APPENDIX B

CHANNEL MAINTENANCE DREDGING PLAN

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U.S Army Corps of Engineers

Seattle District

Channel Maintenance and Dredging

Program Management Plan

10 October 2012

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1 Introduction

1.1 Purpose

A Program Management Plan can be defined as "*a management tool used to ensure that undue or reasonably avoidable adverse impacts of the construction, operation and decommissioning of a project are prevented; and that the positive benefits of the project are enhanced*." Program Management Plans are therefore important tools for ensuring that the management actions arising from assessments, evaluations, project challenges, and/or issues are clearly defined and implemented through each phase of the project life-cycle. The overall purpose of the guideline is two-fold: to inform and guide the preparation and implementation of plans and processes in a manner that promotes the effectiveness of the Program Management Plan; and to assist authorities and other reviewers in objectively evaluating the quality of the project challenge or issue.

This Program Management Plan (PgMP) provides the general framework and strategies for executing the Seattle District Channel Maintenance and Dredging Program as outlined in ER 1130-2-520 and EP 1130-2-520. This is intended to be a general document that provides an overview of the program, organizational structure and resources available for executing the program. This document defines the multi-discipline team strategy, goals, responsibilities and expectations for successful execution of the Navigation Program (NAV program) and establishes the roles and responsibilities of the Program Manager, Project Managers, and Project Development Team (PDT) members. The basis for this PgMP is the USACE Project Management Business Process (PMBP) Manual (May 2009). The PMBP Manual establishes USACE business processes that:

- Enhance our ability to function with efficient management of diverse resources
- Focus on far exceeding customer expectations
- Set parameters for a tool to measure progress across the entire organization, and
- Enhance our ability to function with efficient management of diverse resources

The PMBP Manual codifies USACE business processes (BPs) that are supported by USACE accepted management computerized programs. The BPs also describes responsibilities, process flow diagrams, and references.

Execution of the annual dredging program will be guided by an accompanying, Operating Management Plan (OMP) provided as an attachment. The OMP is a project specific, 5-year plan for maintenance dredging in Seattle District, updated annually to support this PgMP.

1.2 Scope

This PgMP describes the scope and content of project challenges or issues, covering both the preparation and implementation stages of a project process, as well as some of the key roles of stakeholders. This guideline describes the key components that should be included in project challenges or issues, drawing from relevant existing guidelines as well as first-hand experiences.

Key features of this plan are:

- It is applicable to a range of types and scales of projects or developments, from projects with low to high level risk;
- It assumes a broad understanding of biophysical, social, and economic components;
- It includes the enhancement of positive impacts (benefits) as well as the mitigation of negative impacts; and
- It is a living and flexible document.

Looking ahead, this PgMP provides an essential tool for ensuring that the mitigation of negative impacts and enhancement of positive impacts is carried out effectively during the project life-cycle. It is therefore

intended that this guideline be used in the spirit of continual improvement, to assist in promoting best practice in navigation management, in a manner that is pragmatic, efficient and cost-effective

1.3 Authority

- Various River and Harbors Acts, specified for each authorized project.

1.4 References

- ER 1130-2-520, USACE Navigation and Dredging Operations and Maintenance Policies
- EP 1130-2-520, USACE Navigation and Dredging Operations and Maintenance Guidance and Procedures
- ER 5-1-11, USACE Project Management Business Process

2 Navigation Section Organization

2.1 Mission

Seattle District Navigation Section's mission is to provide safe, reliable, efficient, effective and environmentally sustainable waterborne transportation systems for movement of commerce, national security needs, and recreation for Federally-authorized Navigation Projects. See Appendix A for a complete list of Seattle District Navigation Projects, their features, frequency of dredging or repairs and Navigation Project Managers. A copy of the Seattle District Project and Index Map Booklet is kept in Navigation Section. This booklet contains a description of the documents that authorized each of the Projects and a location map and layout of the Project.

2.2 Scope

Navigation Section, Operations Technical Support Branch, Operations Division is responsible for accomplishing the Seattle District, Corps of Engineers Navigation mission. Navigation Section maintains channels and other structural features for safe navigation. Maintaining channels requires keeping them at serviceable and reliable depths and widths by dredging and other means. Maintenance also includes removing navigation hazards and underwater obstructions, beach nourishment and producing hydrographic survey information for use by the general public and navigation community.

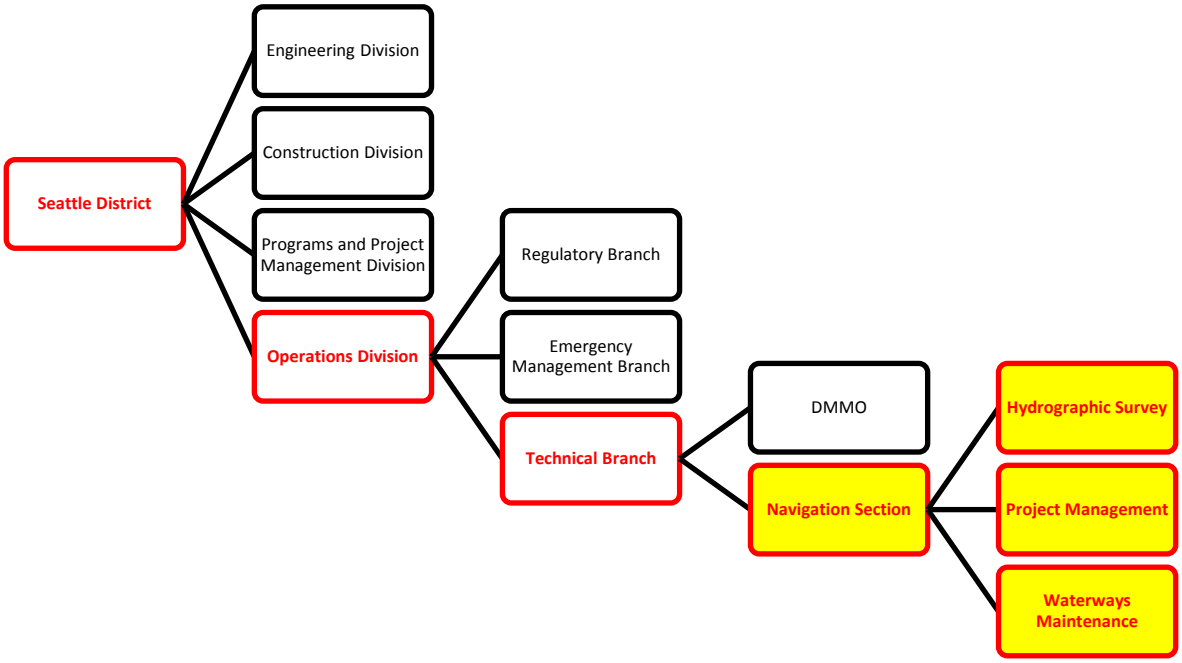
Navigation projects are scoped to meet the requirements, policies, and procedures appropriate for the legislative authority. Most projects are on-going Operations and Maintenance of existing projects that have been performed for many years in the Seattle District. Only projects that are authorized and appropriated will be performed.

2.3 Objectives

Successful completion of this program will produce the following outcomes:

- No delays in commercial navigation due to channel maintenance on Seattle District harbors, rivers and inland waterways if full project funding is appropriated
- Project Reliability- no significant draft restrictions if full project funding is appropriated.
- Increased competition for the projects by the dredging contractors to achieve a fair and reasonable price for dredging contracts.
- Environmentally sustainable projects

2.4 Organization Structure



2.5 Roles and Responsibilities

2.5.1 Hydrographic Survey

The Hydrographic Survey will follow procedures, policies and guidelines established in accordance with EM 1110-2-1003, Hydrographic Surveying and EP 1130-2-520, Navigation and Dredging Operations and Maintenance Guidance and Procedures. Survey activities include the following:

- Project Condition and Reconnaissance Surveys. Active waterways and harbor projects shall be surveyed at a frequency sufficient to maintain adequate information on available project dimensions. Either project condition surveys (Class 2) or more economical reconnaissance surveys (Class 3) may be performed, depending on project requirements. Unless unique circumstances are present, scheduled project condition surveys should not be more frequent than the maintenance dredging cycle for a given project. General reconnaissance surveys should be performed each year on projects that are dredged at infrequent periods (i.e., less than once per year).
- Dredging Measurement, Payment and Acceptance Surveys. Contract related hydrographic dredging surveys will be conducted, as needed, during the contract period to ensure that the work is being performed in accordance with the contract plans and specifications. At a minimum, a pre-dredge and post-dredge survey should be performed.
- Survey Time Constraints. Plans and specifications surveys will be performed as close to the advertisement date as possible, fully considering the historical shoaling conditions of the project. Pre-dredging surveys shall be completed as close to the start of dredging as possible, but generally within two (2) weeks prior to commencement of work in the reach to be dredged. After Dredging and/or Final Acceptance surveys shall be completed as close to the end of dredging an acceptance section as possible, but generally within five (5) days after completion of work in the applicable acceptance section or channel reach.
- Disposition of Survey Data. Survey data shall be reduced, edited, and plotted as expeditiously as possible, generally within two (2) days after completion of the survey. Government survey data

shall be made available to the contractor or a designated representative in accordance with the plans and specifications before requiring the contractor to re-dredge any portion of the work. If requested, the results of government dredging surveys pursuant to the contract paragraph entitled "Final Examination and Acceptance" shall be furnished to the contractor or an authorized representative after the acceptance section(s) is surveyed. The contracting officer shall verify Final Acceptance surveys and furnish to the contractor.

The Hydrographic Unit Supervisor is responsible for submitting budget packages so the Project Condition Survey accounts will have sufficient funding to provide surveys of channels not being dredged.

2.5.2 Project Management

The primary objective of project management is to ensure that program goals and actions have been assessed, evaluated, and integrated into day-to-day activities to meet the mission requirements. The Navigation Section Chief is responsible for timely positioning of funds required to initiate new, or to continue ongoing work. The Project Manager (PM) is responsible for managing the scope, schedule, and project funds necessary to execute the individual projects. The PM prepares the Project Management Plan (PMP) and updates as appropriate. The PMP is a "'living document" that provides a lifecycle framework for executing the project and establishes specific strategies and milestones for projects.

