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

REPLY TO
ATTENTION OF

CEPOD-PDC

23 MAY 2011

MEMORANDUM FOR COMMANDER ALASKA ENGINEER DISTRICT (CEPOA-CO-O/JULIE ANDERSON), P.O. BOX 898, ELMENDORF AFB, AK 99506-0898

SUBJECT: Programmatic Review Plan Approval for Operation and Maintenance of Flood Risk Management Projects

1. The enclosed Programmatic Review Plan for Operation and Maintenance of Flood Risk Management Projects has been prepared in accordance with EC 1165-2-209, Civil Works Review Policy, dated 31 January 2010. The Alaska Engineer District and Pacific Ocean Division are the lead offices to execute this Programmatic Review Plan which does not include Independent External Peer Review.

2. I approve this Programmatic Review Plan. It is subject to change as circumstances require, consistent with project development under the Project Management Business Process. Subsequent revisions to this Programmatic 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:

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

Encl
as

PROGRAMMATIC REVIEW PLAN

For

Operations and Maintenance of Flood Risk Management Projects

Alaska District
May 12, 2011

MSC Approval Date: May 23, 2011
Last Revision Date: None

US Army Corps
of Engineers ®

PROGRAMMATIC REVIEW PLAN

Operations and Maintenance Flood Risk Management Projects

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1. PURPOSE AND REQUIREMENTS

a. Purpose. This Review Plan defines the scope and level of peer review for routine activities associated with Flood Risk Management projects managed by the Alaska District. The Flood Risk Management business line, managed by the Alaska District Operations and Maintenance Branch, currently includes one Flood Damage Reduction Project owned and operated by the Alaska District and one for which the Alaska District has short-term (15-year) responsibility, the Inspection of Completed Works Program, and the Levee Safety Program.

This Review Plan does not include the non-routine Dam Safety actions associated with the Chena River Lakes Flood Control Project. The Review Plan titled "Moose Creek Dam, Chena River Lakes Flood Control Project, Fairbanks, Alaska for Interim Risk Reduction Measures" dated 18 March 2010 covers the non-routine dam safety actions, and will be updated to include the Dam Modification Study as needed. Similarly, if other projects warrant dam safety interim risk reduction measures or dam modifications, a separate review plan will be prepared.

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 2010
(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) CEPOA-7.1-11 Study Quality Management, 7 June 2010
(6) ER 5-1-11, Management USACE Business Practices, 1 Nov 2006
(7) ER 11-1-320 Civil Works Emergency Management Programs, 1 Nov 2009
(8) EP 500-1-1, Emergency Employment of Army and Other Programs – Procedures, 30 Sep 2001
(9) ER 500-1-1, Emergency Employment of Army and Other Programs, 30 Sep 2001
(10) ER 1110-2-1150, Engineering and Design for Civil Works Projects, 31 Aug 1999
(11) ER 1110-2-1156, Safety of Dams, Policy and Procedures, 1 Nov 2010
(12) ER 1110-2-1302, Engineering and Design Civil Works Cost Engineering, 15 Sep 2008
(13) ER 1110-2-1806, Earthquake Design and Evaluation for Civil Works Projects, 31 July 1995
(14) ER 1130-2-530, Flood Control Operations and Maintenance Policies, 30 Oct 1996
(15) Engineering Pamphlet (EP) 1165-2-1, Digest of Water Resources Policies and Authorities, 30 July 1999
(16) Civil Works Operations and Maintenance Program Management Plan, Alaska District, 11 August 2009
(17) CEPOA-QMP-001, Alaska District Quality Management Plan, 28 December 2010
(18) CECW-HS Memorandum, Subject: Levee Safety Program Implementation, 16 Nov 2007

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, some products, like decision

documents, may be subject to cost engineering review and certification (per EC 1165-2-209) and planning model certification/approval (per EC 1105-2-407).

2. REVIEW MANAGEMENT ORGANIZATION (RMO) COORDINATION

The RMO is responsible for managing the overall peer review effort described in this Review Plan. For those documents requiring only DQC, the effort will be managed by the Alaska District. In accordance with EC 1165-2-209, Section 9.c.(2), the MSC, in this case POD, will serve as the RMO for "other work products" that require Agency Technical Review.

