

5.21 SHORT-TERM USE VERSUS LONG-TERM PRODUCTIVITY OF THE ENVIRONMENT

Proposed gas pipeline construction and operation would require short-term and long-term uses of land and other resources. Short-term would be considered for the duration of the construction period, and long-term would be for the life of the proposed Project (30 years). This section examines and compares the proposed Project's potential short-term uses of the environment to the maintenance and enhancement of long-term environmental productivity.

5.21.1 Applicable Regulations

The National Environmental Policy Act (NEPA) states in Section 102 (42 United States Code [U.S.C.] § 4332) that all agencies of the Federal Government shall:

(C) include in every recommendation or report on proposals for legislation and other major Federal actions significantly affecting the quality of the human environment, a detailed statement by the responsible official on –

(iv) the relationship between local short-term uses of man's environment and the maintenance and enhancement of long-term productivity, and...

This portion of the NEPA recognizes that short-term uses and long-term productivity of the environment are linked and that opportunities acted upon have corollary opportunity costs in relation to foregone options and productivity that could have continuing effects well into the future. This section examines short-term uses and long-term productivity together, according to resource area. Sections 5.1 through 5.18 describe specific impacts to resource areas.

5.21.2 Short-Term Uses and Long-Term Productivity

The relationship between short-term uses and long-term productivity would not be appreciably different for the proposed Project and Denali National Park Route Variation. There would be no effect on short-term uses and long-term productivity under the No Action Alternative. However, opportunities to include multi-use paths in the proposed Project design, to address issues raised during public scoping, would not occur as a benefit to recreation under the No Action Alternative.

5.21.2.1 Land Use

Construction of the proposed gas pipeline would convert undeveloped land and land used or planned for public recreation, wildlife habitat, low-density residential development, light industrial uses, agriculture, timber harvesting, and mining to a pipeline right-of-way (ROW). As allowable land uses generally permitted within the permanent ROW would include agriculture, including the use of farming equipment and the cultivation of row crops, and pastureland, impacts to

these agricultural lands would generally be limited to the duration of proposed Project construction and would not be expected to result in any long-term changes to land productivity.

The proposed Project has the potential to affect developed land by exposing residences or commercial/industrial buildings located near the proposed Project ROW to dust and noise primarily during construction. Sections 5.15 and 5.16 discuss effects related to dust and noise, respectively. In addition to noise and dust effects, the proposed Project has the potential to affect developed areas by hindering short- or long-term land uses on lands within or in near proximity to the ROW. Some current land uses would be converted to long-term utility use for the life of the proposed Project; this could alter productivity depending on the current land use. For example, long-term conversion would put permanent constraints on development of private land. To facilitate pipeline integrity management and safety inspection activities, the Alaska Gasline Development Corporation (AGDC) would not permit permanent structures that are not easily removed to remain on the permanent ROW. No dwellings could be placed within the permanent ROW (52 feet on federal lands and 30 feet on state/private lands), which would be maintained in an open condition for the life of the pipeline.

As described in Section 5.9, Land Use, timber acreage would be affected by the proposed Project within the federal and state planning areas intersected by the ROW. After proposed Project construction, those timber areas outside of the proposed Project permanent facilities (i.e., permanent ROW, new access roads, and aboveground facility footprints) would be allowed to revert to pre-project condition. Timber resources would not be restored within the proposed Project's permanent footprint; therefore, there would be a long-term loss or alteration of forest land use to herbaceous areas or grasslands in these areas. The volume of commercial timber within areas that would be cleared for the proposed Project ROW has not been quantified by a timber survey.

As described in Section 5.11, Visual Resources, construction of the proposed Project could result in short-term adverse effects on tourism and recreation, primarily attributed to a general decline in recreation quality and restricted access in proximity to the pipeline route. These impacts are of particular concern during the peak recreation seasons, including salmon fishing in the spring and early summer and big game and waterfowl hunting in the fall. However, such impacts would be localized along the pipeline route and would only last as long as the duration of construction in any one area. A permanent ROW would be required (i.e., 52-foot ROW on federal lands and 30-foot ROW on all other lands); however, because the pipeline would be located underground, there would be no impacts on access to recreation features located along the pipeline corridor and all existing public access points would be retained. No new public vehicular access routes would be required for proposed Project operations, although there could be opportunities to include multi-use paths in the proposed Project design to address issues raised during public scoping. This would be a recreation benefit to the region.

