

March 28, 2014

**TO:** CRC Document Controls  
**FROM:** Kevin Gray  
**SUBJECT:** Project Closeout Summary for Columbia River Crossing – Section 408  
Permit Support (Master Agreement B31835 WOC #2)

This memorandum, assembled at the time of project closeout, provides a summary of work completed towards obtaining Section 408 authorizations from the United States Army Corps of Engineers for modifications to navigation channels and flood protection levees impacted by the proposed Columbia River Crossings. The intent of the memorandum is to provide information and guidance on the applicable technical and administrative efforts that may be used at a future date towards completion of this project, or a similar effort in the affected area.

## Executive Summary

The construction of the Columbia River Crossing includes impacts to Federal Navigation Channels within the Columbia River, regulated and maintained by the United States Army Corps of Engineers (USACE). Additionally, the project requires modifications or realignment of the Peninsula Drainage District Number 1 (Pen 1), Peninsula Drainage District Number 2 (Pen 2), and the Denver Avenue Cross Levee systems (Denver Avenue), which were authorized by the Flood Control Act of June 22, 1936 and are under jurisdiction of the USACE and operated by the Multnomah County Drainage District. United States Code (USC) Title 33 Section 408 (known as 33 USC 408 or Section 408) requires that modifications to Federal Projects, including the design of modifications to levees, bank protection, and interior drainage receive authorization from the USACE. Acting as a subconsultant to David Evans and Associates (DEA), HDR Engineering led the consultant effort to secure those authorizations in support of the CRC Environmental Lead.

In order to proceed, CRC requires two separate authorizations from the USACE: one for the impacts to Navigation (referred to as Navigation 408); and another for impacts to levees, along North Portland Harbor (referred to as Levee 408). Both authorizations require extensive review processes with the USACE and substantial technical analysis to demonstrate that modifications will not be injurious to the public interest and will not impair the usefulness of the existing navigation channels and levee systems, respectively. USACE memoranda titled *Policy and Procedural Guidance for the Approval of Modification and Alteration of Corps of Engineers Projects* (USACE, October 23, 2006) and *Clarification Guidance on the Policy and Procedural Guidance for the Approval of Modifications and Alterations of Corps of Engineers Projects* (USACE, November 17, 2008) provide the framework for the analysis and review. Furthermore, all Requests for Section 408 Approval of Modification must be prepared to comply with USACE's October 23, 2006 and November 17, 2008 guidance and with *Engineer Regulation (ER) 1165-2-119 Water Resources Policies and Authorities, Modifications to Completed Projects* (USACE, September 20, 1982). Specifically, the document will address requirements in the October 23, 2006 guidance, as clarified and supplemented via the November 17, 2008 guidance. In addition to the USACE Review, both processes require an Individual Expert Panel Review (IEPR), to ensure the technical adequacy of all work.

As of March 21, 2014, the project team has completed the following:

Navigation 408:

- The complete 60% submittal package for USACE review has been submitted to CRC and reviewed by Parametrix, on behalf of CRC. That package includes the following technical analyses and reports:
  - HEC-RAS Report – Complete;
  - Navigation Section 408 Summary Report;
  - Safety Assurance Review Plan - approval by USACE dated March 3, 2014;
  - One-Dimensional Hydraulic Model Report ;
  - Two-Dimensional Hydraulic Report ;
  - Navigation Channel Dredging and Maintenance Analysis;
  - Proposed Ship Simulation Study, including Design Vessels and Test Methodology;
  - Deep-Draft Ship Simulation Report (Draft);
  - Shallow-Draft 75% Progress Report;
  - Draft Alternatives Analysis for Yaquina Dredge Impacts During Construction ();
- The Draft Floodplain Report has been submitted to CRC – separate from the 60% package.

Levee 408:

- Draft Levee Review Plan – not submitted to USACE;
- Levee Locations and Encroachments Report;
- Preliminary Levee Alternatives Summary Report; and,
- Levee Alternatives Analysis Report.

Below is a detailed summary of work status and project deliverables, known issues or gaps, outstanding work to complete the Section 408 authorization processes, an overview of project history, key decisions, and information on key documents and references.

