
APPENDIX D

Project Management Plan
Integrated General Reevaluation Report
And
Environmental Impact Statement Supplement
For
Grays Harbor GI
Grays Harbor County, Washington

REVIEW PLAN

February 2011



US ARMY CORPS
OF ENGINEERS®
SEATTLE DISTRICT



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1 PURPOSE

1.1 PURPOSE

The purpose of this document is to present a Review Plan (RP) for the Grays Harbor General Reevaluation Report and Environmental Impact Statement Supplement and all associated documents and components for the deepening of the navigational channel in Grays Harbor, Washington authorized under Section 202 of Public Law 99-662, the Water Resources Development Act of 1986 (WRDA 86). The Grays Harbor, Washington Navigation Improvement Project is a single purpose deep draft navigation project. This RP is Appendix D of the Project Management Plan (PMP) and is used to document and assign the appropriate level review independence, establish procedures, and assign responsibilities for conducting the review of the decision document to ensure the quality and credibility of all conclusions, recommendations, and decisions presented. The level of review is determined through a thorough risk informed decision process.

1.2 REQUIREMENTS

Engineering Circular (EC) 1165-2-209 Civil Works Review Policy (31 January 2010) outlines procedures for conducting technical reviews and ensuring the quality and credibility of decision and implementation documents. The subject guidance includes procedures for conducting District Quality Control (DQC), Agency Technical Review (ATR) and Independent External Peer Review (IEPR) when appropriate. These various review elements shall be documented in a RP as part of the Project Management Plan (PMP).

1.3 REFERENCES

- Engineering Circular (EC) 1165-2-209, Civil Works Review Policy, 31 Dec 2009
- Engineering Regulation (ER) 1105-2-100, Planning Guidance Notebook
- EC 1105-2-407, Planning Models Improvement Program: Model Certification, 31 May 2005
- ER 1110-2-12, Quality Management, 30 Sep 2006
- ER 1105-2-101 Risk Analysis – Flood Risk Management Risk Analysis.pdf
- Cost and Schedule Risk Analysis Guidance 17 May 2009
- Project Management Plan for the Grays Harbor Navigation Improvement Project General Investigation

2 PROJECT BACKGROUND

2.1 STUDY AUTHORIZATION

The “Grays Harbor, Washington Navigation Improvement” construction project was authorized in November 1986 by Section 202 of Public Law 99-662, the Water Resources Development Act of 1986 (WRDA 86), based on the approved feasibility study completed in 1982. The project has

an authorized project depth of -38 feet mean lower low water (MLLW) and was estimated to cost \$97.2 million (\$102.7M in 1988 \$; \$112.6M “fully-funded authorized cost” for original construction scope and schedule; \$131.74M “maximum project cost” before the project needs to be congressionally re-authorized). The non-federal sponsor is the Port of Grays Harbor.

2.2 STUDY LOCATION

The study area includes Grays Harbor, which is located at the mouth of the Chehalis River and extends upstream to the Port of Grays Harbor. Grays Harbor is located on the southwestern coastline of Washington, approximately 110 miles south of the entrance to the Strait of Juan De Fuca and 45 miles north of the Columbia River’s outfall. The cities of Aberdeen, Hoquiam, Ocean Shores, and Westport are located within the study area. Twin jetties secure the mouth of the harbor with a deep draft channel over 22 miles long from the Pacific Ocean near Westport inland to Cow Point (near Aberdeen). The two jetties are 17,200 feet and 13,734 feet long (north and south, respectively) and made of large rock. The deep draft channel is 1,000 feet wide over the entrance bar and through the entrance channel reach and decreases to 350 feet wide near the Port of Grays Harbor terminals at Cow Point. The channel and jetties were authorized under the River and Harbor Act of 1896, modified by subsequent acts.

The segment that is being evaluated for deepening is from the entrance channel inland to Cow Point. This segment of the navigation channel is currently authorized to -38 feet MLLW, but was only constructed to and is maintained at -36 MLLW.

