



REPLY TO
ATTENTION OF

CENWD-PDD

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

19 DEC 2012

MEMORANDUM FOR Commander, Portland District (CENWP-PM-F/Eric Stricklin)

SUBJECT: Review Plan (RP) Approval for the Willamette Basin Review, Coast Fork Willamette River Reallocation Report

1. Reference EC 1165-2-209, Civil Works Review Policy, 31 January 2012.
2. The enclosed RP for the Willamette Basin Review, Coast Fork Willamette River Reallocation Report been prepared in accordance with the reference guidance.
3. The RP has been revised to address Northwestern Division review comments. All comments have been back-checked and closed out.
4. I hereby approve this RP, which is subject to change as study circumstances require, consistent with study development under the Project Management Business Process. Subsequent revisions to this RP or its execution will require review by CENWD-PDD and approval by this office.
5. The RP should be posted to the internet and available for public comment.
6. Please contact Jeremy Weber, at 503-808-3858, if you have further questions regarding this matter.

Encl

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

REVIEW PLAN

WILLAMETTE BASIN REVIEW - COAST FORK WILLAMETTE RIVER REALLOCATION REPORT

PORTLAND DISTRICT

MSC Approval Date: 19 December 2012
Last Revision Date:



**US Army Corps
of Engineers®**

REVIEW PLAN

**WILLAMETTE BASIN REVIEW -
COAST FORK WILLAMETTE RIVER
REALLOCATION REPORT**

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1. PURPOSE AND REQUIREMENTS

a. **Purpose.** This Review Plan defines the scope and level of peer review for the Willamette Basin Review covering FY13 activities. FY13 activities focus on establishing municipal and industrial (M&I) storage pricing for the Willamette system and small-scale storage reallocation for the Coast Fork Willamette River. This Review Plan shall be updated for work in FY 14 and beyond for feasibility study.

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 2010
- (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) Willamette Basin Review Project Management Plan, ## November 2012
- (6) Northwestern Division Regional Business Process

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).

- (1) District Quality Control/Quality Assurance (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 Major Subordinate Command (MSC).
- (2) 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 US Army Corps of Engineers (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 a designated Review Management Organization (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. To assure independence, the leader of the ATR team shall be from outside the home MSC.

- (3) 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. 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 is generally for decision documents and Type II is generally for implementation products.
- (a) 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.
- (b) 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.
- (4) Policy and Legal Compliance Review. Decision documents will be reviewed throughout the study process for their compliance with law and policy. These reviews culminate in Washington-level 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 Chief of Engineers. Guidance for policy and legal compliance reviews is addressed further in Appendix H, ER 1105-2-100, Planning Guidance Notebook. When policy and/or legal concerns arise during DQC or ATR that are not readily and mutually resolved by the PDT and the reviewers, the District will seek issue resolution support from the MSE and HQUSACE in accordance with the procedures outlined in Appendix H, ER 1005-2-100. IEPR teams are not expected to be knowledgeable of Army and administration policies, nor are they expected to address such concerns. The home district Office of Counsel is responsible for the legal review of each decision document and signing a certification of legal sufficiency.
- (5) Model Certification/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. Engineering software is being addressed under the Engineering and Construction (E&C) Science and Engineering Technology (SET) initiative. Until an appropriate process that documents the quality of commonly used engineering software is developed through the SET initiative, engineering activities in support of planning studies shall proceed as in the past. 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. The use of engineering models is also subject to DQC, ATR, and IEPR (if required).

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 the Planning Center of Expertise for Water Management and Reallocation Studies.

The RMO will coordinate with the Hydropower PCX to ensure the appropriate expertise is included on the review teams to assess the adequacy of the hydropower impacts analysis.

