



# Izembek

## National Wildlife Refuge

### Land Exchange/Road Corridor

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*Final Environmental Impact Statement*

## Appendix F Mitigation Measures





## **U.S. Fish and Wildlife Service Mission Statement**

*The Mission of the U.S. Fish & Wildlife Service is working with others to conserve, protect and enhance fish, wildlife, plants and their habitats for the continuing benefit of the American people.*



## **Refuge System Mission Statement**

*The Mission of the National Wildlife Refuge System is to administer a national network of lands and waters for the conservation, management, and where appropriate, restoration of the fish, wildlife, and plant resources and their habitats within the United States for the benefit of present and future generations of Americans.*

*—National Wildlife Refuge System Improvement Act of 1997*

**APPENDIX F**  
**Mitigation Measures**

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## Introduction

Mitigation measures proposed in this EIS are from:

- the Omnibus Public Land Management Act of 2009 (Act);
- adopted from the King Cove Access Project EIS (2003 EIS), with minor modifications where appropriate; and
- additional recommended mitigation measures identified through the analysis process.

Many of the 2003 EIS mitigation measures are considered best management practices to address construction and operations impacts. Modifications were generally needed because of changes in authority or responsibility.

The enforceable mitigation plan, identified in the Act, would be developed after an alternative is selected, the Record of Decision is issued, and if the Secretary of the Interior determines the proposed land exchange is in the public interest.

The Act indicates the following direction for the mitigation plan:

(1) IN GENERAL – Based on the evaluation of impacts determined through the completion of the environmental impact statement under section 6402(b)(2), the Secretary, in consultation with the entities described in section 6402(b)(3)(B), shall develop an enforceable mitigation plan.

Mitigation is intended to avoid impacts to wildlife and to comply with Section 404 of the Federal Water Pollution Control Act to minimize impacts to wetlands. The Act also indicates the Secretary of the Interior may make corrective modifications to the plan.

Detailed descriptions of the mitigation measures and responsibilities for enforcement would be provided in that plan. See Chapter 2 (Section 2.7) for additional discussion of mitigation measures.

**Table 1: Mitigation Measures**

The following list of mitigation measures, for construction and operation activities identified in Alternatives 2-5, are displayed by resource categories, beginning with measures related to the physical environment, followed by those associated with the biological environment and the cultural environment. Mitigation measures in italics are paraphrased from the Act.

	<b>Mitigation Measure</b>	<b>Responsible Party</b>	<b>Timeframe</b>	<b>Likelihood of Effective Implementation</b>
<b>A</b>	<p><b>Erosion and Sediment Control Plan</b></p> <p>An erosion and sediment control plan will be incorporated into project plans and specifications. The goal of this plan is to prevent the degradation of freshwater or marine waters from project activities. Examples of techniques to accomplish this are the isolation of in-water work areas from open waters, treatment of unvegetated or recently cleared slopes to prevent erosion, proper installation and maintenance of sediment control fencing at the toe of fill slopes adjacent to wetlands. Soil stabilization practices will maximize the use of native plant species and will avoid the use of any seed mixtures that could result in the establishment of non-native or invasive plants in the project area.</p>	Applicant/ Corps/EPA	Construction period	Likely
<b>B</b>	<p><b>Storm Water Pollution Prevention Plan</b></p> <p>A plan showing appropriate temporary and permanent erosion and siltation controls will be prepared. All exposed soil and other fill will be permanently stabilized at the earliest practicable date.</p>	Applicant/ Corps/EPA	Construction	Likely
<b>C</b>	<p><b>Hazardous Material and Petroleum Product Control Plan</b></p> <p>Hazardous material and petroleum products will be handled in accordance with an approved Alaska Department of Environmental Conservation or the Environmental Protection Agency corrective action plan.</p> <p>A. The contractor will develop and implement a plan to address spill prevention, containment, cleanup, and disposal of hazardous waste material including petroleum products generated by construction equipment or activities, with the exception of fuel handling.</p> <p>B. The project applicant will develop and implement a plan that will be followed for any hazardous materials or petroleum products used or generated during operations and maintenance.</p>	State/Operator	Prior to Construction period	Likely
		State/Operator	Indefinitely	Likely

