



DEPARTMENT OF THE ARMY
PACIFIC OCEAN DIVISION, U.S. ARMY CORPS OF ENGINEERS
FORT SHAFTER, HAWAII 96858-5440

REPLY TO
ATTENTION OF

CEPOD-PDC

27 DEC 2011

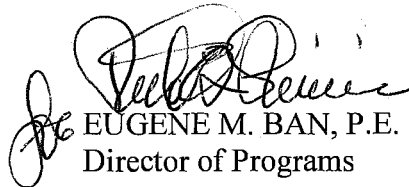
MEMORANDUM FOR COMMANDER ALASKA ENGINEER DISTRICT (CEPOA-PM-C/DAVID WILLIAMS), P.O. BOX 898, ELMENDORF AFB, AK 99506-0898

SUBJECT: Review Plan Approval for the Little Diomedede, Alaska, Navigation Improvements Feasibility Report

1. The enclosed Review Plan for the Little Diomedede, Alaska, Navigation Improvements Feasibility Report has been prepared in accordance with EC 1165-2-209, Civil Works Review Policy, dated 31 January 2010. The Small Boat Harbor Planning Sub-center of Expertise of the Pacific Ocean Division is the lead office to execute this Review Plan, which does include Type I Independent External Peer Review.
2. I approve this Review Plan. It is subject to change as circumstances require, consistent with project development under the Project Management Business Process. Subsequent revisions to this Review Plan or its execution will require new written approval from this office.
3. The point of contact for this memorandum is Mr. Russell Iwamura, Senior Economist, Civil Works Integration Division, at 808-438-8859 or email Russell.K.Iwamura@usace.army.mil.

FOR THE COMMANDER:

Encl


EUGENE M. BAN, P.E.
Director of Programs

REVIEW PLAN

**Little Diomedede, Alaska
Navigation Improvements Feasibility Report**

Alaska District

**MSC Approval Date: 27 December 2011
Last Revision Date: None, Original Review Plan**



**US Army Corps
of Engineers ®**

REVIEW PLAN

**Little Diomedes, Alaska
Navigation Improvements
Feasibility Report**

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1. PURPOSE AND REQUIREMENTS

a. **Purpose.** This Review Plan defines the scope and level of peer review for the Little Diomedede, Alaska Navigation Improvements Feasibility Report.

b. References

- (1) Engineering Circular (EC) 1165-2-209, Civil Works Review Policy, 31 Jan 2010
- (2) EC 1105-2-412, Assuring Quality of Planning Models, 31 Mar 2011
- (3) Engineering Regulation (ER) 1110-1-12, Quality Management, 30 Sep 2006
- (4) ER 1105-2-100, Planning Guidance Notebook, Appendix H, Policy Compliance Review and Approval of Decision Documents, Amendment #1, 20 Nov 2007
- (5) Navigation Improvements and Storm Damage Reduction, Little Diomedede, Alaska, CWIS 013785, Project Management Plan, 18 Aug 2006
- (6) CEPOA-QMP-001, Alaska District Quality Management Plan, Jan 2010
- (7) CEPOA-7.3-11 Study Quality Management, 7 Jun 2010
- (8) CEPOA-7.3-1-WI-09, Civil Works Review Policy Roll Out Brief, 7 Jun 2010
- (9) CEPOA-7.3-4 Independent Technical Review/Design Review, 7 Jun 2010

c. **Requirements.** This review plan was developed in accordance with EC 1165-2-209, which establishes an accountable, comprehensive, life-cycle review strategy for Civil Works products by providing a seamless process for review of all Civil Works projects from initial planning through design, construction, and operation, maintenance, repair, replacement and rehabilitation (OMRR&R). The EC outlines four general levels of review: District Quality Control/Quality Assurance (DQC), Agency Technical Review (ATR), Independent External Peer Review (IEPR), and Policy and Legal Compliance Review. In addition to these levels of review, decision documents are subject to cost engineering review and certification (per EC 1165-2-209) and planning model certification/approval (per EC 1105-2-412). This review plan was drafted based upon a template for decision document review plans dated 16 Mar 2011.

2. REVIEW MANAGEMENT ORGANIZATION (RMO) COORDINATION

The RMO is responsible for managing the overall peer review effort described in this Review Plan. The RMO for decision documents is typically either a Planning Center of Expertise (PCX) or the Risk Management Center (RMC), depending on the primary purpose of the decision document. The RMO for the peer review effort described in this Review Plan is Small Boat Harbor Planning Sub-Center of Expertise (SBH-PSCX) located in the Alaska District (Anchorage, Alaska) of the Pacific Ocean Division of the Corps of Engineers.

The RMO will coordinate with the Cost Engineering Directory of Expertise (DX) to ensure the appropriate expertise is included on the review teams to assess the adequacy of cost estimates, construction schedules and contingencies.

3. STUDY INFORMATION

a. **Decision Document.** This review plan is for the decision document Feasibility Report for Navigation Improvements in Little Diomedede, Alaska. The purpose of the feasibility study is to evaluate potential navigation improvements and determine whether Federal participation in measures to meet

community navigation needs is appropriate. The study was authorized by Conference Report 106-988 for Fiscal Year 2001 Appropriations, Public Law 106-377 which appropriated \$75,000 for initiation of the study. Approval will be by HQUSACE. The final report package, including a Chief of Engineers Report, will be provided to Congress to consider authorization of a recommended plan for implementation. Currently, the feasibility report is anticipated to be accompanied by an Environmental Assessment (EA).

- b. Study/Project Description.** The community of Inalik, commonly known as Diomedede or Little Diomedede, is a traditional Eskimo village of approximately 115 people, located on the western shore of Little Diomedede (locally known as Igaluk) Island, Alaska. Residents of Little Diomedede rely almost entirely upon a subsistence lifestyle. Little Diomedede and its companion island, Big Diomedede, lie at the center of the Bering Strait separating the Bering Sea from the Chukchi Sea, and Russia from the United States (figure 1). The community is 2.5 miles from Big Diomedede, which belongs to Russia; 0.6 miles from Russian waters and airspace; 27 miles from the Alaskan mainland; and about 685 air miles northwest of Anchorage.

