Lower Duwamish Waterway Upper Reach Remedial Action

Light Control Plan

Revision 4

August 28, 2024

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Quality information

Prepared by	Checked by	Verified by	Approved by	Contractor Approval
Eric Megna	Rachel Johnson	Alfred Trotta, PE	Kristine Carbonneau, PE	JC Clark

Revision History

Revision	Revision date	Details
0	June 12, 2024	
1	July 8, 2024	
2	July 19, 2024	
3	August 23, 2024	
4	August 28, 2024	

Prepared for:

King County – WTD Construction
Shannon Phipps, Project Representative
2500 W Jameson Street
Seattle, WA 98199-1241

Prepared by:

AECOM
1111 Third Avenue
Suite 1600
Seattle, WA 98101
aecom.com

Prepared in association with:

Pacific Pile and Marine

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Abbreviations

BMP	Best Management Practice
CQA Team	King County's Construction Quality Assurance Team
EMB	Environmental Mitigation Binder
LDW	Lower Duwamish Waterway
Plan	Light Control Plan
PPM	Pacific Pile & Marine
RAWP	Remedial Action Work Plan
Site	Lower Duwamish Waterway Superfund Site
SMA	Sediment Management Area
SMC	Seattle Municipal Code
TMC	Tukwila Municipal Code

1. Introduction

This Light Control Plan (Plan) for the Lower Duwamish Waterway (LDW) Upper Reach describes light control requirements 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.

The general scope of work includes the following:

- Mobilization of construction equipment and materials;
- Site preparation activities, including construction and setup of the 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, barge dewatering, in-water transportation, transloading, upland transportation, and disposal of dredge material, dredge debris, identified debris, and piling from the Sediment Management Areas (SMAs);
- Placement of clean imported materials in and around the SMAs;
- 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.

1.1 Purpose

The purpose of this Plan is to identify, minimize, and mitigate project-related quality of life impacts associated with light generating Site activities that have the risk of affecting the surrounding community and to perform the remedial action complying with all federal, state, and local standards. The following Site documents were used to prepare aspects of this Plan:

- 100% Remedial Design Volume II, Part I Construction Quality Assurance Plan for Lower Duwamish Waterway Upper Reach (Anchor QEA, 2024);
- Specification Section 01 33 00 (Submittals); and
- Specification Section 01 35 43 (Environmental Procedures).

Work for the Site will be performed in accordance with the plans and specifications or as directed by the Project Representative to execute this Plan.

1.2 Key Roles and Responsibilities

The Remedial Action Work Plan (RAWP) provides an organizational chart of key Site personnel, roles, and a summary of responsibilities. King County's Construction Quality Assurance Team will be responsible for performing all light monitoring as outlined in the Construction Quality Assurance Plan (Anchor QEA, 2024).

2. Performance Standards and Sources

2.1 Performance Standards

Referenced standards applicable to this Light Control Plan include those stated in **Table 2-1**:

Table 2-1 Referencce Standards

Reference	Title
Seattle Municipal Code (SMC) Chapter 23.50.046	Industrial Buffer and Industrial Commercial – Light & Glare Standards
Tukwila Municipal Code (TMC) Chapter 18.44.050	Development Standards

All Site activities including work conducted at the PPM yard (700 S Riverside Dr. Seattle, WA 98108) and the Duwamish Reload Facility will comply with light requirements, regulations, and local ordinances regarding light control to limit the extent of light impacts to the community while conducting activities at the Site. All light control requirements of the Cities of Seattle and Tukwila (SMC Chapter 23.50.046 and TMC Chapter 18.044.050) will be followed when working close to residential areas such as shoreline residential private properties, marina live-aboard residential, and commercial/industrial areas. Required by the SMC, PPM will shield or direct away any exterior lighting from all nearby adjacent residential zones.
Light-generating activities will be limited to normal working hours (between the standard hours of 7:00 a.m. and 7:00 p.m. for weekdays and 9:00 a.m. and 7:00 p.m. for weekends and legal holidays) to the extent possible to reduce light impacts to the community. It is expected that the excavation and material placement work at SMA 5 will be conducted during the hours of 6:00 pm to 6:00 am due to the need to complete this work during low tide hours.