	Mitigation Measure	Responsible Party	Timeframe	Likelihood of Effective Implementation
<b>D</b>	<p><b>Fuel Handling and Spill Response Plan</b> Spill response supplies adequate in type and quantity for the equipment being used on the project shall be onsite and readily accessible at all times.</p> <p>A. The project applicant will develop and implement a fuel handling and spill response plan throughout project construction.</p>	State/Operator	Construction period	Likely
	<p>B. The project applicant will develop and implement a fuel handling and spill response plan for project operation.</p>	State/Operator	Indefinitely	Likely
	<p>C. At least 3 paired sets of heavy duty eyebolts suitable to anchor boom will be installed and maintained in the hovercraft ramps, at each ramp, in case of an oil or fuel spill</p>	Operator	Indefinitely	Likely
	<p>D. Fuel containment boom shall be deployed around marine vessels during refueling.</p>	Operator	Indefinitely	Likely
	<p>E. Spill containment structures to minimize fuel releases to soils during refueling of the hovercraft on land.</p>	Operator	Indefinitely	Likely
<b>E</b>	<p><b>Acid Rock Testing</b> Rock identified for potential use as infill of wetlands would undergo analytical testing to determine chemistry of the minerals, to mitigate the potential for acid rock drainage. The applicant or its contractor will coordinate with the Alaska Department of Transportation and Public Facilities, and the Alaska Department of Environmental Conservation to identify acid rock standards and suitability of materials for use as fill.</p>	Applicant/Contractor	Prior to Construction	Uncertain
<b>F</b>	<p><b>Geotechnical Studies</b> The applicant will conduct follow-up geotechnical studies to evaluate the intensity and extent of potential ground failure from an earthquake at the Lenard Harbor ferry terminal site and identify necessary engineering controls to abate the potential for catastrophic ground failure.</p>	Applicant	Prior to Construction	Likely
<b>G</b>	<p><b>Hydrologic/Structural Monitoring</b></p> <p>A. The applicant will need to monitor culverts and drainage structures for hydrologic and structural function post storm events and on an annual basis.</p> <p>B. Continuous monitoring of turbidity and storm event monitoring of hydrocarbons would occur upstream and downstream of stream crossing of fish bearing streams during construction and for 3 years post construction to ensure compliance with Alaska Department of Environmental Conservation water quality standards and Alaska Department of Fish and Game standards for fish bearing streams.</p>	State of Alaska	Post-construction, through life of the project	Uncertain (subject to available funds)

Mitigation Measure		Responsible Party	Timeframe	Likelihood of Effective Implementation
<b>H</b>	<p><b>Restoration Plan</b></p> <p>If damage to a stream occurs during construction or operation, restoration efforts will be conducted to ensure the water quality and functionality of the stream channel.</p>	State of Alaska	Indefinitely	Likely
<b>I</b>	<p><b>Hydro-Acoustic Assessment</b></p> <p>A hydro-acoustic assessment of the hovercraft would be implemented to validate the determination that underwater noise would “not likely adversely affect” marine mammals. The plan of study should be reviewed, modified if necessary, and approved by National Marine Fisheries Service, Service, and the Corps at least 45 days prior to the implementation of the study. The approved study plan would be implemented no later than 30 days after commencement of hovercraft operations. The applicant shall submit a draft plan of study at least 90 days prior to the commencement of hovercraft operations. The assessment will evaluate and measure the characteristics of underwater noise (wave frequency and intensity) from the hovercraft at varying distances as it is operated at varying speeds (stationary hover, normal operating speed, and maximum operating speed). A report documenting the collected information and findings of the assessment shall be provided the Corps, Service, and National Marine Fisheries Service within 90 days after the completed field measurements.</p> <p>As an alternative to implementing the hydro-acoustic assessment, if an offsite acoustic assessment is completed by others (e.g., the manufacturer) which thoroughly addresses the underwater acoustic signature relative to the same, or equivalent type of hovercraft, that assessment may be substituted for the onsite assessment upon acceptance of the study by the National Marine Fisheries Service and Service in coordination with the Corps.</p>	Applicant	During initial hovercraft operation	Uncertain (subject to available funds)
<b>J</b>	<p><b>Rare Plant Survey</b></p> <p>The applicant is responsible for the design and implementation of a rare plant survey and action plan, to identify the presence of rare plants occurring within construction areas. The survey design will be developed in cooperation with the Service.</p>	Applicant	Prior to Construction	Likely
<b>K</b>	<p><b>Invasive Species Management Plan</b></p> <p>The applicant is responsible for development of an invasive species plan to limit the spread of non-native plant species. The plan will be developed in cooperation with the Service.</p>	Applicant	Prior to Construction and through the life of the project	Likely

