DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS, NORTHWESTERN DIVISION
PO BOX 2870
PORTLAND OR 97208-2870

CENWD-RBT

13 DEC 2012

MEMORANDUM FOR Commander, Walla Walla District (CENWW-PM-PD-PF/Richard Turner)

SUBJECT: Review Plan (RP) Approval for Lower Snake River Programmatic Sediment Management Plan and Environmental Impact Statement Idaho, Oregon, and Washington, Walla Walla District, Northwestern Division

1. References:

a. Memorandum, CENWW-PM-PD-PF, 7 December 2012, subject: Lower Snake River Programmatic Sediment Management Plan and Environmental Impact Statement Idaho, Oregon, and Washington, Walla Walla District, Northwestern Division, Review Plan Submittal (Encl).

b. EC 1165-2-209 Change 1, Civil Works Review Policy, 31 January 2012.

2. Reference 1.a. above has been prepared in accordance with reference 1.b. above.

3. The RP has been coordinated with the Business Technical Division and the Planning, Environmental Resources, Fish Policy and Support Division, Northwestern Division, U.S. Army Corps of Engineers (USACE), and with the USACE Planning Center of Expertise for Inland Navigation (PCXIN). The RP includes District Quality Control, Agency Technical Review (ATR), and Type I Independent External Peer Review (IEPR). The PCXIN will be the Review Management Organization for the ATR and the Type I IEPR.

4. I hereby approve this RP, which is subject to change as circumstances require, consistent with the study development process and the Project Management Business Process. Subsequent revisions to this Review Plan or its execution will require written approval from this office.

5. For further information, please contact Mr. Steve Bredthauer at (503) 808-4053.

Encl

ANTHONY C. FUNKHOUSER, P.E.
COL, EN
Commanding

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CENWW-PM-PD-PF (1105) 7 December 2012

MEMORANDUM FOR, Commander, Northwestern Division, PO Box 2870, Portland, OR 97208-2870

SUBJECT: Lower Snake River Programmatic Sediment Management Plan and Environmental Impact Statement Idaho, Oregon, and Washington Walla Walla District, Northwestern Division, Review Plan Submittal

1. Enclosed for Major Subordinate Command (MSC) Commander approval is the Lower Snake River Programmatic Sediment Management Plan and Environmental Impact Statement, Review Plan. This Review Plan has been prepared according to EC-1165-2-209, Civil Works Review Policy.

2. If you have any further questions please contact Richard Turner, Project Manager, who can reached by telephone at 509-527-7625 or email at Richard.C.Turner@usace.army.mil.

Encls

ANDREW D. KELLY
LTC, EN
Commanding

CENWW-PM-PD-PF YELLOW FILE COPY

DEPARTMENT OF THE ARMY
HUNTINGTON DISTRICT, CORPS OF ENGINEERS
502 EIGHT STREET
HUNTINGTON, WEST VIRGINIA 25701-2035

REPLY TO
ATTENTION OF

CELRH-NC

20 January 2012

MEMORANDUM FOR Commander, Walla Walla District

SUBJECT: Review Plan for the Programmatic Sediment Management Plan and Environmental Impact Statement for the Lower Snake Reservoirs in Idaho, Oregon and Washington

1. The enclosed Review Plan (RP) has been presented to the Planning Center of Expertise for Inland Navigation (PCXIN) for its review and endorsement in accordance with EC1165-2-209 "Civil Works Review" dated 31 January 2010. The National Ecosystem Planning Center of Expertise (ECO-PCX) in the Mississippi Valley Division and the National Flood Risk Management Center of Expertise (FRM-PCX) were also consulted during the review plan approval process.

2. Between 1961 and 1975, the Corps constructed four dams on the Snake River in Washington. This area is collectively referred to as the lower Snake River. The four dams and locks on the lower Snake River are Ice Harbor, Lower Monumental, Little Goose, and Lower Granite. Construction of these dams has created a series of reservoirs on the Snake River, adding an additional 140 miles of shallow draft inland navigation to the Columbia-Snake River System. The Snake River reservoirs generally act as sediment traps due to the slow velocity of river flows through this reach.

3. The PSMP/EIS is a decision document that will recommend a long-term, comprehensive, watershed-level approach for managing sediment inflow and deposition in the lower Snake River reservoirs. Sediment accumulation interferes with the authorized functions of the lower Snake River system. This sediment deposition has been the source of ongoing challenges in the region due to critical habitat and species listed under the Endangered Species Act (ESA) that migrate through the system.

