Appendix D-Essential Fish Habitat Assessment

ESSENTIAL FISH HABITAT ASSESSMENT
Nightmute Airport Improvements
Project #: 51809

1. PROPOSED ACTION

The Alaska Department of Transportation and Public Facilities (ADOT&PF), in cooperation with the Federal Aviation Administration (FAA), is developing a project to improve the Airport in Nightmute, Alaska.

1.1. Proposed Improvements

The following describes the planned improvements to the Nightmute Airport:

- Expand the existing 50 ft by 1,600 ft runway to 75 ft by 3,200 ft
- Extend the existing 100 ft by 2,000 ft runway safety area to 150 ft by 3,800 ft
- Provide a 50 ft by 260 ft taxiway on a 79 ft wide safety area.
- Provide a new 150 ft by 255 ft parking apron.
- Provide a 100 ft by 100 ft pad for a two-single bay Snow Removal Equipment Building.
- Install a medium intensity lighting system.
- Install a lighted wind cone and segmented circle on a 125 ft by 125 ft pad.
- Provide a 30 ft by 60 ft Automated Weather Observation System (AWOS) Pad, two Precision Approach Path Indicator (PAPI) Pads, and install an unlighted wind cone.
- Extend the power line from the village to the airport.
- Rehabilitate the existing 4800 ft by 15 ft airport access road to repair the extreme differential settlement of the road and also to shift the road further away from the Toksook River, and realign it within the right of way.
- Provide erosion protection along the airport access road.

1.2. Location

Nightmute is located on Nelson Island, on the outer fringe of the Yukon-Kuskokwim Delta in western Alaska. It is 18 miles upriver from Toksook Bay and 100 miles west of Bethel. The community lies within Section 33, Township 5N, Range 88W, Seward Meridian, (approximately at Latitude 60.479440° N, and Longitude 164.72389° W). Nightmute is located in the Bethel Recording District (Figure 1: Location and Vicinity Maps).

2. ANALYSIS OF EFFECT TO ESSENTIAL FISH HABITAT

Essential fish habitat (EFH) is defined as "those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity" (16 U.S.C. 1802(10)). EFH is managed under the Magnuson-Stevens Fishery Conservation and Management Act (MSFCMA).

Work directly affecting EFH would include rehabilitation of the airport access road and erosion protection to the access road. Riprap will be placed on the road surface within the right of way (ROW). The Toksook River is expected to encroach on the ROW causing the riprap to fall into the river and provide additional stream erosion protection. See attached Erosion Protection Typical.

A September 2005 search of the Alaska Department of Fish & Game (ADF&G) Fish Distribution database reveals the presence of King, Coho, Pink and Chum Salmon and Arctic char in the Toksook River. According to a September 2005 email correspondence with Nancy Ihlenfeldt, Alaska Department of Natural Resources - Office of Habitat Management & Permitting, "the Toksook River is designated as waters important for the spawning, rearing or migration of anadromous fish, as it supports Chinook, Coho, Pink and Chum Salmon, Arctic char and Whitefish."

A life history summary for each species of anadromous fish, as related to the effect on habitat for the proposed project, is presented below:

King or Chinook Salmon (*Oncorhynchus tshawytscha*). Alaska Rivers normally receive a single run of chinook salmon in the period from May through June. Chinook do not feed during the freshwater spawning migration. Females deposit eggs in gravel nests, or redds, which she excavates in relatively deep, moving water. Eggs hatch in late winter or early spring. The newly hatched fish live in the gravel for several weeks. The juvenile fish wiggle up through the gravel in early spring. The juveniles then remain in fresh water until the following spring when they migrate to the ocean in their second year of life. Juvenile chinook salmon in fresh water feed on plankton then later eat insects.
http://www.adfg.state.ak.us/pubs/notebook/fish/chinook.php accessed on 12/21/05.

Coho Salmon (*Oncorhynchus kisutch*) Coho salmon enter spawning streams from July to November, usually during periods of high runoff. In larger rivers, such as the Yukon, adults arrive early, as they have several weeks or months to reach headwater spawning grounds. Once spawning areas are reached, the female deposits eggs in gravel nests, or redds. The eggs hatch in early spring and juveniles emerge in May or June. Juvenile coho seek off-channel habitat for food and shelter. They live in quiet pools, usually among submerged wood debris and areas free of current. Juvenile cohos in fresh water feed on insects. They spend one to three winters in fresh water before migrating to sea.
http://www.adfg.state.ak.us/pubs/notebook/fish/coho.php accessed 12/21/05.

