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

CEPOD-PDC (1105)

May 5, 2026

MEMORANDUM FOR Commander, Honolulu Engineer District (CEPOH-PPC/Cindy Acpal), Building 230, Fort Shafter, HI 96858-5440

SUBJECT: Review Plan Approval for the Kahaluu Bay Aquatic Ecosystem Restoration Continuing Authorities Program Section 206 Feasibility Study

1. References:

a. Engineer Regulation 1165-2-217, Water Resource Policies and Authorities – Civil Works Quality and Review Policy, 19 Aug 2025.

b. HQ POD, CE-POD-PDC memorandum (Delegation of Approval Authority for Review Plans for Civil Works Products), 13 Jun 2024.

c. Kahaluu Bay Aquatic Ecosystem Restoration (Section 206) Review Plan (Encl).

2. The Pacific Ocean Division is the lead office to execute this Review Plan. The Review Plan does not include Independent External Peer Review or Safety Assurance Review.

3. I hereby approve this Review Plan, which is subject to change as circumstances require, consistent with work product development under the Project Delivery Business Process. Subsequent revisions to this Review Plan or its execution due to significant changes in the study/scope or level of review will require Division Commander written approval.

4. POC is Mr. Jason Norris, Chief of Planning and Policy, Pacific Ocean Division, at 907-802-1516 or at Jason.M.Norris@usace.army.mil.

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Encl

JOSE E. SANCHEZ, P.E., SES
Director of Engineering and Business

Prepared by:
Honolulu District
Pacific Ocean Division

US Army Corps of Engineers

Kahaluu Bay Aquatic Ecosystem Restoration Continuing Authorities Program Section 206

Integrated Feasibility Report with NEPA document Review Plan

March 2026

Date of RMO Endorsement of Review Plan: 5 May 2026

Date of MSC Approval of Review Plan: 5 May 2026

Date of IEPR Exclusion Approval: N/A

Has the Review Plan changed since RMO Endorsement? No

Date of Last Review Plan Revision: NONE

Date of Review Plan web posting: 13 May 2026

Contents

LIST OF TABLES

LIST OF FIGURES

1 Overview

1.1 Purpose of Review Plan

This Review Plan (RP) defines the scope and level of review for the planning decision document developed for the Kahaluu Bay Aquatic Ecosystem Restoration Continuing Authorities Program (CAP) Section 206 Feasibility Study. The scope and level of review required is based upon a preliminary assessment of the magnitude of project risks (ER 1165-2-217, Civil Works Quality and Review Policy), as well as project model user coordination to comply with CECW-P memorandum (28 July 2023), Model Coordination for Civil Works Planning.

As part of the Project Management Plan (PMP), this RP establishes an accountable, comprehensive, life-cycle review strategy for Civil Works products and lays out a risk-informed, value-added process providing the scopes of review for the current phase of work.

1.2 References

- Engineer Regulation (ER) 1165-2-217, Water Resources Policies and Authorities – Civil Works Quality and Review Policy, 19 Aug 2025
- ER 1105-2-103: Policy for Conducting Civil Works Planning Studies, 7 Nov 2023, which supersedes ER 1105-2-100, Chapters 1,2, and 3, dated 22 Apr 2000
- Engineer Circular (EC) 1105-2-412, Assuring Quality of Planning Models, 31 March 2011
- Planning Bulletin 2013-02, Assuring Quality of Planning Models, 31 Mar 2013
- ER 5-1-11, Management—U.S. Army Corps of Engineers (USACE) Business Process, 31 Jul 2018
- ER 1110-2-1150, Engineering and Design for Civil Works Projects, 31 Aug 1999
- Engineering Pamphlet (EP) 1105-2-58, Planning Continuing Authorities Program (1 March 2019)
- EP 1105-2-70, Planning Aquatic Ecosystem Restoration Civil Works Mission and Evaluation Procedures
- EP 1105-2-61, Planning Feasibility and Post Authorization Study Procedures and Report Processing Requirements, 1 Jul 2023
- CECW-P Memorandum, Model Coordination for Civil Works Planning Studies, 28 Jul 2023
- “Model Coordination and Model User Documentation: Non-Specific Mission Areas” 2 November 2023, Provided by (then) EcoPCX August 2024, for Aquatic Ecosystem Study Use
- Enterprise Standard (ES) 081010, Software Validation for the Hydrology, Hydraulics and Coastal Community of Practice (HH&C CoP)

1.3 Review Management Organization

The Review Management Organization (RMO) is the designated U.S. Army Corps of Engineers (USACE) organization overseeing quality reviews by reviewing and endorsing the RP. The Pacific Ocean Division (POD) is the RMO for this project. The RMO’s roles and responsibilities are outlined in ER 1165-2-217.

1.4 Designated Points of Public Contact for Review Plan Questions or Comments

- **District**: Honolulu District (POH), Project Manager (808) 835-4529
- **Major Subordinate Command (MSC):** Pacific Ocean Division (POD), MSC Chief of Planning, (907) 802-1516
- **Review Management Organization (RMO)**: POD, MSC Chief of Planning, (907) 802-1516

1.5 Levels of Review of Planning Decision Documents

All planning products are subject to the conduct and completion of District Quality Control (DQC) and Agency Technical Review (ATR), and a smaller sub-set may be subject to Independent External Peer Review (IEPR). Both planning models and engineering models used in planning decision documents must meet requirements regarding both model users and model certification or approval for use in the planning study. Table 1 summarizes the reviews to be performed for this project. The details of each are provided in later sections of this RP.

Any required review that will not be performed for this study is documented in the appropriate section of this RP, explaining the risk-informed decision not to undertake that review.

Table 2 summarizes the anticipated deliverables/work products that are expected to be reviewed during the project development and the schedule for their delivery. Table 2 also includes the timing and sequence of the reviews (including deferred reviews) and anticipated costs. The specific expertise required for the teams and other relevant information are identified in later sections of this RP covering each facet of review.

Table 1. Study Required Coordination and Review

TYPE OF REVIEW	Included	LOCATION OF DISCUSSION IN RP
Model User Coordination	Yes	Section 3
Model Approval/Certification Review	No	Section 3
District Quality Control (DQC)	Yes	Section 4
Agency Technical Review (ATR) **One Review**	Yes	Section 5
Interim Stage Work Product ATR	No	n/a
Policy and Legal Compliance Review (P&LCR) **One Review**	Yes	Section 5
Independent External Peer Review	No	Section 6/ Appendix 2
Public Review	Yes	Section 7

1.6 Required Review Team Expertise

Table 3 identifies the specific technical discipline and expertise required for the members of each review team. In most cases, the team members will be senior professionals in their respective fields. In general, the technical disciplines identified will be the same for the DQC and ATR teams.

Each ATR team member will be certified to conduct ATR by their community of practice. To serve as an Engineering and Construction reviewer on an ATR Team, USACE personnel must be listed in the Corps of Engineers Reviewer Certification and Access Program (CERCAP). ATR certification for USACE Planning disciplines, including plan formulation, economics, cultural resources, and environmental, is documented in the USACE Planner Database.

1.7 Required Disclaimer on Documents Distributed Outside the Government

For information distributed for review to non-governmental organizations, the following disclaimer will be placed on documents:

“This information is distributed solely for the purpose of pre-dissemination review under applicable information quality guidelines. It has not been formally disseminated by USACE. It does not represent and should not be construed to represent any agency determination or policy.”

Table 2 Schedule and Costs of Reviews Overview

Review Management Organization Coordination & Participation: The RMO will participate in milestone meetings, in-progress reviews, issue resolutions, and review of this RP.