2.2 Sources

Existing lights are present at the SMA-5 upland area and are operated by the property owner. PPM will not have access to operation of the existing lights at SMA-5. Lighting plans for SMA-5 will be updated prior to work which is expected to take place in Construction Season 3, December 2026 through March 2027. Artificial lighting is anticipated to be used for worker and community safety during construction activities. This is due to varied daylight hours during seasonal changes, work being performed during low or high tides, or to facilitate the progress of activities during the in-water work window October 1st through February 15th. Artificial lighting will be needed during the following activities:

- For general lighting for the laydown areas and aboard project vessels at the beginning and end of each workday when standard work hours fall outside of the seasonal daylight window (see **Table 2-2** below for expected sunrise and sunset hours for each season).
- For the safe transportation of materials during early morning or nighttime aboard project vessels
- For any extended work hours (e.g., 18- or 24-hour workdays) required for specific tasks such as bank excavation, if necessary to meet the schedule, or to do work during favorable tide levels.
- For the duration of excavation and material placement work at SMA 5 which is expected to take place between the hours of 6:00 pm to 6:00 am on December 28th, 2026 through March 9th, 2027.

Table 2-2 Expected Sunrise & Sunset Time

Season	Sunrise	Sunset
Fall	6:30am-7:55am	4:00pm-7:48pm
Winter	6:50am-7:57am	4:17pm-5:53pm

Season	Sunrise	Sunset
Spring	5:15am-7:30am	5:55pm-8:58pm
Summer	5:10am-6:27am	7:50pm-9:11pm

Notes: Sunrise and Sunset times taken from https://weatherspark.com/y/913/Average-Weather-in-Seattle-Washington-United-States-Year-Round

3. Prevention and Mitigation

Typical work configurations are depicted on **Figure 1** for upland work (SMA 5) and **Figure 2** for in-water work.

Best management practices (BMPs) that will be implemented during Site activities that require the use of artificial lights are:

- Use the minimum amount of light necessary for safety and security, avoiding excessive brightness to nearby residences. LED lamp types will be utilized to provide focused illumination. They can be directed more precisely and reduce scattered light.;
- Mounting height of all luminaires will be kept at the minimum required height that will allow the required areas to be adequately lit while minimizing spill over to adjacent properties. Position lights strategically to illuminate only specific work areas. Avoid placing lights in a manner that allows light to spill into the surrounding landscape and sky;
- When possible downcast lights will be used rather than upcast;
- Control/limit glare to nearby residents will be done through the use of glare shields mounted on the luminaires; and
- Light Shrouds (glare shields) will be used as necessary to direct light into the immediate work areas and away from nearby residents.

If community complaints and the Project Representative deem that Site lighting has become a nuisance to nearby residences, action will be taken to mitigate the problem in consultation with the Project Representative. Mitigation measures will be handled on an individual basis and will only be used if they do not interfere with the safe operation of the Site. Possible mitigation measures will include:

- Repositioning lights to avoid directing light outside of the immediate work area;
- Changing the timing of excavation and material placement work from outside standard work hours to a time less likely to cause disturbances (such as the daylight period); and
- Repositioning larger equipment such as clean import material barges or dredging equipment to obscure nuisance light from nearby residences.

4. Quality Control

4.1 Project Logbook Documentation

The Project Engineer will be responsible for documenting the following information in a project logbook for each light monitoring event:

- Date/time;
- Weather information;
- Reason for monitoring event including the generating source;
- If monitoring event was in response to community complaint(s), details of the complaint(s) shall be documented including:
    - Time of complaint,
    - Location complaint is in reference to,
    - Generating source of complaint, and
    - Summary of the complaint received.
- Location of monitoring event;
- Results of monitoring;
- Summary of response actions taken, effectiveness, and duration if the monitoring event was due to community complaint(s); and
- Summary of communications with the Project Representative including the time that the complaint(s) were addressed if the monitoring event was in response to complaint(s).

4.2 Reporting

The Construction Quality Control Officer will compile the documentation outlined in **Section 4.1** into the following reports and include the information summarized below at a minimum.

Daily Construction Reports, due the morning of the next workday, will include the following information:

- Document light criteria compliance, associated issues, and community complaint as applicable;
- BMPs implemented; and
- Response actions taken to address community complaints or Project Representative requests.

Weekly Construction Reports, due the Monday morning of the following work week, will include the following information:

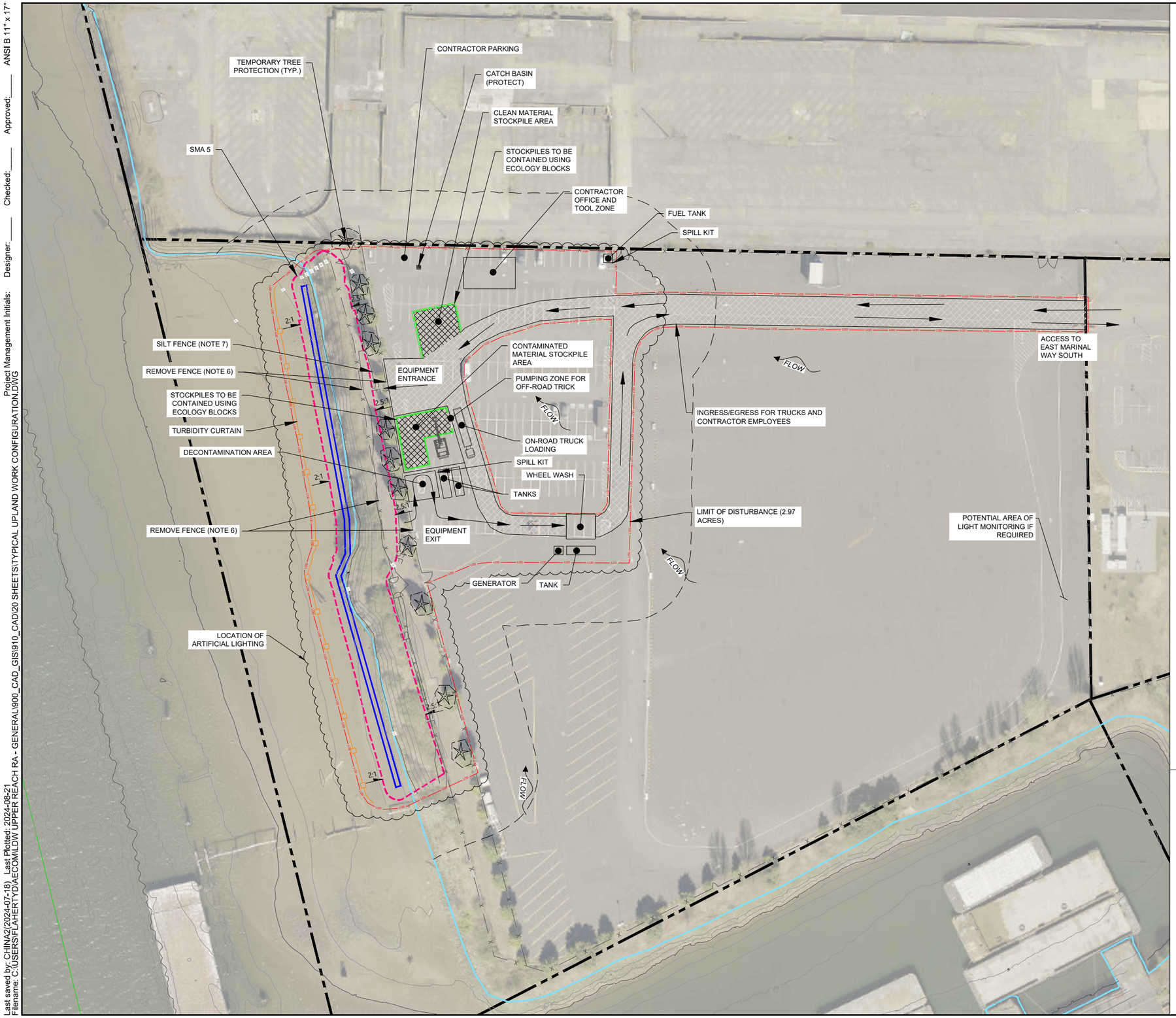
- Document light criteria compliance associated issues, and community complaints as applicable;
- BMPs implemented;
- Response actions taken to address community complaints or Project Representative requests;
- Summary of communication with the Project Representative regarding the information and requirements described in this Plan;
- Summary of outstanding issues; and
- Photographs documenting Site activities and mitigation measures.

Monthly Progress Reports, due with each Application for Payment including the following information:

- Brief summary of monitoring events;
- Brief summary of all mitigation events; and
- Brief summary of community complaints received, and mitigation measures implemented to address complaints.

5. References

Anchor QEA, 2024. 100% Remedial Design Volume II, Part I Construction Quality Assurance Plan for Lower Duwamish Waterway Upper Reach. Anchor QEA. January 2024.



NOTES:

1. LIGHT MONITORING TO BE CONDUCTED IN THE AREA OF CONCERN AT 10 FT INTERVALS.
2. LIGHT MONITORING LOCATIONS WILL VARY BASED ON WORK LOCATIONS.
3. EXISTING LIGHTS AT THE UPLAND SMA-5 AREA AND OPERATED BY THE PROPERTY OWNER. PPM WILL NOT HAVE ACCESS TO OPERATION OF EXISTING LIGHTS.