3. STUDY INFORMATION

- a. Decision Document.** The decision document resulting from FY13 work is the Coast Fork Willamette River, Oregon Water Supply Reallocation Report. The purpose of the decision document is to provide the findings of a Water Supply Reallocation Study authorized in Public Law 85-500, Title III, Water Supply Act of 1958, as amended (72 Stat, 319). The current study is in response to requests for storage for municipal and industrial (M&I) water supply by the Oregon Water Resources Department. It is anticipated that an Environmental Assessment is the appropriate National Environmental Policy Act (NEPA) document required for the study.

b. Study/Project Description. The U.S. Army Corps of Engineers (Corps) operates a system of 13 dams and reservoirs in Oregon’s Willamette River Basin that provide many benefits to the region and Nation. The Willamette Valley Project was authorized by the Flood Control Acts of 1938, 1950, and 1960. The 1938 Act led to the construction of Fern Ridge, Dorena, Cottage Grove, Detroit and Lookout Point dams. The 1950 Act greatly expanded the Willamette Project both in the number of projects and scope, with the Willamette Basin the subject of Volume 5 of the 8-volume Columbia River Basin-wide authorization document (House Document 531). The 1950 Act reauthorized the earlier dams, including Green Peter that had not been started, and added the following dams: Big Cliff Dam on the North Santiam River, Cougar and Blue River dams on the McKenzie River, Hills Creek and Dexter dams on the Middle Fork Willamette River, and Fall Creek Dam on Fall Creek. Figure 1 below shows a map of the Willamette Basin system of reservoirs.

Water supply became an added project purpose under the authority of the Water Supply Act of 1958 and surplus water was authorized by the Rivers and Harbors Act of 1944. The cities of Creswell and Cottage Grove, through the Oregon Water Resources Department, have expressed interest in purchasing up to 499 acre-feet of existing conservation storage for M&I water supply. Both cities are in the area of Cottage Grove and Dorena dams in the Coast Fork Willamette subbasin, located in the upper Willamette River basin in Lane County, Oregon.

Cottage Grove is a small multi-purpose storage project on the Coast Fork of the Willamette River and has no powerhouse. Construction of Cottage Grove was complete in September 1942 and does not have a powerhouse. The earthfill dam has a concrete spillway. Cottage Grove Lake is popular for water-related recreation in summer. Pertinent project information is shown in Table 1.

Table 1. Cottage Grove Project Pertinent Information

Date Completed	1942
River Mile/Stream	29.7 Coast Fork Willamette River
Drainage Area (square miles)	104
Dam Height (feet)	95
Dam Crest (elevation feet MSL)	808.0
Maximum Pool	802.6 feet (48,000 acre-feet)
Spillway Crest	791.0 feet (32,900 acre-feet)
Maximum Conservation Pool	790.0 feet (31,800 acre-feet)
Minimum Conservation Pool	750.0 feet (2,880 acre-feet)
Spillway	Uncontrolled concrete gravity, ogee (40,800 cfs hydraulic capacity)
Regulating Outlets	Three (3,860 cfs combined hydraulic capacity)

Corps 2009. Elevations listed in mean sea level.

Dorena is a multi-purpose storage project on the Row River. Construction of Dorena Dam was complete in 1949 and includes a powerhouse currently under construction. The dam is earthfill with a concrete spillway. The dam controls the Row River and reduces flooding downstream on the Willamette River. Dorena Lake is popular for water-related recreation in summer. Pertinent project information is shown in Table 2.

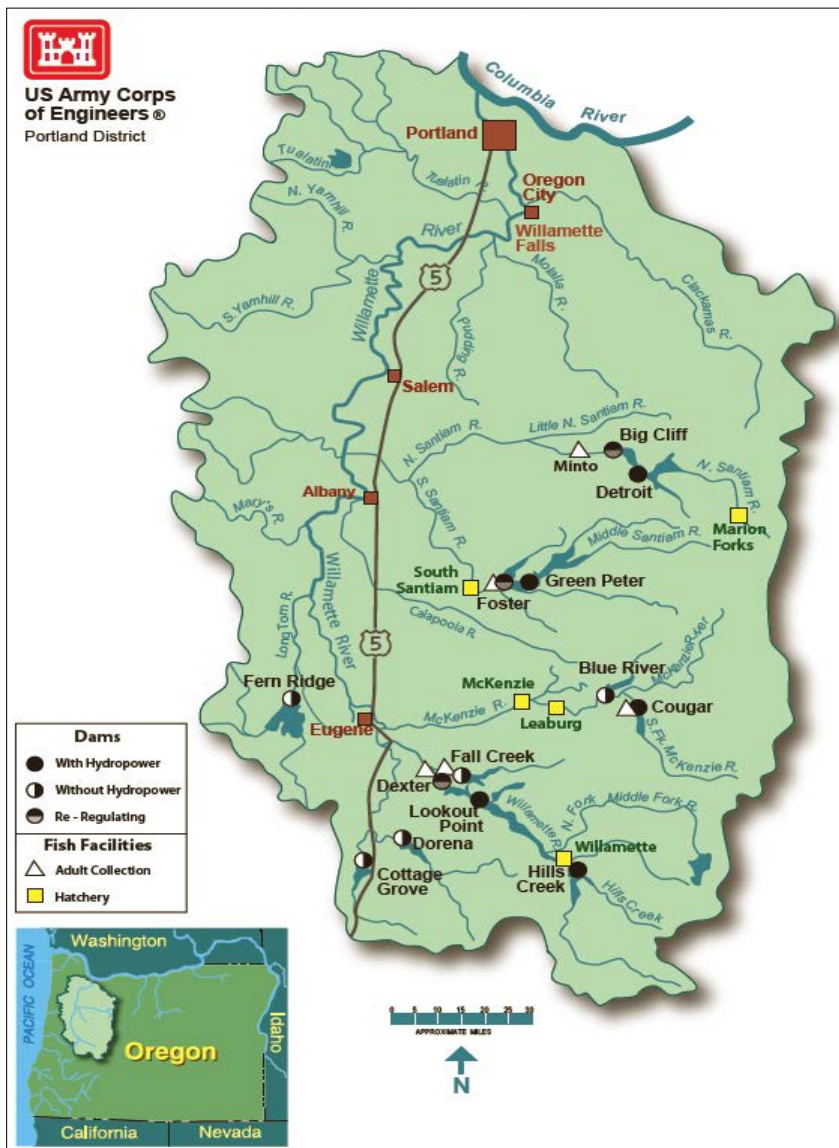
Both projects have their own conservation storage pools. The projects are not in series; however, they are operated as a system with the other 11 dams in the Willamette Basin for the purposes of flood risk reduction and meeting minimum flows on the Mainstem Willamette.

Table 2. Dorena Project Pertinent Information

Date Completed	1949
River Mile/Stream	7.5 Row River
Drainage Area (square miles)	265
Dam Height (feet)	145
Dam Crest (elevation feet MSL)	865.7
Maximum Pool	860.0 feet (131,000 acre-feet)
Full Pool/Spillway Crest	835.0 feet (77,500 acre-feet)
Maximum Conservation Pool	832.0 feet (71,900 acre-feet)
Minimum Conservation Pool	770.5 feet (7,000 acre-feet)
Spillway	Uncontrolled concrete gravity, ogee (97,500 cfs hydraulic capacity)
Regulating Outlets	Five (9,275 cfs combined hydraulic capacity)

Corps 2009. Elevations listed in mean sea level.

Figure 1. Map of the Willamette Basin Projects



The ultimate outcome of FY13 will be a reallocation report documenting the proposal to reallocate existing conservation storage from multiple-use to a single use (M&I water supply), required NEPA documentation, and all supporting documentation for submission to the Northwestern Division Engineer. The study will be conducted in coordination with the Water Supply Planning Center of Expertise and the Hydropower Analysis Center (HAC), two USACE Centers of Expertise. The users will submit demand and needs analysis to Portland District. Portland District will perform ResSim modeling analysis and will document recreation, environmental, hydropower benefits and revenues foregone, and financial impacts of the proposed reallocation and perform NEPA compliance.

c. Factors Affecting the Scope and Level of Review. EC 1165-2-209 stipulates that the appropriate scope and level of review be made as a risk-informed decision and provides criteria for doing so. This review plan for the Coast Fork Willamette River Water Supply Reallocation Study includes District Quality Control (DQC), Agency Technical Review (ATR), as well as Policy and Legal Review. A discussion of the factors affecting the risk informed decisions for these levels of review and reasons Independent External Peer Review (IEPR) is not included in this Review Plan are presented below and in Section 6.

- Is expected to have a total project cost of approximately \$0.40 million which is less than \$45 million;
- Is not expected to receive a request from the head of any Federal or state agency for either an EIS or an IEPR.
- Is not expected to be based on novel methods, does not present complex challenges for interpretation, does not contain precedent-setting methods or models, and will not present conclusion that are likely to change prevailing practices.
- Is not expected to be controversial; there is no expectation that there will be any public dispute as to the size, nature or effects of the project.
- It is not expected that there will be any public dispute as to the economic or environmental cost or benefit of the project. No governmental agencies have demonstrated any concerns to date;
- Is not expected to have adverse impacts on scarce or unique cultural or historic resources;
- Is not expected to have adverse impacts on any fish or wildlife species or their habitat whether or not they are listed as endangered or threatened under the Endangered Species Act of 1973;
- Is not likely to contain influential scientific information.

d. In-Kind Contributions. The non-federal sponsor will be responsible for 50% of the total cost of this study.

4. DISTRICT QUALITY CONTROL (DQC)

The RMO for DQC is the home District. In accordance with EC 209 all work products and reports, evaluations, and assessments shall undergo necessary and appropriate District Quality Control (DQC).

DQC is the internal review process of basic science and engineering work products focused on fulfilling the project quality requirements defined in the project Quality Management Plan (QMP) of the Project Management Plan (PMP).

The DQC is the internal quality control process performed by the supervisors, senior staff, peers and the PDT within the home District and is managed by the home District. DQC consists of;

- a. Quality Checks and reviews. These are routine checks and reviews carried out during the development process by peers not responsible for the original work. These are performed by staff such as supervisors, team leaders or other senior designated to perform internal peer reviews.
- b. PDT reviews. These are reviews by the production team responsible for the original work to ensure consistency and coordination across all project disciplines.

DQC will be performed on the products in accordance with the QMP within the PMP.

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 will be performed throughout the study in accordance with the District and MSC Quality Management Plans. Certification of the ATR will be provided prior to the District Commander signing the final report. Products to undergo ATR include the hydrology and hydraulics modeling and yield analysis, the draft reallocation report, and NEPA documentation.

b. Required ATR Team Expertise.

ATR Team Members/Disciplines	Expertise Required
ATR Lead / Planning	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 as outlined in the “ATR Lead Checklist” developed by the National Planning Centers of Expertise. The ATR lead will also serve as the Planning reviewer. They should therefore be a senior water resources planner with experience in water supply reallocation studies.
Hydrology	The hydrologic engineering reviewer will be an expert in the field of hydrology and have a thorough understanding of the HEC-ResSim computer model. Additionally, the hydrologic engineering reviewer must have expertise in storage-yield calculations.
Economics	The economics reviewer will be an expert in the field of multi-purpose project (reservoir) economics.
NEPA	The NEPA compliance reviewer will be an expert in the environmental and cultural resources requirements of NEPA with

experience in fulfilling these in water supply reallocation studies.
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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 been properly followed;
- (3) The significance of the concern – indicate the importance of the concern with regard to its potential impact on the plan selection, recommended plan components, efficiency (cost), effectiveness (function/outputs), implementation responsibilities, safety, Federal interest, or public acceptability; and
- (4) The probable specific action needed to resolve the concern – identify the action(s) that the reporting officers must 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 H&H models, 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 Portland District has concluded that the Coast Fork Willamette Water Supply Reallocation Report does not require independent external peer review (IEPR) as defined in the Water Resources Development Act (WRDA) of 2007 (Public Law 110-114), and EC 1165-2-209 for the following reasons:
- a. WRDA 2007 Section 2034, Paragraph (3)(A)(i), states that Independent External Peer Review is mandatory if a project has an estimated total project cost of more than \$45 million and is not determined by the Chief of Engineers to be exempt. The total study cost is estimated to be \$400,000 for FY13. The FCSA and total study cost will be amended based on completion of the BiOp and reactivation of this project. The total study cost will be well below \$45 million. The recommended plan is not expected to include any implementation costs (e.g., mitigation, recreation facilities replacement).
 - b. EC 1165-2-209, Appendix D, requires Independent External Peer Review (IEPR) if the project poses a significant threat to human life. No significant threat is anticipated as a result of the recommended plan. Public safety is paramount when considering any action impacting USACE dams and reservoirs. Cottage Grove Dam Safety Action Classification is DSAC III associated with

seepage and piping at the left abutment foundation. EC 1165-2-210, Water Supply Storage and Risk Reduction Measures for Dam Safety, permits reallocation of storage of the conservation pool of DSAC I, II, and III dams provided that non-Federal entities are informed in writing of the DSAC rating, current status of the dam and reservoir, that water supply storage may be reduced by Interim Risk Reduction Measures (IRRM) or other remediation; and that, upon execution of a water storage or surplus water agreement, the non-Federal entity will be required to share in the costs of IRRM and other remediation. However, this EC prohibits reallocation that would require raising the conservation pool for such classified dams. For these reasons, raising the conservation pool into the flood control pool is not a viable alternative of this Water Supply Reallocation study. Because the reallocation of storage in the Coast Fork Willamette River projects will not increase the life safety risk of the project, the Portland District Chief of Engineering does not think there is a significant threat to human life.

- c. EC 1165-2-209, Appendix D, requires IEPR if the Governor of the affected state requests an IEPR. No such request is anticipated for the recommended plan.
- d. EC 1165-2-209, Appendix D, required IEPR if the head of a Federal or state agency charged with reviewing the project study has requested a review because he/she has determined that the project is likely to have a significant adverse impact on resources under jurisdiction of the agency after implementation of the proposed mitigation plans. The study will include alternatives of reallocation from the conservation pool which defined purposes. The conservation pool is simply multi-purpose at this time. The anticipated pool level modifications in most years are on the order of inches to one foot in the summer causing no significant effect to recreation.
- e. EC 1165-2-209, Appendix D, requires IEPR if there is a public dispute of size/nature/effects of the project. Through scoping meetings and comments received to date, no substantial comments indicative of public controversy or dispute have been received related to reallocation of storage in the Coast Fork Willamette projects. Periodic meetings with the M&I users will keep them up to date with the study process to limit disagreement with the recommended plan.
- f. EC 1165-2-209, Appendix D, requires IEPR if there is public dispute of economic/environmental benefits/costs of the project. No public dispute is known or anticipated in association with the recommended plan.
- g. EC 1165-2-209, Appendix D, requires IEPR if the project has novel methods/complexity. No novel or unusually complex methods will be used to arrive at the recommended plan. The study analyses, while complex, are well within the scope that is typical of similar reallocation studies. Most reallocation studies nationwide reallocate from the conservation pool. Therefore, this study report will not contain novel or precedent-setting approaches or influential scientific information.
- h. EC 1165-2-209, Appendix D, requires IEPR if the project has precedent setting models/policy changing conclusions. The recommended plan will utilize models developed in conjunction with the Hydrologic Engineering Center and will be policy compliant.
- i. EC 1165-2-209, Appendix D, required IEPR if the Chief of Engineers determines Type I IEPR is warranted. The Chief of Engineers has not made such a determination.

Per guidance contained in Section 15.d of EC 1165-2-209, when a decision document does not trigger a mandatory Type I IEPR, a risk-informed recommendation will be developed. The process shall consider the consequences of non-performance on project economics, the environment, and social well-being (public safety and social justice), as well as indicate whether the product is likely to contain influential scientific information or be a highly influential scientific assessment, or involve other issues that provide a rationale for determining the appropriate level of review. Furthermore, the recommendation must

make a case that the study is so limited in scope or impact that it would not significantly benefit from IEPR.

The Portland District has considered the criteria above in its recommendation to exclude this action from IEPR. This action is a standard reallocation study involving standardized methods and well-established criteria for determination of water supply demand, analysis of alternatives, and derivation of user costs. There is therefore minimal risk of substantial non-performance related to project economics. With regard to impacts on the environment, a draft environmental assessment (EA) and finding of No Significant Impacts (FONSI) are being prepared in compliance with the National Environmental Policy Act (NEPA). If a FONSI is ultimately determined to be appropriate for signature by the District Commander, impacts to the environment are, by definition, determined to be not significant. Accordingly, analysis of environmental impacts does not involve a large degree of uncertainty or high risk for underestimation. Health and safety would not be impacted through the recommended plan. Social justice considerations are being addressed through determination of low income eligibility determinations in accordance with Section 322 of WRSA 1990. Given these considerations, the risk of non-performance with regard to matters pertaining to social well-being would be anticipated as minimal.

This standard reallocation study does not involve novel, untested, or influential scientific information or methods. The study analyses, while complex, are within the typical scope of similar reallocation studies. Methodology and required data and analyses are well-established in USACE guidance for such studies.

A previously developed Hydrologic Engineering Center Reservoir System Simulation (HEC-ResSim) model will be revised to include updated flow and returns data for this study. Cottage Grove and Dorena Dams are on the Coast Fork Willamette River and operated as part of the Willamette Valley system for flood damage reduction and meeting tributary and mainstem conservation season flows. Therefore, a Willamette system HEC-ResSim model is adequate for analysis and assessment of hydropower impacts.

Outputs from the HEC-ResSim model will be used by the Hydropower Analysis Center to provide estimates of hydropower impacts for the evaluated changes in storage allocation for water supply. Hydropower impacts to other projects within the Willamette River Basin will be evaluated using the method employed by the Willamette Biological Opinions (BiOp) Configuration and Operations Plan (COP) team when looking at system hydropower impacts of BiOp implementation. This methodology includes input from Bonneville Power Administration and uses the HYDSIM and Aurora models in the analysis. HYDSIM is a hydro regulation model that simulates the month to month operation of the Pacific Northwest (PNW) Hydropower System in accordance with operating criteria. Aurora is a pricing model used to determine the value of power generated at Willamette Valley projects. HYDSIM will be used to determine monthly average changes to hydropower generation and then Aurora will be used to estimate the revenue changes for Bonneville Power Administration. During nearly all years there will be no significant changes to the hydropower generation at other Willamette Basin hydropower projects.

Recreation is an originally authorized project purpose and impacts to this purpose will be evaluated. Methodology for evaluating potential recreation impacts will be similar to that employed by the Willamette Biological Opinions (BiOp) Configuration and Operations Plan (COP) team when looking at system recreation impacts of BiOp implementation. The recreation analysis focuses on describing the recreational opportunities at the affected reservoirs, collecting the best available information on current and past recreation demand (visitation) at these lakes, and assessing the impact of operational alternatives on recreation facilities, principally boat ramps. It is anticipated that reallocating such a

small portion of the conservation storage would not result in a significant impact to this originally authorized project purpose.

The limited scope of this action, use of well-established criteria, minimal anticipated environmental impacts, and low uncertainty, are all indicative of an action that would benefit little from further review by IEPR. While providing little benefit, a requirement for IEPR would, however, result in the delay of delivery of reliable water to the Cities of Creswell and Cottage Grove.

Finally, the recommended plan would not significantly affect project operations in terms of flood risk reduction, dam safety, fish and wildlife, irrigation, water quality, recreation, or system hydropower, recreation. Environmental impacts will be addressed in the draft EA/FONSI for the project.

Portland District requests that the RMO and Division Commander endorse the request for exclusion from IEPR and forward a request to the Regional Integration Team (RIT) for their endorsement and approval by the Director of Civil Works per guidance in EC 1165-2-209.

Type II IEPR, the Safety Assurance Review, are conducted on design and construction activities for any hurricane and storm risk management and flood risk management projects, as well as other projects where existing and potential hazards pose a significant threat to human life. Reallocation of storage does not meet the criteria for Type II IEPR.

b. Products to Undergo Type I IEPR. Not Applicable.

c. Required Type I IEPR Panel Expertise. Not-Applicable.

d. Documentation of Type I IEPR. Not-Applicable.

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

The Coast Fork Willamette River Reallocation Study will not include any documents that need to be coordinated with the Cost Engineering DX, located in the Walla Walla District.

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).

- a. **Planning Models.** No planning models are anticipated to be used in the development of the decision document.
- b. **Engineering Models.** The following engineering models are anticipated to be used in the development of the decision document: HEC-ResSim 3.2, HYDSIM and Aurora.

Model Name and Version	Brief Description of the Model and How It Will Be Applied in the Study	Approval Status
HEC-ResSim 3.2	The Hydrologic Engineering Center’s Reservoir Simulation aids engineers and planners in predicting the behavior of reservoirs. ResSim has been used to determine changes to reservoir operations under numerous studies. Version 3.2 will also be used to determine the storage/yield relationship of a multi-purpose project for water supply reallocation reports and agreements.	Will be reviewed during DQC and ATR.
HYDSIM	HYDSIM is a hydro regulation model that simulates the month to month operation of the Pacific Northwest (PNW) Hydropower System in accordance with operating criteria. HYDSIM will be used to determine monthly average changes to hydropower generation. This model will be run by Bonneville Power Administration (BPA) and review by HAC.	Will be reviewed during DQC and ATR.
Aurora	Aurora is a pricing model used to determine the value of power generated at hydropower projects. As part of Bonneville Power Administration’s rate setting process, market prices forecasts for the Mid-C market are prepared using the Aurora pricing model. These price forecasts are used to estimate the amount of revenue that BPA will receive in the secondary market. Price forecasts are forecasted both monthly and diurnally (defined as Heavy Load Hours and Light Load Hours) in nominal dollars. Aurora will be used to estimate the revenue changes for BPA. This model will be run	Will be reviewed during DQC and ATR.

	by BPA and review by HAC.	
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10. REVIEW SCHEDULES AND COSTS

a. **ATR Schedule and Cost.** Portland District shall provide labor funding by cross-charge labor codes and travel funds, if needed, through a government order. The Project Manager will work with the ATRT Leader to ensure that adequate funding is available and is commensurate with the level of review needed. Any funding shortages will be negotiated on a case by case basis and in advance of a negative charge occurring. The ATRT leader shall provide organization codes for each team member and a responsible financial point of contact (CEFMS responsible employee) for creation of labor codes. Reviewers shall monitor individual labor code balances and alert the ATRT Leader to any possible funding shortages. Each ATR reviewer will have \$5000 with an additional \$3000 for the ATRT lead to set up the review team. Once actual costs are determined, this RP will be revised. Until then, ATR and assistance is estimated at \$30,000 for the study. An estimated schedule is presented below pending approval of the Review Plan and availability of reviewers.

Task	Date
H&H Model and System Pricing ATR	March 1, 2013 – March 15, 2013
Evaluate H&H and System Pricing ATR	March 18, 2013 – March 22, 2013
H&H and System Pricing ATR Back Check	March 25, 2011 – March 29, 2013
Agency Technical Review of Draft Document	June 11, 2013 – June 25, 2013
PDT Evaluation of ATR	June 26, 2013 – July 9, 2013
Back Check and Close Out of ATR	July 10, 2013 – July 18, 2013

- b. **Type I IEPR Schedule and Cost.** Not-Applicable.
- c. **Model Certification/Approval Schedule and Cost.** Engineering models used for the study will be certified for use by the ATR team.

11. PUBLIC PARTICIPATION

This study will include a public involvement program designed to meet NEPA requirements; solicit public and government agency input about the water supply reallocation; ensure that public and agency concerns are addressed; and keep the public and agencies involved in the development of the study and proposed reallocation. Agencies with regulatory review responsibilities will be contacted for coordination as required by applicable laws and procedures during the NEPA scoping process. The ATR team will be provided copies of public and agency comments. Federal agencies to be solicited for comments include the US Fish & Wildlife Service, U.S. Forest Service, and the Environmental Protection Agency. State and local agencies and organizations to be included in the coordination are the Oregon Water Resources Department, Oregon Department of Fish & Wildlife, and Oregon Department of Environmental Quality, and area tribes.

The draft report will be placed on the Portland District home page for public comment. Public review of the draft report will overlap the Agency Technical Review. Any significant public review comments will be provided to the ATR Team for review and inclusion in the final report.

12. REVIEW PLAN APPROVAL AND UPDATES

The Northwestern Division 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 will be 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.

13. REVIEW PLAN POINTS OF CONTACT

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

- Eric Stricklin, Portland District Project Manager, 503-808-4757
- Jim Fredericks, NWD Water Supply Business Line Manager, Northwestern Division, 503-808-3856
- Brad Hudgens, Associate Director Water Management and Reallocation Studies Planning Center of Expertise, 469-487-7033

ATTACHMENT 1: TEAM ROSTERS

Project Delivery and Vertical Team

Portland District PDT			
Project Manager	Eric Stricklin	503-808-4757	Eric.T.Stricklin@usace.army.mil
Tech Lead/Reservoir Regulation	Laurie Nicholas	503-808-4887	Laurie.Nicholas@usace.army.mil
Reservoir Regulation	Kathrine Warner	503-808-4885	Kathryn.L.Warner@usace.army.mil
Hydrology	Cindy Bowline	503-808-4832	Cindy.M.Bowline@usace.army.mil
Economist	Louis Landre	503-808-4733	Louis.H.Landre@usace.army.mil
Environmentalist	Kristine Lightner	503-808-4748	Kristine.A.Lightner@usace.army.mil
Dam Safety	Salina Hart	503-808-4894	Salina.N.Hart@usace.army.mil
Chief, Reservoir Regulation Section	Bruce Duffe	503-808-4886	Bruce.J.Duffe@usace.army.mil
Chief, Hydraulic & Hydrology Branch	Robert Buchholz	503-808-4870	Robert.J.Buchholz@usace.army.mil
Chief, Project Management & Planning	Laura Hicks	503-808-4703	Laura.L.Hicks@usace.army.mil
Hydroelectric Design Center			
Hydropower Analysis Center	Russel Davidson	503-808-4222	Russell.L.Davidson@usace.army.mil
MSC - Northwestern Division (NWD)			
NWD Water Supply Business Line Manager	Jim Fredericks	503-808-3856	Jim.K.Fredericks@usace.army.mil
RMO - Water Management and Reallocation Studies PCX			
Director, WMRS PCX	Bradley Hudgens	469-487-7033	Bradley.T.Hudgens@usace.army.mil
RIT - NWD			
NWD Chief, Planning, Env, Fish Policy Division	David Combs	503-808-3828	David.L.Combs@usace.army.mil

Agency Technical Review Team

Table will be populated as ATR team members are assigned.

ATR Team Member Discipline	Name	Organization	Contact Information	Credentials/Years of Experience
Plan Formulation*	TBD			
Hydrology & Hydraulics	TBD			
Economics	TBD			
NEPA Specialist	TBD			

* designated ATR Team Lead

ATTACHMENT 2: SAMPLE STATEMENT OF TECHNICAL REVIEW FOR DECISION 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 DrCheckssm.

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

SIGNATURE _____ Date _____
Name
Project Manager
Office Symbol

SIGNATURE _____ Date _____
Name
Architect Engineer Project Manager¹
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

ATTACHMENT 4: ACRONYMS AND ABBREVIATIONS

<u>Term</u>	<u>Definition</u>	<u>Term</u>	<u>Definition</u>
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
DSAC	Dam Safety Action Classification	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
FRM	Flood Risk Management	QMP	Quality Management Plan
FSM	Feasibility Scoping Meeting	QA	Quality Assurance
GRR	General Reevaluation Report	QC	Quality Control
Home District/MSD	The District or MSD responsible for the preparation of the decision document	RED	Regional Economic Development
HQUSACE	Headquarters, U.S. Army Corps of Engineers	RMC	Risk Management Center
IEPR	Independent External Peer Review	RMO	Review Management Organization
IRRM	Interim Risk Reduction Measures	RTS	Regional Technical Specialist
ITR	Independent Technical Review	SAR	Safety Assurance Review
M&I	Municipal & Industrial	USACE	U.S. Army Corps of Engineers
MSD	Major Subordinate Command	WRDA	Water Resources Development Act