October 2024
Lower Duwamish Waterway Upper Reach Remedial Action

Lower Duwamish Waterway Upper Reach Final Remedial Action Work Plan

Prepared for
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ABBREVIATIONS

BMP	best management practice
DRF	Duwamish Reload Facility
EMB	Environmental Mitigation Binder
ENR	enhanced natural recovery
EPA	U.S. Environmental Protection Agency
GAC	granular activated carbon
HASP	Health and Safety Plan
LDW	Lower Duwamish Waterway
QC Officer	Quality Control Officer
RAWP	Remedial Action Work Plan
RM	river mile
RMC	residuals management cover
PPM	Pacific Pile & Marine
SDS	Safety Data Sheets
Site	Lower Duwamish Waterway Superfund Site
SMA	Sediment Management Area
SPOC	single point of contact

REVISION HISTORY

Revision	Date	Comments	Prepared By	Approved By
0	7/9/24			
1	7/19/24			
2	8/23/24			
3	9/6/24			
4	9/9/24			
5	10/9/24			
6	10/28/24			

RAWP Elements Summary Checklist

Specification Section	Pre-Construction Submittal	RAWP Section
01 11 00	Remedial Action Work Plan (RAWP; see additional specific RAWP elements and pre-construction submittal requirements in this Attachment A)	All
01 32 16	Baseline Project Schedule as part of the RAWP	3, Appendix C
01 32 16	Qualifications for personnel preparing any Project Schedules as part of the RAWP	2.3, Appendix A
01 32 16	Baseline Project Schedule (including, but not limited to, documentation for determining durations for critical and near critical activities) as part of the Final RAWP	3, Appendix C
01 32 16	Initial Schedule of Values	3
01 32 16	Final Schedule of Values	3
01 33 00 01 33 10	Master Submittal List (Standard Form 01 33 00-D, Attachment A) as part of the RAWP	7.1, Appendix D
01 35 29	Site-Specific Health and Safety Plan (HASP) as part of the RAWP	4.1, Appendix F
01 35 29	Emergency Response Plan as part of the RAWP	4.2, Appendix F
01 35 43 01 55 26 31 25 00	Environmental Mitigation Binder (including Water Quality Protection Plan; Erosion and Sediment Control Plan; Stormwater Pollution Prevention Plan; Water Management Plan; Spill Prevention, Control, and Countermeasure Plan; Air Pollution and Odors Control Plan; Noise Control Plan; Light Control Plan; Personnel and Equipment Decontamination Plan; Traffic Control Plan) as part of the RAWP	6, Appendix U - AE
01 35 44	Green Remediation Plan as part of the RAWP	5.5, Appendix M
01 41 26	Identification of permits, easements, and right-of-entry agreements to be obtained by the Contractor, as part of the RAWP	8, Appendix E
01 41 26	A copy of each Contractor-obtained permit, easement, and right-of-entry agreement for the proposed Contractor Transload Facility(ies) and Disposal Facility(ies), as part of the RAWP	Appendix E
01 45 00	Construction Quality Control Plan (including qualifications for Contractor Quality Control Officer) as part of the RAWP	5.6, Appendix N
01 52 00 31 05 10	Temporary Facilities and Control Plan as part of the RAWP	4.3, Appendix G
01 52 01	Project Representative field office plan layout and location as part of the RAWP	4.4, Appendix G
01 55 26	Initial Notification Plan and initial Notification Schedule as part of the RAWP	6.1, Appendix AE
02 21 00	Survey and Positioning Control Plan as part of the RAWP	4.5, Appendix H
02 41 00	Demolition Plan as part of the RAWP	5.7, Appendix O
31 09 00	Qualifications for Condition Inspection Engineer as part of the RAWP	4.6, Appendix I
31 09 00	Instrumentation and Monitoring Plan (including Preliminary Corrective Action Plan) as part of the RAWP	5.8, Appendix P
31 11 00	Site Clearing and Management Plan as part of the RAWP	5.9, Appendix Q
31 62 10	Proposed methodology to install Steel Pipe Piling to the depths shown as part of the RAWP	5.12, Appendix T
31 62 10	List, description, and capacities of proposed equipment for Steel Pipe Piling installation as part of the RAWP	5.12, Appendix T
31 62 10	Equipment suitability to the anticipated Work Site and subsurface conditions as part of the RAWP	5.12, Appendix T

Specification Section	Pre-Construction Submittal	RAWP Section
31 62 10	Environmental procedures during Steel Pipe Piling installation as part of the RAWP	5.12, Appendix T
31 62 10	Welding certificates for piling installation personnel as part of the RAWP	Appendix A
32 32 10	Shop drawings for steel sheet piles, corner piles, tip protection, and other structural steel components as part of the RAWP	5.12, Appendix T
32 32 10	Interlock tension strength test report conforming to steel sheet piling manufacturer's standard test as part of the RAWP	5.12, Appendix T
32 32 10	Description of pile driving equipment to be employed in the Work, manufacturer's name, model number, capacity, rated energy, and verification that the hammer can deliver the required energy as part of the RAWP	5.12, Appendix T
32 32 10	Cement grout cut sheets as part of the RAWP	5.12, Appendix T
32 32 10	Reinforcing bar shop and placement drawings as part of the RAWP	5.12, Appendix T
32 32 10	Cut sheets of reinforcing bar mat side form spacer as part of the RAWP	5.12, Appendix T
32 32 10	Comprehensive work plan of cement grout production, placement, and quality controls as part of the RAWP	5.12, Appendix T
32 32 10	Qualifications of bulkhead installer as part of the RAWP	5.12, Appendix A
32 93 00	Temporary Irrigation Plan as part of the RAWP	5.10
33 05 25	Installation plan for outfall outlet energy dissipation structures as part of the RAWP	5.12, Appendix T
35 10 00	Vessel Management Plan (including the Safety Management System and list of key personnel and qualifications assigned to vessel navigation Work) as part of the RAWP	5.11, Appendix S
35 20 23.01	Transloading, Upland Transportation, Waste Characterization, and Disposal Plan as part of the RAWP	5.3, Appendix K
31 05 10 35 20 23	Dredging and Excavation Plan as part of the RAWP	5.2, Appendix J
31 05 10 35 37 10	Material Placement Plan as part of the RAWP	5.4, Appendix L

1 Introduction

This Remedial Action Work Plan (RAWP) for the Lower Duwamish Waterway (LDW) Upper Reach documents the methods and procedures to be implemented during remedial construction activities for the upper reach of the Lower Duwamish Waterway Superfund Site (Site) in King County, Washington (**Figure 1-1**).

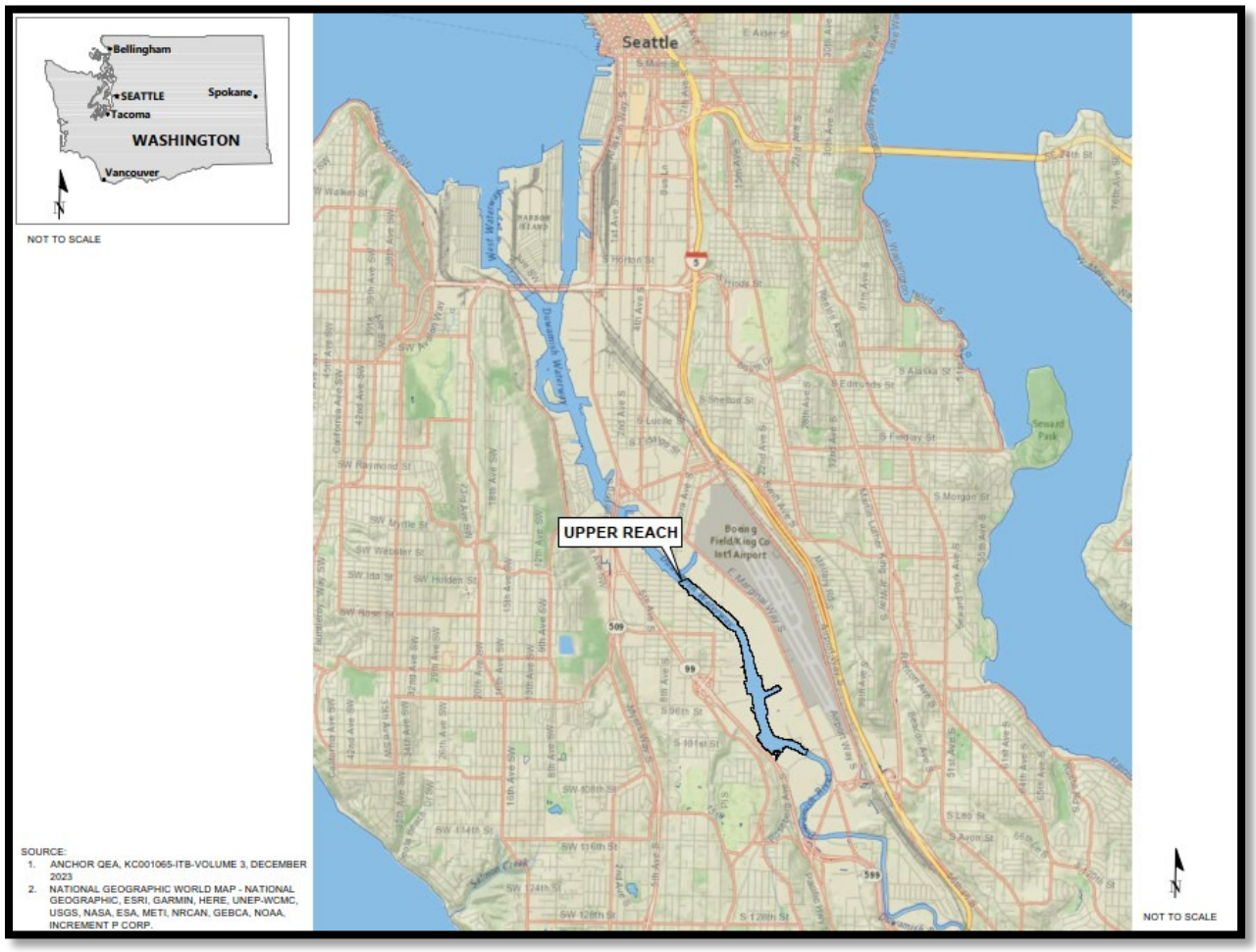

Figure 1-1. *Vicinity Map*

1.1 Site Description

The Duwamish River originates at the confluence of the Green and Black rivers near Tukwila, Washington, and flows northwest for approximately 12 miles prior to discharging into Elliott Bay in Puget Sound. In the early years of the twentieth century, the lower 6 miles of the Duwamish River were straightened and channelized into a commercial corridor for ship traffic, officially designated as the LDW and the East and West Waterways (located along Harbor Island).