0 100 200 Feet

N

L LEGEND

- TOP OF REMOVAL AREA
- BOTTOM OF REMOVAL AREA
- EDGE OF SHORELINE
- PROPERTY LINE
- LIMIT OF DISTURBANCE
- SILT FENCE
- TEMPORARY TREE PROTECTION
- TURBIDITY CURTAIN
- TRUCK ROUTE
- PROPOSED STOCKPILE
- EXISTING MONITORING WELL
- EXISTING EXTRACTION WELL
- ECOLOGY BLOCK

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FIGURE 1

TYPICAL UPLAND (SMA-5) WORK CONFIGURATION

LOWER DUWAMISH WATERWAY UPPER REACH
REMEDIAL ACTION

Contract KC001065 Date: 2024-08-21

Project Management Initials: Designer: Checked: Approved: ANSI B 11" x 17"

Last saved by: CHINA2 (2024-07-18) Last Plotted: 2024-08-21
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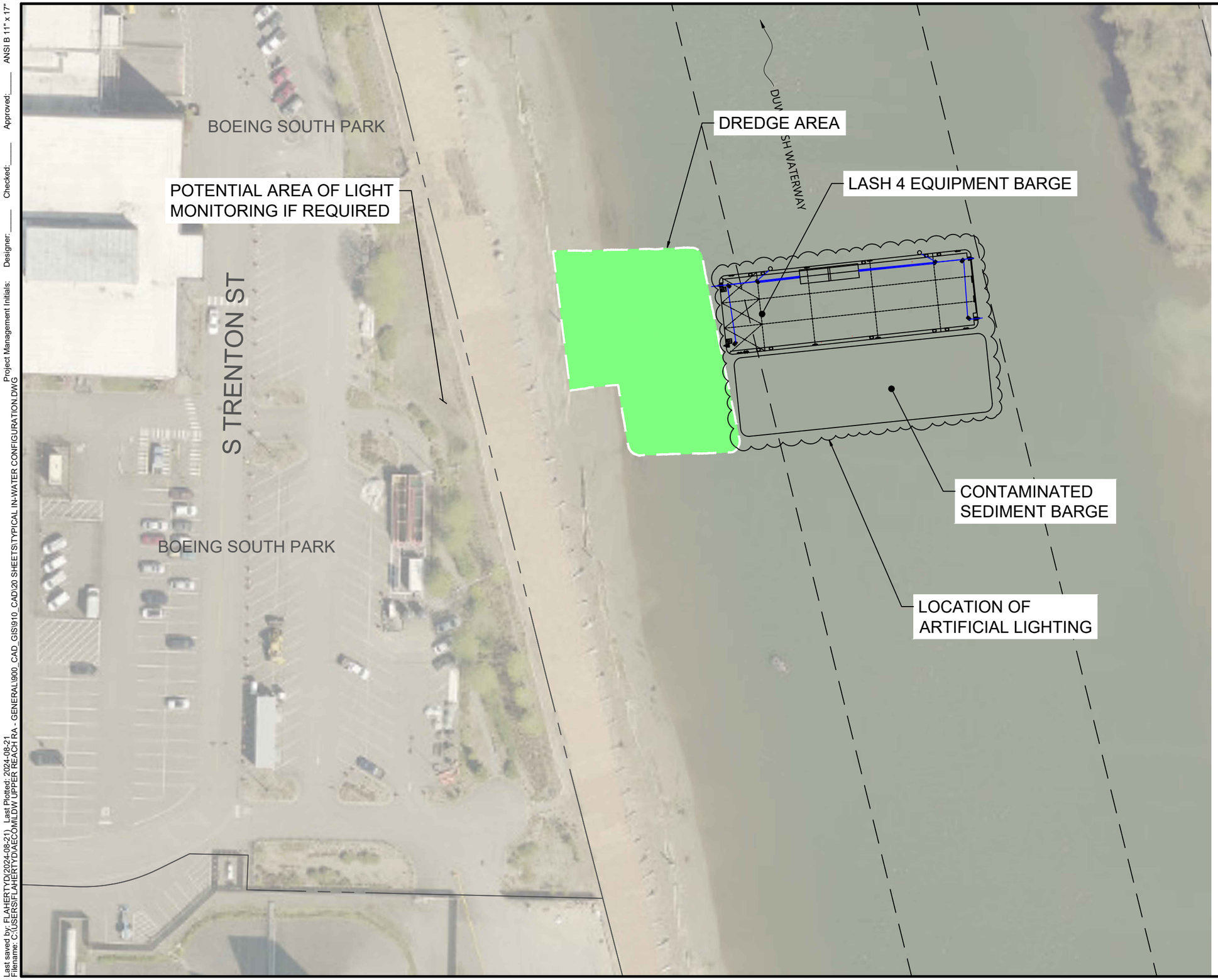

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1. LIGHT MONITORING TO BE CONDUCTED IN THE AREA OF CONCERN AT 10 FT INTERVALS.
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N

30 0 60

GRAPHIC SCALE 1" = 60'

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FIGURE 2

TYPICAL IN-WATER WORK CONFIGURATION

LOWER DUWAMISH WATERWAY UPPER REACH REMEDIAL ACTION

Contract KC001065 Date: 2024-08-20

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Project Management Initials: Designer:____ Checked:____ Approved:____ ANSI B 11" x 17"