

DEPARTMENT OF THE ARMY PERMIT

Permittee: Port of Anchorage

Permit No.: POA-2003-502-N

Issuing Office: U.S. Army Engineer District, Alaska

NOTE: The term "you" and its derivatives, as used in this permit, means the permittee or any future transferee. The term "this office" refers to the appropriate district or division office of the Corps of Engineers having jurisdiction over the permitted activity or the appropriate official of that office acting under the authority of the commanding officer.

You are authorized to perform work in accordance with the terms and conditions specified below.

Project Description:

This permit authorizes work necessary for the construction of the Marine Terminal Redevelopment (Port Expansion) Project to expand, reorganize and improve the existing facilities at the Port of Anchorage to replace functionally obsolete structures; increase POA capacity, efficiency, and security; and accommodate the needs of the U.S. military for rapid deployment. The project involves the construction of a new open cell sheet pile (OCSP) dock in the tidelands west, northwest, and southwest of the existing dock. This permit authorizes the following work:

1. The discharge of fill material over 20.5 acres of wetlands associated with the development of the Cherry Hill and North End Runway borrow pits;
2. The dredging of approximately 258,000 cubic yards of sediment over approximately 21 acres necessary for the construction of the expanded dock and the discharge of the material at the existing Port of Anchorage maintenance dredging disposal site;
3. The discharge of approximately 9,663,420 cubic yards of clean fill material over 111 acres of intertidal and nearshore subtidal waters of Knik Arm necessary for the construction of the expanded dock.

All work will be performed in accordance with the attached plan, 9 sheets, dated July 2007.

Project Location:

The Port of Anchorage is located in the Knik Arm of Upper Cook Inlet, within section 31, T. 14 N., R. 3 W.; and sections 6 & 7, T. 13 N., R. 3 W; Seward Meridian; Latitude 61° 15' N., Longitude 149° 52' W.; in Anchorage, Alaska. The gravel extraction sites are located within sections 5 & 6, T. 13 N., R. 3 W.; and within sections 27, 28, 33, and 34, T. 14 N., R. 3 W.; Seward Meridian; on Elmendorf Air Force Base, northeast of the Port of Anchorage. Construction dredge material will be disposed at the designated maintenance dredging disposal area, located approximately 3,000 feet west of the existing dock.

Permit Conditions:

General Conditions:

1. The time limit for completing the work authorized ends on **August 31, 2014**. If you find that you need more time to complete the authorized activity, submit your request for a time extension to this office for consideration at least one month before the above date is reached.
2. You must maintain the activity authorized by this permit in conformance with the terms and conditions of this permit. You are not relieved of this requirement if you abandon the permitted activity, although you may make a good faith transfer to a third party in compliance with General Condition 4 below. Should you wish to cease to maintain the authorized activity or should you desire to abandon it without a good

faith transfer, you must obtain a modification of this permit from this office, which may require restoration of the area.

3. If you discover any previously unknown historic or archeological remains while accomplishing the activity authorized by this permit, you must immediately notify this office of what you have found. We will initiate the Federal and State coordination required to determine if the remains warrant a recovery effort or if the site is eligible for listing in the National Register of Historic Places.

4. If you sell the property associated with this permit, you must obtain the signature of the new owner in the space provided and forward a copy of the permit to this office to validate the transfer of this authorization.

5. If a conditioned water quality certification has been issued for your project, you must comply with the conditions specified in the certification as special conditions to this permit. For your convenience, a copy of the certification is attached if it contains such conditions.

6. You must allow representatives from this office to inspect the authorized activity at any time deemed necessary to ensure that it is being or has been accomplished in accordance with the terms and conditions of your permit.

Special Conditions:

I. Navigation:

The following conditions are to preserve free navigation, prevent navigational hazards, and to protect the interests of the United States in existing and future federal projects [(33 CFR Part 320.4(o)(3)].

1. Your use of the permitted activity must not interfere with the public's right to free navigation on all navigable waters of the United States.
2. You must install and maintain, at your expense, any safety lights and signals prescribed by the United States Coast Guard (USCG), through regulations or otherwise, on your authorized facilities. The USCG may be reached at the following address and telephone number: Commander (DPW), 17th Coast Guard District, P.O. Box 25517, Juneau, Alaska 99802; (907) 463-2269.
3. The permittee understands and agrees that, if future operations by the United States require the removal, relocation, or other alteration, of the structure or work herein authorized, or if, in the opinion of the Secretary of the Army or his authorized representative, said structure or work shall cause unreasonable obstruction to the free navigation of the navigable waters, the permittee will be required, upon due notice from the Corps of Engineers, to remove, relocate, or alter the structural work or obstructions caused thereby, without expense to the United States. No claim shall be made against the United States on account of any such removal or alteration.
4. Appropriate and practicable mitigation measures shall be employed as needed to minimize adverse affects to federal dredging operations, adjacent properties, and/or flow patterns of waters of the U.S. from temporary changes in sedimentation patterns during the construction phases of the project. The Port of Anchorage shall cooperate with adjacent industrial businesses (e.g., barge terminals) to ensure that all appropriate and practicable mitigation measures are implemented during construction to both minimize and compensate for adverse affects to their operations.