PRODUCT TO UNDERGO REVIEW	Review Level	Site Visit	Start Date	End Date	Estimated Cost	Complete
Planning Model User Coordination Review (See details in Chapter 3)	Appropriate PCX	n/a	06/01/2025	11/06/25	n/a	Attached to review plan
Engineering Model User Coordination Review (See details in Chapter 3)	Appropriate functional CoP	n/a	06/01/2025	11/06/25	n/a	Attached to review plan
Draft Report with integrated NEPA Document	DQC	n/a	07/20/26	08/21/26	$19,425	No
	District Legal	n/a	11/09/26	12/09/26	n/a	No
	Public	n/a	12/17/26	01/16/27	n/a	No
	One Review: ATR & P&LCR (receive comments) P&LCR (response & closeout)	n/a	08/31/26 12/17/26	09/22/26 03/04/27	n/a	No
Final Report with integrated NEPA Document	Targeted DQC	n/a	05/24/27	06/24/27	$14,800	No
	District Legal	n/a	06/25/27	07/09/27	n/a	No
	Targeted One Review: ATR & P&LCR	n/a	08/16/27	11/19/27	n/a	No

Table 3 Review Teams – Disciplines and Expertise

Note: All One Review (ATR & P&LCR) team members shall be certified to perform agency technical review or have the expertise to provide P&LCR for the discipline for which they are completing their review.

Discipline/Role	Expertise	DQC	One Review
DQC & ATR Team Leads	A senior professional with extensive experience preparing Civil Works (CW) decision documents and conducting DQC. The lead may also serve as a reviewer for a specific discipline (such as plan formulation, engineering, environmental resources, etc.).	Yes	Yes
Plan Formulator	A senior water resources planner with experience oceanic aquatic ecosystem restoration consistent with the features/measures evaluated in the study. Fully familiar with USACE ecosystem restoration policies and have demonstrated experience with Cost Effectiveness/Incremental Cost Analysis (CE/ICA) and the Institute for Water Resources (IWR) Planning Suite.	Yes	Yes
Environmental Resources and Compliance	A senior water resources environmental planner with experience in: (1) large scale aquatic ecosystem restoration, resource significance, coral reef or ocean habitat evaluation (including use of ecological models, such as HEA), comparison of alternatives, and requirements for monitoring and adaptive management plans. (2) environmental evaluation and compliance requirements, national environmental laws and statutes, and applicable Executive Orders. If a reviewer does not have expertise in items 1 and 2 above, two environmental reviewers with appropriate expertise will be required.	Yes	Yes
Economics	Experience evaluating ecosystem restoration project benefits and costs. Experience with evaluating the appropriateness of cost effectiveness and incremental cost analysis (CE/ICA), as applied to dollar costs & ecosystem restoration benefits as well as other comprehensive benefits and familiarity with the USACE tool IWR-PLAN is required. Certified to perform agency technical review for economics.	Yes	Yes
Cultural Resources	Experience with cultural resource survey methodology, area of potential effects, Section 106 of the National Historic Preservation Act, state and federal laws/executive orders pertaining to Native Hawaiian communities, and the unique needs and lifestyles of small communities. The environmental reviewer may also serve this role, if they have the appropriate expertise.	Yes	Yes
Hydrology and Hydraulic Engineering	Expert in the field of coastal engineering and has a thorough understanding of analyses of circulation, wave modeling, sediment transport, nearshore processes, and shoreline erosion reduction measures (i.e., seawalls). Experience in USACE resilience policy and guidance. A registered professional engineer is recommended.	Yes	Yes
Geotechnical Engineering	Experienced in geotechnical investigation practices, including drilling, soil classification, and bank construction measures. A registered, professional engineer is recommended.	Yes	Yes
Real Estate	Experienced with real estate laws, policy, and guidance. Familiar with development of real estate plans for Civil Works studies regarding property acquisition.	Yes	Yes
Infrastructure and Installation Resiliency	Expert in the field of infrastructure and installation resiliency, including understanding the assessment/modeling and analyses of changing climate, coastal, and sea level conditions. The hydraulics and hydrology engineer reviewer may also serve this role, if they have the appropriate expertise.	Yes	Yes

2 Project Background

2.1 Project Name

Kahaluu Bay Aquatic Ecosystem Restoration CAP Section 206 Feasibility Study

2.2 Location

Kahaluu Bay, Kailua-Kona, Hawaii Island, Hawaii

2.3 Study Authority

Section 206 of the Water Resources Development Act (WRDA) of 1996, as amended.

2.4 Sponsor

County of Hawaii, represented by Department of Parks & Recreation

2.5 Authorized Project Purpose

Aquatic Ecosystem Restoration

2.6 Project Area Description

Kahaluu Bay is located approximately five miles south of Kailua-Kona on the west coast of the island of Hawaii. The bay is approximately one-half mile-wide and includes a pocket beach and beach park (Figure 1). The County of Hawaii (County) manages the beach park and brought on the Kohala Center to assist in managing the bay. Landside features include a parking lot, two pavilion structures, and two restrooms, protected by three seawalls along the shoreline. Between the two seawalls is a non-functional culturally significant fishpond. Corals are interspersed throughout the bay and partially sheltered from waves by a historic breakwater called the Menehune Wall. The cultural and identity values of the bay and its shoreline features are tied to indigenous Hawaiian beliefs and practices, representing sacred spaces that foster a sense of connection between humans and the marine realm.

The coral reef system provides Kahaluu Bay and the surrounding region with many ecosystem services. Within Kahaluu Bay, the coral reef provides recreational values, attracting tourists, divers, and snorkelers who wish to view the multitude of marine species that reside in and around the reef system. The reef also plays a role in sustaining subsistence fishing practices, serving as nurseries and habitats for commercially important fish species. The complex physical structure of the reef provides shelter, feeding grounds, and breeding sites for a plethora of marine organisms, making it a cornerstone for maintaining food web dynamics. The reef, in combination with the breakwater, also serve to dissipate wave attack from further eroding the nearside shoreline.

Figure 1 Geographical Location Map

2.7 Problem Statement

The compounding effects of stressors including pollutants, erosion and sedimentation, runoff into the bay, stagnation and overuse on the aquatic ecosystem in Kahaluu Bay degrades the marine ecosystem by reducing key species and the natural habitat.

2.8 Future With and Without Project Conditions

If no action is taken, the future without project condition indicates that the extent of shoreline and quality of associated nearshore habitat within the bay will continue to erode. Existing infrastructure, including seawalls, parking lots, community gathering spaces and ancillary recreation buildings, will be further damaged and undermined. These changes will adversely affect the quality and extent of coral, intertidal, and tidal pool aquatic habitats through combined processes of large and fine grain sedimentation (from both upland watershed sources and shoreline or ocean processes) and pollution. Archaeological and cultural features belonging to the Kahaluu Historic District are also adversely affected by ongoing shoreline erosion and inundation. Recreation in the bay is expected to continue and may compound adverse effects to coral habitat in the Bay due to physical and chemical stressors from overuse.

2.9 Project Goals and Objective

The study goal is to formulate an effective and achievable measure or set of measures that will result in selecting an alternative plan that will meet the following objectives.

Study Objective: Over the 50-year period of analysis, restore and protect Kahaluu Bay aquatic ecosystem to:

1. Restore hydraulic and hydrologic conditions to be more conducive to coral habitat persistence, recruitment, and growth.
2. Optimize the ability of the study area to manage and mitigate the impact of sediment and pollutants adversely affecting coral and intertidal habitat persistence, quality, and resiliency.
3. Protect beach and shoreline acreage and topography and reduce sedimentation in the bay to improve coral and intertidal habitat quality and resiliency.
4. Reduce the physical stress on coral reef ecosystem, including breakage and trampling, to improve coral habitat persistence and growth.

2.10 Types of Potential Measures/Alternatives Being Considered:

The formulation of alternatives and measures is ongoing throughout the planning process. Alternatives that consider both structural and non-structural measures are being considered for this project. Viable alternatives must meet the planning objectives, make a significant contribution to the solution of identified problems, and achieve some of the opportunities. The following concept alternatives have been identified by the PDT:

1. Nonstructural alternative: Capacity management recommendations to the County and increased visitor education through signage. Vegetated plantings on roadside dune (dual purpose: to focus visitors into a single point of entry to enable capacity management and environmental benefits from nutrient uptake and dune stabilization.
2. Nature-based features alternative: Vegetated plantings on roadside dune (environmental benefits from nutrient uptake and dune stabilization) and rainwater runoff diversion into said plantings (away from the Bay).
3. Erosion and sedimentation alternative: Repair, removal or relocation of concrete and asphalt structures at the shoreline. Reduces fine grain sedimentation. If repair to the seawalls, could include “living seawall” concrete stamping. Volcanic rock revetment along the corners of the structures/pavilions that are eroding.
4. Erosion and sedimentation plus capacity management alternative: Repair, removal or relocation of concrete and asphalt structures at the shoreline and revetments at the corners of the pavilions. Capacity management recommendations to the county. Vegetated plantings on roadside dune (dual purpose; to focus visitors into a single point of entry to enable capacity management, and environmental benefits from nutrient uptake and dune stabilization.
5. Permeable pavement alternative: Vegetated plantings on roadside dune (dual purpose; to focus visitors into a single point of entry to enable capacity management, and environmental benefits from nutrient uptake and dune stabilization. Replace parking lot pavement with permeable pavement for runoff catchment and to manage inundation.

