APPENDIX O

Archaeological Monitoring Program Synopsis,
Construction Season 3: Dredging

CULTURAL RESOURCES REPORT COVER SHEET

Author: Cooper, Jason B.

Title of Report: Archaeological Monitoring Program Synopsis
Construction Season 3: Dredging
Duwamish Sediment Other Area and Southwest Bank Corrective Measure and Habitat Project, Boeing Plant 2, Seattle/Tukwila, Washington

Date of Report: July 2015

County: King Sections: 29, 32, and 33 Township: 24 North Range: 4 East

Quad: Seattle South Acres: _____

PDF of report submitted (REQUIRED) ☒ Yes

Historic Property Inventory Forms to be Approved Online? ☐ Yes ☒ No

Archaeological Site(s)/Isolate(s) Found or Amended? ☐ Yes ☒ No

TCP(s) found? ☐ Yes ☒ No

Replace a draft? ☐ Yes ☒ No

Satisfy a DAHP Archaeological Excavation Permit requirement? ☐ Yes # ☒ No

Were Human Remains Found? ☐ Yes DAHP Case # ☒ No

DAHP Archaeological Site #:
_____
_____
_____
_____
_____
_____
_____
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_____

- Submission of PDFs is required.
- Please be sure that any PDF submitted to DAHP has its cover sheet, figures, graphics, appendices, attachments, correspondence, etc., compiled into one single PDF file.
- Please check that the PDF displays correctly when opened.

ARCHAEOLOGICAL MONITORING PROGRAM SYNOPSIS
CONSTRUCTION SEASON 3: DREDGING

Duwamish Sediment Other Area and Southwest Bank
Corrective Measure and Habitat Project
Boeing Plant 2
Seattle/Tukwila, Washington

by Jason B. Cooper, M.A., RPA

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Project 0131320080

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Amec Foster Wheeler Environment & Infrastructure, Inc. (Amec Foster Wheeler), was retained by The Boeing Company (Boeing) to develop an Archaeological Monitoring Program (AMEC et al. 2012a) for use on the Boeing Plant 2 Duwamish Sediment Other Area (DSOA) Corrective Measure and Habitat Project (Project) located along the Duwamish Waterway in Seattle, Washington (**Figure 1**). This synopsis presents the results of Amec Foster Wheeler's archaeological monitoring work during the second phase of Construction Season 3 (CS3) dredge operation along the Duwamish Waterway between September 2014 and March 2015 (**Figure 2**). For additional Project details, please refer to the Final Design Report (AMEC et al. 2012b) and the archaeological monitoring program synopses for Construction Seasons 1 and 2 (AMEC et al. 2013; AMEC and Floyd|Snider 2014; DOF et al. 2014) and the first phase of CS3 (DOF 2014).

