SCOPE OF WORK

EAGLE HARBOR OMMP
IMPLEMENTATION FOR YEARS 22
(2019) THROUGH 31 (2028)

On May 8, 2019, Washington State Department of Transportation (WSDOT) requested Herrera Environmental Consultants (Herrera) to provide a scope of work and budget for continued monitoring and engineering support of the Eagle Harbor West Harbor Operable Unit (WHOU) Superfund site. The history of this Superfund site and the required monitoring activities are described in the Draft 2018 Operations, Maintenance, and Monitoring Plan (OMMP) for the West Harbor Operable Unit Wyckoff/Eagle Harbor Superfund Site (Herrera 2018).

In April 1998, Herrera was selected by WSDOT to complete the activities required during the initial 2 years (Year 1 in 1998 and Year 2 in 1999) of the 1997 OMMP (Hart Crowser 1997) at the Eagle Harbor WHOU Superfund site. Herrera was then retained by WSDOT to continue support for implementation of the 1997 OMMP from Year 3 (2000) through Year 10 (2007) to evaluate effectiveness of the site remediation and mitigation completed in 1997. Herrera was then retained to prepare and implement the 2008 OMMP for Year 11 (2008) though Year 20 (2017), which was extended to include preparation of the 2018 OMMP and monitoring in Year 21 (2018). The 2018 OMMP is currently in draft form and has not been approved by EPA. Project stakeholders include EPA and Paccar.

This scope of work includes a discussion of the activities, assumptions, deliverables, and a schedule associated with this project for continued monitoring and engineering support at the Eagle Harbor project site for Year 22 (2019) through Year 31 (2028). The cost estimate (Attachment 1) for this sole source agreement with WSF has been prepared in accordance with WSDOT-approved labor rates for Herrera.

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TASK 1.0 – YEAR 22 (2019) SEDIMENT EROSION INVESTIGATION

To address EPA’s concerns about erosion of thick cap areas in Year 21 (2018), Herrera investigated the potential sediment erosion from ferry boat propeller testing by reviewing past bathymetric survey results, comparing propeller wash modelling results for Colman Dock to conditions at Eagle Harbor WHOU, and probe testing cap thickness within two of the three thick cap areas located in the intertidal portion of the 1997 sediment cap. WSDOT is planning to modify an existing walk-on slip to make it a drive-on slip for maintenance of ferry boats at Slip F where the third thick cap area is located in the subtidal portion of the 1997 sediment cap.

Herrera will conduct additional investigation of sediment erosion by performing propeller wash modeling to evaluate the potential effects of ferry boat engine testing on erosion of the 1997 thick cap areas and the structural integrity of piles supporting adjacent structures. A propeller wash model developed for evaluating erosion of sediments at the Seattle and Port Townsend ferry terminals will be used to estimate erosion of key areas of the sediment cap based on specific site conditions and proposed engine testing procedures. This investigation will include a review of existing information and a site visit by Herrera’s geomorphologist to characterize physical conditions of the sediment cap. WSDOT will provide Herrera with the expected locations and frequency of testing along with the range of propeller size, depth, and revolutions per minute.

During the site visit, Herrera’s geomorphologist will investigate the bed surface exposed during low tide in areas under and adjacent to Pier A. Observations and in-situ measurements of the surface materials will be made, and if necessary, samples will be collected for later drying and sieving. Bed sediment adjacent to Pier A but further from shore will be observed using an underwater camera suspended from Pier A. Video and/or images from this subtidal area near...
SCOPE OF WORK

Pier A will be used in a qualitative evaluation of recent bed mobility or erosion. The images will also be compared to observations and measurements made under Pier A at low tide. Similarity between the locations will help inform the analysis of future erosion potential.

Herrera will prepare a preliminary draft technical memorandum of the modeling methods and results for review by WSDOT and Paccar, a draft technical memorandum addressing comments on the preliminary draft for review by EPA, and a final technical memorandum addressing comments by EPA on the draft technical memorandum. The final technical memorandum will be submitted to EPA as part of the Year 22 (2019) annual report (Task 2.0).

