REVIEW PLAN

MUD MOUNTAIN UPSTREAM FISH PASSAGE

Post Authorization Change Report

NWS

MSC Approval Date: 17 December 2012
Last Revision Date: 27 Novemeber 2012

US Army Corps of Engineers ®

REVIEW PLAN

Mud Mountain Dam Fish Passage Facility, Pierce County, WA
Post Authorization change Report Decision Document Type

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1. PURPOSE AND REQUIREMENTS

a. Purpose. This Review Plan defines the scope and level of peer review for the Mud Mountain Upstream Fish Passage project.

b. References

(1) Engineering Circular (EC) 1165-2-209, Civil Works Review Policy, 31 Jan 2010
(2) EC 1105-2-412, Assuring Quality of Planning Models, 31 Mar 2011
(3) Engineering Regulation (ER) 1110-1-12, Quality Management, 30 Sep 2006
(4) ER 1105-2-100, Planning Guidance Notebook, Appendix H, Policy Compliance Review and Approval of Decision Documents, Amendment #1, 20 Nov 2007
(5) PMP for study, revised March 20, 2012
(6) COMMUNICATION PLAN FOR MMD FISH PASSAGE AND PROTECTION ACTIVITIES AND ESA COMPLIANCE
(7) ER 1110-2-1156 Safety of Dams, Policy and Procedures, 28 October 2011.

c. Requirements. This review plan was developed in accordance with EC 1165-2-209, which establishes an accountable, comprehensive, life-cycle review strategy for Civil Works products by providing a seamless process for review of all Civil Works projects from initial planning through design, construction, and operation, maintenance, repair, replacement and rehabilitation (OMRR&R). The EC outlines four general levels of review: District Quality Control/Quality Assurance (DQC), Agency Technical Review (ATR), Independent External Peer Review (IEPR), and Policy and Legal Compliance Review. In addition to these levels of review, decision documents are subject to cost engineering review and certification (per EC 1165-2-209) and planning model certification/approval (per EC 1105-2-412).

2. REVIEW MANAGEMENT ORGANIZATION (RMO) COORDINATION

The RMO is responsible for managing the overall peer review effort described in this Review Plan. The RMO for decision documents is typically either a Planning Center of Expertise (PCX) or the Risk Management Center (RMC), depending on the primary purpose of the decision document. The RMO for the peer review effort described in this Review Plan is Michael Grzegorzewski.

The RMO will coordinate with the Cost Engineering Directory of Expertise (DX) to ensure the appropriate expertise is included on the review teams to assess the adequacy of cost estimates, construction schedules and contingencies.

PDT will coordinate design criteria and 35% design of TSP with PCX-ECO and Risk Management Center as appropriate.

3. STUDY INFORMATION

a. Decision Document. The Mud Mountain Fish Passage project is located on the White River in Buckley, Washington. The decision document will be a Post Authorization Change Report. The level of approval of the project is Chief of Engineers. An EA/FONSi will be prepared for the project.

b.Study/Project Description. Mud Mountain Dam (MMD) is a single purpose project providing flood control for the lower White and Puyallup River valleys. The existing fish passage facility was constructed as mitigation for the authorized project. The construction of MMD on the White River blocked upstream fish migration. As part of the MMD project, the Corps constructed a fish trap at a non-federal diversion dam on the White River approximately 6 miles downstream of MMD at river mile (RM) 24.3. The structure serves as a fish barrier for the trap-and-haul facility, impounding water to supply the trap with gravity flow. The diversion dam is at the end of its economic life and reliability, safety, and downstream fish passage concerns necessitate replacement.The general description of the plan is to replace the diversion dam on the White River at Buckley with a new fish barrier that reduces annual operation and maintenance requirements and improves survival for fish species, including a large number of pink salmon and other ESA listed fish species. Fish will be trucked upstream of Mud Mountain Dam. This project is required to meet authorized project purposes for Mud Mountain Dam, as well as to meet Corp's BiOp requirements and tribal trust issues. Alternatives evaluated included trap location, barrier designs, and trap and haul features. The project has the strong interest of Washington State (Department of Fish and Wildlife and Department of Ecology), NOAA, USFWS, the Muckleshoot Indian Tribe, and the Puyallup Indian Tribe. Cascade Water Alliance, owner of the barrier dam also has a strong interest in insuring the project does not impact their municipal-industrial water supply source. King County, Pierce County, WRIA 9, and other local governments also strongly support the project.

b. Factors Affecting the Scope and Level of Review.