Pink Salmon (*Oncorhynchus gorbuscha*) Adult pink salmon enter Alaska spawning streams between late June and mid-October. Most pink salmon spawn within a few miles of the coast, spawning within the intertidal zone or at the mouth of rivers and streams is very common. Shallow riffles where flowing water breaks over coarse gravel or cobble-size rock and the downstream ends of pools are favored spawning areas. Sometime during early to mid-winter, eggs hatch. The juvenile pink salmon emerge from the gravel in later winter or spring, and migrate seaward into salt water. Following entry into saltwater, juvenile pink salmon move along the beaches in dense schools near the surface, feeding on plankton, larval fishes, and occasional insects.
http://www.adfg.state.ak.us/pubs/notebook/fish/pink.php accessed 12/21/05.

Chum Salmon (*Oncorhynchus keta*) The chum salmon is typically a fall spawner, with the greatest spawning activity generally occurring in September and October. Chum salmon often spawn in small side channels and other areas of large rivers where upwelling springs provide

excellent conditions for egg survival. Chum do not have a period of freshwater residence after emergence of the fry as do chinook, coho, and sockeye salmon. Chums are similar to pink salmon in this respect, except that chum fry do not move out into the ocean in the spring as quickly as pink fry. Chum fry feed on small insects in the stream and estuary before forming into schools in salt water where their diet usually consists of zooplankton. http://www.adfg.state.ak.us/pubs/notebook/fish/chum.php accessed 12/21/05.

Sockeye Salmon (*Oncorhynchus nerka*) Sockeye salmon return to the freshwater systems from the ocean during the summer months. Spawning usually occurs in rivers, streams, and upwelling areas. Freshwater systems with lakes produce the greatest number of sockeye salmon. Eggs hatch during the winter, and the young sac-fry, or alevins, remain in the gravel, living off the material stored in their yolk sacs, until early spring. Juvenile salmon emerge from the gravel in early spring and may spend up to four years in fresh water before migrating to sea. In systems with lakes, juveniles usually spend one to three years in fresh water before migrating to the ocean in the spring as smolts. However, in systems without lakes, many juveniles migrate to the ocean soon after emerging from the gravel. While in fresh water, juvenile sockeye salmon feed on zooplankton, benthic amphipods, and insects.
http://www.adfg.state.ak.us/pubs/notebook/fish/sockeye.php accessed 12/21/05.

Arctic char (*Salvelinus alpinus Linnaeus*) is present in North America in both the anadromous (seagoing) and the non-anadromous (freshwater resident) forms. In Alaska, Arctic char are known to occur only in the lake resident form. Little is known about the life history of Arctic char in Alaska lakes. However, in other areas, char often exist in two different forms in the same lake. These forms are usually described as "dwarf' and "normal." The forms show differences in habitat and food selection, resulting in different growth rates, size at maturity, and average size. After reaching maturity at an age of 6 to 9 years, Arctic char are thought to spawn every other year. Spawning usually occurs from August through October, probably over steep, broken substrates or gravel shoals at sufficient depth to be protected from winter ice.
http://www.adfg.state.ak.us/pubs/notebook/fish/a%5Echar.php accessed 12/19/05.

2.1. Individual & Cumulative Effects

Immediate or long-time use of the airport facilities and airport access road will not cause significant adverse effect on essential fish habitat. The riprap will be placed on the road surface above the Toksook River's ordinary high water line. It is anticipated that the river will eventually encroach on the roadway right of way, causing some riprap to slope down on the edge of the river thereby providing additional stream erosion protection. No adverse effect on EFH is anticipated. Some minor short-term effects could occur during the period when the riprap falls along the edge of the river; however, mitigation stipulations are proposed to minimize any possible impacts.

3. PROPOSED MITIGATION MEASURES

The following mitigation measures will minimize impacts to anadromous fish habitat:

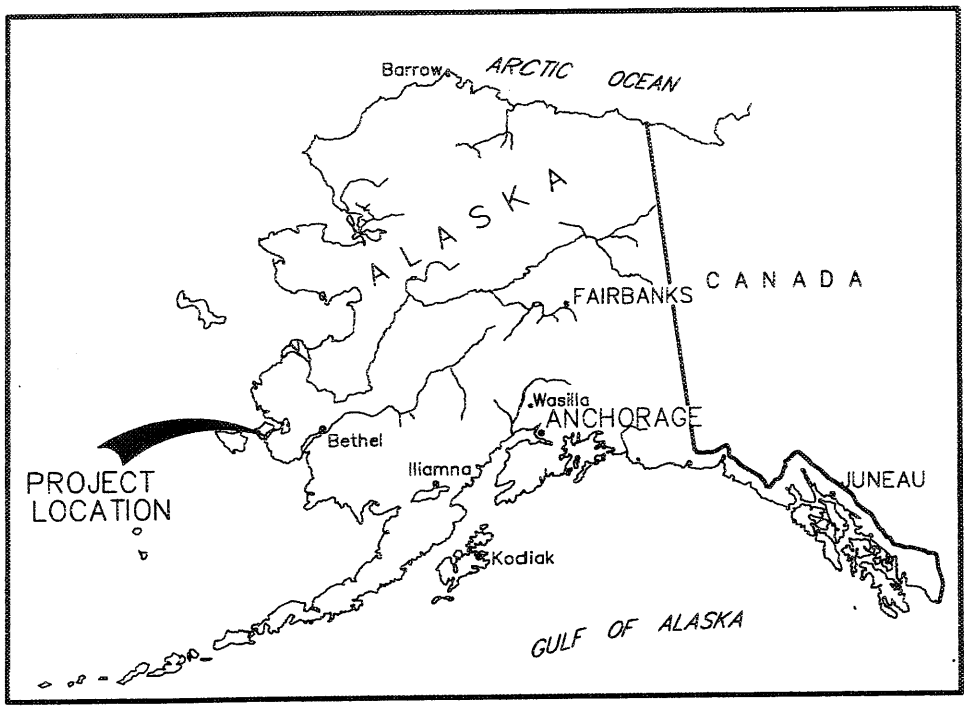
- Erosion protection riprap will be limited to the absolute minimum necessary to stabilize the road.
- Riprap will be clean of all fine-grained materials.

- Project specifications will include special conditions for the implementation and maintenance of Best Management Practices (BMPs) during construction to minimize the project's impact to water quality.