The LDW Superfund Site extends 5 miles upstream from the southern tip of Harbor Island to just upstream of the Turning Basin, a federally authorized and maintained navigation feature consisting of an area where ship traffic can turn around. The LDW Superfund Site has been divided into three reaches (lower, middle, and upper) that are each undergoing remediation on different timelines, with the upper reach being the first reach for which Remedial Action is being performed.

The LDW Upper Reach extends from Duwamish Waterway Park (RM 3.0) to the southern end of the LDW at RM 5.0 near the bridge on South 102nd Street. The average width of the upper reach is 540 feet.

Within the LDW Upper Reach, remedial action occurs within designated Sediment Management Areas (SMAs). There are eighteen (18) SMAs within the LDW Upper Reach (**Figure 1-2**).

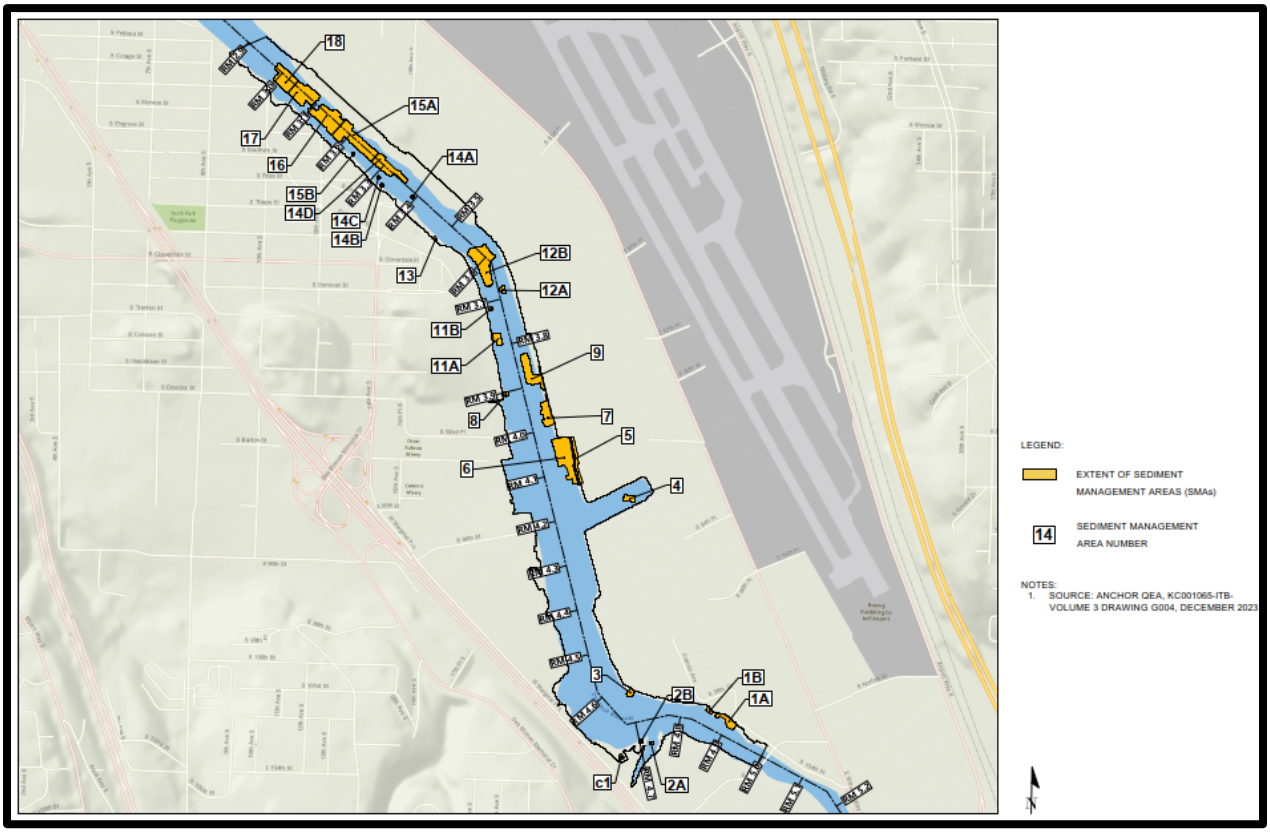

Figure 1-2. *Site Layout Plan*

The upland properties surrounding the LDW upper reach are mixed industrial, commercial, residential, and park/open space. The LDW is an actively used waterway for commercial shipping, tribal fishing activities, and recreational usage, including two marinas.

The Remedial Action for the Upper Reach is under the jurisdiction of the U.S. Environmental Protection Agency (EPA) Region 10 and is being conducted under an enforcement mechanism

between EPA and the performing parties. All Work is per the EPA-approved Final (100%) Remedial Design – Lower Duwamish Waterway Upper Reach (Anchor QEA, 2024). In-water remedial construction activities will occur during an in-water work window (October 1 through February 15) over three construction seasons (2024 – 2027). Construction activities will be coordinated with the tribes to reduce impacts on tribal fishers.

1.2 Project Overview

The Upper Reach Remedial Action includes performing the following remedial construction work, which are further described in subsequent sections of this RAWP and its supporting Plans (found in the Appendices):

- Mobilization of construction equipment and materials;
- Site preparation activities, including setup of the Contractor Transload Facility, Contractor staging and stockpile area(s), temporary erosion and sediment controls, water collection and treatment management practices, utility disconnection, and clearing/grubbing;
- Dredging, excavation, potential contingency re-dredging, contaminated sediment barge dewatering, in-water transportation, transloading, upland transportation and disposal of dredged material, dredge debris, identified debris, and piling from the Sediment Management Areas (SMAs);
- Removal, segregation, handling and disposal of Identified Debris;
- Placement of clean imported materials;
- Removal of pilings, bulkhead strengthening and reinforcement, replacing of piling with steel pipe, and installation of outfall energy dissipation structures; and
- Site restoration, cleanup, and demobilization.

Several activities will be performed in support of the remedial construction work, which are further described in subsequent sections of this RAWP and its supporting Plans (found in the Appendices) and generally include the following:

- Site-specific Health and Safety;
- Construction Quality Control;
- Construction Quality Assurance;
- Environmental monitoring;
- Surveys (Pre-Construction, Progress, and Post-Construction Surveys); and

- Reporting.

1.3 Contractor's Project Scope and Approach

PPM intends to mechanically dredge and excavate, dewater, and dispose of the contaminated sediments by the following means, which are further described in **Section 5** and individual Plans (found in the Appendices). Generally, the work includes:

- Environmental mechanical dredging on construction barges and environmental upland excavation at SMA-5; both dredging and excavation will use a long-reach excavator;
- Dewatering and transporting of the dredged material by scow to the transload facility;
- Transporting the excavated material in SMA-5 by haul trucks to the transload facility;
- Rehandling at the transload facility with placement in rail cars;
- Transport by rail to Columbia Ridge Landfill in Arlington, OR; and
- Backfilling and/or placing cover materials imported from the following sources:
    - CalPortland – DuPont, WA,
    - CalPortland – Enumclaw, WA, and
    - Xylem – Los Angeles, CA.

PPM intends to substantially perform the work during daytime hours five days per week. Due to excavation requirements of SMA-5, excavation will be conducted during the low tide hours which will generally be during the nighttime hours of 6:00 pm to 6:00 am.

1.4 General Sequence of Activities

This section presents each major Work task occurring in each Construction Season. An individual Construction Season is defined as the time period coinciding with the in-water work window, which extends from October 1st through February 15th. Accomplishing the remediation of the Upper Reach's SMAs is expected to require three Construction Seasons (Fall 2024 through Winter 2027). Generally, the work occurs from the upstream SMAs downstream.

The general sequence of Work is pre-construction surveys, removal of Identified Debris, dredging, verification sampling (by the Construction Quality Assurance (CQA) team), potential contingency re-dredging, material placement activities (i.e., backfill and residuals management cover (RMC). Additionally, placement of Enhanced Natural Recovery (ENR) and Amended Cover materials occurs in certain SMAs. Approval of all work is subject to acceptance by the Project Representative.

Additional information on the project schedule is included in **Section 3** and **Appendix C**. An overview of the major Work tasks occurring in each season is as follows:

- Season 1
    - Bulkhead Wall
    - Outfall Energy Dissipation (Outfall 2093 and 2073)
    - Removal of Identified Debris at SMAs 1, 2, 3, 4, 6, 7, 9, 11
        - Identified debris to be removed in the dry at low tide when feasible for the equipment
    - Dredging and material placement of SMAs c1, 1, 2, 3 is planned to occur concurrently with the dredging of SMAs 4, 6, 7, 8, 9, 11, 13.
- Season 2
    - Removal of Identified Debris, dredging, and material placement at SMAs 12, 14, 15, 16
        - Identified debris to be removed in the dry at low tide when feasible for the equipment
- Season 3
    - Removal of Identified Debris, dredging and bank excavation, and material placement at SMAs 5, 17, 18

The general sequence of work for each SMA is the following:

- Dredging the SMA to design elevations with a long-reach excavator mounted on a construction barge;
- Placement of dredged sediment on the contaminated sediment barge which are outfitted with four steel sumps in each corner of the barge to allow for dewater while retaining sediments;
- Pumping of the separated dredge water from the steel sumps pipes, which are wrapped in GAC-infused geotextile filter fabric, and discharged directly into the moon pool or near the dredging operations if the moon pool is not being utilized;

- Transportation of contaminated sediment barges via tugboats to the Inner Berth of the Duwamish Reload Facility (DRF);
- DRF removal of sediment from the contaminated sediment barge utilizing the electric excavator and loading of sediment into railcars utilizing front end loaders for disposal at the Columbia Ridge Landfill in Arlington, OR;
- Potential contingency re-dredging followed by same transport and disposal procedures of dredged material;
- Hauling of clean placement material via clean import material barge; and
- Placement of clean import material to design elevations with a long-reach excavator.