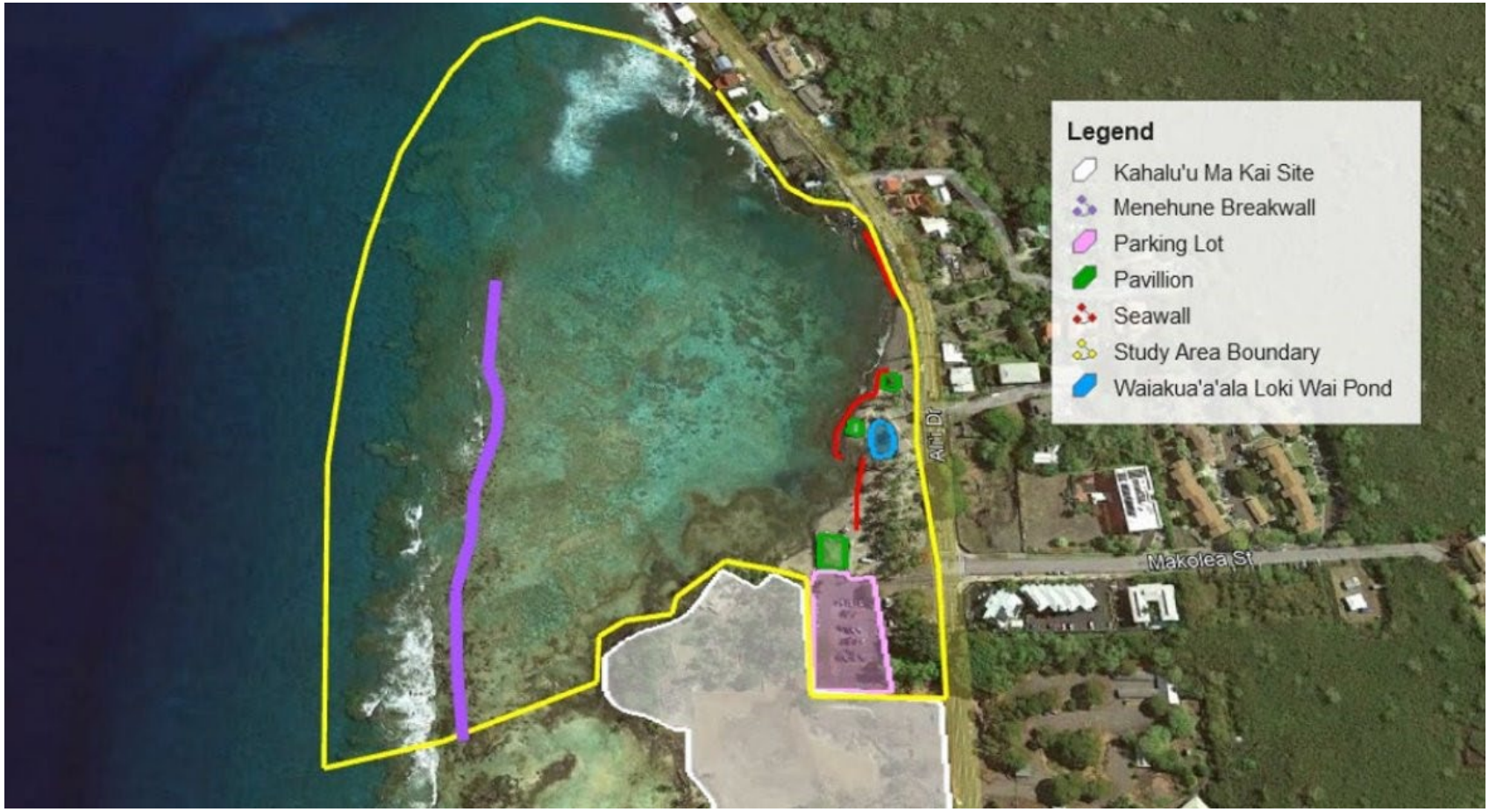

Figure 2. Potential Measures at Kahaluu Bay

2.11 Alternative Plans:

Table 4. Concept Alternatives and Measures briefly describe the measures and potential alternative plans that could address the water resources solution. Not shown in the table is Alterative 1, the no action alternative. Alternative 1 would maintain the status quo and would have no costs and no improvements to habitat diversity.

Table 4. Concept Alternatives and Measures

Alternative	Measures
Alt 2A - Seawall repair & major rehabilitation variation	• Full repair of existing seawalls by pavilions/beach • Relocation of pavilion pad • Wave attenuation artificial reef structures • Snorkel Trail
Alt 2B- Seawall repair, minor rehabilitation variation	• Limited repair of existing seawalls by pavilions/beach (only wall by pavilion/restroom?) • Relocation of pavilion pad • Wave attenuation artificial reef structures • Snorkel Trail
Alt 3A- Rock Sill with Ecotone Beach Flow Mgt	• Shoreline Sill with seawall removal • Lowering of southern seawall • Reinforced Fishpond Wall • Relocation of pavilion pad • Dune with ecotone on beach • Snorkel Trail
Alt 3B- Rock Sill with Ecotone Beach Flow Mgt, Wave Attenuation Variation	• Shoreline Sill with seawall removal • Lowering of southern seawall • Reinforced Fishpond Wall • Relocation of pavilion pad • Dune with ecotone on beach • Wave attenuation artificial reef structures • Snorkel Trail
Alt 3C- Rock Sill with Ecotone Beach Flow Mgt, Cultural Landscape Variation	• Shoreline Sill with seawall removal • Lowering of southern seawall • Reinforced Fishpond Wall • Relocation of pavilion pad • Dune with ecotone on beach • Snorkel Trail • Rock protection around cultural features • Fishpond rehabilitation
Alt 4 - Ecotone Beach Flow Mgt with Upland Flow and Capacity Management	• Shoreline Sill with seawall removal • Lowering of southern seawall • Reinforced Fishpond Wall • Relocation of pavilion pad • Dune with ecotone on beach • Wetland/sediment management basin next to parking lot

Alternative	Measures
	• Smaller parking lot with permeable pavers • Snorkel Trail
Alternative 5A- Upland Flow and Capacity Management	• Upland flow diversion ditch (drains to wetland/sediment management basin next to parking lot) • Wetland/sediment management basin next to parking lot • Smaller parking lot with permeable pavers • Relocation of pavilion pad • Snorkel Trail
Alternative 5B- Upland Flow and Capacity Management, Wave Attenuation Variation	• Upland flow diversion ditch (drains to wetland/sediment management basin next to parking lot) • Wetland/sediment management basin next to parking lot • Smaller parking lot with permeable pavers • Wave attenuation artificial reef structures • Relocation of pavilion pad • Snorkel Trail
Alt 6- Wave Attenuation Alternative	• Wave attenuation reef structures • Snorkel Trail

Based on current information in early planning, all action alternatives would have a total project cost within the CAP 206 authority project cost limit ($15 million Federal limit with a 65% Federal to 35% nonfederal cost share).

2.12 Risk Identification:

ER 1165-2-217 requires review plans document relevant study risk and related issues, including key assumptions and any constraints, in enough detail to support the decisions on the appropriate level of review and types of expertise to be represented on the various review teams.