	Mitigation Measure	Responsible Party	Timeframe	Likelihood of Effective Implementation
L	<p><b>Mitigation of Wetland Loss</b></p> <p><i>The Mitigation Plan shall comply with section 404 of the Federal Water Pollution Control Act (33 U.S.C. 1344) with regard to minimizing, to the greatest extent practicable, the filling, fragmentation or loss of wetlands, especially intertidal wetlands, and shall evaluate mitigating effect of those wetlands transferred in Federal ownership ... .</i></p> <p>The enforceable mitigation plan will include actions required by the applicant that would be consistent with best management practices to satisfy Executive Order 11990 (Protection of Wetlands) and stipulations to ensure compliance with Section 404 of the <i>Federal Water Pollution Control Act</i> and the State of Alaska’s Title 16 authority for Fish Habitat and Special Area permitting.</p> <p>Purpose: To minimize the effect of the land exchange on wetland resources.</p>	State of Alaska/Corps	Construction period	Likely
M	<p><b>Fish and Wildlife Protection Plan</b></p> <p><i>Road construction shall adhere to any specific mitigation measures ... that identify critical periods during the calendar year when the refuge is utilized by wildlife, especially migratory birds; and include specific mandatory strategies to alter, limit or halt construction activities during identified high risk periods in order to minimize impacts to wildlife; and allow for the timely construction of the road.</i></p> <p>Purpose: To minimize the effect of construction on wildlife</p> <p>The project applicant will develop a comprehensive plan, consistent with the details of the enforceable mitigation plan that identifies specific measures to be implemented to protect important fish and wildlife resources during project construction and operation. This plan will be tailored to the specific alternative selected and will be submitted to the Corps, Service, and National Marine Fisheries Service 90 days prior to initiation of construction. The plan will address:</p> <p>A. Fisheries/Stream Crossings: These measures have the common goal of undertaking all appropriate and practicable measures to avoid or minimize impacts to fish and their habitats.</p> <p>i) Construction affecting fish streams will conform to the most current version of the Memorandum of Agreement between Alaska Department of Fish and Game and Alaska Department of Transportation and Public Facilities regarding streams and will occur during times specified by the Alaska Department of Fish and Game.</p> <p>ii) Structures for stream crossing will be designed in accordance with Alaska Department of Transportation and Public Facilities design standards.</p> <p>a. As appropriate, all disturbed stream banks and slopes will be effectively revegetated with native species suited for the area.</p> <p>b. For all in-water work and areas subject to flooding (high water events), only clean rock, gravel, and granular fill will be used, as per Alaska Department of Transportation and Public Facilities standards and specifications.</p>	Applicant/Operator/Service input/Corps	Construction period through life of the project	Likely during construction  Uncertain during operation (subject to available funds for monitoring and enforcement)

Mitigation Measure	Responsible Party	Timeframe	Likelihood of Effective Implementation
<p>c. During culvert installation activities (e.g., during road crossing construction) on any fish stream, the downstream stream flows will be maintained with a sufficient quantity of clean water to support aquatic life found in the stream channel. The design, construction, and maintenance of road crossings shall not disrupt the migration or other movement of those aquatic species of aquatic life inhabiting the water body.</p>			
<p>d. No vehicles may be operated within fish streams without prior approval from the State of Alaska. Any vehicle permitted to operate in these waters will be free of grease, oils, or other materials that could contaminate the stream. Any petroleum product sheen reasonably associated with a vehicle having been in contact with flowing or standing water would constitute noncompliance.</p>			
<p>iii) All waters pumped from the work area shall be discharged into a settling basin, a silt fence, or otherwise treated to prevent the release of turbid water back into the fish stream.</p>			
<p>iv) Project personnel, their contractors, and others will not use construction project access to fishing areas that are not open to the general public for fishing or other harvest activities.</p>			
<p>v) Water withdrawal for construction purposes will be done in conformance with a permit from Alaska Department of Natural Resources.</p>			
<p>vi) Water withdrawals from a fish bearing stream will be done in accordance with a Fish Habitat Permit issued by the Alaska Department of Fish and Game.</p>			
<p>B. Wildlife Resources: These measures have the common goal of undertaking all appropriate and practicable measures to avoid impacts to wildlife and their habitats.</p>			
<p>i.) No vessel will travel north of a straight line between the Northeast Terminal and Cross Wind Cove terminals, except in the case of a life threatening emergency. The ferry shall not travel further than 0.5 mile north of the Cold Bay dock, except in the case of a life threatening emergency.</p>			
<p>ii.) All solid or putrescible waste generated during the project activity shall be removed or otherwise disposed of in a method approved by Alaska Department of Environmental Conservation. All efforts will be made to prevent bears and other wildlife from being attracted to or having access to food or garbage during construction and operation of any transportation link.</p>			
<p>iii.) If threatened or endangered species are observed during project construction, work that could impact these resources shall be stopped and the appropriate resource agency</p>			

Mitigation Measure	Responsible Party	Timeframe	Likelihood of Effective Implementation
<p>contacted for recommendations prior to proceeding: Steller's Eiders, northern sea otters: Service 1-800-272-4174 Steller sea lions, whales: National Marine Fisheries Service 1-907-271-5006</p>			
<p>iv.) Bald Eagles nest in the project area March through August. The applicant will conduct a raptor survey, including surveys of Bald Eagles, by March 31 of each construction year in coordination with the Service, including approval of methods. Construction activities shall be consistent with the Service publication, <i>Bald Eagle Basics</i>. Should a suspected eagle nest be found (active or not) during construction, the Service will be contacted at 1-800-272-4174 for recommendations prior to proceeding. The Service will provide recommendations to the applicant within 48 hours of notification.</p>			
<p>v.) All external lighting will be shielded to prevent bird strikes. Shielding means that the fixtures distribute light downward towards the work area, minimizing light directed up or to the sides. All utilities will be buried. Project personnel, their contractors, and others will not use construction project access to hunting and trapping areas that are not available to the general public to support harvest opportunities.</p>			
<p>vi.) Migratory birds, their eggs, and young are fully protected by International treaty. To avoid/minimize the destruction of nests/young, construction related impacts (nesting habitat removal) should occur either before birds have started nesting or after the nesting season is over. This nesting season is typically April 15-July 15. If practicable, tree and shrub nesting habitats will be removed in anticipation of the construction season; this alleviates the potential for nests and young to be destroyed during active construction.</p>			
<p>vii.) Tundra Swans nest in lakes in the upper Cold Bay vicinity. By June 15 of each construction year, the applicant will conduct a swan survey in coordination with the Service, including approval of methods, to locate nesting swans that would be in close proximity to the construction project. Coordination with the Service to begin by May 1 of each construction year. The Service will make recommendations to the applicant regarding mitigation measures required to protect swans and their nests or broods, which may include stopping construction.</p>			