II. Cultural Resources

The following two conditions are to ensure compliance with Section 106 of the National Historic Preservation Act and at the request of the applicant.

1. Procedures for managing inadvertent discoveries of cultural resources or skeletal remains shall be employed as described in the Cultural Resources Monitoring Plan for Cherry Hill and North End Material Extraction report (Anchorage Port Expansion Team, April 2006, or approved revisions).
2. Prior to ground disturbing activities, POA shall photograph and document site conditions of and around the trees of interest identified by representatives of the Native Village of Eklutna (Anchorage

III. Borrow Pits:

The following condition is to prevent and minimize impacts to nesting migratory birds. Under the Migratory Bird Treaty Act (MBTA) (16 U.S.C. 703), it is illegal to "take" migratory birds, their eggs, feathers or nests.

1. To prevent impacts to nesting migratory birds, no vegetation clearing, fill placement, excavation, stockpiling, grading or other disturbing construction activities at the material extraction sites shall be conducted between 1 May and 15 July, except at sites that have been sufficiently disturbed or altered to the extent that suitable nesting habitat has been eliminated (e.g., covered or otherwise removed) prior to 1 May. If disturbing construction activities in areas containing potential nesting habitat are proposed after 1 May, the Port of Anchorage shall submit a plan to the Corps that demonstrates how compliance with the MBTA will be ensured. This plan must be coordinated with the USFWS and approved by the Corps prior to commencement of work that would potentially affect nesting habitat between 1 May and 15 July.

The following two conditions are necessary to prevent and minimize impacts to wetlands and aquatic organisms

2. The POA will establish a buffer between ground disturbing activities at the gravel extraction sites and adjacent wetland areas as necessary to prevent hydrological disturbances from development activities. Additionally, a buffer area shall be established around the Triangle/Fish Lake wetland complex and delineated onsite with silt fencing and signage and verified as adequate by the Corps prior to commencing extraction activities within 600 feet of the wetland complex. The extent and/or distance of the buffer boundaries shall be determined onsite based on vegetation, topography and hydrology as necessary to prevent an adverse disturbance to the wetland complex. The POA shall install and monitor a series of groundwater wells or piezometers in the western portion of the North End Borrow Pit to assure that gravel mining activities do not adversely affect adjacent wetland hydrology.
3. POA shall, to the extent practicable, limit disturbances to wetlands and open water areas where wood frogs are present to periods of time other than those known for breeding and tadpole growth (1 April to 15 July).

IV. Beluga Whales:

The following conditions are to prevent and minimize adverse impacts to marine mammals and to ensure compliance with the Marine Mammal Protection Act.

1. The POA has submitted petitions for an Incidental Harassment Authorization (IHA) for the 2007 construction season and a Letter of Authorization (LOA) for construction seasons 2008-2012 (Anchorage Port Expansion Team, Final Petition; January 2007) for Small Take Authorizations from the NOAA/NMFS under the Marine Mammal Protection Act (MMPA) for the incidental and unintentional taking of marine mammals. The conditions of the IHA and LOA Small Take Authorizations under the MMPA will be carried as special conditions of this DA permit unless otherwise noted by the Corps. The POA shall comply with the interim mitigation measures listed below to minimize project related adverse impacts to beluga whales. Upon receipt of the IHA and/or LOA MMPA authorizations, the Corps will reevaluate the terms or conditions of this permit and modify any conflicting conditions, if necessary.
 - A. The POA shall measure and evaluate construction and operationally generated noise introduced in Knik Arm at the Port of Anchorage. The applicant shall develop a 'Sound Index' to accurately represent noise levels associated with Port of Anchorage operations and construction activities, which must specifically include noise levels generated from pile driving, dockside activities, vessel traffic in the channel, dredging, and docking activities. The evaluation shall characterize current baseline operational noise levels at the Port of Anchorage and develop an engineering report that identifies structural and/operational noise reduction measures, if necessary, to minimize the baseline operational noise levels at the expanded port to the maximum extent practicable. The final report will be provided to the NMFS two years prior to construction completion.

The Port of Anchorage Sound Index will be collaborated with the concurrent beluga whale monitoring program to correlate construction and operationally generated noise exposures with beluga whale presence, absence, and any altered behavior observed during construction and operations (i.e., a dose-response analysis). An annual review of beluga observations and noise exposure data shall be provided to NMFS no later than 1 Feb annually. The annual review shall also identify relevant technological advances in sound attenuation. The POA shall employ practicable noise minimization measures identified in the annual reports in subsequent POA construction activities.