The following questions were used to assess relevant study risks and inform decisions on the level of review and expertise on review teams:

- Will the study likely be challenging? If so, how so?
  No. The study does not have significant technical, institutional, or social challenges. It is not anticipated that the Kahaluu Bay study will utilize innovative materials or techniques. The study does not present complex challenges or precedent-setting methods or models.

- Is the project likely to be justified by life safety or is the study or project likely to involve significant life safety concerns?
  No. The project is expected to have National Ecosystem Restoration (NER) justification based on the FID. Human life safety is not expected to be impacted.

- Is the project expected to have more than negligible adverse impacts on scarce or unique tribal, cultural, or historic resources? If so, what are the anticipated impacts?
  No. Project planning will account for potential impacts to cultural and historic resources and develop mitigation strategies. Because Kahaluu Bay is a culturally and historically significant site, our planning strategy incorporates extensive stakeholder engagement to identify

traditional practices relating to the ecological preservation of the Bay. Project alternatives will be designed to incorporate or align with these practices as appropriate.

Resource management of cultural and natural resources at the site does garner various public opinions, many of which are disparate. Public communication will be necessary for this study to increase understanding of the study's authority and alternatives.

- Is the project expected to have substantial adverse impacts on fish and wildlife species and their habitat prior to the implementation of mitigation measures? If so, describe the impacts? *No. The project is unlikely to have substantial adverse impacts on fish and wildlife species and their habitat prior to the implementation of mitigation measures. The expected outcome of the Kahaluu Bay ecosystem restoration project is to improve the existing aquatic ecosystem.*

None of the risks identified to date appear to represent a significant risk to human health or the environment now or in the future. A full risk register is available in the E-Risk Register at https://err.sec.usace.army.mil/projects/8264/risks . The primary sources of study risk are summarized below:

1. Increases in labor and material costs-
    a. The landscape of factors that affect labor and material project costs is rapidly changing. The team may identify costs for alternatives only for those costs to drastically change for unforeseen reasons before PED. To mitigate this, best practices and information will be used in the cost engineering process. This is a high risk for cost.
2. Cultural sites in project footprint
    a. The study area has many cultural sites within. Not all are known or documented due to the lack of development at the site. The surrounding landscape is rich with important cultural and historical resources. There is a risk that a project footprint will be established, and a historic or cultural site will later be discovered in that area. To mitigate this, the team will have an early and thorough geotechnical investigation and continue consulting with a wide range of consulting parties and Office of Hawaiian Affairs (OHA) to better understand the historic and current cultural landscape. To evaluate the potential of proposed actions to impact historic resources, additional archaeological testing may be needed. Coordination with OHA and consulting parties will stay in touch determine the need and appropriate methodology for additional testing.
    b. A key feature of within the Bay a is the Menehune-built breakwater, which is a cultural property. No as-built information or survey information exists for this structure. At the point of this study, avoiding modification to the breakwater is a consideration for the PDT and modifying the breakwater is not expected to address the problems of the study area's habitat. For that reason, the lack of geotechnical or survey data about the Menehune wall is considered a low risk but will be reassessed if measures or alternatives are developed that would affect the breakwater.
3. Stakeholder objectives and public support
    a. There is a risk the team identifies a plan that is acceptable to the sponsor but not to the public or other stakeholders. Study area land is owned by the County of Hawaii. Many stakeholders are invested in preserving cultural sites, whereas the Kohala Center (the study partner who manages the beach) prioritizes ecosystem restoration and the operation of a successful beach park. Frequent consultations are the PDT's mitigation strategy. This is a low risk for schedule.

4. Schedule and PDT staffing
    a. Staffing across all districts is diminished due to resignation and retirement programs. The schedule has been designed to account for plenty of contingency, but the PDT cannot mitigate the risk of losing and being unable to replace team members. This is a medium risk for schedule.
5. Real estate acquisition
    a. The County owns and maintains the park area above the ordinary high-water line. The State of Hawaii manages land below the high-water line in the Bay. In the situation where the recommended plan would include measures below the high-water line, the County would be responsible for certifying they are capable of obtaining rights and interests to satisfy their responsibilities as a sponsor, including provision of LERRDs and the execution of OMRR&R in perpetuity. The County has expressed concern about their ability to complete OMRR&R of in-water features (from both a legal and financial perspective). This is a schedule risk, as delay in certification of a real estate capabilities assessment will result in delay in submittal of a final decision document. Alternatively, the PDT could screen out in-water features to mitigate for this risk. It could become a performance risk if inclusion of in-water features is determined to be necessary to obtain aquatic habitat benefits. This medium-level risk will be managed through communication with the County to ensure they are aware and capable of necessary real estate needs. Further, the project will be formulated so that only the real property interests necessary to implement the project and reasonably assured benefits sufficient to justify the project are required for the project.

2.13 Current Project Milestone Schedule

ACTIVITY	SCHEDULED	ACTUAL
Feasibility Cost Share Agreement Executed (CW130)	8/14/2025	8/14/2025
Tentatively Selected Plan (TSP) Milestone (CW262)	10/30/2026	
Draft Report Release to the Public (CW250)	12/16/2026	
Final Report Transmittal (CW160)	9/29/2027	
Approval of Decision Document (CW170)	1/28/2028	

3 Model User Coordination and Model Approval/Certification Reviews

3.1 Objectives of Reviews

Model User Coordination: PDT members using models (planning and engineering) for Civil Works planning studies must comply with CECW-P Memorandum, *Model Coordination for Civil Works Planning Studies* (28 Jul 2023) to ensure cross-functional coordination on model identification, to ensure appropriateness and proper application of planning and engineering models to be used in the study, and to confirm that assigned modelers possess the requisite knowledge and experience required to efficiently and effectively complete Civil Works feasibility study modeling tasks. Model user(s) must coordinate with the appropriate PCX or engineering functional chief for model selection and application.

- For engineering models used during feasibility ER 1110-2-1150 and ES 08101 are the controlling guidance.
- Guidance on the quality assurance for planning models is contained in EC 1105-2-412, Assuring Quality of Planning Models, which 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.

Model Reviews: Approval/Certification: Approval or certification of planning model(s) will not be needed for this study/project; therefore, review for model approval or certification will/will not be required.

3.2 Documentation

Model User Coordination Review: Prior to initiation of work, District personnel will be identified and validated by functional chief/supervisor to ensure identification of personnel are properly selected, trained and resourced for the work assigned. Documentation to comply with CECW-P Memorandum, *Model Coordination for Civil Works Planning Studies* (28 Jul 2023) must be included as part of the RP submittal to the RMO and MSC.

3.3 Models to Be Used in the Study/Project

Table 5 lists the planning models that may be used to develop the decision document. Table 6 lists the engineering models that may be used to develop the decision document.

Table 5. Planning Models, Tools, and Data.

Model Name and Version	Brief Model Description and How It Will Be Used in the Study	Certification/ Approval	Discipline Using the Model
Institute for Water Resources Planning Suite (IWR, v.2.09)	IWR-Planning Suite is a water-resources investment decision support tool originally built to formulate and evaluate ecosystem restoration alternative plans. It is widely used by all USACE business lines for evaluation of actions involving monetary and non-monetary cost and benefits. This model will be used to conduct CE/ICA if needed.	Certified	Economics, plan formulation, environmental
Habitat Equivalency Analysis (HEA)	Methodology used to determine damage to natural coastal and marine resources. Habitats that have been involved in analysis include seagrass, coral reef, tidal wetlands, salmon streams, and estuarine soft bottom sediments.	Approved by PCX for use in coastal and marine environments	Environmental
Regional Economic System (RECONS)	RECONS incorporates a mapping function that allows users to see the economic impact region for 1500 different impact models. It also provides information about the demographic and economic characteristics of these areas. This added information provides a greater understanding for assessing the economic impact estimates as well as the economic significance of USACE activities. RECONS allows users to produce word document and spreadsheet reports of the results of different analyses.	Certified	Economics
Study area conceptual model	The PDT will develop a conceptual model(s), as described in EP-1105-2-70 to represent ecosystem processes and characteristics. The conceptual model(s) will explain how ecological conditions related to identified problems are expected to change under the future without-project conditions and how measures or alternatives would alter future ecological processes and conditions. The conceptual model(s) will also be used to guide the development of monitoring plans.	Conceptual models are qualitative and do not require certification	All disciplines

Table 6. Engineering Models, Tools, and Data.

