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

CEPOD-PDC

6 MAR 2015

MEMORANDUM FOR Commander, Alaska Engineer District (CEPOA-PM-C-PL/Jason Norris), P.O. Box 6898, JBER, AK 99506-0898

SUBJECT: Review Plan Approval for the Kenai Bluffs Bank Stabilization Section 116 Feasibility Report.

1. References:

a. Engineering Circular 1165-2-214, Civil Works Review, 15 December 2012.

b. Review Plan for the Kenai Bluffs Bank Stabilization Section 116 Feasibility Report, Alaska District, U.S. Army Corps of Engineers. (Encl)

2. This memorandum constitutes approval of the Review Plan for the Kenai Bluffs Bank Stabilization Section 116 Feasibility Report, Alaska District, U.S. Army Corps of Engineers, which includes a Type I Independent External Peer Review.

3. The approved Review Plan is subject to change as circumstances require, consistent with project development under the Project Management Business Process. Subsequent significant revision to this Review Plan or its execution requires my written approval.

4. For further information or clarification about the review process, please contact the North Atlantic Division Planning Center of Expertise for Coastal Storm Risk Management (PCX-CSRM) at 347-370-4571.

5. POC is Mr. Russell Iwamura, Senior Economist, Civil Works Integration Division, at 808-835-4625 or email Russell.K.Iwamura@usace.army.mil.

Encl

for: JEFFREY L. MILHORN, P.E.
Brigadier General, USA
Commanding

REVIEW PLAN

Kenai Bluffs Bank Stabilization Section 116 Feasibility Report

Alaska District

MSC Approval Date: 6 March 2015
Last Revision Date: None

US Army Corps
of Engineers ®

REVIEW PLAN

Kenai Bluffs Bank Stabilization Section 116 Feasibility Study

TABLE OF CONTENTS

1. PURPOSE AND REQUIREMENTS

a. Purpose. This Review Plan defines the scope and level of peer review for the Kenai Bluffs Bank Stabilization Section 116 Feasibility Study at Kenai, Alaska. This Review Plan was developed using the Pacific Ocean Division (POD) version of the U.S. Army Corps of Engineers (USACE) National Planning Center of Expertise (PCX) Review Plan template dated 1 November 2012.

b. References

(1) Engineer Circular (EC) 1165-2-214, Civil Works Review, 15 December 2012.

(2) Engineer Regulation (ER) 1110-1-12, Quality Management, 30 September 2006.

(3) ER 1105-2-100, Planning Guidance Notebook, Appendix H, Policy Compliance Review and Approval of Decision Documents, Amendment #1, 20 November 2007.

(4) Pacific Ocean Division (POD) Quality Management Plan, November 2014.

(5) Kenai Bluffs Bank Stabilization Section 116 Feasibility Study Project Management Plan (PMP), April 2014.

(6) Alaska District (POA) Quality Management Plan, CEPOA-QMP-001, January 2010.

(7) CEPOA-CW-6.1-2-WI-01, District Quality Control of Civil Works Decision Documents, April 2014.

(8) ER 1105-2-412, Assuring Quality of Planning Models, 31 March 2011.

c. Requirements. This review plan was developed in accordance with EC 1165-2-214, 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 1165-2-214) and the Value Management Plan requirements in the Project Management Business Process (PMBP) Reference 8023G and ER 11-1-321, Change 1.

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 POA decision documents is typically a Planning Center of Expertise (PCX), POD, 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 the Planning Center of Expertise for Coastal Storm Risk Management (PCX-CSRM) located in the North Atlantic Division. Upon approval by the POD, POA will post the approved Review Plan on its public website. A copy of the approved Review Plan (and any updates) will be provided to PCX-CSRM and POD to keep the PCX and POD apprised of requirements and review schedules.

