

Northern Region Deep Culverts Stage III; State Project No.: Z639130000

The Alaska Department of Transportation and Public Facilities (DOT&PF), in cooperation with the Federal Highway Administration (FHWA), is proposing to replace culverts underneath a segment of the New England Cannery Road, at approximate Milepost (MP) 0.6. The structural integrity of the culverts proposed for replacement have deteriorated, in part due to saltwater corrosion. The culverts provide hydrologic connectivity between the Fleming Spit Lagoon and Orca Inlet. They also provide fish passage at high tides. The preliminary culvert design is intended to enhance both fish passage and hydrologic connectivity over what currently exists.

The environmental review, consultation, and other actions required by applicable Federal environmental laws for this project are being, or have been, carried out by the DOT&PF pursuant to 23 U.S.C. 327 and a Memorandum of Understanding dated November 3, 2017 and executed by the FHWA and DOT&PF.

This project is being developed in accordance with the following with special purpose regulation and Executive Orders (E.O.) relating to highways:

- Section 4(f) of the Department of Transportation Act;
- Section 106 of the National Historic Preservation Act;
- Section 7 of the Endangered Species Act,
- E.O. 11593 Protection and Enhancement of the Cultural Environment;
- E.O. 11988 Floodplain Management;
- E.O. 11990 Protection of Wetlands;
- E.O. 12898 Federal Actions to Address Environmental Justice in Minority Populations and Low Income Populations;
- E.O. 13007 Indian Sacred Sites;
- E.O. 13112 Invasive Species, as amended by EO 13751, and;
- E.O. 13175 Consultation and Coordination with Indian Tribal Governments.

Location:

The project culverts are located within the Southwest ¼ of Section 15, Township 15 South, Range 3 West, Copper River Meridian, USGS Quadrangle map Cordova C-5; or approximately 60.5624° North Latitude and -145.7431° West Longitude (datum NAD 83). Figure 1 is provided as the location and vicinity map.

Purpose and Need:

The Northern Region Deep Culvert Stage III project is part of a larger statewide preventative maintenance project. Its purpose is to implement maintenance of the state's transportation infrastructure and to prevent future deterioration due to storm water.

The project need is that the structural integrity of three existing culverts that provide hydrologic connectivity between the lagoon in the Fleming Spit Recreational Area and Orca Inlet have significantly deteriorated. Additionally, the DOT&PF has determined through hydraulic modeling that the size of these existing culverts, two being 48-inches in diameter and one is 24-inches diameter, are inadequate to provide conveyance of water during a 50-year flood event (2-in-100 chance of flooding during any given year).

Furthermore, the Orca Inlet side of the road embankment is armored by a revetment constructed of concrete filled pillows (Articulated Block Mat) that are held together by high strength revetment cables. Overtime, much of the revetment cables have degraded to the point that they no longer functions as intended. This has resulted in loss of many of the concrete pillows, particularly at the culvert's outlets (Orca Inlet side) where a section of this revetment, measuring approximately 40 feet wide and 25 feet long, has been undermined. The resulting erosion has caused failure of the slope protection and has created voids between the existing sidewalk and ground surface in many places. Failure of these culverts, the sidewalk, or the loss of the roadway's embankment could have adverse effects on traffic safety, recreation activities, and critical utilities (16-inch potable waterline, electrical cables, and telephone lines) that are installed under the roadway's shoulder.

Proposed Actions:

The DOT&PF is proposing to replace the existing culverts (two 48-inch diameter and one 24-inch diameter) that provide hydrologic connectivity between the tidally influenced lagoon in the Fleming Spit Recreational Area and Orca Inlet with a new culvert. The proposed new culvert is a structural plate aluminum arch having a span of 11.1 feet, height of 7.0 feet, and 76.5 feet in length. This new culvert will be able to convey the flow of water at 472 cubic feet per second (cfs); whereas the existing culverts have a combined flow rate of 130 cfs. In addition to increasing flow rates, the larger diameter culvert will allow for more fish to pass through during high tides. The elevation of new culvert's inlet will be 9.0 feet, which is the same elevation as the existing culverts. As such, the depth and geometry of the lagoon would not change.

