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PACIFIC OCEAN DIVISION, U.S. ARMY CORPS OF ENGINEERS
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CEPOD-PDC (1105)

5 April 2020

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

SUBJECT: Review Plan Approval for the Post-Disaster Watershed Assessment for the Territory of American Samoa

1. References:

- a. Engineering Circular 1165-2-217, Review Policy for Civil Works, 20 Feb 18.
 - b. HQUSACE, CECW-CE Memorandum (Interim Guidance on Streamlining Independent External Peer Review (IEPR) for Improved Civil Works Product Delivery), 5 Apr 19.
 - c. Planning Bulletin 2019-01, Watershed Studies, 17 Jan 19.
 - d. Review Plan for Post-Disaster Watershed Assessment for the Territory of American Samoa, Territory of American Samoa, Honolulu District, U.S. Army Corps of Engineers, Feb 21. (Encl)
2. IAW references 1.a., 1.b., and 1.c., this memorandum constitutes approval of the Review Plan for the Post-Disaster Watershed Assessment for the Territory of American Samoa, Territory of American Samoa, Honolulu District, U.S. Army Corps of Engineers, which does not include a Type I Independent External Peer Review.
3. The approved Review Plan is subject to change as circumstances require, consistent with project development under the Project Management Business Process. Subsequent significant revisions to this Review Plan or its execution require Division Commander written approval.
4. POC is Mr. Russell Iwamura, Team Leader for Planning and Policy, Pacific Ocean Division, at 808-835-4625 or at Russell.K.Iwamura@usace.army.mil.

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Encl

JASON D. WILLIAMS
Colonel, EN
Acting Commander

REVIEW PLAN

For

The Territory of American Samoa
Post-Disaster Watershed Assessment



Ofu and Olosega, Source: National Park of American Samoa

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

MSC Approval Date:
Last Revision Date: March 2021



**US Army Corps
of Engineers**®



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Attachment 1: Team Rosters

Attachment 2: Review Plan Revisions



1. Overview

Project Name: Post-Disaster Watershed Assessment for the Territory of American Samoa

P2 Number: 480955

Document Type: Watershed Assessment

Project Type: Flood Risk Management, Coastal Storm Damage Reduction, and Ecosystem Restoration.

District: Honolulu District (POH)

District Contact: Project Manager, (808) 835-4034

Supporting District: Sacramento District (SPK)

Supporting District Contact: Planner, (916) 557-7368

Major Subordinate Command (MSC): Pacific Ocean Division (POD)

MSC Contact: Planning and Policy Chief, (808) 835-4625

Review Management Organization (RMO): Flood Risk Management Planning Center of Expertise (FRM-PCX)

RMO Contact: Deputy Director, (415) 503-6852

Key Review Plan Dates

Date of RMO Endorsement of Review Plan: 14 October 2020

Date of MSC Approval of Review Plan: 5 April 2021

Has the Review Plan changed since PCX Endorsement? N/A

Date of Last Review Plan Revision: N/A

Date of Review Plan Web Posting: 13 April 2021

Date of Congressional Notifications: Pending



	<u>Milestone Schedule</u>		
	<u>Scheduled</u>	<u>Actual</u>	<u>Complete</u>
<u>Funds Received:</u>	Jan 2020	20 Jan 2020	Yes
<u>Shared Vision Milestone:</u>	Jan 2021	28 Jan 2021	No
<u>Recommendations Milestone:</u>	Oct 2021	(enter date)	No
<u>Report Milestone:</u>	Jul 2022	(enter date)	No

2. Purpose and Requirements

a. Purpose

This Review Plan defines the scope and level of review for the Territory of American Samoa Post-Disaster Watershed Assessment (WA).

b. Applicability

This Review Plan was developed in accordance with the following regulation and guidance listed below:

- (1) Planning Bulletin (PB) 2019-01, Watershed Studies, 17 January 2019.
- (2) Engineer Circular (EC) 1105-2-411 Watershed Plans, 15 January 2010.
- (3) Engineer Circular (EC) 1105-2-412, Assuring Quality of Planning Models, 31 March 2010.
- (4) Engineer Regulation (ER) 1110-1-12, Quality Management, 30 September 2006.
- (5) EC 1165-2-217, Review Policy for Civil Works, 20 February 2018.
- (6) ER 1105-2-100, Planning Guidance Notebook, Appendix H, Policy Compliance Review and Approval of Decision Documents, Amendment #1, 20 November 2007.
- (7) Memorandum, SACW, 24 April 2020, subject: Policy Guidance on Implementation of Additional Supplemental Appropriations for Disaster Relief Act, 2019, (Public Law 116-20).