## **Status of Work**

Table 1 summarizes the disposition of deliverable products, completed within Work Order Contract 2 – Section 408, as of March 28, 2014.

Table 1. CRC Section 408 - Deliverable Status

| WB S       | Description and Deliverables   | % Complete for Work 3/28/2014 <sup>1</sup> | Original Date Due    | Comments   |
|------------|--|--|----------------------|--|
| <b>1.0</b> | <b>Project Management</b>  |  |                      |  |
| 1.0        | Progress Reports   | 95%  | 15th of each month   | Ongoing until contract close.  |
| 1.0        | Section 408 schedule in Primavera P6 and PDF format                                  |  | Within 5 days of NTP | The Section 408 process was incorporated into the overall CRC Project Schedule (Primavera P6). Detailed schedules were maintained in MS Project for the Navigation and Levee 408 processes. Additional Excel summaries were updated for USACE and MCDD coordination. The latest versions of those schedules are available at:<br><a href="G:\CRC\CRC Project Files\Deliverables\B31835 DEA WOC 02\B31835 WOC 02 Task 1.1 Schedules">G:\CRC\CRC Project Files\Deliverables\B31835 DEA WOC 02\B31835 WOC 02 Task 1.1 Schedules</a> |
| <b>2.0</b> | <b>Levee &amp; Navigation Documents for CRB and MC/MDHI 408</b>                      |  |                      |  |
| 2.1        | Draft and Final scope of work for Navigation IEPR team to be submitted to the Agency | 100%                                       | 12/18/13             | Submitted to CRC 11/18/13<br><a href="G:\CRC\CRC Project Files\Deliverables\B31835 DEA WOC 02\B31835 WOC 02 Task 2.1\Task 2.1 IEPR Scopes">G:\CRC\CRC Project Files\Deliverables\B31835 DEA WOC 02\B31835 WOC 02 Task 2.1\Task 2.1 IEPR Scopes</a>   |
| 2.1        | Final Submittal of Navigation Review Plans in Adobe PDF Format                       |  | 03/05/14             | Submitted to CRC 1/14/14<br><a href="G:\CRC\CRC Project Files\Deliverables\B31835 DEA WOC 02\B31835 WOC 02 Task 2.1\Task 2.1 Navigation Review Plan">G:\CRC\CRC Project Files\Deliverables\B31835 DEA WOC 02\B31835 WOC 02 Task 2.1\Task 2.1 Navigation Review Plan</a>  |
| 2.2        | Draft Levee Review Plans   | 85%  | 02/05/14             | Submitted to CRC 2/27/14<br><a href="Task 2.2 Levee Review Plan\Deliverable">Task 2.2 Levee Review Plan\Deliverable</a>  |
| 2.2        | Draft and Final scopes of work for Levee IEPR team to be submitted to the Agency     |  | 03/06/14             | Effort suspended – little value in progressing IEPR effort – IEPR scope of work included with Review Plan, Section 3.2:<br><a href="Task 2.2 Levee Review Plan\Deliverable">Task 2.2 Levee Review Plan\Deliverable</a>   |
| 2.3        | Revised Levee Location memo based on comments from MCDD                              | 100%                                       | 02/27/14             | Submitted to CRC 3/6/14<br><a href="G:\CRC\CRC Project Files\Deliverables\B31835 DEA WOC 02\B31835 WOC 02 Task 2.3\Task 2.3 CRC Levee Location Memo (To CRC).pdf">G:\CRC\CRC Project Files\Deliverables\B31835 DEA WOC 02\B31835 WOC 02 Task 2.3\Task 2.3 CRC Levee Location Memo (To CRC).pdf</a>   |