- B. In collaboration with the NMFS, the Port of Anchorage shall continue to develop and maintain a beluga monitoring program to estimate the frequency at which beluga whales are present in the project footprint; characterize habitat use and behavior of belugas near the Port during ice free months; map sound levels and distance attenuation related to POA background noise and expansion activity; and to characterize and assess the impacts of received noise from the POA on beluga whale behavior and movements. POA shall consult with NMFS to develop the program and shall include the following:
- a. Include visual observations (shore-based and opportunistic vessel observations) to monitor beluga movements, timing, group size, locations, identifiable behaviors and patterns, and use of the area in the vicinity of the Project during operations through the construction period. The POA will also provide one year of post-construction monitoring in continued consultation with NOAA/NMFS.
 - b. Include a passive acoustic monitoring plan to correlate with visual observations. The POA shall install hydrophones (or employ other effective methodologies) necessary to detect and localize passing whales and to determine the proportion of belugas missed from visual surveys.
 - c. The POA will employ a marine mammal observation team, separate from the construction contractor observer activities, for the duration of all construction activities.
- C. The Port of Anchorage shall establish and enforce safety radii and shut down standards around the in-water pile driving areas. Initially, the safety radii requiring shut down shall be for any whale observed within 650 meters of pile driving. The Port of Anchorage shall conduct on-site underwater noise surveys to verify the 190, 180 and 160 dB re 1 μ Pa rms isopleths from in-water pile driving activities for the POA expansion. Safety zones appropriate to the POA site conditions and equipment will then be empirically determined and implemented. The 160 dB re 1 μ Pa rms safety zone should be in force unless the POA obtains authorization under the section 101 (a) of the Marine Mammal Protection Act for the incidental and unintentional taking of marine mammals; in which case the safety zones should be those provided within the authorization. The safety zone around pile driving areas shall be monitored for the presence of marine mammals before, during, and after any pile driving activity. If the safety radius is obscured by fog or poor lighting conditions, pile driving will cease until the entire safety radius is visible.
- D. Prior to the start of seasonal pile driving activities, the POA will require construction supervisors and crews, the marine-mammal monitoring team, the acoustical monitoring team, and all project managers to attend a briefing. The purpose of the briefing will be to establish the responsibilities of each party, define the chains of command, discuss communication procedures, provide an overview of monitoring purposes, and review operational procedures.
- E. The Port of Anchorage shall formally notify the NMFS prior to the seasonal commencement of pile driving and provide weekly monitoring reports. A summary monitoring report will be submitted at the end of annual construction activities and a final report will be submitted at the end of the one year post construction monitoring season.
- F. The POA will establish daily "soft start" or "ramp up" procedures for pile-driving activities. The soft start technique will be used at the beginning of each piling installation to allow any marine mammal that may be in the area to leave before pile driving activities reach full energy. The soft start procedure will require contractors to initiate noise from vibratory hammers for 15 seconds at

reduced energy followed by a 1-minute waiting period. This procedure will be repeated two additional times. If an impact hammer is used, contractors will be required to provide an initial start of 3 strikes at 40-percent energy, followed by a 1-minute waiting period, then two subsequent 3-strike sets. If marine mammals are sighted within the safety zone prior to pile driving or during the soft start, the contractor will delay pile-driving continuation until the mammal has moved outside the safety zone. Pile installation will resume only after a qualified observer confirms that the marine mammal has moved outside the safety zone or after 15 minutes have elapsed since the marine mammal was last sighted.

- G. The POA will erect whale-notification signage in the waterfront viewing areas near the Ship Creek Public Boat Launch and within the secured Port entrance that is visible to all Port users. This signage will provide information on the beluga whale and notification procedures for reporting beluga whale sightings to the NMFS. The POA will consult with the NMFS to establish the signage criteria.
 - H. During in-water construction activities, the POA shall ensure that construction contractors delegate supervisory responsibility to include on-site construction personnel to observe, record, and report marine mammal sightings and response actions taken, to include shut down or delay.
 - I. The POA shall establish a long-term, formalized marine-mammal sighting and notification procedure for all Port users, visitors, tenants, or contractors prior to and after construction activities. The notification procedure shall clearly identify roles and responsibilities for reporting all marine mammal sightings. The POA will forward documentation of all reported marine mammal sightings to the NMFS.
2. In-water impact pile-driving, excluding work when the entire pile is out of the water due to shoreline elevation or tidal stage, shall not occur within two hours of either side of each low tide.

V. Fish

The following conditions are necessary to minimize impacts to anadromous fish populations.