c. Requirements

This Review Plan was developed in accordance with EC 1165-2-217, with the review requirements therein modified in accordance with Section 729 of the Water Resource Development Act of 1986 (WRDA 86) implementation guidance and PB 2019-01 to fit



the unique nature of watershed assessments. These review requirements establish an appropriate, accountable, comprehensive review strategy by providing a seamless process for review of planning documents. Four general levels of review are outlined below: District Quality Control/Quality Assurance (DQC), Agency Technical Review (ATR), Policy Review, and Legal Compliance Review.

3. Review Management Organization (RMO) Coordination

The RMO is responsible for managing the overall peer review effort described in this Review Plan. For this WA, Pacific Ocean Division has transferred the RMO role to the Flood Risk Management – Planning Center of Expertise (FRM-PCX). FRM-PCX will coordinate and endorse the Review Plan and manage the ATR.

4. Project Information

a. Final Document

The study will result in a comprehensive and long-range Post-Disaster WA which will undergo reviews as described in this plan. Since the WA will not directly result in a project(s) for implementation there is no requirement for documentation of impacts under NEPA or other environmental laws. There will not be a plan selected for implementation; therefore, the level of review is limited to the evaluation of existing and future-without project conditions, and an array of recommendations or potential solutions that address the issues within the geographical area of the study. Recommendations and solutions will be conceptual in nature, requiring additional analyses and design before implementation. The WA will be prepared in accordance with PB 2019-01. The approval level of the final Watershed Assessment is POD, per current guidance.

b. SMART Planning Status

SMART Planning principles are integral to watershed planning. The Project Delivery Team (PDT) will incorporate critical thinking, risk-informed decision making and early and frequent vertical team engagement throughout the study process. \$1,500,000 in Federal funding has been allocated for this WA from the FY19 Supplemental Appropriations for Disaster Relief Act. The WA will be conducted withing a 30-month timeframe. Therefore, the WA is compliant with the 3x3x3 study requirements and a waiver to these requirements is not anticipated.

c. Project Description

The intent of this WA is to provide recommendations both within and outside of U.S. Army Corps of Engineers (USACE) authorities that will help to rehabilitate and improve the resiliency of damaged infrastructure and natural resources to reduce risks to human life and property from future natural disasters in American Samoa. The assessment will review available information related to past storm damages that had major impacts on



American Samoa; perform technical assessments of the drivers for socio-economic impacts through engagement with the public and other Federal, state and local agencies. The recommendations from the watershed assessment will provide a strategic roadmap to inform future investment decisions by multiple agencies, including but not limited to: potential projects and studies associated with flood risk management, coastal storm damage reduction, and ecosystem restoration under various USACE authorities, as well as environmental infrastructure, and actions to be implemented by others outside of available USACE authorities.

d. Study Area

The study area for the WA is the archipelago of American Samoa as presented in Figure 1. Tropical cyclones Vicki and Wasi caused damages in the American Samoa Islands in January to February 2020. Strong winds, flash floods, coastal flooding and landslides resulted in power outages and significant damage to public and private properties. Tropical Cyclone Gita passed through the main Island of Tutuila in February 2018 causing damages to homes that displaced more than 800 people. The intent of this WA is to propose recommendations both within and outside of USACE authorities that can support the rehabilitation of damaged infrastructure. Recommendations will also aim to improve the resiliency of natural resources to reduce risks to human life and property from future natural disasters in American Samoa. The assessment will review available information related to recent storm damages from Tropical Cyclones Wasi, Vicki and Gita, as well as other past storms that had a major impact on American Samoa. The WA will also perform technical assessments of the drivers for economic impacts through engagement with the public and other Federal, state and local agencies.