SMAs 3,4, 6, 7, 8, 9, 11A-B, 12A-B, 14A, 15A-B, 16, 17, and 18 operations will be completed with the long-reach 1200 excavator mounted on a construction barge (Lash 4 or WEB), KP barges as the contaminated sediment barges and the Kumtux and Eglon barges as the clean import material barges.

Certain SMAs require a change in the standard means and methods including:

- SMAs 1A-B, 2A-B, C1,14B, and 14C operations will be completed with the 470 excavator mounted on a flexifloat barge and Poseidon P2 Hopper and Poseidon Barges, utilizing barge-to-barge transfers to facilitate the short hauling the contaminated sediment and at once decontamination activities are complete the clean import material
- SMA 13 will be completed with the 270 excavator on the Judge Dredge and will require movements of vessels in South Park marina to access the work zone; and
- Structural work including the steel pipe piling, bulkhead wall, and outfall energy dissipation structures will be completed via the water with equipment identified in **Table 5-1**.
    - Concrete placement of the bulkhead wall will be done with upland-based equipment
    - Sheet pile installation of the bulkhead wall will be done by water-based equipment

Concurrent marine work, where two or more construction barges are performing remediation activities at the same time, is anticipated for most of Season 1 and Season 2. Season 3 does not anticipate concurrent marine work.

All equipment may be used for contaminated material activities. No dedicated clean material placement construction barges, excavators, booms, or buckets are designated on this project. If any equipment is used for contaminated materials, it will be fully decontaminated before handling clean

materials. While the **Kumtux** is intended to remain a dedicated clean barge, it also may be used for contaminated materials if project conditions require additional contaminated material barges.

1.5 Ancillary Work Locations

Ancillary Work Locations support the in-water work at the SMAs and include:

- Pacific Pile & Marine Yard – equipment and staging area
- Pacific Pile & Marine Yard Annex – Project Representative Field Office
- Transload Facility – Waste Management Duwamish Reload Facility (DRF)
- SMA5 Staging Area

Pacific Pile & Marine (PPM) will conduct the in-water work from barges and utilize the PPM yard located at 700 S. Riverside Dr. Seattle, WA 98108 as the location for PPM and the Project Representative field offices and equipment and staging area for the Work (**Figure 1-3** and **Figure 1-4**). Equipment and material lay-down \ areas identified in **Figure 1-3** will be used to support current contract work. Permits for the PPM yard can be found in **Appendix E**. See **Appendix Z,** for detail on fuel storage, fueling equipment, and spill prevention, containment, control, and spill response measures. All equipment involved with in-water work will be fueled overwater and equipment involved with upland work at SMA 5 will be fueled at the designated fueling location at SMA 5, **Figure 1-5**.

Figure 1-3. *PPM permanent lay-down yard and offices*

Figure 1-4. *Approximate Layout of Project Representative's Field Office*

The Duwamish Reload Facility (DRF) is located at 7400 8th Avenue South Seattle, WA 98108. The DRF is designated as the transload facility for the duration of the project. See the Transloading, Upland Transportation Waste Characterization, and Disposal Plan **(Appendix K)** for more details on the DRF.

Temporary facilities will be established for SMA 5. **Figure 1-5** depicts the temporary facilities layout to be used during the SMA 5 work. A parking area will be sectioned off of the existing Container Properties parking lot. Due to the SMA 5 work occurring in 2026, a general layout has been provided by the subcontractor performing the work. More details will be provided prior to the 2026 Construction Season.

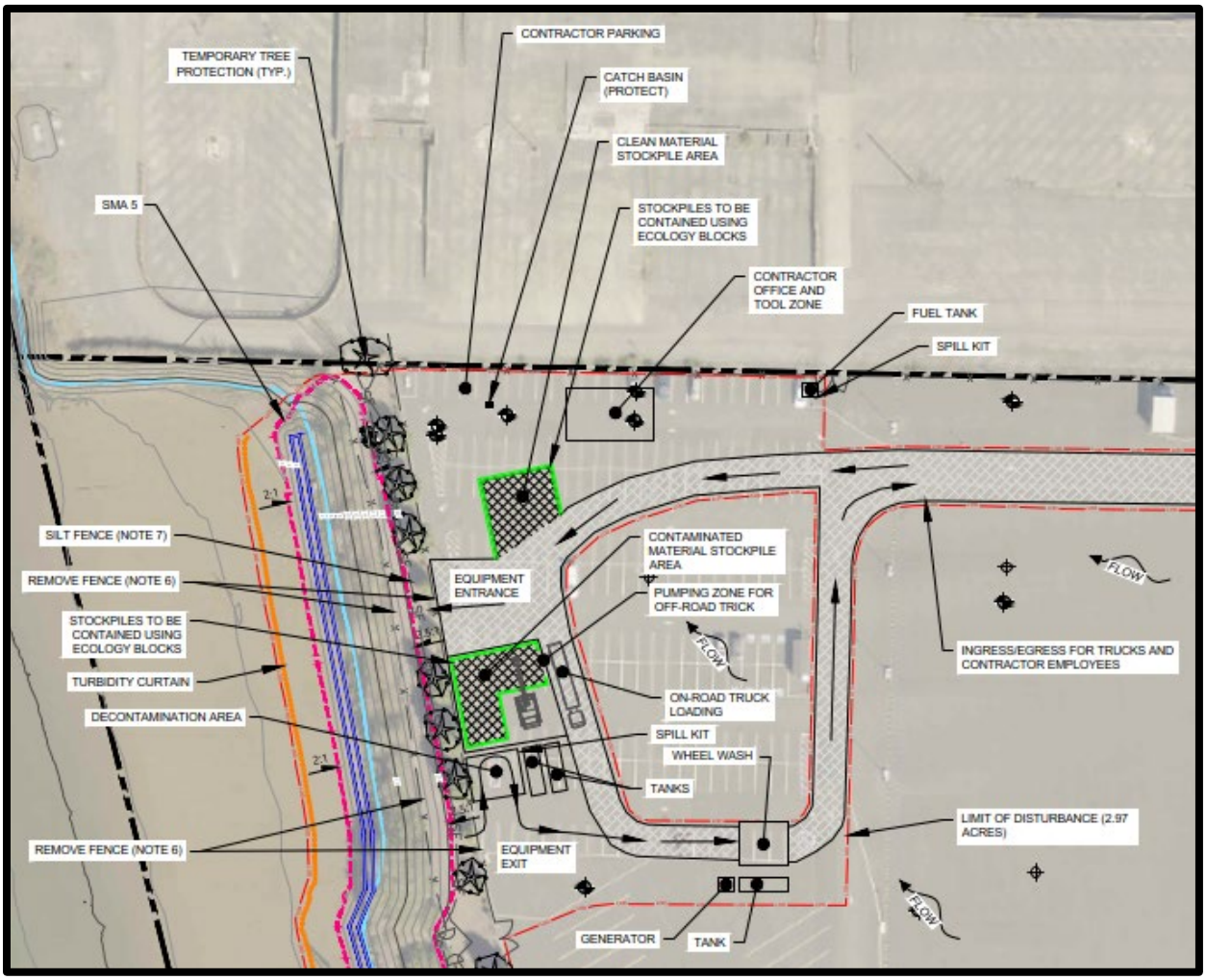

Figure 1-5. *SMA 5 subcontractor temporary facilities layout*

1.6 Contractor Coordination with Owner

PPM's Contractor's Representative (see **Section 2.3**) will submit all correspondence, questions, and documentation to the Project Representative. All communication with PPM will be through the Contractor's Representative.

As part of the Project Schedule development, PPM developed a comprehensive strategy to address scheduling and coordination related to Owner-provided access agreements, ensuring seamless communication and efficient project execution in accordance with Section 00 72 00 (General Terms and Conditions; Article 3.15C). All project aspects will be discussed at the designated project meetings including the pre-construction meetings, weekly progress meetings, and pre-final inspection meetings each construction season. Where potential project delays are identified, contingent strategies will be developed to mitigate identified potential project delays.

PPM will identify any items it believes may constitute a change under its Contract to the Project Representative. The Project Representative will communicate with EPA to obtain approval for items impacting the approved project scope or schedule. Approved change orders will be handled per contract terms.

2 Project Team

The following subsections present the project team contact information, organizational structure, and key personnel roles, responsibilities, and qualifications.

2.1 Project Team Contact Information

The following tables present contact information for the King County Project Team (**Table 2-1**); PPM's Project Team, including the emergency coordinator who will be available 24 hours a day, 7 days a week (**Table 2-2**); and PPM's proposed subcontractors (**Table 2-3**). The primary field point of contact for PPM will be Matt Miller (PPM Project Manager).