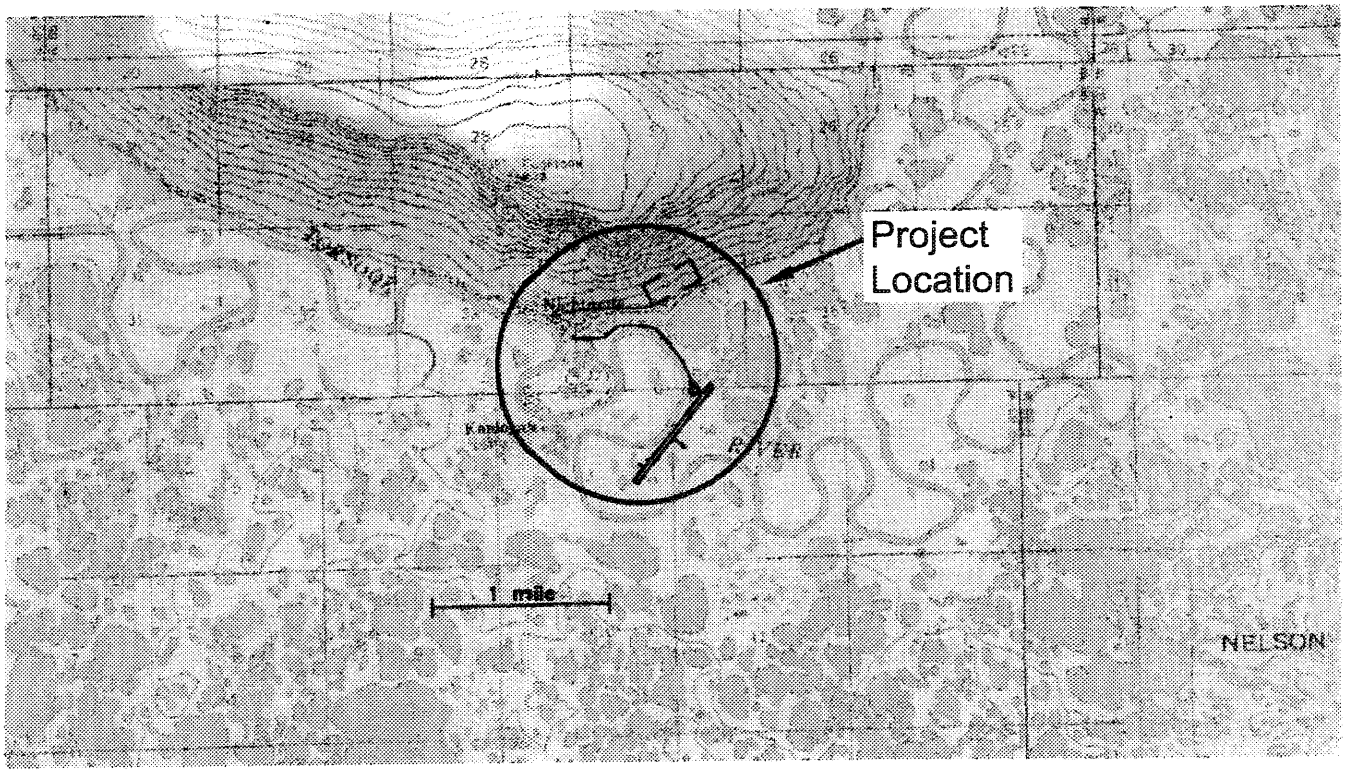
4. AGENCY DETERMINATION

Based on the scope and nature of impacts expected from the project and the mitigation measures identified above, the ADOT&PF on behalf of the FAA has determined that there will be no substantial adverse individual or cumulative effects on EFH as a result of the proposed project.

Attachments: Figure 1: Location and Vicinity Maps
Erosion Protection Typical



T 5 N, R 88 W, SEC 34 & 33
T 4 N, R 89 W, SEC 2 & 3
SEWARD MERIDIAN
U.S.G.S. BAIRD INLET (B-7,B-8,C-7,C-8) ALASKA



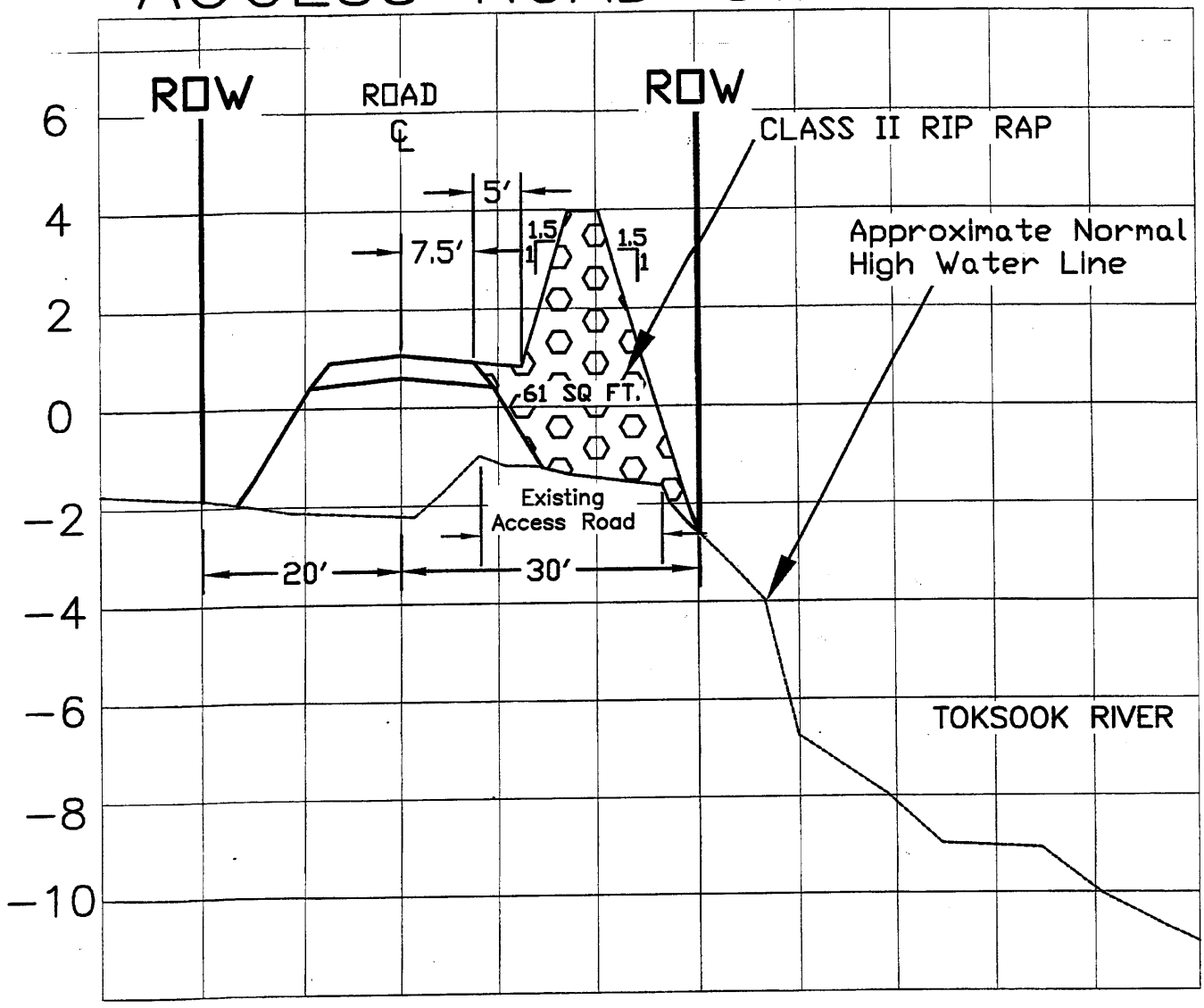
STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES
CENTRAL REGION–DESIGN AND CONSTRUCTION–AVIATION

