



REPLY TO  
ATTENTION OF

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

CEPOD-PDC

6 Dec 12

MEMORANDUM FOR COMMANDER HONOLULU ENGINEER DISTRICT (CEPOH-PP-C/CINDY BARGER), BUILDING 230, FORT SHAFTER, HI 96858-5440

SUBJECT: Review Plan Approval for the North Kohala Continuing Authorities Program Section 107 Navigation Improvements Feasibility Report, Island of Hawaii, Hawaii

1. References:

a. Engineering Circular 1165-2-209, Civil Works Review Policy, 31 January 2010, and Change 1, 31 January 2012.

b. Policy Memorandum #1, HQ USACE, CECW-P, 19 January 2011, subject: Continuing Authority Program Planning Process Improvements.


c. Review Plan for the North Kohala Section 107 Feasibility Report, Island of Hawaii, Hawaii, Honolulu District, U.S. Army Corps of Engineers.

2. The enclosed Review Plan (reference 1.c.) for the North Kohala, Island of Hawaii, Hawaii, navigation improvements feasibility report was prepared IAW references 1.a. and 1.b. The Pacific Ocean Division Civil Works Division is the lead office to execute this Review Plan. This plan does not include Type I Independent External Peer Review.

3. 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.

4. The point of contact for this memorandum is Mr. Russell Iwamura, Senior Economist, Civil Works Integration Division, at 808-835-4625 or email [Russell.K.Iwamura@usace.army.mil](mailto:Russell.K.Iwamura@usace.army.mil).

Encl

  
GREGORY J. GUNTER  
Colonel, EN  
Acting Commander

**REVIEW PLAN**

**NORTH KOHALA NAVIGATION IMPROVEMENTS**  
**ISLAND OF HAWAI'I, HAWAI'I**

**Feasibility Study**  
**Continuing Authorities Program (CAP)**  
**Section 107 of the Rivers and Harbors Act of 1960**

**U.S. Army Corps of Engineers, Honolulu District**



**MSC Approval Date:** 6 December 2012  
**Last Revision Date:** 19 November 2012



**US Army Corps  
of Engineers** ®

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**REVIEW PLAN**

**NORTH KOHALA NAVIGATION IMPROVEMENTS**  
**ISLAND OF HAWAI‘I, HAWAI‘I**

**Feasibility Study**  
**Continuing Authorities Program (CAP)**  
**Section 107 of the Rivers and Harbors Act of 1960**

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## **1. PURPOSE AND REQUIREMENTS**

**a. Purpose.** This Review Plan defines the scope and level of peer review for the North Kohala Navigation Improvements, Island of Hawai‘i, Hawai‘i, Feasibility Study, Section 107 project decision document.

Section 107 of the Rivers and Harbors Act of 1960, as amended, is one of the legislative authorities within the Continuing Authorities Program (CAP) under which the Secretary of the Army, acting through the Chief of Engineers, is authorized to plan, design, and implement certain types of water resources projects without additional project specific congressional authorization. CAP projects are water resource related projects of smaller scope, cost, and complexity than typical U.S. Army Corps of Engineers (USACE) Civil Works projects which require specific authorization by Congress. Under the delegated authority of Section 107, USACE is authorized to plan, design and construct navigation projects without project specific congressional authorization.

Additional Information on this program can be found in Engineer Regulation (ER) 1105-2-100, Planning Guidance Notebook, Appendix F, Amendment #2, 31 January 2007.

**b. Applicability.** This Review Plan was developed following the USACE Pacific Ocean Division (POD) Model Review Plan (MRP), dated May 2011. The POD MRP is applicable to those Section 107 project decision documents that do not require an Independent External Peer Review (IEPR).

### **c. References.**

- (1) Engineer Circular (EC) 1165-2-209, Civil Works Review Policy, 31 January 2012.
- (2) Director of Civil Works Policy Memorandum #1, CAP Planning Process Improvements, 19 January 2011.
- (3) EC 1105-2-412, Assuring Quality of Planning Models, 31 March 2010.
- (4) ER 1110-1-12, Quality Management, 30 September 2006.
- (5) ER 1105-2-100, Planning Guidance Notebook, Appendix F, CAP, Amendment #2, 31 January 2007.
- (6) ER 1105-2-100, Planning Guidance Notebook, Appendix H, Policy Compliance Review and Approval of Decision Documents, Amendment #1, 20 November 2007.
- (7) USACE POD Quality Management Plan, December 2010.
- (8) USACE Honolulu District (POH) Civil Works Review Policy (ISO CEPOH-C\_12203), 1 November 2010.