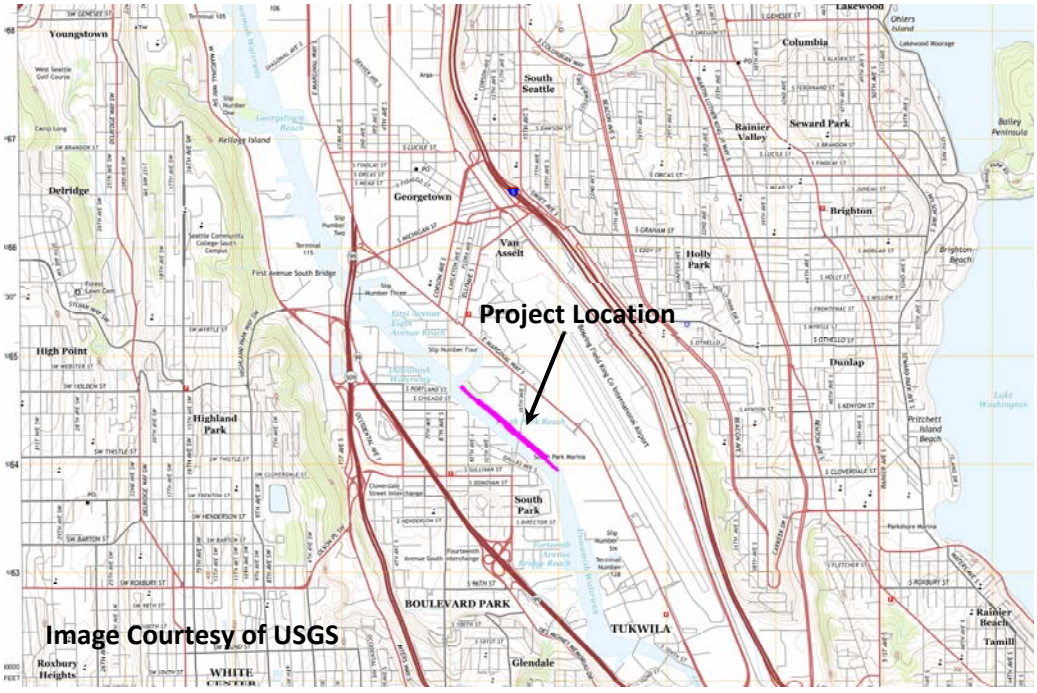

Figure 1 Project Vicinity Map

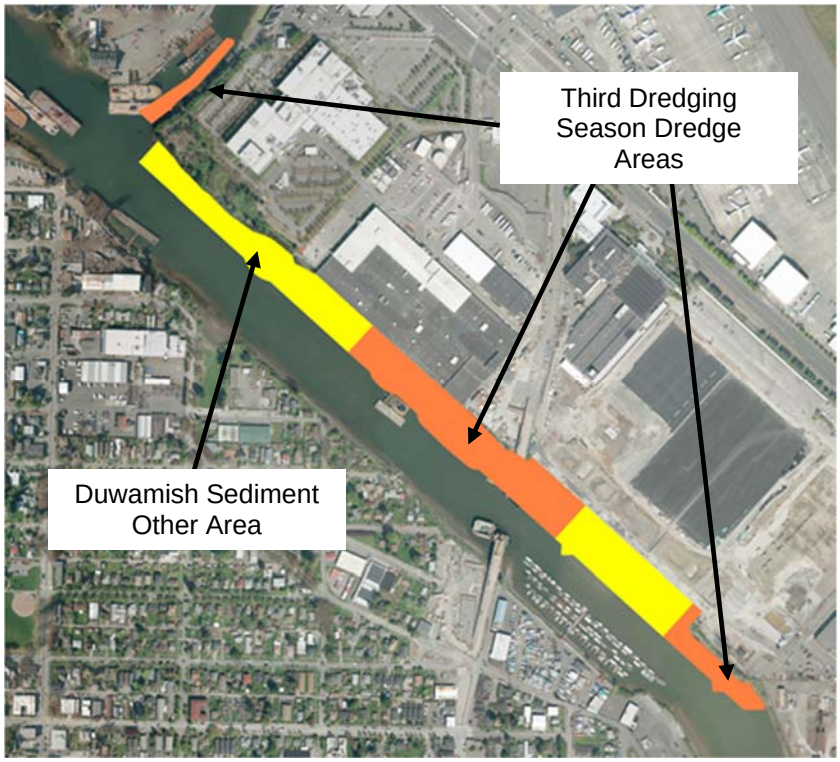

Figure 2 Location of Dredging Activities along Duwamish Waterway

1.0 ARCHAEOLOGICAL MONITORING PROGRAM

Under the Archaeological Monitoring Program, Amec Foster Wheeler prepared an archaeological monitoring plan ([AMP]; AMEC et al. 2012a) for use during the Project's government-to-government consultation process. For this Project, the U.S. Environmental Protection Agency (EPA) is considered the lead federal agency and ultimately responsible for all formal consultation with participating agencies and Native American tribes. EPA forwarded the AMP to the Muckleshoot Indian Tribe, Suquamish Tribe, and Duwamish Tribe for review and comments.

Prior to Construction Season 1, Amec Foster Wheeler followed up EPA's formal consultation effort with separate informal project coordination meetings with each tribe. At these coordination meetings, which included Amec Foster Wheeler personnel and cultural resources representatives from each tribe, the proposed Project and AMP were discussed in detail. A key point for discussion during these meetings was the proposed development of an archaeological training video by Amec Foster Wheeler that would be shown to all on-site construction personnel to assist in identification of significant cultural resources. The nature of the proposed Project (i.e., offshore dredging of contaminated soil)

did not require an on-site archaeologist present at all times. As such, it was decided to train all on-site construction personnel by showing an archaeological training video that introduced a wide range of cultural resources that could be uncovered during construction excavation or dredging. During these training meetings, the appropriate chain of communication was established, and contact information was disseminated to the construction personnel for use in the event of an inadvertent discovery. Also discussed were the legal aspects of artifact discovery and disclosure laws.