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. **Routine O&M Documents.** This Programmatic Review Plan applies to the routine O&M documents associated with the Chena River Lakes Flood Control Project, Lowell Creek Project, Inspection of Completed Works Program, and the Levee Safety Program. These documents are described below:

1. Annual Inspections – Yearly inspections of the Chena River Lakes Flood Control Project.
2. Periodic Inspections – Inspections of the project are performed every 3 years for the Chena River Lakes Flood Control Project, as authorized for the Lowell Creek Project, and every 5 years for the levees included in the Levee Safety Program.
3. Hydraulic Steel Structures Inspection – Inspection of structural steel members of the dam which have a hydraulic loading
4. Emergency Action Plan Updates – Updates to the text of the Emergency Action Plan, which describes procedures and means for ensuring reliable identification and evaluation of existing or potential emergencies and proper notification.
5. Water Control Manual Updates – Updates to the text of the Water Control Manual, which describes a plan of water control and notes who is responsible for operating the project.
6. Routine Maintenance Contracts – Contracts for services to maintain the project. Examples are contracts for floodway mowing and janitorial services.
7. Other Project Feature Inspection – Inspection reports of a part of the project performed on an "as needed" basis.
8. Letter Reports - Reports on a project feature's status and at times, proposed changes to a project feature.
9. Letter Report (WRDA 2007 Required) – WRDA 2007 requires a letter report that details the extend and estimated cost of the Corps 15 years of operations and maintenance of the Lowell Creek tunnel, inlet and outlet structures.
10. Tunnel Inspection – Inspection of the interior of Lowell Creek Tunnel performed annually.
11. Routine Inspection – Annual Inspection of completed projects and levees included in the Levee Safety Program.

The levels of review for these documents are discussed in the following sections and reflect the guidance provided in Appendix V and W of the ER 1110-2-1156 at reference (11) and the CECW-HS memorandum at reference (18).

The table below summarizes the review actions for the routine O&M projects covered by this Review Plan. Documents not covered by this plan will require a project-specific Review Plan.

Document	Approval Level	NEPA	DQC	ATR	IEPR
Flood Damage Reduction					
Chena River Lakes Flood Control					
Annual Inspections	POA		X		
Periodic Inspections (Every 3 years)	POD		X		
HSS Inspections	POA		X		
EAP Updates	POA		X		
Water Control Manual Updates		As Needed	X		
Routine Maintenance Contracts	POA	As Needed	X		
Other project feature inspections	POA		X		
Letter Reports	POA	As Needed	X	As Needed	
Lowell Creek Project					
Periodic Inspection	POA	As Needed	X		
Tunnel Inspection	POA		X		
Letter Report (WRDA 2007 Required)	ASA (CW)		X	X	
Letter Reports	POA	As Needed	X	As Needed	
Inspection of Completed Works					
Routine Inspections	POA		X		
Levee Safety Program					
Routine Inspections (Annual and after project design flood events of 50 years or greater)	POA LSPM or LSO		X		
Periodic Inspections (Every 5 years)	POA LSO		X		
Initial Eligibility Inspections (As requested)	POA LSO		X		

Notes: EAP = Emergency Action Plan
HSS = Hydraulic Steel Structures
LSO = Levee Safety Officer
LSPM = Levee Safety Program Manager

b. Study/Project Description. The scope of this review plan includes flood risk management projects, the Inspection of Complete Works Program, and projects in the Levee Safety Program. Project descriptions, maps, purpose and costs to date are included in the report "US Army Corps of Engineers Alaska District, 2009 Project Maps and Index Sheets". This report is updated annually with sections available on the web site http://www.poa.usace.army.mil/CO/CoOrg/Ops.htm.

Flood Risk Management

The **Chena River Lakes Flood Control Project** consists of an 8.1-mile-long embankment dam and outlet works designed and constructed to protect the cities of Fairbanks and North Pole and the Fort Wainwright Army Base. Other major project features include a 2,000 acre out-granted area for recreation, a project office/visitors center, and maintenance facilities. Annual inspections, periodic inspections, instrumentation reports, Hydraulic Steel Structure inspections, and inspections of other project features are performed as part of the routine operation and maintenance of this project.

Key documents used to manage the project include the Flood Control Manual, Emergency Action Plan, the Operations and Maintenance Manuals, Water Control Manual and the historical project documentation. Some of these documents were recently updated under the dam safety program. Updates and inspections not related to dam safety are covered under this review plan. The Chena Lakes Flood Control Project is authorized by the Flood Control Act of 13 August 1968 (Public Law 90-483, House Doc. 148, 90th Congress, 2nd Session).