(9) North Kohala Navigation Improvements Feasibility Study Project Management Plan (PMP), dated September 2008.

**d. Requirements.** This Review Plan was developed in accordance with EC 1165-2-209, 31 January 2010 and Change 1, 31 January 2012 and the Director of Civil Works Policy Memorandum#1, 19 January 2011, which establishes an accountable, comprehensive, life-cycle review strategy for Civil Works CAP products by providing a seamless process for review of all Civil Works projects during the Feasibility Phase. The EC outlines four general levels of review: District Quality Control/Quality Assurance (DQC), Agency Technical Review (ATR), IEPR, and Policy and Legal Compliance Review. In addition to these levels of review, CAP decision documents are subject to cost engineering review and certification (per EC 1165-2-209) and the Director of Civil Works Policy Memorandum#1 and the Value Management Plan requirements in the Project Management Business Process Reference 8023G and the 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 the Section 107 decision document is POD. POD will coordinate and approve the review plan and manage the ATR. POD will coordinate with the Small Boat Harbor (SBH) Planning Center of Expertise (PCX) as necessary.

Upon approval by POD, POH will post the approved review plan on its public website. A copy of the approved review plan (and any updates) will be provided to POD and the SBH-PCX to keep the PCX apprised of requirements and review schedules.

## 3. STUDY INFORMATION

**a. Decision Document.** The North Kohala Navigation Improvements, Island of Hawai‘i, Hawai‘i Section 107 Feasibility Study decision document will be prepared in accordance with ER 1105-2-100, Appendix F, Amendment #2, 31 January 2007. The approval level of the decision document (if policy compliant) is the POD. An Environmental Assessment (EA) will be prepared with the decision document.

**b. Project Sponsor.** The non-Federal sponsor for this project is County of Hawai‘i, Department of Parks and Recreation (DPR).

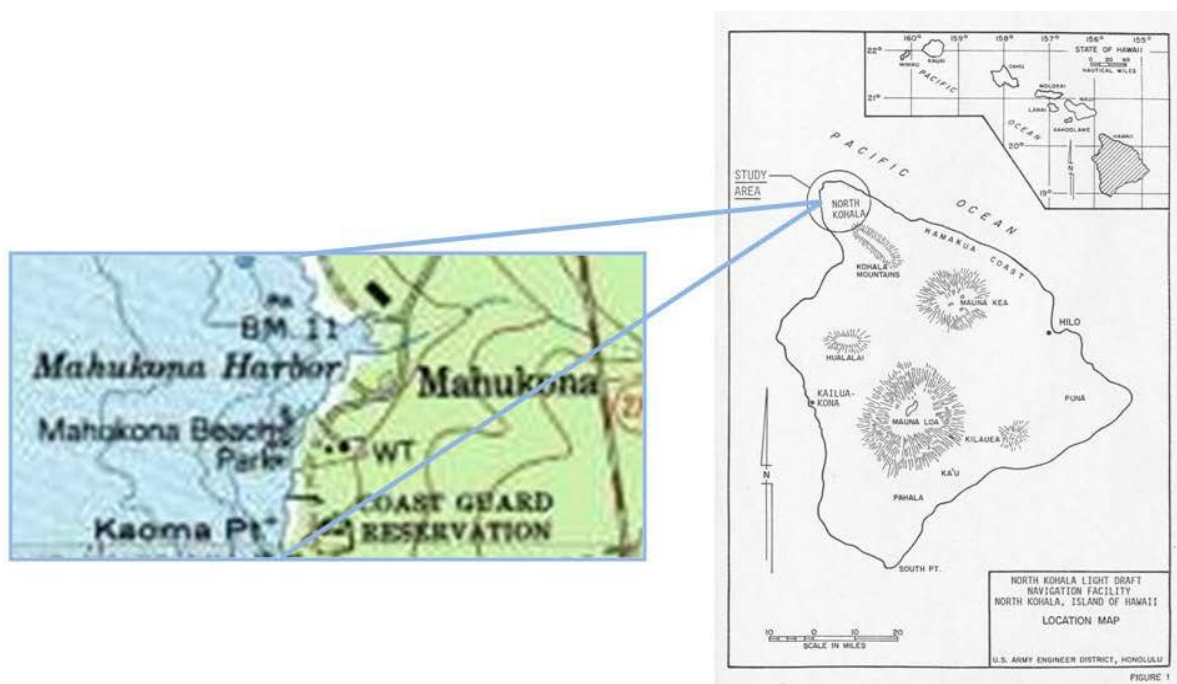
**c. Study/Project Description.** The North Kohala Navigation Improvement is located in North Kohala District on the Island of Hawai‘i, State of Hawai‘i (See Figure 1). The reconnaissance phase of the study demonstrated the feasibility of developing a Federal navigation project within the study area. Based on reconnaissance level investigations of various North Kohala locations, the Mahukona site was identified as having Federal interest. The purpose of the feasibility phase of study is to identify the National Economic Development plan for a light draft navigation project. The study will provide project design to a level commensurate with the development of plans and specifications for implementation of the project. The Harbor design will include federally authorized general navigation features