In addition to detailing the development of an archaeological training video, the AMP presented the modus operandi for when a professional archaeologist would be on-site for archaeological monitoring activities during dredging and/or sediment removal operations. The protocol included having a HAZWOPER-certified archaeologist on-call in the event of a discovery, spot checking areas of the Project that maintained a higher probability for unknown cultural resources, and random inspections of the Project.

Archaeological monitoring results from Construction Season 1 (CS1) were reported in AMEC et al. (2013). During CS1, one historic period isolate find (wagon wheel) was recorded. The historic wagon wheel, which was documented with the State of Washington Department of Archaeology and Historic Preservation (DAHP) as site 45KI1142, was identified during dredge operations along the southwest bank of the Duwamish Waterway. No other historic objects were found in association with the wagon wheel. Site 45KI1142 was recommended not eligible for listing in the National Register of Historic Places (NRHP) as it was unlikely to yield information important to the history of the area.

Archaeological monitoring results from the shoreline construction were reported in AMEC and Floyd|Snider (2014). No archaeological sites or isolate finds were documented during monitoring efforts for the shoreline construction, although construction activity and monitoring did uncover concrete debris, discarded building material (e.g., wood fragments), metal rebar, abandoned wooden piers, modern refuse, and one metal sign of an unknown age.

Archaeological monitoring results from the second dredging construction season were reported in DOF et al. (2014). No archaeological sites or isolated finds were documented during monitoring efforts between January and March 2014.

2.0 ARCHAEOLOGICAL TRAINING VIDEO

A copy of the archaeological training video was made available to all on-site construction personnel conducting dredging operations between September 2014 and March 2015. Any new on-site construction personnel that did not participate in the original archaeological training video sessions and/or subsequent training sessions were required to watch the training video prior to carrying out any

work. Amec Foster Wheeler archaeologist, Jason Cooper, presented the archaeological training video in October 2014 to over 50 on-site construction personnel at the South Seattle Community College-Georgetown Campus. This latest round of training was in preparation for on-site personnel conducting dredging operations during the CS3 dredging season.

3.0 RESULTS

Due to the nature of dredging contaminated sediment from the Duwamish Waterway, the surveillance of excavated sediment was carried out by Dalton, Olmstead, & Fuglevand, Inc. (DOF) personnel who had completed the archaeological training several times. DOF surveillance activities consisted of several key personnel observing the sediment being removed from each bucket that was pulled out of the Duwamish Waterway (DOF 2014). DOF personnel included a dredge observer, deck hands, and water management personnel. The dredge observer was the Design Team Field Engineer, whose responsibilities included sitting in the cab of the excavator and observing and recording all dredging activities. This individual was on site 100% of the time during dredging and had a clear view of the bucket and sediment barge at all times. The dredge observer also filled out a daily report that recorded minute-by-minute activities during each dredge shift, as well as observations or notes. These reports were reviewed by an Amec Foster Wheeler archaeologist to inspect for anomalies or other observations that may have archaeological implications.

DOF deck hands were available to assist with operations while moving the sediment barges and the dredge. During dredge operations, the deck hands were available to keep an eye on the dredged sediment and watch for any unusual or potentially significant material. The water management personnel worked alongside the sediment barge and were responsible for managing the water in the sediment barge and observing the material that went into the barge. Along the with the deck hands, the water management personnel worked alongside the perimeter of the sediment barge in an effort to keep all dredged material inside of the bin walls.

Another DOF procedure for archaeological monitoring was sediment inspection that took place at the Transport, Treatment, and Disposal (TTD) facility. Loaded barges were brought to the TTD facility for offloading and eventual sediment disposal. Project personnel at the TTD facility were trained on how to recognize material that was historically or archaeologically significant. Surveillance of the offloaded material at the TTD facility was carried out by the TTD observer and crane spotter. The TTD observer's job was to monitor all offloading activities at the facility. This individual filled out a daily report that recorded all significant activities, and took before and after pictures of the sediment barge during offloading. The crane spotter had a view of the crane bucket at all times and was instructed to notify project personnel if any unusual material was found.