Projects managed annually:

- Routine/Non-Routine Dredging O&M (PM assignments are provided in Appendix A)
- Routine/Non-Routine Structure O&M (PM assignments are provided in Appendix A)
- Beach Nourishment
- Emergency Dredging
- Emergency Structure Repair

In addition to project management, the PM shall also provide technical and construction oversight for the project, either directly or through technical support. Contract inspections shall conform to the procedures outlined in NWSOM 5-1-3 Quality Control Plan for Navigation and the following guidance: The PM is often the Contracting Officer Representative (COR) for the project, if proper training and certifications are maintained.

2.5.3 Waterways Maintenance

The River and Harbor Act of 13 July 1892 authorized the Puget Sound and Tributary Waters (PS&TW) program. ER 1105-2-100 provides the policy and procedure to perform emergency snagging and clearing work to benefit navigation, under authority of Section 3 of the River and Harbor Act approved 2 March 1945. For routine waterways maintenance, the project authorization document provides the authority for snagging and clearing for navigation. ER 1130-2-520, Chapter 4, Removal of Wrecks and Other Obstructions provides the policy for removal of wrecks and other obstructions to navigation.

2.5.4 Responsibilities

The following responsibilities and guiding principles will be followed when performing the Dredging Program for Seattle District:

- In order to improve and maintain the waterways suitability for navigation and other purposes, the District shall dredge in an efficient, cost-effective, and environmentally sustainable manner consistent with Federal laws and regulations.
- The District shall, after taking into consideration economics, engineering, and environmental requirements in accordance with applicable Federal laws and regulations (33 CFR Parts 335-338)

seek the maximum practicable beneficial uses of materials dredged from authorized Federal navigation projects.

- The justification to dredge navigation projects shall reflect the current level of navigation activity at the project and will provide a rationale for the frequency of dredging and the dredge area dimensions. The justification shall be in accordance with current budgetary and waterway use guidance.
- Navigation channel depths in project authorization documents and on maps, charts or engineering site drawings shall refer to a vertical datum in accordance with EM 1110-2-1003.
- In accordance with 33 USC 628, dredging shoreward of harbor lines shall not use funds appropriated for navigation projects.
- Authorized navigation projects will be maintained to full constructed channel dimensions when feasible and justified.
- Allowable overdepth dredging is permitted (depth and/or width) outside the required prism to allow for inaccuracies in the dredging process. Seattle District may dredge a maximum of two feet of allowable overdepth.
- Advance maintenance dredging, to a specified depth and/or width, may be performed in critical and/or fast-shoaling areas to avoid frequent re-dredging and ensure the least overall cost of maintaining the project. Advanced maintenance dredging requires permission from the NWD Commander.

Navigation Section is also responsible for the QA/QC of Dredging Contracts. Contract inspections shall conform to the procedures outlined in NWSOM 5-1-3 Quality Control Plan for Navigation and the following guidance:

- Accurate and complete information and data shall be recorded in official logs and reports covering all significant actions or incidents occurring during work progress. Particular attention shall be given to occurrences which could lead to future claims by or against the United States Government.
- The Navigation Chief will determine the level of inspection required for dredging operations. On leased dredges operating at an hourly rental rate, full-time inspection and careful logging of various pay-time items shall also be performed. The inspector shall have knowledge of the dredging operation, hydrographic surveying methods, and safety requirements applicable to the work. Use of the Dredging Inspectors Guide, EP 1130-2-310, and the Safety and Health Requirements Manual, EM 385-1-1, is required. The inspector must be trained in preparing and submitting all dredging reports and any records to be maintained.

3 Project Setup

3.1 P2

P2 is a management tool utilized by USACE that captures project details and displays information that can be accessed by those who need it, enabling simultaneous review and reporting. It is a management tool that enables better planning and execution by entering more accurate, timely data up front and providing comprehensive source for information. This information is utilized by everyone within USACE from the district to Headquarters and from members of the PDT to executive members of Headquarters. There is a direct relationship between USACE business processes, project phases, AIS tools and PMBP. The Project Manager, with the assistance of their P2 support staff, is expected to maintain each project P2 account and keep the information current.

3.1.1 Work Breakdown Structure

A project within P2 is described using a Work Breakdown Structure. The work breakdown structure (WBS) includes elements that outline the categories of work that are necessary for successful project

delivery and upward reporting. The WBS will follow the Navigation Program template (DRAFT-) and should be revised by the Project Manager and coordinated with the sponsor and PDT as needed for the scale, requirements, and milestones needed for the specific project. The WBS should be a product based schedule, with realistic timelines, and consider appropriate items to place funding.

Development of project activities is the framework for work management in P2. The activities comprise the total work that is to be performed to complete the project, taking into consideration PDT input, HQ requirements, and Navigation Program section-specific needs. Each activity will consist of a calendar, activity types, activity codes, durations, predecessor and successor relationships, and possible constraints and/or thresholds. After this process is performed, resource estimates and acquisition strategy will be entered to provide a total project cost to further the continuation of PMP development.

The PM is responsible for ensuring that the schedule is realistic and achievable and includes resourcing of PDT members, work in kind, and contracts. The P2 schedule needs to reflect a reasonable, achievable estimate through project completion not just current fiscal year. The P2 schedule must include project milestones and completion of deliverables. The P2 resourcing should be completed keeping in mind that the relationship will exist between P2 and CEFMS and fiscal year work load reports will be generated from P2. P2 will generate project information and financial tracking information for CEFMS in accordance with these relationships. The PM is responsible for ensuring that the activities are established such that the P2/CEFMS relationships will allow accurate reporting of financial data. The Project Manager is responsible for P2 resourcing which also has a relationship to the OFA database to produce 2101 schedules and HQ budget work plan.

The Project Delivery Team (PDT) is responsible for ensuring that activity information is provided in sufficient detail to support effective project execution and facilitate workload analysis and resource leveling. The PDT led by the PM is responsible for developing and executing the schedule.

3.1.2 Schedule

Project schedules will be established in P2 and included in all PMPs. NWS P2 templates will be used for Navigation projects. Schedules will extend through project completion. The NWS District Implementation Plan (July 2011) was created to improve and standardize the project management and P2 practices in the region.

The initial schedule will be reviewed and approved as part of the PMP approval process. All required milestones must be reflected in the P2 schedule. In addition, the baseline schedule will be reviewed and approved by the Program Manager prior to the basic lock. Typical Navigation Program projects should be completed within two years if there are no funding delays. Design, plans and specs, environmental permitting, and real estate certification should be completed in 12 months, and typically construction is completed in the same or following seasons.

Project schedules will be evaluated by the Project Manager with input from the PDT and updated as required. Milestones will be marked completed as soon as they are finished, in accordance with the District Battle rhythm for P2 maintenance. P2 will be managed in accordance with district policies and procedures that have been established by the NWS PDMT. Current schedules will be reviewed and compared to the baseline schedules monthly at LIR and PRB (See Section 4 for more information). The schedule for LIR, PRB, and turn around reports are available in the NWS Master Calendar <\\nwd\nws\NWS-Project\PMBP\Master Schedule 2011.docx>

Data Management Branch will produce monthly turn around reports and Gantt charts and post to the network at the following location:

<file://Y:\PRB (Proj Review Board Update Here)\Civil\Turnaround Reports\PM Info Folders>

The information is organized by the Project Manager's by your last name. The Project Manager can update the schedule by sending e-mail to the scheduler, meeting with the scheduler, or marking up a hard copy of the turnaround report. Information to consider during the monthly maintenance include:

- Start/Finish dates
- Activity Percent Complete
- Remaining Duration
- Resource Budget
- Contract dates
- Environmental Work Windows

Schedules are automatically recalculated and advanced every month regardless of whether or not updates were provided. If no input from the Project Manager is received, the schedule will be pushed out and will show no progress was made.

If the project is progressing as originally scheduled the PM shall return the turnaround reports or email the scheduler with "Project On Schedule". This will ensure future activity and milestone dates are maintained. If no progress was achieved then the PM shall return the reports or email the scheduler with "No Progress to Report". The schedule will be recalculated but will not update activity status or reduce durations. This will cause the project activities and milestone to slip forward in time and deviate from the baseline. Updates must be in P2 by the Friday before LIR, so give the scheduler time to enter any project information.

3.2 Project Management Plan (PMP)

3.2.1 Scope

Project management plans (PMPs) will be prepared to the level of detail commensurate with the project size and complexity in accordance with NWS standard of practice. The PMP should enable:

- NWS management to understand project scope and assign PDT members with appropriate levels of expertise;
- PDT members to understand their role and what they must do, how, when, and at what cost;
- the sponsor to establish cash and/or work in kind estimates and approve the project scope; and
- a successor project manager to pick up and assume management of the project. The PMP is attached as supporting documentation to the FCSA and PPA.

The PMP is required to provide the framework so that all team members can work together efficiently. The PMP communicates critical project/program information (scope, budget, and schedule) to all interested parties. The PMP serves as the planning, communications, and quality management tool for the project. It encompasses all aspects, phases, and resources for the lifecycle of a project. The PMP is a living document and should be updated as needed. At a minimum the PMP should be revised at the beginning of each phase, when significant changes occur to the project, or annually.

Navigation projects are scoped to meet the requirements, policies, and procedures appropriate for the legislative authority. Most projects are on-going Operations and Maintenance of existing projects that have been performed for many years in the Seattle District. Only projects that are authorized and appropriate will be performed.

3.2.2 Approval

The PMP is developed by the PM and the sponsor with assistance from all PDT members. The PMP should include scopes of work, schedule, and budgets from each discipline for the current phase. These scopes of work and budgets will be used as appendices to the PMP and should be reviewed by the first line supervisors. Per the NWS PMP approval process, once the PMP is drafted and approved by the

sponsor, the program manager can approve the PMP. Exceptions to this approval occur when the project is unusually complex, high-risk, or has command interest. In these cases, the appropriate branch chiefs or DPM must approve the PMP. The approvals may include the:

- Civil Branch
- Planning Branch
- Design Branch
- Geotechnical and Environmental Services Branch
- Engineering Services Branch
- Construction Branch (or Area Engineer)
- Civil Contracting Branch
- Technical Services Branch
- Real Estate Cost-Share Branch

Once approved, the PMP is posted internally to the P2 database.