| WB S | Description and Deliverables   | % Complete for Work 3/28/2014 <sub>1</sub> | Original Date Due | Comments  |
|------|--|--|-------------------|---|
| 2.3  | Draft and Final Memorandum summarizing findings, data gaps, and recorded assumptions and activities  |  | 01/31/14          | Submitted to CRC 1/15/14<br><a href="#">Task 2.3 Levee Data Gaps Memo/Deliverable/Task 2.3 IEVEE Section 408 Data Gap Analysis 11-15-2012.pdf</a>   |
| 2.4  | Levee Alternatives Summary Memorandum  |  | 02/07/14          | Submitted to CRC 2/7/14<br><a href="#">G:\CRC\CRC Project Files\Deliverables\B31835 DEA WOC 02\B31835 WOC 02 Task 2.4\B31835 WOC 02 Task 2.4.pdf</a>  |
| 2.4  | Revised Levee Alternatives memo documenting additional analysis, Cost Estimate, and the process used to choose the Selected Alternative, and the applicable design criteria. | 95%  | 3/15/14           | Effort suspended at 95% level. Draft Report located:<br><a href="#">G:\CRC\CRC Workpaper Files\ Closeout Incomplete Deliverables\B31835 WOC 2\Task 2.4 Levee Mods Alternatives Analysis\Supporting Files\Task 2.4 Design Crit &amp; Levee Alt T M.pdf</a> |
| 2.10 | Final HEC-RAS hydraulic model.   |  | --                | Submitted to CRC 1/15/14<br><a href="#">G:\CRC\CRC Workpaper Files\ Closeout Incomplete Deliverables\B31835 WOC 2\Task 2.10-2.11 Hydraulic Analysis (1D)\Supporting Files\1D_Report_HEC_RAS_Model</a>   |
| 2.10 | 60% SAR submittal for Draft Hydraulics Report (CRB & MC/MDHI Bridges)  | 100%                                       | 03/05/14          | Accompanies 60% 408 Package Submittal to CRC 3/5/14<br><a href="#">G:\CRC\CRC Project Files\Deliverables\B31835 DEA WOC 02\B31835 WOC 02 Task 2.10-2.11\Deliverable\Task 2.10-2.11 1D Hyd Model.pdf</a>   |
| 2.11 | HEC-RAS hydraulic model.   | 100%                                       | --                | Submitted to CRC 1/15/14<br><a href="#">G:\CRC\CRC Workpaper Files\ Closeout Incomplete Deliverables\B31835 WOC 2\Task 2.10-2.11 Hydraulic Analysis (1D)\Supporting Files\1D_Report_HEC_RAS_Model</a>   |

| WB<br>S | Description and<br>Deliverables   | %<br>Complete<br>for Work<br>3/28/2014<br>1 | Original<br>Date Due | Comments  |
|---------|---|---|----------------------|---|
| 2.11    | Draft Hydraulic Report (including the final MC/MDHI Bridge design) detailing model preparation, calibration, runs, and scour potential at the 60% |   | 03/05/14             | Accompanies 60% 408 Package Submittal to CRC 3/5/14<br><a href="G:\CRC\CRC Project Files\Deliverables\B31835 DEA WOC 02\B31835 WOC 02 Task 2.10-2.11\Deliverable\Task_2.10-2.11_1D_Hyd_Model.pdf">G:\CRC\CRC Project Files\Deliverables\B31835 DEA WOC 02\B31835 WOC 02 Task 2.10-2.11\Deliverable\Task_2.10-2.11_1D_Hyd_Model.pdf</a>                      |
| 2.12    | Draft Floodplain Assessment   | 100%  | 03/05/14             | Submitted to CRC 3/18/14<br><a href="G:\CRC\CRC Project Files\Deliverables\B31835 DEA WOC 02\B31835 WOC 02 Task 2.12\Deliverable\Task_2_12_Floodplain_Rpt_Mainstem_(draft_for_CRC_review).pdf">G:\CRC\CRC Project Files\Deliverables\B31835 DEA WOC 02\B31835 WOC 02 Task 2.12\Deliverable\Task_2_12_Floodplain_Rpt_Mainstem_(draft_for_CRC_review).pdf</a> |
| 2.13    | Final SRH-2D hydraulic model.   |   | 03/05/14             | Submitted to CRC 1/15/14<br><a href="G:\CRC\CRC Workpaper Files\Closureout Incomplete Deliverables\B31835 WOC 2\Task_2.13_Hydraulic_Analysis_(2D)\Supporting_Files">G:\CRC\CRC Workpaper Files\Closureout Incomplete Deliverables\B31835 WOC 2\Task_2.13_Hydraulic_Analysis_(2D)\Supporting_Files</a>   |
| 2.13    | 60% SAR submittal for Draft 2-D Hydraulics Report (95% completed report).   | 100%  | 03/05/14             | Accompanies 60% 408 Package Submittal to CRC 3/5/14<br><a href="G:\CRC\CRC Project Files\Deliverables\B31835 DEA WOC 02\B31835 WOC 02 Task 2.13\Task_2.13_CRC_2D_Hyd_Model.pdf">G:\CRC\CRC Project Files\Deliverables\B31835 DEA WOC 02\B31835 WOC 02 Task 2.13\Task_2.13_CRC_2D_Hyd_Model.pdf</a>  |