2.3 STUDY PURPOSE

The Grays Harbor, Washington Navigation Improvement Project is a deep draft navigation single purpose project. The General Reevaluation Report and Environmental Impact Statement Supplement will evaluate the federal interest in deepening the navigation channel to increase Net Economic Benefits (NED) by facilitating more cost effective deep draft commercial navigation while taking into account the environmental impacts of such a project. The report will include a net benefit analysis and a full environmental analysis of deepening the existing channel. The resulting recommended plan will be effective, efficient, reasonably maximize net NED benefits, and minimize environmental impacts.

2.4 SCOPE

The study will evaluate a full range of transportation cost saving alternatives that include both channel deepening and other cost saving measures. These measures and alternatives will be optimized and a trade-off analysis will be performed. Project construction costs are currently estimated to be \$19 million.

2.5 POTENTIAL RISK AND UNCERTAINTIES

Levels of contamination (dioxin) from upstream lumber product processing plants may result in unacceptable levels of contaminants in the dredged materials, which could require expensive disposal methods. Although the processing plants have been closed for 20 or more years, traces

of contamination continue to be uncovered. Deepening the channel would expose undisturbed material which could include these contaminants.

Impacts to fish and wildlife, including threatened and endangered species, are unknown at this time. NWS preliminary analysis indicates that non-ESA covered fish and their prey resources, and invertebrate species other than crabs, would not be seriously impacted by the project. Crab resources were determined to be impacted in the initial deepening and widening project, and are anticipated to continue to be affected. As far as ESA species, new species are listed that were not in 2007 that could be impacted, including the green sturgeon and eulachon.

3 CENTER OF EXPERTISE SUPPORT

The Seattle District has coordinated the project with the National Deep Draft Navigation Center of Expertise (DDNPCX) in the Mobile District. Coordination for ATR of cost estimates, construction schedules, and contingencies will be overseen by the Cost Engineering Directorate in the Walla Walla District. Contact information for each Center of Expertise (PCX) is provided below:

National Deep Draft Center of Expertise PCX:

E-mail Address:

(DDNPCX) Planning PCX - DeputyDirector-DDNPCX@sam.usace.army.mil

Website:

<http://www.sam.usace.army.mil/ddncx/>

Physical Address:

U.S. Army Corps of Engineers
South Atlantic Division
PO Box 2288
Mobile, AL 36628-0001

Walla Walla Cost Engineering Directorate of Expertise:

E-mail Address:

CENWW-COST@usace.army.mil

Website: <http://www.nww.usace.army.mil/html/OFFICES/Ed/C/default.asp>

Physical Address:

Walla Walla District Headquarters
201 North Third Avenue
Walla Walla WA. 99362-1876

The PCX will serve as the Review Management Organization for the study. The PCX will be responsible for coordination of the ATR and IEPR review teams. The PCX will be responsible for reviewing this RP before approval by NWD. The PCX will also be responsible for developing the “charge” to the reviewers. The charge will outline the objective of the review and

the specific advice sought. The charge will specify that the review should be conducted to identify, examine, and comment upon assumptions that underlie analyses, as well as evaluate the soundness of models and analytic methods.

4 PROJECT DELIVERY TEAM

The project manager for this study is Jessica Winkler, (206) 764-3462, Jessica.G.Winkler@usace.army.mil. The project manager is the main point of contact at the Seattle District for more information about this project and the review plan. Table 1 lists the disciplines of the project delivery team. Names are withheld due to Privacy Act, and are listed in Appendix F of the PMP, Project Teams.

Table 1: Project Delivery Team (PDT)

Discipline
Project Management
Environmental Resources
Cultural Resources
Planning
Economics
Cost Engineering
Coastal Engineering
Environmental Engineering
Real Estate
Geo-Spatial
Dredged Material Management Office (DMMO)
Operations - Navigation

5 DISTRICT QUALITY CONTROL PLAN

5.1 GENERAL

DQC is the review of basic science and engineering work products focused on fulfilling the project quality requirements defined in the PMP. It is managed in the Seattle District and may be conducted by senior staff in the Seattle District, and may include contracted work that is being reviewed. DQC for decision documents is covered by EC 1165-2-209 is managed by the Seattle District in accordance with the Major Subordinate Command (MSC) and district Quality Management Plans. All draft products and deliverables will be reviewed within the district as they are developed by the PDT to ensure they meet project and customer objectives, comply with regulatory and engineering guidance, and meet customer expectations of quality. Section Chiefs are responsible for accuracy and sufficiency of products. Work products will be forwarded to the appropriate Branch Chiefs of disciplines directly involved with the development of the document. The Branch Chiefs will determine the most appropriate person to carry out the review of the document.

5.2 PRODUCTS FOR REVIEW

All work products and reports, evaluations, and assessments shall undergo necessary and appropriate DQC, including National Environmental Policy Act (NEPA) documents, other environmental compliance products, and any in-kind services provided by the local sponsor. Additionally, the PDT is responsible for a complete reading of the report to assure the overall integrity of the report, technical appendices, and the recommendations before approval by the District Commander.

5.3 DOCUMENTATION OF DQC

DrChecks review software will be used to document all DQC 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:

- **The review concern** – identify the product’s information deficiency or incorrect application of policy, guidance, or procedures;
- **The basis for the concern** – cite the appropriate law, policy, guidance, or procedure that has not been properly followed;
- **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
- **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 and then assess whether further specific concerns may exist. The DQC documentation in DrChecks® will include the text of each DQC team member’s concern, the PDT response, a brief summary of the pertinent points in any discussion, including any vertical coordination, and lastly the agreed upon resolution. The DQC team will prepare a Review Report which includes a summary of each unresolved issue. Unresolved issues will be raised to the vertical team for resolution.

6 AGENCY TECHNICAL REVIEW (ATR)

6.1 PURPOSE OF REVIEW

ATR is an in-depth review, managed within the US Army Corps of Engineers (USACE), and conducted by a qualified team outside of the Seattle District that is not involved in the day-to-day production of the project/product. The objective of the ATR is to ensure the product is consistent 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 teams will be comprised of senior USACE personnel (Regional Technical Specialists (RTS), etc.), 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. Products will be reviewed against published guidance, including Engineering Regulations, Circulars, Manuals, Engineering Technical letters and Bulletins. The PCX responsible for ATR coordination for this document is the Deep Draft Navigation PCX, Mobile District, South Atlantic Division.

6.2 PRIMARY DISCIPLINES AND EXPERTISE NEEDED FOR ATR

The ATR is anticipated to include at least 10 agency reviewers from outside of Seattle District. The number of reviewers is based on the following number and types of disciplines required to develop the decision documents. It is recommended that reviewers should have a minimum of 5 years of experience working in the field of coastal engineering or navigation in their respective discipline, and be a GS 12 or GS 13. The disciplines and expertise required for the ATR team are:

- Planner/Plan Formulation: Experience with navigation studies, General Investigation requirements and feasibility reports.
- Environmental/NEPA: Knowledge of Northwest biology, specifically knowledge of endangered coastal species and experience on coastal projects; knowledge of Federal regulations and National Environmental Policy Act (NEPA).
- Cultural Resources: Knowledge of Northwest tribal cultures and archaeology.
- Economics: Knowledge of cost/benefit analysis for navigation improvement projects and experience with Harborsym model.
- Cost Estimating: Micro-Computer Aided Cost Estimating System (MCACES) experience. Experience costing navigation improvement, dredging, and coastal dredged material disposal.
- Real Estate: Experience developing real estate requirements for coastal projects including offshore and upland dredged material disposal sites.
- Dredge Materials: Knowledge of coastal dredging for the purpose of channel deepening and requirements for allowable dredging and dredged material disposal.
- Environmental Engineering: Knowledge of navigation improvement, requirements for allowable dredging and waste disposal, and measuring contamination.
- Coastal Engineering: Experience designing navigation improvement projects including channel deepening projects. Knowledge of General Investigation requirements for coastal engineering.
- Geology: Knowledge of coastal geological systems especially systems in the Northwest. Experience surveying coastal soils and advising large-scale dredging projects.

Table 2: Agency Technical Review Team Roster

Discipline
Review Team Lead
Planning
Environmental Coordinator
Cultural Resources Coastal Engineer
Geology Environmental Engineer
Dredge Materials Specialist
Cost Engineering Real Estate Specialist
Economist Toxicologist

The ATR team members will be listed in Appendix F, Study Teams, when the information becomes available. Team member qualifications will be identified here. The Agency Technical Review Team will be selected by the Deep Draft Navigation PCX on the basis of having the proper knowledge, skills, and experience necessary to perform the task and their lack of affiliation with the development of the feasibility report / EIS and associated appendixes. Management of the ATR team will be performed by the PCX. The ATR team will be from outside Seattle District and the ATR leader will be outside the MSC.

6.3 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:

- **The review concern** – identify the product’s information deficiency or incorrect application of policy, guidance, or procedures;
- **The basis for the concern** – cite the appropriate law, policy, guidance, or procedure that has not been properly followed;
- **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
- **The probable specific action needed to resolve the concern** – identify the action(s) that the reporting officers must take to resolve the concern.

The ATR team will prepare a Review Report which includes a summary of each unresolved issue; each unresolved issue will be raised to the vertical team for resolution. The Seattle District will be responsible for responding to the issues and comments presented in the Review Report. Review Reports will be considered an integral part of the ATR documentation 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.

ATR will be certified when all ATR concerns are either resolved or referred to Headquarters (HQUSACE) for resolution and the ATR documentation is complete. Certification of ATR will be completed for the FSM, AFB, draft report, and, if significant changes from AFB document occur, the final report. A Feasibility Review Conference may be required if significant changes have occurred to the AFB document. A sample certification is included in ER 1110-2-12.

6.4 FUNDING FOR ATR

Once the review team is identified, a budget estimate will be developed and coordinated through the PCX and the ATR team. For budget purposes \$45,000 per review will be assumed.

7 REAL ESTATE REVIEW CERTIFICATION

Real Estate Gross Appraisals are used to support final decision documents or other aspects of project approval, authorization, and funding. These reports are subject to policy compliance review. Gross appraisal reports must contain an appropriate certification by a qualified review appraiser.

8 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 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. Guidance for policy and legal compliance reviews is addressed further in Appendix H, ER 1105-2-100, Planning Guidance Notebook. DQC and ATR will address compliance with pertinent USACE policies. Policy Compliance When policy, technical 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 MSC and HQUSACE in accordance with the procedures outlined in Appendix H, ER 1105-2-100. IEPR teams are not expected to be knowledgeable of Army and administration

polices, nor are they expected to address such concerns. Reviews will include a Feasibility Scoping Meeting (FSM), an Alternate Formulation Briefing (AFB) and the Final Submittal. Other interim reviews may be required.

The Office of Counsel is responsible for the legal review of each decision document and signing a certification of legal sufficiency.

9 INDEPENDENT EXTERNAL PEER REVIEW

9.1 PURPOSE OF REVIEW

Independent External Peer Review (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. Independent External Peer Review is conducted by an Outside Eligible Organization, composed of nationally recognized technical experts outside of the Corps of Engineers. An Outside Eligible Organization:

- (1) is described in section 501(c)(3), and exempt from Federal tax under section 501(a), of the Internal Revenue Code of 1986;
- (2) is independent;
- (3) is free from conflicts of interest;
- (4) does not carry out or advocate for or against Federal water resources projects; and
- (5) has experience in establishing and administering peer review panels.

The Independent External Peer Review panel will be established by the responsible PCX through contract with an independent scientific and technical advisory organization. The PCX shall instruct the outside eligible organization to prepare a review report that will document all reviewers' comments at completion of the review. The IEPR will be used in cases where there are public safety concerns; a high level of complexity, novel or precedent-setting approaches; where the project is controversial; has significant interagency interest; has a total project cost greater than \$45 million; or has significant economic, environmental and social effects to the nation; or where requested by the Governor of an affected state. The degree of independence required for technical review increases as the project magnitude and project risk increases. A Type I IEPR is typically conducted on study phase decision documents. Type I IEPR is 100% federal cost and limited to \$500,000. Type I IEPR will be conducted on the Integrated General Reevaluation Report and EIS supplement. A Type II IEPR is not expected to be required for the Grays Harbor Navigation Improvement Project (GHNIP) study. A Type II IEPR is required during for design and construction documents and will be scheduled prior to initiation of the design phase.

9.2 NEED FOR IEPR

The Integrated General Reevaluation Report and Environmental Impact Statement Supplement require an Independent External Peer Review (IEPR). This decision was made using a risk informed decision process. The scope of the review will address all underlying planning,

engineering, including safety assurance, economics, and environmental analyses performed, not just one aspect of the project. The IEPR panel will use appropriate analytical methods for each technical section. The panel will meet with the study PDT and the public to determine areas of controversy in the decision document. If determined necessary, the panel will tour the study area and interview participants as needed.

The Grays Harbor, Washington Navigation Improvement Project study is anticipated to require a Type I IEPR because of high agency interest due to the potential for contaminated sediments; however the contaminated sediments are not expected to pose a human health risk. The project does not involve significant threat to human life. The project may have significant economic, environmental, or social affects to the nation. The project is not likely to contain influential scientific information, or be a highly influential scientific assessment. The project is not expected to be highly controversial.

9.3 REQUIRED IEPR PANEL OF EXPERTISE

The IEPR plan is expected to include at least 7 external reviewers whose expertise and expertise is similar to that of the ATR review team. The IEPR team members will be selected and managed by the Deep Draft Navigation PCX. The names and qualifications of the IEPR panel will be inserted in table 2 when that information becomes available. The following are the required reviewers and expertise required:

- **Planner/Plan Formulation:** Experience with navigation studies, General Investigation requirements and feasibility reports.
- **Environmental/NEPA:** Knowledge of Northwest biology, specifically knowledge of endangered coastal species and experience on coastal projects, knowledge of Federal regulations and National Environmental Policy Act (NEPA).
- **Economics:** Knowledge of cost/benefit analysis for navigation improvement projects and experience with Harborsym model.
- **Real Estate:** Experience developing real estate requirements for coastal projects including offshore and upland waste disposal sites.
- **Dredge Materials:** Knowledge of coastal dredging for the purpose of channel deepening and requirements for allowable dredging and waste disposal.
- **Environmental Engineering:** Knowledge of navigation improvement, requirements for allowable dredging and waste disposal, and measuring contamination.
- **Coastal Engineering:** Experience designing navigation improvement projects including channel deepening projects. Knowledge of General Investigation requirements for coastal engineering.
- **Geology:** Knowledge of coastal geological systems especially systems in the Northwest. Experience surveying coastal soils and advising large-scale dredging projects.

Table 3: Independent External Review Panel Members

<u>Discipline</u>
Environmental Specialist
Coastal Engineer
Environmental Engineer
Dredged Materials Specialist
Economics Specialist
Geology
Real Estate Specialist
Toxicology, with technical expertise in industrial byproducts and humans, and fish and wildlife impacts

9.4 PRODUCTS FOR REVIEW

The IEPR team will review the decision document, including NEPA/environmental compliance documentation and technical appendixes, and any supporting documentation that is not contained in the technical appendixes. While the IEPR panel is not expected to make comments on policy, the team may provide comments on policy.

9.5 PANEL RECOMMENDATIONS

The panel will submit to USACE through the managing organization a final report containing the panel's economic, engineering, and environmental analysis of the project study, including the panel's assessment of the adequacy and acceptability of the economic, engineering, and environmental methods, models, and analyses used by the Corps of Engineers.

NWS will consider the report from the panel of experts and will present documentation on how issues were resolved or will be resolved by the District Engineer before the district report is signed. After receiving the report on the project from the panel of experts, USACE shall consider all recommendations contained in the report and prepare a written response for all recommendations adopted or not adopted. The IEPR comments will be evaluated and addressed by the PDT member in whose discipline the comment topic matter resides. When necessary, the PDT member will clarify any questions with the IEPR panel commenter. Depending on the complexity of the comment, senior District and Division subject matter experts may need to be involved in the response.

The recommendations and responses will be presented to the Civil Works Review Board by the District Engineer with a Type I IEPR panel or OEO representative participating, preferably in person. Written recommendations of a reviewer or panel of reviewers and the responses of USACE shall be made available to the public, including through electronic means on the

Internet. The panel’s final report and the responses of USACE shall also accompany the publication of any report of the Chief of Engineers for the project. If there is no Chief’s report, the DCW will certify the agency response.

9.6 FUNDING FOR IEPR

Once the review team is identified a budget estimate will be developed and coordinated through the PCX and the IEPR team. Funding of reviewers may include travel to Seattle District for the review conference. For budget purposes \$300,000 will be assumed for this review. The cost of the IEPR panel is not a cost shared cost and will be 100% federally funded.

9.7 REVIEW SCHEDULE

The review schedule is presented below in Table 4:

Table 4 - Milestone Schedule

Grays Harbor General Reevaluation Report		
Milestone Schedule		
Feasibility Phase	Nov-10	Jun-15
Execute FCSA/Initiate Study	Feb-11	Feb-11
Public Workshop/Scoping	Apr-11	Apr-11
ATR FSM	Feb-12	May-12
Feasibility Scoping Meeting	Jul-12	Jul-12
ATR AFB	Oct-12	Nov-12
Alternative Formulation Briefing	Mar-13	Mar-13
Independant External Peer Review	Dec-13	Apr-14
Final Public Meeting	May-14	May-14
ATR Final Review	Feb-14	Mar-14
HQUSACE Review	Dec-14	Jan-15
Chief’s Report	Feb-15	Feb-15
Project Authorization	Jul-16	Oct-16

The schedule and implementation of reviews for design and construction documents will be updated at a later time prior to initiation of the design phase.

10 IN-KIND CONTRIBUTIONS

The non-federal sponsor has the option of providing in-kind services as a portion of their cost share during feasibility. Sponsor provided services will be determined during the development of the PMP, but are unknown at this time. Any products produced by the sponsor for the study will

undergo Corps internal review as well as DQC and ATR. The IEPR of sponsor's product, should the sponsor choose to provide in-kind services, will be the responsibility of the sponsor.

11 MODEL APPROVAL/CERTIFICATION

The use of certified or approved models for all planning activities is required by EC 1105-2-407. This policy is applicable to all planning models currently in use, models under development and new models. The appropriate PCX will be responsible for model certification/approval. The goal of certification/approval is to establish that planning products are theoretically sound, compliant with USACE policy, computationally accurate, and based on reasonable assumptions. The use of a certified or approved model does not constitute technical review of the planning product. Independent review of the selection and application of all models and the input data and results is required through implementation of DQC, ATR, and, if appropriate, IEPR. Planning models (including the certification/approval status of each model) and engineering models used in the development of the decision document are described below:

USACE does not currently have a standardized economic model to evaluate the benefits of navigation deepening improvements. Harborsym, for deepening projects is expected to be available in FY 2011. Microsoft Excel software will likely be used to evaluate the economic benefits of navigation improvements. Cost Engineers will use Crystal Ball for risk analysis and Primavera for scheduling. MII will be used for cost estimating. For statistics, ProUCL Version 4.00.04, an EPA software that has been extensively certified, and MiniTab, a commercial product that has been tested by industry and is known as an industry standard will be used. For visualizations ArcGIS and Automated Risk Assessment Modeling System (ARAMS) will be used. It is to be determined what modeling will be used for environmental considerations associated with disposal of dredged material. The Review Plan will be updated when a model is selected, to include model information, certification status and the certification process to be used (as applicable), and these updates will be coordinated with the MSC and ECO-PCX (if it is an environmental/habitat model) for approval. The same is true if it is determined that mitigation is required for environmental impacts. These previously mentioned models do not require further approval or certification. This review plan will be updated with any additional utilized models as well as the certification status of the models.

Models and spreadsheets developed for use in this study and are not certified models may receive a "certification for use" as technically correct and appropriate for incorporation in this study.

Table 4: Models and Status

Task	Model Name	Certification Status
Economics	Harborsym or Excel	TBD
Cost Estimating	MI	Certified
Project Scheduling	Primavera	Certified

Risk and Uncertainty – Cost Engineering	Crystal Ball	Certified
Risk and Uncertainty - Other	@Risk	TBD
Excel Applications		Uncertified
Statistics	ProUCL Version 4.00.04	Certified
Statistics	MiniTab	Certified
Visualization	ArcGIS	Certified
Visualization	Automated Risk Assessment Modeling System	Certified
Environmental		TBD

12 PUBLIC REVIEW OPPORTUNITIES

In developing an RP, the Seattle District will provide an opportunity for public comment on the review process by posting the approved RP on the District, Division, and HQUSACE public websites. This is not a formal comment period and there is no set timeframe for the opportunity for public comment. If and when comments are received, the PDT will consider them and decide if revisions to the review plan are necessary. This engagement will ensure that the peer review approach is responsive to the wide array of stakeholders and customers, both within and outside the Federal Government.

13 VALUE ENGINEERING DURING STUDY PHASE

A Value Engineering Study (VE) must be done for any project with a total project cost greater than one million dollars. VE will be conducted during the planning phase, most likely during the latter part of the identification of measures phase and the early part of alternative plan formulation per ER 11-1-321. An additional VE may be conducted once a recommended plan has been identified to review the planning and design of the project.

A VE also needs to be performed after authorization if construction costs are estimated at \$10 million or more per ER 11-1-321.

14 MSC APPROVAL

Northwestern Division is the MSC for the Seattle District, and is responsible for approving the Review Plan. A MSC approval letter is required for each review plan and must be signed by the MSC Commander. The Commander’s approval should reflect vertical team input (involving district, MSC, PCX, and HQUSACE members) as to the appropriate scope and level of review for the decision document. The Review Plan is part of the Project Management Plan, and is a living document which may be modified as the study progresses. Changes to the Review Plan should be approved by following the process used for initially approving the plan. In all cases the MSC will review the decision on the level of review and any changes made in updates to the project. A RP for the design phase will be included with the final decision document submittal.

15 REVIEW PLAN POINTS OF CONTACT

Questions and/or comments on this RP can be directed to the following points of contact:

- Seattle District: Jessica Winkler
 - Email: Jessica.G.Winkler@usace.army.mil
 - Voice: 206-764-3462

- Northwest Division: Valerie Ringold
 - Email: Valerie.A.Ringold@usace.army.mil
 - Voice: 503-808-3984

- National Deep Draft Center of Expertise PCX:
 - E-mail: DDNPCX@sam.usace.army.mil

16 GLOSSARY

<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
CWRB	Civil Works Review Board	O&M	Operation and maintenance
DQC	District Quality Control	OMB	Office and Management and Budget
DX	Directory of Expertise	OMRR&R	Operation, Maintenance, Repair, Replacement and Rehabilitation
EA	Environmental Assessment	OEO	Outside Eligible Organization
EC	Engineer Circular	OSE	Other Social Effects
EIS	Environmental Impact Statement	PCX	Planning Center of Expertise
EO	Executive Order	PDT	Project Delivery Team
ER	Ecosystem Restoration	PAC	Post Authorization Change
FDR	Flood Damage Reduction	PMP	Project Management Plan
FEMA	Federal Emergency Management Agency	PL	Public Law
FSM	Feasibility Scoping Meeting	QMP	Quality Management Plan
GRR	General Reevaluation Report	QA	Quality Assurance
HQUSACE	Headquarters, U.S. Army Corps of Engineers	QC	Quality Control
IEPR	Independent External Peer Review	RED	Regional Economic Development

<u>Term</u>	<u>Definition</u>	<u>Term</u>	<u>Definition</u>
MSC	Major Subordinate Command	RTS	Regional Technical Specialist
		USACE	U.S. Army Corps of Engineers