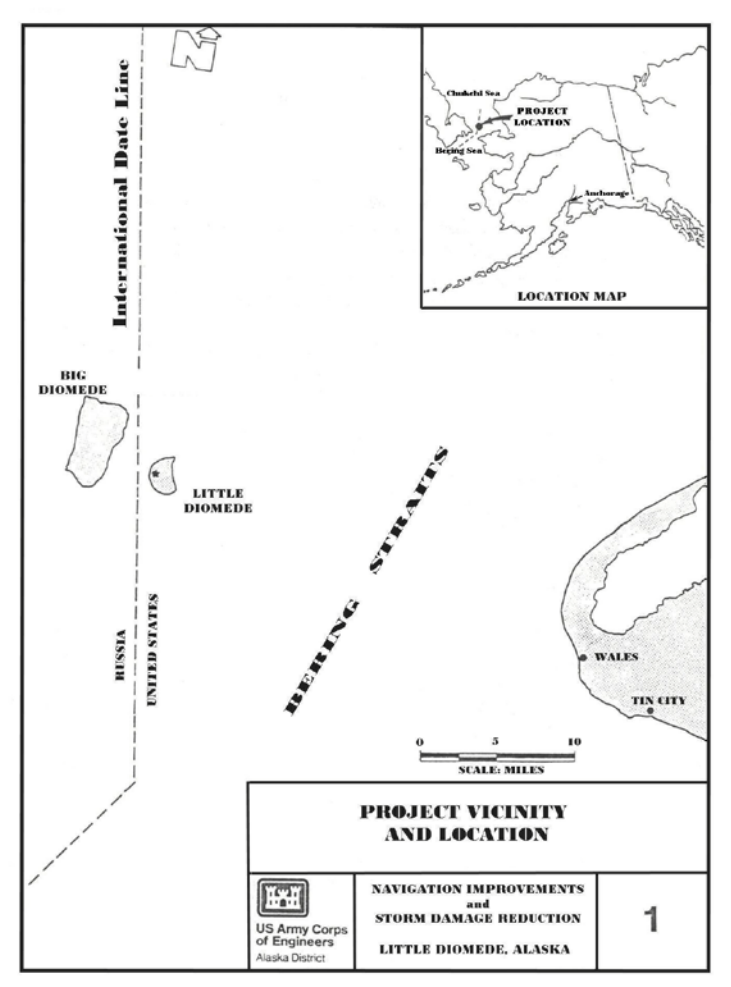


Figure 1 – Vicinity and Location Map

Diomedede is an extremely remote community, perhaps the least accessible in the United States, based on its location, the time, cost, and difficulty/uncertainty associated with travel to and from the island, and the severe physical attributes of Little Diomedede Island. The island is only 2-1/8 miles

long and 1-7/8 mile wide, encompassing only 2.8 square miles. The land rises abruptly from the sea at a 40-degree angle to a height of nearly 1,300 feet and is characterized by extremely steep slopes littered with large amounts of rock and boulders (figure 2). Little or no soil covers the side slopes of the island with many areas barren of any vegetation. The sparse vegetation that does exist on the island is arctic tundra composed of salmonberry, moss, greens, and some roots.



Figure 2 – Village of Diomedes on Little Diomedes Island faces the open ocean. Ripped point of land extending into Bering Strait is State owned heliport.

The problem of concern at Little Diomedes is critically restricted navigation and aviation access related to harsh physical and environmental conditions which result in a reduced quality of life and life/safety issues. There are currently no navigational improvements at Diomedes. There are no landing ramps or areas of protected moorage or protected storage areas along the beach. The shoreline consists of large rocks and boulders with no semblance of a beach suitable as a landing area. Winds are typically 20 to 30 mph, with sustained winds of 60 to 80 mph common. In addition to wind generated waves, Diomedes is also susceptible to long period swells. Due to the rocky beach and wave climate, landing any sort of vessel at Diomedes is a risky venture. Barges delivering fuel and goods must either lighter goods to shore using small skiffs or construct a crude landing from material available locally. The size of the boats utilized by Diomedes residents is limited to those sizes that can be manually hauled out of the water and high enough above the beach to avoid damage from waves. A crude ramp was constructed of material available from the beach and nearshore in

the summer of 2011 to support a school reconstruction project. This ramp required constant upkeep during the duration of the construction project to remain operational.

Lack of safe and reliable access has resulted in a life threatening shortage of emergency and routine medical care, significant restrictions on travel both to and from the community, shortages of basic commodities, and lack of materials to repair deteriorating infrastructure. Long term continued viability of the community is in jeopardy.

Located in the middle of the Bering Strait (see Figure 1), the island is nearly a full day's travel by boat in summer to Wales, the nearest community with regular air transportation service. Historically, the Bering Strait was generally frozen from mid-December to mid-June but more recently freeze-up has occurred as late as February and March. A shallow reef between Little and Big Diomed Islands has historically facilitated the formation of solid ice between the two islands. More recently though, the formation of solid ice has not been as reliable. Summer in the Bering Strait is frequently rough and windy, making travel to and from the island in 18- to 20-foot open aluminum skiffs an extremely hazardous undertaking. Lives have been lost in these crossings. Because of the hazardous landing conditions at Little Diomed, local shipping companies have discontinued regular freight delivery service. Small freight shipments are received through the weekly helicopter service or, for a limited time during the freeze-up, by plane. Larger items must wait for a sufficiently large accumulation to justify the expense of barge delivery. Typically the barge delivery interval is 2 or more years. Fuel oil is delivered once a year.

A state owned heliport allows for weekly mail delivery. The mail helicopter carries four passengers or 1,300 pounds of small freight, but mail has priority because of the Postal Service subsidy. Bad weather and/or mechanical problems frequently disrupt service and several weeks often can pass between flights. From February through April there is usually a four week period during which a runway is constructed on the frozen ocean and fixed wing aircraft deliver dry goods and supplies. During the winter months of 2008 and 2009 the ice was too thin to allow construction of the ice runway.

Emergency medical service can be provided by the Alaska National Guard stationed in Nome, or other commercial sources, weather permitting. However, delays or failures to respond to medical emergencies occur every year and, in some cases, have resulted in fatalities. Travel to and from Diomed for business and/or pleasure is restricted by the concern over irregular transportation availability. Visitors to Diomed have been stranded in the community for long periods of time, sometimes two or more weeks. Likewise, Diomed residents have been unable to return home and are forced to reside with relatives or friends since bush communities typically do not have commercial lodging or dining facilities.

Alternatives Identified for consideration include:

- Protected harbor for moorage of small boats
- Protected harbor for moorage of small boats and barge
- Protected ramp for the launching and removal of small boats and offloading of barges

Potential alternatives involve using between 10,000 and 50,000 cy of rock to form a barge landing and/or a small harbor. With possible rock costs over \$300/cy, potential project costs range from \$20 - \$30 million.

The non-Federal sponsor for the study/project is Kawerak , Inc., the native regional non-profit corporation formed under the 1971 Alaska Native Claims Settlement Act to provide services to residents of the Bering Strait Region.