| WB<br>S | Description and<br>Deliverables   | %<br>Complete<br>for Work<br>3/28/2014<br>1 | Original<br>Date Due | Comments   |
|---------|---|---|----------------------|--|
| 2.14    | Summary report detailing the technical analysis, channel layouts, and recommendations (includes topographic surfaces and layouts of the new channel in MicroStation format) at the 60%. | 100%  | 03/05/14             | Accompanies 60% 408 Package Submittal to CRC 3/5/14. Source documents located at:<br><a href="G:\CRC\CRC Workpaper Files\ Closeout Incomplete Deliverables\B31835 WOC 2\Task 2.14 Navigation Channel Dredge and Maintenance\Supporting Files">G:\CRC\CRC Workpaper Files\ Closeout Incomplete Deliverables\B31835 WOC 2\Task 2.14 Navigation Channel Dredge and Maintenance\Supporting Files</a> |
| 2.14    | Draft Navigation Channel Dredging and Maintenance Report (95% completed report) submitted with the 60% SAR submittal.   |   | 03/05/14             | Accompanies 60% 408 Package Submittal to CRC 3/5/14<br><a href="G:\CRC\CRC Project Files\Deliverables\B31835 DEA WOC 02\B31385 WOC 02 Task 2.14\Deliverable\Task 2.14 Nav Chan Dredg Maint Analysis.pdf">G:\CRC\CRC Project Files\Deliverables\B31835 DEA WOC 02\B31385 WOC 02 Task 2.14\Deliverable\Task 2.14 Nav Chan Dredg Maint Analysis.pdf</a>   |
| 2.14    | Associated geographic information system (GIS) and Excel files developed for the analysis at the 60% SAR submittal.   |   | 03/05/14             | Accompanies 60% 408 Package Submittal to CRC 3/5/14<br><a href="G:\CRC\CRC Workpaper Files\ Closeout Incomplete Deliverables\B31835 WOC 2\Task 2.14 Navigation Channel Dredge and Maintenance\Supporting Files">G:\CRC\CRC Workpaper Files\ Closeout Incomplete Deliverables\B31835 WOC 2\Task 2.14 Navigation Channel Dredge and Maintenance\Supporting Files</a>                               |