The proposed project actions also include:

- Replacing the revetment along the coastal side of the roadway, between approximate MP 0.5 and 0.7, with a new revetment;
- Replacing the existing sidewalk with a new sidewalk that's compliant with the Americans with Disabilities Act (ADA) standards;
- Relocating the existing utilities, which are necessary to install the new culvert, and;
- Repaving a section of the New England Cannery Road, from MP 0.0 through MP 0.8.
- Right-of-way (ROW) acquisitions within the project area are anticipated.

Figures 2 through 5 depict the locations of project action areas; Figures 6 and 7 provides details of the proposed culvert, revetment, and sidewalk.

The DOT&PF anticipates that construction of the proposed project could begin in 2020.

Background Information:

The City of Cordova is located on the eastern side of Orca Inlet, a fjord that's located at the southeastern end of Prince William Sound, just before it opens up into the Gulf of Alaska. No roads connect Cordova to other Alaskan towns; it's only accessible by aircraft, boat, or the Alaska Marine Highway System's ferry. The airport in Cordova is named the Merle K. (Mudhole) Smith Airport and is located 13 miles southeast of the city and is accessible from the Copper River Highway.

The Copper River Delta is located approximately 4.0 miles southeast from the city. This delta is a vast 35-mile wide wetland complex and is the largest continuous wetlands along the Pacific

coast of North America. The delta forms an important biologically productive interface between the marine environment and the coastal rain forests located further inland. The Copper River Delta ranks as one of the most important fisheries and wildlife habitats in the world. This delta is a critical stop for millions of migratory birds on the Pacific Flyway. Each spring (late April through May) the delta hosts the largest gathering of shorebirds in the western hemisphere. An estimated 12-16 million shorebirds stop to rest and feed on the delta's tidal flats on the way to their northern nesting grounds each year. Among these migratory birds are nearly the entire Pacific coast population of dunlins (*Calidris alpina*) and western sandpipers (*Calidris mauri*). The Copper River Delta is also home to the world's largest population of nesting trumpeter swans (*Cygnus buccinator*) and according to the U.S. Fish and Wildlife Service (FWS) it's the only known nesting habitat for the dusky Canada goose (subspecies of *Branta canadensis occidentalis*). Because of the delta's significance, the Copper River Delta Critical Habitat Area was established. Both the City of Cordova and the project area are outside the boundaries of this critical habitat area.

Anadromous Fish and Essential Fish Habitat:

Magnuson-Stevens Fishery Conservation and Management Act, as amended (MSA; 16 U.S.C. § 1801) is the primary law governing marine fisheries management in U.S. federal waters. Some of the key objectives of the MSA are to: prevent overfishing; rebuild overfished stocks; increase long-term economic and social benefits, and; ensure a safe and sustainable supply of seafood. The National Oceanic and Atmospheric Administration-National Marine Fisheries Service (NOAA Fisheries) is the federal agency responsible for the stewardship of national marine resources. The DOT&PF will be consulting with NOAA Fisheries about the proposed project actions.

The Alaska Department of Fish and Game (ADF&G) is the state agency responsible for management of anadromous fish, which includes management of the anadromous waters database as well as revision to and publication of the *Catalog of Waters Important for the Spawning, Rearing or Migration of Anadromous Fishes*, and its associated Atlas (AWC), effective July 1, 2008. The AWC are important because they specify which streams, rivers and lakes are important to anadromous fish species and therefore afforded protection under AS 16.05.871. Water bodies that are not "specified" within the AWC are not afforded that protection.

The AWC lists Fleming Creek as being anadromous waters; AWC Code Number 221-10-10080. The AWC lists the following salmon species for Fleming Creek as: coho salmon (*Oncorhynchus kisutch*), rearing and spawning; chum salmon (*Oncorhynchus keta*), spawning, and; pink salmon (*Oncorhynchus gorbuscha*), spawning.

Additionally, there are two net-pens installed in the Fleming Creek Lagoon for raising salmon smolt. The ADF&G operates one of these net-pens for rearing Chinook salmon (*Oncorhynchus tshawytscha*) in an effort to establish spawning and rearing habitat for this important species. The other is operated by the Prince William Sound Aquaculture Corporation (PWSAC) to increase the population of returning adult coho salmon another important salmon species.