3.3 Financial Management (CEFMS)

CEFMS along with custom reports will be used for tracking and reporting funds management. The NWS RM will be responsible for maintaining CEFMS.

3.4 Project Reporting

Program/project goals costs will be tracked and reported at meetings. Program/projects costs are intended to prevent, sustain, enhance, improve or correct challenges and issues. Requested work orders and mandatory changes will reflect the best management practice/solution and a full range of options. Project costs estimates are only intended as a place holder. If funds are not available for mandatory changes, reduction in the scope may be necessary.

3.4.1 LIR and PRB

Monitoring and control of projects will consist of periodic formal and informal reviews of each project during the fiscal year. The purpose of monitoring is to address any internal or external forces which may impact project scope, schedule, and cost. Monitoring at the NWS level primarily addresses scope, schedule, resource management, and financial status of the project.

Monthly Civil Line Item Reviews (LIR) are held to review project issues, schedule, and budget. Project Managers update all project narratives and schedules in P2 the Friday prior to the LIR. Project Managers and should attend the LIR prepared to brief each project and any issues needing resolution. The Project Manager should bring a copy of their schedule and any other items needed for reference in providing status of the project. The Program Manager and Appropriations Manager will be monitoring the LIR and reviewing any deviations from the basic lock in P2 to schedule or obligations. Typically, LIR is scheduled on the first Tuesday and Wednesday of every month in preparation for PRB. The Navigation Program is generally scheduled on Tuesday morning. Occasionally, projects may be selected by the Program Manager to be reviewed at the High Interest portion of the LIR on Wednesday mornings. Projects selected for high interest will have approximately 15 minutes of discussion with district resource managers to discuss any issues or upcoming work. Project Managers will provide 15 copies of a one-page summary of the project and bring their schedule and work requests.

Monthly NWS Civil Project Review Boards (PRB) are used to report the program execution, status, and any significant issues of the projects in the program. The Program Manger and the Program Analyst typically prepare the materials for slides and present the information to the PRB. The Project Manager is responsible for keeping the P2 narrative and schedule up to date in time for preparation of the PRB package. Occasionally, PMs may be requested by the Civil Works Branch Chief or the Program Manager

to present high interest projects or special topics. Typically, PRB is scheduled on the second Wednesday morning of every month.

Special Navigation Program PRBs are sometimes held in order to allow for in-depth discussion of each project. These are scheduled by the Program Manager and attended by the Project Managers on an as-needed basis.

4 Project/Program Management

1ST Quarter	Update 5-year Navigation Program OMP (See Attachment A)
October	Put dredging schedule in the Dredge Information System
	Present schedule to contractors at Western Dredging Association (WEDA)
April	Preparation of the President's Budget (CFY+2)
August	Update the dredging schedule for coming FY based on President's Budget
September	Coordinate dredging schedule at Pacific Navigation Community of Practice

4.1 Program Budget

The annual Operations and Maintenance Appropriation of the Civil Works budget funds the Seattle District Navigation Program. Funding for channel maintenance and dredging is identified by authorized project. The Condition Survey account funds monitoring and publishing of channel conditions for projects dredged less than once a year. The Puget Sound & Tributary Waters account funds the collection and disposal of debris considered hazardous to commercial navigations. This debris consists of floating sections of derelict docks, piling, trees, snags and other debris considered hazardous to commercial navigation.

The Seattle District (NWS) has two projects that are dredged annually. These are Grays Harbor Project and the Everett Harbor and Snohomish River Project. Other NWS navigation projects have differing maintenance cycles (refer to Appendix A) and programmed into the annual maintenance program as appropriate. Each year beginning in March or A pril, the NPMs will prepare funding requests and submittal of budgetary documents in the President's Budget (CFY+2) for the projects assigned. These may include condition surveys packages, dredging packages, environmental study packages, repairs to structures such as jetties, revetments, groins and breakwaters. It also includes preparation of survey packages for projects not funded in the budget year. A five year plan is outlined in Appendix A - Seattle District Channel Maintenance and Dredging Program Operation Management Plan.

4.2 Acquisition Strategy

The development of contract documents is applicable to new work dredging, maintenance dredging, and dredging for other purposes such as beach nourishment, dike and levee construction, and other beneficial uses. Section 7.1 defines the specific contractual vehicles used for the acquisition of O&M dredging. The following guidance will apply to all dredging contracts.

- Team members responsible for preparation of construction contracts for dredging shall ensure that plans and specifications accurately describe the work to be accomplished, the conditions existing at the work site, the required dredging quantities for unit price contracts, the required prism, allowable over depth, the limits of the work area, and any environmental considerations at the work site.
- Seattle District commander shall establish procedures which ensure that appropriate technical and contract administration personnel with dredging experience (both office and field) are included in the constructability, bid ability, and operability reviews of all dredging plans and specifications.

- Terminology and standard sections used in contract documents shall be consistent with standard definitions.
- When zero allowable over depth is specified (which is rare), the contract documents shall clearly indicate that all material from within the required dredging prism must be removed. The contractor may dredge below the required depth to ensure that all material is removed from within the required prism, however, the contract documents will make clear that no payment will be made for yardage removed below the required prism.
- New work dredging plans and specifications, where hard materials exist (e.g., dense clays, rock, or manmade materials), shall have a required depth, required over-depth, required advance maintenance and allowable overdepth, in order to ensure future maintenance of the project to the authorized dimensions.

The acquisition strategy is documented in the project PMP for obtaining resources and delivering products in a timely manner at a reasonable cost. The Project Manager is responsible for working with PDT members and direct line supervisors to get approved work requests and plans for resourcing by external methods. External methods may include A/E services, other districts, and other agencies. Construction acquisition strategies should be planned early in the design phase so that the plans and specs are produced accordingly.

Acquisition strategies are brought to the NWS Civil Works Acquisition Panel for review and approval. The Project Manager is responsible for collecting information and getting contract actions into the contracting Microsoft SharePoint database. The action will be tracked and monitored by the panel and updated in the Microsoft SharePoint database as the action proceeds. If the acquisition involves USACE assets, coordinate any awards with the NWS Construction in Progress program manager.

4.2.1 DREDGING CONTRACT METHODS

Unit price construction contracts are the preferred method of accomplishing dredging work by the Seattle District, Corps of Engineers. Traditionally, Invitation for Bid (IFB) has been the preferred method of acquisition in the Seattle District for dredging projects. However, due to contractor performance and safety issues, the Request for Proposal (RFP) acquisition method was used in FY11 for complicated projects. This approach will be evaluated after the FY11 dredging season. However, before an acquisition technique is chosen, the Navigation Business Line Manager must submit a recommendation to the Acquisition Panel for approval.

Unit Price Contracts - Volume Measure. To ensure that volume measure unit price contracts are effectively used, the Chief, Navigation will:

- define the scope of work and determine the required and allowable overdepth dredging quantities;
- define bid quantities to reflect the total required and allowable overdepth quantities;
- perform payment surveys in an accurate and timely manner;
- assure specifications are written to allow the use of all types of dredge plant capable of efficiently, effectively, and safely performing the work in an environmentally sound manner; and
- assure that the surveys specified in the contract are sufficient to verify that the contract requirements are met;

Unit Price Contracts - Time Measure. Leased equipment dredging contracts may be used when the quantities of material to be dredged cannot be accurately estimated (e.g., areas of active or erratic shoaling, where shoaling cannot be determined or is difficult to predict prior to bid opening, or where rapidly fluctuating river stages exist), and accurate and timely surveys are difficult to accomplish. This acquisition approach is not commonly used in the Seattle District. To ensure that leased equipment dredging contracts are effectively used, the Chief, Navigation will:

- assure specifications are written to require adequate plant and personnel to complete contract requirements in a timely, safe, and environmentally sound manner; and
- require quality assurance representatives on board the leased dredge whenever the dredge is working for pay.

Unit Price Contracts Scow or Bin Measure. Scow or bin measure contracts may be used when the Contracting Officer determines that a contractor will be at risk of receiving insufficient credit for work performed due to rapid shoaling and/or significant changes in bottom conditions. To ensure that scow or bin measure contracts are effectively used, the Chief, Navigation will:

- provide quality assurance representatives on board the vessel at all times, or provide a method to determine that the dredging process is being performed in accordance with the specifications;
- assure specifications describe the relationship between the quantity of in place material and the measurement of the material. Typically, the relationship might include bulking factor or insitu density;
- assure the necessary drawings and/or measurements of vessels used to haul dredged material are available to provide a basis for quantity determination of work accomplished;
- assure the specifications provide the dredging depth (required + allowable), and a computation method based on the after dredging survey to determine excess dredging; and
- assure specifications are written in order to complete contract requirements in a safe, timely and environmentally sound manner.

Firm Fixed Price - Lump Sum Contracts. The firm fixed price - lump sum method of payment for dredging contracts may be used primarily for maintenance work, when the Contracting Officer determines that the rate of shoaling in the navigation channel is slow and/or predictable over the length of the contract. The Chief, Navigation will consider the following guidelines to assure that a lump-sum contract is effectively used:

- acceptance surveys are sufficient to assure that all material is removed from the required prism and that all contractual requirements are met;
- assure specifications are written to allow users of all types of dredge plant capable of efficiently, effectively, and safely performing the work in an environmentally sound manner;
- define the necessary parameters in the contract specifications so that prospective bidders can prepare reasonable bids. (District commanders will make available, and contract specifications shall indicate which information is available to prospective bidders.); and
- justify the use of firm fixed price - lump sum contracts. (The justification and use of firm fixed price - lump sum contracts will be approved by NWD or HQUSACE.)

Request for Proposal (RFP), Technically Acceptable, Lowest Price Contracts. This approach is used when unusual technical approaches are needed, performance problems have been identified during a prior dredging contract or safety issues or trends are discovered during prior dredging efforts. The Chief, Navigation will develop appropriate guidelines specifically for each contract, however the principles will be similar to unit price or firm fixed price contracts.

4.3 Construction Management

The primary goal of construction management (oversight of dredge contracts) is to ensure compliance with contract requirements, which meet mission requirements, on schedule, within budget.

NWS Navigation Section will administer day-to-day management of the dredge project.

Contracts will be administered by NWS associated staff and designated contracting officer representatives (COR) and administrative contracting officers (ACO). Cost and schedule growth will be monitored as a measure of performance. Any changes requiring funding above the available contingency will be approved and resourced and briefed to the district leadership.