| WB S | Description and Deliverables  | % Complete for Work 3/28/2014 <sup>1</sup> | Original Date Due                     | Comments   |
|------|---|--|---------------------------------------|--|
| 2.16 | Trip Report #1 (Dec 9-13, 2013)<br>Trip Report #2 (Jan 13-17, 2014)<br>Trip Report #3 (Jan 20-24, 2014)<br>Trip Report #4 (Jan 27-31, 2014)<br>Trip Report #5 – N/A | 100%                                       | Ten days after completion of trip     | All trip reports are 100% complete and were submitted to CRC.<br><a href="G:\CRC\CRC Project Files\Deliverables\B31835 DEA WOC 02\B31835 WOC 02 Task 2.16">G:\CRC\CRC Project Files\Deliverables\B31835 DEA WOC 02\B31835 WOC 02 Task 2.16</a>   |
| 2.16 | Review comments on technical reports prepared by Agency's Ship Simulation consultant. Up to five reports will be reviewed.  | 90%  | Within five days of receipt of report | Draft Deep Draft WST Report reviewed and comments provided (100% complete)<br>Draft Shallow Draft due to HDR for comment 3/28/14 from WST – See WOC 15 for Deliverables:<br><a href="G:\CRC\CRC Project Files\Deliverables\B31260 DEA WOC 15\B31260 WOC 15 Task XX .docx">G:\CRC\CRC Project Files\Deliverables\B31260 DEA WOC 15\B31260 WOC 15 Task XX .docx</a>  |
| 2.17 | Navigation Section 408 application and approval request package for review at the 60%.  | 100%                                       | 03/05/14                              | Submitted to CRC 3/5/14<br><a href="G:\CRC\CRC Project Files\Deliverables\B31835 DEA WOC 02\B31385 WOC 02 Task 2.17\Deliverable\CRC_Navigation_Section_408_Submittal_working_files">G:\CRC\CRC Project Files\Deliverables\B31835 DEA WOC 02\B31385 WOC 02 Task 2.17\Deliverable\CRC_Navigation_Section_408_Submittal_working_files</a>   |
| 2.19 | Will be defined by Agency requirements during the contract period.  | 90%  | TBD                                   | Draft Approach Technical Memorandum Accompanies 60% 408 Package Submittal to CRC 3/5/14 (Note: Incomplete, due to closeout and IGA delays.)<br><a href="G:\CRC\CRC Workpaper Files_Closeout Incomplete Deliverables\B31835 WOC 2\Task 2.19_Contingency_Work\Draft Yaquina Report\Task 2.19 Alternatives Analysis Dredging Yaquina Passage.pdf">G:\CRC\CRC Workpaper Files_Closeout Incomplete Deliverables\B31835 WOC 2\Task 2.19_Contingency_Work\Draft Yaquina Report\Task 2.19 Alternatives Analysis Dredging Yaquina Passage.pdf</a> |
| 2.19 | Monthly Status Reports if required.   |  |                                       |  |

| WB S | Description and Deliverables   | % Complete for Work 3/28/2014 <sup>1</sup> | Original Date Due | Comments  |
|------|--|--|-------------------|---|
| 2.20 | Draft Navigation Exhibits for Vancouver Turning Basin at the 60%.    | 100%                                       | 03/05/14          | Draft exhibit source files included with the supporting files for Task 2.14:<br><a href="G:\CRC\CRC Workpaper Files\ Closeout Incomplete Deliverables\B31835 WOC 2\Task 2.14 Navigation Channel Dredge and Maintenance\Supporting Files">G:\CRC\CRC Workpaper Files\ Closeout Incomplete Deliverables\B31835 WOC 2\Task 2.14 Navigation Channel Dredge and Maintenance\Supporting Files</a> |
| 2.20 | Draft Navigation Exhibits for Primary Navigation Channel at the 60%. |  | 03/05/14          |   |
| 2.20 | Draft Navigation Exhibits for Barge Channel at the 60%.              |  | 03/05/14          |   |
| 2.21 | Draft Minor 408 for follow-on explorations or other encroachments.   | 50%  | TBD               | Work suspended – Supporting Files for Task 5.0- Geotech - located:<br><a href="G:\CRC\CRC Workpaper Files\ Closeout Incomplete Deliverables\B31835 WOC 2\Task 5.0 Geotech - Minor 408">G:\CRC\CRC Workpaper Files\ Closeout Incomplete Deliverables\B31835 WOC 2\Task 5.0 Geotech - Minor 408</a>   |
| 2.21 | Final Minor 408 for follow-on explorations or other encroachments.   |  | TBD               |   |
| 4.1  | Draft NEPA Reevaluation  | 100%                                       | 3/5/14            | Accompanies 60% 408 Package Submittal to CRC 3/5/14<br><a href="G:\CRC\CRC Project Files\Deliverables\B31835 DEA WOC 02\B31835 WOC 02 Task 4.1">G:\CRC\CRC Project Files\Deliverables\B31835 DEA WOC 02\B31835 WOC 02 Task 4.1</a>  |
| 4.4  | Meeting Notes for Section 408 Meetings                               | 95%  | As Needed         | Notes for all USACE and MCDD Coordination meetings are available (link). Note: Expiration of USACE and MCDD IGAs precluded their review of 2/19/14 and 3/5/14 meeting notes.<br><a href="G:\CRC\CRC Project Files\Deliverables\B31835 DEA WOC 02\B31835 WOC 02 Task 4.4">G:\CRC\CRC Project Files\Deliverables\B31835 DEA WOC 02\B31835 WOC 02 Task 4.4</a>                                 |