including, but not limited to an entrance channel, turning basin, and rubble-mound structures as necessary to provide a protected and dependable harbor facility. Design of non-Federal features necessary to realize benefits claimed from project implementation (such as boat ramps, boat landings and other associated infrastructure) will also be included in the study.

**d. Study Alternatives.** During the reconnaissance phase, alternatives were identified in an attempt to determine if a Federal interest exists. The alternatives consisted of the “No Action” plan and various locations for implementation of navigation improvement. Based on plan formulation to date, the Project Delivery Team (PDT) has identified the initial selected plan at the Mahukona site. Project features include dredging an entrance channel and turning basin in the embayment and constructing a rubble-mound breakwater.

The Mahukona site is a small embayment and is accessible by paved road from the highway. The site currently serves as a haul-out crane for boat with lengths of up to 18 feet. The site is exposed to direct attack from incident ocean wave energy which renders the existing boat hoist unsafe during even moderate wave events. The Mahukona Park site has improved access from the highway; is situated on State owned land; and has some existing facilities, including water. A small archeological site is located at this location, as well. This site is somewhat more sheltered from wave energy actions than the Kapa‘a County Beach Park site.

**Figure 1: North Kohala Navigation Improvement Location Map**



**e. Estimated Construction Costs.** Construction costs are estimated at \$5-\$7 million.

**f. In-Kind Contributions.** Products and analyses provided by the non-Federal sponsors as in-kind services are subject to DQC and ATR, similar to any products developed by USACE.



The anticipated in-kind services from the non-Federal sponsor are discussed in the PMP for the study. All information and data provided as work-in-kind will be incorporated into the feasibility study/EA. DQC and ATR of this information will be conducted with the DQC/ATR of the feasibility report/EA.

**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. POH shall manage the DQC process. Documentation of DQC activities is required and should be in accordance with the Quality Manuals of POH and POD.

**a. Documentation of DQC.** Consistent with the POH Quality Manual, DQC will be documented using the POH DQC review table. When all comments have been addressed and back checked, the DQC lead will sign a DQC certification in compliance with the POH Quality Manual. The DQC comments and responses will be provided for the ATR team at each review.

**b. Products to Undergo DQC.** The following products will be subject to DQC:

- (1) Draft and final integrated feasibility study/EA.
- (2) All technical reports and appendices developed in support of the integrated feasibility study/EA.
- (3) The draft and final EA decision will be subject to DQC.

**c. Required DQC Expertise.** The following expertise is needed for DQC. Because the project is discrete with limited complexities, one reviewer may fill the role of several disciplines:

**Table 1: DQC Required Expertise**

DQC Team Members/Disciplines	Expertise Required
DQC Lead	The DQC Lead should be a senior professional, preferably with experience in preparing Section 107 decision documents.
Planning	The planning reviewer should be a senior water resources planner with experience in navigation and SBH.
Economics	The economics reviewer should be a senior economist with experience in navigation and SBH benefit analyses.
Environmental Resources	The Environmental reviewer should be a senior National Environmental Policy Act (NEPA) expert.