The Feasibility Scoping Meeting for the Little Diomedede study was held in July 2008. The primary concerns expressed in the FSM Policy Guidance Memorandum centered on providing better, more complete, quantitative development of the costs incurred by the community in the without-project condition and more properly defining the project assumptions, problem statements, planning objectives, constraints, and opportunities. In developing the study report and environmental document, the District was to perform a standard economic analysis, then, as appropriate, develop project justification based on Section 2006 of the 2007 Water Resources Development Act. Also, the District should follow standard guidance regarding discussions of study authority, environmental compliance, public and agency coordination, use of certified planning models, cost estimate development, and report format.

Section 2006 of the 2007 Water Resources Development Act (WRDA 2007) provides an alternative analysis process for evaluation of certain navigation projects in Remote and Subsistence Harbors using not only National Economic Development (NED) benefits, but also benefits to public health, welfare, safety, access, regional economics, and social and cultural values. Implementation guidance for Section 2006 was issued by Headquarters on 22 July 2008. The text of Section 2006 is, as follows:

“(a) In General – In conducting a study of harbor and navigation improvements, the Secretary may recommend a project without the need to demonstrate that the project is justified solely by national economic development benefits if the Secretary determines that—

(1)(A) the community to be served by the project is at least 70 miles from the nearest surface accessible commercial port and has no direct rail or highway link to another community served by a surface accessible port or harbor; or

(B) the project would be located in the State of Hawaii, the Commonwealth of Puerto Rico, Guam, the Commonwealth of the Northern Mariana Islands, the United States Virgin Islands, or American Samoa;

(2) the harbor is economically critical such that over 80 percent of the goods transported through the harbor would be consumed within the community served by the harbor and navigation improvement; and

(3) the long term viability of the community would be threatened without the harbor and navigation improvement.

(b) Justification – In considering whether to recommend a project under subsection (a), the Secretary shall consider the benefits of the project to—

(1) public health and safety of the local community, including access to facilities designed to protect public health and safety;

(2) access to natural resources for subsistence purposes;

(3) local and regional economic activities;

(4) welfare of the local population; and

(5) social and cultural value to the community.”

Diomedede satisfies all the criteria of Section 2006 of WRDA 2007. If justification of a project based upon NED benefits does not seem likely justification based upon Section 2006 will be pursued.

- c. **Factors Affecting the Scope and Level of Review.** The most challenging aspect of this study is merely accessing the project site. There has not been consistent commercial air or boat service to Little Diomed during the course of this study. The PDT has not been able to conduct scoping meetings with the community on-site on any kind of regular schedule. Maintaining adequate communication between the PDT and the citizens of Little Diomed is an ongoing challenge. During an August 2011 site visit, PDT members were unable to contact Diomed by telephone to confirm their visit. Upon arrival in Diomed, we learned that the power and phone service on the island was partially inoperable. Due to the lack of power and the fact that many in the village were busy working to remedy this situation, a previously scheduled public meeting was not conducted.

There are several sources of uncertainty and risk that will influence the formulation of potential alternatives. Currently, a portion of the needed bathymetric survey has not been captured. Tentative alternatives shall be developed without this information. Once collected, if the bathymetric data proves to be vastly different than assumed, this could necessitate the reformulation of alternatives. There is also uncertainty regarding the cost of armor rocks required for the construction of potential projects. Importing rock from a source such as the Nome Quarry will add transportation costs and will be subjected to the variable market costs of the rock, which has been highly variable in the past.

A subsistence economic evaluation model, currently under development, will estimate the full monetary value of subsistence resources harvested in many Alaska Native communities. This model will be required to undergo a model approval process. Model approval is a relatively new process within the Corps of Engineers, hence the potential impact upon project budgets and schedule are uncertain. At this time, model approval is anticipated to initiate in the spring of 2012, take 6 months and cost \$250,000. The approval shall be coordinated through the Deep Draft Navigation Planning Center of Expertise.

The following items provide additional background factors that could affect the scope and appropriate level of review and the expertise needed for the review.

- The technical hydraulic/coastal analyses for the study are not particularly challenging. The village is located on the open ocean and development of design parameters for any improvements is relatively straightforward. Because the District has completed a regional wind/wave analysis for western Alaska, there is a good technical basis to develop design parameters. The biggest analysis challenge will be to put together the basic information and evaluations to enable a project recommendation to be made using not only NED benefits, but also health, safety, welfare, access, social and cultural benefits.
- The preliminary assessment of where the major project risks are likely to occur determined that the greatest unknown will be associated with the development of a reasonable cost estimate for project construction, operation, and maintenance. Construction costs in Alaska are generally significantly higher than in the lower 48. The project site is one of the most difficult in Alaska to access and operate in. The village is very small and lacks public facilities to service general travelers. A contractor will have to fully support his entire work crew while at Diomed. The challenge is to develop reasonable cost estimates that do not price improvements for this native village beyond the realm of possibility.
- The project itself is not likely to have significant economic, environmental, and social effects for the Nation. However navigation measures are essential for the long-term viability of this Eskimo community.

- The project is intended to improve the extremely dangerous conditions that currently exist for marine access to Diomedes, in particular the lack of a safe landing place and/or harbor providing moorage for small vessels. Lives have been lost due to the current extremely poor marine access to Diomedes. The project itself does not present a significant threat to human life, but is intended to significantly increase safety assurance and reduce future fatalities. Whatever is recommended, even if it were to be damaged in the future, will result in an improvement over the current extremely hazardous conditions for landing a vessel at Diomedes.
- The study will have moderate interagency interest, because of their concerns regarding the seabird nesting colonies. Because of the relatively small footprint of any project for Little Diomedes, the impacts to marine organisms are expected to be minimal.
- The project is not expected to be highly controversial. We do not anticipate controversy over improving navigational access to this community, which is one of the most, if not the most isolated in the United States. Opposition to providing safer navigation and vessel landing and/or moorage conditions, which should reduce the probability for loss of life, is not expected.
- With the exception of the subsistence economic evaluation model, the project report is not likely to contain influential scientific information or constitute a highly influential scientific assessment. The subsistence economic evaluation model has the potential to provide a future standard for the evaluation of potential project impacts upon subsistence practices throughout the nation.
- The information in the decision document and the project design is not expected to contain novel approaches or methods or present complex challenges for interpretation. However, the report may contain precedent setting methods or models, since this will be the first, or at least an early, application of evaluation, selection, and recommendation criteria wider than just NED analysis. The methods and conclusions presented in the report may have a much wider application in the future, if the upcoming revision to the Water Resources “Principles and Guidelines” requires a multi-output based evaluation and recommendation process for all water resources studies.
- The project design will place improvements in an extremely dynamic site. Project design will need to consider, at least, resiliency and robustness, but redundancy is probably not achievable within any reasonable cost.
- The project will be a relatively small rock job, but its location on the open ocean in the middle of the Bering Strait will provide significant construction challenges. The contractor will need to provide a complete “camp” for his workers, since there are no available local facilities of sufficient size and capability to handle the crew.
- Potential recommended alternatives are not likely to exceed \$45 million, but could, depending on the cost of obtaining, transporting, and placing large rock riprap.
- There is no request by the Governor of Alaska or an affected state for a peer review by independent experts.

d. In-Kind Contributions. Products and analyses provided by non-Federal sponsors as in-kind services are subject to DQC, ATR, and IEPR.