4. PCXIN staff has reviewed the plan for technical sufficiency and policy compliance. The PSMP/EIS does meet the mandatory trigger requirements outlined in EC 1165-2-209 for a Type I or Type II Independent External Peer Review (IEPR). The PSMP/EIS employs the Hydrologic Engineering Center's Flood Damage Reduction Analysis (HEC-FDA) Version 1.2.4. This model, developed by the Corps' Hydrological Engineering Center is certified. The engineering models anticipated to be used in developing the decision document are the Micro-Computer Aided Cost Estimating System, Second Generation (MCACES or MII) and the Hydrologic Engineering Center's River Analysis System (HEC-RAS).

5. I concur with the findings of the PCXIN technical staff and endorse the enclosed review plan for the Programmatic Sediment Management Plan and Environmental Impact Statement for the Lower Snake Reservoirs in Idaho, Oregon and Washington. Following approval by Northwest Division, the Walla Walla District is requested to post the RP to its web site and provide the link to the PCXIN for their use. Prior to posting, the names of the individuals in the RP should be removed.

6. If you have any questions or need additional information, please contact Ms. Beth Cade of my staff at (304) 399-5848.

Encl

WESLEY W. WALKER
Technical Director
PCX for Inland Navigation

REVIEW PLAN

Programmatic Sediment Management Plan and Environmental Impact Statement

Walla Walla District

MSC Approval Date: *(Pending)*
Last Revision Date: September 2012

US Army Corps of Engineers ®

REVIEW PLAN

Programmatic Sediment Management Plan and Environmental Impact Statement

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1. PURPOSE AND REQUIREMENTS

a. **Purpose.** This Review Plan defines the scope and level of peer review for the Programmatic Sediment Management Plan and Environmental Impact Statement (PSMP/EIS) for the lower Snake River reservoirs in Idaho, Oregon, and Washington. The PSMP/EIS is anticipated to culminate in a Record of Decision (ROD) that addresses the immediate need to reestablish the congressionally approved federal navigation channel and a long term plan to manage, and prevent if possible, the accumulation of sediment that interferes with authorized project purposes.

b. **References**

- Engineering Circular (EC) 1165-2-209, *Civil Works Review Policy*, 31 Jan 2010
- EC 1105-2-412, *Assuring Quality of Planning Models*, 31 Mar 2011
- Engineering Regulation (ER) 1110-1-12, *Quality Management*, 30 Sep 2006
- ER 1105-2-100, *Planning Guidance Notebook*, Appendix H, *Policy Compliance Review and Approval of Decision Documents,* Amendment #1, 20 Nov 2007
- Project Management Plan (PMP) for the PSMP/EIS
- Major General Riley, Memorandum on Peer Review Process, 30 May 2007
- Public Law 79-14, *River and Harbor Act of 1945*
- 08502-CEND-RBT, EC 1165-2-209, *Civil Works Review Policy Guidance,* 29 September 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 primary RMO for the peer review effort described in this Review Plan is the Inland Navigation Planning Center of Expertise (PCXIN) in the Great Lakes and Ohio River Division (LRD) Planning Center, located in Huntington, West Virginia. The National Ecosystem Planning Center of Expertise (ECO-PCX) in the Mississippi Valley Division and the National Flood Risk Management Center of Expertise (FRM-PCX) were consulted during the review plan approval process.

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.

3. STUDY INFORMATION

a. **Environmental Impact Statement.** The PSMP/EIS is anticipated to culminate in a Record of Decision (ROD) that addresses the immediate need to reestablish the congressionally-approved Federal navigation channel and a long-term plan to manage, and prevent if possible, the accumulation of sediment that interferes with authorized project purposes. Sediment accumulation interferes with the authorized functions of the lower Snake River system: commercial navigation; hydropower; irrigation water withdrawals; recreation; and flood risk management. This sediment deposition has been the source of ongoing challenges in the region due to critical habitat and species listed under the Endangered Species Act (ESA) migrating through the system. The PSMP/EIS will not require Congressional authorization, and the ROD will be approved by the US Army Corps of Engineers (Corps), Northwestern Division (NWD).

a. **Study/Project Description.** As part of its Congressional mandate, the Corps maintains and operates the navigational system on the Columbia and Snake Rivers. Between 1961 and 1975, the Corps constructed four dams on the Snake River in Washington. This area is collectively referred to as the lower Snake River. The four dams and locks on the lower Snake River are Ice Harbor, Lower Monumental, Little Goose, and Lower Granite. Construction of these dams has created a series of reservoirs on the Snake River, adding an additional 140 miles of shallow draft inland navigation to the Columbia-Snake River System. This navigation system depends on the availability of a navigation channel 14 feet deep and 250 feet wide for barge tows.

