

March 24, 2014

TO: Project File
FROM: Doug Gates, Laurie Line, Carolyn Sourek, Tom Natwick
SUBJECT: Project Closeout Summary for Columbia River Bridges & Approaches
Design Build Procurement – Stormwater

Executive Summary

This memorandum provides the status of the stormwater work for the development of the Columbia River Bridges & Approaches (CRBA) Design Build (DB) Procurement, specifically addressing the following technical focus areas:

- Stormwater Management and Drainage Design
 - Conveyance systems
 - Water quality treatment facilities

This memo overviews the status of the work, outstanding work and next steps, an overview of project history, key decisions, and information on key documents and references. This memorandum, assembled at the time of project closeout, is intended to provide adequate information to allow project start-up within a year's time-frame.

Status of Work

The work includes the development of the drainage performance requirements and the conceptual stormwater management plan (CSMP). The CSMP represents proof of concept for stormwater management design for the CRBA contract, part of the First Phase of the Columbia River Crossing. Conceptual stormwater management design for CRBA includes conveyance systems and water quality treatment facilities. The work tasks and task numbers are described below:

- Task 4.3: Develop the Request for Proposal (RFP) DB procurement performance requirements - provision 141.22 Drainage.
- Task 5.2: Develop preliminary drainage data for the performance requirements. This includes, specifically, a Proof of Concept CSMP document.
- Task 5.2A1: Develop CSMP Revision to; a) include flows draining into and out of the project interfaces with adjacent project packages; b) reflect the change to Oregon only stormwater management design standards for Oregon facilities; and c) identify potential stormwater related Inter-Government Agreement (IGA) considerations.

Each task deliverable and the approximate level of completeness at the time of the stop work order are identified in the following Table 1.

TABLE 1.
CRBA DB Procurement Deliverables Status Summary
Status of Deliverables for the CRBA Design Build Procurement Development

TASK	DELIVERABLE	APPROX. PERCENT COMPLETE	STATUS OF WORK
4.3	Draft Technical Performance Requirements - provision DB 141.22 Drainage	80%	<ul style="list-style-type: none"> Work in progress. Internal comments submitted to Procurement team. Project Wise file: <i>RFP_Comment_Resolution_Log_dbg_ces_lal.xlsx</i> and <i>DesignIssuesList.xlsx</i> Internal comments have not been incorporated into the Draft Performance Requirements 141.22 Drainage External comments from Agency counterparts were not completed.
5.2	Draft and Final Conceptual Stormwater Management Plan (CSMP)	100%	<ul style="list-style-type: none"> Deliverable complete. No additional work. Draft submitted 12/4/2013. ProjectWise file: <i>CRC_CSMP_131203_Draft.docx</i>. Final submitted 12/31/2013. Project Wise file: <i>Conceptual_Stormwater_Management_Plan_(CSMP)_Final_20131231.docx</i>
5.2A1	Draft and Final CSMP Revision	15%	<ul style="list-style-type: none"> Stop work order. The CSMP revision was intended to reflect a change in direction to using standards specific each jurisdiction, and to provide CRC package interface solutions. Design calculations and documentation spreadsheets using ODOT only design criteria in Hayden Island right-of-way are in progress. Project Wise file: <i>WQDesign_ODOT_Templates.xlsx</i>. Package interface locations have been identified and potential solutions are in progress. Project Wise file: <i>2013_0925_CRCPhasedWA-InterfaceAreas.pdf</i> and <i>CRBA_PckgInterfaceList_201311.pdf</i>.

Table Notes:

1. Table status as of March 24, 2014.

Known Issues

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

- **Pipe Condition Assessment** – For existing stormwater conveyance pipes proposed to remain in place at the Hayden Island and SR 14 interchanges, preliminary steps to obtain condition were initiated. Of concern are the conditions (physical condition, age, load bearing ability) and ability of downstream pipes receiving project flows, and/or the ability of existing receiving and non-receiving pipes to bear the burden of proposed project fills and loading. Condition assessment vendor quotes were received just prior to the stop work order. The selected existing pipes of interest were based on the latest available project Microstation cad and Inroads surface files. The age of the pipes was not available at time of the preliminary assessment.
- **Inter-Government Agreements** - If the DB contractor proposes that stormwater from two separate jurisdictions drain to a common stormwater treatment facility, an IGA would be required to determine how the facility would be managed. The project has not begun early IGA discussions with the agencies. IGA discussions would inform the RFP procurement document.
- **Archeological Areas** - Some potential conflicts with archeological areas exist within the SR14 interchange. Need to review inadvertent discovery plan and identify inconsistencies with stormwater. This is not time critical work, but should be completed before final RFP.

- **Future Compatibility** - Stormwater management facilities provided in the CSMP requires accommodation of the future surface water runoff from the SR 14 westbound to I5 northbound ramp. It is expected that the ramp will be constructed sometime after completion of the CRBA package. However, due to the site constrained interchange and limited right of way, it is considered prudent to ensure that the future ramp can receive stormwater treatment on-site. This design effort would have been completed as part of the Task 5.2A1 CSMP Revision document.
- **Performance requirements – provision 141.22 Drainage** - During page turn meetings there was concern with construction materials used on the Columbia River Bridges. Bridge pipe materials should be researched to assure that mixed materials won't cause corrosion. It should be resolved whether specific information needs to be included in the performance requirements.
- **Performance requirements – provision 141.22 Drainage** - Maximum width of runoff spread for the area between the Columbia River Bridges and each tie-in should be defined. The runoff spread will be limited by the narrowest shoulder within the temporary and the final channelization. Need to define temporary and final channelization relative to construction schedule. Note runoff spread cannot go beyond the fog line and enter the travel lane. These parameters would inform the performance requirements.