Table Notes:

1. % Complete as of March 14, 2014.



| <b>Additional Submittals Provided</b> |   | <b>Comments</b>   |
|---------------------------------------|---|---|
| 2.10/2.11                             | USACE back check submittal for Draft Hydraulics Report (CRB & MC/MDHI Bridges)                | PDF of revised submittals provided to CRC for USACE back check and closeout of DrChecks comments from 30% review.<br><br>New Project Description also added to reports. |
| 2.14                                  | USACE back check submittal for Draft Navigation Channel Dredging and Maintenance Report       |   |
| 2.13                                  | USACE back check submittal for Draft SRH-2D hydraulic model                                   |   |
| 2.1                                   | USACE back check submittal for Final Submittal of Navigation Review Plans in Adobe PDF Format |   |

## Known Issues/Gaps

The following is a summary of the known issues that were not resolved at the time of closeout:

### Unresolved Comments:

The USACE maintains records of all Agency review comments and applicant responses in their DrChecks electronic records software. A record of all comments received, responses and disposition is included in Appendix 9a of the 60% Navigation Submittal Package. The USACE has identified three comments as “Critical”. The CRC team discussed these items at the February 19, 2014 meeting with the USACE and addressed all 3 comments with the 60% package. However, those comments remain “Open”, until the USACE can review and address the response at a future date.

### Unresolved Issues:

**Yaquina Dredge Operations During Construction:** During the course of discussions with USACE staff regarding the Navigation 408 process, it is apparent that they have significant concerns regarding the completion of their dredging responsibilities, upstream of the project area during construction of the new crossing. Potential Vessel Impacts During Construction are summarized in Chapter 3. Of the Conceptual Staging Narrative – Appendix 2h of the 60% Navigation Submittal. Specific recommendations to address routine and emergency dredging operations for the USACE Dredge Yaquina are briefly summarized in a the Draft Technical Memorandum prepared by the CRC team and included in Appendix 2l. Unfortunately, due to timing of the CRC team’s Intergovernmental Agreements (IGA) with USACE and delayed responses to Requests for Information, this technical memorandum has not been reviewed by USACE staff and reflects information available to CRC as of March 1, 2014. The CRC team is confident that routine dredging can easily be accommodated during the ordinary low water months of August and September, concurrent with the USACE schedule. “Emergency Dredging” is less easily defined and accommodated. However, as noted in the Draft Technical Memorandum, the CRC team believes that “Emergency Dredging” can be accomplished with the Dredge Yaquina, as passage can be accommodated with coordination of construction efforts – movement of barges, and possible tug assist for passage in the unlikely event that emergency dredging is necessary during periods of high water surface elevation.

**Levee Alternatives:** The Levee Alternatives Memorandum, dated March 21, 2014 reflects the results of discussion with MCDD and USACE. At the last coordination meeting on March 5, 2014 the CRC team presented the preferred alternatives and evaluation criteria documented in the memo. While there was general agreement among attendees (Byron Woltersdorf and Sunny Simpkins from MCDD and Jerry Otto from USACE (Marci Johnson participated via phone)) that the analysis appeared sound and the preferred alternatives appeared to be supported, it is also clear that further refinement and design are necessary to validate direction. Furthermore, the USACE involvement was limited to Otto and Johnson, due to the expiration of the IGA. Other USACE staff may have different opinions and technical concerns.

**Floodplain Report:** The Draft Floodplain Report identifies a very slight rise in base flood elevation for North Portland Harbor after project completion (no net rise in main river channel). There are no simple mitigation measures available to address this rise. Because of the rise in floodway elevations, the requirements of 44 CFR 65.12 will be invoked which will require a Conditional Letter of Map Revision (CLOMR) be issued by FEMA prior to project permitting (as described in Section 1.2.2 of the Floodplain Report).

## Evaluation of Future Utility

The following work products retain considerable utility for future efforts within the project area, regardless of project timing or configuration.