1. The Port of Anchorage shall either avoid pile driving activities between 15 May and 15 August or conduct an on-site fish study to analyze the impacts of vibratory and impact hammer sheet pile driving activities on salmonids at various distances and measured sound pressure levels. The study plan shall be developed in consultation with local representatives of the U.S. Fish and Wildlife Service, the National Marine Fisheries Service, the Environmental Protection Agency, and approved by the Corps. The study plan should include a live cage fish study and hydroacoustic monitoring to assess the impacts of pile driving on the health and behavior of fish groups and individuals. The study plan shall be completed by 1 January 2008 and initiated in the 2008 construction season. The results shall be analyzed following the completion of the 2008 construction season and coordinated with the Corps and the aforementioned resource agencies. Based on the results of the study, this condition may be modified and/or supplemented to minimize adverse impacts to salmonids (including timing restrictions).
2. No in water fill placement or pile driving activities shall occur within a one week period following smolt releases from the Ship Creek Hatchery. The Port shall coordinate with hatchery staff to ensure compliance with this condition.
3. In-water sheet piles shall be driven with a vibratory hammer to the maximum extent possible (i.e., until desired depth is achieved and/or to refusal, prior to using an impact hammer).
4. The final design shall, wherever possible, incorporate end-of-phase construction joints that provide potential refuge habitat areas for salmonids in the non-structural voids. Although the spacing, size, and configuration of these structural joints will be dictated by stability and construction requirements, void spaces within these joints shall be developed to maximize the potential salmonid refuge value of the space. The design of the refuge area within the void space shall be approved by the Corps, in consultation with other federal resource agencies. The refuge area shall be monitored by the Port of Anchorage between 15 May and 15 August for a minimum of 2 years following construction to determine the extent and nature of use by salmonids. Based on the monitoring observations, this condition may be modified to improve the functional value of refuge areas if necessary.

VI. Design Coordination:

The following three conditions are to prevent and minimize adverse impacts to public safety and security and to protect the interests of the United States in existing and future federal projects:

1. A final analysis of the global and internal structural stability of the open cell sheet pile structure under static and seismic conditions shall be submitted to the Corps of Engineers a minimum of two months prior to sheetpile installation activities of 2008. The analysis shall state the assumptions made, data used, computational analyses performed, modeling input criteria used and output results generated (where modeling is applicable) that led to the final analysis. Additionally, to the maximum extent practicable, the final analysis shall, at minimum, include the following:
 - a. Test the borrow source(s) to confirm the stability model input and determine the densification requirements. Provide your Quality Assurance Plan and the acceptance criteria for validating the densification of the backfill.
 - b. For each soil profile, run static stability models with six feet of over dredge below the design project depth and at a water elevation of -5 ft. MLLW.
 - c. Submit a plan that describes the proposed piezometer placements and all other instrumentation to be used to confirm how consolidation (and associated strength gain) is expected to occur, and to what degree. Additionally, the POA will submit annual reports of actual findings.
 - d. Conduct a parametric sensitivity analysis, investigating strength, modulus, and geometry, with the model for seismic loading to determine if the model is sensitive to small changes in input parameters. The study shall further evaluate possible failure modes, to include toe heave.
 - e. Define the target Factor of Safety for internal stability and model each construction phase area. All engineering parameters and design calculations for internal stability evaluation shall be included in the design analysis.
 - f. Further evaluate earthquake loading by considering a minimum of five accelograms, with no more than two being synthetic, and refined target design response spectra criteria in the analysis. Specifically, develop design target spectra based on deterministic spectra for MCE scenario earthquakes from the Castle Mountain fault and Megathrust sources using M_{max} and closest distance parameters. Use a suite of ground motion attenuation models that are appropriate for the region and source. Combine this suite of models either by a weighting or enveloping procedure to develop final target spectra and match the selected accelograms to the target spectra. Review the latest information on USGS Alaska seismic hazard maps to assist in the selection of parameters and ground motion attenuation models. The development of the final suite of design ground motions shall be conducted by a professional engineering seismologist experienced with current practice for developing design ground motions for critical facilities.
 - g. In light of the large strains predicted during an MCE, include laboratory residual shear strength tests in your analysis to investigate potential material responses.
 - h. Develop compatible designs for adjacent cells with different seismic performance objectives.
2. The POA shall submit Open Cell Sheetpile design modifications to the Corps for review.
3. The POA shall submit as-built drawings of the OCSP structures, approved and stamped by the Engineer-of-Record, following completion of construction phases and the overall structure.

VII. Fill Material:

The following conditions are required to minimize adverse impacts of the discharge on special aquatic sites and other waters outside of the project area [33 CFR 320.4 (r), 40 CFR 230.5 (j) and 40CFR 230 Subpart H, including parts 230.71, 230.72, 230.73, 230.75]]

1. Fill material shall consist of clean fill, free of unsuitable material (e.g., trash, debris, asphalt, etc.), and free of toxic pollutants.

2. All fill material shall be stabilized as necessary to prevent erosion and encroachment of fill material outside the authorized footprint before, during, and after construction. No fill or construction materials shall be stockpiled on adjacent mudflats outside of the authorized project boundary.