Mitigation Measure	Responsible Party	Timeframe	Likelihood of Effective Implementation
<p>C. Wildlife Monitoring Programs</p> <p>i.) The effect of the road on caribou and brown bear populations would be monitored for a 5-year period. If the operation of the road is determined to adversely effect on these species the State and Service will meet and determine if additional mitigation measures should be implemented such as limiting the number or timing of vehicle use, or plowing paths through roadside snow drifts to facilitate caribou passage, etc.</p> <p>ii.) During construction, caribou behavior during migration would be monitored. If caribou are present and appear reluctant to move through the area, construction may be temporarily shut down until they have moved through.</p>	State of Alaska	Construction and 5-year post construction	Likely to occur prior to construction, Uncertain to occur thereafter – subject to available funds
<p>iii.) The response of Steller’s Eiders to the hovercraft operation will be assessed during the first 2 winter seasons. The applicant, with coordination with the Service, will monitor the reaction of Steller’s Eiders within the No Transit Zone (NTZ; MM-5B.i) as the hovercraft follows its proposed route. Data needs include environmental conditions, reaction and distance of Steller’s Eider flocks seen from the hovercraft, and post-passage behaviors, if possible. A summary report will be prepared and distributed to the Service, Corps, AEB, and other interested parties by June of each year.</p>	Applicant	First two winters of hovercraft operations	Uncertain (subject to available funds)

	Mitigation Measure	Responsible Party	Timeframe	Likelihood of Effective Implementation
N	<p><b>Marine Mammal Protection Plan</b></p> <p>The project applicant will develop a comprehensive marine mammal protection plan, consistent with the details of the enforceable mitigation plan that identifies specific measures to be implemented to avoid potential disruption to the normal behavior of marine mammals in the project area during project construction and operation. This plan will be tailored to the specific alternative selected and will be submitted to the Corps, Service , and National Marine Fisheries Service 90 days prior to the initiation of construction for purposes of obtaining the agencies' concurrence on the plan.</p> <p>In the case of Alternatives that would involve the operation of a vessel on the waters of Cold Bay, the plan shall include provisions such as the following when any marine mammal (e.g., whale, Steller sea lion, or northern sea otter) is observed from the vessel: The vessel shall: (a) not approach to within 100 yards of the marine mammal; (b) change course away from the marine mammals observed and/or anticipated path of travel; and (c) adjust speed as necessary to comply with (a) and (b) above. In those situations in which a marine mammal abruptly and without prior observation surfaces in close proximity of the vessel, the vessel will be in compliance with the plan if the captain takes action to re-establish the required 100 yard distance and otherwise complies with provisions (a) through (c). These provisions would not apply to the extent that a vessel is restricted in its ability to maneuver due to shoreline or navigational hazards, other nearby vessels, or unanticipated conditions, which would create a safety hazard to the vessel, its crew, and/or passengers.</p>	Applicant and Operator	Construction period through life of the project	Likely during construction  Uncertain during operation (subject to available funds for monitoring and enforcement)
O	<p><b>Adjustment of Harvest Limits</b></p> <p>The Alaska Board of Fisheries, the Alaska Board of Game, and/or the Federal Subsistence Board to adjust harvest limits where needed if harvests exceed management objectives because of improved access to the resources.</p>	State of Alaska and Federal Subsistence Board	Indefinitely	Likely
P	<p><b>Cultural Resources</b></p> <p>A. Inventory &amp; Evaluation</p> <p>An appropriate level of investigation, including intensive surveys; evaluations of all resources potentially eligible for listing on the National Register of Historic Places; assessments of adverse effects; and applicable mitigation of identified impacts, would be completed before any potentially destructive activities could begin.</p>	State of Alaska	Prior to Construction	Likely

