

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

Construction and operation of the proposed Northern Rail Extension (NRE) would require short-term uses of land and other resources. This chapter examines and compares the potential short-term impacts of the project on the environment with the maintenance and enhancement of long-term environmental productivity.

18.1 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,...

This portion of the NEPA regulations recognizes that short-term uses and long-term productivity of the environment are linked, and that opportunities that are acted upon have corollary opportunity costs in terms of foregone options and productivity that could have continuing effects well into the future. The following discussion examines short-term uses and long-term productivity together, according to resource categories. Specific impacts of the proposed project on resources are described in Chapters 3 through 17.

18.2 Short-Term Uses and Long-Term Productivity

The relationships between short-term uses and long-term productivity would not be appreciably different from one alternative segment to another, but instead, come largely from whether the project is constructed.

18.2.1 Land Use

Construction of the NRE would convert mostly undeveloped lands into industrial rail operation. Productivity loss for soils would be limited to the disturbed areas affected by land clearing, grading, and construction. It is unlikely that the proposed railbed would ever be dismantled, and effects on soils and some land uses would be permanent. It is estimated, however, that only 2 acres of the route is currently used for agricultural purposes. This minimal loss would not affect long-term agricultural productivity.

Construction of the NRE would likely restrict access to State of Alaska resources west of the Tanana River, including fish, wildlife, wild plants and berries, timber, minerals, and gravel. Specifically, there could be long-term changes in hunting patterns in the area because

construction of the rail line would create a limited number of crossing points, thereby limiting access to some hunting areas. Increased and potentially differential mortality rates of migratory versus resident moose populations from moose-train collisions could result in reduced moose productivity in the area, which could eventually lead to changes in hunter activity.

18.2.2 Water Resources

Construction of the proposed NRE would result in short-term disturbances to surface water and groundwater resources, and to the floodplain. 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. Construction of the project would adversely affect an estimated 185 acres of wetlands resulting from borrow pit excavation for all proposed alignments, and a maximum of approximately 946 acres for construction of the rail segments. Wetlands that are excavated for fill material would likely be converted to surface waters, but could eventually return to wetlands. Wetlands that are filled during construction would likely not return to wetlands without restoration efforts.

Surface water and groundwater would be used in the construction process. The project area contains significant water resources, and the short-term impacts on water resources from the proposed NRE would have minimal long-term effects on productivity. Potential long-term effects on productivity could result from railbeds or access roads diverting, impounding, or impeding surface and shallow subsurface water movement. No estimates of water uses (rates and volumes) have been generated, but water withdrawal for construction would likely have moderate short-term (seasonal) impacts on the stage (water level) of smaller streams, with a lesser short-term effect on larger watercourses, and no long-term effects. The features of the rail line would have other minor impacts on surface waters and groundwater, as described in Chapter 4, Water Resources.

The project would include the construction of bridge footers, embankments, revetments, and other facilities within the floodplain of the Tanana River. These features would reduce the cross-sectional area available for flood storage and conveyance of flood flows, but the amounts would be extremely small in relation to the overall floodplain area and would not affect long-term productivity of the area.

18.2.3 Biological Resources

Construction of the proposed rail line would result in some short-term and long-term impacts to plant communities and fish and wildlife resources. 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 in the 200-foot right-of-way and workspaces, 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. For example, vegetation loss would be short term in edge habitats between the road and rail embankments owing to natural post-construction revegetation. Natural recovery and assisted restoration of vegetation would take place in some areas in the project area after construction activities had ceased. However, some areas stripped of vegetation, such as forest and riparian vegetation, would require from 70 to 200 years to regenerate, which would be considered long-

term habitat loss, even with restoration. Impacts on the longest potential route would include approximately 3,570 acres of vegetation cleared for the right-of-way, of which approximately 2,330 acres is forest vegetation. The shortest possible route would involve clearing approximately 3,080 acres of vegetation, of which approximately 2,320 is forest.

Construction of the rail line and facilities would result in short-term disturbance along the approximately 80-mile alignment in the Alaska Department of Fish and Game's Game Management Units 20A, 20B and 20D. In general, construction-related impacts on 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. There would be additional short-term disturbance and intentional harassment for the protection of workers and equipment during construction. In rare events, some animals, most likely bears and moose, could be killed to defend workers and property. Habitat impacts, including loss, alteration, and fragmentation, initiated with project construction would continue through project operations and maintenance. Specific impacts to wildlife would include direct mortality from collisions with trains, power lines, and communication towers. Construction of the project would have localized impacts on fish populations during the construction period. None of these impacts is expected to affect long-term productivity of the environment.

18.2.4 Air Quality

Chapter 8, Climate and Air Quality, describes estimated construction emissions (see Table 8-4), and shows that volatile organic compounds carbon monoxide, particulate matter less than 10 or 2.5 microns would all have slightly elevated levels during the construction phase while machinery is operating. Table 8-5 lists estimated annual average emissions from rail line operations and shows that nitrogen oxides and sulfur dioxide would have slightly elevated levels compared to that of construction emissions. These emission totals for each of the pollutants are well below the *de minimis* conformity thresholds of 100 tons per year for each pollutant, and these estimated increases in emissions from rail line construction and operations would be minimal in the context of existing conditions. The project could have a beneficial impact on air quality over the long term by reducing the number of vehicles using Richardson Highway.