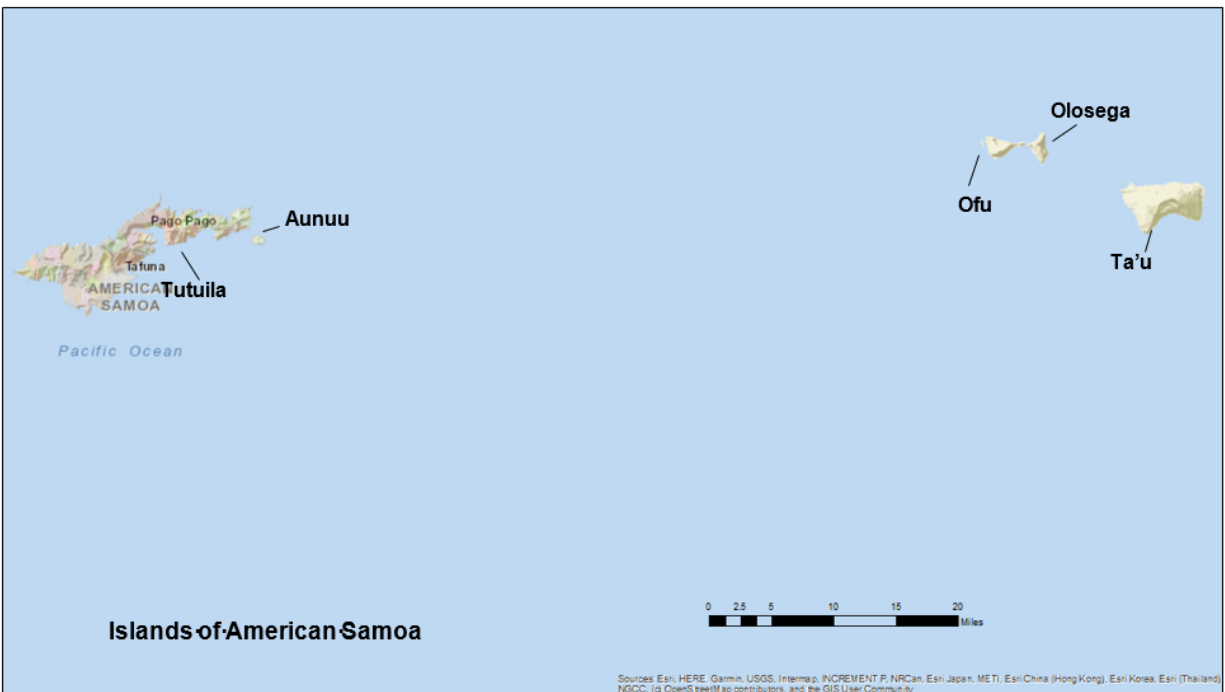


Figure 1. Map of American Samoa



e. Federal Interest

There is Federal interest in reducing the life safety risk and property damages in the Territory of American Samoa by increasing community resilience through a focus on the social, economic and environmental aspects that contribute to it. This WA would provide recommendations to increase community resilience that could be implemented by various Federal, Territorial, local and non-governmental organizations.

f. Risk Identification

Based on the PDT review of existing documentation and verified through stakeholder coordination, there is an existing and ongoing risk to life safety, critical infrastructure and property damage from large storm events, and this risk will most likely increase in the future due to climate change. Additionally, anthropogenic stressors such as deforestation and reliance on septic systems have degraded the habitat, increasing vulnerability to large storm events.

g. Factors Affecting the Scope and Level of Review

The conceptual nature of solutions or recommendation resulting from the WA will not create a significant threat to human life/safety or involve significant public dispute as to the size, nature, or effects of a project. The WA will not select a plan for implementation, and additional analysis would be required prior to implementation of any recommendation. Because this authority does not include construction of any alternatives, environmental compliance documentation and IEPR is not required. DQC and ATR will focus on verifying that the existing and future without-project conditions were fully captured and evaluating the screening level conceptual alternative formulation.

Since there will be no project selected for implementation, participation by general engineering, cost engineering and real estate PDT members will be minimal and on a qualitative basis. The conceptual nature of the watershed management recommendations is the main determinant for the scope of review of the WA and the level of expertise required from the reviewers.