The ADF&G has stated in prior communications with the DOT&PF about this project that if the water levels in the lagoon [Fleming Spit Recreational Area] drop at all, it would likely have a

significant adverse effect on their ability to successfully imprint king salmon smolt, if not make it impossible. The same could be said for PWSAC's coho smolt that are imprinted in the lagoon. The ADF&G stated that at its current water levels, the lagoon is just deep enough for the smolt to stay below the gulls and provides a good tidal flush; they would like to keep things the way they are.

With these concerns in mind, the DOT&PF has designed the new replacement culvert so that its inlet elevation is the same as the elevation of the existing culverts' inlets (9.0 feet). As such, neither the depth nor geometry of the lagoon would change. The culvert is also designed to provide efficient fish passage; in accordance with the *Memorandum of Agreement between Alaska Department of Fish and Game and Alaska Department of Transportation and Public Facilities for the Design, Permitting, and Construction of Culverts for Fish Passage*, August 3, 2001.

The DOT&PF's Hydraulics Department is working with the ADF&G Habitat and Restoration Division to ensure there would not be an adverse effect to essential fish habitat (EFH), anadromous fish, or resident fish populations as a result of the proposed culvert installation or maintenance of it. The DOT&PF will continue coordination with the ADF&G throughout this project's development.

Marine Mammals:

The Marine Mammal Protection Act of 1972, as amended (MMPA; 16 U.S.C. § 1631 et seq.) prohibits the incidental taking of marine mammals. The incidental take of a marine mammal falls under three categories: mortality, serious injury, or harassment, which includes injury and behavioral effects. The MMPA defines harassment as any act of pursuit, torment, or annoyance which: (1) has the potential to injure a marine mammal or marine mammal stock in the wild (Level A harassment); or (2) has the potential to disturb a marine mammal or marine mammal stock in the wild by causing disruption of behavioral patterns, including, but not limited to, migration, breathing, nursing, breeding, feeding, or sheltering (Level B harassment).

NOAA Fisheries is the federal agency responsible for the stewardship of national marine resources.

Marine mammals that reside within Prince William Sound include:

- fin whales (*Balaenoptera physalus*);
- humpback whales (*Megaptera novaeangliae*);
- minke whales (*Balaenoptera acutorostrata*);
- killer whales (*Orcinus orca*);
- Dall's porpoises (*Phocoenoides dalli*);
- harbor porpoises (*Phocoena phocoena*);
- Steller sea lions (*Eumetopias jubatus*);
- harbor seals (*Phoca vitulina*), and;
- sea otters (*Enhydra lutris*).

Fin, humpback, minke, and killer whales can be found in the deep offshore waters of the Gulf of Alaska as well as the coastal waters of Prince William Sound; as can harbor and Dall's porpoises. Steller sea lions, harbor seals, and sea otters primarily inhabit the near shore marine environment.

Although all marine mammals are protected by the MMPA, special considerations and provisions are provided to species that NOAA Fisheries have listed as depleted under the MMPA. The fin whale, the western Distinct Population Segment (DPS) of Steller sea lion, and the central North Pacific stock of humpback whales are all listed as depleted under the MMPA; they are also listed as endangered under the Endangered Species Act, discussed below.

The DOT&PF anticipates only minimal impacts to marine mammals and to the physical habitat features on which they rely on. The DOT&PF will be consulting with NOAA Fisheries about the proposed project actions, as required by the MMPA.

Endangered and Threatened Species:

The Endangered Species Act of 1973 (ESA; 16 U.S.C. § 1531.) provides a program for the conservation of threatened and endangered plants and animals and the habitats in which they are found. The lead federal agencies for implementing the ESA are the FWS and NOAA Fisheries.

The law requires federal agencies to consultation with the FWS and/or the NOAA Fisheries, to ensure that actions they authorize, fund, or carry out are not likely to jeopardize the continued existence of any listed species or result in the destruction or adverse modification of designated critical habitat of such species.