The RMO will coordinate with the Civil Works Cost Engineering and ATR Mandatory Center of Expertise (MCX) 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. Study Authority. This study is being conducted under authority granted by Section 116 of the Energy and Water Development and Related Agencies Appropriations Act of 2010 (P.L. 111-85), as amended, for costal storm damage reduction and prevention, combat coastal erosion, address ice and glacial damage, and allows for the relocation of affected communities and construction of replacement facilities.

b. Decision Document. The Kenai Bluffs Bank Stabilization Section 116 Flood Risk Management project decision document will be prepared in accordance with ER 1105-2-100, Appendix H. An Environmental Assessment (EA) will be prepared with the decision document being an integrated feasibility report/EA.

c. Study/Project Description. Kenai (KEE-neye) is located on the western coast of the Kenai Peninsula, fronting Cook Inlet. It is approximately 65 air miles and 155 highway miles southwest of Anchorage. The population of Kenai is 7,100 according to the 2010 census. The non-federal sponsor is the City of Kenai. Coastal erosion at the mouth of the Kenai River is leading to the loss of archaeological and historical assets, as well as economically productive land and associated structures. The causes of this erosion include scour at the toe of the bank, groundwater seepage through the bluff, and overland flow from the top of the bluff. The 905(b) analysis identified a number of measures for addressing these issues including bluff armoring with groundwater seepage collection and overland flow reduction measures that would cost approximately $42 million to construct.

d. Factors Affecting the Scope and Level of Review. Assumptions about risk factors include:

- The project is not likely to pose a significant threat to human life/safety.
- The project cost will not likely exceed $200 million.
- There are no significant environmental issues identified at this time.
- The information in the decision document will likely not:
    - Be based on novel methods.
    - Involve the use of innovative materials or techniques.
    - Present complex challenges for implementation.
    - Contain precedent-setting methods or models.
    - Present conclusions that are likely to change prevailing practices.
- The project report is not likely to contain influential scientific information or be a highly influential scientific assessment.
- There is no request by the Governor of the State of Alaska for a peer review by independent experts.
- There is unlikely to be significant public dispute over the project's size, nature, or effects.
- Currently the project is projected to cost more than $10 million; therefore Value Engineering Studies will be required in both the feasibility and preliminary engineering and design (PED) phases.

e. In-Kind Contributions. Products and analyses provided by non-Federal sponsors as in-kind services are subject to DQC, ATR, and IEPR. The anticipated non-Federal sponsor's in-kind services for this study are discussed in the study PMP.

f. Schedule.

Activity	Duration	Scheduled Start	Scheduled Finish
Feasibility Cost Sharing Agreement Executed	1.d	1-Jun-15	1-Jun-15
Local Funding Received	15.d	1-Jun-15	15-Jun-15
Site Visit / Public Meeting / Meeting Minutes	15.d	15-Jun-15	1-Jul-15
Without Project Conditions Developed	60.d	1-Jul-15	1-Sep-15
Preliminary Alternative Formulation	45.d	1-Jul-15	15-Aug-15
Initial NEPA Work (environmental)	90.d	1-Jul-15	1-Oct-15
Geotechnical Field Work	7.d	1-Jul-15	8-Jul-15
Real Estate Plan	120.d	15-Aug-15	15-Dec-15
Develop Estimated Erosion Rates	30.d	1-Jul-15	1-Aug-15