Deliverables and Schedule

- Draft and final technical memorandum to be completed by November 31, 2019.

TASK 2.0 – YEAR 22 (2019) MONITORING AND REPORTING

Under the previous contract for the Eagle Harbor WHOU Superfund site, Herrera conducted the annual upland and shoreline inspections with WSDOT and project stakeholders during the second quarter of Year 22 (2019). Under this contract Herrera will:

- Prepare the final 2018 OMMP in response to comments by EPA on the draft 2018 OMMP.
- Compile information gathered by WSDOT in Year 22 (2019) regarding stormwater and wet weather inspections, stormwater monitoring, and site maintenance and construction activities/plans.
- Prepare the Year 22 (2019) annual report in accordance with the 2018 OMMP to include a draft report for review by WSDOT and Paccar and a final report for submittal to EPA.
- Conduct an annual project meeting with stakeholders following completion of the final annual report.

Deliverables and Schedule

- Final 2018 OMMP within 30 days of receiving comments by EPA on the draft 2018 OMMP.
- Draft and final Year 22 (2019) annual report to be completed by March 31, 2020.
- Annual project meeting to be conducted by May 15, 2020.
SCOPE OF WORK

TASK 3.0 – YEAR 23 (2020) MONITORING AND REPORTING

Herrera will:

- Conduct the annual upland and shoreline inspections with WSDOT and project stakeholders during the second quarter of Year 23 (2020).
- Compile information gathered by WSDOT in Year 23 (2020) regarding stormwater and wet weather inspections, stormwater monitoring, and site maintenance and construction activities/plans.
- Prepare the Year 23 (2020) annual report in accordance with the 2018 OMMP to include a draft report for review by WSDOT and Paccar and a final report for submittal to EPA.
- Conduct an annual meeting with stakeholders following completion of the final annual report.

Deliverables and Schedule

- Annual upland and shoreline inspections to be completed by June 30, 2020
- Draft and final Year 23 (2020) annual report to be completed by March 31, 2021
- Annual project meeting to be conducted by May 15, 2021

TASK 4.0 – YEAR 24 (2021) MONITORING AND REPORTING

Year 24 (2021) will also include water quality monitoring in accordance with the 2018 OMMP. Herrera will:

- Conduct the annual upland and shoreline inspections with WSDOT and project stakeholders during the second quarter of Year 24 (2021).
- Conduct groundwater sampling at one monitoring well (to include one duplicate sample and one rinsate blank) and intertidal seep sampling at four seeps during the annual inspections, and submit the samples to an approved laboratory for analysis of total suspended solids, total and dissolved mercury (groundwater only), and dissolved copper and zinc.
- Validate and tabulate the water quality monitoring results.
SCOPE OF WORK

• Compile information gathered by WSDOT in Year 24 (2021) regarding stormwater and wet weather inspections, stormwater monitoring, and site maintenance and construction activities/plans.

• Prepare the Year 24 (2021) annual report in accordance with the 2018 OMMP to include a draft report for review by WSDOT and Paccar and a final report for submittal to EPA.

• Conduct an annual meeting with stakeholders following completion of the final annual report.

Deliverables and Schedule

• Annual upland and shoreline inspections and water quality monitoring to be completed by June 30, 2021

• Draft and final Year 24 (2021) annual report to be completed by March 31, 2022

• Annual project meeting to be conducted by May 15, 2022

TASK 5.0 – YEAR 25 (2022) MONITORING AND REPORTING

Herrera will:

• Conduct the annual upland and shoreline inspections with WSDOT and project stakeholders during the second quarter of Year 25 (2022).

• Compile information gathered by WSDOT in Year 25 (2022) regarding stormwater and wet weather inspections, stormwater monitoring, and site maintenance and construction activities/plans.