DESIGN _____ CHECKED _____ DATE _____

Nightmute Airport Improvements
51809

Location and Vicinity Maps
Figure 1

ACCESS ROAD STA. 27+00



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CENTRAL REGION—DESIGN AND CONSTRUCTION—AVIATION

DESIGN _____ CHECKED _____ DATE _____

Nightmute Airport Improvements
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Access Road Typical

SHEET 1 OF 1

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STATE OF ALASKA

DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES

NORTHERN REGION, PRECONSTRUCTION

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January 9, 2006

Nightmute Airport Improvements
Project #51809
Essential Fish Habitat Assessment

Ms. Jeanne Hanson
Habitat Conservation Division
National Marine Fisheries Service
222 W. 7th Avenue, #43
Anchorage, AK 99513-7577

Dear Ms. Hanson:

The Alaska Department of Transportation and Public Facilities (ADOT&PF), in cooperation with the Federal Aviation Administration (FAA), is developing a project to improve the Airport in Nightmute, Alaska. In accordance with the Magnuson-Stevens Fishery Conservation and Management Act (MSFCMA), the enclosed EFH Assessment has been prepared for the subject project.

The scope of the project will involve protection of the existing roadway embankment through the placement of Class II riprap. This slope protection will prevent further erosion of roadway embankment into the Toksook River. The Toksook River is designated as waters important for the spawning, rearing or migration of anadromous fish, as it supports King, Coho, Pink and Chum Salmon, Arctic char and Whitefish. The ADOT&PF consulted with National Marine Fisheries Service to determine if an EFH Assessment was necessary, Mr. John V. Olson, Fishery Biologist/GIS Analyst, concluded via email that an EFH Assessment would be necessary based on the scope of the project. ADOT&PF has completed the EFH Assessment and determines that the proposed action will not cause significant adverse impacts to Essential Fish Habitat (EFH).

Please provide any comments you have on this assessment to Abigail Ogbe, Environmental Impact Analyst, (907) 451-5106, or by email to *abigail_ogbe@dot.state.ak.us*.

Sincerely,

Chuck Howe
Northern Region Environmental Coordinator

AO/dt
Enclosure: EFH Assessment
cc: Marcia Heer, Regulatory Specialist, USACE, Corps
Nancy Ihlenfeldt, Habitat Biologist, ADNR-OHMP, Fairbanks
Gary Lincoln, Design Project Manager, ADOT&PF, Anchorage
Abigail Ogbe, Environmental Impact Analyst, ADOT&PF, Fairbanks
Patricia Oien, Project Manager, Federal Aviation Administration, Anchorage
John Olson, Fishery Biologist/GIS Analyst, National Marine Fisheries Service, Anchorage
Larry Peltz, National Marine Fisheries Service, Anchorage

Subject: Re: [Fwd: Nightmute Airport Improvements (51809): Erosion Protection issues & EFH]
From: John Olson <john.olson@noaa.gov>
Date: Wed, 08 Mar 2006 11:39:43 -0900
To: Abigail Ogbe <abigail_ogbe@dot.state.ak.us>
CC: "Charles E. Howe" <chuck_howe@dot.state.ak.us>, Gary Lincoln <gary_lincoln@dot.state.ak.us>, Jeanne Hanson <Jeanne.Hanson@noaa.gov>

Abigail,

The Nightmute Airport Improvement project will not result in any permanent adverse effect to Essential
Fish Habitat (EFH). Removing the fines from the riprap is not a useful exercise, as the river is undercutting the road and the amount of fines released from that process is much greater than any that may come from the riprap. The issue that I have been considering is that this method of placing riprap is not normally what I would associate with a professionally engineered solution. I would have great concerns if I saw this sort of deployment in the future. I worked for ADF&G many years ago and dealt with conveyances and native allotments, so I am familiar with some of the issues that you have to deal with for this project.
Thank you for your consideration with this project.

John

Abigail Ogbe wrote:
> Hi John, we have not received your response to this email. I will appreciate it if you could respond within the next week or two. Your contributions will be an important part of the environmental document.
> Thank you for working with us.

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John V. Olson
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