Risk-informed decision making is integral to this study and levels of review. A Risk Register on the Institute for Water Resources-Assistance for Planning Teams (IWR-APT) will be used to document the uncertainties and risks identified during the analysis. Vertical team integration and early engagement is also part of the risk-informed planning process. To the extent possible, the study will follow the conceptual risk management framework on the iterative SMART Planning steps detailed in Planning Manual Part II: Risk-Informed Planning (2017-R-03).



h. In-Kind Contributions

No in-kind contributions are expected since the WA is fully federally funded. Products and analyses provided by non-USACE partners and stakeholders, including biological surveys, mapping, and past studies, would be referenced in the development of the WA.

5. District Quality Control (DQC)

All report documents (including supporting data, analyses, environmental compliance documents, etc.) shall undergo DQC. DQC is an internal review process of basic science and engineering work products focused on fulfilling the project quality requirements defined in the Project Management Plan (PMP). Honolulu District (POH) shall manage DQC and will appoint a DQC Lead to manage the review (see EC 1165-2-217, section 8.a.1).

a. Documentation of DQC

Quality Control should be performed continuously throughout the study. A specific certification of DQC completion is required at the draft and final report stages. Documentation of DQC should follow the District Quality Manual and the POD Quality Management Plan. If possible, DQC of the draft and final WA should be conducted using DrChecks. An example DQC Certification statement is provided in EC 1165-2-217, on page 19 (see Figure F).

Documentation of completed DQC should be provided to POD, RMO and ATR Team leader prior to initiating an ATR. The ATR team will examine DQC records and comment in the ATR report on the adequacy of the DQC effort. Missing or inadequate DQC documentation can result in delays to the start of other reviews (see EC 1165-2-217, section 9).

b. Required DQC Expertise

The following expertise is anticipated for the WA. The DQC team will be reflective of the major disciplines involved in the assessment. Some disciplines in this list may be added or removed including general engineering, cost engineering, and real estate which are not currently anticipated to be necessary. Office of Counsel will conduct a legal sufficiency review further described in Section 8.b. Legal Review.



<i>DQC Team Members/Disciplines</i>	<i>Expertise Required</i>
DQC Lead	The DQC lead will be a qualified senior staff member (e.g. Supervisor, lead planner, or Project Manager) who has no production role in a large study; however, for smaller studies they may also be a reviewer.
Planning	The reviewer will be a water resources planner with experience in ecosystem restoration, flood risk management (inland and coastal) and have experience in WRDA 1986 Section 729 watershed assessments.
Environmental Resources	The reviewer will have a solid background in the habitat types found in the Pacific Island Territories and understand the factors that influence the ecology in the area.
Hydrology and Hydraulic Engineering	The reviewer will have extensive knowledge of hydrology and coastal engineering in the Pacific Island Territories. The reviewer should have extensive knowledge of HEC-RAS modeling including the use of GIS inputs to the model.
Economics	The reviewer will have knowledge of economic factors that influence/affect development in the Pacific Island Territories, including Other Social Effects (OSE) that look at health and safety, economic vitality, and increased risk to vulnerable populations. This discipline potentially could be combined with other disciplines.

NOTE: Real Estate and Cost Engineering reviewers are not required, as products specific to those disciplines are not anticipated. Office of Counsel review documented in Section 8.b, Legal Review.

6. Agency Technical Review (ATR)

The ATR will assess whether the analyses are technically correct and comply with guidance, and that documents explain the analyses and results in a clear manner. An RMO manages ATR. The review is conducted by an ATR Team whose members are certified to perform reviews. Lists of certified reviewers are maintained by the various technical Communities of Practice (see EC 1165-2-217, section 9(h)(1)). A site visit is not anticipated for the completion of the ATR.

a. Required ATR Team Expertise

The appropriate RMO, in cooperation with the PDT, vertical team, and other appropriate centers of expertise, will determine the final make-up of the ATR team. The following



table provides the types of disciplines anticipated to be included on the ATR team and descriptions of the expertise required.