Geotechnical Report	60.d	15-Jul-15	15-Sep-15
Cost Estimates	120.d	15-Aug-15	15-Nov-15
Determine Prior Erosion Losses	30.d	15-Aug-15	15-Sep-15
Hydraulics & Hydrology Engineering Report	180.d	1-Oct-15	1-Mar-16
Benefit to Cost Ratio	90.d	1-Nov-15	1-Feb-16
Checkpoint Meeting With Community	1.d	1-Feb-16	1-Feb-16
Gather Additional Information	30.d	1-Feb-16	1-Mar-16
Write Draft Report/EA	90.d	15-Jan-16	15-Apr-16
District Legal Certification	15 d	15-Apr-16	1-May-16
District Quality Review	30.d	1-May-16	1-Jun-16
Value Engineering Study	7.d	1-Jun-16	8-Jun15
Agency Technical Review	60.d	1-Jun-16	1-Aug-16
Pacific Ocean Division Review/AFB Milestone	60.d	1-Aug-16	1-Oct-16
Draft Report Review Conference	30.d	1-Oct-16	1-Nov-16
Receive Guidance	60.d	1-Nov-16	1-Jan-17
Independent External Peer Review	60.d	1-Jan-17	1-Mar-17
Public Review of EA/FONSI	30.d	1-Mar-17	1-Apr-17
Finalize Report/EA/FONSI	45.d	1-Apr-17	15-May-17
Report Approved	45.d	15-May-17	1-Jul-17
Sign Design Agreement	90.d	1-Jul-17	1-Oct-17

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 PMP. POA shall manage DQC. Documentation of DQC activities is required and should be in accordance with CEPOA-CW-6.1-2-WI-01 and the POD Quality Manual. For this study, DQC will be conducted within DrChecks^{sm}.

a. Documentation of DQC. DrChecks^{sm} review software will be used to document all DQC 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.

b. Products to Undergo DQC. All decision documents, including cost estimates are to be prepared in accordance with the POA Quality Management Plan and will undergo DQC.

c. Required DQC Expertise. The following expertise is required for DQC.

DQC Team Members/Disciplines	Expertise Required
DQC Lead	The DQC lead should be a professional with experience in preparing Civil Works decision documents. The lead should also have the necessary skills and experience to lead a team through the DQC process. The DQC lead may also serve as a reviewer for a specific discipline (such as planning, economics,

	environmental resources, etc).
Planning	The Planning reviewer should be a water resources planner with experience in the U.S. Army Corps of Engineers (USACE) planning process and be knowledgeable of current USACE policies and guidance. He/she should be familiar with coastal storm damage reduction measures.
Economics	The economics reviewer should be have experience conducting economic evaluations of coastal storm damage reduction benefits and be familiar with the associated policies thereof.
Environmental Resources	The Environmental Resources reviewer should have extensive experience in evaluation of coastal, riverine, and riparian habitat and the effects of coastal storm damage reduction measures on those habitats. He/she should also have experience in the National Environmental Policy Act (NEPA) process. The Environmental Resources reviewer will also act as the Cultural/Historical Resources reviewer. The Environmental Resources reviewer may choose to delegate the Cultural/Historical Resources review to a professional with equal or greater experience in Section 106 National Historic Preservation Act (NHPA) consultation and other relevant laws, guidance, and policies as they relate to Cultural/Historical Resources.
Hydraulic Engineering	The Hydraulic Engineering reviewer should have experience in the design of coastal storm damage reduction measures, the analyses required to conduct said design, and the relevant policies governing these activities. A registered professional engineer is recommended.
Geotechnical	The Geotechnical reviewer should have experience in geotechnical analyses as they pertain to the design of coastal storm damage reduction measures. A registered professional engineer is recommended.
Real Estate	The real estate reviewer should have experience in the application of real estate law and Federal policies and guidance in the application thereof.
Cost Engineering	The Cost Engineering reviewer should be familiar with cost engineering of coastal storm damage reduction measures using the Microcomputer Aided Cost Engineering System 2nd Generation (MCACES MII) model and preparation of MII Cost estimates. The reviewer should be a certified cost technician, consultant, or engineer.

The DQC team members are listed in Attachment 1.

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 POA that is not involved in the day-to-day production of the project/product. ATR teams will be comprised of USACE personnel and may be supplemented by outside experts as appropriate. The ATR team lead will be from outside POD.

a. Products to Undergo ATR. ATR will be performed throughout the study in accordance with POA and POD Quality Management Plans. The ATR shall be documented and discussed at the Alternatives milestone. Certification of the ATR will be provided prior to the District Commander signing the final report. Products to undergo ATR include the draft Feasibility Report and Environmental Assessment for the Kenai Bluffs Bank Stabilization Section 116 study.

b. Required ATR Team Expertise.