The Snake River reservoirs generally act as sediment traps due to the slow velocity of river flows through this reach. The Lower Granite reservoir, the uppermost reservoir in the lower Snake River system, traps approximately 85% of the sediment entering the system. The remaining sediment stays suspended in the water and gradually settles out as it passes through the other reservoirs. The accumulation of sediments in the lower Snake River affects the authorized purposes of the Corps projects.

Historically, the Corps has used dredging as the primary means of managing sediment deposited in areas that interfere with the authorized uses of the lower Snake River. The majority of these maintenance dredging actions have been conducted on a case-by case basis, with no long-term focus. Since the late 1990's, the Corps has been working on the development of a programmatic plan to clarify and adopt processes and procedures for managing sediment on a long-term basis. The first effort to accomplish this was the 2002 Dredged Material Management Plan/Environmental Impact Statement (DMMP/EIS). The plan recommended in the DMMP/EIS was maintenance dredging in the navigation channel, beneficial use of the dredged material to create shallow water habitat, and up to a 3-foot levee raise on the Lewiston Levee system for standard project flood (SPF) conveyance.

The release of the DMMP/EIS resulted in a legal challenge that halted implementation of the recommended plan. The focus of the lawsuit was on an inadequate range of alternatives, and detrimental direct and indirect impacts to ESA-listed salmon. A settlement agreement was reached in September 2005, when the Corps agreed to prepare a separate PSMP/EIS by December 2009, subject to congressionally-appropriated funds. The PSMP/EIS was authorized in 2006, and the first appropriation was received in October 2007.

c. **Factors Affecting the Scope and Level of Review.** This section describes the key points in the study that will undergo the most scrutiny. The PSMP/EIS was first subjected to an Agency Technical Review in spring 2012. The ATR certification was delayed because of anticipated revisions to the PSMP/EIS indentified during the NWD policy review. Because the revisions were substantial and involved revisions to the alternatives formulated, a second ATR was deemed necessary. However, this second ATR will only focus on revisions to the PSMP/EIS.

- **Immediate Action.** Historically, the Corps has routinely dredged the navigation channel to maintain its authorized dimensions, typically every 3 to 5 years. The Corps has not performed maintenance dredging in the channel since the winter of 2005-2006. At that time, the Lower Monumental and Lower Granite downstream navigation lock approaches, the Federal channel at the confluence of the Snake and Clearwater Rivers, and the berthing areas of the Ports of Lewiston and Clarkston were dredged. Sediment has accumulated in the navigation channel since that time, reaching a level of accumulation where the channel is not at authorized dimensions in some locations, even when the reservoir is operated above minimum operating pool (MOP). Currently, sediment accumulation has reduced the navigation channel depth to less than 14 feet at MOP, and is impairing navigation at several locations within the LSRP. Therefore, immediate action is needed to reestablish the navigation channel to its authorized dimensions at the following locations:

  - Ice Harbor Navigation Lock downstream approach
  - Federal navigation channel at confluence of Snake and Clearwater Rivers
  - Port of Clarkston berthing area
  - Port of Lewiston berthing area

- **Programmatic Sediment Management Plan.** The PSMP/EIS is not a typical planning document or a feasibility study. The Corps agreed to complete the PSMP as part of the 2005 settlement agreement. The PSMP/EIS uses a watershed approach to indentify sediment sources and determine feasible sediment management strategies. The PSMP/EIS will identify and categorize problem areas, group measures by problem areas, and identify action triggers and responses. The alternatives identified in the EIS were revised following the NWD policy review.

b. **In-Kind Contributions.** There are no in-kind products and analyses, as there is no non-Federal sponsor.

4. DISTRICT QUALITY CONTROL (DQC)

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

a. **Documentation of DQC.** The PSMP/EIS documents will be written by HDR Inc, a Corps contractor. The project deliver team (PDT) will conduct this review for draft and final products. The comments will be documented in DrChecks^{sm}. Any legal or policy issues that arise and

cannot be resolved at the District level will be submitted to the MSC or Corps Headquarters (HQUSACE) for immediate issue resolution.

b. **Products to Undergo DQC.** Both the draft PSMP and EIS with technical appendices, and the Final PSMP and EIS with technical appendices will undergo DQC within the Corps, Walla Walla District.

c. **Required DQC Expertise.** The level of expertise required for DQC should be comparable to that required for the ATR (Table 1).

5. AGENCY TECHNICAL REVIEW (ATR)

An 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 Corps guidance, and verifying the document explains the analyses and results in a reasonably clear manner for the public and decision makers. The ATR is managed within the Corps by the designated RMO, and is conducted by a qualified team not involved in the day-to-day production of the project/product. The ATR teams will be comprised of senior Corps personnel from outside the home District, and the ATR team lead will be from outside the home MSC.

a. **Products to Undergo ATR.** The products will be presented for review by the ATR team are the Draft PSMP and EIS, with technical appendices It is estimated that total ATR costs for this project will be $50,000.

b. **Required ATR Team Expertise.** The ATR team will be comprised of individuals that have not been involved in the development of the decision document. Team members will be chosen based on expertise, experience, and/or skills. The members will roughly mirror the composition of the PDT and, wherever possible, reside outside of Northwestern Division (NWD). It is anticipated that the team will consist of approximately 8 reviewers, who will be identified at the time the review is conducted. The ATR Team will be presented in Attachment 1.