Lowell Creek Tunnel and its appurtenant structures divert stream flow through Bear Mountain and into Resurrection Bay at the south end of the City of Seward. The operation and routine maintenance of the Lowell Creek Project is the responsibility of the City of Seward. The Water Resources Development Act (WRDA) of 2007 gave the US Army Corps of Engineers long term maintenance responsibility for the Lowell Creek Tunnel for 15 years, while the ownership of the dam and tunnel remain with the City of Seward. The Guidance also requires a Letter Report detailing the extent of and cost of the operations and maintenance be reviewed and approved by the ASA (CW) before any long-term maintenance and repair is accomplished. This project is authorized by the Flood Control Act of 25 August 1937 (House Doc. 154, 75th Congress, 1st Session).

Guidance from HQUSACE acknowledges this non-federal dam is unique, and is allowing the Alaska District to perform an initial inspection, Screening Risk Portfolio Risk Assessment, and will use the finding of these to formulate a path forward. Only the initial inspection is covered under this review plan. If an Interim Risk Reduction Measures Plan is prepared, a separate review plan for that document will be prepared since it is non-routine in nature.

Other Dams or Similar Structures that are inspected as work for others will undergo the same level of review and approval as shown in this plan and ER 1110-2-1156.

Inspection of Completed Works

Inspection of Completed Works involves performing periodic inspections of Flood Damage Reduction projects to assess project conditions and provide inspection results to local sponsor for their use in meeting maintenance requirements. These projects are federally constructed but locally operated and maintained. The purpose of this inspection is ensuring the local sponsor upkeeps and complies with the item in its partnership agreement. Not performing inspections under this program could result in catastrophic failure of structures.

Levee Safety Program

There are five active projects and one inactive project in the Alaska District Levee Safety Program; a short description of each is included below. At the owner's request, other projects may be added if program requirements are met.

The Aniak Levee was constructed by the Civil Aviation Administration, the predecessor to the Federal Aviation Administration, to protect the runway and other FAA facilities from flooding on the Kuskokwim River. The Aniak Levee is in the Corps' Rehabilitation and Inspection Program. The levee is a gravel embankment with an articulating concrete revetment that protects a portion of the levee from damage caused by ice floes during breakup. The Aniak Levee is owned and operated by the City of Aniak, and is not an authorized Corps of Engineers project.

The **Klutina River Flood Control Project** was constructed to protect the developed area of Copper Center, AK (approximately 60 acres) and the northerly approach to the Old Richardson Highway

Bridge crossing the Klutina River. The levee is located on the north bank of the Klutina River near Copper Center. Operation and maintenance of the Klutina River Levee is the responsibility of the State of Alaska Department of Transportation and Public Facilities. It is approximately 4,100 feet long with 2:1 side slopes, an average height of 10 feet and an average crest width of 10 feet. This project is authorized by the Flood Control Act of 30 June 1958 under Section 205.

Moose Creek Acres Berm is a low embankment that is part of the Chena River Lakes Flood Control Project. It is located in the Fairbanks North Star Borough immediately east of Moose Creek Bluff and north of the Richardson Highway. Operation and maintenance of the Moose Creek Acres Berm is the responsibility of the Alaska District. The purpose is to protect the community of Moose Creek Acres from high water on Moose Creek. The Chena Lakes Flood Control Project is authorized by the Flood Control Act of 13 August 1968 (Public Law 90-483, House Doc. 148, 90th Congress, 2nd Session).

The **Skagway River Levee**, which was constructed in 1940 as part of the Corps of Engineers Skagway Harbor navigation project, protects the town of Skagway, Alaska. The city has not been flooded since the levee was built; however, large floods have required major flood fighting efforts to prevent flows circumventing or overtopping the levee. Flooding at Skagway necessitated the use of Corps emergency funds to repair the dike in 1946, 1951, and 1967. Airport expansion encapsulated a portion of the levee in the late 1990's, with the side slope of the runway, being integrated into the levee footprint. The levee extends from the river mouth upstream about 7,000 feet to the Klondike Highway (Twenty-Third Avenue) bridge crossing the Skagway River near the upstream end of the city. The existing flood control levee provides for a 60-year return interval level of protection. The Skagway River Levee is authorized by the Rivers and Harbors Act of 20 June 1938 (House Doc. 547, 75th Congress, 3rd Session) and by the Flood Control Act of 24 July 1946 (House Doc. 695, 79th Congress, 2nd Session).