During archaeological monitoring and surveillance of the CS3 dredge operation, no archaeological sites or isolate finds were documented. During the monitoring and surveillance work, personnel inspected the dredging of approximately 78,600 cubic yards of sediment and the placement of approximately 189,700 tons of backfill material. During this final CS3 dredging, operations took place in three locations within the project area (Figure 2):

- The southernmost reach between project stations 32+85 and 39+44 (approximate river miles 4.0 to 4.1);
- A middle reach between stations 13+25 and 26+50 (approximate river miles 3.6 to 3.9), which included the footprint of the old and new South Park bridges; and
- The south side of Slip 4 from the cap placed by the City of Seattle to the Duwamish Waterway.

Unlike previous years' dredging, the CS3 work also included diver-assisted hydraulic dredging around the east footing of the new South Park Bridge (DOF 2015).

Photo 1 shows CS3 dredge operation in full swing. **Photo 2** shows dredge material loaded onto a sediment barge. Modern refuse, such as the wire mesh fencing shown the picture, was commonly recovered during dredge operation. **Photo 3** shows onshore preparation of a diver prior to entering the Duwamish Waterway for diver-assisted dredging. **Photo 4** shows dredge sediments in the shaker screen at the dredge return water system.

4.0 CONCLUSIONS

The CS3 dredging was carried out between September and March 2015. No archaeological material was identified during archaeological monitoring and surveillance activities. Amec Foster Wheeler presented an archaeological training video in October 2014 to all on-site construction and TTD personnel responsible for the dredge operation.

Photo 1 View of Construction Season 3 dredge operation in the Duwamish Waterway.

Photo 2 Dredge material in sediment barge.

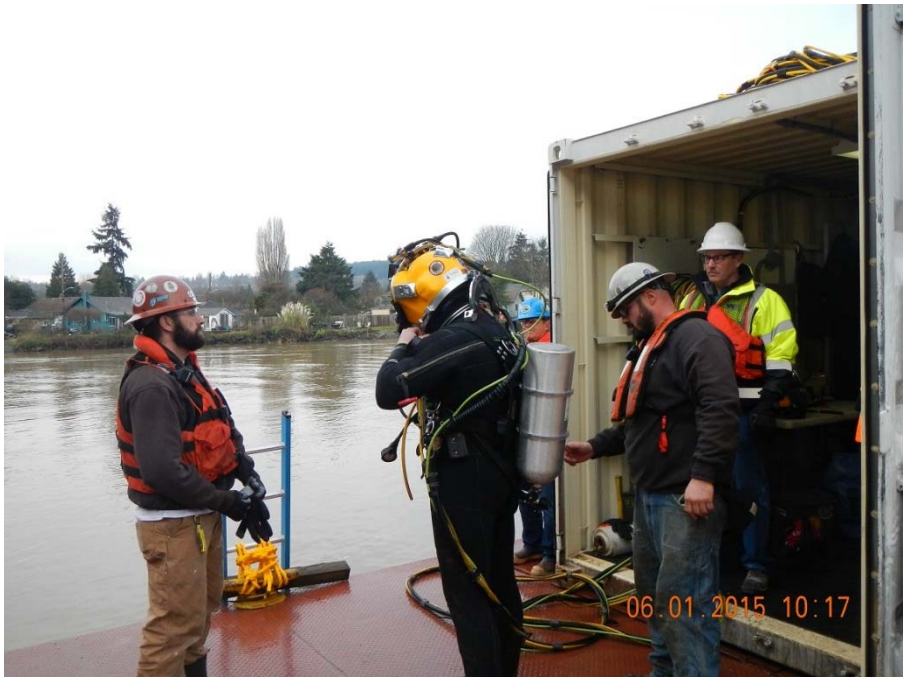

Photo 3 A dredge diver preparing to enter the Duwamish Waterway during dredge operation.

Photo 4 View of dredge sediment after going through shaker screen.

5.0 REFERENCES

AMEC Environment & Infrastructure, Inc., Dalton, Olmsted & Fuglevand, Inc., and Floyd|Snider, Inc. (AMEC et al.). 2012a. Archaeological Work Plan, Appendix G *in* Final Design Report, Duwamish Sediment Other Area and Southwest Bank Corrective Measure and Habitat Project, Boeing Plant 2, Seattle/Tukwila, Washington. Prepared for The Boeing Company, Seattle, Washington.

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