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

- Review concern – identify the information deficiency or incorrect application of policy, guidance, or procedures;
- Basis for the concern – cite the appropriate law, policy, guidance, or procedure that has not be properly followed;
- 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
- Probable specific action needed to resolve the concern – identify the action(s) that reporting officers must take to resolve the concern.

Table 1 - Agency Technical Review Team

Discipline	Experience Needed for Review
ATR Manager/Plan Formulation	Plan formulation for multi-purpose projects, including flood risk management and inland navigation: familiarity with the ER1105-2-100, *Planning Guidance Notebook;* and the Water Resources Council's Principals and Guidelines; good communication skills; and familiarity with the ATR process
Limnologist	Reviewer should have extensive knowledge of water quality, sediment quality, sediment testing, and studies relative to inland navigation.
Environmental Resources	Familiar with integration of environmental evaluation and compliance requirements pursuant to ER 200-2-2, *Procedures for Implementing NEPA*, national environmental statutes, applicable executive orders, and other federal planning requirements, into the planning of Civil Works projects
Civil Engineer	Civil engineer with experience in Dredging; dredged material used to create shallow-water habitat; in-water structures (dike/revetments) for navigation; and a number of other closely associated technical subjects
Fishery Biologist	Reviewer should have particular knowledge of ESA fisheries in Pacific Northwest related to habitat effects associated with construction of in-water structures (dike/revetments), dredging for inland navigation projects; and/or beneficial use of dredged material to create shallow water habitat.

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

The ATR documentation in DrChecks^{sm} will include the text of each ATR concern, the PDT response, a brief summary of 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^{sm} with a notation that the concern has been elevated to the vertical team for resolution.

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

- Identify the document(s) reviewed and the purpose of the review;
- Disclose the names of the reviewers and organizational affiliations, including 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, as well as findings and conclusions;
- Identify and summarize any unresolved issues; and

- Include a verbatim copy of each reviewer's comments (either with or without specific attributions), or represent the views of the group as a whole, including any disparate and dissenting views.

An ATR may be certified when all ATR concerns are either resolved or referred to the vertical team for resolution, and ATR documentation is complete. The ATR Lead will prepare a Statement of Technical Review (Attachment 2), certifying that 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 Alternative Formulation Briefing (AFB), draft report, and final report.

6. INDEPENDENT EXTERNAL PEER REVIEW (IEPR)

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

- **Type I IEPR.** Type I IEPR reviews are managed outside of the Corps, 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. For decision documents where a Type II IEPR [Safety Assurance Review (SAR)] is anticipated during project implementation, safety assurance will also be addressed during the Type I IEPR (per EC 1165-2-209).

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

a. **Decision on IEPR.** This decision document will present a long-term, comprehensive, watershed-level approach for managing sediment inflow and deposition in the lower Snake River reservoirs. Such sediment interferes with the authorized functions of the lower Snake River system (commercial navigation; hydropower; irrigation water withdrawals; recreation and flood risk reduction). The decision document meets the risk and magnitude criteria for a Type I IEPR. Information presented in the decision document will not be based on novel methods or contain precedent-setting methods or models, and will not present complex challenges. The potential for controversy and uncertainties of predictions and outcomes is considered likely based on the past challenges. Costs associated with

this project would exceed the $45 million threshold for completing Type I IEPR, and the decision document requires an EIS. For these reasons, a Type I IEPR will be performed. Based on EC 1165-2-209 guidelines, the cost for the IEPR is estimated to be approximately $250,000. Type II IEPR (SAR) is not appropriate at this time, but may be appropriate in the future during implementation (design and construction) of any recommended alternative; if it is determined there are life safety concerns.

b. **Products to Undergo Type I IEPR.** The Draft PSMP and EIS, with technical appendices, will be submitted for an IEPR.

c. **Required Type I IEPR Panel Expertise.** The IEPR Panel will be comprised of individuals external to the Corps. These individuals will be chosen based on expertise, experience, and/or skills. The expertise/disciplines represented on the IEPR panel may be similar to those at the ATR team, but may be more specifically focused. In general, fewer disciplines and individuals are required unless a study is exceptionally large or complex. The Outside Eligible Organization (OEO) will determine the final participants on the IEPR panel.