Table 2-1
King County Project Team Contact Information

Name	Organization	Role	Phone	Email
Shannon Phipps	King County	Project Representative	[redacted] O: 206-477-3846	sphipps@kingcounty.gov
Samuel Coles	King County	Inspector	[redacted] O:N/A	Samuel.coles@kingcounty.gov
Linda Sherman	King County	Project Control Engineer	[redacted] O:N/A	Linda.Sherman@kingcounty.gov
Diana Li	King County	Administrative Support	[redacted] O:N/A	Dli@kingcounty,gov
Corry Platt	Geosyntec	Construction Team Lead	[redacted]	corry.platt@geosyntec.com
Jeff Williams	Geosyntec	Construction Manager	[redacted]	jwilliams@geosyntec.com
Nicole Fancher	Geosyntec	Project Administrator	[redacted]	nicole.fancher@geosyntec.com
Anne Fitzpatrick	Geosyntec	Project Coordinator	[redacted]	afitzpatrick@geosyntec.com

Table 2-2
Contractor Project Team Contact Information

Name	Organization	Role	Phone	Email
Wilbur "JC" Clark	PPM	Contractor's Representative	[redacted] O: 206-331-3873	jc@pacificpile.com
Matt Huston	PPM	Project Manager & Emergency Coordinator	[redacted] O: 206-331-3873	matt@pacificpile.com

Name	Organization	Role	Phone	Email
Marty Locke	PPM	Superintendent & Certified Erosion and Sediment Control Lead	[redacted] O: 206-331-3873	martyl@pacificpile.com
Jeff Denman	AECOM	Quality Control Officer	[redacted] O: N/A	jeff.denman@aecom.com
Sam deMers	AECOM	Conditions Inspection Engineer	[redacted] O: N/A	Sam.deMers@aecom.com
Carolyn Nelson	PPM	Site Health and Safety Officer	[redacted] O: 206-331-3873	carolynn@pacificpile.com
Ben Nguyen	PPM	Field Engineer	[redacted] O: 206-331-3873	benn@pacificpile.com

Table 2-3
Proposed Subcontractor Contact Information

Name	Organization	Role	Scope of Work	Phone	Email
Chris Kemp	Marker Offshore	Professional Land Surveyor	Hydrographic and Topographic Surveys	[redacted] O: N/A	ckemp@markeroffshore.com
Zach Martin	Duwamish Services	Project Manager	SMA 5 Work	[redacted] O: N/A	zachm@duammishservices.com
Zach Jenkins	Waste Management	Transportation and Disposal Coordinator	Transloading, Upland Transportation, and Disposal	[redacted]0 O: N/A	zjenkins@wm.com
Teri Oosterwyk	Out West Landscape & Irrigation	Project Manager	Landscape & Irrigation	[redacted] O: 360-863-2797	teri@outwestlandscape.com

2.2 Organization Chart

PPM's organizational structure is shown in **Figure 2-1**.

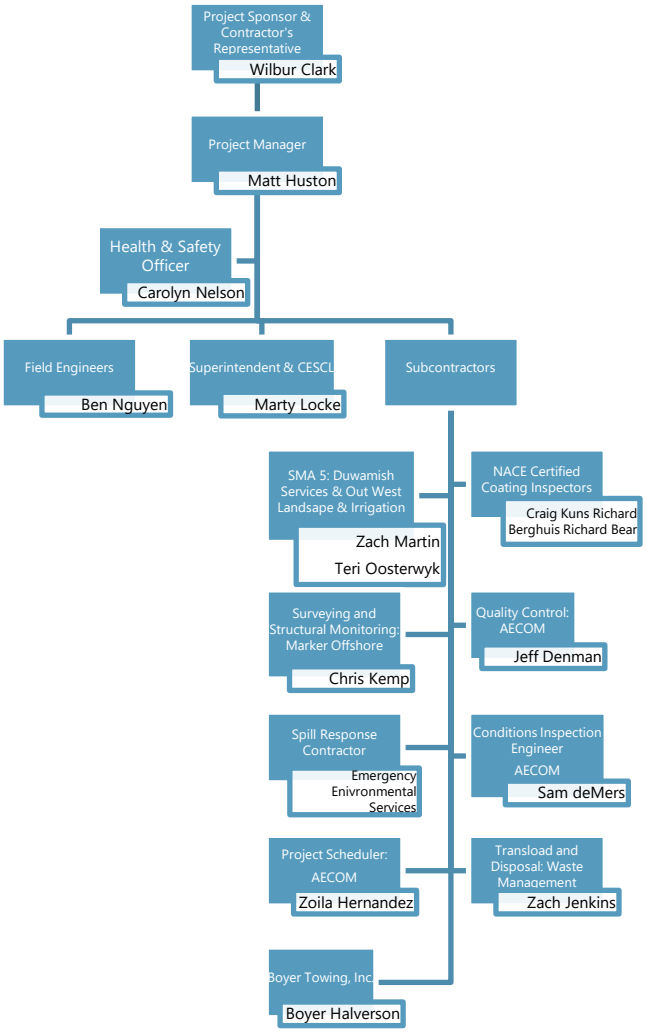

Figure 2-1 PPM's Organizational Chart Supporting the King County Project Representative and interfacing with the EPA Remedial Project Manager is the Construction Quality Assurance Team. The duties of this team are outlined under separate cover in the Construction Quality Assurance Plan. A

summary of the Construction Quality Assurance Team is shown in **Figure 2-2**. EPA has identified that Nasrin Erdelyi is the alternate Remedial Project Manager.

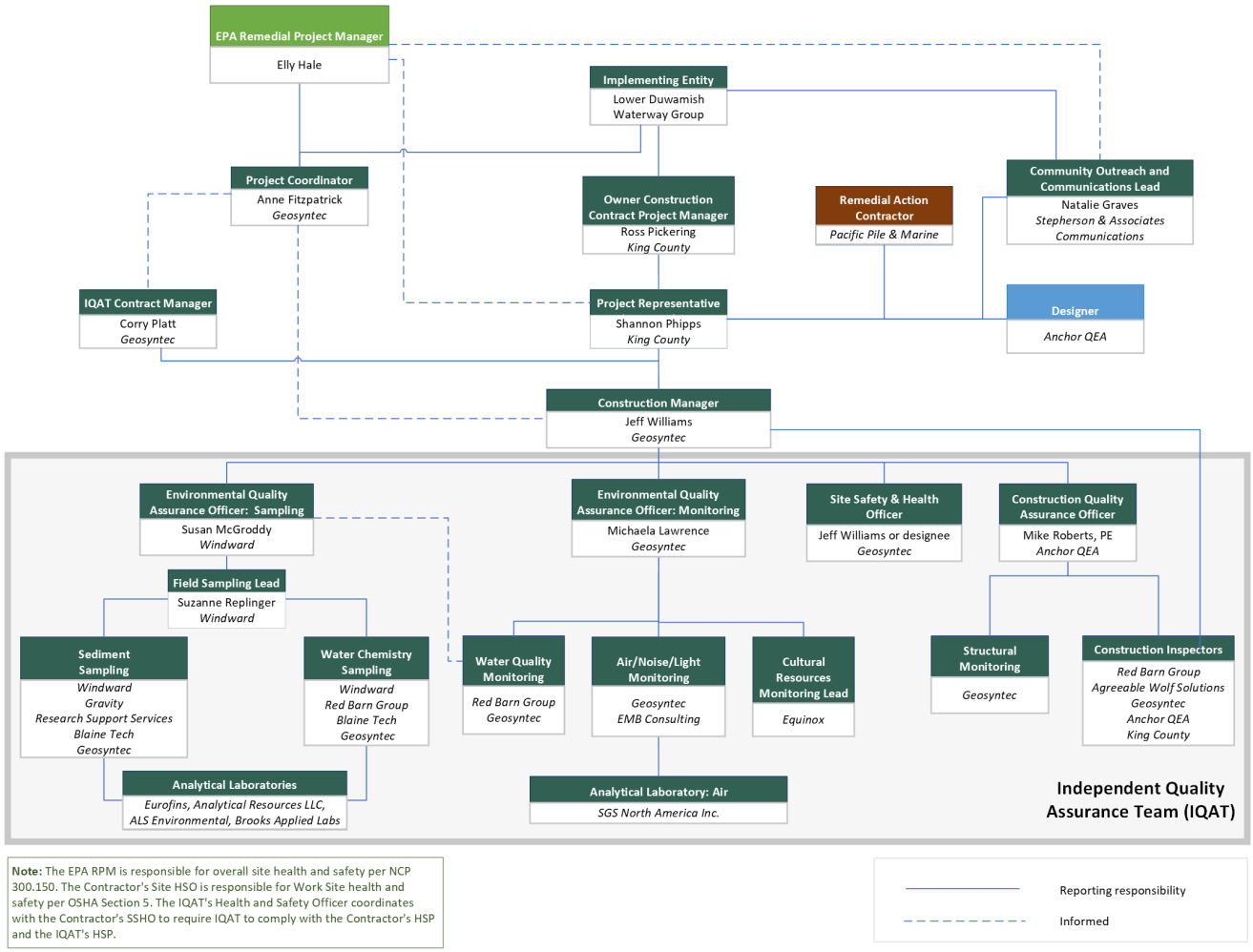

Figure 2-2. *Construction Quality Assurance Team Organizational Chart*

2.3 Key Contractor Personnel Roles, Responsibilities, and Qualifications

This section presents PPM's key personnel, roles, and responsibilities. Resumes for each person identified in subsections 2.3.1 through 2.3.11 are provided in **Appendix A**.

2.3.1 Project Sponsor & Contractor's Representative

PPM's Project Sponsor and Contractor's Representative on this project is Wilbur "JC" Clark. The Contractor's Representative is responsible for communications with King County and the Project Representative and oversight of PPM and its subcontractors. The Contractor's Representative is supported by PPM's Health and Safety Officer and Project Manager.

2.3.2 Project Manager

PPM's Project Manager (PM) on this project is Matt Huston. The PM reports to the King County Project Representative and is responsible for overseeing completion of the construction work in accordance with the project plans and specifications, design drawings, and the approved CQCP, or approved changes of the same. The PM is supported by the PPM's Superintendent, QC Officer, and Health and Safety Officer. The PM's responsibilities include, but are not limited to:

- Coordinating with the King Country Project Representative and Superintendent to accomplish construction in accordance with the plans and specifications;
- The PM will communicate with the Superintendent and Site Health and Safety Officer to ensure that the PPM's staff are informed on the approved quality control and health and safety procedures as outlined in the Construction Quality Control Plan and Site Specific Health and Safety Plan (HASP);
- The PM will coordinate as needed with field team and labs to ensure that required tests and inspections are conducted, and that the required data quality review is performed on the results received;
- The PM will ensure that the PPM's staff performing the tests and inspection are properly trained;
- The PM will ensure that testing and inspection results meet QC requirements;
- Inform the Superintendent and the Project Representative of any new findings or changed conditions;
- Provide QC documentation to the Superintendent and the Project Representative; and
- Submit as-built conditions to the Project Representative.