It is anticipated that the local sponsor will assist in gathering data required for the definition of the existing economic condition. This assistance may take the form of performing surveys, identifying and providing access to knowledgeable people regarding subsistence activities, identifying historic sources of supplies and costs of those materials, and other actions to provide a complete and

accurate portrayal of the economic situation in Little Diomedede. The local sponsor will provide staff for support of data gathering activities, and will perform an in-depth subsistence survey of the subsistence activities performed by residents of Diomedede. The local sponsor will provide records of equivalent real estate actions to assist the Government in defining the value of the real estate required for the project. The local sponsor will conduct bathymetric and beach profile surveys of the project area and provide periodic transportation to the community.

4. DISTRICT QUALITY CONTROL (DQC)

All decision documents (including supporting data, analyses, environmental compliance documents, etc.) shall undergo DQC. DQC is an internal review process of basic science and engineering work products focused on fulfilling the project quality requirements defined in the Project Management Plan (PMP). The home district shall manage DQC. Documentation of DQC activities is required and should be in accordance with the Quality Manual of the District and the home MSC.

a. Documentation of DQC. DQC is documented by a district process where Section and Branch Chiefs formally certify products once they are complete. This is conducted after each review. Documentation of DQC reviews will be provided to ATR teams prior to their conducting each review.

b. Products to Undergo DQC.

- Feasibility Scoping Meeting Package (completed in July 2008)
- Alternative Formulation Briefing Package (early version of draft FR/EA)
- Draft Report Review Package, including the draft FR and EA
- Final Report Review Package, including the draft final FR and EA and the other items specified in ER 1105-2-100

c. Required DQC Expertise. The Alaska District DQC process requires that the DQC team be composed of appropriate personnel, including technical chiefs and persons not directly associated with the PDT in the detailed preparation of the document. The team will include the following chiefs: Project Formulation, Economics, Environmental, and Hydraulics & Hydrology. Additional DQC members should include, as a minimum, the following members: the DQC Lead, cost engineer (with expertise in estimating costs for boat harbor breakwater projects), geotechnical specialist, project operations engineer (with expertise in managing breakwater contracts), hydraulic design engineer (with expertise in designing small boat harbors), and environmental specialist (with expertise in NEPA compliance and evaluation of impacts on marine and avian species).

5. AGENCY TECHNICAL REVIEW (ATR)

ATR is mandatory for all decision documents (including supporting data, analyses, environmental compliance documents, etc.). The objective of ATR is to ensure consistency with established criteria, guidance, procedures, and policy. The ATR will assess whether the analyses presented are technically correct and comply with published USACE guidance, and that the document explains the analyses and results in a reasonably clear manner for the public and decision makers. ATR is managed within USACE by the designated RMO and is conducted by a qualified team from outside the home district that is not involved in the day-to-day production of the project/product. ATR teams will be comprised of senior USACE personnel and may be supplemented by outside experts as appropriate. The ATR team lead will be from outside the home MSC. There will be appropriate consultation with allied Communities of Practice throughout the ATR.

a. Products to Undergo ATR.

- Feasibility Scoping Meeting Package (completed in July 2008)
- Alternative Formulation Briefing Package (early version of draft FR/EA)
- Draft Report Review Package, including the draft FR and EA
- Final Report Review Package, including the draft final FR and EA and the other items specified in ER 1105-2-100

b. Required ATR Team Expertise. Since the ultimate product from this study is a decision document for Congressional consideration, the multiple, iterative ATRs of the study documents will be managed by the SBH-PCX, Alaska District office in accordance with provisions of EC 1165-2-209. The purpose of the iterative ATRs is to ensure the work products are consistent with established guidance, procedures, criteria, and policy. Members of the ATR team will be from outside the home district (Alaska District), with the ATR Lead from outside the home MSC (Pacific Ocean Division). Members of the ATR team will reflect expertise of PDT members. It is anticipated that the ATR team will consist of 7-10 persons, (depending upon actual availability of specific persons at the time of the review and how the Cost Engineering Directory of Expertise DX handles the cost engineering review). One reviewer can serve on the ATR team to cover more than one discipline, provided they have the appropriate expertise in their background. Table 1 lists the desired expertise for ATR team members.

Table 1 ATR Team Member Expertise Required

ATR Team Members/Disciplines	Expertise Required
ATR Lead	The ATR lead should be a senior professional with extensive experience in preparing Civil Works decision documents and conducting ATR. The lead should also have the necessary skills and experience to lead a virtual team through the ATR process. Typically, the ATR lead will also serve as a reviewer for a specific discipline (such as planning, economics, environmental resources, etc).
Planning	The planning reviewer should be a senior water resources planner with extensive experience in the Corps planning process and be knowledgeable of current Corps policies and guidance. He/she should be familiar with navigation projects, in particular small boat harbor projects involving the use of breakwaters and other energy reduction measures.
Economics	The economics reviewer should be experienced in economic evaluation of civil works small boat harbor navigation projects and evaluation of subsistence and cultural benefits.
Environmental	The environmental reviewer should be experienced in coastal ecosystems, the influence of construction of breakwaters and other energy attenuation measures on aquatic plants and species and the National Environmental Policy Act (NEPA) process and analysis procedures.
Cultural Resources	The cultural resources reviewer should be experienced in cultural aspects of Corps navigation projects, particularly in regard to tribal laws, regulations, and issues encountered in government to government consultation.
Hydraulic (Coastal)	The hydraulic engineering reviewer will be an expert in the field of coastal

Engineering	hydraulics and have a thorough understanding of analyses of winds, waves, currents, hydrodynamics, small boat harbor design, and breakwater construction.
Geotechnical Engineering	The geotechnical engineering reviewer shall have experience in the characterization of bottom sediments identified lying under proposed marine structures and the design and construction of rubblemound breakwater structures in an arctic environment.
Cost Engineering	The cost engineering reviewer will be familiar with cost estimating for remote small boat harbor projects using the Microcomputer Aided Cost Engineering System (MCACES) model. The reviewer will be a Certified Cost Technician, Certified Cost Consultant, or Certified Cost Engineer. Coordination with the Cost Engineering DX will be required to obtain DX certification of the cost estimate.
Real Estate	The real estate reviewer will be experienced in Federal civil works real estate law, policy, and guidance, development of Real Estate Plans for civil works studies, particularly in regards to application of navigational servitude.