The **Tanana River Levee** is part of the Chena River Lakes Flood Control Project. The levee was constructed by the U. S. Army Corps of Engineers to protect the Fairbanks North Star Borough (FNSB) from flooding on the Tanana River. The FNSB is the local sponsor and has Operations and Maintenance (O&M) responsibility for the majority of the levee. Approximately 1.01 miles of the levee is federally owned and maintained. The Tanana Levee extends along the north side of the Tanana Levee from the Moose Creek Dam, starting at dam station 98+69 (Levee Station 11+96), 20.7 miles to a point on the north bank of the Tanana River approximately 1/4 mile south of Fairbanks International Airport. The levee is a zoned earth embankment with a gravel stability berm/drainage blanket extending from the core landward 15 feet beyond the embankment toe. To prevent the river from eroding northward into this blanket, a system of L-head groins was built. The interior drainage system provides protection from the Tanana River underseepage and local surface runoff for the floodplain located between the Tanana and Chena Rivers. The interior drainage system consists of three separate, major drainage channels, A, B, and C, and one ponding area. The Chena Lakes Flood Control Project is authorized by the Flood Control Act of 13 August 1968 (Public Law 90-483, House Doc. 148, 90th Congress, 2nd Session).

The **Salmon River Levee** is located in Hyder, Alaska and protects the Salmon River Highway, the town of Hyder, and the approach to the Hyder dock. The levee is currently inactive due to maintenance deficiencies. The Alaska Department of Transportation and Public Facilities is the owner and operator of the Salmon River Levee and plans to correct the deficiencies concurrent with a planned adjacent road project. Upon request of the sponsor, the Alaska District will perform an

initial eligibility inspection to confirm the levee's condition. This project is authorized by the River and Harbor Act of 18 June 1934 (House Doc. 228, 72nd Congress, 1st Session) and the River and Harbor Act of 11 July 1956 (Public Law 685, 84th Congress).

c. **Factors Affecting the Scope and Level of Review.** Routine activities associated with Operations and Maintenance projects covered by this review plan are not particularly challenging or risk-involved. The projects do not contain new or controversial scientific information and are not likely to constitute highly influential scientific assessments. Performing long-term repair and maintenance work is not highly controversial with the public with regard to size, nature, effects, economic benefits and cost, and environmental effects. Work is not based on novel methods, does not present complex challenges for interpretation, does not contain precedent-setting methods, and does not present conclusions that are likely to change prevailing practices. The governor of the State of Alaska has not requested a peer review by independent experts of any Operations and Maintenance project. The program is so limited in scope and impact that it would not significantly benefit from ATR or IEPR.

d. **In-Kind Contributions.** Products and analyses provided by non-Federal sponsors as in-kind services are subject to DQC, ATR, and IEPR. Operations and Maintenance projects are usually 100 percent federally funded. Sponsor most often provide upland disposal sites with appropriate certification of ownership to the Real Estate Division prior to advertising for project construction. There are generally no in-kind products or analyses to be provided by the non-Federal sponsor.

4. DISTRICT QUALITY CONTROL (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 Alaska District shall manage DQC. Documentation of DQC activities is required and should be in accordance with the Quality Manual of the Alaska District and the Pacific Ocean Division.

a. **Documentation of DQC.**
DQC is the foundation for quality of all products, and there are routine district processes that cover DQC. Section Chiefs are responsible for all work products produced by disciplines in their sections. Reviewers should be individuals who are not involved with the project. DQC is conducted for all reports and Plans and Specifications covered by this document. All team members review the final work product to ensure coordination of disciplines and to provide quality assurance. Branch Chiefs will ensure that DQC is completed.

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.

5. AGENCY TECHNICAL REVIEW (ATR)

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.

a. **Products to Undergo ATR.** Lowell Creek Tunnel letter reports will require ATR.

b. **Required ATR Team Expertise.** ATR will require a multi-disciplined team of Dam Safety professionals. The team shall consist of a geotechnical engineer, a hydraulic engineer, a structural engineer, a mechanical engineer, and any other profession that is needed to address any new failure mode identified by the Potential Failure Mode Analysis. The ATR will be performed and led by a team from NWD and will be endorsed by the POD and NWD DSPM. This will be documented in the PA report.

   Lowell Creek Tunnel ATR will require a multi-disciplined team consisting of a geotechnical engineer, a hydraulic engineer, a structural engineer, a mechanical engineer, material engineer and any other profession that is needed to review the technical aspects of the Letter Report. The ATR will be led by NWD.

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 be 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 sample Statement of Technical Review is included in Attachment 2.