- If parts of the study will likely be challenging (with some discussion as to why or why not and, if so, in what ways – consider technical, institutional, and social challenges, etc.); and
- A preliminary assessment of where the project risks are likely to occur and what the magnitude of those risks might be (e.g., what are the uncertainties and how might they affect the success of the project);

Project challenges include cost (current TSP CWE is $70M as of 2009), schedule as a result of the need to re-evaluate fish barrier design alternatives, potential real estate issues if the trap is located on tribal lands, uncertainty with respect to the numbers of fish that must be passed based on tribal treaty rights and ESA requirements (of the 650,000 salmon that were passed in 2011, over 600,000 were pink salmon (non ESA)). Because of crowding the pink salmon need to handled and dealt withIn order to ensure capture and transport of intermingled ESA listed species. High numbers of pink salmon are expected to occur over at least the next ten years.

- If the project will likely be justified by life safety or if the project likely involves significant threat to human life/safety assurance (with some discussion as to why or why not and, if so, in what ways – consider at minimum the safety assurance factors described in EC 1165-2-209 including, but not necessarily limited to, the consequences of non-performance on project economics, the environmental and social well-being [public safety and social justice]; residual risk; uncertainty due to climate variability, etc.) – the discussion of life safety should include the assessment of the home District Chief of Engineering on whether there is a significant threat to human life associated with the project (per EC 1165-2-209 Frequently Ask Question 3.j.);

The project will not be justified because of safety or significant threat to human life/safety. Project design will be coordinated with Risk Management Center.

- If there is a request by the Governor of an affected state for a peer review by independent experts;

No.

- If the project/study is likely to involve significant public dispute as to the size, nature, or effects of the project (with some discussion as to why or why not and, if so, in what ways);

No. The project will not have significant negative effects to the public or environment. However, the affected tribes and State Fish and Wildlife department have stated a need to pass more fish than may be justified based on cost and based on capacity to transport. There is also a pending biological opinion from the National Marine Fisheries Agency on the study area.

- If the project/study is likely to involve significant public dispute as to the economic or environmental cost or benefit of the project (with some discussion as to why or why not and, if so, in what ways);

Affected tribes and State Fish and Wildlife department have stated a need to pass more fish than may be justified based on cost and based on capacity to transport. These perspectives have been taken into account in the overall study analysis.

- If the information in the decision document or anticipated project design is likely to be based on novel methods, involve the use of 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 (with some discussion as to why or why not and, if so, in what ways); and
- If the project design is anticipated to require redundancy, resiliency, and/or robustness, unique construction sequencing, or a reduced or overlapping design construction schedule (with some discussion as to why or why not and, if so, in what ways).

The project will not require novel design and is intended to increase the effectiveness of existing operations at the site. It may require some level of fish trap and haul redundancy in order to pass fish during pink salmon runs. Pink salmon run years could also affect construction timing since fish passage will still need to occur during construction.

c. In-Kind Contributions. Products and analyses provided by non-Federal sponsors as in-kind services are subject to DQC, ATR, and IEPR. The in-kind products and analyses to be provided by the non-Federal sponsor include: **There is no in-kind associated with this project.**

4. DISTRICT QUALITY CONTROL (DQC)

All decision documents (including supporting data, analyses, environmental compliance documents, etc.) shall undergo DQC. DQC is an internal review process of basic science and engineering work products focused on fulfilling the project quality requirements defined in the Project Management Plan (PMP). The home district shall manage DQC. Documentation of DQC activities is required and should be in accordance with the Quality Manual of the District and the home MSC.

a. Documentation of DQC. DQC documentation will be in the form of Dr. Checks.

b. Products to Undergo DQC. DQC products will include the draft Decision Document/EA and 35% design documents.

c. Required DQC Expertise. DQC expertise will include the following disciplines: H&H, Geotech, Civil, Mechanical, Structural, Fish Passage Engineering, Fish Biology, Planning, Environmental Permitting, Economics, Cost Estimating, Real Estate.