Due to an updated understanding of the scope and conceptual nature of the WA, the ATR team will only include the following key disciplines:

<i>ATR Team Members/Disciplines</i>	<i>Expertise Required</i>
ATR Lead	The ATR lead will be a senior professional preferably with experience in WRDA 1986 Section 729 watershed assessments and conducting ATR. The lead will 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 shall be selected from a District outside of POD.
Planning	The reviewer will be a water resources planner with experience in ecosystem restoration, flood risk management (inland and coastal) and have experience in WRDA 1986 Section 729 watershed assessments.
Environmental Resources	The reviewer will have a solid background in the habitat types found in the Pacific Islands Territories and understand the factors that influence the ecology in the area.
Hydrology/Hydraulic Engineering	The reviewer will have knowledge of hydrologic and hydraulic processes and coastal engineering in the Pacific Island Territories.
Economics	The reviewer will have knowledge of economic factors that influence/affect development in the Pacific Island Territories, including Other Social Effects (OSE) that look at health and safety, economic vitality, and increased risk to vulnerable populations. This discipline potentially could be combined with other disciplines.
Climate Change	The person will be an approved ATR reviewer by the Climate Preparedness and Resiliency Community of Practice (CoP) with experience in inland and coastal hydrology.

NOTE: Real Estate and Cost Engineering reviewers are not required, as products specific to those disciplines are not anticipated



b. Documentation of ATR

DrChecks will be used to document all ATR comments, responses and resolutions. Comments should be limited to those needed to ensure product adequacy. If a concern cannot be resolved by the ATR team and PDT, it will be elevated to the vertical team (VT) for resolution using the EC 1165-2-217 issue resolution process. Concerns can be closed in DrChecks by noting the concern has been elevated for resolution. The ATR Lead will prepare a Statement of Technical Review (see EC 1165-2-217, Section 9), for the draft and final reports, certifying that review issues were resolved or elevated. ATR may be certified when all concerns are resolved or referred to the vertical team at Headquarters (HQUSACE) and the ATR documentation is complete.

7. Independent External Peer Review (IEPR)

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. Per EC 1165-2-217 Paragraph 11.a., "Type 1 IEPR is conducted on project studies (decision documents)." As watershed studies do not result in a decision document or project, IEPR is not an applicable review.

8. Policy and Legal Compliance Review

Policy and legal compliance reviews for the draft and final Watershed Assessment will be submitted to the POD Planning and Policy Chief (see Director's Policy Memorandum 2018-05, paragraph 9).

a. Policy Review.

The policy review team is identified through the collaboration of the POD Chief of Planning and Policy and the HQUSACE Chief of the Office of Water Project Review. The team is identified in Attachment 1 of this Review Plan. The makeup of the Policy Review team will be drawn from Headquarters (HQUSACE), POD, the Planning Centers of Expertise, and other review resources as needed

- The Policy Review Team will be invited to participate in key meetings during the development of decision documents as well as SMART Planning Milestone meetings. These engagements may include In-Progress Reviews, Issue Resolution Conferences or other vertical team meetings plus the milestone events.
- The input from the Policy Review team should be documented in a Memorandum for Record (MFR) produced for each engagement with the team. The MFR should be distributed to all meeting participants.
- 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 should be documented in an MFR.

b. Legal Review.

Representatives from the Office of Counsel will be assigned to participate in reviews. Members may participate from POH, POD and HQUSACE. 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 particular 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.

9. Cost Engineering Mandatory Center of Expertise (MCX) Review and Certification

Per EC 1165-2-217, paragraph 9.3.1.3 only decision documents must have costs reviewed by the Cost Engineering Mandatory Center of Expertise (MCX) located in Walla Walla District. Watershed Assessments are not decision documents; therefore, cost engineering review(s) and certification are not required.

10. Model Certification and Approval

In conducting watershed plans, and overall watershed planning, it is recognized that many agencies and stakeholders have developed numerous models and data. Use of existing models and data in watershed planning, whether it is from the USACE, other Federal agencies or local entities is encouraged through collaborative processes. The quality and validity of these models and data must be evaluated and the agency technical review documented by the appropriate agencies.

a. Planning Models

The following planning models are anticipated for use in the development of the WA.

Model Name and Version	Brief Model Description and How It Will Be Used in the Study	Certification / Approval
Institute for Water Resources (IWR)	Supports the formulation, evaluation and comparison of conceptual alternatives involving non-monetary costs and benefits, including community resiliency. The Multi-Criteria Decision Analysis (MCDA) module may be used to assist in revealing and communicating the trade-offs between economic, environmental and	Certified



Model Name and Version	Brief Model Description and How It Will Be Used in the Study	Certification / Approval
Planning Suite 2.0.9	social effects. The Watershed wizard module may be used to develop a transparent framework for formulating multiple solutions and scales across multiple locations.	
Hydrologic Engineering Center (HEC)-LifeSim Version 2.0	Supports the formulation, evaluation and comparison of conceptual alternatives by estimating life loss and economic damages determined by the hazard (e.g. storm surge). Results from the simulation can inform recommendations to reduce risks to human life and property from future natural disasters.	Pending

b. Engineering Models

No engineering models are anticipated for use in the development of the WA. Engineering work for this WA will be limited to qualitative review based on existing data to potentially include some additional data accumulation and synthesis.