Table 2 – Independent External Peer Review Team

Discipline	Experience Needed for Review
Hydrology and Hydraulics	Hydrologist or hydraulic engineer proficient with river hydraulics; 2D models (ADH and PTM); HEC-RAS, HEC-FDA, and associated one dimensional models; floodplain mapping; sediment transport analysis; and a number of other closely associated technical subjects.
Environmental Resources/Fisheries Biologist	Familiar with the Integration of environmental evaluation and compliance requirements pursuant to ER 200-2-2, *Procedures for Implementing NEPA*, national environmental statutes, applicable executive orders, and other federal planning requirements, into the planning of Civil Works projects. Reviewer should have particular knowledge of ecosystem restoration, and should also be familiar with efforts to create instream habitat for fish species. The reviewer should have experience in ecosystem restoration of arid regions, preferably experience in the arid sections of the Pacific Northwest.

d. **Documentation of Type I IEPR.** The IEPR panel will be selected and managed by an 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. The Corps 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 the Corps' response. The Review Report and the Corps' response will be made available to the public via 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 ER 1105-2-100, *Planning Guidance Notebook*, Appendix H. 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. The 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

The RMO is responsible for ensuring decision documents are coordinated with the Cost Engineering Directory of Expertise (DX), located in the Walla Walla District. The DX will assist in determining the expertise necessary for the ATR and Type I IEPR teams (if required), as well as in the development of the review charge(s). The DX will also provide Cost Engineering DX certification.

9. MODEL CERTIFICATION AND APPROVAL

The use of certified or approved models for all planning activities is mandated in EC 1105-2-412, *Planning: Assuring Quality of Planning Models*, to ensure models are technically and theoretically sound, compliant with Corps policy, computationally accurate, and based on reasonable assumptions. Planning models, for the purposes of the EC, are defined as any models and analytical tools planners use to define water resources management problems and opportunities, formulate potential alternatives to address the problems and take advantage of the opportunities, evaluate potential effects of alternatives, and 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, as well as the input and output data, is still responsibility of the users and is subject to DQC, ATR, and IEPR (if required).

Engineering models used in planning are not covered in E C1105-2-412, *Planning: Assuring Quality of Planning Models*. The responsible use of well-known and proven Corps-developed and commercial engineering software will continue and the professional practice of documenting software application and modeling results must be followed. As part of the Corps' 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, as well as the input and output data, is the responsibility of the users and is subject to DQC, ATR, and IEPR (if required).

a. **Planning Models.** Table 3 contains planning models anticipated to be used in the development of the PSMP/EIS:

- The Hydrologic Engineering Center's Flood Damage Reduction Analysis (HEC-FDA) Version 1.2.4 – This model, developed by the Corps' Hydrological Engineering Center, will assist the PDT in applying risk analyses methods for flood damage reduction studies as required by, Engineer Manual (EM) 1110-2-1419, *Hydrologic Engineering Requirements for Flood Damage Reduction Studies.*
-

Table 3 – Planning Models

Model Name and Version	Brief Description of the Model and How It Will Be Applied in the Study	Certification / Approval Status
HEC-FDA 1.2.4	The HEC-FDA program provides the capability for integrated hydrologic engineering and economic analysis for formulating and evaluating flood risk management plans using risk-based analysis methods. The program will be used to evaluate and compare the future with- and without-project plans.	Certified
HEC-FDA 1.2.5	The HEC-FDA 1.2.5 program was used in the final analysis of flood risk.	Certified

b. **Engineering Models.** Table 4 contains engineering models anticipated to be used in developing the decision document:

- Micro-Computer Aided Cost Estimating System, Second Generation (MCACES or MII): These are cost estimating models.
- The Hydrologic Engineering Center's River Analysis System (HEC-RAS): The function of this model is to complete one-dimensional hydraulic calculations.

Table 4 – Engineering Models

Model Name and Version	Brief Description of the Model and How It Will Be Applied in the Study	Approval Status
HEC-RAS 4.0	The HEC-RAS program provides the capability to perform one-dimensional steady and unsteady flow river hydraulics calculations. HEC-RAS provides the one-dimensional steady/unsteady flow hydraulic and sediment transport analysis required by this project. The HEC-RAS model was selected for this investigation in consultation with engineers at the Hydrologic Engineering Center during early formulation of the study. The USACE ERDC Adaptive Hydraulics (ADH) model was used for two-dimensional hydrodynamics and sediment transport at the confluence of the Snake and Clearwater Rivers. There is no need for other reservoir simulations (HEC RES-SIM) to meet the objectives of the study. Reservoir flood control operation is well defined by the existing Water Control Manual. The Hydraulic and Hydrology report includes a detailed review	Hydrology, Hydraulics, and Coastal Community of Practice (HH&C CoP) Preferred Model

	of the flood hydrology for Lower Granite Reservoir.	