5. AGENCY TECHNICAL REVIEW (ATR)

ATR is mandatory for all decision documents (including supporting data, analyses, environmental compliance documents, etc.). The objective of ATR is to ensure consistency with established criteria, guidance, procedures, and policy. The ATR will assess whether the analyses presented are technically correct and comply with published USACE guidance, and that the document explains the analyses and results in a reasonably clear manner for the public and decision makers. ATR is managed within USACE by the designated RMO and is conducted by a qualified team from outside the home district that is not involved in the day-to-day production of the project/product. ATR teams will be comprised of senior USACE personnel and may be supplemented by outside experts as appropriate. The ATR team lead will be from outside the home MSC.

a. Products to Undergo ATR. ATR products will include the draft Decision Document/EA and 35% design documents.

b. Required ATR Team Expertise.

ATR Team Members/Disciplines	Expertise Required
ATR Lead	The ATR lead should be a senior professional with extensive experience in preparing Civil Works decision documents and conducting ATR. The lead should also have the necessary skills and experience to lead a virtual team through the ATR process. The ATR lead may also serve as a reviewer for a specific discipline (such as planning, economics, environmental resources, etc).
Planning	The Planning reviewer should be a senior water resources planner with experience in water resources projects and ecosystem restoration.
Economics	Senior economist with life cycle and incremental cost expertise.
Environmental Resources	Senior fish biologist with knowledge of National and State of Washington Environmental permitting, Pacific Northwest fisheries, and fish passage facility experience.
Cultural Resources	NA
Hydrology	Senior engineer with high energy river dynamics in a system with large amounts of bedload and debris. The White River drains a significant portion of the north side of Mount Rainier, the largest glaciated peak in the lower 48.
Hydraulic Engineering	Senior engineer must be an expert in the field of hydraulics and have a thorough understanding of knowledge of open channel dynamics, application of levees, and computer and physical modeling techniques such as HEC-RAS, FLO-2D, UNET, TABS, etc. Knowledge of sediment transport. Knowledge of water retention

	structures.
Coastal Engineering	NA
Geotechnical Engineering	Senior engineer with experience in test boring for road improvements. Fish barrier dam replacement in a high energy river system. Knowledge of water retention structures, embankment construction.
Civil Engineering	Senior engineer with fish passage barrier and fish trap and haul design. Knowledge of embankment design and water retention structure design, USACE vegetation criteria.
Structural Engineering	Senior engineer with fish passage barrier and fish trap and haul design.
Electrical/Mechanical Engineering	Senior engineer with fish passage barrier and fish trap and haul design.
Cost Engineering	Senior engineer with fish passage barrier and fish trap and haul design.
Construction/Operations	Senior engineer with fish passage barrier and fish trap and haul design.
Real Estate	Senior real estate expert with knowledge of multiple tribal, private utility, and public utility ownerships with need to purchase in fee or acquire easements in perpetuity.
Hazardous, Toxic and Radioactive Waste (HTRW)	Senior scientist with knowledge of petroleum contaminated soils.
Dam Safety	Senior Dam Safety engineer familiar with fish passage barriers, water retention structures.
Geologist	Senior geologist with experience in seismic design and seepage control features.

c. Documentation of ATR. DrChecks review software will be used to document all ATR comments, responses and associated resolutions accomplished throughout the review process. Comments should be limited to those that are required to ensure adequacy of the product. The four key parts of a quality review comment will normally include:

(1) The review concern – identify the product's information deficiency or incorrect application of policy, guidance, or procedures;
(2) The basis for the concern – cite the appropriate law, policy, guidance, or procedure that has not be properly followed;
(3) The significance of the concern – indicate the importance of the concern with regard to its potential impact on the plan selection, recommended plan components, efficiency (cost), effectiveness (function/outputs), implementation responsibilities, safety, Federal interest, or public acceptability; and
(4) The probable specific action needed to resolve the concern – identify the action(s) that the reporting officers must take to resolve the concern.