c. **Documentation of ATR.** DrChecks review software will be used to document all ATR comments, responses and associated resolutions accomplished throughout the review process. Comments should be limited to those that are required to ensure adequacy of the product. The four key parts of a quality review comment will normally include:

- (1) The review concern – identify the product’s information deficiency or incorrect application of policy, guidance, or procedures;
- (2) The basis for the concern – cite the appropriate law, policy, guidance, or procedure that has not been properly followed;
- (3) The significance of the concern – indicate the importance of the concern with regard to its potential impact on the plan selection, recommended plan components, efficiency (cost), effectiveness (function/outputs), implementation responsibilities, safety, Federal interest, or public acceptability; and
- (4) The probable specific action needed to resolve the concern – identify the action(s) that the reporting officers must take to resolve the concern.

In some situations, especially addressing incomplete or unclear information, comments may seek clarification in order to then assess whether further specific concerns may exist.

The ATR documentation in DrChecks will include the text of each ATR concern, the PDT response, a brief summary of the pertinent points in any discussion, including any vertical team coordination (the vertical team includes the district, RMO, MSC, and HQUSACE), and the agreed upon resolution. If an ATR concern cannot be satisfactorily resolved between the ATR team and the PDT, it will be elevated to the vertical team for further resolution in accordance with the policy issue resolution process described in either ER 1110-1-12 or ER 1105-2-100, Appendix H, as appropriate. Unresolved concerns can be closed in DrChecks with a notation that the concern has been elevated to the vertical team for resolution.

At the conclusion of each ATR effort, the ATR team will prepare a Review Report summarizing the review. Review Reports will be considered an integral part of the ATR documentation and shall:

- Identify the document(s) reviewed and the purpose of the review;
- Disclose the names of the reviewers, their organizational affiliations, and include a short paragraph on both the credentials and relevant experiences of each reviewer;
- Include the charge to the reviewers;
- Describe the nature of their review and their findings and conclusions;
- Identify and summarize each unresolved issue (if any); and
- Include a verbatim copy of each reviewer's comments (either with or without specific attributions), or represent the views of the group as a whole, including any disparate and dissenting views.

ATR may be certified when all ATR concerns are either resolved or referred to the vertical team for resolution and the ATR documentation is complete. The ATR Lead will prepare a Statement of Technical Review certifying that the issues raised by the ATR team have been resolved (or elevated to the vertical team). A Statement of Technical Review should be completed, based on work reviewed to date, for the AFB, draft report, and final report. A sample Statement of Technical Review is included in Attachment 2.

6. INDEPENDENT EXTERNAL PEER REVIEW (IEPR)

IEPR may be required for decision documents under certain circumstances. IEPR is the most independent level of review, and is applied in cases that meet certain criteria where the risk and magnitude of the proposed project are such that a critical examination by a qualified team outside of USACE is warranted. A risk-informed decision, as described in EC 1165-2-209, is made as to whether IEPR is appropriate. IEPR panels will consist of independent, recognized experts from outside of the USACE in the appropriate disciplines, representing a balance of areas of expertise suitable for the review being conducted. There are two types of IEPR:

- **Type I IEPR.** Type I IEPR reviews are managed outside the USACE and are conducted on project studies. Type I IEPR panels assess the adequacy and acceptability of the economic and environmental assumptions and projections, project evaluation data, economic analysis, environmental analyses, engineering analyses, formulation of alternative plans, methods for integrating risk and uncertainty, models used in the evaluation of environmental impacts of proposed projects, and biological opinions of the project study. Type I IEPR will cover the entire decision document or action and will address all underlying engineering, economics, and environmental work, not just one aspect of the study. For decision documents where a Type II IEPR (Safety Assurance Review) is anticipated during project implementation, safety assurance shall also be addressed during the Type I IEPR per EC 1165-2-209.
- **Type II IEPR.** Type II IEPR, or Safety Assurance Review (SAR), are managed outside the USACE and are conducted on design and construction activities for hurricane, storm, and flood risk management projects or other projects where existing and potential hazards pose a significant threat to human life. Type II IEPR panels will conduct reviews of the design and construction activities prior to initiation of physical construction and, until construction activities are completed, periodically thereafter on a regular schedule. The reviews shall consider the adequacy, appropriateness, and acceptability of the design and construction activities in assuring public health safety and welfare.

a. Decision on IEPR. At this time, we lack sufficient information regarding the cost of the potential project to request an IEPR exclusion. While it is unlikely that the project will be over \$45 million, it is premature to rule that possibility out. Based upon existing information, a Type I IEPR is warranted. Since this study does not entail addressing hurricane, storm, and flood risk management projects or other projects posing a significant threat to human life, a Type II IEPR is not warranted. The benefit of conducting a Type I IEPR will be reassessed as cost estimates are further developed in preparation for the Alternative Formulation Briefing.

b. Products to Undergo IEPR.

The following products will undergo Type I IEPR,

- Draft Report Review Package, including the draft FR and EA

c. Required IEPR Panel Expertise.

IEPR Panel Members/Disciplines	Expertise Required
Economics	The economics reviewer should be experienced in economic evaluation of civil works small boat harbor navigation projects and evaluation of subsistence and cultural benefits.
Environmental	The environmental reviewer should be experienced in coastal ecosystems, the influence of construction of breakwaters and other energy attenuation measures on aquatic plants and species and the National Environmental Policy Act (NEPA) process and analysis procedures.
Hydraulic (Coastal) Engineering	The hydraulic engineering reviewer will be an expert in the field of coastal hydraulics and have a thorough understanding of analyses of winds, waves, currents, hydrodynamics, small boat harbor design, and breakwater construction.
Cost Engineering	The cost engineering reviewer will be familiar with cost estimating for remote small boat harbor projects using the Microcomputer Aided Cost Engineering System (MCACES) model. The reviewer will be a Certified Cost Technician, Certified Cost Consultant, or Certified Cost Engineer. Coordination with the Cost Engineering DX will be required to obtain DX certification of the cost estimate.
Planning	The planning reviewer should be a senior water resources planner with extensive experience in the Corps planning process and be knowledgeable of current Corps policies and guidance. He/she should be familiar with navigation projects, in particular small boat harbor projects involving the use of breakwaters and other energy reduction measures.
Geotechnical Engineering	The geotechnical engineering reviewer shall have experience in the characterization of bottom sediments identified lying under proposed marine structures and the design and construction of rubblemound breakwater structures in an arctic environment.