	<b>Mitigation Measure</b>	<b>Responsible Party</b>	<b>Timeframe</b>	<b>Likelihood of Effective Implementation</b>
	<p><b>B. Discovery</b></p> <p>In the unlikely event that ground disturbing or other construction activities result in the inadvertent discovery of archaeological resources, work would be halted in the immediate area, direct contact made with the landowner, and the Alaska State Historic Preservation Officer notified. Work would be halted until such time as further investigation and appropriate consultation is concluded. In the event of the inadvertent discovery of human remains, work would be halted in the area, the discovery covered and secured against further disturbance, and immediate contact established with the appropriate federal and state law enforcement as well as the State Historic Preservation Officer.</p>	Applicant/ Contractor	Construction period	Likely
<b>Q</b>	<p><b>Access to Subsistence Harvest Areas During Construction</b></p> <p>Access to subsistence harvest areas during the road construction shall be maintained to the extent practicable. The State will meet with the King Cove Corporation and Tribal leaders to address subsistence access issues.</p>	State of Alaska	Construction period	Likely
<b>R</b>	<p><b>Compliance/Oversight</b></p> <p>If the project applicant is not a state or federal entity, an independent Environmental Monitor shall be onsite throughout the construction phase of the project to provide training and guidance to construction personnel concerning various environmental protection plan requirements, permit conditions, and stipulations. This person would be qualified to monitor impacts to fish and wildlife resources. The Environmental Monitor will provide a weekly written report, including digital photographs, directly to the Corps, Service, Federal Highway Administration, Alaska Department of Transportation and Public Facilities, other State of Alaska agencies with jurisdiction, and Aleutians East Borough and is responsible for documenting compliance or potential noncompliance with permit conditions or stipulations, and environmental protection plans. The Environmental Monitor is responsible for identifying and conveying potential noncompliance issues immediately and concurrently to the project supervisor, the Corps, Service, Federal Highway Administration, Alaska Department of Transportation and Public Facilities, other State of Alaska agencies with jurisdiction, and Aleutians East Borough, when resource damage is occurring or appears imminent.</p>	Contractor	Construction period	Likely
<b>S</b>	<p><b>Fares, Subsidies, and Additional Revenue</b></p> <p>Acquire additional outside funding to cover the operator's shortfall in operating revenue. This would include adjustments in fares, efforts to increase the vessel's revenues from mail and freight transportation, and external grant sources to subsidize operations. Efforts to increase cargo revenue and recover medical charter costs could also be continued.</p>	Operator	Indefinitely	Unlikely
<b>T</b>	<p><b>Standard Health and Safety Practices</b></p> <p>Implement standard practices related to worker health and safety could help mitigate the potential public safety impacts to workers from construction of the road and ferry terminal.</p>	Contractor	During Construction	Likely

Mitigation Measure		Responsible Party	Timeframe	Likelihood of Effective Implementation
<b>U</b>	<p><b>Non-Commercial Use</b></p> <p><i>Any portion of the road constructed on the federal land conveyed pursuant to this subtitle shall be used primarily for health and safety purposes (including access to and from the Cold Bay Airport) and only for noncommercial purposes, except for the use of taxis, commercial vans for public transportation, and shared rides (other than organized transportation of employees to a business for other commercial facility).</i></p> <p>Signs shall be placed on both ends of the road.</p> <p>Public education programs shall be implemented.</p> <p>The effectiveness of the signs and education programs would be monitored for 3 years. If the measure is not effective, the State, City of King Cove, Aleutians East Borough, and King Cove Corporation shall meet and evaluate additional measures such as enforcement.</p> <p>Purpose: To ensure that the primary use of the road is health and safety of King Cove residents.</p>	State of Alaska	Indefinitely	Likely (with funding and enforcement concerns)
<b>V</b>	<p><b>Barriers</b></p> <p><i>The road ... shall be constructed to include a cable barrier on each side of the road,... unless a different type of barrier is required as a mitigation measure in the Record of Decision ...</i></p> <p>Signs would be located along the barrier to notify the public that motorized access is not allowed outside the road corridor in the wilderness.</p> <p>The effectiveness of the barrier and would be monitored for 3 years. If additional measures are necessary, the Service will meet with the State, City of King Cove, Aleutians East Borough and King Cove Corporation to identify additional measures.</p> <p>Purpose: To restrict motorized access into the wilderness from the road.</p>	State of Alaska	Construction period, and maintained indefinitely	Likely (with concerns for ongoing maintenance and enforcement)
<b>W</b>	<p><b>Road Design</b></p> <p><i>The road shall have a width of not greater than a single lane in accordance with the standards of the State; be constructed of gravel; include appropriate safety pullouts, and facilitate the passage and migration of wildlife, and the exchange of tidal flows where applicable.</i></p> <p>Purpose: To limit the impact on refuge, wilderness and associated resources.</p>	State of Alaska	Construction period, and maintained indefinitely	Likely
<b>X</b>	<p><b>Support Facilities</b></p> <p><i>Support facilities for the road shall not be located within the Izembek National Wildlife Refuge.</i></p> <p>Purpose: To limit the amount of federal land transferred for the road corridor.</p>	State of Alaska/ Service	Indefinitely	Likely
<b>Y</b>	<p><b>Hovercraft Operations and Maintenance</b></p> <p>Implementation of safety restrictions on the hovercraft to seas that are above 6 feet and/or winds above 30 knots per hour. Required regular maintenance and increased availability of a trained crew to operate the vessel to help reduce the number of days per year that the hovercraft is unavailable.</p>	Operator	Indefinitely	Likely