Under the ESA, the federal government has the responsibility to protect:

- Endangered species—species that are in danger of extinction throughout all or a significant portion of their range.
- Threatened species—species that are likely to become endangered in the foreseeable future.
- Critical habitat—specific areas that are:
 - o within the geographical area occupied by the species at the time of listing, if they contain physical or biological features essential to conservation, and those features may require special management considerations or protection;
 - o outside the geographical area occupied by the species if the agency determines that the area itself is essential for conservation.

There are no terrestrial plants or animals listed as threatened or endangered under the ESA in the project area; however, there are marine mammals in the project area that are listed. Of the marine mammals listed above under the heading of *Marine Mammals*, three are listed as endangered under the ESA, they are the: fin whale, western DPS of Steller sea lions, and central North Pacific stock of humpback whales. The sea otter is listed as a threatened species under the ESA.

Fin Whale

As previously mentioned, the fin whale is listed as endangered under the ESA. Fin whales inhabit the deep offshore waters of the Gulf of Alaska as well as the coastal waters of Prince William Sound.

Humpback Whale

Humpback whales inhabit all the world's ocean basins. NOAA Fisheries have determined there are 14 identified DPS of humpback whales worldwide. In concerns to our project area is the central North Pacific stock of humpback whales, which winters in Hawaii and summers in Alaska, including the waters of Prince William Sound. The central North Pacific stock of humpback whales is listed as endangered under the ESA.

Steller sea lion

NOAA Fisheries recognizes two DPSs of Steller sea lions, the western DPS and the eastern DPS. The western DPS of the Steller sea lion is listed as endangered under the ESA. Furthermore, NOAA Fisheries has established a Designated Critical Habitat for the western DPS of Steller sea lion. The project area is within the Designated Critical Habitat of the western DPS of Steller sea lion.

Sea Otter

Within the State of Alaska there are three DPSs of sea otters; the Southeast DPS, the Southcentral DPS, and the Southwestern DPS. Of these three stocks, only the sea otters of the Southwestern DPS are listed as threatened under the ESA. The project area is located within the habitat of the Southcentral DPS of sea otters, which is a stable stock that's not listed as either threatened or endangered.

The DOT&PF will be consulting with the FWS and NOAA Fisheries about the proposed project actions, as required under Section 7 of the ESA.

Invasive Species:

A June 8, 2017 review of the University of Alaska Anchorage's Alaska Natural Heritage Program-Alaska Exotic Plants Information Clearinghouse (AKEPIC) Non-Native Plant Species Data Portal (<http://aknhp.uaa.alaska.edu/maps/akepic/>) identified 6 species of non-native plant occurrences within the vicinity of project area, they are:

1. annual bluegrass (*Poa annua* L.);
2. common dandelion (*Taraxacum officinale* F.H. Wigg.);
3. common plantain (*Plantago major* L.);
4. prostrate knotweed (*Polygonum aviculare* L.);
5. pineappleweed (*Matricaria discoidea* DC.), and;
6. big chickweed (*Cerastium fontanum* Baumg. ssp. *Vulgare* (Hartm.)).

Additionally, the Copper River Watershed Project has identified the following non-native plant occurrences in the Cordova area as being high priority species:

1. Elodea (*Elodea* sp.);
2. Reed canarygrass (*Phalaris arundinacea*);
3. Bohemian knotweed (*Fallopia x bohemica*), and;
4. Orange hawkweed (*Hieracium aurantiacum*)

Through implementation of practicable measures to reduce the potential of introduction or spread of invasive species into the project area it's anticipated that no substantial spread of invasive species would result. In order to achieve this outcome the DOT&PF proposes the following measures:

- The contract specifications will include the requirements that the awarded contractor remove all soil, vegetation, and rock medium from equipment by washing all equipment prior to mobilization to the site.
- The contract specifications will include the DOT&PF 2004 Standard Specification for Highway Construction, Special Modification Section 724-2.02 Seed Materials that states: Construction Contractor shall comply with the DNR Division of Agriculture, "Seed Regulations" latest edition. Grass seed shall be furnished in standard containers on which states the name of the seed species and cultivars of seed.
- The construction activities will be sequenced to minimize disturbed areas
- The construction activities are to minimize ground disturbance by maintaining as much native vegetation as practicable and disturb only areas necessary for staging and construction.
- The awarded contractor is to stabilize disturbed areas as soon as practicable, which includes timely seeding of project-disturbed areas with non-invasive species providing adequate cover
- The DOT&PF will recommend that the awarded contractor use erosion control products composed of forage material (straw bales, straw wattles, straw blankets, coir logs, etc.) and be weed free certified.