PPM's Project Manager has the full authority to execute any and all actions necessary to ensure that the construction work complies with the project plans and specifications, and HASP.

2.3.3 Superintendent

Marty Locke has been designated as the PPM's Superintendent. The Superintendent will be on site full time whenever work is being performed and supports PPM's Project Manager. The Superintendent's responsibilities include, but are not limited to:

- Monitoring all Site work for compliance with the plans and specifications;
- Ensuring that PPM's staff follow the approved quality control and health and safety procedures as outlined in the Construction Quality Control Plan and Site Specific Health and Safety Plans;
- The Superintendent will ensure that the required tests and inspections are conducted;
- The Superintendent will recommend mitigation measures as needed to address air pollution, odor, noise, light, or water quality concerns or criteria exceedances (see the Environmental Mitigation Binder), in coordination with the King County Project Representative and Contractor Quality Control Officer and direct field personnel on implementation of the agreed upon mitigation measures to be used; and
- Document as-built conditions.

2.3.4 Site Health and Safety Officer

Carolyn Nelson has been designated as PPM's Health and Safety Officer (HSO). She will be primarily responsible for implementing and overseeing that firm's Site Specific Health and Safety Plan (HASP), see **Appendix F**. She will also be responsible for providing PPM's staff with the HASP that includes site-specific hazards and ensuring that all employees are trained in appropriate safety techniques relevant to the project.

The HSO will be responsible for overseeing safety while work is occurring, ensuring that safe work procedures are followed at the job site, ensuring that proper safety equipment is available at the job site, and maintaining Health and Safety documentation and providing such documentation to the King County Project Representative.

2.3.5 Contractor Quality Control Officer

The Quality Control Officer (QC Officer) for this project has been designated as Jeff Denman (AECOM). The QC Officer is responsible for monitoring construction work for compliance with the project plans and specifications, communicating directly with the King County Project Representative on QC matters and PPM's Superintendent and reporting to PPM's Project Manager. The QC Officer's responsibilities include but are not limited to:

- Coordination, review, and reporting of monitoring and mitigation measures according to the plans and specifications;
- Implementing the approved CQCP;
- Monitoring site activities for adherence to project specifications, drawings, and field changes approved by the King County Project Representative;
- Performing required inspections specified in the CQCP and project plans and specifications;
- Reviewing testing and inspection results for compliance with QC requirements;
- Revising the CQCP as required and approved by the Project Representative;
- Maintaining QC documentation; and
- Providing QC documentation to PPM's Project Manager.

The QC Officer has the full authority to execute actions necessary for implementing the QC program to maintain compliance with the project plans and specifications.

The QC Officer shall confirm that:

- Pertinent issues of appropriate QC documents are available at locations where operations essential to the effective functioning of the quality system are performed; and
- Obsolete documents are promptly removed from points of issue or use.

2.3.6 Professional Land Surveyor

The third-party Professional Land Surveyor (PLS) for this project is Chris Kemp (Marker Offshore LLC). Chris Kemp is a Professional Land Surveyor licensed in Washington State. The PLS will conduct all bathymetric and topographic surveys in accordance with Section 02 21 00 (Site Surveys and Positioning Control) and the Survey and Positioning Control Plan. The PLS will also serve as the Monitoring Surveyor and be responsible for performing the structural monitoring in accordance with Section 31 09 00 (Geotechnical Instrumentation and Condition Inspections) and the Instrumentation and Monitoring Plan.

2.3.7 Transportation and Disposal Coordinator

The Transportation and Disposal Coordinator for this project is Zach Jenkins (Waste Management). The Transportation and Disposal Coordinator is responsible for all stages of waste management (including transloading, transportation, and disposal) of dredge material, dredge debris, identified debris, and piling in accordance with Section 35 20 23 (Transloading, Upland Transportation, and Disposal).

2.3.8 Conditions Inspection Engineer

The Conditions Inspection Engineer for this project is Sam deMers, P.E. (AECOM). The Conditions Inspection Engineer will conduct all structural inspections in accordance with Section 31 09 00 (Geotechnical Instrumentation and Condition Inspections) and the Construction Quality Control Plan (**Appendix N**).

2.3.9 Certified Erosion and Sediment Control Lead

The Certified Erosion and Sediment Control Lead (CESCL) for the project is Marty Locke. A separate CESCL will be provided for SMA 5 operations, that person will be determined before initiating SMA5. The CESCL has an active certification through a CESCL course approved by Ecology, minimum of one year of experience, and one similar project as required by Section 31 25 00 (Erosion and Sedimentation Control). The CESCL is responsible for conducting inspections of all erosion and sediment control measures in accordance with the Erosion and Sediment Control Plan.

2.3.10 NACE Certified Coating Inspector

The National Association of Corrosion Engineers (NACE) Certified Coating Inspectors for this project are Craig Kuns, Richard Berghuis, and Richard Bear. The NACE Certified Coating Inspectors will conduct inspections of the protective coating applied to the Steel Pipe Piling in accordance with Section 09 60 62 (Coating of Steel Piles).

2.3.11 Project Scheduler

The Project Scheduler for this project is Zoila Hernandez (AECOM). The project scheduler is responsible for preparation and maintenance of the project schedule and associated reports in accordance with Section 01 32 16 (Construction Progress Schedules).

2.3.12 Duwamish Services

PPM has contracted Duwamish Services to perform contract work at SMA 5. Plans pertaining to work to be conducted at SMA 5 will be updated and submitted for acceptance prior to the work being conducted at the SMA which is scheduled to take place in Construction Season3 between October 2026 and March 2027.

2.3.13 Out West landscape and Irrigation

PPM has contracted Out West Landscape and Irrigation to perform restoration work at SMA 5. PPM will prepare a Temporary Irrigation Plan to meet the requirements of Section 32 93 00 (Landscaping and Maintenance) prior to work being conducted at SMA 5 which is scheduled to take place in Construction Season 3 between October 2026 and March 2027.

2.3.14 Boyer Towing, Inc.

PPM has contracted Boyer Towing, Inc. to provide and operate tugboats and barges to support the contact work. Boyer Towing, Inc. was established in 1935 and operate 34 tugboats and barges on the Pacific Coast between the United States and Canada.

2.4 Crew Staffing & Communications

PPM is committed to adequately staff each crew, promoting efficiency and timely completion through dedicated teams for project management, engineering and surveying, construction, quality control, and support. Staffing levels will be adjusted according to the project phase, with additional personnel brought in during peak activity periods to maintain optimal productivity.

To ensure continuous operations and meet project deadlines, PPM will implement a shift work schedule with one 10-hour shift per day. If the project requires multiple shifts per day or operations greater than a 60-hour work week then shift rotations will be added and managed to prevent fatigue and ensure alertness, with special provisions for night shifts such as enhanced lighting and regular breaks. Staffing levels for each shift will be tailored to the specific demands of each task, ensuring deadlines are met without compromising quality or safety.

Operators selected will be trained, experienced, and qualified to perform the tasks assigned to them per Specification Section 01 45 00 1.05 A.

The crews will report through the hierarchy beginning with field employees to craft leaders, general foreman,to Superintendent, who will report to the Project Manager.

3 Project Schedule

The Baseline Project Schedule is provided in **Appendix C**. The Baseline Project Schedule meets the schedule and project requirements and constraints outlined in the following Project Specification Sections:

- 00 72 00 (General Terms and Conditions; Article 4.3)
- 01 14 00 (Work Restrictions; Article 1.07, 1.09, and 1.10);
- 01 31 19 (Contract Meetings; Article 1.04)
- 01 32 16 (Construction Progress Schedules; Articles 1.04, 1.06, and 1.07);
- 01 32 16 (Schedule of Values; Article 1.10);
- 01 33 00 (Submittals);
- 01 35 29 (Health and Safety; Articles 1.04 and 3.01);
- 31 05 10 (SMA 5 Bank Construction; Article 1.05);
- 32 93 10 (Temporary Tree Protection; Articles 3.01, 3.04, and 3.05);
- 35 20 23 (Remedial Dredging, Barge Dewatering, and In-Water Transportation; Article 3.02);
- 35 20 23.01 (Transloading, Upland Transportation, and Disposal; Article 1.05); and
- 35 37 10 (Material Placement; Article 1.05).

Also included in **Appendix C** is the project schedule narrative which provides additional detail on the project schedule.

4 Pre-Construction Elements of the RAWP

The following subsections provide details of the pre-construction elements of the RAWP as presented in the Appendix Table of Contents Volume 1 Appendices A through I.