d. Documentation of IEPR. The IEPR panel will be selected and managed by an Outside Eligible Organization (OEO) per EC 1165-2-209, Appendix D. Panel comments will be compiled by the OEO and should address the adequacy and acceptability of the economic, engineering and environmental methods, models, and analyses used. IEPR comments should generally include the same four key parts as described for ATR comments in Section 5.d above. The OEO will prepare a final Review Report that will accompany the publication of the final decision document and shall:

- Disclose the names of the reviewers, their organizational affiliations, and include a short paragraph on both the credentials and relevant experiences of each reviewer;
- Include the charge to the reviewers;
- Describe the nature of their review and their findings and conclusions; and
- Include a verbatim copy of each reviewer's comments (either with or without specific attributions), or represent the views of the group as a whole, including any disparate and dissenting views.

The final Review Report will be submitted by the OEO no later than 60 days following the close of the public comment period for the draft decision document. USACE shall consider all recommendations contained in the Review Report and prepare a written response for all recommendations adopted or not adopted. The final decision document will summarize the Review Report and USACE response. The Review Report and USACE response will be made available to the public, including through electronic means on the internet.

7. POLICY AND LEGAL COMPLIANCE REVIEW

All decision documents will be reviewed throughout the study process for their compliance with law and policy. Guidance for policy and legal compliance reviews is addressed in Appendix H, ER 1105-2-100. These reviews culminate in determinations that the recommendations in the reports and the supporting analyses and coordination comply with law and policy, and warrant approval or further recommendation to higher authority by the home MSC Commander. DQC and ATR augment and complement the policy review processes by addressing compliance with pertinent published Army policies, particularly policies on analytical methods and the presentation of findings in decision documents.

8. COST ENGINEERING DIRECTORY OF EXPERTISE (DX) REVIEW AND CERTIFICATION

All decision documents shall be coordinated with the Cost Engineering DX, located in the Walla Walla District. The DX will assist in determining the expertise needed on the ATR team and Type I IEPR team (if required) and in the development of the review charge(s). The DX will also provide the Cost Engineering DX certification. The RMO is responsible for coordination with the Cost Engineering DX.

9. MODEL CERTIFICATION AND APPROVAL

EC 1105-2-412 mandates the use of certified or approved models for all planning activities to ensure the models are technically and theoretically sound, compliant with USACE policy, computationally accurate, and based on reasonable assumptions. Planning models, for the purposes of the EC, are defined as any models and analytical tools that planners use to define water resources management problems and opportunities, to formulate potential alternatives to address the problems and take advantage of the opportunities, to evaluate potential effects of alternatives and to support decision making. The use of a

certified/approved planning model does not constitute technical review of the planning product. The selection and application of the model and the input and output data is still the responsibility of the users and is subject to DQC, ATR, and IEPR (if required).

EC 1105-2-412 does not cover engineering models used in planning. The responsible use of well-known and proven USACE developed and commercial engineering software will continue and the professional practice of documenting the application of the software and modeling results will be followed. As part of the USACE Scientific and Engineering Technology (SET) Initiative, many engineering models have been identified as preferred or acceptable for use on Corps studies and these models should be used whenever appropriate. The selection and application of the model and the input and output data is still the responsibility of the users and is subject to DQC, ATR, and IEPR (if required).

a. Planning Models. The following planning models are anticipated to be used in the development of the decision document:

Model Name and Version	Brief Description of the Model and How It Will Be Applied in the Study	Certification / Approval Status
Subsistence Economic Evaluation Model	This model, currently under development, will estimate the full monetary value of subsistence resources harvested in many Alaska Native communities.	Model under development

b. Engineering Models. The following engineering models are anticipated to be used in the development of the decision document:

Model Name and Version	Brief Description of the Model and How It Will Be Applied in the Study
WAM	Wave Model (WAM): is a USACE preferred discrete spectral wave model solving the action (energy/radial frequency) balance equation for time and spatial variation of a 2-D wave spectrum from wind forcing.
STWAVE	STWAVE (STeady State spectral WAVE) is a USACE preferred, easy-to-apply, flexible, robust, half-plane model for nearshore wind-wave growth and propagation. STWAVE simulates depth-induced wave refraction and shoaling, current-induced refraction and shoaling, depth- and steepness-induced wave breaking, diffraction, parametric wave growth because of wind input, and wave-wave interaction and white capping that redistribute and dissipate energy in a growing wave field. STWAVE will be used to transport the waves generated from the hindcast onto shore.

10. REVIEW SCHEDULES AND COSTS

a. ATR Schedule and Cost. At this time, ATR of the Alternative Formulation Briefing material is anticipated to occur in the summer of 2012, take 6 weeks to complete from beginning to end (2 weeks for the ATR team to provide comments, 2 weeks for the PDT to coordinate and provide responses, and 2 weeks for back check and close-out of the ATR), and cost \$60,000. If no major changes or reformulation is required pursuant to the ATR of the Alternative Formulation Briefing,

subsequent ATR of the draft and final decision documents could cost \$40,000 and be completed in 4 weeks. Dates for completion of the ATRs of the decision document will be best estimated following completion of ATR for the Alternative Formulation Briefing material but at this time, it appears that the ATR of the draft decision document could occur in the spring of 2013.

Type I IEPR Schedule and Cost. If IEPR is required, an OEO will be identified and panel members shall be selected in summer 2012. Type I IEPR will be conducted for this study following completion of ATR for the draft decision document likely in fall/winter of 2013. It is anticipated to take 10 weeks and cost \$200,000. Type II IEPR panels will conduct reviews of the design and construction activities prior to initiation of physical construction and, until construction activities are completed, periodically thereafter on a regular schedule.

- b. Model Certification/Approval Schedule and Cost.** At this time, model approval is anticipated to initiate in the spring of 2012, take 6 months to complete, and cost \$250,000. The approval shall be coordinated through the Deep Draft Navigation Planning Center of Expertise.

11. PUBLIC PARTICIPATION

The public and resource agencies will have multiple opportunities to participate in this study. The earliest opportunity was as part of the public scoping process during the first year of the study. Public review of the draft feasibility report will occur after issuance of the AFB policy guidance memo and concurrence by HQUSACE that the document is ready for public release (expected at the Feasibility Review Conference). Public review of the draft decision document will begin approximately 1 month after the completion of the ATR process and issuance of a policy guidance memo. One or more public meetings will be held during the public and agency review period. Comments received during the public comment period for the draft report could be provided to the IEPR team before their review of the draft Decision Document and to the ATR team reviewing the final Decision Document. Intensive coordination with resource agencies will occur throughout the planning process. A summary of public comments and resolutions will be included in the final document package. The final decision document, associated review reports, and USACE responses to IEPR comments will be made available to the public on the Alaska District webpage.