Model Name and Version	Brief Model Description and How It Will Be Used in the Study	Certification/ Approval	Discipline Using the Model
MCACES, v. MII	MCACES is the cost estimating software program tool used by cost engineering to develop and prepare CW and environmental project cost estimates.	CW cost engineering MCX mandatory	Cost engineering
CMS-FLOW (v5.3) (Coastal Engineering)	CMS-Flow is a coupled hydrodynamic and sediment transport model capable of simulating depth-averaged circulation, salinity and sediment transport due to tides, wind and waves. The hydrodynamic model solves the conservative form of the shallow water equations and includes terms for the Coriolis force, wind stress, wave stress, bottom stress, vegetation flow drag, bottom and friction, and turbulent diffusion. CNS-FLOW will be applied in this study to develop currents for input into ship simulations and to evaluate harbor currents/circulation.	HH&C CoP Preferred	Coastal Engineering and Hydraulics and Hydrology
CMS-WAVE (v3.2)	CMS-Wave is a spectral wave transformation model and solves the steady-state wave-action balance equation on a non-uniform Cartesian grid. It considers wind wave generation and growth, diffraction, reflection, dissipation due to bottom friction, white capping and breaking, wave-wave and wave-current interactions, wave runup, wave setup, and wave transmission through structures. This model will be used to transform deep water wave conditions from WIS to the nearshore vicinity of the harbor and as input to the FUNWAVE model	HH&C CoP Preferred	Coastal Engineering and Hydraulics and Hydrology
FUNWAVE	FUNWAVE 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 model can simulate most of the phenomena of interest in 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. This model will be used to evaluate harbor surge and oscillations, reflection and results of proposed structural measures within the harbor.	HH&C CoP Preferred	Coastal Engineering and Hydraulics and Hydrology

Wave Information Study (WIS)	WIS is a wave hindcast that generates consistent, hourly, long-term (20+ years) wave climatologies along all US coastlines. A wave hindcast predicts past wave conditions using a computer model and observed wind fields. This data will be used to develop wave climate for the project area and determine offshore conditions appropriate for input to the wave transformation models.	HH&C CoP Preferred
Particle Tracking Model (PTM)	PTM is a Lagrangian model designed to evaluate the behavior of water-borne constituents, such as sediment, chemicals, debris, or biota, under the combined effect of currents and waves. The Coastal Inlets Research Program (CIRP) supports the PTM with the Coastal Modeling System (CMS), which provides coupled wave and current forcing for PTM simulations. CMS-PTM is implemented in the Surface-water Modeling System, a GUI environment for input development, model execution, data pre- and postprocessing, and visualization.	HH&C CoP Preferred
Abbreviated Risk Analysis (ARA) *Cost Schedule Risk Analysis (CSRA)*	Cost risk analysis to estimate the contingency that must be added to a project cost and define the high-risk drivers. The analysis will include a narrative identifying the risks or uncertainties. During the alternative's evaluation, the PDT will assist the cost engineer to define confidence/risk levels associated with the project feature within the abbreviated risk analysis.	CW cost engineering MCX mandatory
Total Project Cost Summary (TPCS)	The TPCS is the required cost estimate document that will be submitted for either division or HQUSACE approval. The Total Project Cost for each CW project includes all Federal and authorized non-Federal costs represented by the CW Work Breakdown Structure features and respective estimates and schedules, including the lands and damages, relocations, project construction costs, construction schedules, construction contingencies, planning, and engineering costs, design contingencies, construction management costs, and management contingencies.	CW cost engineering MCX mandatory
HEC-RAS	The Hydrologic Engineering Center's River Analysis System (HEC-RAS) program provides the capability to perform two-dimensional steady and unsteady flow for overland flow hydraulic calculations. The program can be used to determine hydraulic flow paths that may correlate to upland sedimentation impacts to downstream areas.	Certified

4 Project Delivery Team & District Quality Control

Prior to District Quality Control (DQC), the report and supporting documentation should undergo a Project Delivery Team (PDT) review. DQC is an internal USACE review covering basic science and engineering work products and fulfills the project quality requirements of the Project Management Plan (PMP). DQC will be performed continuously and managed by the Honolulu District. The DQC Reviews will consist of informal quality checks and more formal project stage reviews.

- **Project Delivery Team:** The PDT will review the report and supporting documentation.
- **Informal Quality Checks:** Informal quality checks will be performed by supervisors or peers not actively involved with project delivery. The informal quality checks reviews will not have a formal schedule or a formal team but will be performed throughout the life of a project and documented, as appropriate.
- **Independent District Quality Control:** The DQC will be performed by peers not actively involved with the project delivery and will be performed prior to all ATRs.

A robust DQC and enhanced MSC Quality Assurance is central to project development.

4.1 Objectives of Reviews

- Read entire report and appendices and provide editorial comments for clarity and readability.
- Evaluate the correct applications of methods, validity of assumptions, adequacy of basic data, correctness of calculations, completeness of documentation, and compliance with guidance and standards.
- Check all computations and graphics by having the reviewer place a highlight (e.g., “red dot”) on each annotation and/or number indicating concurrence with the correctness of the information shown.

4.2 Required Review Team Expertise

Table 3 identifies the review team expertise required for the project.

- **PDT Reviews.** PDT Reviews will be performed by team members actively involved in project delivery. The PDT has been assigned an Engineering Technical Lead in accordance with ER 5-1-11. The PDT members and disciplines are shown in Appendix 3 of this RP.
- **Independent DQC Reviews.** Independent DQC reviews will be performed by reviewers NOT actively involved in the project delivery. The independent DQC team has been assigned a DQC Review Lead in accordance with ER 1165-2-217. See Appendix 3 of this RP for the Team Roster.

4.3 Documentation

All DQC reviews will be performed and documented in accordance with ER 1165-2-217. Documentation of DQC will follow the District Quality Manual and the MSC Quality Management Plan. DrChecks^{SM} will be used for documentation of DQC comments for project stage reviews. The DQC certification template for project DQC will follow the sample certification sheet found in ER 1165-2-217. Documentation of completed DQC will be provided to the MSC, RMO, and the ATR Team Lead. All DQC comments and their resolutions from all DQC Reviews will be

provided to the ATR Team so that the ATR Team can determine whether an adequate DQC was performed.

4.4 Schedule and Estimated Costs

Although DQC is performed continuously, Table 2 identifies the project stage review requirements and approximate cost of each DQC review.

4.5 District Quality Control Checklist

The DQC Review Lead will confirm the following before completing DQC Certification. By signing off on completion of DQC, the DQC reviewer is assuming the same level of responsibility as the author.

General Issues

1. Has the PDT Review been completed?
2. Was the allotted time for DQC in the review plan adhered to?
3. Has the DQC Team verified the information presented in the current study checklist (pre-AMM, pre-TSP, Final Report) is accurate?
4. Is the identified problem well understood?
5. Are the risks and uncertainties properly characterized?
6. Has an appropriate array of alternatives been considered that could solve the problem?
7. Does the TSP solve the problem?
8. Are the implementation risks appropriately considered?
9. Are the proposed construction methods appropriate?
10. Are the schedules and cost estimates reliable (comprehensive, well-documented, accurate, and credible)?
11. What is the risk of potential cost and schedule growth?
12. Are there lessons learned that need to be considered?
13. Does the product comply with USACE criteria and policy requirements including environmental compliance requirements?
14. If applicable, has life-safety risk been appropriately assessed?
15. Are the methods used to develop analyses and conclusions clearly and fully presented to ensure transparency, if applicable?

Items for Verification

1. Are the assumptions, methods, procedures, computations (including quantities), and materials used in the analyses consistent with the project purpose or decisions being made?
2. Is the array of alternatives considered comprehensive?
3. Are the methods used to develop analyses and conclusions clearly and fully presented?
4. Are the data, level of data, assumptions, and safety risk based on deterministic criteria and risk-informed decision-making information appropriate?
5. Are the results compared to project purpose in compliance with applicable laws and USACE policies reasonable?
6. Correctness of Calculations – For each discipline, ensure correctness of the information on each annotation, computation, and model input parameter.
7. Correctness, accuracy, and clarity of graphic/plan presentation – For each discipline, ensure correctness of information shown on graphics (e.g., dimension, elevation, notes, or references).