In some situations, especially addressing incomplete or unclear information, comments may seek clarification in order to then assess whether further specific concerns may exist.

The ATR documentation in DrChecks will include the text of each ATR concern, the PDT response, a brief summary of the pertinent points in any discussion, including any vertical team coordination (the vertical team includes the district, RMO, MSC, and HQUSACE), and the agreed upon resolution. If an ATR concern cannot be satisfactorily resolved between the ATR team and the PDT, it will be elevated to the vertical team for further resolution in accordance with the policy issue resolution process described in either ER 1110-1-12 or ER 1105-2-100, Appendix H, as appropriate. Unresolved concerns can be closed in DrChecks with a notation that the concern has been elevated to the vertical team for resolution.

At the conclusion of each ATR effort, the ATR team will prepare a Review Report summarizing the review. Review Reports will be considered an integral part of the ATR documentation and shall:

- Identify the document(s) reviewed and the purpose of the review;
- Disclose the names of the reviewers, their organizational affiliations, and include a short paragraph on both the credentials and relevant experiences of each reviewer;
- Include the charge to the reviewers;
- Describe the nature of their review and their findings and conclusions;
- Identify and summarize each unresolved issue (if any); and
- Include a verbatim copy of each reviewer's comments (either with or without specific attributions), or represent the views of the group as a whole, including any disparate and dissenting views.

ATR may be certified when all ATR concerns are either resolved or referred to the vertical team for resolution and the ATR documentation is complete. The ATR Lead will prepare a Statement of Technical Review certifying that the issues raised by the ATR team have been resolved (or elevated to the vertical team). A Statement of Technical Review should be completed, based on work reviewed to date, for the AFB, draft report, and final report. A sample Statement of Technical Review is included in Attachment 2.

6. INDEPENDENT EXTERNAL PEER REVIEW (IEPR)

IEPR may be required for decision documents under certain circumstances. IEPR is the most independent level of review, and is applied in cases that meet certain criteria where the risk and magnitude of the proposed project are such that a critical examination by a qualified team outside of USACE is warranted. A risk-informed decision, as described in EC 1165-2-209, is made as to whether IEPR is appropriate. IEPR panels will consist of independent, recognized experts from outside of the USACE in the appropriate disciplines, representing a balance of areas of expertise suitable for the review being conducted. There are two types of IEPR:

- Type I IEPR. Type I IEPR reviews are managed outside the USACE and are conducted on project studies. Type I IEPR panels assess the adequacy and acceptability of the economic and environmental assumptions and projections, project evaluation data, economic analysis, environmental analyses, engineering analyses, formulation of alternative plans, methods for integrating risk and uncertainty, models used in the evaluation of environmental impacts of proposed projects, and biological opinions of the project study. Type I IEPR will cover the entire decision document or action and will address all underlying engineering, economics, and environmental work, not just one aspect of the study. For decision documents where a Type II

IEPR (Safety Assurance Review) is anticipated during project implementation, safety assurance shall also be addressed during the Type I IEPR per EC 1165-2-209.