ATR Team Members/Disciplines	Expertise Required
ATR Lead	The ATR lead should be a professional with experience in preparing civil works decision documents. The lead should have the necessary skills and experience to lead a virtual team through the ATR process. The ATR lead may also serve as a reviewer for a specific discipline (such as planning, economics, environmental resources, etc). The ATR Lead must be from outside of POD.
Planning	The Planning reviewer should be a water resources planner with demonstrable experience in planning related to coastal storm damage reduction studies.
Economics	The Economics reviewer should have experience in conducting economic analyses as it relates to coastal storm damage reduction studies.
Environmental Resources	The Environmental Resources reviewer should have extensive experience in evaluation of coastal, riverine, and riparian habitat and the effects of coastal storm damage reduction measures on those habitats. The Environmental Resources reviewer will also serve as

	the Historical/Cultural Resources reviewer. The Environmental Resources reviewer may choose to delegate the Cultural/Historical Resources review to a professional with equal or greater experience in Section 106 (NHPA) consultation and other relevant laws, guidance, and policies as they relate to Cultural/Historical Resources.
Hydraulic Engineering	The Hydraulic Engineering reviewer should have experience in the design of flood coastal storm damage reduction measures.
Geotechnical Engineering	The Geotechnical Engineering reviewer should have experience in conducting geotechnical analyses as they pertain to the design of coastal storm damage reduction measures.
Cost Engineering	The cost engineering reviewer will be Cost MCX Staff or a Cost MCX Pre-Certified Professional with experience in preparing cost estimates for coastal storm risk management studies.
Real Estate	The real estate reviewer should be a real estate professional with experience in developing real estate plans for civil works projects.

Once identified, the members of the ATR team and a brief description of their credentials will be listed in Attachment 1.

c. Documentation of ATR. DrChecks[sm] 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[sm] will include the text of each ATR concern, the Project Delivery Team (PDT) response, a brief summary of the pertinent points in any discussion, including any vertical team coordination (the vertical team includes POA, POD, 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[sm] 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 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 1165-2-214, 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 1165-2-214.

- Type II IEPR. Type II IEPRs, or Safety Assurance Reviews (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. Type I IEPR will be conducted for this project. Type II IEPR will not be required for this decision document. These decisions are based on the following assumptions.

- The Project does not require an EIS.

- The life safety consequences and risks for this project will be no greater than those expected conditions experienced under the "Without Project Conditions".

- The project is not controversial. To the contrary, it has broad support.

- The project has no more than negligible adverse impacts on scarce or unique cultural or historic resources.

- The project has no significant adverse impacts on fish and wildlife species and their habitat.

- The project has no more than a negligible adverse impact on species listed as endangered or threatened under the Endangered Species Act of 1973 (16 U.S.C. 1531 et seq.) or the critical habitat of such species designated under such Act.

- The project has no significant local, State or Federal interagency interest related to potential adverse impacts on the environment, cultural or other resources.

- The project is for an activity for which there is ample experience within USACE and industry.

- The Federal action is not justified by life safety.

- The project does not involve the use of innovative materials or techniques where the engineering is based on novel methods, does not present complex challenges for interpretations, does not contain precedent-setting methods or models, or does not present conclusions that are likely to change prevailing practices.

- The project design does not require redundancy, resiliency, and/or robustness.

- The project does not have unique construction sequencing, or a reduced or overlapping design construction schedule.

- The risk associated with this project is the construction cost. Fluctuations in the construction cost index are factored into the determination of the project cost contingency. Other factors such as potential weather delays are also included.

- This study will contain no influential scientific information and will be conducted using standard and routine analyses typically associated with flood risk management projects.

- There has been no request by the Governor for a peer review by independent experts.

- The total projects costs will likely exceed $45 million dollars.

b. Products to Undergo Type I IEPR. Integrated Feasibility Study and NEPA Document.

c. Required Type I IEPR Panel Expertise.