DQC Team Members/Disciplines	Expertise Required
	They should have working knowledge of marine systems, Clean Water Act (CWA) Section 404(b)(1) alternatives analysis, and civil works planning mitigation and monitoring requirements.
Marine Ecology Outputs Model	The Marine Ecology Output Model reviewer should have experience and familiarity with tropical coral reef and marine habitats and familiarity with the HEA.
Cultural Resources	The Cultural Resource reviewer is typically a senior archaeologist with experience in Native Hawaiian culture and customs.
Coastal Engineering/Geotechnical Engineering	The Coastal Engineer should be a senior professional with experience in navigation and SBH.
Cost Engineering	The Cost Engineering reviewer will be the Cost DX Staff or Cost DX Pre-Certified Professional, with experience in preparing cost estimates for navigation and small boat harbors.
Real Estate	The Real Estate reviewer should be a senior real estate expert with experience in developing real estate plans for civil works projects.

**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 POD and is conducted by a qualified team from outside POH 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 POD.

**a. Products to Undergo ATR.** ATR will be performed throughout the study in accordance with the POH and POD Quality Management Plans. Certification of the ATR will be provided prior to the POH Commander signing the final report. Because this project is relatively discrete with limited complexities, the Project Delivery Team (PDT) anticipates an ATR is only necessary for the preliminary draft feasibility/EA report. Depending on the outcome of the ATR, POH, and POD may determine that an additional ATR is needed on the final report/EA. Products to undergo ATR include:

- Draft integrated feasibility study/EA; and,

- All technical reports and appendices developed in support of the integrated feasibility study/EA.

**b. Required ATR Team Expertise.** The following ATR expertise is required for this project. Because the project is small, where possible ATR team members will address multiple disciplines and emphasis. POD, as the RMO, will identify the final make-up of the ATR team and identify the ATR team leader in consultation with the Project Manager (PM), the vertical team, and appropriate centers of expertise. Once identified, the ATR team members for this study and a brief description of their credentials will be added in Attachment 1.

**Table 2: ATR Required Expertise**

ATR Team Members/Disciplines	Expertise Required
ATR Lead	The ATR Lead should be a senior professional, preferably with experience in preparing Section 107 decision documents and conducting an 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). The ATR Lead must be from outside the POD.
Planning	The planning reviewer should be a senior water resources planner with experience in navigation and SBH.
Economics	The economics reviewer should be a senior economist with experience in navigation and SBH benefit analyses.
Environmental Resources	The Environmental reviewer should be a senior NEPA expert. They should have working knowledge of marine systems, CWA Section 404(b)(1) alternatives analysis, and civil works planning mitigation and monitoring requirements.
Marine Ecology Output Model	The Marine Ecology Output Model reviewer should have experience and familiarity with tropical coral reef and marine habitats and familiarity with the Habitat Equivalency Assessment (HEA) method.
Cultural Resources	The Cultural Resource reviewer is typically a senior archaeologist with experience in the customs of the indigenous people of the area.
Coastal Engineering/Geotechnical Engineering	The Coastal Engineer should be a senior professional with experience in navigation and SBH.
Cost Engineering	The Cost Engineering reviewer will be the Cost DX

ATR Team Members/Disciplines	Expertise Required
	Staff or Cost DX Pre-Certified Professional, with experience in preparing cost estimates for navigation and small boat harbors.
Real Estate	The Real Estate reviewer should be a senior real estate expert with experience in developing real estate plans for civil works projects.

**c. Documentation of ATR.** DrChecks<sup>sm</sup> 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 make 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<sup>sm</sup> 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 POH, POD, and possibly the SBH-PCX 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 1110-2-12 or ER 1105-2-100, Appendix H, as appropriate. Unresolved concerns can be closed in DrChecks<sup>sm</sup> 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 of 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.

An 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 (STR), certifying that the issues raised by the ATR team have been resolved (or elevated to the vertical team). A STR should be completed, based on work reviewed to date, for the AFB, draft report and final report. A sample STR 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 by an Outside Eligible Organization (OEO) external to USACE. 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.

All CAP projects are excluded from Type I IEPR except Section 205 and Section 103 or those projects that include an EIS or meet the mandatory triggers for Type I IEPR as stated in EC 1165-2-209. Exclusions from Type I IEPR for Section 205 and Section 103 projects will be approved on a case by case basis by the POD Commander, based upon a risk informed decision process as outlined in EC 1165-2-209 and may not be delegated.