	Mitigation Measure	Responsible Party	Timeframe	Likelihood of Effective Implementation
<b>Z</b>	<p><b>Ferry Terminal Facilities Management</b></p> <p>i) Shielded lighting could be used at terminal areas during darkness to reduce adverse impacts to solitude or primitive and unconfined recreation.</p> <p>ii) Signage would be posted along the road system and at the ferry terminal to inform the public about unauthorized motorized use within Izembek Wilderness.</p>	Operator	Indefinitely	Likely

**Table 2: Mitigation Measures by Resource and Alternative**

<p><b>Air Quality</b></p> <p>Alternative 1: No mitigation measures identified</p> <p>Alternative 2: No mitigation measures identified</p> <p>Alternative 3: No mitigation measures identified</p> <p>Alternative 4: No mitigation measures identified</p> <p>Alternative 5: No mitigation measures identified</p>
<p><b>Climate</b></p> <p>Alternative 1: No mitigation measures identified</p> <p>Alternative 2: No mitigation measures identified</p> <p>Alternative 3: No mitigation measures identified</p> <p>Alternative 4: No mitigation measures identified</p> <p>Alternative 5: No mitigation measures identified</p>
<p><b>Geology and Soils</b></p> <p>Alternative 1: No mitigation measures identified</p> <p>Alternative 2: Erosion and Sediment Control Plan (MM-A) Storm Water Pollution Prevention Plan (MM-B) Hazardous Material and Petroleum Product Control Plan (MM-C) Fuel Handling and Spill Response Plan (MM-D) Acid Rock Testing (MM-E)</p> <p>Alternative 3: Erosion and Sediment Control Plan (MM-A) Storm Water Pollution Prevention Plan (MM-B) Hazardous Material and Petroleum Product Control Plan (MM-C) Fuel Handling and Spill Response Plan (MM-D) Acid Rock Testing (MM-E)</p> <p>Alternative 4: Erosion and Sediment Control Plan (MM-A) Storm Water Pollution Prevention Plan (MM-B)</p> <p>Alternative 5: Erosion and Sediment Control Plan (MM-A) Storm Water Pollution Prevention Plan (MM-B) Geotechnical Studies (MM-F)</p>

**Hydrology/Hydrological Processes**

- Alternative 1: No mitigation measures identified
- Alternative 2: Erosion and Sediment Control Plan (MM-A)  
Storm Water Pollution Prevention Plan (MM-B)  
Hazardous Material and Petroleum Product Control Plan (MM-C)  
Fuel Handling and Spill Response Plan (MM-D)  
Hydrologic/Structural Monitoring (MM-G)  
Restoration Plan (MM-H)
- Alternative 3: Erosion and Sediment Control Plan (MM-A)  
Storm Water Pollution Prevention Plan (MM-B)  
Hazardous Material and Petroleum Product Control Plan (MM-C)  
Fuel Handling and Spill Response Plan (MM-D)  
Hydrologic/Structural Monitoring (MM-G)  
Restoration Plan (MM-H)
- Alternative 4: Hazardous Material and Petroleum Product Control Plan (MM-C)  
Fuel Handling and Spill Response Plan (MM-D)
- Alternative 5: Erosion and Sediment Control Plan (MM-A)  
Storm Water Pollution Prevention Plan (MM-B)  
Hazardous Material and Petroleum Product Control Plan (MM-C)  
Fuel Handling and Spill Response Plan (MM-D)  
Hydrologic/Structural Monitoring (MM-G)  
Restoration Plan (MM-H)

**Hazardous Materials**

- Alternative 1: No mitigation measures identified
- Alternative 2: Fuel Handling and Spill Response Plan (MM-D)  
Hazardous Material and Petroleum Product Control Plan (MM-C)
- Alternative 3: Fuel Handling and Spill Response Plan (MM-D)  
Hazardous Material and Petroleum Product Control Plan (MM-C)
- Alternative 4: Fuel Handling and Spill Response Plan (MM-D)  
Hazardous Material and Petroleum Product Control Plan (MM-C)
- Alternative 5: Fuel Handling and Spill Response Plan (MM-D)  
Hazardous Material and Petroleum Product Control Plan (MM-C)

**Noise**

- Alternative 1: No mitigation measures identified
- Alternative 2: No mitigation measures identified
- Alternative 3: No mitigation measures identified
- Alternative 4: No additional mitigation measures identified

Alternative 5: No mitigation measures identified
<p><b>Terrestrial and Aquatic Plant Communities</b></p> <p>Alternative 1: No mitigation measures identified</p> <p>Alternative 2: <i>Barriers (MM-V)</i> Invasive Species Management Plan (MM-K) Rare Plant Survey (MM-J)</p> <p>Alternative 3: <i>Barriers (MM-V)</i> Invasive Species Management Plan (MM-K) Rare Plant Survey (MM-J)</p> <p>Alternative 4: Invasive Species Management Plan (MM-K)</p> <p>Alternative 5: Invasive Species Management Plan (MM-K) Rare Plant Survey (MM-J)</p>
<p><b>Wetlands</b></p> <p>Alternative 1: No mitigation measures identified</p> <p>Alternative 2: <i>Barriers (MM-V)</i> <i>Mitigation of Wetland Loss (MM-L)</i></p> <p>Alternative 3: <i>Barriers (MM-V)</i> <i>Mitigation of Wetland Loss (MM-L)</i></p> <p>Alternative 4: No mitigation measures identified</p> <p>Alternative 5: <i>Mitigation of Wetland Loss (MM-L)</i></p>
<p><b>Fish and Essential Fish Habitat</b></p> <p>Alternative 1: No mitigation measures identified</p> <p>Alternative 2: Fish and Wildlife Protection Plan (MM-M) Erosion and Sediment Control Plan (MM-A) Storm Water Pollution Prevention Plan (MM-B) Hazardous Material and Petroleum Product Control Plan (MM-C) Fuel Handling and Spill Response Plan (MM-D) <i>Road Design (MM-W)</i> Hydrologic/Structural Monitoring (MM-G) Adjustment of Harvest Limits (MM-O)</p> <p>Alternative 3: Fish and Wildlife Protection Plan (MM-M) Erosion and Sediment Control Plan (MM-A) Storm Water Pollution Prevention Plan (MM-B) Hazardous Material and Petroleum Product Control Plan (MM-C) Fuel Handling and Spill Response Plan (MM-D) <i>Road Design (MM-W)</i></p>

<p>Hydrologic/Structural Monitoring (MM-G) Adjustment of Harvest Limits (MM-O) Alternative 4: Fuel Handling and Spill Response Plan (MM-D) Hydro-Acoustic Assessment (MM-I)</p> <p>Alternative 5: Fuel Handling and Spill Response Plan (MM-D)</p>
<p><b>Birds</b></p> <p>Alternative 1: No mitigation measures identified Alternative 2: Fish and Wildlife Protection Plan (MM-M) <i>Barriers (MM-V)</i> <i>Non-Commercial Use (MM-U)</i> Alternative 3: Fish and Wildlife Protection Plan (MM-M) <i>Barriers (MM-V)</i> <i>Non-Commercial Use (MM-U)</i> Alternative 4: Fish and Wildlife Protection Plan (MM-M) <i>Barriers (MM-V)</i> Alternative 5: Fish and Wildlife Protection Plan (MM-M)</p>
<p><b>Land Mammals</b></p> <p>Alternative 1: No mitigation measures identified Alternative 2: Fish and Wildlife Protection Plan (MM-M) <i>Barriers (MM-V)</i> <i>Non-Commercial Use (MM-U)</i> Alternative 3: Fish and Wildlife Protection Plan (MM-M) <i>Barriers (MM-V)</i> <i>Non-Commercial Use (MM-U)</i> Alternative 4: Fish and Wildlife Protection Plan (MM-M) Alternative 5: Fish and Wildlife Protection Plan (MM-M)</p>
<p><b>Marine Mammals</b></p> <p>Alternative 1: No mitigation measures identified Alternative 2: Marine Mammal Protection Plan (MM-N) Alternative 3: Marine Mammal Protection Plan (MM-N) Alternative 4: Marine Mammal Protection Plan (MM-N) Erosion and Sediment Control Plan (MM-A) Storm Water Pollution Prevention Plan (MM-B) Hazardous Material and Petroleum Product Control Plan (MM-C)</p>

<p>Fuel Handling and Spill Response Plan (MM-D) Fish and Wildlife Protection Plan (MM-M) Hydro-Acoustic Assessment (MM-I) Alternative 5: Marine Mammal Protection Plan (MM-N) Erosion and Sediment Control Plan (MM-A) Storm Water Pollution Prevention Plan (MM-B) Hazardous Material and Petroleum Product Control Plan (MM-C) Fuel Handling and Spill Response Plan (MM-D) Fish and Wildlife Protection Plan (MM-M)</p>
<p><b>Threatened and Endangered Species</b></p> <p>Alternative 1: No mitigation measures identified Alternative 2: Erosion and Sediment Control Plan (MM-A) Storm Water Pollution Prevention Plan (MM-B) Hazardous Material and Petroleum Product Control Plan (MM-C) Fuel Handling and Spill Response Plan (MM-D) Fish and Wildlife Protection Plan (MM-M) Marine Mammal Protection Plan (MM-N) Alternative 3: Erosion and Sediment Control Plan (MM-A) Storm Water Pollution Prevention Plan (MM-B) Hazardous Material and Petroleum Product Control Plan (MM-C) Fuel Handling and Spill Response Plan (MM-D) Fish and Wildlife Protection Plan (MM-M) Marine Mammal Protection Plan (MM-N) Alternative 4: Fish and Wildlife Protection Plan (MM-M) Marine Mammal Protection Plan (MM-N) Alternative 5: Fish and Wildlife Protection Plan (MM-M) Marine Mammal Protection Plan (MM-N)</p>
<p><b>Land Ownership and Use</b></p> <p>Alternative 1: No mitigation measures identified Alternative 2: No mitigation measures identified Alternative 3: No mitigation measures identified Alternative 4: No mitigation measures identified Alternative 5: No mitigation measures identified</p>
<p><b>Socioeconomics</b></p> <p>Alternative 1: No mitigation measures identified Alternative 2: No mitigation measures identified</p>

<p>Alternative 3: No mitigation measures identified Alternative 4: Fares, Subsidies, and Additional Revenue (MM-S) Alternative 5: Fares, Subsidies, and Additional Revenue (MM-S)</p>
<p><b>Transportation</b></p> <p>Alternative 1: No mitigation measures identified Alternative 2: <i>Barrier (MM-V)</i> <i>Non-Commercial Use (MM-U)</i> Compliance/Oversight (MM-R) Alternative 3: <i>Barrier (MM-V)</i> <i>Non-Commercial Use (MM-U)</i> Compliance/Oversight (MM-R) Alternative 4: No additional mitigation measures identified Alternative 5: No additional mitigation measures identified</p>
<p><b>Public Health and Safety</b></p> <p>Alternative 1: No mitigation measures identified Alternative 2: Health and Safety Practices (MM-T) <i>Road Design (MM-W)</i> Alternative 3: Health and Safety Practices (MM-T) <i>Road Design (MM-W)</i> Alternative 4: Hovercraft Operations and Maintenance (MM-Y) Alternative 5: Standard Health and Safety Practices (MM-T)</p>
<p><b>Environmental Justice</b></p> <p>Alternative 1: No mitigation measures identified Alternative 2: Health and Safety Practices (MM-T) <i>Road Design (MM-W)</i> Access to Subsistence Harvest Areas During Construction (MM-Q) Alternative 3: Health and Safety Practices (MM-T) <i>Road Design (MM-W)</i> Access to Subsistence Harvest Areas During Construction (MM-Q) Alternative 4: Hovercraft Operations and Maintenance (MM-Y) Alternative 5: Standard Health and Safety Practices (MM-T)</p>
<p><b>Public Use</b></p> <p>Alternative 1: No mitigation measures identified Alternative 2: <i>Barrier (MM-V)</i> <i>Road Design (MM-W)</i> Access to Subsistence Harvest Areas During Construction (MM-Q)</p>

<p>Alternative 3: <i>Barrier (MM-V)</i> <i>Road Design (MM-W)</i> Access to Subsistence Harvest Areas During Construction (MM-Q)</p> <p>Alternative 4: No mitigation measures identified</p> <p>Alternative 5: No mitigation measures identified</p>
<p><b>Subsistence</b></p> <p>Alternative 1: No mitigation measures identified</p> <p>Alternative 2: Access to Subsistence Harvest Areas During Construction (MM-Q)</p> <p>Alternative 3: Access to Subsistence Harvest Areas During Construction (MM-Q)</p> <p>Alternative 4: No mitigation measures identified</p> <p>Alternative 5: No mitigation measures identified</p>
<p><b>Cultural Resources</b></p> <p>Alternative 1: No mitigation measures identified</p> <p>Alternative 2: Cultural Resources (MM-P)</p> <p>Alternative 3: Cultural Resources (MM-P)</p> <p>Alternative 4: No mitigation measures identified</p> <p>Alternative 5: Cultural Resources (MM-P)</p>
<p><b>Visual Resources</b></p> <p>Alternative 1: No mitigation measures identified</p> <p>Alternative 2: <i>Road Design (MM-W)</i> Erosion and Sediment Control Plan (MM-A) <i>Barriers (MM-V)</i></p> <p>Alternative 3: <i>Road Design (MM-W)</i> Erosion and Sediment Control Plan (MM-A) <i>Barriers (MM-V)</i></p> <p>Alternative 4: No mitigation measures identified</p> <p>Alternative 5: No mitigation measures identified</p>

**Wilderness**

Alternative 1: No mitigation measures identified

Alternative 2: *Barrier (MM-V)*

*Support Facilities (MM-X)*

Fish and Wildlife Protection Plan (MM-M)

Invasive Species Management Plan (MM-K)

Alternative 3: *Barrier (MM-V)*

*Support Facilities (MM-X)*

Fish and Wildlife Protection Plan (MM-M)

Invasive Species Management Plan (MM-K)

Alternative 4: No mitigation measures identified

Alternative 5: Ferry Terminal Facilities Management (MM-Z)

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