IEPR Panel Members/Disciplines	Expertise Required
Civil Works Planning	The civil works planning reviewer should have a minimum of 10 years of demonstrated experience in public works planning with a Masters degree in a

	related field. The reviewer should possess familiarity with USACE civil works planning policies, methodologies, and procedures.
Economics	The economics reviewer should have extensive experience in evaluation of benefits as they pertain to the construction of coastal storm damage reduction measures as well as the laws and policies which govern the process by which the Corps calculates those benefits.
Environmental Resources	The Environmental Resources reviewer should have extensive experience in evaluation of coastal, riverine, and riparian habitat and the effects of coastal storm damage reduction measures on those habitats. The reviewer should also have extensive experience in the NEPA process. The Environmental Resources reviewer will also serve as the Historical/Cultural Resources reviewer and should have experience in Section 106 NHPA coordination.
Hydraulic Engineering	The hydraulic engineering reviewer should have extensive experience in the design of coastal storm damage reduction measures such as revetments, groins, retaining walls, and other soil retention structures. In addition, the hydraulic engineering reviewer should be familiar with groundwater collection and disposal measures and methods. The hydraulic engineering reviewer should be a registered engineer.
Geotechnical Engineering	The geotechnical reviewer should have extensive experience in geotechnical evaluation related to the construction of coastal storm damage reduction measures including revetments, groins, retaining walls, and other soil retention structures. In addition, the geotechnical engineering reviewer should be familiar with groundwater collection and disposal measures and methods. The geotechnical reviewer should be a registered engineer.

d. Documentation of Type I IEPR. The IEPR panel will be selected and managed by an Outside Eligible Organization (OEO) per EC 1165-2-214, 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.c. 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 by POD 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 POD 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 AND ATR MANDATORY CENTER OF EXPERTISE (MCX) REVIEW AND CERTIFICATION

All decision documents shall be coordinated with the Cost Engineering MCX, located in the Walla Walla District. The MCX 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 MCX will also provide the Cost Engineering MCX certification. The RMO is responsible for coordination with the Cost Engineering MCX.

9. MODEL CERTIFICATION AND APPROVAL

a. Planning Models. 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).

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
Economics Single-Use Spreadsheet	The model will gauge losses due to erosion. Wave attack and inundation are not issues for this study; therefore normal models such as HEC-FDA and Beach-fx are not appropriate. POA has commenced coordination with PCX-CSRM on the model approval process.	Approval to be gained through PCX-CSRM.

b. Engineering Models. 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).

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	Approval Status
HEC-RAS 4.0 (River Analysis System)	The Hydrologic Engineering Center's River Analysis System (HEC-RAS) program provides the capability to perform one-dimensional steady and unsteady flow river hydraulics calculations. The program will be used for steady flow analysis to evaluate the future without- and with-project conditions along Kenai River and its tributaries.	HH&C CoP Preferred Model
HEC-FFA (Flood Frequency Analysis)	HEC-FFA provides the capability to compute flood frequencies.	HH&C CoP Preferred Model
STWAVE	STWAVE is a 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 in the H&H effort to determine wave forces acting upon the bluff.	HH&C CoP Preferred Model
MCACES MII	The MCACES MII construction cost estimating software is a tool used by cost engineers to develop and prepare all USACE Civil Works cost estimates. Using the features in this system, cost estimates are prepared uniformly allowing cost engineers throughout USACE to function as one virtual cost engineering team.	Cost Engineering MCX Required Model

10. REVIEW SCHEDULES AND COSTS

a. ATR Schedule and Cost. The ATR for the Kenai Bluffs Bank Stabilization Section 116 Feasibility Study will be accomplished in accordance with the cost and schedule in the PMP. As of the approval date of this Review Plan, the ATR is scheduled for nine months after the date of the FCSA execution and may be subject to change. The estimated cost of the ATR is $25,000.