5 One Review Team Review

This project will undergo a combined ATR and P&LCR using a single, combined “One Review Team” (ORT) to minimize duplication and increase efficiency of reviews. An integrated policy and agency technical review team, led by a Review Manager, is a resource for the project delivery team. The ORT will execute ATR and P&LCR formal reviews to ensure the final report and its appendices meet all agency standards for technical sufficiency and legal defensibility before it is elevated for final approval.

The purpose of ATR is to ensure the quality and credibility of USACE scientific and technical information is consistent with the ER 1165-2-217 and the responsible MSC’s Quality Management Plan. ATR is mandatory for all draft and final decision documents and most implementation products and will be conducted as part of the single ORT. The ORT review of work products and reports include the review any necessary NEPA documents, other environmental compliance products including deferred environmental commitments during implementation, any in-kind contributions/services provided by local sponsors or their A-Es, and other supporting documents. P&LCR of draft and final planning decision documents is delegated to the MSC (see EP 1105-2-61). The P&LCR incorporated in the ORT culminates in determination whether report recommendations 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.

Members of the ORT may function as subject matter experts or be available for targeted review of early decisions that will shape project delivery (e.g., foundational plan formulation decisions, sufficiency of existing engineering data).

5.1 Objectives of Review

- Perform a comprehensive review of PDT conclusions to ensure that the results and decisions are clearly supported by the information presented and in compliance with current USACE policy and procedures.
- Assess adequacy of DQC to ensure proper and effective DQC has been conducted by reviewing the work products, DQC documentation, and the signed DQC certification. Work products that are of poor quality or appear to have inadequate DQC may be returned with no action.
- Validate key PDT decisions and identify important issues, concerns, and lessons learned.
- Perform Cost Engineering review.
- Provide advice and support to PDT and decision makers.
- Engage at both the MSC and HQ levels, ensuring that the vertical teaming aspect Civil Works project development is maintained.
- Ensure national consistency in policy compliance.
- Help guide the PDT through project development and the completion of policy and legally compliant documents.
- Identify policy and legal issues as early as possible.

5.2 Required Review Team Expertise

Policy and technical review, ORT, is conducted with the MSC (POD) and will include POD Policy and Legal Compliance Review team members and ATR-certified team members where the legal

and policy compliance review from the MSC does not have the necessary technical expertise. As determined necessary to fulfill the qualifications necessary for the ORT, team members may also include team members from HQUSACE as well as from USACE Planning Centers of Expertise and Mandatory Centers of Expertise. The ORT Lead or Review Manager shall come from outside the District to remove unintended bias. Table 3 identifies the ORT expertise required for the project. See Appendix 3 of this RP for the ORT Roster.

- The ORT will be invited to participate in key meetings during the development of decision documents. These engagements may include In-Progress Reviews, Issue Resolution Conferences, or other vertical team meetings plus the milestone events.
- In addition, teams may choose to capture some of the policy review input in a risk register if appropriate. These items should be highlighted at future meetings until the issues are resolved. Any key decisions on how to address risk or other considerations will be documented in an MFR.

Representatives from the Office of Counsel will be assigned to participate in reviews. Members may participate from the District and MSC. The POD Chief of Planning and Policy will coordinate membership and participation with the office chiefs.

- In some cases, legal review input may be captured in the MFR for the meeting or milestone. In other cases, a separate legal memorandum may be used to document the input from the Office of Counsel.
- Each participating Office of Counsel will determine how to document legal review input.

5.3 Documentation

DrChecks will be used to document all combined ATR & P&LCR comments, responses, and resolutions. Comments should be limited to those needed to ensure product adequacy. All members of the ORT will use the four-part comment structure (see ER 1165-2-217, Chapter 5). If a concern cannot be resolved by the ORT and PDT, it will be elevated to the vertical team to resolve using the issue resolution process described in ER 1165-2-217, section 5.9. Concerns will be closed in DrChecks by noting the concern has been elevated. The ORT Lead will prepare a Statement of Technical Review (see ER 1165-2-217, chapter 5.11 and Appendix D), for the draft and final reports, certifying that review issues have been resolved or elevated. ORT will be certified when all concerns are resolved or referred to the vertical team and the ORT documentation is complete. The Cost Engineering Mandatory Center of Expertise will provide the Cost Engineering certification.

Each participating Office of Counsel will determine how to document legal review input. In some cases, legal review input may be captured in the MFR for a particular meeting or milestone. In other cases, a separate legal memorandum may be used to document the input from the Office of Counsel.

5.4 One Review Schedule and Estimated Costs

The One Review should build upon all prior cycles of review of any work product. Each ORT review iteration should address only incremental changes and additions to documents and analyses addressed in prior reviews, unless the ORT determines that certain subjects warrant revisiting due to other changes. Table 2 outlines the study's anticipated schedule and review costs for One Review.

6 Independent External Peer Review

Independent External Peer Review (IEPR) is the most independent level of review conducted on project studies and only is applied in cases that meet certain criteria where the uncertainties, risk, and magnitude of the proposed project are such that a critical examination by a qualified team outside of USACE is warranted.

IEPR Determination: IEPR will not be performed for the study/project as determined by Figure 6.1 of ER 1165-2-217, which provides a flowchart for decision-making on conducting an IEPR and is incorporated by reference. Appendix 2 provides the project-specific risk-informed assessment on the IEPR determination.

7 Public Review

Public Review of the Review Plan: This RP will be posted on the District's website. Public comments on the scope of reviews, technical disciplines involved, schedules, and other considerations may be submitted to the District for consideration. If the comments result in a change to the RP, an updated RP will be posted to the District's website.

Public Review of the draft planning decision document: Additional public review will occur when the report with integrated NEPA document is released for public and agency comment.

Appendix 1: Review Plan Change Log

Revision Date	Description of Change	Page / Paragraph Number

Appendix 2: Risk-Informed IEPR Assessment

Project Name: Kahaluu Bay Aquatic Ecosystem Restoration CAP Section 206 Feasibility Study

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IEPR Determination: Based on the Risk Informed IEPR Assessment below, it was determined that Kahaluu Bay Aquatic Ecosystem Restoration CAP Section 206 Feasibility Study will *not conduct* IEPR.

Section 1. Mandatory Decision on Conducting IEPR.
The three mandatory conditions determining whether IEPR is undertaken (ER 1165-2-217 Section 6.4) are:

#1. Has the Chief of Engineers determined the project is controversial *No*

If YES, then **IEPR is mandatory**. Statutory exclusion does not apply.
If NO, **go to question #2**
Project-specific rationale for response: No. Currently, this CAP Section 206 study has not met any of the controversial triggers (i.e., significance, scope, effects present) that would warrant a determination by the Chief of Engineers.

#2. Has the Governor of affected State requested an IEPR? *No*

If YES, then **IEPR is mandatory**. Statutory exclusion does not apply.
If NO, **go to question #3**
Project-specific rationale for response: No. There has been no request by the Governor of Hawaii for peer-review by independent experts, and such a request is not anticipated at this time.

#3. Is the cost of the project, including mitigation costs, greater than $200 million? *No*

If YES, **IEPR is mandatory** unless exclusions apply. **Go to Section 3.**
If No, then IEPR is discretionary. **Go to Section 2.**
Project-specific rationale for response: No. This is a CAP Section 206 study, and it is expected that the total cost will be significantly less than the $200 million trigger.

Section 2. Discretionary IEPR.
When none of the 3 mandatory triggers for IEPR listed in Section 1 are met, MSC Commanders have the discretion to conduct IEPR based on risk-informed assessment of the expected contribution of IEPR to the project. See ER 1165-2-217 Section 6.5.1 for details.