5.21.2.2 Water Resources

As described in Section 5.2, Water Resources, construction of the proposed Project would result in short-term disturbances to surface water and floodplains. The proposed Project would require a total of 1.09 billion gallons of surface water for construction ice workpads, ice access road construction, ice armoring of snow roads, earthwork (dust control and compaction), hydrostatic testing of the pipeline, and HDD crossing operations. Additional water will be needed for cleanup of equipment at camps and material sites, and construction camp usage. Use of surface water may result in alteration of surface water hydraulics or a new groundwater recharge area. Any altered hydraulics due to use of surface water for construction purposes would disappear after construction is complete.

Wetlands and surface waters that would be disturbed during construction would not recover in the short-term, and long-term productivity related to those resources could be lost. After construction has been completed, the temporary construction ROW would, over time, revert to wetlands similar in type and function to those that existed prior to construction. Forested wetlands would require more time to reestablish than shrub or herbaceous wetlands. The permanent ROW would also support wetland vegetation and characteristics, but would be altered in the long-term by maintenance and inspection activities. Vegetation height and density would be limited, and forested wetlands would be converted to shrub wetlands within the permanent maintained ROW. These changes would be long-term, lasting for the life of the proposed Project and beyond. The acres of wetlands for each pipeline segment that would be impacted within the temporary construction ROW and permanent ROW are identified by hydrogeomorphic composition in Section 5.4, Wetlands.

Excavation in a waterbody during pipeline installation, permanent facility construction, or access road construction might result in erosion within a streambed, causing a short-term increase in sediment loading of surface water, or contamination of surface water due to excavation equipment refueling leaks. After construction has been completed, it is assumed the streambed would revert to pre-construction conditions. Features of the proposed Project would result in other minor and short-term impacts to surface water, floodplains, and groundwater, as described in Section 5.2, Water Resources. However, the addition of new bridges may result in increased scour and erosion over the long-term due to altered hydraulics, leading to a long-term increase in sediment loading in surface water.

Placement of fill for pipeline or aboveground facility installation may result in a reduction in flood storage capacity (if within a floodplain). This could cause increased upstream stages due to backwater effects. Short-term disturbance would be limited to construction impacts. Construction of the proposed Project is not expected to cause long-term effects on stream flow, stream profile, or structural components of streams or waterbodies, as described in Section 5.2, Water Resources.

5.21.2.3 Biological Resources

Proposed Project construction would result in some short- and long-term impacts to plant communities and fish and wildlife resources. Several federally protected species under the jurisdiction of the U.S. Fish and Wildlife Service (USFWS) and National Marine Fisheries Service (NMFS) were identified that could be potentially affected by the proposed Project. No species listed by the Endangered Species Act (ESA) under jurisdiction of the NMFS were found to be potentially affected by the proposed Project; however one species protected by the Marine Mammal Protection Act, the polar bear, occurs within the proposed Project area.

During construction, vegetation would be removed in the footprint of the proposed pipeline, which includes the construction ROW, access roads, and associated aboveground facilities, and potentially in some staging areas. Plant communities in those areas would be considerably altered. Vegetation loss and/or changes would be short-term in some areas and long-term in others, depending on the type of vegetative cover. As described under Water Resources, vegetation in the permanent ROW would be permanently altered by maintenance and inspection activities. Natural recovery and assisted restoration of vegetation would take place outside the permanent ROW after construction activities ceased. However, some vegetation, such as forests, would require from 25 to 150 years to regenerate, which would be considered a permanent conversion and long-term habitat loss even with restoration. The largest potential impacts along the route would include clearing of up to approximately 10,507 acres of vegetation within the construction ROW and for aboveground facilities and access roads.