b. Type I IEPR Schedule and Cost. The IEPR (Type I) for the Kenai Bluffs Bank Stabilization Section 116 Feasibility Study will be accomplished in accordance with the cost and schedule in the PMP. As of the approval date of this Review Plan, the IEPR (Type I) is scheduled for 12 months after the FCSA execution and may be subject to change. The estimated cost of the IEPR (Type I) is $150,000.

c. Model Certification/Approval Schedule and Cost. Model Approval for the Kenai Bluffs Bank Stabilization Section 116 Feasibility Study will be accomplished in

accordance with the PMP. As of the approval date of this Review Plan, model certification is expected to be completed in eight months after the date of the FCSA execution and may be subject to change. The estimated cost of model approval is $15,000.

11. PUBLIC PARTICIPATION

State and Federal resource agencies may be invited to participate in the study covered by this Review Plan as partner agencies or as technical members of the PDT, as appropriate. Agencies with regulatory review responsibilities will be contacted for coordination as required by applicable laws and procedures. The ATR team will be provided copies of public and agency comments. This Review Plan and all decision documents will be posted on the POA's website for public review.

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 POA, POD, 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. POA is responsible for keeping the Review Plan up to date. Minor changes to the Review Plan since the last POD 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 POD 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 POA's webpage. The latest Review Plan should also be provided to POD and PCX-CSRM.

13. REVIEW PLAN POINTS OF CONTACT

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

Alaska District POC:
Mr. Bruce Sexauer
Chief of Civil Works Planning
U.S. Army Corps of Engineers, Alaska District
Bldg. 2204
JBER, AK 99506
Telephone: (907) 753-5619

Pacific Ocean Division POC:
Mr. Russell Iwamura
Senior Economist, Civil Works Integration Division
U.S. Army Corps of Engineers, Pacific Ocean Division
Building 525

Fort Shafter, HI 96858-5440
Telephone: (808) 835-4625

ATTACHMENT 1: TEAM ROSTERS

Project Delivery Team

The Project Delivery Team is comprised of the following individuals:

Discipline	Team Member
Project Manager	**David Martinson**
Planning	**Jason Norris**
Economics	**Lorraine Cordova**
Environmental Resources	**Chris Floyd**
Real Estate	**John Smith**
Hydraulic Engineering	**Lance Overstreet**
Geotechnical Engineering	**Coleman Chalup**
Cost Engineering	**Karl Harvey**
Value Engineering	Don Tybus
Survey	Tom Sloan
Office of Counsel	Phil Santerre

-Core PDT members are indicated by **bold** lettering. They will be involved throughout the study. Non-bolded members will be involved during certain portions but will not be required to attend each meeting.

District Quality Control Team

A DQC team will be assembled based on the expertise and qualifications provided in paragraph 4.c. Team members that are currently identified are listed in the table below.

Discipline	Team Member Office Symbol
Planning	CEPOA-PM-C-PL
Economics	CEPOA-PM-C-PL
Environmental Resources	CEPOA-EN-CW-ER
Hydraulics & Hydrology	CEPOA-EN-CW-HH
Cost Engineering	CEPOA-EN-CE
Chief, Civil Works Branch	CEPOA-PM-C

Agency Technical Review Team

An ATR Team will be constructed based on the expertise and qualifications provided in paragraph 5.b. of this Review Plan. Team members that are currently identified are listed in the table below. Their experience and qualifications will be appended below. Team members not currently identified will be added during the feasibility phase.

Discipline	Team Member
ATR Lead/Planning	CENAE
Economics	TBD
Environmental Resources	TBD
Hydraulic Engineering	TBD

Geotechnical Engineering	TBD
Real Estate	TBD
Cost Engineering	TBD

ATR Team Experience and Qualifications:

Independent External Peer Review (Type I)

An IEPR (Type I) will be conducted based on the expertise and qualifications provided in paragraph 6.c. of this Review Plan. Team members that are currently identified are listed in the table below. Their experience and qualifications will be appended below. Team members not currently identified will be added during the feasibility phase.

