Do Not Renew)
<b><i>Birds and Terrestrial Mammals</i></b>		
<p><i>Action Impacts:</i> Impacts generally are anticipated to be local, affect only individual animals, and have no adverse impacts to populations. Population level impacts are considered very unlikely. They only would be anticipated from a very large spill or a spill that contaminated a crucial habitat in which a large number of animals were concentrated.</p>	<p><i>Action Impacts:</i> Impacts would be similar to those under the proposed action on an annual basis during the renewal period. Total impacts over the period of renewal would be comparable to a similar duration under the 30-year renewal alternative.</p>	<p><i>Action Impacts:</i> Small, localized impacts would be associated with termination activities. Following termination, habitat conditions along the TAPS would, over a matter of several years or several decades, return to those of adjacent lands.</p>
<p><i>Cumulative Impacts:</i> Impacts from many activities could be large in local areas but would be minor on the population level.</p>	<p><i>Cumulative Impacts:</i> Impacts for this renewal period would be similar to those under the proposed action, depending upon the level of North Slope petroleum activities. Thereafter, if an additional renewal period were approved, impacts would be similar to those described for the proposed action. If an additional renewal period were not requested or were not approved, then subsequent impacts would be similar to those described for no action.</p>	<p><i>Cumulative Impacts:</i> Indirect adverse impacts could potentially result if wild food was used to compensate for the loss of income (e.g., by increasing loss of wildlife through subsistence hunting). However, overall impacts, particularly on the North Slope, would be reduced because of the decline of oil development, production, and transportation activities.</p>

**TABLE 2-1 (Cont.)**

Proposed Action (Renew for 30 Years)	Less-Than-30-Year Renewal Alternative (Renew for Less Than 30 Years)	No-Action Alternative (Do Not Renew)
<b><i>Threatened, Endangered, and Protected Species</i></b>		
<p><i>Action Impacts:</i> Impacts are not expected to produce population-level effects that are distinguishable from natural variation in numbers, unless a low-probability, high-volume spill reached marine waters such as Prince William Sound. In the latter case, impacts may be moderate on the population level.</p>	<p><i>Action Impacts:</i> Impacts would be similar to those for the proposed action on an annual basis during the renewal period. Total impacts over the period of renewal would be comparable to a similar duration under the 30-year renewal alternative.</p>	<p><i>Action Impacts:</i> During termination, impacts on an annualized basis would be greater than those for the proposed action. Thereafter, impacts would be less than for the proposed action. Population-level impacts are not anticipated to be distinguishable from natural variation.</p>
<p><i>Cumulative Impacts:</i> Impacts are anticipated to be negligible to minor and are not anticipated to threaten population viability, unless a low-probability, high-volume spill from oil transportation occurred in Prince William Sound or along Pacific transportation routes. Such a spill might cause impacts that would be high on a local level and moderate on a local level.</p>	<p><i>Cumulative Impacts:</i> Impacts for this renewal period would be similar to those under the proposed action, depending upon the level of North Slope petroleum activities. Thereafter, if an additional renewal period were approved, impacts would be similar to those described for the proposed action. If an additional renewal period were not requested or were not approved, then subsequent impacts would be similar to those described for no action.</p>	<p><i>Cumulative Impacts:</i> Impacts on the North Slope and Prince William Sound would decline with declining oil exploration, development, and production. Removal of TAPS facilities might create temporary, minor impacts.</p>



**TABLE 2-1 (Cont.)**

Proposed Action (Renew for 30 Years)	Less-Than-30-Year Renewal Alternative (Renew for Less Than 30 Years)	No-Action Alternative (Do Not Renew)
<p><b>Economics</b></p> <p><i>Action Impacts:</i> North Slope oil production would make a substantial, though declining (14% by 2020), contribution to domestic oil production and would continue to reduce the need for foreign oil imports, thus improving national energy security and the overall balance of trade. Significant federal tax revenues would be generated with continued TAPS operations, together with marine and shipbuilding employment and employment in the economy as a whole. Gross state product, population, employment, personal income, and tax revenues would experience slow to moderate growth, though North Slope oil production and resultant employment and revenues would decline.</p> <p><i>Cumulative Impacts:</i> Overall cumulative impacts are reflected in the above discussion. Temporary, local negative cumulative economic impacts might occur during the construction of a gas pipeline and the National Missile Defense System (NMDS), because they would primarily test the capabilities of local services. No long-term or statewide negative cumulative impacts are anticipated. Anticipated positive economic impacts of these two projects likely would help to offset declines in economic activity expected to accompany reduced oil volumes transported through the TAPS over the coming decade.</p>	<p><i>Action Impacts:</i> With a shorter renewal period, investment in new North Slope production could be reduced, and that reduction could have economic repercussions at the local, state, and national levels. On the national level, TAPS contribution to oil production, energy security, the balance of trade, federal revenues, and marine and shipbuilding employment could be reduced, depending on prevailing economic conditions and the length of the renewal period. A shorter TAPS renewal period might reduce the prospect of further diversification of the Alaska economy by creating a riskier business climate. This condition would result in less predictable employment prospects, slower income growth, and slower growth in population. A shorter TAPS ROW renewal period would reduce the flow of funds into state and local governments, thereby reducing their ability to implement a wide range of programs requiring long operating lives.</p> <p><i>Cumulative Impacts:</i> Overall cumulative economic impacts are reflected in the above discussion. Construction and operation of a natural gas pipeline and the NMDS could help to offset the projected decline in oil throughput and revenues.</p>	<p><i>Action Impacts:</i> Reduction in economic activity would occur. A major source (17% currently) of U.S. oil production would stop production, with related impacts to national energy security, the balance of trade, and federal taxes. The gross state product and state revenues would drop substantially following the end of oil production in 2003; gross state product would not recover to 2003 levels in the following three decades. Impacts on employment and personal income in the state would be substantial, but less severe. Growth would be expected in both of these measures over the period 2004–2034, especially during the second half of that period, but it would be substantially less than under the proposed action.</p> <p><i>Cumulative Impacts:</i> Overall cumulative impacts are reflected in the above discussion. Construction and operation of a natural gas pipeline and the NMDS could help to offset the projected decline in oil throughput and revenues.</p>