The contractors will submit data for review on items required by contract specifications. The contractor is responsible for the adequacy and accuracy of submittals. The Navigation PM will identify the appropriate reviewing personnel and/or agency for items requiring special review approval. Status of submittals will be tracked by the PM for compliance with contractual review periods.

The QAR/COR is responsible for the day-to-day inspection of construction to ensure compliance with contract plans and specifications, resolving routine problems, maintaining the progress log, conducting weekly construction coordination meetings and updating the weekly construction status report.

The Contracting Officer is responsible for resolving payment, schedule and change order issues; performing Quality Assurance (QA) and coordinating through the PM and COR.

Some dredging projects will utilize the USACE Resident Management System (RMS). RMS is a quality management and contract administration system developed to support USACE and customers. The system provides an efficient method to plan, track, accomplish and control project management by integrating job specific requirements, corporate technical knowledge, and management policies. The Navigation PM will be responsible for setting up the project and support RMS staff and maintaining current data in RMS.

4.4 Data Management

Data Management utilizes the concept of a District repository for data with manager(s) responsible for maintenance/storage of data from all projects. This reduces the collection of redundant data and provides a central location for PDT members to determine available information for a project.

Project files will be maintained on a public drive, accessible by all team members. Folders within a project folder will be organized in a logical manner, for example by project phase (design, construction, etc), resource, activity, and so forth. Meetings and decisions will be documented through meeting notes or an MFR, and saved to the appropriate folder. The project manager is responsible for ensuring the project folder is organized and communicate all team members where to save project documents. Critical project file items to be stored in a central location are key products, financial information including WIK and PCT, legal agreements, letters of intent, critical correspondence, memos or waivers, PMP, real estate certification and appraisals, PCR, minutes, and final reports must be provided by the Project Manager to Engineering Records. Project schedule and budget will be managed and resourced in P2 and CEFMS for further financial execution.

Four original copies of agreements: one copy to real estate, one copy to records holding, and two copies to the local sponsor. Additional copies, as necessary, to RM, Program Manager, PM file, programs. It is recommended to PDF a copy of any agreement and saved within the appropriate project folder. Environmental documents should also be saved as a PDF to the project folder, and EA/FONSIs placed on the Seattle District's website.

The data management plan (DMP) outlines the processes and standards for the collection and life cycle maintenance of spatial data used by the PDT members, partners, customers, and stakeholders. The DMP is an integral part of the PMP. Data Management (DM) is a process and standard for the collection and life cycle maintenance of data used by the PDT members, partners, customers, and stakeholders. Data Management is also a key component to Value and Quality Management. Geospatial data management for one project spans from initial data searches/collection, supplemental data collection, use of data, database management, and storage of data after completion of the project.

4.5 Risk Management

Risk Analysis and mitigation measures will be implemented on a project by project basis and addressed in individual situations as necessary. These measures will differ widely based on a situation's complexity,

geographic location, and regional condition. This Program Management Plan does address risk areas common to the Navigation projects executed in the Seattle District's Area of Responsibility.

Risk is the chance of an event or series of events occurring that will have a positive or negative impact upon the accomplishment of project objectives. Risk is measured in terms of the likelihood and consequences of the event(s). The PDT utilizes risk analysis in all Navigation Program projects for making strategic decisions. The PMP has a section that details the projects risks in both facility and execution in a risk register. The risks are identified as what events can happen and how can they happen, e.g. failure modes/sequences and analyzed by determining likelihood and consequences/costs to determine the estimated risk level. The risk register identifies and describes the key risks to achieving the project performance and potential remedies to mitigate risks.

Table 1. Risk Register

Probability	Consequence or Impact				
	Negligible	Marginal	Significant	Critical	Crisis
Very Likely	**Low**	**Moderate**	**High**	**High**	**High**
Likely	**Low**	**Moderate**	**High**	**High**	**High**
Unlikely	**Low**	**Low**	**Moderate**	**Moderate**	**High**
Very Unlikely	**Low**	**Low**	**Low**	**Low**	**High**

Legend
High – loss of ability or significantly degrades Navigation Programabilities to accomplish program
Moderate - degrades program accomplishment Navigation Programabilities
Low - little or no impact on program accomplishments

The Navigation program risk register, a project risk register template, and a risk checklist are being developed and will eventually be provided in Appendix C.

It is important that careful and frequent analysis, implementation, and review of the mitigation response be conducted. The mitigation responses to these risks are being implemented and are continually evaluated to ensure process improvements.

The overall risk level associated with the probability of successful execution on this program is Moderate (yellow) to High (red). Risks that have been identified resulting in this rating are listed in Table 2.

Table 2. Navigation Program Risks

Risks	**Risk Event Description**	**Potential Effect**	**Response**	**Probability**	**Severity**
Time	Adverse Weather – Rough Sea, storms	Unable to dredge, unable to finish project	Longer period of performance in contract, expand environmental work windows when possible	Likely	Significant
Cost	Budget - Funding	No funds/reduced funds delays contract awards, reduce the quantity of material dredge, reduced oversight of project. CRA	Prioritizing Projects. Modifying scopes, to include prioritizing project reaches and quantities.	Likely	Significant

Risks	Risk Event Description	Potential Effect	Response	Probability	Severity
Time	Environmental Documentation	Delay and/or inability to award contract.	Start environmental preparation at project initiation. Work with SMEs within resource offices.	Likely	Significant
Time/Scope	Discovery of Contaminated Material	Delay award of Contract Force scope change (Change of Disposal Options)	Conduct early sediment sampling. Stay current with sediment regulations.	Unlikely	Significant
Time/Scope	Change of Regulatory Criteria	Delay award of Contract Force scope change (Change of Dredge and/or Disposal Options)	Maintain frequent interaction with regulatory agencies and project stakeholders. Stay current with regulations.	Unlikely	Significant
Time	Critical Work Related Accidents	Delay and/or shut down of project.	Require H&S Plans. Contractors must comply with EM 385-1-1. USACE Safety Office conducts regular safety inspections.	Unlikely	Critical
Time	Equipment Failure	Delay and/or shut down of project.	Contractor equipment must be maintained according to manufacture maintenance schedules. Contractor's vessels and equipment are subject to US Coast Guard inspection, when applicable.	Likely	Significant

Risks	Risk Event Description	Potential Effect	Response	Probability	Severity
Time/Cost	Internal Resource Workload	Delay of contract award.	Early identification of PDT. Signed work requests submitted to resources managers.	Likely	Significant
Cost	Fuel Prices	Cost overruns	Contingency funds available.	Likely	Negligible
Time/Cost	Award Protest	No award, Delay of start of project/missed work windows, increased costs	Award contract 45-60 days prior to in water work window	Likely	Significant

5 Quality Control Plan and Objectives

The following steps will be accomplished to ensure a quality program:

- A 5-year, Navigation Program OMP for dredging will be prepared. The OMP will identify the funding and specific projects to be accomplished in each year and provide general guidance addressing funding, the procurement process, real estate and environmental clearances, schedules for key activities to ensure contract documents are prepared on time, and the project remains on schedule for bidding. The OMP is Attachment A to this document.
- The OMP will address field quality control including pre/post surveys, weir designs, dike rehabs, dredge inspection, dredge safety, and environmental compliance.
- Quality Control/Quality Assurance will be in accordance with NWSOM 5-1-3, Quality Control Plan for Navigation.

Quality management is driven primarily by the desire to perform the project well and to comply with standards and criteria written in USACE documents, Engineering Regulations, Engineering Circulars, and other guidance published by HQUSACE, NWD, and NWS. Each project must have a Quality Management Plan (QMP) as part of the PMP that addresses quality control, quality assurance, and quality standards for the project. Federal, state, and local regulatory codes and guidance can also play a role in project scope and quality requirements. The Program Manager is responsible for ensuring quality scope, schedules, and budgets are produced. The Environmental Resources Branch Chief is responsible for ensuring projects meet NEPA requiremens, including the preparation of environmental assessment elements.

5.1 Quality Management Plan Methodology

Quality is planned and managed through the Plan-Do-Check-Act (PDCA) procedure. This procedure is an overview of the Quality Management Plan Methodology, and is summarized below:

Plan:

- Identify Customer Quality Objectives;
- Identify professional standards;

- Evaluate costs and benefits of selected quality objectives and processes used to achieve those objectives;
- Develop an effective plan and process;
- Develop performance measurement thresholds; and
- Ensure customer endorsement of quality objectives

Do:

- Execute QA and QC processes;
- Act upon deficiencies and update PgMP as necessary; and
- Document Lessons Learned

Check:

- Perform reviews;
- Ensure quality objectives are met; and
- Check performance against PgMP

Act:

- Take corrective action if performance thresholds are exceeded
- Document quality improvements

5.2 Review Plans

The review plan specifies the levels of review, types of review, and scope depending on the type of project. An independent peer review may be required by other USACE offices, centers of expertise, or independent agency depending on the size and scope of the project. Primarily, project documents are:

- Project/Task Environmental Decision Package (Statement of Findings, Finding of No Significant Impact, Environmental Assessment, Supplemental Environmental Assessment).
- Plans and Specs - review shall include plans and specifications, design analysis report, constructability analysis report, and construction cost estimate.

Project Managers will coordinate with their PDTs to determine ATR requirements prior to submitting a review plan for NWD approval. Most routine Navigation projects will not require ATR or IEPR. The work products represent routine type work posing a very low risk and in accordance with EC1165-2-209 it was determined no ATR review is required. Additionally, the work products do not meet the requirements outlined in EC 1165-2-209 to conduct either an IEPR type I or type II review.

If necessary, Review plans and ATR teams should be coordinated through the NWS Review Coordinator. PDTs should strive to support trading ATR teams with other districts and recommend ATR teams to NWD at the time of review plan submittal. The identification of ATR team members is not required prior to execution of the FCSA, however, the PDT must identify the technical requirements and fields for the initial review plan submittal. All reviews must be tracked in Dr. Checks. Approved review plans should remove USACE staff identification prior to posting to the NWS public website.