VIII. Compensatory Mitigation:

The following conditions are required to compensate for resource losses important to the human and aquatic environment. (33 CFR 320.4(r) and 40 CFR Parts 230.41 and 230.42)

1. The Port of Anchorage shall provide funding equivalent to the monetary value of the debits of the authorized project impacts, as determined by the Anchorage Debit Credit Methodology, in accordance to the attached Memorandum of Agreement (MOA) concerning compensatory mitigation for the overall project. Compensatory mitigation funds from the account will be allocated primarily for construction related costs of selected mitigation projects, as specified in the MOA. In addition to the funding requirements, the Port of Anchorage shall provide for the project management actions necessary to obtain any applicable permits and/or authorizations, the preparation of necessary engineered designs, and monitoring of all selected mitigation projects as necessary.
2. In addition to the mitigation requirements specified above, the Port of Anchorage shall conduct a feasibility study to identify the most practicable and beneficial aquatic habitat restoration, enhancement, creation, and preservation projects available in the Lower Ship Creek watershed and estuary. The projects identified in this study will be used by the Corps, under consultation with a mitigation advisory committee (consisting of federal, state, and local resource agencies and other applicable stakeholders, as appropriate) to determine which project(s) shall be implemented and funded as part of the compensatory mitigation requirements of this permit. The content of the final feasibility study plan shall be approved by the Corps to ensure compliance with this requirement.

Special Information:

Any condition incorporated by reference into this permit by General Condition 5, remains a condition of this permit unless expressly modified or deleted, in writing, by the District Engineer or his authorized representative.

Further Information:

1. Congressional Authorities: You have been authorized to undertake the activity described above pursuant to:

(X) Section 10 of the Rivers and Harbors Act of 1899 (33 U.S.C. 403).

(X) Section 404 of the Clean Water Act (33 U.S.C. 1344).

() Section 103 of the Marine Protection, Research, and Sanctuaries Act of 1972 (33 U.S.C. 1413).

2. Limits of this authorization.

a. This permit does not obviate the need to obtain other Federal, State, or local authorization required by law.

b. This permit does not grant any property rights or exclusive privileges.

c. This permit does not authorize any injury to the property or rights of others.

d. This permit does not authorize interference with any existing or proposed Federal project.

3. Limits of Federal Liability. In issuing this permit, the Federal Government does not assume any liability for the following:

a. Damages to the permitted project or uses thereof as a result of other permitted or unpermitted activities or from natural causes.

b. Damages to the permitted project or uses thereof as a result of current or future activities undertaken by or on behalf of the United States in the public interest.

c. Damages to persons, property, or to other permitted or unpermitted activities or structures caused by the activity authorized by this permit.

d. Design or construction deficiencies associated with the permitted work.

e. Damage claims associated with any future modification, suspension, or revocation of this permit.

4. Reliance on Applicant's Data: The determination of this office that issuance of this permit is not contrary to the public interest was made in reliance on the information you provided.

5. Reevaluation of Permit Decision. This office may reevaluate its decision on this permit at any time the circumstances warrant. Circumstances that could require a reevaluation include, but are not limited to, the following:

a. You fail to comply with the terms and conditions of this permit.

b. The information provided by you in support of your permit application proves to have been false, incomplete, or inaccurate (See 4 above).

c. Significant new information surfaces which this office did not consider in reaching the original public interest decision.

Such a reevaluation may result in a determination that it is appropriate to use the suspension, modification, and revocation procedures contained in 33 CFR 325.7 or enforcement procedures such as those contained in 33 CFR 326.4 and 326.5. The referenced enforcement procedures provide for the issuance of an administrative order requiring you to comply with the terms and conditions of your permit and for the initiation of legal action where appropriate. You will be required to pay for any corrective measures ordered by this office, and if you fail to comply with such directive, this office may in certain situations (such as those specified in 33 CFR 209.170) accomplish the corrective measures by contract or otherwise and bill you for the cost.

6. Extensions. General Condition 1 establishes a time limit for the completion of the activity authorized by this permit. Unless there are circumstances requiring either a prompt completion of the authorized activity or a reevaluation of the public interest decision, the Corps will normally give favorable consideration to a request for an extension of this time limit.

Your signature below, as permittee, indicates that you accept and agree to comply with the terms and conditions of this permit.

William J. Sheffield
(PERMITTEE) AND TITLE

8-10-07
(DATE)

This permit becomes effective when the Federal official, designated to act for the Secretary of the Army, has signed below.

Kevin J. Wilson
KEVIN J. WILSON
COLONEL, CORPS OF ENGINEERS
DISTRICT COMMANDER

10 Aug 2007
(DATE)

When the structures or work authorized by this permit are still in existence at the time the property is transferred the terms and conditions of this permit will continue to be binding on the new owner(s) of the property. To validate the transfer of this permit and the associated liabilities associated with compliance with its terms and conditions have the transferee sign and date below.