- Appendix A: Contractor Personnel Resumes (See **Section 4.1** for additional details)
- Appendix B: Sample Forms (See **Section 4.2** for additional details)
- Appendix C: Baseline Project Schedule (See **Section 3** for additional details)
- Appendix D: Master Submittal List (See **Section 4.4** for additional details)
- Appendix E: Contractor Provided Permits, Easements, and Right-of-Entry Agreements (See **Section 4.5** for additional details)
- Appendix F: Site-Specific Health and Safety Plan & Emergency Response Plan (See **Section 4.6** and **4.7** for more details)
- Appendix G: Temporary Facilities and Control Plan & Project Representative Field Office Plan Layout (See **Section 4.8** for more details)
- Appendix H: Survey and Positioning Control Plan (See **Section 4.9** for more details)
- Appendix I: Structural Conditions Inspections Personnel Qualifications (See **Section 4.10** for more details)

4.1 Contractor Personnel Resumes

The resumes for the following roles are contained within **Appendix A**:

- Contractor Project Representative
- Project Manager
- Contractor Superintendent
- Contractor Quality Control Officer
- Contractor Site Safety & Health Officer (SSHO)
- Structural Design Engineer (Structural Condition Inspections Personnel)
- Professional Land Surveyor
- Duwamish Reload Facility District Manager

- Project Scheduler
- Coating Inspectors

4.2 Sample Forms

The sample forms as provided by King County in specification 01 33 10 are contained in **Appendix B.**

4.3 Project Schedule

Refer to Section 3 for a description of the Baseline Project Schedule contained in **Appendix C.**

4.4 Master Submittal List

The Master Submittal List as provided by King County in specification 01 33 10 are contained in **Appendix D.**

4.5 Contractor Provided Permits, Easements, and Right-of-Entry Agreements

Permits required by PPM's transload and disposal supplier, Waste Management, are provided in Volume 1 **Appendix E** and include:

- Disposal
    - Solid Waste Disposal Site Permit
- Transloading
    - Waste Discharge Permit
    - Industrial Stormwater General Permit
    - Solid Waste Facility Permit
- Staging and Stockpile Area (associated with SMA 5)
    - Construction Stormwater General Permit- PPM and its subcontractor will evaluate demonstrating substantive requirements in SMA5 plans to be submitted prior to the 2026-2027 construction season. See also the SWPPP in **Appendix X**.
- Traffic Control
    - Process will start early 2025, approval expected mid-2025.

- Temporary Facilities
    - Permits are not necessary for the establishment of a project field office and contractor field office as described in Seattle Building Code 106.13.5.

PPM does not need any additional easements or right-of-entry agreements beyond what King County is acquiring.

PPM will also ensure substantive permit compliance for on-site actions, including staging and stockpile areas for SMA 5. This includes adhering to all environmental and safety regulations, and implementing BMPs to minimize environmental impact. Regular inspections and audits will be conducted to ensure substantive compliance with requirements, and any deviations will be promptly addressed. Documentation and reporting will be maintained to demonstrate compliance, and staff will be trained on compliance procedures to ensure all activities align with regulatory requirements.

4.6 Site-Specific Health and Safety Plan

PPM has prepared a Site-Specific HASP that meets the requirements of Section 01 35 29 (Health and Safety). The HASP is presented in **Appendix F** and includes site specific information and a description of the following:

- Map of the Work Site illustrating the location of anticipated hazards and areas of control for those hazards;
- Personnel and alternates responsible for Work Site health and safety;
- Hazardous material inventory and material Safety Data Sheets (SDS) for all chemicals that will be brought to the Work Site;
- Monitoring procedures to evaluate hazards; and
- Administrative (record keeping and documentation) measures to be implemented for reporting purposes.

4.7 Emergency Response Plan

The Emergency Response Plan (ERP) has been prepared to meet the requirements of Section 01 35 29 (Health and Safety). The ERP is presented in **Appendix F** and presents emergency response procedures in case of an emergency at the Work Site. The ERP includes the following information:

- Description of pre-emergency planning and preparation activities
- Personnel roles and responsibilities in the event of an emergency

- List of standard operating procedures and response measures to be taken in emergency situations
- Notification procedures in case of an emergency to specific parties and their contact information
- Procedures for reporting and documentation, to be completed following an emergency

4.8 Temporary Facilities and Control Plan & Project Representative Field Office Plan Layout

PPM has prepared a Temporary Facilities and Control Plan & Project Representative Field Office Plan Layout, contained in **Appendix G**, that meets the requirements of Specification Sections 01 52 00 (Construction Facilities) and 31 05 10 (Sediment Management Area 5 Bank Construction). The Temporary Facilities and Control Plan includes a description of the following information:

- Temporary facilities layout and locations including staging and stockpile areas, offices, and parking;
- Maintenance and security procedures established for the temporary facilities; and
- Existing and temporary utilities to be established including maintenance procedures.

The Project Representative field office will be located next to PPM's permanent lay-down yard at 700 S Riverside Drive Seattle, WA 98108 (**Figure 1-4**). The Project Representative field office will be fully functional at least 15 working days prior to the start of each Construction Season and will meet the requirements of Specification Section 01 52 01 (Project Representative Field Office).

4.9 Survey and Positioning Control Plan

PPM's surveying subcontractor Marker Offshore LLC. has prepared a Survey and Positioning Control Plan contained in **Appendix H** that meets the requirements of Specification Sections 02 21 00 (Site Surveys and Positioning Control). The Survey and Positioning Control Plan includes a description of the following information:

- A proposed schedule including the Pre-, Post-, and Progress Construction Surveys estimated to take place each construction season;
- The proposed Marker Offshore LLC. field and office staff that will be assigned to the Site;
- A list of proposed survey equipment with specifications;
- Existing project controls and procedures for new site-specific controls and monitoring to be established;

- Vessel and equipment positioning controls;
- Quality control procedures;
- Procedures for data processing including quantity calculation methods; and
- A list of deliverables.

4.10 Structural Condition Inspections Personnel Qualifications

The Pre- and Post- Construction Structural Condition Inspections will be performed by Sam deMers with AECOM who meets the requirements of Specification Section 31 09 00 (Geotechnical Instrumentation and Condition Inspections).

5 Primary Construction Elements of the RAWP

The following subsections provides details of the construction elements of the RAWP as presented in the Appendix Table of Contents Volume 2 Appendices J though T.

- Appendix J: Dredging and Excavation Plan (see **Section 5.2** for more details)
- Appendix K: Transloading, Upland Transportation, Waste Characterization and Disposal Plan (see **Section 5.3** for more details)
- Appendix L: Material Placement Plan (see **Section 5.4** for more details)
- Appendix M: Green Remediation Plan (see **Section 5.5** for more details)
- Appendix N: Construction Quality Control Plan (see **Section 5.6** for more details)
- Appendix O: Demolition Plan (see **Section 5.7** for more details)
- Appendix P: Instrumentation and Monitoring Plan (see **Section 5.8** for more details)
- Appendix Q: Site Clearing and Management Plan (see **Section 5.9** for more details)
- Appendix R: Temporary Irrigation Plan (reserved, see **Section 5.10** for more details)
- Appendix S: Vessel Management Plan (see **Section 5.11** for more details)
- Appendix T: Structures Plan (see **Section 5.12** for more details)

5.1 Equipment

PPM will use the equipment shown in **Table 5-1** across multiple Plans individually described in **Section 5**. **Table 5-1** serves to identify within which individual Plan the equipment is described with supporting materials and certifications, as appropriate, and includes a cross-walk between multiple Plans where the specific equipment will be employed. Equipment replacements are likely during construction. When it occurs, PPM is required to submit to KC PR (before mobilizing equipment) the equipment spec sheets and certifications. Submittal contents will be approved by KC and available to EPA Oversight during the Weekly Progress Meeting. Replacements will be documented in the Daily, Weekly, and Construction Season Report.

RAWP Table 5-1	Equipment Directory							Construction Activities						
Category	Name/Description		Make	Model	Engine Tier	Horsepower	Automatic Shutoff Feature	Dredging	Material Placement	Bulkhead Wall	Piling Install/ Removal	Transloading	SMA5 (Season 3 only)	Equipment Specification Location
Hydraulic Excavators	Mounted on WEB		Hitachi	EX 1200-5	Tier 2	760 HP	X	X	X					Dredging and Excavation Plan
	Mounted on Lash 4		Hitachi	EX 1200-6	Tier 2	760 HP	X	X	X	X	X			Dredging and Excavation Plan
	Mounted on FlexiFloat Barge		Hitachi	ZX 470	Tier 4	367 HP	X	X	X		X			Dredging and Excavation Plan
	Electric Excavator at Waste Management		SENNEBOGEN	875E	NA	391 kW	X					X		Transloading Plan
	Mounted on Judge Dredge		Hitachi	ZX 270	Tier 3	188 HP	X		x					Material Placement Plan
	50 Ton Long Reach Excavator (70')				TBD	TBD	TBD						X	Dredging and Excavation Plan
	50 Ton Standard Front Excavator				TBD	TBD	TBD						X	Dredging and Excavation Plan
	20 Ton Standard Front Excavator				TBD	TBD	TBD						X	Dredging and Excavation Plan
Cranes	Crawler Crane mounted on FlexiFloat Barge		American	9310	Tier 1	270 HP				X	X			Structures Plan
Vibratory Hammer	Power Unit for Ape 200 Hammer	8300#	CAT	C9	Tier 3	375 HP	NA			X	X			Structures Plan
	Pile Shear		Densco		NA	NA	NA				X			Demoliton Plan
TugBoats	Halle H	50' x 18' x 7'	2 x GM	12V-71	Tier 2	800 HP	X	X	X	X	X			Vessel Management Plan
	Gretchen H	85' x 30' x 9'	3 x Cummins	QSK19	Tier 3	2250 HP	X		X					Vessel Management Plan
	Jennifer H	65' x 22' x 7'	2 x Cat	C18	Tier 2	938 HP	X	X	X	X	X			Vessel Management Plan
Other Boats	Fog Dog Survey Boat	27'	Cummins	T-330	Tier 2	330 HP		X	X		X			Vessel Management Plan
	Work & Monitoring Skiff #1	16 - 21'	Honda- Gas	BF60	NA	60 HP		X	X	X	X			Vessel Management Plan
	Work & Monitoring Skiff #2	16 - 21'	Honda- Gas	BF60	NA	60 HP		X	X	X	X			Vessel Management Plan
Front End Loaders	Loader #1		John Deere	624	Tier 4	192 HP	X		X					Material Placement Plan
	Loader #2		John Deere	624	Tier 4	192 HP	X		X					Material Placement Plan
Miscellaneous	Powered Street Sweeper		TBD	TBD	TBD	TBD	TBD						X	SWPPP & ESC Plans
	Water Truck		TBD	TBD	TBD	TBD	TBD						X	SWPPP & ESC Plans
Locomotives	Long Haul Locomotive (typical)		EMD	GP22	Tier 4	2,150HP	X					X		Transloading Plan
Trucks	On-road Haul Truck #1 (typical)		TBD	TBD	TBD	TBD	TBD						X	Dredging and Excavation Plan
	10 cy Haul Truck		TBD	TBD	TBD	TBD	TBD						x	Maerial Placement Plan
Barges	Lash 4 (w/Hitachi 1200-6)	160' x 50' x 12'			N/A		NA	X	X	X	X			Vessel Management Plan
	WEB (w/Hitachi 1200-5)	142' x 58' x 11'			N/A		NA	X	X					Vessel Management Plan
	FlexiFloat (w/Hitachi 470)	80' x 40'x 5'			N/A		NA	X	X	X	X			Vessel Management Plan
	Judge Dredge	22' x 60' x 5'			N/A		NA		X					Vessel Management Plan
	PamTay	184' x 50' x 11'			N/A		NA			X				Vessel Management Plan
	Posideon (hopper barge)	40' x 20' x 7'			N/A		NA	X	X		X			Vessel Management Plan
	KP-1 (flat deck scow)	180' x 50' x 12'			N/A		NA	X		X	X			Vessel Management Plan
	KP-2 (flat deck scow)	180' x 50' x 12'			N/A		NA	X		X	X			Vessel Management Plan
	KP-3 (flat deck scow)	180' x 50' x 12'			N/A		NA	X						Vessel Management Plan
	KP-4 (flat deck scow)	180' x 50' x 12'			N/A		NA	X						Vessel Management Plan
	Kumtux (flat deck scow)	220' x 64' x 16'			N/A		NA		X					Vessel Management Plan
	Eglon (flat deck scow)	230' x 64' x 14'			N/A		NA		X					Vessel Management Plan
Buckets	Environmental	5 cy	Young		N/A		NA	X	X		X			Dredging and Excavation Plan
	Rehandle	4 cy	Jewell		N/A		NA	X	X		X			Dredging and Excavation Plan
	Rehandle	2 cy	Young		N/A		NA	X	X		X			Dredging and Excavation Plan
	Hard Digging	3 cy	Young		N/A		NA	X		X				Dredging and Excavation Plan
Survey Equipment	Norbit iWBMS				N/A		NA	Surveying	Surveying					Surveying and Positioning Control Plan
	Applanix Wavemaster II RTK GPS				N/A		NA	Surveying	Surveying					Surveying and Positioning Control Plan