- Type II IEPR. Type II IEPR, or Safety Assurance Review (SAR), are managed outside the USACE and are conducted on design and construction activities for hurricane, storm, and flood risk management projects or other projects where existing and potential hazards pose a significant threat to human life. Type II IEPR panels will conduct reviews of the design and construction activities prior to initiation of physical construction and, until construction activities are completed, periodically thereafter on a regular schedule. The reviews shall consider the adequacy, appropriateness, and acceptability of the design and construction activities in assuring public health safety and welfare.

a. Decision on IEPR. The decision to conduct Type I IEPR is made by comparing EC 1165-2-209 criteria to the study, as shown in the table below. Based on these factors, Type I IEPR will be conducted. Type II IEPR (SAR) is not anticipated for the PAC Report and 35% design of the recommended plan. Type II will be required for 95% design. Coordination with Dam Safety Office will be required during final design. The Review Plan will be updated for the design phase following approval of the PAC Report.

EC 1165-2-209 Criteria	Mud Mountain Dam Fish Passage
Is there significant threat to human life?	No. The goal of the study is to evaluate options which will increase the effectiveness of existing operations to meet obligations of biological opinions and tribal agreements. The study area is sparsely inhabited and the current measures under consideration will not induce flooding or risk to those who live within the study area.
Is the total project cost more than $45 million?	The cost of implementation will likely exceed $45 million.
Has the Governor of Washington requested a Type 1 IEPR?	No requests have been received for a Type 1 IEPR for this study.
Has the head of Federal or State agency charged with reviewing the project study requested a Type 1 IEPR?	No requests have been received for a Type 1 IEPR for this study.
Will the altneratives be a significant threat to human life and safety?	No. The goal of the study is to evaluate options which will increase the effectiveness of existing operations to meet obligations of biological opinions and tribal agreements. The study area is sparsely inhabited and the current measures under consideration will not induce flooding or risk to those who live within the study area.
Will there be significant public controversy as to the size, nature, or effects of the project?	The project has the potential for controversy at the local level if it is perceived that operations are adversely affecting local residents. Potential controversy with local tribes, State resource agencies over number of fish that need to be transported.
Will there be significant public controversy as to the economic or environmental cost or benefit of the project?	The project has the potential for controversy at the local level if it is perceived that operations are adversely affecting local residents.
Will the study be based on information from novel methods, present complex challenges or interpretation, contain precedent-setting methods or models, or present conclusions that are likely to change prevailing practices?	The study utilizes existing science and proven methods for facilitating fish passage around existing Federal infrastructure. The intent of the study is to optimize the effectiveness of these methods through structural improvements to the site.

b. Products to Undergo Type I IEPR. The Type I IEPR will be performed for the draft decision document, including NEPA environmental compliance documentation and technical appendices. Type I IEPR panel members will be provided with ATR documentation and any significant public comments made during public meetings and on the products under review.

c. Required Type I IEPR Panel Expertise. The following types of expertise will be required on the Type I IEPR Team:

IEPR Panel Members/Disciplines	Expertise Required
Hydraulics and Hydrology	Panel member will be an expert in the field of hydrology and hydraulics and will have a thorough understanding of rainfall runoff models, flow-frequency analysis, hydraulic effects of water diversion operations, open channel dynamics, and sedimentation.
Environmental	Panel member will have expertise in Pacific Northwest fisheries and have specific knowledge related to the biology of anadromous fish, understand the factors that influence the reestablishment of native species of plants and animals, be experienced in the preparation of NEPA documentation, and understand the complexities of tribal rights to fisheries.
Geotechnical Engineering	Panel member will have extensive experience in geotechnical evaluation of in situ structures, such as static and dynamic slope stability evaluation, seepage through earthen embankments evaluation, and under-seepage through the foundation of in situ structures.
Civil Design	Panel member will have expertise in designing water diversion and ecosystem restoration measures, channel design and retention structures.

d. Documentation of Type I IEPR. The IEPR panel will be selected and managed by an Outside Eligible Organization (OEO) per EC 1165-2-209, Appendix D. Panel comments will be compiled by the OEO and should address the adequacy and acceptability of the economic, engineering and environmental methods, models, and analyses used. IEPR comments should generally include the same four key parts as described for ATR comments in Section 4.d above. The OEO will prepare a final Review Report that will accompany the publication of the final decision document and shall:

- Disclose the names of the reviewers, their organizational affiliations, and include a short paragraph on both the credentials and relevant experiences of each reviewer;
- Include the charge to the reviewers;
- Describe the nature of their review and their findings and conclusions; and
- Include a verbatim copy of each reviewer's comments (either with or without specific attributions), or represent the views of the group as a whole, including any disparate and dissenting views.