Floodplain Management:

A June 7, 2017 review of the Federal Emergency Management Agency (FEMA) website indicates that Fleming Creek is within FEMA's Flood Insurance Rate Map (FIRM) numbers 0200370053C and 0200370061C, both maps revised on December 16, 2015. The FIRM Panels denote Fleming Creek as being in a Special Flood Hazard Area, Flood Zone A. FEMA defines Flood Zone A as: "Areas subject to inundation by the 1-percent-annual-chance flood event generally determined using approximate methodologies. Because detailed hydraulic analyses have not been performed, no Base Flood Elevations or flood depths are shown. Mandatory flood insurance purchase requirements and floodplain management standards apply."

A City of Cordova Building Permit will be required to construct this project within this Special Flood Hazard Area.

As previously stated, the new culvert will be able to convey the flow of water at 472 cfs; whereas the existing culverts have a combined flow rate of 130 cfs. Additionally, the DOT&PF has designed the new replacement culvert so that its inlet elevation is the same as the elevation of the existing culverts' inlets. Therefore, the proposed project is not anticipated to increase base flood elevations.

National Parks, Wildlife Refuges, Preserves, and Monuments:

The project area is not within a National Wildlife Refuge, National Park, National Preserve, or National Monument.

Wild and Scenic Rivers:

The project area does not border or cross a designated Wild and Scenic River.

Federal Recreation Areas:

The proposed project will not take place within any Federal Recreational Area.

State Parks, State Refuges, Critical Habitat Areas, and Sanctuaries:

The project area is within the Designated Critical Habitat of the western DPS of Steller sea lion, as it's located within the 20 nautical mile Aquatic Zone buffer that's established around all its major haul outs and rookeries.

The Copper River Delta Critical Habitat Area is in the vicinity of the project area however, neither the City of Cordova nor the project area is within the boundaries of this critical habitat area. Additionally, no project actions would occur within a state park, state refuge, or sanctuary.

City Parks and Recreation Areas:

The project area is both within and adjacent to the City of Cordova's Fleming Spit Recreational Area. A segment of the existing road alignment, its embankment, and existing culverts, which are proposed to be replaced as part of this project, already extend outside of DOT&PF's existing right-of-way (ROW) and into the Fleming Spit Recreational Area. As such, the DOT&PF will need to acquire approximately 0.3 acre from this parcel (AST 1610, Tract A) in order to construct and maintain the proposed new culvert and to correct the road alignment issue of it being outside the existing DOT&PF ROW.

Right-of-way

As mentioned above, the DOT&PF will need to acquire approximately 0.3 acre from parcel AST 1610, Tract A (Fleming Spit Recreational Area), which is owned by the City of Cordova. This acquisition is needed in order to construct and maintain the proposed new culvert and to correct the road alignment that is currently outside of DOT&PF's existing ROW.

Additionally, the DOT&PF will need to acquire 0.01 acre from the City of Cordova's parcel ASLS 2001-5 to correct the existing road alignment issue. ASLS 2001-5 is located directly north and adjacent to AST 1610, Tract A. The City of Cordova has voted to dispose of this parcel and is currently in negotiations with the Prince William Sound Science Center as the potential new property owner.

Section 106

Section 106 of the National Preservation Act of 1966 (NHPA) requires, in part, that the DOT&PF (pursuant to 23 U.S.C. § 327 and a Memorandum of Understanding dated November 3, 2017) take into account the effects of their undertakings on historic properties.

On February 2, 2016, the DOT&PF determined that there were no cultural resources identified within the project's area of potential effect and that the proposed undertaking meets all the conditions of the Section 106 Programmatic Agreement's Tier 1 and Tier 2 Allowances.