Note: Table 5-1 is meant to allow flexibility, but specific text in appendices reflect current plans.
Equipment replacements are likely during construction. When this occurs, PPM is required to submit to KCPR (before mobilizing equipment) the equipment spec sheets and certifications. Submittal contents will be KC approved and available to EPA Oversight during weekly progress meetings. Replacements will be documented in the daily, weekly, and construction season reports.

5.2 Dredging and Excavation Plan

PPM prepared a Dredging and Excavation Plan contained in **Appendix J** that meets the requirements of Sections 35 20 23 (Remedial Dredging, Barge Dewatering, and In-Water Transportation) and 31 05 10 (Sediment Management Area 5 Bank Construction). The Dredging and Excavation Plan includes the following information:

- General approach to complete Required Dredging; Required Excavation; Contingency Re-Dredging; Dredge Material, Dredge Debris, and Identified Debris removal; contaminated sediment barge dewatering; and in-water transportation of Dredge Material, Dredge Debris, Identified Debris, and Piling to the Contractor Transload Facility
- Proposed equipment for dredging and excavation
- General Work sequence
- Methods and procedures to be used in site-specific conditions (e.g., slopes)
- Methods, procedures, and equipment to be used for in-water transportation and rehandling
- Methods, procedures, and equipment for protecting existing structures and facilities
- Proposed best management practices (BMPs) to be used during remedial dredging, contaminated sediment barge dewatering, and in-water transportation

5.3 Transloading, Upland Transportation, Waste Characterization, and Disposal Plan

PPM prepared a Transloading, Upland Transportation, Waste Characterization, and Disposal Plan contained in **Appendix K** that meets the requirements of Section 35 20 23.01 (Transloading, Upland Transportation, and Disposal). The Transloading, Upland Transportation, Waste Characterization, and Disposal Plan includes the following information:

- General approach and Work sequence to complete transloading, upland transportation, waste characterization, and disposal
- Identification of proposed Contractor Transload Facility (Waste Management's Duwamish Reload Facility) and Disposal Facility (Columbia Ridge Landfill)
- Contractor Transload Facility layout and means and methods for operation
- General Work sequence for each Construction Season to identify timing and predecessors for transloading, upland transportation, and disposal as they relate to other major elements of the Work

- Methods of upland transportation from the Contractor Transload Facility to the Disposal Facility
- Means and methods for environmental protection during offloading and upland transportation

5.4 Material Placement Plan

PPM prepared a Material Placement Plan contained in **Appendix L** that meets the requirements of Section 35 37 10 (Material Placement) and Section 31 05 10 (Sediment Management Area 5 Bank Construction). The Material Placement Plan includes the following information:

- General approach to complete material placement activities, including practice material placement
- Proposed equipment for material placement (including the number, types, names, and capacity), including dredges, tugboats, workboats, clean import material barges, other marine vessels, and land-based equipment
- General Work sequence for each Construction Season to identify timing and predecessors for material placement
- Identification of location and procedures for pre-soaking and blending of granular activated carbon (GAC)
- Documentation of proposed upland source of origin for placement materials
- Methods, procedures, and equipment to be used for transporting materials to the Work Site
- Description of the approach for protecting existing structures if land-based material placement is proposed
- Methods and procedures for collecting representative samples and completing chemical testing for all placement materials
- Identification (name and location) of the accredited laboratories for the independent, certified analytical laboratory(ies) that will conduct required testing, which are as follows:
    - Analytical Resources, LLC, which holds several accreditations, available at https://www.arilabs.com/accreditations/
    - Enthalpy Analytical Lab, which holds several accreditations, available at https://enthalpy.com/accreditations

5.5 Green Remediation Plan

The Green Remediation Plan (GRP) contained in **Appendix M** was prepared to meet the requirements of Section 01 35 44 (Green Remediation Requirements). The GRP includes the following information:

- Air pollution requirements
- Green transportation requirements
- Recycling, reuse, and waste minimization requirements
- Proposed BMPs to be used during construction to reduce water consumption and energy usage
- Use of local materials
- Description of sustainable business practices to be employed and incentives for participation

During construction, PPM will track the following information for the equipment discussed in the GRP:

- Construction equipment type (and number of equipment pieces) for each construction activity
- Distribution of construction equipment by engine Tier for each construction activity
- Usage of these equipment types (i.e., percentage of total operating hours of equipment type operating at a certain engine Tier)
- Methods for tracking construction equipment type and associated engine Tier for each construction activity, in each Construction Season, for air pollution compliance purposes

A sample tracking form is provided in **Appendix B**. This form will summarize and track the compliance with air pollution requirements in Section 01 35 44 (Green Remediation Requirements).

5.6 Construction Quality Control Plan

The Construction Quality Control Plan (CQCP) contained in **Appendix N** outlines the procedures, responsibilities, and documentation required to ensure compliance with project specifications and standards. The CQCP details the quality control measures for all phases of construction activities, ensuring the highest level of quality and adherence to contract requirements. The CQCP was prepared to meet the requirements of Section 01 45 00 (Quality Control) and includes the following information:

- Description of document control procedures
- Quality control methods and procedures to ensure compliance with the Specifications

5.7 Demolition Plan

PPM has prepared a Demolition Plan contained in **Appendix O** that meets the requirements of Section 02 41 00 (Demolition and Salvage). The purpose of the Demolition Plan is to provide proper sequencing, project controls, and BMPs for demolition activities. The Demolition Plan includes the following information:

- Description of demolition procedures, including Piling removal
- List of Equipment to be used during demolition Work
- Work sequence for demolition activities in relation to affected SMAs and schedule showing coordination with other adjacent Work Site activities
- Means and methods to provide protection of the environment

5.8 Instrumentation and Monitoring Plan

The Instrumentation and Monitoring Plan contained in **Appendix P** has been prepared to meet the requirements of Section 31 09 00 (Geotechnical Instrumentation and Condition Inspections). The Instrumentation and Monitoring Plan describes survey controls and monitoring to be implemented at the Site and includes the following information:

- Monitoring personnel qualifications
- Description of proposed monitoring locations
- A schedule and outline of procedures for implementation of monitoring activities
- Manufacturer's information for monitoring equipment

Additionally, a preliminary corrective action section of the Instrumentation and Monitoring Plan is included to provide response actions to be taken in the event of an action level exceedance. The response actions include the following:

- Investigation procedures pertaining to the cause(s) of the of the Action Level exceedance
- Preliminary list of probable actions to be taken, according to structure type and construction activity, if recorded displacements exceeded the Trigger Level indicated in Section 31 09 00, Article 3.04

- Preliminary list of probable actions to be taken, according to structure type and construction activity, if recorded displacements exceeded the Maximum Level indicated in Section 31 09 00, Article 3.04

5.9 Site Clearing and Management Plan

PPM has prepared a Site Clearing and Management Plan contained in **Appendix Q** that meets the requirements of Specification Section 31 11 00 (Clearing and Grubbing). The Site Clearing and Management Plan includes the following information:

- Locations and extents of proposed areas to be cleared and grubbed
- Methods, procedures, and equipment to be used for clearing and grubbing
- Details for disposal of all cleared and grubbed material
- Sequencing approach for clearing and grubbing for each proposed area
- Methods and procedures to restore similar function to any affected areas during Work to pre-construction conditions

5.10 Temporary Irrigation Plan (Reserved)

PPM will prepare a Temporary Irrigation Plan to be in **Appendix R** to meet the requirements of Section 32 93 00 (Landscaping and Maintenance), which outlines the procedures, equipment, and methods for installing and maintaining a temporary irrigation system during work performed at SMA 5. The Temporary Irrigation Plan ensures the adequate watering of newly planted areas, maintaining soil moisture levels necessary for plant establishment and growth in compliance with project specifications. The Temporary Irrigation Plan will include details on the following aspects of work:

- Location(s) of temporary irrigation systems (SMA 5)
- Equipment and materials to be used
- Installation, testing, maintenance, and removal procedures
- Description of the methods of irrigation and/or watering schedule
- Installation, flushing, testing procedures
- Maintenance and operation of temporary irrigation system

5.11 Vessel Management Plan

The Vessel Management Plan (VMP) contained in **Appendix S** has been prepared to meet the requirements of Section 35 10 00 (Navigation Safety and Marine Traffic Control) and includes information on the following:

- Certifications of barges
- Description of the number, types, and size/capacity of marine vessel equipment to be used
- Notifications and procedures to be used for vessel movements
- Proposed procedures for daily US Coast Guard compliance with all in-water navigation and spudding/anchoring activities
- Proposed notification and coordination procedures with USCG
- Map(s) depicting primary vessel routes within, into, and out of the LDW
- Emergency management procedures for extreme weather
- Spudding, mooring, anchoring, and/or transit restrictions applying to certain areas, including with active submarine cables, outfalls, SMA10, the ENR/AC pilot, and identified areas next to Duwamish Waterway Park and Duwamish People's Park

5.12 Structures Plan

PPM has prepared the Structures Plan contained in **Appendix T** to outline the methodologies, equipment, and quality control measures for the installation of Steel Pipe Piling, Bulkhead Wall Systems, and Outfall Energy Dissipation Structures, as specified in Sections 31 62 10, 32 32 10, and 33 05 25 of the project specifications. Additional details on the structural work are provided in the subsections below.

5.12.1 Steel Pipe Piling Installation

Steel pipe piling will be installed in accordance with Section 31 62 10 (Steel Pipe Piling). The Structural Work Plan contained in **Appendix T** presents the following information on steel pipe piling installation:

- Proposed equipment for Steel Pipe Piling installation, including list, description, and capacity(ies)
- Proposed driving methodology to install Steel Pipe Piling to the required depths
- Environmental procedures to be implemented during Steel Pipe Piling installation

- Coordination steps with the Project Representative prior to and during Steel Pipe Piling installation
- Piling installer qualifications, including welding certificates for any personnel
- Schedule for Steel Pipe Piling installation

5.12.2 Bulkhead Wall System Installation

The bulkhead wall will be installed in accordance with Section 32 32 10 (Bulkhead Wall Systems). The Structural Work Plan contained in **Appendix T** presents the following information on bulkhead wall system installation:

- Proposed driving methodology to install Bulkhead Wall
- Proposed equipment for Bulkhead Wall installation, including manufacturer's name, model number, and capacity
- Shop drawings of steel sheet piles, corner piles, tip protection, and cut sheets
- Bulkhead wall installer qualifications
- Cement grout production, placement, and quality controls

5.12.3 Outfall Energy Dissipation Structures

The outfall energy dissipation structures will be installed in accordance with Section 33 05 25 (Outfall energy Dissipation Structures). The Structural Work Plan contained in **Appendix T** includes the following information on the installation of the outfall energy dissipation structures:

- Proposed methodology to install outfall energy dissipation structures
- Proposed equipment for outfall energy dissipation structure installation
- Outfall energy dissipation installer qualifications

6 Environmental Mitigation Binder

The following provides details of the Environmental Mitigation Binder (EMB) of the RAWP as presented in the Appendix Table of Contents Volume 3 Appendices U though AE. See **Table 5-1** for specifications of equipment discussed in the Volume 3 Appendices.

The EMB, Volume 3 **Appendix U**, meets the requirements of Specification Section 01 35 43 (Environmental Procedures). The purpose of the EMB is to document the methods and procedures for implementing required environmental controls, maintaining the environmental quality and protection during construction activities, and complying with applicable federal, state, and local statues, ordinances, and regulations. The EMB includes the following information:

- Personnel responsible for certificate of disposal
- Personnel responsible for emergency coordination
- Environmental Issues (including descriptions of Site Plans included in Volume 3 Appendices V through AE)

The Site environmental plans are incorporated as appendices V through AE in Volume 3 of this RAWP:

- Appendix V: Water Quality Protection Plan (See **Section 6.1** for more details)
- Appendix W: Erosion and Sediment Control Plan (See **Section 6.2** for more details)
- Appendix X: Stormwater Pollution Prevention Plan (See **Section 6.3** for more details)
- Appendix Y: Water Management Plan (See **Section 6.4** for more details)
- Appendix Z: Spill Prevention, Control, and Countermeasure Plan (See **Section 6.5** for more details)
- Appendix AA: Air Pollution and Odors Control Plan (See **Section 6.6** for more details)
- Appendix AB: Noise Control Plan (See **Section 6.7** for more details)
- Appendix AC: Light Control Plan (See **Section 6.8** for more details)
- Appendix AD: Personnel and Equipment Decontamination Plan (See **Section 6.9** for more details)
- Appendix AE: Traffic Control Plan & Notification Plan (See **Section 6.10** for more details)

6.1 Water Quality Protection Plan

The Water Quality Protection Plan contained in **Appendix V** has been prepared to meet the requirements of Section 01 35 43 (Environmental Procedures).
The Water Quality Protection Plan includes the following information:

- Procedures to monitor water quality during construction
- Best management practices to prevent contamination of local water bodies
- Mitigation strategies and corrective actions for any identified water quality issues

6.2 Erosion and Sediment Control Plan

The Erosion and Sediment Control Plan contained in **Appendix W** has been prepared to meet the requirements of Section 31 25 00 (Erosion and Sedimentation Control).
The Erosion and Sediment Control Plan includes the following information:

- Installation of erosion control measures in SMA 5
- Ground cover strategies to minimize erosion in SMA 5
- Management of runoff from construction activities in SMA 5

6.3 Stormwater Pollution Prevention Plan

The Stormwater Pollution Prevention Plan contained in **Appendix X** has been prepared to meet the requirements of Section 01 35 43 (Environmental Procedures).
The Stormwater Pollution Prevention Plan includes the following information:

- Identifies stormwater drainage areas, discharge points, and pollution control measures
- Lists erosion, sediment, and chemical control measures to prevent pollution
- Outlines procedures for regular inspections and maintenance of stormwater controls

6.4 Water Management Plan

The Water Management Plan contained in Appendix Y has been prepared to meet the requirements of Section 01 35 43 (Environmental Procedures).
The Water Management Plan includes the following information:

- Dewatering procedures for SMA 5 and DRF
- Water diversion methods to protect the work site at SMA 5 and DRF

- Groundwater protection strategies at SMA 5 and DRF

6.5 Spill Prevention, Control and Countermeasure Plan

The Spill Prevention, Control, and Countermeasure Plan contained in **Appendix Z** has been prepared to meet the requirements of Section 01 35 43 (Environmental Procedures).
The Spill Prevention, Control, and Countermeasure Plan includes the following information:

- Identification of hazardous materials and locations where spills may occur
- Best management practices to prevent spills
- Responsibilities and procedures of project team in case of a spill

6.6 Air Pollution and Odors Control Plan

The Air Pollution and Odors Control Plan contained in **Appendix AA** has been prepared to meet the requirements of Section 01 35 43 (Environmental Procedures).
The Air Pollution and Odors Control Plan includes the following information:

- Dust suppression measures
- Procedures for monitoring and limiting emissions from equipment and vehicles
- Odor control techniques during construction

6.7 Noise Control Plan

The Noise Control Plan contained in **Appendix AB** has been prepared to meet the requirements of Section 01 35 43 (Environmental Procedures).
The Noise Control Plan includes the following information:

- Utilization of noise reduction measures
- Restrictions on construction hours to minimize disturbances

6.8 Light Control Plan

The Light Control Plan contained in **Appendix AC** has been prepared to meet the requirements of Section 01 35 43 (Environmental Procedures).
The Light Control Plan includes the following information:

- Best management practices to prevent light pollution during construction
- Nighttime work restrictions

6.9 Personnel and Equipment Decontamination Plan

The Personnel and Equipment Decontamination Plan contained in **Appendix AD** has been prepared to meet the requirements of Section 01 35 43 (Environmental Procedures).
The Personnel and Equipment Decontamination Plan includes the following information:

- Setup and location of stations for cleaning personnel and equipment
- Step-by-step processes for removing contaminants from workers and machinery.
- Handling and disposal of contaminated materials

6.10 Traffic Control Plan & Notification Plan

The Traffic Control Plan & the Notification Plan contained in **Appendix AE** have been prepared to meet the requirements of Section 01 55 26 (Traffic Control).

The Traffic Control Plan includes the following information:

- Designated traffic routes for construction vehicles to minimize disruption to local traffic
- Placement of signage and barriers to ensure safe traffic flow and pedestrian safety

The Notification Plan includes the following information:

- Potential affected business owner(s)/property(ies)
- Estimated timeframe and duration that construction will be nearby the affected property

7 Submittals and Project Reporting During Construction

7.1 Master Submittal List

PPM has prepared the Master Submittal List, provided in **Appendix D** as required by Section 01 33 00 (Submittals). The Master Submittal List will be updated and submitted to the King County Project Representative monthly throughout the Construction Season, after each construction season, and a final and fully completed Master Submittal List will be submitted prior to Substantial Completion.

7.2 Daily and Weekly Reporting Procedures

The Daily Construction Report will be submitted to the Project Representative the morning following the completion of work for the previous day and include the details required by Section 01 33 00 (Submittals). The Weekly Construction Report will be submitted to the Project Representative the Monday morning following the completion of the work and will include content identified in Section 01 33 00 (Submittals).

7.3 Contractor's Annual Construction Season Summary Procedures

The Contractor's Annual Construction Season Summary Report for the work completed each Construction Season will be provided to the King County Project Representative within 30 calendar days after completion of construction activities (including disposal of Dredge Material) and demobilization from the Work Site. This Report will satisfy the requirements of Specification 01 78 39, 1.03 C2.