Outstanding Work

The following is a summary of work elements in progress and those not started. Each element supports the development of the CRBA DB Procurement RFP

Task 4.3 Draft Performance Requirements

1. Request comments from agency counterparts.
2. Address comments in comment log from internal and agency staff.
3. Finalize Draft Performance Requirements.
4. Prepare Final Performance Requirements.
5. Prepare Performance Requirements Addenda, if needed.

Task 5.2A1 Preliminary Drainage Data

1. Confirm interface locations between CRC packages pertaining to stormwater management.
2. Identify drainage basin boundaries outside of the CRBA project area, but draining onto it.
3. Develop schematic figures showing boundaries and concept level impervious areas, drainage catchments, flow direction, time of concentration flow path, and stormwater treatment facilities beyond the current CRBA, but draining to it.
4. Develop table with design flow rates and stormwater treatment volumes per facility, as appropriate.
5. Revise CRBA stormwater treatment facility sizing presented in the CSMP, as needed.
6. Determine ROW constraints, if any, for increase facility sizing.
7. Revise Hayden Island stormwater treatment facilities, as needed, to comply with ODOT only design standards and approved methods for water quality facility sizing.
8. Update CSMP figures and tables to show revisions to stormwater treatment facilities and CIA.
9. Revise text, as needed, to incorporate ODOT only design standards, where applicable.
10. Coordinate design revisions with other disciplines.
11. Submit CSMP Revision for internal and external review.

Milestones & Key Decisions Related to Disciplines

Key stormwater related project decisions include:

- Prior to development of the Biological Assessment to address project impacts to fish listed under the federal Endangered Species Act; the Oregon branch of the National Marine Fisheries Service (NMFS) was selected as the lead reviewing office (rather than the Lacey, Washington office). Subsequently, contributing impervious area, abbreviated as CIA, as defined by ODOT was selected as the project wide water quality treatment area. And, project water quality treatment best management practices (BMPs) would be selected using the ODOT BMP Selection Tool. Otherwise,

stormwater infrastructure would be designed using local jurisdictional standards including WSDOT, ODOT, COV, and COP.

- Per a commitment made in the Final Environmental Impact Statement Record of Decision (identified as ROD92): Some or all of the water quality BMPs from ODOT's stormwater quality memo or more stringent applicable standards will be included in the CRC project.
- In August 2012, ODOT approved the use of the WSDOT MGSFlood tool to calculate volumes for ODOT water quality treatment facility sizing for this project. In October 2012, ODOT also indicated they would accept conveyance modeling/sizing methods including WSDOT spreadsheets, Bentley Inroads Storm & Sanitary software, or the sizing template provided in the ODOT Hydraulics Manual.
- In January 2014 ODOT under the ODOT managed CRC decided the MGSFlood tool was unacceptable for use on Oregon water quality treatment facilities design. Facility sizing would follow the ODOT Hydraulic manual or ODOT approved methods.
- From the ODOT BMP Selection Tool, constructed wetlands were selected and deemed an appropriate treatment alternative for the high groundwater scenarios found on Hayden Island and the Marine Drive areas. However, ODOT standards do not include constructed wetland design details or guidelines. Therefore in August 2012, ODOT and the CRC team agreed that Clean Water Services' guidelines for designing these facilities meet design requirements and would be used.
- Other than as described above, WSDOT and ODOT manuals/guidelines are used to design stormwater management facilities within their respective jurisdictions. Outside of ODOT and WSDOT right-of-way, COP and COV manuals/guidelines are used to design facilities that comply with the criteria listed above. An example is water quality treatment planters in COP jurisdictional areas.
- Stormwater Design Reports were developed for the Locally Preferred Alternative (LPA). These reports were developed to meet stormwater management hydrologic and hydraulic reporting and permit requirements of ODOT, WSDOT, City of Portland, City of Vancouver, Oregon Department of Environmental Quality, and Washington Department of Ecology. The Initial Construction Program (ICP) Stormwater Design Report was submitted to support the project's Oregon and Washington permit applications and 401 Water Quality Certification review.
- Comments based on review of the LPA and ICP Stormwater Design Reports were intended to be addressed in the respective Stormwater Design Reports developed for each ICP contract package. The first contract-based report referred to as the CRBA Drainage Report was not completed prior to the office shut down in July of 2013.
- During ODOT CRC management, the scope of the drainage report was reduced in content to focus on a conceptual stormwater management (CSMP) approach that demonstrates proof of concept.
- For the design-build scenario, the selected contractor is required to follow the design criteria listed above. The contractor is not required to finalize the drainage designs and build the stormwater management facilities as detailed by the CRC stormwater design team.

Project Records

Records of the work conducted under this task can be found at: G:\CRC\CRC Project Files\Deliverables

Standards & Versions

Standards used for the work are listed in the Design-Build General Provisions DB 141.22 Drainage

DBG, LAL, CES
cc: Project Controls