IAW reference 1.c.(2) of this review plan, this Section 107 decision document (Feasibility Phase) is excluded from Type I IEPR.

- **Type II IEPR.** Type II IEPR, or Safety Assurance Review, is managed by the Risk Management Center (RMC) and is 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.

For Section 107 decision documents prepared under the POD MRP dated May 2011, Type II IEPR is not anticipated to be required in the design and implementation phase, but this will need to be verified and documented in the review plan prepared for the design and implementation phase of the project.

## **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 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 MANDATORY CENTER OF EXPERTISE (MCX) REVIEW AND CERTIFICATION**

For CAP projects, ATR of the costs may be conducted by pre-certified district cost personnel within the region or by the Walla Walla Cost MCX. The pre-certified list of cost personnel has been established and is maintained by the Cost MCX at: <https://kme.usace.army.mil/EC/cost/CostAtr/default.aspx>. The cost ATR member will coordinate with the Cost MCX for execution of cost ATR and cost certification. The Cost MCX will be responsible for final cost certification and may be delegated at the discretion of the Cost MCX.

## **9. MODEL CERTIFICATION AND APPROVAL**

**a. Planning Models.** The approval of planning models under EC 1105-2-412 is not required for CAP projects. The POD Commander is responsible for assuring models for all planning activities are technically and theoretically sound, compliant with USACE policy, computationally accurate, and based on reasonable assumptions. Planning models are defined as

any models and analytical tools that planners use to define water resource management problems and opportunities to formulate potential alternatives to address problems and take advantage of opportunities, to evaluate potential effects of alternatives and to support decision making. The selection and application of the model and the input and output data are still the responsibility of the users and are subject to DQC, ATR, and IEPR (if required).

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

**Table 3: Planning Models and Certification/Approval Status**

<b>Model Name and Version</b>	<b>Brief Description of the Models and How It Will Be Applied in the Study</b>	<b>Certification / Approval Status</b>
North Kohala Site Specific Spreadsheet Economic Model	A customized excel spreadsheet model will be developed specifically for Section 107 projects that will focus on reducing operating costs of commercial fishermen in the study area. Reducing travel time to fishing grounds will be another primary function of the model. Other benefit categories the model will calculate will be based on volume and value of catch and damage prevented to boats and equipment. The spread sheet model will also compute anticipated changes in the value of subsistence fishing and recreation boating. In addition to this customized spread sheet model, Institute of Water Resources (IWR) Plan Annualizer in the IWR Planning Suite is the certified model that will be used to compute average annual values of cost and revenue streams, discount future values to present values, compute interest during construction and perform other basic arithmetic functions.	Model will be reviewed during ATR.
Institute of Water Resources (IWR) Planning Suite	This model assists with formulating plans, Cost Effectiveness/Incremental Cost Analysis (CE/ICA), which are required for ecosystem restoration projects. An “annualizer” module has been included to allow for easy calculations of equivalent annual average values, total net values, and annualizing non-monetary benefits and calculating costs.	Certified
North Kohala Site Specific Spreadsheet Mitigation Model	Depending on the Tentatively Selected Plan, an ecosystem output model may be required to assess the mitigation requirements for this study. In the absence of any regionalized ecosystem output model that quantifies habitat benefits for coral reef habitats in Hawai‘i, a customized spreadsheet model will be developed specifically for use on the North Kohala Navigations Improvements Project. This is considered to be an appropriate approach, as a	Model will be reviewed during the ATR

Model Name and Version	Brief Description of the Models and How It Will Be Applied in the Study	Certification / Approval Status
	spreadsheet model can be tailored to focus on metrics that are directly applicable to the project mitigation objective. In particular, habitat quality parameters contained within the model can serve as a key dataset for quantification of habitat impacts and benefits in the spreadsheet model. In addition, elements of the HEA approach will be used. The National Oceanic and Atmospheric Administration and U.S. Fish and Wildlife Service regularly use this method for coral reef mitigation assessment in the Pacific. The HEA has not been approved by the Ecosystem Restoration PCX but has been accepted on a site specific basis for navigation projects in the USACE Jacksonville District. In accordance with USACE regulations and policies, the HEA discount rate will not be used.	