The final Review Report will be submitted by the OEO no later than 60 days following the close of the public comment period for the draft decision document. USACE shall consider all recommendations contained in the Review Report and prepare a written response for all recommendations adopted or not adopted. The final decision document will summarize the Review Report and USACE response. The Review Report and USACE response will be made available to the public, including through electronic means on the internet.

7. POLICY AND LEGAL COMPLIANCE REVIEW

All decision documents will be reviewed throughout the study process for their compliance with law and policy. Guidance for policy and legal compliance reviews is addressed in Appendix H, ER 1105-2-100. These reviews culminate in determinations that the recommendations in the reports and the supporting analyses and coordination comply with law and policy, and warrant approval or further recommendation to higher authority by the home MSC Commander. DQC and ATR augment and complement the policy review processes by addressing compliance with pertinent published Army policies, particularly policies on analytical methods and the presentation of findings in decision documents.

8. COST ENGINEERING DIRECTORY OF EXPERTISE (DX) REVIEW AND CERTIFICATION

All decision documents shall be coordinated with the Cost Engineering DX, located in the Walla Walla District. The DX will assist in determining the expertise needed on the ATR team and Type I IEPR team (if required) and in the development of the review charge(s). The DX will also provide the Cost Engineering DX certification. The RMO is responsible for coordination with the Cost Engineering DX.

9. MODEL CERTIFICATION AND APPROVAL

EC 1105-2-412 mandates the use of certified or approved models for all planning activities to ensure the models are technically and theoretically sound, compliant with USACE policy, computationally accurate, and based on reasonable assumptions. Planning models, for the purposes of the EC, are defined as any models and analytical tools that planners use to define water resources management problems and opportunities, to formulate potential alternatives to address the problems and take advantage of the opportunities, to evaluate potential effects of alternatives and to support decision making. The use of a certified/approved planning model does not constitute technical review of the planning product. The selection and application of the model and the input and output data is still the responsibility of the users and is subject to DQC, ATR, and IEPR (if required).

EC 1105-2-412 does not cover engineering models used in planning. The responsible use of well-known and proven USACE developed and commercial engineering software will continue and the professional practice of documenting the application of the software and modeling results will be followed. As part of the USACE Scientific and Engineering Technology (SET) Initiative, many engineering models have been identified as preferred or acceptable for use on Corps studies and these models should be used whenever appropriate. The selection and application of the model and the input and output data is still the responsibility of the users and is subject to DQC, ATR, and IEPR (if required**). Planning Models.** Planning models to be used during this study will be determined as the study progresses. This section of the Review Plan will be revised accordingly. It is not anticipated that models will be needed for life cycle cost analysis or incremental analysis. Modeling is not anticipated for fish passage performance goals.

Engineering Models. The following engineering models are anticipated to be used in the development of the decision document:

Model Name and Version	Brief Description of the Model and How It Will Be Applied in the Study	Approval Status
HEC-RAS.	This Corps 1-dimensional river analysis model would be used to determine initial estimates of water surface profiles in the proposed fish passage structures, in the forebay and possibly the tailrace.	CoP-preferred.

10. REVIEW SCHEDULES AND COSTS

a. ATR Schedule and Cost. ATR of the Draft PAC Report, appendices and 35% design of the recommended plan is scheduled to occur January 2014 at an estimated cost of $20,000.

b. Type I IEPR Schedule and Cost. Type I IEPR of the Draft PAC Report, appendices and 35% design of the recommended plan is scheduled to occur January 2014 at an estimated cost of $300,000

Model Certification/Approval Schedule and Cost. No additional certification of models is required for this study. All models have been certified or approved.