6. INDEPENDENT EXTERNAL PEER REVIEW (IEPR)

IEPR may be required for decision and implementation documents as well as other work products 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.** Projects included in this review plan are either performed annually or exist and need repairs. Neither the risk nor the magnitude of the routine maintenance projects included in

this review plan are expected to trigger the need for an IEPR. Therefore, no Type I or Type II IEPRs are planned.

b. Products to Undergo Type I IEPR. Not-Applicable.

c. Required Type I IEPR Panel Expertise. Not-Applicable.

d. Documentation of Type I IEPR. Not-Applicable.

7. POLICY AND LEGAL COMPLIANCE REVIEW

The documents covered by this Review Plan 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

The RMO is responsible for coordinating with the Cost Engineering DX, located in the Walla Walla District, for all studies requiring ATR or Type I IEPR. 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. This coordination will take place should ATRs or IEPRs become necessary for the activities covered by this Review Plan.

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.** No planning models will be used during the routine O&M activities covered by this Review Plan.

b. **Engineering Models.** No engineering models will be used during the routine O&M activities covered by this review plan.

10. REVIEW SCHEDULES AND COSTS

a. **ATR Schedule and Cost.** ATR schedules and costs will be developed for Letter Reports when these actions are initiated.

b. **Type I IEPR Schedule and Cost.** Not Applicable.

c. **Model Certification/Approval Schedule and Cost.** Not Applicable.

11. PUBLIC PARTICIPATION

Opportunities for public comment include presentations at community meetings and forums. NEPA updates may trigger the need for public comment periods. Significant and relevant public comments not resolved in the project documents will be provided in the memo to the review team. Resolution of public comments is usually directly back with the commenter from a community meeting and through the NEPA process.

12. REVIEW PLAN APPROVAL AND UPDATES

The Pacific Ocean Division 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 projects covered by this plan. 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:

- *Allen Churchill, Chief of Operations Branch, Alaska District, (907) 753-2753*
- *Helen Stupplebeen, Pacific Ocean Division (808) 438-8526*
- *Russell Iwamura, Review Management Organization, Pacific Ocean Division, (808) 438-8859*
- *Agency Technical Review Team, North Western Division, Laila Berre (402) 996-3830*

ATTACHMENT 1: TEAM ROSTERS

Project Delivery Team		
Name	Office	Phone Number
Allen Churchill	Operations Chief	753-2753
Julie Anderson	Operations Project Manager	753-5685
Michael Tencza	Operations Project Manager	753-2648
Ken Eisses	Hydraulics and Hydrology Chief/ICW Manager	753-2742
Marcus Palmer	Chief Geotechnical and Materials Branch/DSPM/LSPM	753-2665
Scott Olson or Lynn Meyers	Southern Area Office Project Engineers	753-2884/2866
Michael Salyer	Environmental Resources Chief	753-2690
Ze Jong	Resident Engineer, Southern Area Office	753-2503
Karl Harvey	Cost Engineering Chief	753-5738
Thomas Oh	Chief of Chemistry and Industrial Hygiene	753-2699
Christine Dale	Contracting Officer	753-5618
Anne Burman	Office of Counsel	753-2532
ATR Team		
NWD - Leader		
Geotechnical Engineer		
Hydraulic & Hydrology Engineer		
Mechanical Engineer – As needed		
Electrical Engineer – As needed		
Structural Engineer – As needed		
Environmental Resources – As needed		

ATTACHMENT 2: SAMPLE STATEMENT OF TECHNICAL REVIEW FOR DECSION 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 DrChecks[sm].

SIGNATURE _____ Date _____

Name
ATR Team Leader
Office Symbol/Company

SIGNATURE _____ Date _____

Name
Project Manager
Office Symbol

SIGNATURE _____ Date _____

Name
Architect Engineer Project Manager[1]
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, Construction 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
ASA(CW)	Assistant Secretary of the Army for Civil Works	NED	National Economic Development
ATR	Agency Technical Review	NER	National Ecosystem Restoration
CSDR	Coastal Storm Damage Reduction	NEPA	National Environmental Policy Act
DPR	Detailed Project Report	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
EAP	Emergency Action Plan	OSE	Other Social Effects
EC	Engineer Circular	PCX	Planning Center of Expertise
EIS	Environmental Impact Statement	PDT	Project Delivery Team
EO	Executive Order	PAC	Post Authorization Change
ER	Ecosystem Restoration	PMP	Project Management Plan
FDR	Flood Damage Reduction	PL	Public Law
FEMA	Federal Emergency Management Agency	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
HSS	Hydraulic Steel Structures	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