- ..... The Two Dimensional Hydraulic Model (2-D Model) can be used as a basis for future scour, navigation channel maintenance, bank protection analysis and navigational impacts (ship simulation). The model was prepared with existing bathymetry (river bottom formations). Significant changes in bathymetry or river management activities will necessitate updating the model.
- ..... The One Dimensional Model (Velocity and Scour and Floodplain computations) should remain valid for scour calculations, water surface elevation/floodplain analysis and dredging computations. As with the 2-D Model, changes in bathymetry or river management activities will necessitate updating the model.

The work products discussed below, should retain their utility for the immediate future (one year horizon). However, they may have limited utility depending upon the timing of future project actions and the state of USACE regulations and policies:

- ..... The Navigation 408 Safety Assurance Review Plan approved by the USACE does not have a defined expiration. However, *Engineering Circular (EC) 1165-2-214* dated 15 December 2012, defines the policies and procedures by which USACE reviews all Civil Works is set to expire December 2014. Future updates to those policies may require different processes and/or data needs for Section 408 Approval. It is difficult to predict what those changes may be. However, it is difficult to envision a reduction in the level of effort or data required.
- ..... The Draft Ship Simulation Reports generated to support the Navigation 408 will retain their value, as long as the configuration and modeling (above) remain the same AND *ER 1110-2-1403* remains in effect, as currently written. Note: assumes USACE does not eliminate the requirement to model for the final design to assure safe and efficient navigation. Changes to policy or regulation could require additional simulations, prior to submission for review to the USACE.

Estimated shelf life of work products, and rough estimate of time and costs if work is picked up after expiration date.

- As noted above, if the project is reinstated in its present configuration, completion of the Navigation 408 approval process could be completed in 9 – 12 months and the Levee 408 approval process in 21 – 24 months, at a total cost of \$700,000 – \$1,100,000.
- ..... Substantial changes to USACE regulations and/or policies governing the Section 408 Approval Process or changes to project configuration that result in the need to begin both processes anew would result in adding at least one year to the Navigation 408 and 4 – 8 months to the Levee 408 processes. Completing those processes would likely cost between \$3-4 million, depending upon the changes to Ship Simulation and IEPR requirements, etc.

## Outstanding Work – Future Project Proponents

The work plan for completing the two Section 408 processes is best summarized in the attached Excel schedule summaries.

[G:\CRC\CRC Project Files\Deliverables\B31835 DEA WOC 02\B31385 WOC 02 Task 1.1 Schedules\Project Schedules\CRC 408 Levee Review Schedule\\_24-February-14.xlsx](G:\CRC\CRC Project Files\Deliverables\B31835 DEA WOC 02\B31385 WOC 02 Task 1.1 Schedules\Project Schedules\CRC 408 Levee Review Schedule_24-February-14.xlsx)

[G:\CRC\CRC Project Files\Deliverables\B31835 DEA WOC 02\B31385 WOC 02 Task 1.1 Schedules\Project Schedules\CRC 408 Navigation Schedule\\_2-24-14.xlsx](G:\CRC\CRC Project Files\Deliverables\B31835 DEA WOC 02\B31385 WOC 02 Task 1.1 Schedules\Project Schedules\CRC 408 Navigation Schedule_2-24-14.xlsx)

As noted above, if the process were to reconvene before significant changes to USACE regulations and processes, the Navigation 408 Process should recommence at the 60% submission stage and follow the progression below:

- USACE Review of 60% Submittal;
- IEPR Review of 60% Submittal and Ship Simulation Reports;
- Revise and Resubmit a 90% Package;
- USACE Review of 90% Submittal;
- IEPR Back Check;
- Revise and Resubmit a Final Package; and,
- USACE Review and Approval of Submittal.

Additionally, the USACE would have to approve mitigation measures proposed for upstream dredging during construction. Although, that process is not included in the SAR, the CRC team recommends completing review of mitigation proposed in Appendix 2.I. concurrently with the 60%, 90% and Final design submittal package process outlined above.