11. Review Schedules and Costs

The Project Manager will work with the DQC and ATR Lead to ensure that adequate funding is available and is commensurate with the level of review outlined for each discipline in Sections 5 and 6 above. Any funding shortages will be negotiated on a case by case basis and in advance of a negative charge occurring. The ATR Lead shall provide organization codes for each team member and a responsible financial point of contact (Corps of Engineers Financial Management System responsible employee) for creation of labor codes. Reviewers shall monitor individual labor code balances and alert the ATR Lead to any possible funding shortages.

In addition to reviewing the products listed below, the ATR Lead and RMO will be required to participate in an In Progress Review (IPR) corresponding to the completion of the draft WA. The ATR Lead and project manager will determine if ATR technical specialties will participate for each IPR. The ATR team will review any substantive changes to the final WA as a result of policy compliance and legal compliance reviews to ensure consistency and technical suitability of the revisions.

The project schedule and anticipated dates for DQC, ATR, Policy and Legal Compliance Review and non-Federal partner review are shown in **Error! Reference source not found.** below. DQC and targeted ATR are included to review the modeling assumptions and methodology for using existing data (storm surge and Federal Emergency Management Agency inundation mapping) and a simplified structural inventory to create LifeSim modeling for the study area. Schedule dates are contingent on funding and resource availability.



Review Product	Review Level	Start Date	End Date	Cost	Complete
<i>LifeSim modeling approach and assumptions</i>	<i>District Quality Control¹</i>	<i>Dec 2020</i>	<i>Jan 2021</i>	<i>\$5,000</i>	<i>Yes</i>
<i>LifeSim modeling approach and assumptions</i>	<i>Targeted ATR</i>	<i>Feb 2021</i>	<i>Mar 2021</i>	<i>\$5,000</i>	<i>Yes</i>
<i>Recommendations Milestone Documentation and LifeSim application</i>	<i>District Quality Control¹</i>	<i>Aug 2021</i>	<i>Oct 2021</i>	<i>\$25,000</i>	<i>No</i>
<i>LifeSim application</i>	<i>Targeted ATR</i>	<i>Sep 2021</i>	<i>Oct 2021</i>	<i>\$5,000</i>	<i>No</i>
<i>Draft Watershed Assessment</i>	<i>District Quality Control</i>	<i>Jan 2022</i>	<i>Feb 2022</i>	<i>\$24,000</i>	<i>No</i>
<i>Draft Watershed Assessment</i>	<i>Agency Technical Review</i>	<i>Mar 2022</i>	<i>May 2022²</i>	<i>\$33,000</i>	<i>No</i>
<i>Draft Watershed Assessment</i>	<i>Concurrent Public, Legal, Policy and Stakeholder Review</i>	<i>Mar 2022</i>	<i>Apr 2022</i>	<i>N/A</i>	<i>No</i>
<i>Final Watershed Assessment</i>	<i>Policy and Legal Review</i>	<i>Jun 2022</i>	<i>Jul 2022</i>	<i>N/A</i>	<i>No</i>

¹DQC of the LifeSim application must be completed, including appropriate documentation, prior to initiating the targeted ATR

²ATR review of the Draft WA to include backcheck on the Final WA

12. Review Plan Approval and Updates

The POD Commander is responsible for approving this Review Plan. The Commander’s approval reflects VT input as to the appropriate scope and level of review for the watershed assessment. Like the PMP, 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. Significant changes to the Review Plan (such as changes to the scope and/or level of review) should be re-approved by the POD Commander following the process used for initially approving the plan. The latest version of the Review Plan, along with the Commander’s approval memorandum, should be posted on POH’s webpage. The latest Review Plan should also be provided to the RMO and POD.



Attachment 2: Review Plan Revisions

Revision Date	Description of Change	Page/Paragraph Number