The Project Manager and ATR Lead should work to develop a well-defined charge that will consider scale, size, and risk of project. ATR team members should be limited to about five reviewers, depending on the risk of the project. For example, if the lands are all owned by the sponsor and there are no real estate acquisitions needed, then perhaps real estate does not need an ATR team member. Dr. Checks comments should be substantial and limited only to those that are required to ensure adequacy. The Dr. Checks comments should follow the four-part comment structure (EC 410):

1. Clear statement of the concern

2. Basis for the concern (reference policy, not personal opinion)

3. The significance of the concern (why does it need to be addressed)

4. Actions recommended to resolve the comment (help the PDT respond to the comment)

Editorial and informal comments should be tracked outside of Dr. Checks. An ATR summary memo will be provided to NWD with the submittal of the DPR. Any unresolved comments should be discussed in the memo.

6 Change Management

Change management is the practice of tracking and administering changes during the execution of a project. It is intended to provide controls to avoid change or minimize the impact of changes while allowing for maximum authority wherever possible. Change primarily affects a project's scope, cost, and schedule, with related impacts to quality, risk, and work products, as well as the functioning of the project team.

Change management is a critical activity undertaken by the Project Delivery Team (PDT). It is the process by which changes in a project are identified, assessed, addressed, and documented. If change is not formally managed, there is a likelihood that the project scope, schedule and budget could increase beyond acceptable program levels due to poor communication and coordination.

The Change Management Plan is used to define and manage the project's baseline performance measurement thresholds for scope, cost, schedule, risk and quality. The project's performance measurement thresholds will be used to determine if actual project performance has exceeded the project's baseline performance measurement thresholds. Significant changes, i.e., those which cross the thresholds defined by the project's Change Management Plan, will prompt updates to the PMP. The level of detail of the Change Management Plan is based on the complexity of the project.

The purpose of the Change Management Plan is to:

- Manage and control scope, schedule, and budget changes during the execution of a Project through objectively establishing thresholds to address variances between the current project needs and the established project baseline.
- Ensure that a project change is implemented efficiently without adding undue cost or schedule delay due to poor communication and coordination.
- Align or adjust District resources to meet current project needs and established District priorities in order to effectively execute District programs.
- Improve customer and stakeholder communication and relationships
- Establish greater District visibility and project accountability

6.1 Change Management Thresholds

During the development of the PMP the PDT will establish thresholds and document them in the Change Management section of the PMP. The established thresholds will trigger a formal Project Change Request (PCR) in the event that project execution deviates outside the approved baseline metrics. Thresholds will be established on a project by project basis by assessing risk factors such as, but not limited to, schedule float, critical work windows, political interest, and fiscal constraints. The table below describes the Navigation Program thresholds and approval authority.

Table 3. Navigation Program Thresholds

NAVIGATION PROGRAM	Threshold	Documentation and Approval
Scope	Scope changes will result in impacts to the budget or schedule. Typically changes occur due to sponsor requested changes, technical issues arising, or new process requirements added to the project.	Program manager evaluates.
Schedule: Calendar Day Change in HQ Required Milestones	Slippage exceeding 14 calendar days	Project Manager documents in Project Change Request Form (PCR)
Schedule: Calendar Day Change in HQ Required Milestones	Slippage of 30 to 60 calendar days	Program Manager approval of PCR
Schedule: Calendar Day Change in HQ Required Milestones	Slippage greater than 60 days, or into another fiscal year	Civil Works Branch Chief approval of PCR, PRB briefing
Budget: cost deviation as percent of the phase cost as documented in the last approved PMP	plus or minus 5%	Project Manager documents in PCR
Budget: cost deviation as percent of the phase cost as documented in the last approved PMP	10% of the phase costs or that will result in greater than 5% carry-over of current FY funds	Program Manager approval of PCR
Budget: cost deviation as percent of the phase cost as documented in the last approved PMP	20% of the phase costs or that will result in greater than 10% carry-over of current FY funds	Navigation Section Chief approval of PCR and PRB briefing
Budget	Any study cost increase that triggers an amendment to an agreement	Civil Works Branch Chief approval and potentially PRB briefing

6.2 Change Management Procedure

After the Project Management Plan is approved, changes that affect a project's scope, schedule, key milestones, costs or fiscal execution require update, approval and communication of revised versions of project documentation, including scope, schedule and budget baselines, work requests, and management plans. Submit the PCR promptly when the need for change is known allowing the PM, PgM, Technical Services Branch Chief, or PRB sufficient time to evaluate and possibly minimize the impacts of the change. A need for a PCR could be driven by unexpected contract award amounts, unexpected PDT labor charges, unforeseen technical requirements including additional survey needs, etc.

Project Managers are empowered to approve changes to project cost, schedule or budget that do not exceed the thresholds established their Project Management or Program Management plan. All changes will be coordinated with the project sponsor. Changes that deviate from the Project Management Plan will require updates to the Project Management Plan. Changes that exceed these thresholds must be approved by the appropriate reviewer(s), documented in a PCR, and will be attached to the Project Documentation in P2

7 Communication Plan

Navigation projects are unique to each community. Communication plans for individual projects will be developed, with the assistance of the district public affairs office (PAO), and described in the Project Management Plan developed for each individual project. The communication plan should discuss internal and external strategies.

7.1 General Communications

The Navigation Project Manager will be the spokesperson for the project for the life of the project. Communication tools include workshops, team meetings, news releases, public notices, public open houses, project website, and site tours. The communication plan is prepared by PAO with support from the Project Manager, sponsor, and PDT. The communication plan is a required element in the PMP.

7.2 Program Communications

The Program Manager will be the key spokesperson for the Navigation Program. New project development and outreach to communities will primarily be the Program Manager's responsibility. The Program Manager will assess the local need and potential fit with the Navigation Program. The Program Manager will work with sponsors to develop any letters of intent (See Work Acceptance in Section 4.1). Project Managers should direct any potential new projects to the Program Manager.

The Program Manager is the point of contact in the district for programmatic upward reporting and budget development. The Program Analyst will work closely with the Program Manager in responding to data calls. The Program Manager will present status and program development at periodic regional meetings.

7.3 External Communications

External communications is considered communication with external stakeholders such as state and federal regulators, political entities, tribal nations, NGOs, and the potentially affected public. Communication with congressional staff should follow the NWS Congressional communication SOP.

Press inquiries should be handled by the Project Manager with assistance from Public Affairs Office as needed. Project Managers should notify the Program Manager of press interactions.

7.4 Internal Communications

Internal communications include work requests, minutes command and staff inputs, P2 narratives, memos, LIR, and PRB. Project Managers are responsible for documenting and archiving internal project communication.

7.5 Contract Communications

Directions to contractors should always go through the Contracting Branch. The contracting officer's representative and the Project Manager must communicate with contractors to complete work as with any other PDT member, but cannot under any circumstances direct the contractor to do anything outside of the agreed upon scope. The NWS Acquisition Panel must be informed of upcoming contacts. USACE is

the contracting agent for construction. Sponsors and on-site PDT members may recommend to the Project Manager changes to construction work but may not direct the contractor.

7.6 Contractual Agreements

Project Managers cannot obligate the government to any contractual agreements. This can only be done by approved Contracting Officers (KO). For most projects following model agreements, signature authority of FCSA and PPA have been delegated to the District Engineer. Contracts to vendors can only be approved by contracting division.

7.7 Formal Communication

Opportunities for formal communications occur at line item reviews, PRBs, and corporate board meetings. The PRB and command and staff are opportunities to provide formal periodic communications to NWS management.

7.8 Informal Communication

The Project Manager will keep the customer and PDT fully apprised of the task status in a timely manner either telephonically, through e-mail, or during personal visits and team meetings. The level of NWS involvement will be defined in the scope of work and the task budget.

8 Performance Measurement

Monitoring at the NWD level is for program execution in regards to established metrics. This includes quarterly PRBs to review P2 reportable milestones and obligation schedules compared against the basic locked schedules. The basic lock is performed during the beginning of the fiscal year. All projects must be scheduled with milestones and resourced for the amount of funds expected to be obligated for the year. Any funding that is not identified as available through either carry-in or the HQ approved work-plan should not be resourced during the basic lock. Any surplus funds should be made available for reprogramming to other projects. The P2 data will be exported to Oracle Financial Advisor (OFA) to create a 2101 schedule and the P2 project will be baselined to complete the basic lock. The Navigation Program goal is expected to obligate at least 95 percent of the basic locked schedule by the end of the fiscal year.

8.1 Customer Surveys

Annual customer surveys are performed for every active project. Seattle District has a Standard Operating Procedure for Civil Works Customers Satisfaction Surveys and Navigation Section will follow this SOP.

The Program Manager is responsible for following up with Project Managers on negative reviews.

9 APPROVALS

This is to certify that the undersigned concur in the scope and structure for the subject program.

_____

JOHN HICKS
CHIEF, NAVIGATION SECTION

_____

WAYNE WAGNER
CHIEF, OPERATIONS TECHNICAL SUPPORT BRANCH

_____

BETH COFFEY
CHIEF, CIVIL WORKS BRANCH

_____

STUART COOK
CHIEF, OPERATIONS DIVISION

_____

OLTON SWANSON
DEPUTY DISTRICT ENGINEER FOR PLANNING,
PROGRAMS AND PROJECT MANAGEMENT

Appendix A:
Operations Plan

U.S Army Corps of Engineers

Seattle District

Channel Maintenance and Dredging

OPERATION MANAGEMENT PLAN

FY2012 – FY2016

10 November 2011

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OPERATIONS MANAGEMENT PLAN
SEATTLE DISTRICT
CHANNEL MAINTENANCE AND DREDGING PROGRAM

1 SCOPE

The Seattle District Channel Maintenance and Dredging Program Management Plan (PgMP) provides the general framework and scope of the Seattle District navigation maintenance program. This Operations Management Plan (OMP) describes the specific maintenance objectives for the current year and lays out a plan for out-year capabilities including non-dredging actions.

2 NAVIGATION MAINTENANCE OBJECTIVES

A complete list of all Seattle District authorized navigation projects is contained in Tables 1 and 2.