**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 initiative, many engineering models have been identified as preferred or acceptable for use on USACE 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:

**Table 4: Engineering Models and Approval Status**

Model Name and Version	Brief Description of the Models and How It Will Be Applied in the Study	Approval Status
CMS-WAVE (Coastal Modeling System)	Developed by the Coastal Inlets Research Program of the USACE Engineer Research and Development Center, Coastal and Hydraulics Laboratory, in collaboration with two universities in Japan, CMS-Wave is a suite of coupled models operated in the Surface-Water Modeling System, which is an interactive and comprehensive graphical user interface environment for preparing model input, running models, and viewing and analyzing results. The CMS-Wave is designed for accurate and reliable representation of wave processes affecting operation and maintenance of coastal inlet structures in navigation projects as well as in	Coastal Engineering CoP Preferred Model



<b>Model Name and Version</b>	<b>Brief Description of the Models and How It Will Be Applied in the Study</b>	<b>Approval Status</b>
	<p>risk and reliability assessment of shipping in inlets and harbors. Important wave processes at coastal inlets are diffraction, refraction, reflection, wave breaking, and dissipation mechanisms, and the wave-current interaction. The effect of locally-generated wind can also be significant during wave propagation at inlets.</p>	
<p>Boussinesq (BOUSS-2D)</p>	<p>The BOUSS-2D is a comprehensive numerical model for simulating the propagation and transformation of waves in coastal regions and harbors based on a time-domain solution of Boussinesq-type equations. The governing equations are uniformly valid from deep to shallow water and can simulate most of the phenomena of interest in the nearshore zone and harbor basins including shoaling/refraction over variable topography, reflection/diffraction near structures, energy dissipation due to wave breaking and bottom friction, cross-spectral energy transfer due to nonlinear wave-wave interactions, breaking-induced longshore and rip currents, wave-current interaction, and wave interaction with porous structures. Many processes at inlets and harbors can be studied using BOUSS-2D.</p> <p>The BOUSS-2D can be applied to a wide variety of coastal and ocean engineering problems, including complex wave transformation over small coastal regions (1km to 5kms), wave agitation and harbor resonance studies, wave breaking over submerged obstacles, breaking-induced nearshore circulation patterns, wave-current interaction near tidal inlets, infra-gravity wave generation by groups of short waves, and wave transformation around artificial islands.</p>	<p>Coastal Engineering CoP Preferred Model</p>
<p>Microcomputer Aided Cost Engineering System (MCACES) 2<sup>nd</sup> Generation (MII)</p>	<p>The MCACES MII construction cost estimating software, developed by Building Systems Design, Inc., 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 engineering throughout USACE to function as one virtual cost engineering team.</p>	<p>Cost Engineering MCX Required Model</p>

## 10. REVIEW SCHEDULES AND COSTS

**a. ATR Schedule and Cost.** The ATRs for this study will be accomplished in accordance with the cost and schedule in the PMP. As of the approval date of this Review Plan, the ATRs of the various documents are scheduled as follows:

- Draft Feasibility Report/EA: May 2013.
- Estimated Cost: \$25,000.

**b. Model Review Schedule and Cost.** For CAP decision documents prepared under the POD MRP, use of existing certified or approved planning models is encouraged. Where uncertified or unapproved model is used, review of the model for use will be accomplished through the ATR process. The ATR team should apply the principles of EC 1105-2-412 during the ATR to ensure the model is theoretically and computationally sound, consistent with USACE policies, and adequately documented. If specific uncertified models are identified for repetitive use within a specific district or region, the appropriate PCX, MSC(s), and home District(s) will identify a unified approach to seek certification of these models.

The North Kohala site specific economic and ecosystem output models will be used on a one-time basis. These models will be reviewed during the ATR of the draft document. In the event that POD and/or the ECO-PCX require a separate or regional approval, the schedule and costs will be adjusted accordingly.

## 11. PUBLIC PARTICIPATION

A Public Involvement Plan will be developed for the feasibility study to guide the public participation process. Small group meetings with key stakeholders and resource agencies will be conducted to collect specific information relevant to study goals and objectives and provide information to key stakeholders and interest groups relevant to the study goals and objectives. A public scoping meeting will be held prior to the development of the Draft Feasibility Report/EA. A public meeting will be held to seek input on the draft report.

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.