(TRANSFEREE)

(DATE)



**MEMORANDUM OF AGREEMENT
BETWEEN THE
U.S. ARMY CORPS OF ENGINEERS
&
THE MUNICIPALITY OF ANCHORAGE**

**Concerning the Administration and Management of
Compensatory Mitigation Funds for the
Port of Anchorage Expansion Project
Department of the Army Permit POA-2003-502**

SECTION 1. INTRODUCTION & BACKGROUND

- 1.1 This Memorandum of Agreement (MOA) establishes a formal agreement between the Regulatory Division of the Alaska District Corps of Engineers (hereinafter "Corps") and the Municipality of Anchorage (hereinafter "Municipality") for the administration of compensatory mitigation funds, as required by Department of the Army (DA) permit POA-2003-502-2 and subsequent modifications authorizing work in waters of the U.S. associated with the Port of Anchorage Expansion Project (Port Expansion). This MOA describes the objectives, process and the roles and responsibilities associated with the management and allocation of compensatory mitigation funds. Mitigation projects shall be reviewed and selected in the context of their comparative abilities to offset the direct losses of aquatic habitat and functions attributed to the Port Expansion project, as well as their overall ecological benefit relative to cost (cost/benefit analysis). Mitigation projects for consideration will include projects that restore, enhance, create, and/or preserve aquatic habitat and functions of Knik Arm and its tributaries, including projects that support and enhance the Municipality's sustainable salmon and creek restoration programs. This MOA is effective as of the last date set forth on the signatory page hereto.
- 1.2 DA permit POA-2003-502-2 authorized the discharge of fill material over 27 acres of intertidal mudflats in Knik Arm north of the existing dock at the Port of Anchorage (Port). DA Permit POA-2003-502-N, if issued, would authorize discharges of fill material over the remainder of the proposed Port Expansion project area, which includes an additional 111 acres of intertidal mudflats and nearshore subtidal waters of Knik Arm and gravel extraction activities that would result in the removal of 20.5 acres of wetlands on Elmendorf Air Force Base (EAFB).

SECTION 2.

AUTHORITY

- 2.1 The Corps has regulatory jurisdiction over discharges of dredged and/or fill material in waters of the United States, including wetlands, under Section 404 of the Clean Water Act and work in or affecting navigable waters of the United States under Section 10 of the Rivers and Harbors Act of 1899. The Corps Regulatory Program strives to avoid, minimize, and offset adverse impacts to aquatic resources, while allowing reasonable infrastructure development and economic growth through fair, flexible and balanced permit decisions. Authorized adverse impacts to the aquatic environment are offset by appropriate and practicable compensatory mitigation requirements, which may include restoring, enhancing, creating and/or preserving aquatic habitat and their functions and values.
- 2.2 The Municipality is recognized as a qualified entity for the administration and management of mitigation funds on behalf of the Port of Anchorage under the terms and conditions of this MOA. The Municipality has staff with expertise in land management, law, wetlands, hydrology, and planning. Additionally, the Municipality's Creeks Community Development Manager provides oversight and coordination of the Municipality's salmon habitat protection and restoration program, pursuant to the Southeast Sustainable Salmon Program and the Pacific Coast Salmon Recovery Fund. The Watershed Task Force, established by the Mayor of Anchorage, provides advice and guidance to the Municipality as it implements salmon restoration and watershed projects.

Section 3

PROGRAM ADMINISTRATION

- 3.1 The Municipality of Anchorage Office of Economic and Community Development shall oversee implementation of the MOA including organizing the Port of Anchorage Mitigation Advisory Committee (advisory committee) and related administrative support. The advisory committee shall include an initial permanent panel consisting of representatives of federal, state, and municipal resource agencies. Other public, private, nonprofit, and/or tribal entities will be invited for consultation on particular mitigation projects as appropriate and mutually agreed upon by the Corps and the Municipality. The Municipality and the Corps will consult with the advisory committee for advice and recommendations as to the overall ecological benefits and the appropriateness of proposed mitigation projects in meeting the purpose, objectives and outcomes of this MOA, which are described in Section 4. The initial permanent panel members shall consist of representatives from the following agencies:

1. Alaska Department of Natural Resources
Office of Habitat Management and Permitting
2. U.S. Fish and Wildlife Service
3. Environmental Protection Agency
3. National Marine Fisheries Service
4. Municipality of Anchorage, Planning Department

7. Department of the Air Force, 3 CES/CEVP
8. Municipality of Anchorage
Office of Economic and Community Development
9. U.S. Army Corps of Engineers, Regulatory Division

- 3.2 The Municipality of Anchorage Creeks Community Development Manager shall chair the advisory committee, which includes responsibilities to organize meeting dates, times, and place, in consultation with members of the advisory committee. The Municipality shall convene meetings with the Corps and the advisory committee as necessary to execute the terms and conditions of this MOA, at minimum once a quarter, and maintain a written record of meetings. Additionally, the Municipality will track and present the progress of projects funded pursuant to this MOA to the Corps and the advisory committee.
- 3.3 The Corps shall be the final approval for the allocation and distribution of mitigation funds after considering all comments and recommendations provided by the advisory committee.