• Prepare the Year 25 (2022) annual report in accordance with the 2018 OMMP to include a draft report for review by WSDOT and Paccar and a final report for submittal to EPA.

• Conduct an annual meeting with stakeholders following completion of the final annual report.

Deliverables and Schedule

• Annual upland and shoreline inspections to be completed by June 30, 2022

• Draft and final Year 25 (2022) annual report to be completed by March 31, 2023
SCOPE OF WORK

- Annual project meeting to be conducted by May 15, 2023

**TASK 6.0 – YEAR 26 (2023) MONITORING AND REPORTING**

Herrera will:

- Conduct the annual upland and shoreline inspections with WSDOT and project stakeholders during the second quarter of Year 26 (2023).
- Compile information gathered by WSDOT in Year 26 (2023) regarding stormwater and wet weather inspections, stormwater monitoring, and site maintenance and construction activities/plans.
- Prepare the Year 26 (2023) annual report in accordance with the 2018 OMMP to include a draft report for review by WSDOT and Paccar and a final report for submittal to EPA.
- Conduct an annual meeting with stakeholders following completion of the final annual report.

**Deliverables and Schedule**

- Annual upland and shoreline inspections to be completed by June 30, 2023
- Draft and final Year 26 (2023) annual report to be completed by March 31, 2024
- Annual project meeting to be conducted by May 15, 2024

**TASK 7.0 – YEAR 27 (2024) MONITORING AND REPORTING**

Herrera will:

- Conduct the annual upland and shoreline inspections with WSDOT and project stakeholders during the second quarter of Year 27 (2024).
- Compile information gathered by WSDOT in Year 27 (2024) regarding stormwater and wet weather inspections, stormwater monitoring, and site maintenance and construction activities/plans.
- Prepare the Year 27 (2024) annual report in accordance with the 2018 OMMP to include a draft report for review by WSDOT and Paccar and a final report for submittal to EPA.
SCOPE OF WORK

- Conduct an annual meeting with stakeholders following completion of the final annual report.

Deliverables and Schedule

- Annual upland and shoreline inspections to be completed by June 30, 2024
- Draft and final Year 27 (2024) annual report to be completed by March 31, 2025
- Annual project meeting to be conducted by May 15, 2025

TASK 8.0 – YEAR 28 (2025) MONITORING AND REPORTING

Herrera will:

- Conduct the annual upland and shoreline inspections with WSDOT and project stakeholders during the second quarter of Year 28 (2025).
- Compile information gathered by WSDOT in Year 28 (2025) regarding stormwater and wet weather inspections, stormwater monitoring, and site maintenance and construction activities/plans.
- Prepare the Year 28 (2025) annual report in accordance with the 2018 OMMP to include a draft report for review by WSDOT and Paccar and a final report for submittal to EPA.
- Conduct an annual meeting with stakeholders following completion of the final annual report.

Deliverables and Schedule

- Annual upland and shoreline inspections to be completed by June 30, 2025
- Draft and final Year 28 (2025) annual report to be completed by March 31, 2026
- Annual project meeting to be conducted by May 15, 2026
SCOPE OF WORK

**TASK 9.0 – YEAR 29 (2026) MONITORING AND REPORTING**

Year 29 (2026) will also include water quality monitoring in accordance with the 2018 OMMP. Herrera will:

- Conduct the annual upland and shoreline inspections with WSDOT and project stakeholders during the second quarter of Year 29 (2026).
- Conduct groundwater sampling at one monitoring well (to include one duplicate sample and one rinsate blank) and intertidal seep sampling at four seeps during the annual inspections, and submit the samples to an approved laboratory for analysis of total suspended solids, total and dissolved mercury (groundwater only), and dissolved copper and zinc.
- Validate and tabulate the water quality monitoring results.
- Compile information gathered by WSDOT in Year 29 (2026) regarding stormwater and wet weather inspections, stormwater monitoring, and site maintenance and construction activities/plans.
- Prepare the Year 29 (2026) annual report in accordance with the 2018 OMMP to include a draft report for review by WSDOT and Paccar and a final report for submittal to EPA.
- Conduct an annual meeting with stakeholders following completion of the final annual report.