#1. Has a federal or state Agency requested IEPR due to significant adverse environmental impacts? *No*

If YES, then MSC Commander has discretion on determining if IEPR will be conducted.
If No**, go to question #2**

Project-specific Rationale: *No such request has been made with respect to this study.*

#2 Risk Informed Decision Determination on Conducting IEPR: At minimum, the MSC Commander will consider if the project will have/use any of the following:

- Is the project likely to involve significant life safety concerns? If so, what are they?

Significant life safety concerns: ***No***

- Is the information in the decision document or anticipated project design likely to be based on novel methods, involve innovative materials or techniques, present complex challenges for interpretation, contain precedent-setting methods or models, or present conclusions that are likely to change prevailing practices? If so, how?
  Novel methods, complex challenges, precedent setting, change prevailing practices: ***No***

If the response to either of these risk informed decision determination questions is YES, then IEPR may add value or significant benefit. If the response to both of these questions is NO, then IEPR may not add value or significant benefit.

Project-specific rationale: *The Project Delivery Team (PDT) does not recommend an IEPR based on the Risk-Informed Decision Making (RIDM) considerations outlined in ER 1165-2-217, para. 6.5.2, as an IEPR would not substantially benefit or add value to the project study. The study does not address significant life safety concerns, is not burdened by complex challenges, is not controversial, is not expected to utilize novel or precedent setting methods or models, is unlikely to change prevailing practices, does not have significant interagency interest, and does not have significant economic, environmental, or social effects to the Nation. Each of the management measures considered during the federal interest determination are relatively straightforward in design and construction methods and have been recommended and implemented by the USACE on other ecosystem restoration projects.*

#2. IEPR Exclusion Condition A - Discussion for Non-Controversial or Routine Projects:

Does the Project meet *ALL the following criteria:*

- *Not controversial;* ***Yes***
- *Negligible impacts on scarce or unique cultural, historic, or tribal resources;* ***Yes***
- *No substantial adverse impacts on fish and wildlife species and habitats prior to the implementation of mitigation measures; AND* ***Yes***
- *Before implementation of mitigation measures, no more than a negligible adverse impact on a species listed as threatened or endangered under the Endangered Species Act of 1973 or the critical habitat of such species as designated under such Act* ***Yes***

If YES to ALL, then IEPR is not mandatory. Consider criteria for Discretionary IEPR (Section 2). If NO to ANY, then statutory exclusion does not apply. **Go to #3.**

Project-specific Rationale: No. Currently, this CAP Section 206 study has not met any of the controversial triggers (i.e., significance, scope, effects present) that would warrant a determination by the Chief of Engineers.

#3. IEPR Exclusion Condition B - Discussion for Routine or Common Projects with Minimal Life Safety Risk.

Does the Project meet the following criteria:

- Only involves rehabilitation/replacement of existing hydropower turbines, lock structures, flood control gates with the same footprint and for the same purpose as an existing water resource project; OR
- Is for an activity for which there is ample experience within USACE and industry to treat the activity as being routine; AND ***Yes***
- Has minimal life safety risk ***Yes***

If YES to either/both the first and second bullet AND the third bullet, then IEPR is not mandatory. Consider criteria for Discretionary IEPR (Section 2).

If NO to both the first and second bullet, OR to the third bullet, then statutory exclusion does not apply. **Go to #4**

Project-specific Rationale: No. The project is expected to have National Ecosystem Restoration (NER) justification based on the FID. Human life safety is not expected to be impacted. The final integrated feasibility report and supporting documentation will contain standard engineering, economic, environmental analysis. The proposed Kahaluu Bay ecosystem restoration falls under the CAP Section 206 and is therefore considered by USACE to be routine. The PDT includes expertise from the Jacksonville District which commonly deals with coral-related projects. Ongoing coordination with the Eco-PCX and the natural nature-based solutions community of practice will also ensure that the appropriate experience informs the water resources solution.

#4. IEPR Exclusion Condition C - Discussion for CAP Projects

Does the Project meet the following criterion?

- If the Project/Study does not include an EIS, is it being conducted under a CAP authority? ***Yes***

If YES, then IEPR is not mandatory. Consider criteria for Discretionary IEPR (Section 2).

If NO, then statutory exclusion under Condition C does not apply and **IEPR is required**.

Project-specific Rationale: This study is being undertaken under the CAP 206 authority.

Appendix 4: Model User Checklists

Model Coordination and Model User Documentation

APPLICABILITY: All civil works planning studies must document compliance with CECW-P memo (28 July 2023), *Model Coordination for Civil Works Planning*, to coordinate all planning and engineering models, and confirm assigned modelers possess the requisite knowledge and experience to complete modeling tasks.

Name of Study: Kahalu'u Bay Ecosystem Restoration CAP 206 Study

Name of Model User: Dominique Edelenbos **District:** Jacksonville

Status of Review Plan:
(•) Initial
( ) Approved (Date:)

Name of Model(s) or Software. List all models/software to be used by named Model User
Habitat Equivalency Assessment (HEA).

QUESTIONNAIRE

1. Does the current Review Plan list all models/software, including approval/certification status (as appropriate)?
(•) YES, go to #2
( ) NO
If No, STOP update Review Plan, then go to #2

2. Did the model user coordinate with the appropriate PCX, CoP, or engineering functional chief for model selection? *[Note: PCX and CoP staff are a resource teams can use to ensure staff are trained to run models, and assist in model/software selection]*
(•) YES, go to #3
( ) NO
If NO, provide brief justification on why then go to #3:

3. Has the study completed concurrent reviews?
( ) YES, skip to #9
(•) NO, continue to #4

4. Has the model user had previous successful experience using the model(s)/software listed here?
( ) YES, skip to #7
(•) NO, continue to #5

5. Does the novice modeler have a mentor?
(•) YES (Include name of Mentor: Jae Chung),go to #6
( ) NO
If No, STOP and reach out appropriate PCX or CoP to find a mentor if one is unavailable locally. Once mentor identified include name above and continue to #6.

6. Is a Subject Matter Expert on the model/software listed available for collaboration, if needed?
(•) YES, (Name, if model user is an SME then list "self": Sam Hans),go to #7
[ ] Check this box if the model user is an SME and willing to be an SME for others
( ) NO
If No, STOP and reach out appropriate PCX or CoP to find a SME. Once SME identified include name above and continue to #7.

7. Will another non-Corps entity (e.g., Non-Federal sponsor, another federal agency) be running the model/software to inform the planning decisions?

(●) NO, skip to signatures and submit!

( ) YES, go to #8

8. If another entity is running the model/software, does the corresponding Corps PDT member have knowledge on how to use the model/software, interpret the outputs, and understand the results?

(●) YES, that PDT member has visibility on the work, is accountable for understanding how the model/software works, and vouching for proper use of the model/software in the CW planning study. Continue to signatures and submit!

( ) NO

If No, STOP and reach out appropriate Community of Practice to find someone to assist you with this responsibility. Once SME identified include name below.

(Name of person who will assist: continue to signatures and submit!

9. Does the District confirm that the named model user had experience needed to apply and interpret the models/software, including inputs and outputs, correctly, and that all modeling work has been reviewed to date for technical accuracy and policy sufficiency?

(●) YES, continue to signatures and submit!

( ) NO

If No, STOP then go back to #4 and complete questionnaire.

SIGNATURES

MODEL USER

By signing this questionnaire, I confirm I have the experience needed (and have a mentor/SME identified to assist if needed) to apply the model/software correctly and interpret model/software outputs.

Name: Dominique Edelenbos

EDELENBOS.DOMINIQUE.NICHOLE.1623577119 Digitally signed by EDELENBOS.DOMINIQUE.NICHOLE.1623577119 Date: 2025.10.29 15:38:41 -04'00'

Signature Date: 10/29/25

SUPERVISOR

By signing this questionnaire, I confirm that the assigned modeler has the experience needed (or has a mentor/SME identified if needed) to complete Civil Works feasibility study modeling tasks, including application and interpretation of outputs for the listed model(s)/software.

Name: Kristen Donofrio

DONOFRIO.KRISTEN.L.1384961858 Digitally signed by DONOFRIO.KRISTEN.L.1384961858 Date: 2025.11.04 16:21:15 -05'00'

Signature Date: 11/4/25

SUBMISSION: Submit completed questionnaire to your assigned Review Manager at the MSC or appropriate PCX.