Completion of Ship Simulation review and approval should occur with the 60% and 90% submittal packages outlined above. Note: As of March 21, 2014, the Draft Deep Draft Ship Simulation Report has been completed and is included with the 60% Navigation 408 submittal package (Appendix 2.j.) The Draft Shallow-Draft Ship Simulation Report is due from WST on March 28, 2013. The CRC team recommends that HDR provide review comments and administrative support to ensure that this effort is completed in a manner that is ready for submission to the USACE. The advantage in completing this recommended process with WST now is that if the project is resumed, even years from now, and the design parameters are the same, the simulations will be just as valid then as they are now and the reports will be in the record. On a related note, the CRC team also recommends that ODOT retain Tom Rodino (IEPR) under existing Contract #B31840 to complete his review of that same WST Draft Shallow-Draft Ship Simulation Report, complete the responses to the charge questions relative to the vessel simulations. An IEPR back check of the Final Ship Simulation Reports would have to occur before completion of the Final Reports, to be included in the 90% Navigation 408 Submittal Package.

Lastly, the NEPA Reevaluation Process should be completed concurrent with the 60% review.

The Levee 408 Process is far less advanced. It would follow the process outlined below:

- Complete Alternatives Selection with USACE and MCDD review and concurrence;
- Prepare 30% Submittal Package;
- USACE and MCDD Review of 30% Submittal;
- Prepare SAR Package for USACE Review and Approval (prior to 60%);
- Revise and Resubmit a 60% Package;
- USACE and MCDD Review of 60% Submittal;
- IEPR Review of 60% Submittal and Ship Simulation Reports;

- Revise and Resubmit a 90% Package;
- USACE and MCDD Review of 90% Submittal;
- IEPR Back Check;
- Revise and Resubmit a Final Package; and,
- USACE and MCDD Review and Approval of Submittal.

Note: Although “Approval” of the Floodplain Report is not included in the USACE processes, the Levee 408 Process likely cannot be completed until issuance of a CLOMR for North Portland Harbor by FEMA. Therefore, pursuit of that approval should commence with Multnomah County, as soon as practicable if reinstating the 408 Processes.

## Project History, Milestones & Key Decisions

The Section 408 Approval processes have been initiated and conducted consistent with the Record of Decision for the project. The USACE has requested a NEPA Reevaluation to document specific impacts to navigation and levees, in order to determine whether or not there are significant impacts to same. The CRC prepared a reevaluation summary for the 60% Navigation 408 submittal – Appendix 7.d. It is not anticipated that that Reevaluation would result in any change to the Record of Decision. The only impact noted in that Reevaluation that may be of concern would be the placement of rip rap along the North Portland Harbor levee face, below ordinary high water. However, as noted in the Draft Levee Alternatives Memorandum, dated March 21, 2014, that alternative for addressing impacts is not recommended and it is unlikely that significant work below the ordinary high water level would be necessary to address levee impacts.

Key technical decisions associated with the Navigation 408 process are well documented and included with the 60% Submittal:

- The one-dimensional hydraulic model development is documented in Appendix 2.d. One-Dimensional Hydraulic Model Report;
- The two-dimensional hydraulic model development is documented in Appendix 2.e. Two-Dimensional Hydraulic Model Report;
- The extent and definition of the Vancouver Turning Basin was determined from Microstation files, provided by USACE, dated June 2012. See Appendix 2.g. Navigation Channel Dredging and Maintenance Analysis;
- Determination of the Design Vessel used for the Deep Draft Ship Simulation Report (Appendix 2.j.) is detailed in Appendix 2.i. Proposes Ship Simulation Study including Design Vessels and Test Methodology Memorandum.

Key technical decisions/recommendation for the Levee 408 process are outlined in the Draft Levee Alternatives Memorandum, dated March 21, 2014.

## Project Records

Records of the work conducted under this task can be found at:

- Deliverables and QC Documentation: <G:\CRC\CRC Project Files\Deliverables\B31835 DEA WOC 02>
- Supporting Files and Working Drafts: <G:\CRC\CRC Workpaper Files\ Closeout Incomplete Deliverables\B31835 WOC 2>
- Quality Control Documentation: <G:\CRC\CRC Project Files\Deliverables\QC files for 408>

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