Table 1. Routine Channel Maintenance and Dredging Projects

Navigation Project	Navigation Features	Work Window	Estimated Quantities (CY)	Dredge Cycle (yrs)	Dredge Method	Historic Disposal	Contract Type	Navigation Project Manager
Grays Harbor	Inner Harbor Reaches	16 July - 14 Feb	1,500,000 - 2,000,000	Annual	Clamshell	Open water, Jetty toe protection	RFP	Chien
	Outer Harbor Reaches	1 April - 30 June	1,500,000 - 2,000,000	Annual	Hopper	Open water, Jetty toe protection	Gov't Dredge	Chien
Everett Harbor and Snohomish River	Channel and Upstream basin	16 Oct - 15 Feb	180,000	2	Pipeline	Upland rehandling	RFP	Pell
	Channel and downstream basin	17 Oct - 15 Feb	300,000	2	Pipeline	PSDDA Port Gardner open water, Jetty Island	RFP	Pell
Seattle Harbor	Duwamish River channel, upstream turning basin	1 Oct - 14 Feb with fish monitoring	100,000	2	Clamshell	PSDDA Elliott Bay open water	RFP	Hicks
Quillayute River	Channel and boat basin	1 Oct – 28 Feb	100,000	2	Pipeline & Clamshell	Beach nourishment & Upland	RFP	Pell

Navigation Project	Navigation Features	Work Window	Estimated Quantities (CY)	Dredge Cycle (yrs)	Dredge Method	Historic Disposal	Contract Type	Navigation Project Manager
Swinomish Channel	Swinomish Channel	15 Jul - 14 Feb	60,000		Clamshell	PSDDA Rosario Strait open water, upland	RFP	Pell
Lake Crocket - Keystone Harbor	Channel	15 Jul - 15 Feb	25,000	5	Pipeline & Clamshell	Beach nourishment	RFP	Pell

Table 2. Non-routine Channel Maintenance and Dredging Projects

Navigation Project	Navigation Features	Work Window	Estimated Quantities (CY)	Dredge Cycle (yrs)	Dredge Method	Historic Disposal	Contract Type	Navigation Project Manager
Neah Bay	Fish Gap Excavation	16 July-15. Feb	6000	4	Excavation	Clam Beach Nourishment	IFB	Chien
	Outer Breakwater Repair	16 July-15. Feb	600 ft	10+	Construction	N/A	RFP	Chien
Port Townsend	Channel and Marina Entrance	16 July-14 Oct	10,000	5+	Clamshell	PSDDA Port Townsend Site	IFB	Hicks
Ediz Hook	Revetment Repair and Beach Nourishment	16 July-15 Sept	300,000	2	Pipeline	PSDDA Port Gardner open water, Jetty Island	IFB	Chien
Bellingham	Channels	15 Jul - 14 Feb	100,000	10	Clamshell	PSDDA Bellingham Bay open water, upland	IFB	Chien/Pell
Oak Harbor	Channel	16 July-14 Oct	35,000		Clamshell	PSDDA Port Townsend Site	IFB	Pell

2.1 5-Year Plan

Table 3 lists the 5-year capability plan for the Seattle District Channel Maintenance and Dredging Program. Column FY 11 shows the FY 2011 Work Allowance and column FY 2012 shows the House of

Representatives passed FY 12 Budget. Column FY13 is the HQ Submitted budget after discussion with OMB as of 22 July 2011. Columns marked FY 14-15 indicates each year's estimated capability.

Table 3. Seattle District's 5 year Capability Channel Maintenance and Dredging Program

PROJECT	FY 12 Work Allowance ($1,000)	FY 13 House Budget ($1,000)	FY 14 HQ Capability ($1,000)	FY 15 Capability ($1,000)	FY 16 Capability ($1,000)
BELLINGHAM HARBOR	0	0	$1,800	$1,890	$1,950
EDIZ HOOK	0	0	$773	$780	$845
EVERETT HARBOR	$2,396	$600	$1,890	$1,935	$2400
FRIDAY HARBOR	0	0	$133	0	$0
GRAYS HARBOR	$8,330	$8,525	$10,792	$14,000	$14,400
KENMORE	0	0	0	$580	$650
KEYSTONE/ LAKE CROCKETT	0	0	0	0	$750
NEAH BAY	0	0	0	$60	$350
OLYMPIA HARBOR	0	0	$1,876	$1,925	$2,200
PORT TOWNSEND	0	0	0	0	$275
PROJECT COND SURVEYS	$505	$397	$530	$535	$560
P S & T W	$975	$803	$1,101	$1,200	$1,300
QUILLAYUTE RIVER	0	$1,140	$1,328	$1,380	$1,450
SEATTLE HARBOR	$4,155	$795	$1,300	$1,405	$1,490
SWINOMISH CHANNEL	0	0	$893	$933	$1,200
TACOMA HARBOR	0	0	$1,003	$1,024	$1,310
WILLAPA HARBOR & RIVER	0	0	$117	$128	$140
WW PORT TOWNSEND	0	0	0	0	$0
TOTALS	$17,048	$12,260	$23,536	$27,775	

2.2 FY 2012 WORK ALLOWANCE

- **Everett Harbor and Snohomish River:** Includes maintenance dredging of the downstream settling basin and navigation channel. This funding will provide full project dimensions. Capacity is estimated at 200,000 CY.
- **Grays Harbor and Chehalis River:** Includes maintenance dredging by contract the Inner Harbor portion of the project and outer harbor and the entrance channels by Government Hopper dredges and potentially some contract dredging activities.
- **Project Condition Surveys:** Includes hydrographic condition surveys on the navigation channel of projects that are not funded by the FY 2012 appropriation.
- **Puget Sound and Tributary Waters:** Includes the collection and disposal of debris and other hazardous to navigation in the Puget Sound and Tributary Waters. Debris may include, but not limited to, floating dock sections, tree trunks, whole trees, piling and other types considered hazardous to navigation.
- **Seattle Harbor:** Includes the preparation of plans and specs for mechanical (clamshell) dredging approximately 100,000 CY from the Duwamish Waterway, monitor water quality, progress surveys, and S & A for the dredging contract. These funds allow both in-water upland (confined) disposal.

2.3 FY 2013 HOUSE BUDGET

- **Everett Harbor and Snohomish River:** Includes maintenance dredging of the upstream settling basin and navigation channel. This funding will not provide full project dimensions.
- **Grays Harbor and Chehalis River:** Includes maintenance dredging by contract the Inner Harbor portion of the project and outer harbor and entrance channels by Government Hopper dredges. This funding will also provide for all associated work for contracting out the Inner Harbor dredging and S & A of the contract and the Government Hoppers.
- **Project Condition Surveys:** Includes hydrographic condition surveys on the navigation channel of projects that are not funded by the FY 2013 budget.
- **Puget Sound and Tributary Waters:** Includes the collection and disposal of debris and other hazardous to navigation in the Puget Sound and Tributary Waters. Debris may include, but not limited to, floating dock sections, tree trunks, whole trees, piling and other types considered hazardous to navigation.
- **Quillayute River:** Includes hydrographic condition surveys of the navigation channel and boat basin, development of plans and specs, and hydraulic dredging of approximately 100,000 CY.
- **Seattle Harbor:** Includes hydrographic condition surveys of the navigation channel, development of plans and specs, clamshell dredging of suitable sediment from the Upper Turning Basin with disposal in Elliott Bay Disposal site.

2.4 FY 2014 HQ SUBMITTAL

- **Bellingham Harbor:** Includes hydrographic condition surveys of the navigation channel, characterization of dredging areas, environmental coordination, dredging, and S&A of the dredging contract. Dredging likely performed using clamshell dredging due to probable disposal locations.

- **Ediz Hook:** Includes condition surveys and beach nourishment as well as repairs to the 13,000-foot long rock revetment. Deterioration of the revetment is causing severe erosion at the Coast Guard Station. Regular monitoring is prudent and appropriate. This work will be conducted once the Sponsor can provide the cost-sharing portion of the work (10.4%).
- **Everett Harbor and Snohomish River:** Includes maintenance dredging of the downstream settling basin and navigation channel. This funding will provide full project dimensions.
- **Friday Harbor:** Includes underwater inspection of floating breakwater structure.
- **Grays Harbor and Chehalis River:** Includes contract maintenance dredging the Inner Harbor portion of the project and Government Hopper dredging the outer harbor and entrance channels. This funding will also provide for all associated work monitoring of the contract and the Government Hoppers. The funding will also provide dollars to prepare plans and specifications for the repair of the South Jetty at the entrance to Grays Harbor, associated contract monitoring and S & A costs.
- **Olympia Harbor:** Includes the preparation of plans and specs and award of contract dredging, provide progress hydrographic quantity surveys for the contract and perform S & A on the dredging contract.
- **Project Condition Surveys:** Includes hydrographic condition surveys on the navigation channel of projects that are not funded by the FY 2014 budget.
- **Puget Sound and Tributary Waters:** Includes the collection and disposal of debris and other hazardous to navigation in the Puget Sound and Tributary Waters.
- **Quillayute River:** Includes dredging and associated work if the dredging is funded in FY 2012. If the dredging is funded in FY 2013, the funds will be used to make repairs to the training walls that protect the boat basin.
- **Seattle Harbor:** Includes hydrographic condition surveys of the navigation channel, development of plans and specs for clamshell dredging of suitable sediment from the Upper Turning Basin with disposal in Elliott Bay Disposal site and large volumes of unsuitable dredge material from the navigation channel with upland disposal. The bulk of the funds assume this activity is not funded in 2013.
- **Swinomish Channel:** Includes the preparation of plans and specs and award of contract dredging, progress hydrographic quantity surveys for the contract, and S & A on the dredging contract. This project will be dredging by hydraulic methods with upland beneficial reuse.
- **Tacoma Harbor:** Includes the preparation of plans and specs and award of contract dredging, progress hydrographic quantity surveys for the contract, and S & A on the dredging contract.
- **Willapa Harbor and River:** Includes hydrographic condition surveys of the navigation channel and dredging if the dredging is not funded in 2013.

2.5 FY 2015 NAVIGATION PROGRAM CAPABILITY

- **Bellingham Harbor:** Includes hydrographic condition surveys of the navigation channel, characterization of dredging areas, environmental coordination, dredging, and S&A of the dredging contract. Dredging likely performed using clamshell dredging due to probable disposal locations. If this dredging is performed in 2014, this dredging task will not be necessary.