As described in Section 5.5, Wildlife, most of the proposed Project (85 percent) falls within four game management units (GMUs): 20, 26, 24, and 13. Habitats crossed by the proposed Project support a diversity of wildlife, including big game animals, small game animals and furbearers, waterfowl and game birds, and many other nongame animals. In general, construction-related impacts to wildlife would include long-term habitat loss; long- and short-term habitat alteration and fragmentation; direct mortality during construction and operation; altered hunting mortality patterns due to altered human access; indirect mortality because of stress or avoidance of feeding due to exposure to construction and operations noise, low-level helicopter or airplane monitoring over flights, and from increased human activity; reduced breeding success from exposure to construction and operations noise; reduced survival or reproduction due to decreased abundance of forage species or reduced cover; and altered survival, mortality, or reproduction due to exposure to equipment fuel or lubricants spilled during construction or maintenance. Construction would occur mostly during the winter months or along existing and disturbed corridors. Timing windows for construction would also be required to further mitigate any short- and long-term impacts.

Construction within the mainline and Fairbanks Lateral ROW (including TEWs) would result in removal or modification of about 8,575 acres of wildlife habitats; vegetation cover would be reestablished within the ROW after construction. Trees would not be allowed to reestablish over the pipeline, and because of the time required for regrowth of mature forests, conversion of forested habitats to herbaceous or scrub shrub would be considered a permanent habitat impact, and could result in resource productivity alternations. Forest nesting and burrow

habitats for red squirrels and birds would be lost. However, clearing forest in some areas would allow for establishment of shrubs and forbs that could provide forage for moose and bears; this would be a change in productivity. Construction of the segment from Willow to the extraction plant would result in fragmentation of forested habitats and would open a travel corridor that would likely facilitate hunter access in this area, leading to additional changes in productivity.

As described in Section 5.8, Threatened and Endangered (T&E) Species, federally protected threatened or endangered species and federal candidate species with the potential to occur in the proposed Project area include nine marine mammals (bearded seal, bowhead whale, Cook Inlet beluga whale, fin whale, humpback whale, Pacific walrus, ringed seal, polar bear, and Steller sea lion), one terrestrial mammal (wood bison), four birds (Eskimo curlew, Spectacled eider, Steller's eider, and yellow-billed loon) and two fish species (Chinook salmon and Steelhead trout ESUs). The analysis presented in Section 5.8, T&E Species concluded that short-term disturbance could occur to several of these species, but effects would not be long-term adverse.

Primary direct effects to fisheries from proposed Project construction and operation would include increased erosion and sedimentation from removal of riparian vegetation, loss or alteration of stream and riparian habitats due to placement of structures, alteration of stream and wetland hydrology, and blockage of movements. Placement of the buried pipeline across specific fish-bearing streams during construction is likely to have the greatest potential effect to the fishery resources of the proposed Project area. Pipeline construction would most likely cause short-term disturbances to fishery resources. The extent of impacts would depend on the alternative and type of crossing. Long-term impacts resulting in changes to productivity are not expected.

5.21.2.4 Air Quality

Section 5.16, Air Quality, describes estimated emissions that would result from construction and operation of the proposed Project. Air quality effects associated with construction of the proposed Project mainline would include emissions from fossil-fuel fired construction equipment, fugitive dust, and open burning. Because pipeline construction moves through an area relatively quickly, air emissions typically would be localized, intermittent, and short-term. Emissions from construction equipment combustion, fugitive dust, and open burning would be controlled to the extent required by the Alaska Department of Environmental Conservation (ADEC). The proposed Project emissions from mainline construction-related activities would not significantly affect local or regional air quality over the long-term.

Over the long-term, the proposed Project would have a beneficial effect on air quality in the Fairbanks area, which currently is in non-attainment status for particulates due to the use of oil, coal, and wood for home heating. The Fairbanks Lateral (a component of the proposed Project) would deliver 60MMscfd of natural gas for use in the Fairbanks area. A pipeline distribution system and possibly new facilities that compress natural gas for distribution by storage tanks would be required. Conversion or retrofit of power generation and heating facilities could also

take place to allow for burning of natural gas. Replacement of existing fuels with cleaner burning natural gas could improve overall air quality in the Fairbanks area.

5.21.3 Conclusion

The short-term use of a resource versus the preservation of its long-term use or productivity considers converting the renewable nature of a resource (e.g., land, water, habitat, air) to a developed use that can have relatively short economic life. Generally, short-term refers to the useful life of the project. Long-term refers to the time beyond the lifetime of the project. Impacts that narrow the range of beneficial uses of the renewable resources are usually of primary concern as discussed in the above sections. For a complete discussion on the direct and indirect impacts of the proposed Project on all resources, please see Sections 5.1 through 5.20 of this document.