**TABLE 2-1 (Cont.)**

Proposed Action (Renew for 30 Years)	Less-Than-30-Year Renewal Alternative (Renew for Less Than 30 Years)	No-Action Alternative (Do Not Renew)
<b>Subsistence</b>		
<p><i>Action Impacts:</i> TAPS renewal for 30 years would have small impacts on subsistence.</p>	<p><i>Action Impacts:</i> There would be smaller impacts to subsistence under the less-than-30-years alternative than in the proposed action. Total impacts over the period of renewal would be comparable to a similar duration under the 30-year renewal alternative.</p>	<p><i>Action Impacts:</i> Adoption of the no-action alternative would result in a slight improvement in subsistence.</p>
<p><i>Cumulative Impacts:</i> There would be low impacts on subsistence, except on the North Slope where impacts would be moderate. Subsistence hunting and fishing, particularly on the North Slope (and, to a lesser extent, in Interior Alaska) could be negatively impacted, primarily as a result of restrictions in areas where subsistence can be pursued and as a result of possible disruptions to the movement of subsistence resources from human presence and activities. However, both of these main impacts are not anticipated to be severe, with restricted access affecting relatively small portions of large subsistence harvest areas and with changes in animal movement patterns often temporary and usually affecting only a relatively few individual animals. Contributions from the TAPS to these cumulative impacts are expected to be relatively small.</p>	<p><i>Cumulative Impacts:</i> Impacts for this renewal period would be similar to those under the proposed action, depending upon the level of North Slope petroleum activities. Thereafter, if an additional renewal period were approved, impacts would be similar to those described for the proposed action. If an additional renewal period were not requested or were not approved, then subsequent impacts would be similar to those described for no action.</p>	<p><i>Cumulative Impacts:</i> Certain impacting factors in different local areas would be different from those described under the proposed action (e.g., reduced employment, reduced competition from sport hunting and recreation, increased need for resources, removal of barriers), but the overall cumulative effect might be the same.</p>

**TABLE 2-1 (Cont.)**

Proposed Action (Renew for 30 Years)	Less-Than-30-Year Renewal Alternative (Renew for Less Than 30 Years)	No-Action Alternative (Do Not Renew)
<b>Sociocultural Systems</b>		
<p><i>Action Impacts:</i> The proposed action would contribute to continued change in Alaska Native and rural non-Native sociocultural systems that likely would be small.</p>	<p><i>Action Impacts:</i> Impacts would be similar to those for the proposed action on an annual basis during the renewal period. Total impacts over the period of renewal would be comparable to a similar duration under the 30-year renewal alternative.</p>	<p><i>Action Impacts:</i> The overall impacts of the no-action alternative on sociocultural systems would likely be negative and sufficiently large to be detectable. Short term impacts would occur during termination.</p>
<p><i>Cumulative Impacts:</i> In sociocultural systems founded on cooperation and subsistence, cumulative impacts might accompany their continued interaction with modern American society and the continued growth in the importance of a cash economy. However, these changes are largely a part of changes occurring throughout Alaska and are not attributable solely to cumulative actions considered in this EIS. The contribution of the TAPS to these cumulative impacts would be relatively small.</p>	<p><i>Cumulative Impacts:</i> Impacts for this renewal period would be similar to those under the proposed action, depending upon the level of North Slope petroleum activities. Thereafter, if an additional renewal period were approved, impacts would be similar to those described for the proposed action. If an additional renewal period were not requested or were not approved, then subsequent impacts would be similar to those described for no action.</p>	<p><i>Cumulative Impacts:</i> Impacts of the same type and substantially similar in degree as those under the proposed action.</p>
<b>Cultural Resources</b>		
<p><i>Action Impacts:</i> Mitigation measures should adequately address possible impacts from routine operations. The risk of impact to cultural resources, therefore, is low because the chance of a large oil spill that could impact these resources is low.</p>	<p><i>Action Impacts:</i> Impacts would be similar to those for the proposed action on an annual basis during the renewal period. Total impacts over the period of renewal would be comparable to a similar duration under the 30-year renewal alternative.</p>	<p><i>Action Impacts:</i> Mitigation measures should adequately address impacts from termination activities and from the dismantlement and removal of the TAPS, which may be determined eligible for listing on the National Register of Historic Places (NRHP). Impacts from oil spills would be much lower than those under the other alternatives.</p>
<p><i>Cumulative Impacts:</i> Negative cumulative impacts to cultural resources are expected to be absent or negligible, in part as a result of adhering to existing state and federal regulations on such resources during project development and operation.</p>	<p><i>Cumulative Impacts:</i> Impacts for this renewal period would be similar to those under the proposed action, depending upon the level of North Slope petroleum activities. Thereafter, if an additional renewal period were approved, impacts would be similar to those described for the proposed action. If an additional renewal period were not requested or were not approved, then subsequent impacts would be similar to those described for no action.</p>	<p><i>Cumulative Impacts:</i> Cumulative impacts to cultural resources are expected to be absent or negligible, in part, as a result of adhering to existing state and federal regulations on such resources during project development and operation.</p>