- **Ediz Hook:** Includes condition surveys and beach nourishment as well as repairs to the 13,000-foot long rock revetment. Deterioration of the revetment is causing severe erosion at the Coast Guard Station. Regular monitoring is prudent and appropriate. This work will be once the Sponsor can provide the cost-sharing portion of the work (10.4%).
- **Everett Harbor and Snohomish River:** Includes maintenance dredging of the upstream and downstream settling basins and navigation channel. This funding will provide full project dimensions.
- **Grays Harbor and Chehalis River:** Includes contract maintenance dredging the Inner Harbor portion of the project and Government Hopper dredging the outer harbor and entrance channels. This funding will also provide for all associated work monitoring of the contract and the Government Hoppers. The funding will also provide dollars to prepare plans and specifications for the repair of the South Jetty at the entrance to Grays Harbor, associated contract monitoring and S & A costs.
- **Kenmore Navigation Channel:** Includes hydrographic condition surveys of the navigation channel, development of plans and specs for clamshell dredging of sediment from the navigation channel with disposal in Elliott Bay Disposal site.
- **Neah Bay:** Includes condition surveys on the approximately 8,000 ft long rubble mound breakwater.
- **Olympia Harbor:** Includes the preparation of plans and specs and award of contract dredging, progress hydrographic quantity surveys for the contract, and S & A on the dredging contract.
- **Project Condition Surveys:** Includes hydrographic condition surveys on the navigation channel of projects that are not funded by the FY 2015 budget.
- **Puget Sound and Tributary Waters:** Includes the collection and disposal of debris and other hazardous to navigation in the Puget Sound and Tributary Waters.
- **Quillayute River:** Includes dredging and associated work.
- **Seattle Harbor:** Includes hydrographic condition surveys of the navigation channel, development of plans and specs for clamshell dredging of suitable sediment from the Upper Turning Basin with disposal in Elliott Bay Disposal site and large volumes of unsuitable dredge material from the navigation channel with upland disposal. The bulk of the funds assume this activity is not funded in 2013.
- **Swinomish Channel:** Includes the preparation of plans and specs and award of contract dredging, progress hydrographic quantity surveys for the contract, and S & A on the dredging contract. This project will be dredging by hydraulic methods with upland beneficial reuse.
- **Tacoma Harbor:** Includes the preparation of plans and specs and award of contract dredging, progress hydrographic quantity surveys for the contract, and S & A on the dredging contract.
- **Willapa Harbor and River:** Includes hydrographic condition surveys of the navigation channel and dredging if the dredging is not funded in 2013.

2.6 FY 2016 NAVIGATION PROGRAM CAPABILITY

- **Everett Harbor and Snohomish River:** Includes maintenance dredging of the upstream settling basin and navigation channel. This funding will not provide full project dimensions.

- **Bellingham Harbor:** Includes hydrographic condition surveys of the navigation channel, characterization of dredging areas, environmental coordination, dredging, and S&A of the dredging contract of Squalicum and I&J Waterways. Dredging likely performed using clamshell dredging due to probable in-water disposal locations. If this dredging is accomplished in 2015, this dredging task will not be necessary.
- **Ediz Hook:** Includes condition surveys and beach nourishment as well as repairs to the 13,000-foot long rock revetment. Deterioration of the revetment is causing severe erosion at the Coast Guard Station. Regular monitoring is prudent and appropriate. This work will be once the Sponsor can provide the cost-sharing portion of the work (10.4%). If funded in 2015, this nourishment will not be necessary.
- **Everett Harbor and Snohomish River:** Includes maintenance dredging of the upstream and potentially downstream settling basins and navigation channel as well as key bends in the River prone to siltation. This funding will provide full project dimensions.
- **Grays Harbor and Chehalis River:** Includes contract maintenance dredging the Inner Harbor portion of the project and Government Hopper dredging the outer harbor and entrance channels. This funding will also provide for all associated work monitoring of the contract and the Government Hoppers. The funding will also provide dollars to prepare plans and specifications for the repair of the South Jetty at the entrance to Grays Harbor, associated contract monitoring and S & A costs.
- **Kenmore Navigation Channel:** Includes hydrographic condition surveys of the navigation channel, development of plans and specs for clamshell dredging of sediment from the navigation channel with disposal in Elliott Bay Disposal site. FY2016 would include dredging of up to 75,000 CY of material.
- **Neah Bay:** Includes condition surveys on the approximately 8,000 ft long rubble mound breakwater and Fish Gap Excavation to allow juvenile salmon access.
- **Olympia Harbor:** Includes the preparation of plans and specs and award of contract dredging, progress hydrographic quantity surveys for the contract, and S & A on the dredging contract if not completed in prior 3 years.
- **Project Condition Surveys:** Includes hydrographic condition surveys on the navigation channel of projects that are not funded by the FY 2015 budget.
- **Puget Sound and Tributary Waters:** Includes the collection and disposal of debris and other hazardous to navigation in the Puget Sound and Tributary Waters.
- **Quillayute River:** Includes dredging and associated work if not performed in prior years.
- **Seattle Harbor:** Includes hydrographic condition surveys of the navigation channel, development of plans and specs for clamshell dredging of suitable sediment from the Upper Turning Basin with disposal in Elliott Bay Disposal site and large volumes of unsuitable dredge material from the navigation channel with upland disposal. The bulk of the funds assume this activity is not funded in 2013.
- **Swinomish Channel:** Includes the preparation of plans and specs and award of contract dredging, progress hydrographic quantity surveys for the contract, and S & A on the dredging contract. This project will be dredging by hydraulic methods with upland beneficial reuse.
- **Tacoma Harbor:** Includes the preparation of plans and specs and award of contract dredging, progress hydrographic quantity surveys for the contract, and S & A on the

dredging contract for removal of sediment in the Hylebos and Blair waterways. If funded in prior 5 years, this dredging would likely not be necessary.

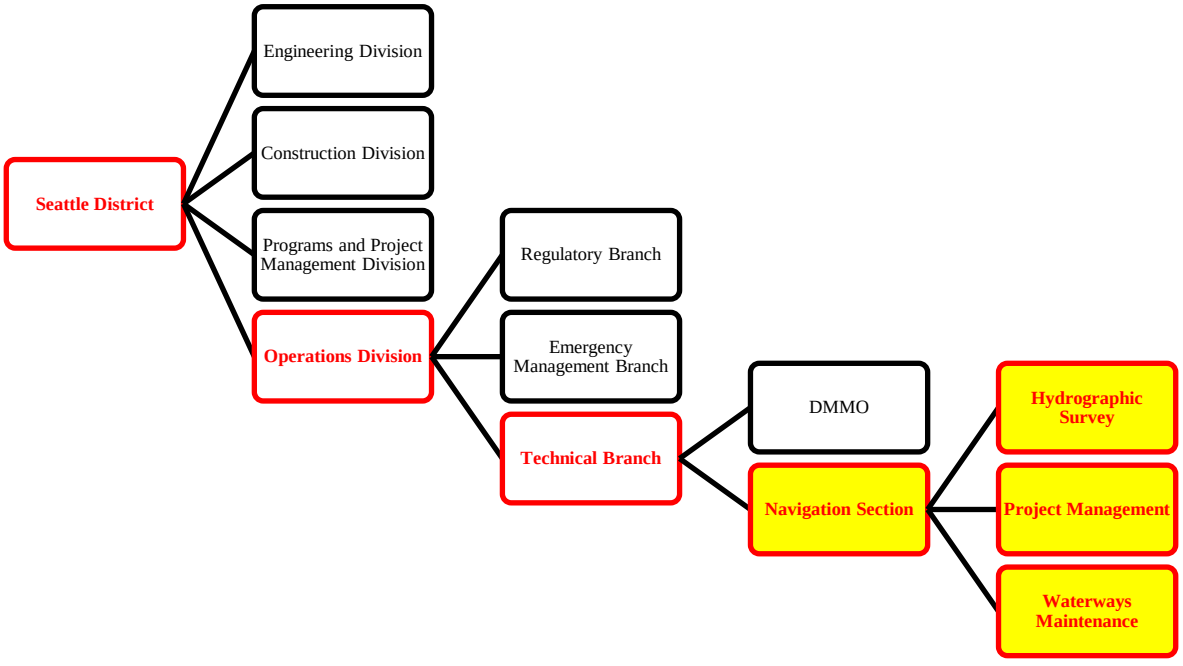
- **Willapa Harbor and River:** Includes hydrographic condition surveys of the navigation channel and dredging if the dredging is not funded in 2015 or in prior 3 years.

3 EXECUTION STRATEGIES AND MANAGEMENT OBJECTIVES

- All maintenance activities will be planned and managed in accordance with ER 5-1-11, Business Process Manual/P2 Users Guide. These projects will have a Project Management Plan (PMP) and managed as a P2 project.
- No delays in commercial navigation on Seattle District harbors, rivers, and inland waterways due to channel maintenance if full project funding is appropriated.
- Project Reliability- no significant draft restrictions if full project funding is appropriated.
- Increased competition by the dredging contractors to achieve a fair and reasonable price for dredging contracts.
- Environmentally sustainable projects.

4 ROLES AND RESPONSIBILITIES

4.1 Navigation Section



Program Management: The Chief of Navigation Section is the Navigation Program Manager and Business Line Manager for Seattle District Channel Maintenance and Dredging Program.

Hydrographic Survey: The Hydrographic Survey Unit is responsible for surveying, processing, mapping, and posting the channel condition survey data. There are two hydrographic survey crews - Puget Sound Survey Crew and the Aberdeen Survey Crew. They have the ability to perform both single beam and multi-beam surveys. Once a hydrographic survey has been completed, it is edited and processed by the survey party and delivered to the office either by hand or by electronic process. The data is rechecked, placed on survey base sheets by CADD technicians in Navigation Section and filed in the

proper electronic folder. Draft survey drawings are given to the Navigation Project Manager for the project for review and evaluation. Funding from the Project Condition Surveys program is used to monitor channel conditions in projects that are not scheduled for maintenance dredging.