SECTION 4

PURPOSE OBJECTIVES & OUTCOMES

- 4.1 Purpose: This MOA establishes the procedures and process for the management and administration of compensatory mitigation funds as required under DA permit POA-2003-502-2 and any applicable subsequent permit modifications, which authorize work in waters of the U.S associated with the Port of Anchorage Expansion. Mitigation funds shall be used for the restoration, enhancement, preservation, and/or creation of aquatic habitats and functions to offset, as practicable, respective losses associated with authorized activities. The establishment of a mitigation account to fund compensatory mitigation projects within adjacent and/or nearby tributary watersheds of Knik Arm (which may include tributaries within the Matanuska-Susitna Borough) has been determined to represent the most appropriate and practicable compensatory mitigation opportunity available to offset the unavoidable adverse impacts associated with DA authorized Port Expansion activities.
- 4.2 Objectives: Compensatory mitigation projects shall be selected based on the ecological benefits that would be provided and their respective contributions toward offsetting the losses of aquatic habitats and functions associated with DA authorized Port Expansion activities. Projects will be prioritized based on their availability, their respective locations and aquatic function gains relative to the authorized project impacts, and comparative cost to benefit ratios. When practicable, on-site compensatory mitigation (i.e., in areas adjacent or continuous to the impacted aquatic areas of the Port expansion) will be preferential over offsite mitigation projects. Off-site compensatory mitigation projects will be undertaken in the same geographic area and types of aquatic habitat impacted by the authorized work to the extent practicable. Additionally, in-kind compensatory mitigation projects that would offset the direct aquatic resource functional

losses associated with Port Expansion activities will be undertaken to the extent practicable.

- 4.3 DA permit POA-2003-502-2 authorized the discharge of fill material over 27 acres of intertidal mudflats adjacent to the existing Port in Knik Arm. DA permit POA-2003-502-D authorized the discharge of fill material over 0.21 acre of wetlands on Elmendorf Air Force Base for maintenance activities on the POA Haul Road. DA permit POA-2003-502-N, if issued, would authorize the discharge of fill material over an additional 111 acres of adjacent intertidal mudflats and nearshore subtidal waters at the existing Port location in Knik Arm and 20.5 acres of ponded wetlands on EAFB. Priority shall be given to projects in proximity and of similar habitat types as the impacted areas of the Port Expansion. The authorized impact areas of the Port Expansion involve the intertidal mudflats and nearshore waters of Knik Arm, located north of the mouth of Ship Creek and south of Cairn Point, and wetlands within the Cherry Hill and North End Runway Borrow Pits on EAFB, northeast of the Port (See Attachment A). Mitigation projects contiguous or adjacent to authorized impact areas have the highest priority, followed by projects which are in the same watershed, followed by projects in other watersheds nearby. Additionally, mitigation projects involving the same or similar aquatic habitat types as those impacted and lost by Port Expansion activities will be given priority over other habitat types. To contribute towards offsetting the intertidal mudflats and nearshore marine habitat losses associated with the expansion of the Port infrastructure, mitigation projects adjacent to the impact areas in Knik Arm will be given the highest priority, followed by projects in the intertidal and tidally influenced estuarine and riparian reaches of nearby freshwater tributaries of Knik Arm, mainly Ship Creek, just south of the Port expansion (See Attachment A). To offset the wetland losses associated with the gravel extraction developments on EAFB, located within the proximity of the Six Mile Creek watershed, priority will be given to wetland and riparian mitigation projects within the Six Mile Creek watershed.
- 4.4 The primary aquatic resource losses associated with the port expansion are the losses of intertidal and nearshore habitat used by salmon and beluga whales, species of high social and ecological value. The intertidal and nearshore subtidal waters of the Port Expansion area are used by juvenile and adult salmonids, originating from tributaries of Knik Arm, for refuge from the strong currents of Knik Arm and as a migration corridor for adult salmonids. The mouth of Ship Creek is located approximately 2000 feet from the southernmost limit of the Port expansion project. Ship Creek supports a hatchery enhanced urban sport fishery of high social and economic importance to the City of Anchorage and the State of Alaska. Ship Creek hatchery produced Chinook and Coho smolt represent the salmonid populations that would experience the greatest direct impact from the habitat losses associated with the Port Expansion. Cook Inlet Beluga whales, a depleted marine mammal, are known to frequent the Port area, especially the gyre formation south of Cairn Point, and are believed to use the area for the feeding opportunities provided by the salmonid use. In-kind mitigation options that involve the direct replacement of the intertidal and nearshore subtidal habitat losses associated with the Port Expansion are not currently available or practicable. Mitigation projects that would best offset Port Expansion impacts by restoring, enhancing, or preserving nearby

intertidal and nearshore salmonid habitats will be given the highest priority, including projects located in the estuarine and lower riparian reaches of nearby Knik Arm tributaries. It is anticipated that projects that improve salmon habitat to maintain and enhance Pacific salmon populations near the Port Expansion area would also provide a direct benefit to beluga whales by maintaining and/or enhancing a primary food source.