PUBLIC PARTICIPATION

The Muckleshoot Indian Tribe, Puyallup Indian Tribe, NOAA, USFWS, Washington State Fish and Wildlife Department, and Washington Department of Ecology, and the Cascade Water Alliance (CWA) (owners of the barrier dam) will be involved in review of the decision document/EA as part of the NEPA process, report review, and negotiations for a new Biological Opinion. Additional meetings will be held with local entities (King, Pierce Counties, etc) as needed. Tribal and CWA representatives are represented on the PDT and regularly review output. NOAA and USFWS are actively involved in developing fish passage facility design. The final decision document, associated review reports, and USACE responses to IEPR comments will be made available to the public. The Review Plan and the accompanying PMP will be posted to the District web site for public review once it is approved by the MSC. The PAC Report, if approved, will also be available on the District web site. The IEPR Report will be a part of the administrative record and available upon request.

REVIEW PLAN APPROVAL AND UPDATES

The NWD Commander is responsible for approving this Review Plan. The Commander's approval reflects vertical team input (involving district, MSC, RMO, and HQUSACE members) as to the appropriate scope and level of review for the decision document. Like the PMP, the Review Plan is a living document and may change as the study progresses. The home district is responsible for keeping the Review Plan up to date. Minor changes to the review plan since the last MSC Commander approval are documented in Attachment 3. Significant changes to the Review Plan (such as changes to the scope and/or level of review) should be re-approved by the MSC Commander following the process used for initially approving the plan. The latest version of the Review Plan, along with the Commanders' approval memorandum, should be posted on the Home District's webpage. The latest Review Plan should also be provided to the RMO and home MSC.

REVIEW PLAN POINTS OF CONTACT

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

- Gordon Thomson, Project Manager, 206-316-3966, Seattle District
- Martin Hudson, NWD Planning Team Leader 503-808-3851C
- RMO is NWD; coordinate as needed with PCX-ECO, Risk Management Center

ATTACHMENT 1: TEAM ROSTERS

ATR Team: An ATR lead or team have not been selected. PDT coordinating identification of team with NWD.

ATR Team Members/Disciplines	Expertise Required
ATR Lead	The ATR lead should be a senior professional with extensive experience in preparing Civil Works decision documents and conducting ATR. The lead should also have the necessary skills and experience to lead a virtual team through the ATR process. The ATR lead may also serve as a reviewer for a specific discipline (such as planning, economics, environmental resources, etc).
Planning	The Planning reviewer should be a senior water resources planner with experience in water resources projects and ecosystem restoration.
Economics	Senior economist with life cycle and incremental cost analysis expertise.
Environmental Resources	Senior fish biologist with knowledge of National and State of Washington Environmental permitting, Pacific Northwest fisheries, and fish passage facility experience.
Cultural Resources	NA
Hydrology	Senior engineer with high energy river dynamics in a system with large amounts of bedload and debris. The White River drains a significant portion of the north side of Mount Rainier, the largest glaciated peak in the lower 48.
Hydraulic Engineering	Senior engineer must be an expert in the field of hydraulics and have a thorough understanding of knowledge of open channel dynamics, application of levees, and computer and physical modeling techniques such as HEC-RAS, FLO-2D, UNET, TABS, etc. Knowledge of sediment transport.
Coastal Engineering	NA
Geotechnical Engineering	Senior engineer with experience in test boring for road improvements. Fish barrier dam replacement in a high energy river system.
Civil Engineering	Senior engineer with fish passage barrier and fish trap&haul design.
Structural Engineering	Senior engineer with fish passage barrier and fish trap&haul design.
Electrical/Mechanical Engineering	Senior engineer with fish passage barrier and fish trap&haul design.
Cost Engineering	Senior engineer with fish passage barrier and fish trap&haul design.
Construction/Operations	Senior engineer with fish passage barrier and fish trap&haul design.
Real Estate	Senior real estate expert with knowledge of multiple tribal, private utility, and public utility ownerships with need to purchase in fee or acquire easements in perpetuity.
Hazardous, Toxic and Radioactive	Senior scientist with knowledge of petroleum contaminated soils.

