

March 14, 2014

TO: Project File
FROM: Orlena Chiu
SUBJECT: Project Closeout Summary for Columbia River Bridges & Approaches Design Build Procurement – DB 141.25 Permanent Traffic Control and DB 141.29 Intelligent Transportation Systems (ITS)

Executive Summary

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

- Permanent Traffic Signals (including ramp meters, intersection traffic signals, and automatic traffic data recorders)
- Permanent Signing
- Permanent Striping
- Permanent Intelligent Transportation System Devices

This memo overviews the status of the work, outstanding work and next steps, project history, key decisions, and 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:

- Intersection Traffic Signals
 1. I-5 NB ramp at Hayden Island Road (ODOT)
 2. I-5 SB ramp at Hayden Island Road (ODOT)
 3. Mainland connector at Hayden Island Drive (ODOT)
 4. Mill Plain Blvd at I-5 NB ramp (WSDOT)
 5. Mill Plain Blvd at I-5 NB ramps (WSDOT)
 6. Mill Plain Blvd at Broadway St. (City of Vancouver)
 7. Mill Plain Blvd at Washington St. (City of Vancouver)
 8. 7th St and C St. (City of Vancouver)

All of the existing traffic signals within the project area on Hayden Island are to be replaced with new traffic signals at intersections 1-3 as listed above.

Traffic signal modifications are required at intersections 4-5 due to lane configuration modifications proposed at the Mill Plain Boulevard interchange.

The existing traffic signals at intersections 5-6 are to be replaced completely with new traffic signals. It is anticipated that the existing traffic signals at these intersections would most likely be affected by the temporary wind mill truck detour route on Mill Plain Blvd (see DB section 141.21 Roadway Geometrics and DB 141.25 Permanent Traffic Control for more information on the detour if required) prior to the construction of the WA Transit package (which overlaps with the CRBA DB Procurement Package construction at these intersections). The draft performance requirements include text addressing the requirements of potential traffic signal work at intersections 4 and 5.

A new traffic signal is to be installed at 7th and C Street with the proposed project construction.

As had been requested by ODOT, the proposed traffic signal locations are not described specifically in the performance requirements in order to allow the Contractor greater flexibility (if the Contractor could figure out ways to avoid some of the traffic signal modifications such as with the wind detour, then they could be allowed to do so provided they still met other project needs as specified in the performance requirements). They are however, shown on the concept plans as a general guide as to what work was anticipated with the project.

- Ramp Meters
 1. I-5 SB ramp at Hayden Island Drive (existing to be replaced with new)
 2. I-5 NB ramp at Hayden Island Drive (new)
 3. I-5 SB ramp at E. 6th St (new)
- Permanent Signing
 1. New signing is to be provided throughout the project vicinity as described in DB 142.25 Permanent Traffic Control in order to accommodate the proposed roadway, tolling (tolling sign requirements are addressed in more detail in DB 141.29 Intelligent Transportation Systems), and other project improvements.
- Permanent Striping
 1. Striping is to be provided throughout the project vicinity as described in DB 142.25 Permanent Traffic Control
- ITS
 1. Closed Circuit Television Cameras (CCTV)
 2. Variable Message Signs (VMS)
 3. Variable Speed Limit System (VSL)
 4. Fiber Optic Communications Infrastructure
 5. Bicycle and Pedestrian Counting System on the Main Columbia River Crossing Bridge
 6. Automatic Traffic Data Recorder

DB 141.25 Permanent Traffic Control and DB 141.29 Intelligent Transportation Systems (ITS) do not include the following:

1. Structural Requirements for the Traffic Structures (DB141.11 – Structures)
2. Tolling System Requirements (although the proposed tolling system devices were incorporated into the Signals and ITS concept plans) (DB141.61)
3. Electrical Power Connection Specific Requirements for providing power to the Permanent Traffic Control and ITS devices (DB 141.24)

4. The striping concept plan is included as part of the roadway plans and their roadway design work. This memorandum only addresses the striping performance requirements.

The following deliverables were completed at the approximate level of completeness as identified in Table 1, at the time of project closeout.

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
4.4	Reference Information Documents	80%	Work in progress. See "Draft RFP action item list".
4.3	Draft technical Performance Requirements – provision DB 141	75%	Work in progress. Waiting for client review. Continued clean up of DB 141 for formatting, language, terminology, acronyms, interdisciplinary coordination, project interfaces, and other outstanding issues. See "Draft RFP action items list".
12.1	Signing Concept Plans	50%	Work in progress. Waiting for client review. Continued revision required to reflect "proof of concept", interdisciplinary coordination, and project interfaces. See "Draft RFP action items list".
12.2 and 12.3	Signal and ITS Plan	50%	Work in progress. Waiting for client review. Continued revision required to reflect "proof of concept", interdisciplinary coordination, and project interfaces. See "Draft RFP action items list".
15.1	Updated bid quantities for the CRBA	0%	Work not started. Deleted by WOC 4 Amendment No. 1

Table Notes:

1. Table status as of March 14, 2014.

Known Issues

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

- ODOT and WSDOT IT'S and traffic signal system software/firmware may not be the same. WSDOT was in the process of reviewing everything to make sure that the system could work their existing legacy system and communicate with all parties as needed.