- 4.5 Compensatory mitigation projects that would contribute toward offsetting the functional losses attributed to the Port Expansion would support salmon populations through the restoration, enhancement, creation and/or preservation (listed in order of priority) of existing nearby estuarine and associated lower riparian habitats. Projects would include the removal and restoration of historical fills and developments, the removal of fish passage barriers, the restoration of natural hydrodynamics and sediment transport patterns, the enhancement and/or creation of estuarine juvenile salmonid refuge and rearing habitat, restoration and enhancement of riparian buffers and streambanks, the preservation of estuarine and riparian habitats, and projects that protect natural riparian buffers and streambanks by providing public access and improving overall social function (fishing, viewing, etc.) The allocation of mitigation funds for studies and evaluations will be approved sparingly only as absolutely necessary to implement high priority compensatory mitigation projects.
- 4.6 Prior to the allocation of mitigation funds, the Corps, Municipality, and the advisory committee will review available mitigation projects and prioritize them in accordance to their overall ability to offset the aquatic function losses of the Port expansion and their respective cost/benefit or cost/credit ratio. Applicable mitigation projects include projects identified in the Municipality of Anchorage's Sustainable Salmon initiative and/or other projects that may later be identified that would meet the purpose and objectives of this MOA. Nearby Knik Arm tributaries and the preliminary mitigation projects currently available for review and consideration by the Corps, Municipality and the advisory committee are summarized below (the following list is not absolute and does not limit other Knik Arm tributaries or projects which may be later identified).

Chester Creek

Chester Creek Aquatic Ecosystem Restoration, Westchester Lagoon to Cook Inlet, Phase II is an aquatic restoration project at the mouth of Chester Creek in Anchorage, Alaska. The proposed project is to improve anadromous fish passage by removing a major obstruction, constructed in 1971, to salmon at the mouth of Chester Creek. The mitigation project involves the construction/creation of a new intertidal channel to allow unobstructed fish migration in and out of Chester Creek from Knik Arm.

Status: An environmental assessment, finding of no significant impact, and preliminary engineer design drawings have been completed for this project. The final design for the project is anticipated by October 2007. The allocation of mitigation funds associated with DA permit POA-2003-502-2 for the construction

of this project is available for the immediate review and consideration by the Corps, Municipality, and the advisory committee.

Six Mile Creek

To offset the unavoidable wetland losses associated with the borrow pit developments on EAFB, the following compensatory mitigation projects have been identified within the Six Mile creek watershed:

Lower Six Mile Lake: This project would replace fish ladders that are impeding fish migration in an effort to improve fish passage for adult and juvenile salmon.

Upper Six Mile Lake: This project is intended to stabilize the edge of Talley Avenue separating Upper and Lower Six Mile Lakes and enhance the existing gravel spawning beds. The project will also design and construct spawning channels along with check dams to coincide with freshwater flows.

Six Mile Creek: This project would design and construct four irregularly shaped over-wintering ponds at the location where Six Mile Creek meanders through the wetlands west of Fairchild Avenue.

Status: The Six Mile Creek fisheries enhancement projects would be available for review and consideration by the Corps, Municipality, and the advisory committee following issuance of DA permit POA-2003-502-N. Design drawings and environmental review and permitting would commence following the review and approval of the projects by the Corps under consultation with the advisory committee.

Lower Ship Creek

Ship Creek, which is the closest and most directly impacted watershed by the Port expansion area, has been historically degraded from human development activities. The Ship Creek estuary has been historically diminished in both size and function and the lower reaches of Ship Creek have been channelized, dammed and developed. The industrial developments have diminished streamside riparian habitat and buffering, salmon spawning and rearing habitat, and several dams have created major obstructions to salmon passage, which have substantially reduced the creek's wild salmon population. Mitigation activities that would restore and/or enhance the ecological functions of the Ship Creek estuary would provide the greatest opportunities to offset the unavoidable direct and indirect impacts of the Project. Due to the private ownership of the creek bed and adjacent lands in lower reaches of the creek, coupled with conflicting stakeholder interests in the lower and upper reaches of the creek, mitigation projects are very controversial in the area. The Corps, Municipality and the advisory committee will consider appropriate and practicable mitigation projects identified