12. REVIEW PLAN APPROVAL AND UPDATES

The POD Commander is responsible for approving this Review Plan. The Commander's approval reflects vertical team input (involving district, MSC, RMO, and HQUSACE members) as to the appropriate scope and level of review for the decision document. Like the PMP, the Review Plan is a living document and may change as the study progresses. The home district is responsible for keeping the Review Plan up to date. Minor changes to the review plan since the last MSC Commander approval are documented in Attachment 3. Significant changes to the Review Plan (such as changes to the scope and/or level of review) should be re-approved by the MSC Commander following the process used for initially approving the plan. The latest version of the Review Plan, along with the Commanders' approval memorandum, should be posted on the Home District's webpage. The latest Review Plan should also be provided to the RMO and home MSC.

13. REVIEW PLAN POINTS OF CONTACT

Public questions and/or comments on this review plan can be directed to the following points of contact:

- George Kalli, Project Formulator, Alaska District 907-753-2622
- David Williams, Project Manager, Alaska District 907-753-5621
- Russell Iwamura, Senior Economist, Pacific Ocean Division, 808-438-8859

ATTACHMENT 1: TEAM ROSTERS**Project Delivery Team**

Name	Specialty	Affiliation
George Kalli	Plan Formulation	Alaska District
Chris Floyd	Environmental Resources	Alaska District
Chris Hoffman	Biological Resources	Alaska District
Lorraine Cordova	Economics	Alaska District
Jim Richardson	Economics	ResourEcon A/E contractor
Dee Ginter	Hydraulics/ Coastal Engineering	Alaska District
John Rajek	Soils and Geology	Alaska District
Al Arruda	Cost Engineering	Alaska District
Carmen Osmond	Real Estate	Alaska District
Anne Burman	Office of Counsel	Alaska District
Aaron Wilson	Cultural Resources	Alaska District
Amanda Shearer	Tribal Liaison	Alaska District
Jerry Zuspan	Surveying	Alaska District
David Williams	Project Management	Alaska District
Donald Tybus	Value Engineer	Alaska District
Sean McKnight	Engineer/Project Management	Local Sponsor

Agency Technical Review Team

Name	Specialty	Affiliation	Years Experience
Jon Brown	ATR Lead	Buffalo District	30
alternate Mike Greer	Jon Brown has 30 years experience and has been the Lead Economist in the Planning Branch of the Buffalo District since 1990. As a regional team member, he assists in the evaluation and formulation of regional studies in LRD and other MSC's. Mr. Brown served as U.S. technical work group leader for the recreational navigation component of International Joint Commission's St. Lawrence River-Lake Ontario Criterion study. Mr. Brown developed the recreational boating and tourism methodology portion for this five-year \$20M bi-national plan of study. Other recent work include: developing the methodology and designing contingent valuation mail survey questionnaire for measuring economic impacts of proposed Valdez, AK small boat harbor expansion.		
Phil Berkeley	Planning	Buffalo District	30+
alternate Mike Greer	Philip E. Berkeley is a Biologist in the Planning Branch at the USACE, Buffalo District. He received a B.S. in Biology from Springfield College in Springfield, Massachusetts and M.S. in Biology from the State University of New York at Buffalo. He has over 30 years Federal government experience in Corps of Engineers Planning and Project Evaluation, for navigation, flood risk management and ecosystem restoration.		
Roger Haberly	Economics	Buffalo District	29
alternate Jon Brown	Have performed and been a team member on a number of Section 107 economic evaluations. Was a major team player in the following Section 107 evaluations: Cooley Canal Section 107-1995, Buffalo Inner Harbor, 2005. Was the team leader on the following section 107s; Rochester Harbor section 107-2003; Olcott Harbor Reevaluation-Section 107, 2006, Two Harbors, Minnesota, 2007. Currently involved in an Ogdensburg Harbor, New York section 107. Analyses have involved developing surveys for dock owners, and charter fishing operators to generate willingness to pay values and charter fishing operating budgets. Analyses have developed the full range of Associated Costs needed to make the project fully operational (from parking lots, to floating docks, gasoline docks, winter storage facilities, roadways, signage, etc.).		
Jay Miller	Environmental Resources	Buffalo District	11
alternate Bill Butler	Responsible for coordinating and conducting investigations, planning, and preparing environmental reports such as Environmental Impact Statements, Environmental Assessments, Coastal Zone Management (CZM) consistency determinations, Water Quality Certification applications, Section 404 Evaluations, and other associated National Environmental Policy Act (NEPA) documents for District Operations		

	and Maintenance (O&M), Continuing Authorities Program (CAP), Construction General (CG), General Investigation (GI), and other projects. Coordinates District projects with Federal, state, and local government representatives and officials, as well as special interest groups and the general public. Assures environmental compliance of District projects by applying knowledge of applicable Federal, State and local environmental regulations and executive orders. Undertakes coordination, development and technical evaluation of biological assessments for required consultation under the Endangered Species Act.		
Mike Mohr	Coastal Engineering	RTS (A/E firm)	
alternate Shanon Chader	Mr. Mohr's expertise includes the hydraulic design and evaluation of all features of a Coastal Engineering project from inception to completion. Functional areas include commercial deep draft navigation harbors and channels (structure layout and design, channel sizing and evaluation), wave propagation, littoral transport, small boat harbors and complex beach (nourishment, offshore breakwaters, artificial headland breakwaters), and shoreline erosion control (nourishment, revetments, emergency shore protection) projects. Mr. Mohr has ATR'ed several POA studies		
Jon Kolber	Geotechnical	Buffalo District	30
alternate: Frank Lewandowski	Mr. Kolber possesses thirty years experience with experience in stability analysis, earthwork construction, subsurface explorations, foundation design, and berm raising design and construction. Has deployed on numerous emergency missions and has served on special teams addressing dam safety.		
Bill Butler	Cultural Resources	Buffalo District	31
	Environmental and cultural resources compliance manager. District Tribal Liaison. District Pest Management Program POC. Technical authority on environmental compliance with regulations and laws for planning, design, construction, operation and maintenance of water resource development projects and programs. Manage environmental and cultural resources program including preparation of environmental assessments, environmental impact statements, consultation for endangered species, and memoranda of agreement. Perform Independent Technical Review and quality control of environmental documents. Promote sound environmental stewardship. Prepare and review plans and assessments for maintenance of navigation including navigation structure repair and rehabilitation, and dredging and disposal activities. Develop and review mitigation plans. Review facility management actions for environmental compliance. Prepare decision documents.		
Jennifer Janik	Real Estate	Detroit District	8
	Employed as a Realty Specialist by U.S. Army Corps of Engineers since 2003. Serve as the Real Estate Specialist at the Buffalo District field office under the management the Detroit District. Manage a wide		