Discipline	Organization	Description of Credentials
Economics	TBD	TBD
Environmental Resources	TBD	TBD
Hydraulic Engineering	TBD	TBD
Geotechnical Engineering	TBD	TBD
Cost Engineering	TBD	TBD

Division Points of Contact

Name	Title	Telephone
Linda Hihara-Endo	POD Civil Works Planning Team Leader	808-835-4621

ATTACHMENT 2: SAMPLE STATEMENT OF DISTRICT QUALITY CONTROL FOR DECISION DOCUMENTS

Kenai Bluffs Bank Stabilization
Section 116 Feasibility Report
Kenai, Alaska

COMPLETION OF DISTRICT QUALITY CONTROL REVIEW

The District has completed the Section 116 Feasibility Report for Bank Stabilization at Kenai, Alaska. Notice is hereby given that District Quality Control review has been conducted that is appropriate to the level of risk and complexity inherent in the project. During the District Quality Control review, 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 of data obtained; and reasonableness of the results, including adherence to Civil Works policy and guidance.

Ronnie Barcak, Chief, Planning	Date
TBD, Economics	Date
TBD, Environmental Resources	Date
Ken Eisses, Chief, Hydraulics & Hydrology	Date
TBD, Cost Engineering	Date
Jason Norris, Lead Planner (Technical Lead)	Date

CERTIFICATION OF DISTRICT QUALITY CONTROL REVIEW

As noted above, all concerns resulting from independent technical review of the project have been considered. The report and all associated documents required for this phase of the study by the National Environmental Policy Act have been fully reviewed.

Bruce Sexauer Chief, Civil Works Branch	Date

ATTACHMENT 3: SAMPLE STATEMENT OF AGENCY TECHNICAL REVIEW FOR DECISION DOCUMENTS

COMPLETION OF AGENCY TECHNICAL REVIEW

The Agency Technical Review (ATR) has been completed for the Section 116 Feasibility Report for Bank Stabilization at Kenai, Alaska. The ATR was conducted as defined in the project's Review Plan to comply with the requirements of EC 1165-2-214. 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 _____

TBD
ATR Team Leader
TBD (must be from outside of POD)

SIGNATURE _____ Date _____

David Martinson
Project Manager
CEPOA-PM-C

SIGNATURE _____ Date _____

Lawrence Cocchieri
Review Management Office Representative
CEPOD-PDC

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 _____

David Frenier
Chief, Engineering Division
CEPOA-EN

SIGNATURE _____ Date _____

Ronnie Barcak
Chief, Planning Division
CEPOA-PM-C-PL

[1] Only needed if some portion of the ATR was contracted

ATTACHMENT 4: REVIEW PLAN REVISIONS

Revision Date	Description of Change	Page / Paragraph Number

ATTACHMENT 5: ACRONYMS AND ABBREVIATIONS

Term	Definition	Term	Definition
AFB	Alternative Formulation Briefing	NER	National Ecosystem Restoration
ASA(CW)	Assistant Secretary of the Army for Civil Works	NEPA	National Environmental Policy Act
ATR	Agency Technical Review	O&M	Operation and maintenance
CSDR	Coastal Storm Damage Reduction	OMB	Office and Management and Budget
DPR	Detailed Project Report	OMRR&R	Operation, Maintenance, Repair, Replacement and Rehabilitation
DQC	District Quality Control/Quality Assurance	OEO	Outside Eligible Organization
DX	Directory of Expertise	OSE	Other Social Effects
EA	Environmental Assessment	PCX	Planning Center of Expertise
EC	Engineer Circular	PDT	Project Delivery Team
EIS	Environmental Impact Statement	PAC	Post Authorization Change
EO	Executive Order	PMP	Project Management Plan
ER	Ecosystem Restoration	POD	Pacific Ocean Division
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
Home District/MSC	The District or MSC 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
NED	National Economic Development		