**Deliverables and Schedule**

- Annual upland and shoreline inspections and water quality monitoring to be completed by June 30, 2026
- Draft and final Year 29 (2026) annual report to be completed by March 31, 2027
- Annual project meeting to be conducted by May 15, 2027

**TASK 10.0 – YEAR 30 (2027) MONITORING AND REPORTING**

Herrera will:
SCOPE OF WORK

- Conduct the annual upland and shoreline inspections with WSDOT and project stakeholders during the second quarter of Year 30 (2027).

- Compile information gathered by WSDOT in Year 30 (2027) regarding stormwater and wet weather inspections, stormwater monitoring, and site maintenance and construction activities/plans.

- Prepare the Year 30 (2027) annual report in accordance with the 2018 OMMP to include a draft report for review by WSDOT and Paccar and a final report for submittal to EPA.

- Conduct an annual meeting with stakeholders following completion of the final annual report.

Deliverables and Schedule

- Annual upland and shoreline inspections to be completed by June 30, 2027

- Draft and final Year 30 (2027) annual report to be completed by March 31, 2028

- Annual project meeting to be conducted by May 15, 2028

TASK 11.0 – YEAR 31 (2028) MONITORING AND REPORTING

Herrera will:

- Conduct the annual upland and shoreline inspections with WSDOT and project stakeholders during the second quarter of Year 31 (2028).

- Compile information gathered by WSDOT in Year 31 (2028) regarding stormwater and wet weather inspections, stormwater monitoring, and site maintenance and construction activities/plans.

- Prepare the Year 31 (2028) annual report in accordance with the 2018 OMMP to include a draft report for review by WSDOT and Paccar and a final report for submittal to EPA.

- Conduct an annual meeting with stakeholders following completion of the final annual report.

Deliverables and Schedule

- Annual upland and shoreline inspections to be completed by June 30, 2028
SCOPE OF WORK

- Draft and final Year 31 (2028) annual report to be completed by March 31, 2029
- Annual project meeting to be conducted by May 15, 2029

TASK 12.0 – 2028 OMMP

Herrera will prepare the 2028 OMMP describing inspection, monitoring, and reporting requirements for the following 10 years at the Eagle Harbor WHOU. The 2028 OMMP will include updates and modifications of the 2018 OMMP based on the reported findings from Year 22 (2019) through Year 30 (2027) and discussions with EPA and Paccar. Herrera will prepare a preliminary draft OMMP for review by WSDOT and Paccar, a draft OMMP for review by EPA, and a final OMMP for all stakeholders.

Deliverables and Schedule

- Preliminary draft OMMP by August 31, 2028
- Draft OMMP by October 15, 2028
- Final OMMP by December 31, 2028

TASK 13.0 – CONTINGENCY TECHNICAL SUPPORT

Herrera will provide additional technical support to WSDOT for operation, maintenance, and monitoring of the site on an as needed basis. Contingency technical support may include but not be limited to:

- Completion of the final 2018 OMMP
- Additional site inspections
- Additional water quality monitoring
- Sediment quality or tissue quality monitoring
- Analysis of stormwater treatment or other source control actions
- Review of materials and estimating recover costs incurred by WSDOT for payment by Paccar.
SCOPE OF WORK

Deliverables and Schedule

- To be determined on an as needed basis

TASK 14.0 – PROJECT MANAGEMENT/CONTRACT ADMINISTRATION

Herrera’s project manager will be responsible for ongoing administration of the project, including preparing invoices and progress reports, as well as coordination of work efforts with the designated client point of contact and all subconsultants. Herrera will subcontract with Anchor QEA for historical information or technical review on an as needed basis. Herrera’s project manager will have phone and e-mail contact with WSDOT and subconsultants on an as-needed basis.

Deliverables

- Progress reports and invoices.