10. REVIEW SCHEDULES AND COSTS

a. **The ATR Schedule and Cost.** The ATR process for this document will follow the timeline listed in Table 5. Timing is dependent on annual appropriations and, therefore, may change. It is estimated that the total ATR costs for this project will be $50,000.

Table 5– Review Task and Schedule

Task	Date
Revised Project Review Plan	Sept 2012
NWW PDT Completes Revision to PSMP/EIS	28 Sept 2012
Complete Agency Technical Review of Draft Environment Impact Statement (EIS) and PSMP	28 Oct 2012
Complete Joint NWW/NWD Review and Resolve ATR comments of Draft Environment Impact Statement (EIS) and PSMP	28 Nov 2012
File DEIS with EPA	7 Dec 2012
Start IEPR, ESA Consultation, NHPA, Water Certification, and Release Draft EIS and PSMP for Public Review	14 Dec 2012
Draft EIS Public Meeting	Late Dec/Early Jan
IEPR Schedule of Draft PSMP/EIS (Refer to Attachment 3)	
Summarize Public Comments/Draft Responses/Revise EIS	15 Feb 2013
Summarize IEPR Comments	29 Mar 2013
End of ESA Consultation, NHPA, Water Certification	28 Jun 2013
NWD Review of Final EIS and PSMP	12 Jul 2013
File FEIS with EPA	19 Jul 2013
Release Final EIS and PSMP for Public Review	26 Jul 2013
Summarize Comments/Draft Responses – Concurrent Prepare Draft Record of Decision (ROD)	3 Sep 2013
NWD Commander ROD Approval	17 Sep 2013

b. **Type I IEPR Schedule and Cost.** The Type I IEPR panel will produce a final Review Report, provided to the PDT not later than 60 days after the close of the public and agency review of the draft report. This report shall be scoped as part of the effort to engage the Type I IEPR panel.

The Walla Walla District will draft a response report to the IEPR final report to Northwestern Division. Upon satisfactorily resolving any relevant follow-on actions, the Corps will finalize its response to the Type I IEPR Review Report and will post both the Review Report and the Corps final responses to the public website. Based on guidelines in EC 1165-2-209, *Water Resources Policies and Authorities—Civil Works Review Policy*, the cost for the Type I IEPR is estimated to be approximately $250,000.

11. PUBLIC PARTICIPATION

The public and other agencies will have multiple opportunities to participate in the study. The first opportunity occurred at the technical workshops in the fall and winter of 2006/2007. There were public scoping meetings in February 2007. The Corps then established a Local Sediment Management Group (LSMG) for coordinating technical input in preparing the PSMP/EIS. The LSMG meets bi-annually to discuss status of studies; and is comprised of other federal agencies, tribal governments, state agencies, local agencies and non-governmental organizations. The Corps also maintains a PSMP/EIS site on the internet (*www.nww.usace.army.mil/psmp*) during the preparation of the draft EIS and LSMG meetings. The website provides project information, and the opportunity to submit comments and questions to the Corps regarding the PSMP/EIS. Public review of the draft report will begin following legal and MSC reviews. At least one public workshop or meeting will be held during the public and agency 45-day review period. Comments received during the public comment period for the draft report will be provided to the IEPR team prior to completion of the final Review Report, and to the ATR team before review of the final Decision Document. Upon completion of the review period, comments will be consolidated in a matrix and addressed, as needed. A summary of the comments and resolutions will be included in the final document.

12. 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 during the course of the study. The home district is responsible for keeping the Review Plan current. 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, will be posted to the Home District's webpage. The latest Review Plan will also be provided to the RMO and home MSC.

13. REVIEW PLAN POINTS OF CONTACT

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

- Richard Turner, Project Manager, Walla Walla District Planning Branch, (509) 527-7625, *richard.c.turner@usace.army.mil*
- Wes Walker, PCXIN Co-Technical Director, 304-399-6938, *wesley.w.walker@usace.army.mil*