	<p>range of real estate matters, to include formulating initial assessments, real estate plans, navigational servitude, acquisitions, outgrants, and working with the non-Federal sponsors in their acquisition of necessary Lands, Easements, Rights-of-Way, Relocations and Disposal areas (LERRDs). Have negotiated and processed several right-of-entry agreements with public and private property owners for projects under the Formally Utilized Sites Remedial Action Program (FUSRAP). Serve as a Project Delivery Team member for all Buffalo District projects. Serves as an Agency Technical Review Team member for the real estate discipline for numerous authorities.</p>		
James Neubauer	Cost Engineering	Walla Walla District	See below
	<p>Since August 2007 Mr. Neubauer has served as the ATR coordinator and a lead reviewer in the Cost Engineering Directory of Expertise for Civil Works located in Walla Walla District (Cost DX). He has served 29 years as a civil engineer with experience in military and civil works construction, project management and cost engineering. Mr. Neubauer is a licensed professional engineer, a certified cost engineer and a certified project manager – level 1. Since 1992, Mr. Neubauer has served as a senior lead cost engineer for Albuquerque District, Europe District and Walla Walla District in both military and civil works. His current reviews include civil works cost estimates, schedules and risk analyses. Mr. Neubauer assisted the development of the current civil works cost Engineer Regulation ER 1110-2-1302, was a main author of the civil works cost Engineering Technical Letter ETL 1110-2-573, the current Cost and Schedule Risk Analysis Guidance and the Cost ATR Guidance for the US Army Corps of Engineers. Mr. Neubauer has led many cost ATRs and numerous teams in developing or reviewing multi-billion dollar estimates for the Corps and the Department of Energy.</p>		

IEPR Team

IEPR Panel Members/Disciplines	Expertise Required
Economics	TBD by OEO summer 2012
Environmental	TBD by OEO summer 2012
Hydraulic (Coastal) Engineering	TBD by OEO summer 2012
Cost Engineering	TBD by OEO summer 2012
Planning	TBD by OEO summer 2012
Geotechnical Engineering	TBD by OEO summer 2012

Vertical Team

Name	Specialty	Affiliation
David Williams	Project Management	Alaska District
George Kalli	Technical Lead	Alaska District
Bruce Sexauer	Chief, Project Formulation	Alaska District
Carl Borash	Chief, Civil Works	Alaska District
Gib Owen	Civil Works Planner	POD Regional Integration Team
Russell Iwamura	Senior Economist	Pacific Ocean Division

ATTACHMENT 2: SAMPLE STATEMENT OF TECHNICAL REVIEW FOR DECISION DOCUMENTS

COMPLETION OF AGENCY TECHNICAL REVIEW

The Agency Technical Review (ATR) has been completed for the <type of product> for <project name and location>. The ATR was conducted as defined in the project’s Review Plan to comply with the requirements of EC 1165-2-209. During the ATR, compliance with established policy principles and procedures, utilizing justified and valid assumptions, was verified. This included review of: assumptions, methods, procedures, and material used in analyses, alternatives evaluated, the appropriateness of data used and level obtained, and reasonableness of the results, including whether the product meets the customer’s needs consistent with law and existing US Army Corps of Engineers policy. The ATR also assessed the District Quality Control (DQC) documentation and made the determination that the DQC activities employed appear to be appropriate and effective. All comments resulting from the ATR have been resolved and the comments have been closed in DrCheckssm.

SIGNATURE _____ Date _____
Name
ATR Team Leader
Office Symbol/Company

SIGNATURE _____ Date _____
Name
Project Manager
Office Symbol

SIGNATURE _____ Date _____
Name
Architect Engineer Project Manager¹
Company, location

SIGNATURE _____ Date _____
Name
Review Management Office Representative
Office Symbol

CERTIFICATION OF AGENCY TECHNICAL REVIEW

Significant concerns and the explanation of the resolution are as follows: Describe the major technical concerns and their resolution.

As noted above, all concerns resulting from the ATR of the project have been fully resolved.

SIGNATURE _____ Date _____
Name
Chief, Engineering Division
Office Symbol

SIGNATURE _____ Date _____
Name
Chief, Planning Division
Office Symbol

¹ Only needed if some portion of the ATR was contracted

ATTACHMENT 3: REVIEW PLAN REVISIONS

Revision Date	Description of Change	Page / Paragraph Number

ATTACHMENT 4: ACRONYMS AND ABBREVIATIONS

Term	Definition	Term	Definition
AFB	Alternative Formulation Briefing	NED	National Economic Development
ASA(CW)	Assistant Secretary of the Army for Civil Works	NER	National Ecosystem Restoration
ATR	Agency Technical Review	NEPA	National Environmental Policy Act
CSDR	Coastal Storm Damage Reduction	O&M	Operation and maintenance
DQC	District Quality Control/Quality Assurance	OMB	Office and Management and Budget
DX	Directory of Expertise	OMRR&R	Operation, Maintenance, Repair, Replacement and Rehabilitation
EA	Environmental Assessment	OEO	Outside Eligible Organization
EC	Engineer Circular	OSE	Other Social Effects
EIS	Environmental Impact Statement	PCX	Planning Center of Expertise
EO	Executive Order	PDT	Project Delivery Team
ER	Ecosystem Restoration	PAC	Post Authorization Change
FDR	Flood Damage Reduction	PMP	Project Management Plan
FEMA	Federal Emergency Management Agency	PL	Public Law
FR	Feasibility Report	QMP	Quality Management Plan
FRM	Flood Risk Management	QA	Quality Assurance
FSM	Feasibility Scoping Meeting	QC	Quality Control
GRR	General Reevaluation Report	RED	Regional Economic Development
Home District/MSD	The District or MSD responsible for the preparation of the decision document	RMC	Risk Management Center
HQUSACE	Headquarters, U.S. Army Corps of Engineers	RMO	Review Management Organization
IEPR	Independent External Peer Review	RTS	Regional Technical Specialist
ITR	Independent Technical Review	SAR	Safety Assurance Review
LRR	Limited Reevaluation Report	USACE	U.S. Army Corps of Engineers
MSC	Major Subordinate Command	WRDA	Water Resources Development Act