Click to Clear Form:

Model Coordination and Model User Documentation

APPLICABILITY: All civil works planning studies must document compliance with CECW-P memo (28 July 2023), *Model Coordination for Civil Works Planning*, to coordinate all planning and engineering models, and confirm assigned modelers possess the requisite knowledge and experience to complete modeling tasks.

Name of Study: Kahalu'u Bay Ecosystem Restoration

Name of Model User: Malia Hines **District:** POH

Status of Review Plan:
(•) Initial
( ) Approved (Date:)

Name of Model(s) or Software. List all models/software to be used by named Model User
HEC-RAS

QUESTIONNAIRE

1. Does the current Review Plan list all models/software, including approval/certification status (as appropriate)?
(•) YES, go to #2
( ) NO
If No, STOP update Review Plan, then go to #2

2. Did the model user coordinate with the appropriate PCX, CoP, or engineering functional chief for model selection? *[Note: PCX and CoP staff are a resource teams can use to ensure staff are trained to run models, and assist in model/software selection]*
( ) YES, go to #3
(•) NO
If NO, provide brief justification on why then go to #3:
H&H Engineering SME within District

3. Has the study completed concurrent reviews?
( ) YES, skip to #9
(•) NO, continue to #4

4. Has the model user had previous successful experience using the model(s)/software listed here?
( ) YES, skip to #7
(•) NO, continue to #5

5. Does the novice modeler have a mentor?
(•) YES (Include name of Mentor: Jessica Brunty),go to #6
( ) NO
If No, STOP and reach out appropriate PCX or CoP to find a mentor if one is unavailable locally. Once mentor identified include name above and continue to #6.

6. Is a Subject Matter Expert on the model/software listed available for collaboration, if needed?
(•) YES, (Name, if model user is an SME then list "self": Jessica Brunty),go to #7
[ ] Check this box if the model user is an SME and willing to be an SME for others
( ) NO
If No, STOP and reach out appropriate PCX or CoP to find a SME. Once SME identified include name above and continue to #7.

7. Will another non-Corps entity (e.g., Non-Federal sponsor, another federal agency) be running the model/software to inform the planning decisions?

◉ NO, skip to signatures and submit!

○ YES, go to #8

8. If another entity is running the model/software, does the corresponding Corps PDT member have knowledge on how to use the model/software, interpret the outputs, and understand the results?

○ YES, that PDT member has visibility on the work, is accountable for understanding how the model/software works, and vouching for proper use of the model/software in the CW planning study. Continue to signatures and submit!

○ NO

If No, STOP and reach out appropriate Community of Practice to find someone to assist you with this responsibility. Once SME identified include name below.

(Name of person who will assist: continue to signatures and submit!

9. Does the District confirm that the named model user had experience needed to apply and interpret the models/software, including inputs and outputs, correctly, and that all modeling work has been reviewed to date for technical accuracy and policy sufficiency?

○ YES, continue to signatures and submit!

○ NO

If No, STOP then go back to #4 and complete questionnaire.

SIGNATURES

MODEL USER

By signing this questionnaire, I confirm I have the experience needed (and have a mentor/SME identified to assist if needed) to apply the model/software correctly and interpret model/software outputs.

Name: Malia Hines

HINES.MALIA.ANN.1556038283 Digitally signed by HINES.MALIA.ANN.1556038283 Date: 2025.10.30 12:52:26 -10'00'

Signature Date: 10/30/25

SUPERVISOR

By signing this questionnaire, I confirm that the assigned modeler has the experience needed (or has a mentor/SME identified if needed) to complete Civil Works feasibility study modeling tasks, including application and interpretation of outputs for the listed model(s)/software.

Name:

MOLINA.LAUREN.KAPILINAHE KAM SIM.1503498126 Digitally signed by MOLINA.LAUREN.KAPILINAHE KAM SIM.1503498126 Date: 2025.10.31 08:49:13 -10'00'

Signature Date:

SUBMISSION: Submit completed questionnaire to your assigned Review Manager at the MSC or appropriate PCX.

Click to Clear Form:

Model Coordination and Model User Documentation

APPLICABILITY: All civil works planning studies must document compliance with CECW-P memo (28 July 2023), *Model Coordination for Civil Works Planning*, to coordinate all planning and engineering models, and confirm assigned modelers possess the requisite knowledge and experience to complete modeling tasks.

Name of Study: Kahalu'u Bay Ecosystem Restoration

Name of Model User: Nicholas Deosaran **District:** POH

Status of Review Plan:
(•) Initial
( ) Approved (Date:)

Name of Model(s) or Software. List all models/software to be used by named Model User
Wave Information Study (WIS)
CMS-WAVE
Funwave

QUESTIONNAIRE

1. Does the current Review Plan list all models/software, including approval/certification status (as appropriate)?
(•) YES, go to #2
( ) NO
If No, STOP update Review Plan, then go to #2

2. Did the model user coordinate with the appropriate PCX, CoP, or engineering functional chief for model selection? *[Note: PCX and CoP staff are a resource teams can use to ensure staff are trained to run models, and assist in model/software selection]*
( ) YES, go to #3
(•) NO
If NO, provide brief justification on why then go to #3:
Coastal Engineering SME within District

3. Has the study completed concurrent reviews?
( ) YES, skip to #9
(•) NO, continue to #4

4. Has the model user had previous successful experience using the model(s)/software listed here?
( ) YES, skip to #7
(•) NO, continue to #5

5. Does the novice modeler have a mentor?
(•) YES (Include name of Mentor: Adam Keen),go to #6
( ) NO
If No, STOP and reach out appropriate PCX or CoP to find a mentor if one is unavailable locally. Once mentor identified include name above and continue to #6.

6. Is a Subject Matter Expert on the model/software listed available for collaboration, if needed?
(•) YES, (Name, if model user is an SME then list "self": Adam Keen),go to #7
[ ] Check this box if the model user is an SME and willing to be an SME for others
( ) NO
If No, STOP and reach out appropriate PCX or CoP to find a SME. Once SME identified include name above and continue to #7.

7. Will another non-Corps entity (e.g., Non-Federal sponsor, another federal agency) be running the model/software to inform the planning decisions?

◉ NO, skip to signatures and submit!

○ YES, go to #8

8. If another entity is running the model/software, does the corresponding Corps PDT member have knowledge on how to use the model/software, interpret the outputs, and understand the results?

○ YES, that PDT member has visibility on the work, is accountable for understanding how the model/software works, and vouching for proper use of the model/software in the CW planning study. Continue to signatures and submit!

○ NO

If No, STOP and reach out appropriate Community of Practice to find someone to assist you with this responsibility. Once SME identified include name below.

(Name of person who will assist: continue to signatures and submit!

9. Does the District confirm that the named model user had experience needed to apply and interpret the models/software, including inputs and outputs, correctly, and that all modeling work has been reviewed to date for technical accuracy and policy sufficiency?

○ YES, continue to signatures and submit!

○ NO

If No, STOP then go back to #4 and complete questionnaire.

SIGNATURES

MODEL USER

By signing this questionnaire, I confirm I have the experience needed (and have a mentor/SME identified to assist if needed) to apply the model/software correctly and interpret model/software outputs.

Name: Nicholas Deosaran

DEOSARAN.NICHOLAS.DANIEL.1407751953 Digitally signed by DEOSARAN.NICHOLAS.DANIEL.1407751953 Date: 2025.10.30 13:29:28 -10'00'

Signature Date: 10/30/25

SUPERVISOR

By signing this questionnaire, I confirm that the assigned modeler has the experience needed (or has a mentor/SME identified if needed) to complete Civil Works feasibility study modeling tasks, including application and interpretation of outputs for the listed model(s)/software.

Name:

MOLINA.LAUREN.KAPILINAHE KAM SIM.1503498126 Digitally signed by MOLINA.LAUREN.KAPILINAHE KAM SIM.1503498126 Date: 2025.10.31 08:48:40 -10'00'

Signature Date:

SUBMISSION: Submit completed questionnaire to your assigned Review Manager at the MSC or appropriate PCX.

Click to Clear Form: