17. SHORT-TERM USE VERSUS LONG-TERM PRODUCTIVITY OF THE ENVIRONMENT

Proposed rail line construction and operations would require short-term uses of land and other resources. This chapter examines and compares the project's potential short-term uses of the environment to the maintenance and enhancement of long-term environmental productivity.

17.1 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 —

> *(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,…*

This portion of 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 chapter examines short-term uses and long-term productivity together, according to resource area. Chapters 3 through 16 describe specific impacts to resource areas.

17.2 Short-Term Uses and Long-Term Productivity

The relationship between short-term uses and long-term productivity would not be appreciably different from one alternative to another.

17.2.1 Land Use

Construction of the proposed rail line 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 freight rail operations. Productivity loss for soils would be limited to the areas disturbed by land clearing, grading, and construction. It is unlikely that the proposed rail line railbed would ever be returned to its current use and condition, so effects on soils and some land uses would be permanent. The Surface Transportation Board's Section of Environmental Analysis (SEA) estimates that about 2 acres of agricultural land could be directly affected. This minimal loss of agricultural land would not adversely affect long-term agricultural productivity.

Proposed rail line construction would likely alter recreational access due to closure of unofficial trails crossed by the proposed ROW; however, trail users could utilize other official trails in response to trail closings. ARRC does not propose to provide crossings for unofficial trails. Unofficial trails would be blocked and ARRC's trespassing regulations would prohibit the public

from crossing of the ROW without first obtaining approval from ARRC. The rail line could alter access to and along public and navigable water bodies with access rights reserved through Alaska Statute 38.05.127 (as described in Title 11 Alaska Administration Code 51.045), which would result in a change to recreational access patterns to certain waters. Because access points are numerous, SEA anticipates that users would identify an alternative location for recreational access to navigable and public waters that is not affected by the proposed rail line. The rail line, grade embankment, and vegetation removal could affect wildlife movement. The embankment could affect the hydrological features of the landscape; however, the Alaska Railroad Corporation (ARRC) would design and construct the proposed rail line to maintain natural water flow and drainage patterns to the extent practicable to minimize long-term maintenance and provide for fish passage. Therefore, SEA would not expect use of sport fishing to decrease as a result of the project. New, 180-foot communication towers for rail line operation could alter the localized movement of recreational aircraft.

17.2.2 Water Resources

Construction of the proposed rail line would result in short-term disturbances to surface water and groundwater resources, and to floodplains. There would be minimal consumption of surface water and groundwater resources during the construction process. Wetlands and waters that would be filled would not recover in the short term, and long-term productivity related to those resources would be lost. The loss of functions and values (such as erosion and flood control, water-supply replenishment, water-quality protection, aquatic-habitat maintenance; and aesthetic appreciation and recreational opportunities) in filled wetlands would affect long-term productivity. Rail line construction and operations impacts to wetlands would vary by project alternative and could range from 188 acres to 478 acres. The intensity of potential impacts to wetlands would be a function of not only the portion of wetland filled but of the sensitivity and importance of the affected wetland and the value of the adjacent habitat the proposed rail line would fragment. Wetlands excavated for fill material would likely be converted to surface waters, but could eventually return to wetlands. Wetlands filled during construction would likely not return to wetlands without restoration efforts.

Potential long-term effects to productivity from the proposed rail line could result where the railbed or access roads would be near or adjacent to waterbodies. Spring ice break-up, snowmelt, and rainstorms could affect water quality through increased transport of fine-grained sediments; increased concentrations of pollutants that could alter waterbody chemistry and pH; and fugitive dust from rail operations and vehicle use of access roads. Bridges and culverts could change channel hydraulics and impact water quality due to increased sediment transport loads and increased sedimentation. Features of the proposed rail line would result in other minor impacts to surface waters and groundwater, as described in Chapter 4, Water Resources.

Proposed rail line construction and operations activities could result in long-term effects to groundwater movement through changes in infiltration and recharge rates due to compaction of the overlying soil. These effects would be limited to the footprints of the rail line, facilities, access roads, and staging areas.

The proposed project would include the construction of bridge abutments and, embankments within floodplains. These features would reduce the cross-sectional area available for flood

storage and conveyance of flood flows, but the size of this area would be extremely small in relation to the overall floodplain area and would not affect long-term productivity of the area.

17.2.3 Biological Resources

Proposed rail line construction would result in some short- and long-term impacts to plant communities and fish and wildlife resources. Other than the Cook Inlet beluga whale, there are no Federal- or state-protected threatened, endangered, or candidate plant or animal species in the project area. There are no rare plants or vegetation communities of conservation concern in the project area.

During construction, vegetation would be removed within the 200-foot (ROW) and potential for some staging areas, and plant communities in those areas would be considerably altered. Vegetation loss would be short term in some areas and long term in others, depending on the type of vegetative cover. Natural recovery and assisted restoration of vegetation would take place in some areas in the project area after construction activities ceased. However, some vegetation, such as forests, would require from 70 to 200 years to regenerate, which would be considered a long-term habitat loss, even with restoration. Potential impacts along the longest potential route would include clearing of up to approximately 1,272 acres of vegetation within the ROW, of which approximately 941 acres is forest vegetation. The shortest possible route would involve approximately 930 acres of vegetation, of which approximately 678 acres is forest.

Rail line and facilities construction would result in short-term disturbance in Alaska Department of Fish and Game Game Management Subunits 14A and 14B. In general, construction-related impacts to wildlife would include habitat loss, alteration, and fragmentation; decrease in breeding success from exposure to construction noise and from increased human activity; and direct mortality from project construction. Specifically, habitat loss from project alternatives would result in reduced habitat for approximately five to seven moose, which would likely be of no consequence to the existing moose population, and therefore would not result in any long-term impacts to the moose population. Moose-train collisions from operations on the proposed rail line would kill an estimated average of three to four moose per year. When operation of increased train traffic on the ARRC main line as a result of the proposed project is also considered, the estimated total increase in moose-train collision mortality would be six to seven moose per year, on average (see Section 5.3).

There would be additional short-term disturbance and intentional harassment of wildlife like bears and moose by hazing for the protection of workers and equipment during construction. Impacts to habitat, including loss, alteration, and fragmentation, initiated with project construction would continue through project operations. Specific impacts to wildlife would include direct mortality from collisions with construction vehicles, trains, power lines, and communications towers. Proposed rail line construction would result in localized impacts to fish populations during the construction period.

Potential indirect rail line construction- and operations-related impacts to the endangered beluga whale would include impacts to fish forage resources due to rail line stream crossings and potential impacts to beluga whale presence in the waters off Port MacKenzie due to induced

noise and disturbance from increased ship traffic. SEA has determined that with implementation of avoidance and minimization measures, rail line construction and operations *may affect, but is not likely to adversely affect* the Cook Inlet beluga whale (see Appendix H).

Primary direct effects to fisheries from rail line construction and operations would include increased erosion and sedimentation from removal of riparian vegetation, and loss or alteration of stream and riparian habitats due to placement of structures, alteration of stream and wetland hydrology, and blockage of movements. The extent of impacts would depend on the alternative and type of crossing.

17.2.4 Air Quality

Chapter 8, Climate and Air Quality, describes estimated emissions that would result from construction and operation of the proposed rail line. Estimated emission totals for volatile organic compounds, carbon monoxide, and particulate matter with an aerodynamic diameter equal to or less than 10 or 2.5 microns are well below the *de minimis* conformity thresholds of 100 tons per year for each pollutant. The estimated increases in emissions from rail line construction and operations would be minimal in the context of existing conditions and any potential impacts to climate and air quality would be low under any of the alternatives evaluated (see Chapter 8, Table 8-4). Over the long term, the project could have a beneficial effect on air quality to the extent that commodities from Interior Alaska that would be transported to Port MacKenzie over the proposed rail line would otherwise be transported to the Ports of Anchorage or Seward, emissions associated with rail line transport of those commodities would be reduced because of the shorter rail haul distance.