Section 4(f)

Section 4(f) of the U.S. Department of Transportation Act of 1966 (49 U.S.C. § 303) is a federal policy that requires in part, that special efforts be made to preserve the natural beauty of the countryside and public parks and recreational lands, wildlife and waterfowl refuges, and historical sites. In order to carry out this policy, Section 4(f) stipulates that the DOT&PF (under

the authority pursuant to 23 U.S.C. § 327 and a Memorandum of Understanding dated November 3, 2017) cannot approve the use of land from publicly owned parks, recreational areas, wildlife and waterfowl refuges, or public and private historical sites unless the following conditions apply:

- There is no feasible and prudent avoidance alternative to the use of land; and the action includes all possible planning to minimize harm to the property resulting from such use;

Or

- The DOT&PF determines that the use of the property will have a *de minimis* impact

The DOT&PF has determined that Fleming Spit Recreational Area is a Section 4(f) property. The DOT&PF has also determined that acquiring ROW from the Fleming Spit Recreational Area would constitute a use under Section 4(f).

The DOT&PF is proposing that the project actions meet the criteria of a *de minimis* impact. The DOT&PF's *de minimis* impact determination will only occur after the DOT&PF has published a public notice and opportunity for public and agency review and comment, that the proposed project will not adversely affect the activities, features, and attributes of the Fleming Spit Recreational Area, and; after the DOT&PF receives concurrence from the City of Cordova's official(s) with jurisdiction over the recreation area.

Section 6(f)

Section 6(f) is part of the Land and Water Conservation Fund Act (LWCF) of 1965. The LWCF is a federal program that was established by Congress in 1964 to provide funds and matching grants to federal, state and local governments for the acquisition of land and water, and easements on land and water, for the benefit of all recreating Americans. Under Section 6(f), it's prohibited to convert property acquired or developed with LWCF grant money to non-recreational purposes without approval from the Grants Administrator.

On January 2, 2018 the DOT&PF contacted the Grants Administrator, State of Alaska Department of Natural Resources, Division of Parks and Outdoor Recreation, to inquire as to whether the City of Cordova had received any grant funding from the LWCF to assist in the acquisition or development of the Fleming Spit Recreational Area. The Grants Administrator replied back to the DOT&PF stating in part, that "While our records indicate LWCF involvement with several outdoor recreational properties in or near Cordova, the Fleming Spit Recreational Area is not one of them. Therefore, Section 6(f)(3) provisions of the LWCF do not apply."

Material Sites

There are two material sites that are located north of the airfield and within airport property that are owned by the State of Alaska; material site 851-066-5 and material site 851-067-5. However, these two sites are reserved for the DOT&PF Maintenance and Operations department's use and for infrastructure development at the Merle K. (Mudhole) Smith Airport only; e.g., material from these two sites are not available for highway construction projects.

There are also commercial material sites located along the Copper River Highway at approximate MP 9, MP 14, and MP 17. The material site at MP 9 primarily produces sand; the

material site at MP 14 produces gravel, and the material site at MP 17 is a bedrock quarry. The surface estates of each of these three sites are owned by the Eyak Corporation and the subsurface estates are owned by the Chugach Alaska Corporation.

Chugach Alaska Corporation is also developing a granite bedrock quarry at Port Gravina, which is located along the Alaska Marine Highway, approximately half-way between Cordova and Tatitlek, AK. The surface estate of this quarry is owned by the U.S. Forest Service and the subsurface estate is owned by the Chugach Alaska Corporation.

Commercial material sites are also available in Valdez, AK.

Wetlands and Waters of the United States

The project area on the Orca Inlet side of the roadway is a marine intertidal (littoral) shoreline having an unconsolidated bottom. On the inland side of the road is the Fleming Spit Lagoon, a shallow, semi-isolated estuary at the mouth of Fleming Creek. The Fleming Spit Lagoon receives some salt water mixing during high tides, via the existing culverts that are emplace underneath the roadway, which have connectivity to Orca Inlet.

The DOT&PF anticipates that authorization under Section 10 of the Rivers and Harbors Appropriation Act of 1899 (33 U.S.C. §403) will be required from the U.S. Army Corps of Engineers (USACE) in order to replace the revetment and culverts. Authorization under Section 404 of the Clean Water Act may also be required by the USACE. The DOT&PF will be consulting with the USACE about the proposed project actions.