ATTACHMENT 1: TEAM ROSTERS

PROJECT DELIVERY TEAM

NAME	TITLE/ORG.	PHONE	EMAIL
Richard Turner	Planner/Project Manager CENWW-PM-PD-PF	509-527-7625	Richard.C.Turner@usace.army.mil
James Gregory (Contractor)	Planner/Project Manager HDR Inc.	503-423-3700	James.Gregory@hdrinc.com
Sandy Shelin	Environmental Resource Specialist (NEPA) CENWW-PM-PD-EC	509-527-7265	Sandy.L.Shelin@usace.army.mil
David Trachtenbarg	Fisheries Biologist CENWW-PM-PD-EA	509-527-7238	David.A.Trachtenbarg@usace.army.mil
Gregg Teasdale, Ph.D., P.E.	Senior Hydraulic Engineer CENWW-EC-H	509-527-7291	Gregg.N.Teasdale@usace.army.mil
Steve Juul, Ph.D.	Water and Sediment Quality CENWW-EC-H	509-527-7281	Steve.T.Juul@usace.army.mil
Russ Heaton	Limnologist CENWW-EC-H	509-527-7282	Russ.D.Heaton@usace.army.mil
John Gent, P.E.	Geotechnical Engineer CENWW-EC-D-GT	509-527-7610	John.M.Gent@usace.army.mil
Kurt Friederich	Cost Engineer CENWW-EC-X	509-527-7512	Kurt.O.Friederich@usace.army.mil
Robert Herres	Geographic Information System (GIS) CENWW-EC-D-GE	509-527-7270	Robert.R.Herres@usace.army.mil
Craig Newcomb	Regional Economist CENWW-PM-PD-PF	509-527-7296	Craig.A.Newcomb@usace.army.mil
TBD	Cultural Resources CENWW-PM-PD-EC		@usace.army.mil
Robert Eskildsen	Counsel CENWW-OC	509-527-7708	Robert.D.Eskilden@usace.army.mil
Ann Glassley	Operations CENWW-OD-T	509-527-7115	Ann.K.Glassley@usace.army.mil

AGENCY TECHNICAL REVIEW TEAM

NAME	TITLE/ORG.	PHONE	EMAIL
Crorey Lawton	ATR Manager/Plan Formulation	504-862-1281	James.M.Lawton@usace.army.mil
Steve Martin	Environmental Resources	206-764-3631	Stephen.G.Martin@usace.army.mil
Keith O'Cain	Civil Design	504-862-2746	Keith.J.OCain@usace.army.mil
Cynthia Studebaker	Fishery Biologist	503-808-4788	Cynthia.A.Studebaker@usace.army.mil
Portland G2L1MR0	Limnologist	503-808-	@usace.army.mil

INDEPENDENT EXTERNAL PEER REVIEW TEAM

NAME	TITLE/ORG.	PHONE	EMAIL
TBD	Environmental Resources/Fisheries Biologist		
TBD	Hydraulics & Hydrology		

VERTICAL TEAM

NAME	TITLE/ORG.	PHONE	EMAIL
	District Support Planner		@usace.army.mil

PLANNING CENTER OF EXPERTISE - INLAND NAVIGATION

NAME	TITLE/ORG.	PHONE	EMAIL
Wes Walker	Program Manager, PCX Inland Navigation	304-399-6938	Wesley.W.Walker@usace.army.mil

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 _____ _____
Name Date
ATR Team Leader
Office Symbol/Company

SIGNATURE _____ _____
Name Date
Project Manager
Office Symbol

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

SIGNATURE _____ _____
Name Date
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 _____ _____
Name Date
Chief, Engineering Division
Office Symbol

SIGNATURE _____ _____
Name Date
Chief, Planning Division
Office Symbol

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

ATTACHMENT 3: INDEPENDENT EXTERNAL PEER REVIEW SCHEDULE

Task	Action	Due Date	
	NTP/ Review documents available	TBD	
Task 1	*Prepare draft work plan USACE Provide comments on draft work plan	Within 10 days of NTP Within 5 days of receipt of draft work plan	
Task 2	Recruit and screen up to 8 potential peer reviewers; prepare summary information Select no more than 4 external peer reviewers Submit list of selected peer reviewers Complete subcontracts for peer reviewers	Within 10 days of NTP Within 20 days of NTP Within 21 days of NTP Within 10 days of selecting peer reviewers	
Task 3	Government Kick off Meeting On- Site Meeting Final Review Meeting	Within 15 days of peer reviewer selection Within 10 days of Government Kick off Meeting Within 10 days of receipt of final peer review report	
Task 4	Review documents and charge sent to external peer reviewers External peer reviewers complete their review Collate comments from peer reviewers Convene consensus conference call	Within 1 day of peer reviewers being under contract Within 20 days of Contractor kick off meeting with panel Within 5 days of receipt of peer reviewer comments Within 7 days of receipt of peer reviewer comments	

Task	Action	Due Date	
Task 5	Prepare final panel comments *Submit final peer review report	Within 8 days of consensus conference call Within 10 days of receipt of final panel comments;	
Task 6	Input Final panel comments to DrChecks USACE inputs response to final panel comments in DrChecks (i.e., Evaluator) *External Peer Reviewers Respond to USACE comments in DrChecks. (i.e., Back Check)	Within 2 days of submitting final peer review report Within 10 days of Final Review Meeting Within 10 days of notification that USACE comments have been posted in DrChecks	