Navigation Project Managers: There are three Navigation Project Manager (PMs) positions in Navigation Section. They are responsible for planning and accomplishing the planned maintenance activities at the projects assigned in Appendix A. The PMs are responsible for planning and evaluating the condition surveys and coordinating with project stakeholders to determine maintenance needs. The evaluation process includes a review of the current fiscal year budget and a determination of shoaling in the channel. The budget review is to determine if adequate funding is available for dredging. The PM lays out dredging areas and gives the drawing back to the CADD technician (Hydrographic Survey Unit) for yardage computation. Verifying that funds for dredging are available, the PM then drafts technical specifications particular to the dredging project, requests the CADD technician to prepare Plans for dredging and coordinates with other in-house offices in development of contract documents. These offices and their responsibilities include:

Waterways Maintenance: The Waterways Maintenance unit operates and maintains the debris vessel, M/V Puget, which patrols the waters of Puget Sound and tributaries removing debris and other hazards to navigation. This program is funded under the Puget Sound and Tributary Waters Operations & Maintenance account. The Floating Plant supervisor prepares budget packages so that there will be sufficient funding for the survey vessels and the debris pickup and disposal. The Unit is also responsible for operating and maintaining all survey vessels. These include the Shoalhunter, a 56' ocean-going survey vessel; the "31 and 32 Boats", both used for single and multi beam surveys.

4.2 Other District Resources

- **Environmental Resource Section:** Responsible for all environmental coordination during design of the project and insuring compliance of the various environmental authorizations during the construction contract. This includes water quality monitoring during the dredging contract.

- **Specifications Section:** Responsible for reviewing technical portions of the specifications written by the NPMs for compliance with Corps of Engineers latest regulations and guide specifications.

- **Cost Engineering Section:** Responsible for providing an official Government Estimate which provides an estimate of all features of the construction contract and estimates of their cost. This estimate is used to evaluate the reasonableness of the bids received at bid opening.

- **Coastal Engineering Section:** Responsible for providing engineering for navigation projects to include planning, design, preparation of contract plans and specifications and technical support during post award, including project oversight, review of contractor submittals, and analysis of survey data.

- **Contracting Division:** Provides a Contracting Officer to administer the contract and is responsible for finalizing the contract documents and advertising the construction contract. This effort also includes making the construction industry aware of the solicitation and answering questions that may come up during the advertisement period. Contracting also assigns a Contracting Officer Representative for each project.

- **Real Estate Division:** Responsible to obtain any necessary or required easements for placement of dredge material or dredge pipeline and any ingress and egress for contractor's employees or equipment.

- **Office of Counsel:** Responsible for proffering legal advice to the PDT on any matter that comes up during the design, solicitation or constructions phases of the project.

- **Programs, Planning and Project Management Division:** Project management and project delivery.

- **Dredged Material Management Office:** The DMMO office serves as lead for the cooperating federal and state agencies (Environmental Protection Agency, Washington State Departments of Ecology and Natural Resources) who jointly implement dredged material management plans for Puget Sound, Grays Harbor, and Willapa Bay. The DMMO provide technical evaluations of dredged material and policy guidance on disposal management decisions to Navigation Section. DMMO provides recommendations to the NPM on open-water dredged material.

5 CRITICAL ASSUMPTIONS AND RISKS

Table 4 represents the general assumptions and risks that could cause major impacts to actual execution.

Table 4. Critical Assumptions and Risks

ASSUMPTION	RISK	IMPACT	MANAGEMENT
Channel area clear to dredge	Dredging will interfere with local fishing activities (e.g. commercial, recreational or tribal Moderate	Unable to complete job or will prolong work	Early and frequent coordination with project users.
Contractors and equipment will be available	Due to compressed environmental work windows contractor may be busy on other work – High	Unable to complete job	Survey the contractor pool prior to advertisement to ascertain availability
Weather will accommodate the work window-construction schedule	Weather may interfere with completion, work windows during winter months – Moderate	Work may extend into periods of severe weather, if so work might be stopped	Target contract award as soon as possible so work can start at beginning of fish window
Disposal Site Use Permit available or Water Quality Certificate available	Permitting process may be time-consuming and delay start of work -- High	No work possible without this permit or the water quality certificate	Continual monitoring status throughout permitting process
Material is characterized as suitable for open water disposal	Material is above DMMP screening levels and/or fails bioassay tests	Dramatic cost increases for upland disposal or leaving material in place and dredging not performed	Closely monitor laboratory performance and communicate with DMMP. Change strategy if material unsuitable for open water disposal.
Funding sufficient to dredge to authorized depth plus over-depth	Some shoals may remain if funding is limited	Hazards to navigation continue, reduces use of channel	Stay informed of. opportunities that may become available to augment project funding

The following items will be evaluated throughout the life cycle of the project delivery process.

- **Project requirements:** Performing periodic surveys of our critical harbors is important to assure that we plan the dredging accordingly. Condition surveys and special event surveys are critical and will be planned accordingly to accommodate any emergency.
- **Competition:** Coordinate dredging schedules with the other West Coast Districts, NWD Districts, West Coast Chapter of WEDA, Pacific Navigation Community of Practice (PacNavCoP) and Industry Corps Hopper Dredging Management Group (ICHDMG) to assure a balanced schedule and to ensure enough competition to have proper bids on each contract. Most NWS dredging projects will compete with other Corps Pacific region districts and private industry for the dredges.
- **Environmental Compliance:** With the Endangered Species Act and the restrictions in some of the water quality certifications, it has become more difficult to execute the dredging program. We will work closely with stakeholders to find solutions to dredging and disposal issues that satisfy the Corps, our customers and the environmental community needs and concerns.

6 SCHEDULES AND MILESTONES

6.1 FISH WINDOWS

All dredging and in-water maintenance activities are limited by environmental constraints intended to protect critical ecology and habitats. These constraints include what are called “fish” or “work” windows. These vary for each project depending upon the environmental considerations. Table 5 contains the established fish windows for the routine channel maintenance and dredging projects and key milestones to be met to ensure in-water work can begin at the beginning of the dredge window.

Table5. Key Milestones for Routine Dredging Projects

Navigation Project	Navigation Features	Work Window	Days to allow before Work Window				
			Notice To Proceed (15 days)	Ready To Award (25 days)	Initiate Solicitation (55 days)	Pre-Solicit Notice (70 days)	Complete P&S (70 days)
Grays Harbor	Inner Harbor Reaches	16 July - 14 Feb	1-Jul	21-Jun	22-May	7-May	7-May
	Outer Harbor Reaches	1 April - 30 June	18-Mar	8-Mar	6-Feb	23-Jan	23-Jan
Everett Harbor and Snohomish River	Channel and Upstream basin	16 Oct - 15 Feb	1-Oct	16-Sep	6-Sep	23-Aug	23-Aug
	Channel and downstream basin	16 Oct - 15 Feb	1-Oct	16-Sep	6-Sep	23-Aug	23-Aug
Seattle Harbor	Duwamish River channel, upstream turning basin	1 Oct – 31 Jan, 14 Feb conditional with. fish monitoring	15-Sep	5-Sep	6-Aug	22-Jul	22-Jul
Quillayute River	Channel and boat basin	1 Oct - 28 Feb	15-Sep	5-Sep	6-Aug	22-Jul	22-Jul
Swinomish Channel	Swinomish Channel	15 Jul - 14 Feb	30-Jun	20-Jun	21-May	6-May	6-May
Lake Crocket - Keystone Harbor	Channel	15 Jul - 15 Feb	30-Jun	20-Jun	21-May	6-May	6-May

6.2 TYPICAL SCHDULE FOR TASKS FOR MAINTENANCE DREDGING ACTIVITIES

Major Tasks and Activities	Duration (Days)
Initiate PDT	5
Preparation of Plans and Specs	60 - 90
Real Estate, site use permit	30 - 60
Sediment sampling and testing (as required)	90 - 120
Environmental Clearances	
- DMMO Open Water disposal suitability determination	Varies
- Coastal Zone Management consistency statement	Varies
- 401, WQ Cert from EPA	Varies
- 404(b)(1)	Varies
- EA/FONSI	Varies
- ESA Section 7, BA	Varies
- WDFW Letter of concurrence	Varies
ATR Review (when required)	45
Issue Pre-solicitation Notice	15
Sources Sought	7
Complete Form 1	7
Public Notice Issued	30
Advertising	30
Prepare Government Cost Estimate	14
Bid Opening/Source Selection Panel	1-7
Award contract and Notice to Proceed	21
Commence Dredging (mobilize)	15
Close Out	30

7 ACQUISITION STRATEGY

Dredging projects are staged, as dredging windows will allow, throughout the year to allow the most competition and contractor flexibility to bid and insure plant availability. The acquisition for each project will be described in more detail in each dredging project PMP. Historically, Seattle District dredging has been accomplished by Invitation for Bid (IFB) type contracts however due to quality concerns and needs to work safely, some Requests for Proposals (RFP) will be used as needed. Other types of contracts that are available to be used are, Equipment Rental Contracts, Unit Price Contract, Indefinite Delivery/Indefinite Quantity. (IDIQ), Best Value and Request For Proposals (RFP). At times, the emergency dredging contract procurement process will be used, but only when fully justified.

The use of multi-year contracts for dredging is being evaluated in the interest of saving time and precious O & M dollars. Most multi-year contracts have a clause stipulating a guaranteed minimum payment each year. An annually funded project is eligible for a multi-year contract because it can pay the guaranteed minimum amount of the contract. The only annually funded navigation projects within the Seattle District that require dredging are Grays Harbor and Everett Harbor and Snohomish River. Everett Harbor requires the use of two different types of dredges, mechanical and hydraulic pipeline, based on the dredge material placement area proposed for the dredging. In the interest of competitiveness, we shall evaluate the Grays Harbor and Everett projects for dredging under a multi-year contracts whenever possible.

8 VALUE MANAGEMENT

Value engineering assessments will be accomplished in a programmatic manner on Grays Harbor and Everett Harbor and Snohomish River at regular intervals but not annually. The studies will follow the requirements established in ER 11-1-321, OMB Circular A-131 and EC 11-1-114. The ER sites the limiting value for performing a VE Study at $1 M except for construction projects that are $2 M. The Corps defines value not only by cost savings but also includes QUALITY, PERFORMANCE, RELIABILITY, and SAFETY.

9 CLOSEOUT STRAGEGY

Closeout of a project will follow the procedures defined below:

Complete a post-dredge survey after each project is completed and before contract closeout, in order to determine quantities, contract payment, and condition.

- Contracting shall closeout contracts and de-obligated remaining balances will be within 30-days of final invoice.
- Fiscally close projects and return any leftover local sponsor funds.