Outstanding Work

Outstanding Work

The following is a summary of outstanding work at the time of closeout that was not completed, but necessary for the development of the DB Procurement final RFP for the CRBA Package:

- ODOT had performed preliminary reviews of the RFP documents already. However, local agencies, and WSDOT technical staff had not. Their comments in particular need to be received, reviewed, and incorporated as appropriate.
- There are a number of other projects that are to be constructed near the project vicinity (including but not limited to the other CRBA packages). It is currently not anticipated that the other projects, with the exception of the other CRBA projects, was to have significant impact on the DB

procurement project. However, this should be confirmed. The project interfaces where our project overlaps with other CRBA packages should be reviewed to ensure that the overlapping design work and construction scheduling are consistent and constructible.

- There had been discussions on whether other disciplines would need to share our fiber infrastructure and other ITS/Permanent Traffic Control equipment (i.e. had discussion with tolling, TriMet, safety and security, etc.). We had revised our performance requirements according to what had been agreed upon at the time. However, it is recommended that shared equipment be confirmed again should the project be restarted.
- It had not yet been decided how the contractor would connect to the existing fiber infrastructure at the project ends. The connection points need to be confirmed.
- Whether or not emergency phones were to be installed as part of the project is still unknown.
- Upon last review, it did not appear that other disciplines had fully addressed the items they needed to provide for the ITS and Permanent Traffic Control systems (i.e. structural, tolling, lighting and electrical systems, etc.). It is recommended that other discipline work be reviewed again at a later date to ensure that full and complete ITS and Permanent Traffic Control systems are provided.
- The tolling system concept had not been finalized. We had agreed that although there would be a separate performance requirement section for tolling, the concept tolling equipment would be shown on the ITS and signal plans. Changes to tolling system could potentially affect Permanent Traffic Control and ITS concept plans and performance requirements.
- Performance requirements needed to be updated to include the comments from the Page Turn meetings on February 25 and February 26 (see meeting minutes for those meetings).
- Signing and ITS and Traffic Signal Concept Plans need to be reviewed and revised based on the current performance requirements. The plans also need to be revised based on the current project description (a couple of the traffic signals had been removed/added, some roadway geometry's had been revised and the traffic design needed to be adjusted accordingly, etc.). They had not been revised significantly since when WSDOT had been managing the project.
- The lighting design needs to be removed from the concept plans as they are to have their own separate concept plans.
- Cross discipline comments need to be incorporated into deliverables (see cross discipline comments).
- RIDs need to be revised to make sure the most recent RIDs are referenced and include all RIDs required for ITS and Permanent Traffic Control. Standards List in Performance Requirements needs to be reviewed to include a systems engineering checklist, as-builts, and graffiti screen detail (see RIDS).
- All of as-builts provided to DEA have been included in the RIDs. However, it is recommended that the designer confirm with the Agencies on whether there are any additional as-builts available (I believe some had been missed and construction within the project area may have occurred since this memorandum was written).
- Need to make sure that FAA clearance height requirements are met with the concept ITS pole locations.

Next steps:

Below are possible “next steps” for completing the project.

- Gain an understanding of the current project description.

- Gain an understanding of other approved/planned projects within the project vicinity (including but not limited to the other Columbia River Crossing Packages)
- Gain an understanding of what's been completed already and what still needs to be done (review most recent concept plans and performance requirements, this memorandum, and the project records listed below, etc.).
- Look online to see if there have been any updated standards and additional on-line as-built information that you can obtain yourself without additional support.
- Hold meeting with all project stakeholders. This kick-off meeting would be to confirm project description, roles/responsibilities of each team member, receive their input on current draft concept plans and performance requirements (including local agencies, tolling, TriMet, WSDOT, ODOT, other disciplines that affect our system, etc.), request additional data from them, etc.
- Revise performance requirements, RIDs, and concept plans accordingly.

Milestones & Key Decisions Related to Disciplines

Key project milestones include:

- Delivering 50% concept plans
- Initial Draft RFP Performance Requirements
- Provided RIDS to PM

Key project decisions include:

Key project decisions were mainly documented during the project meetings. Key decisions included:

1. Confirmation of the ITS and Permanent Traffic Control project description to the extent that we have to this date

Project Records

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

- Project meeting minutes
- Last set of cross-discipline comments that had not yet been incorporated into the performance requirements/concept plans.
- RIDS
- Performance Requirements
- Microstation Drawing files
 - a. CRBA_BP_SG_Signal.dgn (traffic signal design file)
 - b. CRBA_BP_SN_Signing.dgn (signing design file)
 - c. CRBA_BP_ITS.dgn (ITS design file)
 - d. CRC_BP_Sign.dgn (Guidsign sign shop drawings microstation file)
 - e. CRBA_PS_TR_Intersections.dgn (Signal Intersection Layout Concept Plan sheet file) – note it was decided that we would not include these intersection sheets with the concept plans. Provided for information only.

f. CRBA_PS_TR.dgn (ITS and Signal Concept Plan)

g. CRBA_PS_SN.dgn (Signing Concept Plan)

Standards & Versions

Standards used for the work are listed in the Design-Build General Provisions DB 141.

OWC:OWC

cc: Project Controls