ATTACHMENT 4: REVIEW PLAN REVISIONS

Revision Date	Description of Change	Page / Paragraph Number
Sept 2012	Added immediate action and changed PSMP	P5, Sec C
Sept 2012	ATR team members	P7, Table 1
Sept 2012	New Schedule	P12, Table 3

ATTACHMENT 5: ACRONYMS AND ABBREVIATIONS

AFB	Alternative Formulation Board
ATR	Agency Technical Repair
Corps	US Army Corps of Engineers
DMMP/EIS	Dredged Material Management Plan/Environmental Impact Statement
DQC	District Quality Control
DX	Directory of Expertise
EC	Engineer Circular
EIS	Environmental Impact Statement
EM	Engineer Manual
ER	Engineer Regulation
ESA	Endangered Species Act
GIS	Geographic Information Systems
HEC-FDA	Hydrologic Engineering Center's Flood Damage Reduction Assessment
HEC-RAS	Hydrologic Engineering Center's River Analysis System
HH&C CoP	Hydrology, Hydraulics, and Coastal Community of Practice
HQUSACE	Headquarters, US Army Corps of Engineers
IEPR	Independent External Peer Review
LRD	Great Lakes and Ohio River Division (Corps)
LSMG	Local Sediment Management Group
MCACES-Mii	Micro-Computer Aided Cost Estimating System, Second Generation
MSC	Major Subordinate Command
NEPA	National Environmental Policy Act
NWD	Northwestern Division
OEO	Outside Entity Organization
OMRR&R	Operations, Maintenance, Repair, Replacement, and Rehabilitation
OSE	Other Social Effects
PCX	Planning Center of Expertise
PCXIN	Inland Navigation Planning Center of Expertise
PDT	Project Delivery Team
PMP	Project Management Plan
PSMP/EIS	Programmatic Sediment Management Plan/Environmental Impact Statement
RMC	Risk Management Center
RMO	Review Management Organization
ROD	Record of Decision
SAR	Safety Assurance Review
SET	Scientific and Engineering Technology
SOW	Scope of Work
SPF	Standard Project Flood
SWWRC	State of Washington Water Research Center
USFWS	US Fish and Wildlife Service
USGS	US Geological Survey

DEPARTMENT OF THE ARMY
WALLA WALLA DISTRICT, CORPS OF ENGINEERS
201 NORTH THIRD AVENUE
WALLA WALLA WA 99362-1876

REPLY TO
ATTENTION OF:

January 25, 2012

MEMORANDUM FOR RECORD

SUBJECT: Lewiston Levee Flood Risk Assessment

The Lewiston Levee system was constructed as a part of the Lower Granite Dam and reservoir project. These appurtenances to the dam were built at the confluence of the Clearwater and Snake Rivers to provide protection to the City of Lewiston, Idaho. The majority of the time these levees act as dikes providing protection from the permanent backwater of the reservoir. During times of high flows, Lower Granite Reservoir is drawn down and the slope on the reservoir pool noticeably increases. The appurtenances to the dam perform as riverine levees during these times reducing the flood risk associated with the high river flows. The levees were designed to provide protection up to the Standard Project Flood with five feet of freeboard. The Lewiston Levees presently are classified in the Dam Safety Program as a Dam Safety Action Classification (DSAC) 4.

The flood risk associated with these structures is moderate. The flood risk is not just related to the period duration of a peak winter or spring flood, but is intensified by these levees being continually loaded year round by the reservoir slack water. The risk of flooding from these levees is increased from the reduction in freeboard due to sediment deposition in the reservoir. This loss in freeboard increases the likelihood of levee overtopping or levee failure during high flow events. However, the levees are well maintained and in good condition receiving a DSAC 4 rating.

The presence of the Lewiston levees creates a notable life safety risk. The Lewiston business district and industrial areas are predominantly protected by the levee system. At any given time the water surface notably exceeds first floor elevations for many structures in the Business and Industrial districts. If the levee system were to fail during an extreme flood not only these areas but also significant residential areas would inundate totaling up to 900 acres. The community presently does not work with Corps Emergency Management office on flood risk exercises, and no Corps sponsored flood exercises have been conducted in the community in the recent past. However, the District is planning to conduct a flood exercise in Fiscal Year 2013. In the remote event of an unforeseen rapid failure of the levees, evacuation of the Business district could be limited and loss of life may be great.

The point of contact for this assessment is Mr. Tracy Schwarz (509) 527-7522.

For Mark Lindgren
Donna L. Street, P.E., P.M.P.
Chief Engineering and Construction Division

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