## 12. REVIEW PLAN APPROVAL AND UPDATES

The POD Commander is responsible for approving this review plan and ensuring that use of the POD CAP MRP is appropriate for the specific project covered by the plan. The Review Plan is a living document and may change as the study progresses. POH 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) will be re-approved by the POD Commander following the process used for initially approving the plan. Significant changes may result in the POD determining that use of the POD CAP MRP is no longer appropriate. In these cases, a project specific review plan will be prepared and approved in accordance with EC 1165-2-209 and Director of Civil Works Policy Memorandum #1. The latest version of the review plan, along with the POD Commander's approval memorandum, will be posted on the POH webpage. The latest Review Plan will also be provided to the SBH-PCX and POD.

### **13. REVIEW PLAN POINTS OF CONTACT**

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

Honolulu District

Ms. Deborah A. Solis  
Project Manager  
Civil and Public Works Branch'  
Programs and Project Management Division  
U.S. Army Corps of Engineers, Honolulu District  
Building 230, Room 307  
Ft. Shafter, HI 96858  
Telephone: (808) 835-4035

Review Management Organization/Pacific Ocean Division

Mr. Russell Iwamura  
Economist  
U.S. Army Corps of Engineers, Pacific Ocean Division  
Building 525 CEPOD-PDC  
Ft. Shafter, HI 96858-5440  
Telephone: (808) 835-4625

**ATTACHMENT 2: SAMPLE STATEMENT OF TECHNICAL REVIEW FOR  
DECISION DOCUMENTS**

**COMPLETION OF AGENCY TECHNICAL REVIEW**

The ATR has been completed for the <type of product> for North Kohala Navigation Improvements Project, Island of Hawai'i, Hawai'i. The ATR was conducted as defined in the project's Review Plan to comply with the requirements of EC 1165-2-209 and Director of Civil Works Policy Memorandum #1. 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 USACE policy. The ATR also assessed the 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.

*SIGNATURE*

Name

ATR Team Leader

Office Symbol/Company

\_\_\_\_\_  
Date

*SIGNATURE*

Name

Project Manager (home district)

Office Symbol

\_\_\_\_\_  
Date

*SIGNATURE*

Name

Architect Engineer Project Manager<sup>1</sup>

Company, location

\_\_\_\_\_  
Date

*SIGNATURE*

Name

Review Management Office Representative

Office Symbol

\_\_\_\_\_  
Date

<sup>1</sup> Only needed if some portion of the ATR was contracted.

**CERTIFICATION OF AGENCY TECHNICAL REVIEW (CONT'D)**

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*

---

*Name*

Chief, Engineering Division (home District)

*Office Symbol*

\_\_\_\_\_  
Date

*SIGNATURE*

---

*Name*

Chief, Planning Division (home District)

*Office Symbol*

\_\_\_\_\_  
Date

**ATTACHMENT 3: REVIEW PLAN REVISIONS**

**Table 7: Review Plan Revisions**

<b>Revision Date</b>	<b>Description of Change</b>	<b>Page / Paragraph Number</b>

**ATTACHMENT 4: ACRONYMS AND ABBREVIATIONS**

**Table 8: Standard Acronyms and Abbreviations**

<b><u>Term</u></b>	<b><u>Definition</u></b>	<b><u>Term</u></b>	<b><u>Definition</u></b>
ATR	Agency Technical Review	NEPA	National Environmental Policy Act
CAP	Continuing Authorities Program	OMRR&R	Operation, Maintenance, Repair, Replacement, and Rehabilitation
DQC	District Quality Control/Quality Assurance	OEO	Outside Eligible Organization
EA	Environmental Assessment	PCX	Planning Center of Expertise
EC	Engineer Circular	PDT	Project Delivery Team
ER	Engineer Regulation	PMP	Project Management Plan
HQUSACE	Headquarters, U.S. Army Corps of Engineers	POD	U.S. Army Corps of Engineers, Pacific Ocean Division
IEPR	Independent External Peer Review	POH	U.S. Army Corps of Engineers, Honolulu District
IWR	Institute of Water Resources	RMC	Risk Management Center
MCX	Mandatory Center of Expertise	RMO	Review Management Organization
MRP	Model Review Plan	USACE	U.S. Army Corps of Engineers
MSC	Major Subordinate Command		