Waste (HTRW)	
Dam Safety	Senior Dam Safety engineer familiar with fish passage barriers

ATTACHMENT 2: SAMPLE STATEMENT OF TECHNICAL REVIEW FOR DECSION DOCUMENTS

COMPLETION OF AGENCY TECHNICAL REVIEW

The Agency Technical Review (ATR) has been completed for the *<type of product>* for *<project name and location>*. The ATR was conducted as defined in the project's Review Plan to comply with the requirements of EC 1165-2-209. During the ATR, compliance with established policy principles and procedures, utilizing justified and valid assumptions, was verified. This included review of: assumptions, methods, procedures, and material used in analyses, alternatives evaluated, the appropriateness of data used and level obtained, and reasonableness of the results, including whether the product meets the customer's needs consistent with law and existing US Army Corps of Engineers policy. The ATR also assessed the District Quality Control (DQC) documentation and made the determination that the DQC activities employed appear to be appropriate and effective. All comments resulting from the ATR have been resolved and the comments have been closed in DrChecks[sm].

SIGNATURE _____ Date _____
Name
ATR Team Leader
Office Symbol/Company

SIGNATURE _____ Date _____
Name
Project Manager
Office Symbol

SIGNATURE _____ Date _____
Name
Architect Engineer Project Manager[1]
Company, location

SIGNATURE _____ Date _____
Name
Review Management Office Representative
Office Symbol

CERTIFICATION OF AGENCY TECHNICAL REVIEW

Significant concerns and the explanation of the resolution are as follows: *Describe the major technical concerns and their resolution.*

As noted above, all concerns resulting from the ATR of the project have been fully resolved.

SIGNATURE _____ Date _____
Name
Chief, Engineering Division
Office Symbol

SIGNATURE _____ Date _____
Name
Chief, Planning Division
Office Symbol

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

ATTACHMENT 3: REVIEW PLAN REVISIONS

Revision Date	Description of Change	Page / Paragraph Number
11/27/12	Initial Draft	

ATTACHMENT 4: ACRONYMS AND ABBREVIATIONS

Term	Definition	Term	Definition
AFB	Alternative Formulation Briefing	NED	National Economic Development
ASA(CW)	Assistant Secretary of the Army for Civil Works	NER	National Ecosystem Restoration
ATR	Agency Technical Review	NEPA	National Environmental Policy Act
CSDR	Coastal Storm Damage Reduction	O&M	Operation and maintenance
DPR	Detailed Project Report	OMB	Office and Management and Budget
DQC	District Quality Control/Quality Assurance	OMRR&R	Operation, Maintenance, Repair, Replacement and Rehabilitation
DX	Directory of Expertise	OEO	Outside Eligible Organization
EA	Environmental Assessment	OSE	Other Social Effects
EC	Engineer Circular	PCX	Planning Center of Expertise
EIS	Environmental Impact Statement	PDT	Project Delivery Team
EO	Executive Order	PAC	Post Authorization Change
ER	Ecosystem Restoration	PMP	Project Management Plan
FDR	Flood Damage Reduction	PL	Public Law
FEMA	Federal Emergency Management Agency	QMP	Quality Management Plan
FRM	Flood Risk Management	QA	Quality Assurance
FSM	Feasibility Scoping Meeting	QC	Quality Control
GRR	General Reevaluation Report	RED	Regional Economic Development
Home District/MSC	The District or MSC responsible for the preparation of the decision document	RMC	Risk Management Center
HQUSACE	Headquarters, U.S. Army Corps of Engineers	RMO	Review Management Organization
IEPR	Independent External Peer Review	RTS	Regional Technical Specialist
ITR	Independent Technical Review	SAR	Safety Assurance Review
LRR	Limited Reevaluation Report	USACE	U.S. Army Corps of Engineers
MSC	Major Subordinate Command	WRDA	Water Resources Development Act