**TABLE 2-1 (Cont.)**

Proposed Action (Renew for 30 Years)	Less-Than-30-Year Renewal Alternative (Renew for Less Than 30 Years)	No-Action Alternative (Do Not Renew)
<b>Land Uses and Coastal Zone Management</b>		
<p><i>Action Impacts:</i> Under the proposed action, there could be some access and use conflicts with private land holders, temporary noise impacts on recreationists from TAPS construction work, and impacts from spills (of varying degrees, depending on volume, timing, duration, and location) on other users of the area along the TAPS. There would be no conflict with coastal management programs (CMPs).</p>	<p><i>Action Impacts:</i> Impacts would be similar to those for the proposed action on an annual basis during the renewal period. Total impacts over the period of renewal would be comparable to a similar duration under the 30-year renewal alternative.</p>	<p><i>Action Impacts:</i> Termination activities may temporarily impact recreation uses near the TAPS. After termination, there would be no impacts. There would be no conflict with CMPs.</p>
<p><i>Cumulative Impacts:</i> Negative cumulative impacts on land use are anticipated to be minor. Negative cumulative impacts similarly are anticipated to be minor both on the North Slope and in Prince William Sound. The contribution of TAPS operation to these cumulative impacts is expected to be relatively small. However, an oil spill to marine waters from marine transportation or from oil production could impact implementation of CMPs.</p>	<p><i>Cumulative Impacts:</i> Impacts for this renewal period would be similar to those under the proposed action, depending upon the level of North Slope petroleum activities. Thereafter, if an additional renewal period were approved, impacts would be similar to those described for the proposed action. If an additional renewal period were not requested or were not approved, then subsequent impacts would be similar to those described for no action.</p>	<p><i>Cumulative Impacts:</i> The reduced economic activity as a result of the shutdown of the TAPS would result in less commercial, municipal, and residential development. There would be no conflict with CMPs.</p>

**TABLE 2-1 (Cont.)**

Proposed Action (Renew for 30 Years)	Less-Than-30-Year Renewal Alternative (Renew for Less Than 30 Years)	No-Action Alternative (Do Not Renew)
<p><b>Recreation, Wilderness, and Aesthetics</b></p>		
<p><i>Action Impacts:</i> Under the proposed action, restrictions on recreational use of the ROW; noise from associated TAPS road and air traffic; the visual impact of the pipeline, pump stations, and the Valdez Marine Terminal; and the risk of an oil spill creating local temporary, and possibly long-term, impact on recreation, aesthetics, and (less likely) wilderness values would continue for 30 years.</p>	<p><i>Action Impacts:</i> Impacts would be similar to those for the proposed action on an annual basis during the renewal period. Total impacts over the period of renewal would be comparable to a similar duration under the 30-year renewal alternative.</p>	<p><i>Action Impacts:</i> Termination activities would impact recreational opportunities, aesthetics, and, to a lesser extent, wilderness. Following termination, aesthetics would return to a state similar to that prior to construction of the pipeline. The recreational experience would change to the extent that opportunities to learn about the TAPS would have been removed and a less developed landscape along the current TAPS ROW would be presented.</p>
<p><i>Cumulative Impacts:</i> Construction of a gas pipeline parallel to the TAPS, of other anticipated facilities near the TAPS, and of additional oil and gas facilities on the North Slope, as well as potential oil and gas spills could impact recreation, aesthetic, and wilderness values. Construction impacts would be short term, but the presence of these structures and spills could result in long-term impacts. Long-term aesthetic impacts along the TAPS may be major.</p>	<p><i>Cumulative Impacts:</i> Impacts for this renewal period would be similar to those under the proposed action, depending upon the level of North Slope petroleum activities. Thereafter, if an additional renewal period were approved, impacts would be similar to those described for the proposed action. If an additional renewal period were not requested or were not approved, then subsequent impacts would be similar to those described for no action.</p>	<p><i>Cumulative Impacts:</i> Impacts would be similar to those under the other alternatives except that the recreation, visual, and wilderness impacts associated with the TAPS may not last as long.</p>

