SEPA ENVIRONMENTAL CHECKLIST

A. Background [HELP]

1. Name of proposed project, if applicable:
Kenmore Berth Maintenance Dredging Project (Project)

2. Name of applicant:
Glacier Northwest, Inc. (Glacier) dba CalPortland

3. Address and phone number of applicant and contact person:
Pete Stoltz, Glacier (applicant and contact)
3450 South 344th Way
Federal Way, Washington 98001
206-764-3036
pstoltz@calportland.com

4. Date checklist prepared:
December 2, 2022

5. Agency requesting checklist:
City of Kenmore

6. Proposed timing or schedule (including phasing, if applicable):
Maintenance dredging will be conducted as soon as all permits and approvals are received and timing restrictions on in-water work allow work to begin. Maintenance dredging is expected to take approximately 2 to 3 working days to complete.

7. Do you have any plans for future additions, expansion, or further activity related to or connected with this proposal? If yes, explain.
There are currently no plans for future additions, expansion, or further activity related to or connected with this proposal. The proposed activities are for the sole purpose of maintaining the existing berth for navigation purposes.

8. List any environmental information you know about that has been prepared, or will be prepared, directly related to this proposal.
Environmental information that has been or will be prepared directly related to this proposal includes the following:

- Water Quality Monitoring Plan (Attachment 1)
- Biological Evaluation (BE; Attachment 2)

9. Do you know whether applications are pending for governmental approvals of other proposals directly affecting the property covered by your proposal? If yes, explain.
Glacier is not aware of any applications pending for government approvals of other proposals directly affecting the property covered by the Project.

10. List any government approvals or permits that will be needed for your proposal, if known.
Approvals and permits needed for the Project include:

- U.S. Army Corps of Engineers (USACE) Nationwide Permit 35 for Maintenance Dredging of Existing Basins
- National Marine Fisheries Service (NMFS) and U.S. Fish and Wildlife Service (USFWS): Endangered Species Act (ESA) Section 7 Concurrence
- National Historic Preservation Act Section 106 Concurrence
- Washington State Department of Ecology (Ecology): Clean Water Act Section 401 Water Quality Certification (WQC)
- Ecology: Coastal Zone Management Act Consistency Determination
- Washington Department of Fish and Wildlife (WDFW): Hydraulic Project Approval
- City of Kenmore: Shoreline Substantial Development Permit Exemption
- City of Kenmore: State Environmental Policy Act (SEPA) Determination

11. Give brief, complete description of your proposal, including the proposed uses and the size of the project and site. There are several questions later in this checklist that ask you to describe certain aspects of your proposal. You do not need to repeat those answers on this page. (Lead agencies may modify this form to include additional specific information on project description.)
Glacier is proposing the Kenmore Berth Maintenance Dredging Project (Project) at their ready-mix plant and aggregate yard located near the north end of Lake Washington at 6423 Northeast 175th Street in Kenmore, Washington (Figure 1). The Project includes removing approximately 400 cubic yards (cy) of material within the approximately 16,000-square-foot berth area.

The Project is proposed to provide safe access for vessels and barges to the terminal by removing sand, gravel, and minor amounts of sediment from the berthing area through maintenance dredging. The sand and gravel proposed for removal is clean construction aggregate that was historically released during offloading of barges at the facility. Nearly all of the material was deposited after maintenance dredging was last completed in 2004 and prior to 2010 when the hopper and conveyor used to offload barges were replaced with a system designed to minimize material spillage. In addition to the changes to the offloading equipment, CalPortland has implemented a variety of operational best management practices (BMPs) to minimize spillage including equipment maintenance, employee training, barge housekeeping programs, and a spill inspection and reporting program. These BMPs are effective at avoiding or minimizing spillage of aggregate material during operations. The prior, similar maintenance dredging action was permitted and occurred in 2004 under USACE Reference No. 200300781.

Loaded barges typically draft at approximately 15 feet of water. Water levels in Lake Washington vary by approximately 2 feet, ranging from approximately +20 feet (USACE Kenmore Datum) in winter to approximately +22 feet (USACE Kenmore Datum) in summer. Therefore, dredging is proposed to a depth of +4.47 feet (USACE Kenmore Datum) to allow berthing of loaded barges under normal conditions. Maintenance dredging activities will occur entirely within the existing berth area and will be designed to avoid damaging the existing toe protection armoring, which is composed of quarry spall material that extends up to +4.47 feet (USACE Kenmore Datum). The toe protection feature was installed in the late 1990s to protect the adjacent bulkhead. A similar maintenance dredging action was permitted and occurred in 2004 (under USACE Reference No. 200300781).

12. Location of the proposal. Give sufficient information for a person to understand the precise location of your proposed project, including a street address, if any, and section, township, and range, if known. If a proposal would occur over a range of area, provide the range or boundaries of the site(s). Provide a legal description, site plan, vicinity map, and topographic map, if reasonably available. While you should submit any plans required by the agency, you are not required to duplicate maps or detailed plans submitted with any permit applications related to this checklist.
The Project is located at 6423 Northeast 175th Street, Kenmore, Washington 98028 on the northern end of Lake Washington. The Project is located in the Section 11, Township 26 North, Range 04 East of the Willamette Meridian.

Legal Description:
LOT A KENMORE BLA #BLA2003-110 REC #20040318900001 SD BLA BEING POR GL 1 & 2 & 5 STR 11-26-4 TGW 2ND CL SH LDS LY SLY OF NE 175TH ST LESS POR FOR RD PER DEED REC #20200225000596

B. Environmental Elements [HELP]

1. *Earth* [help]

a. General description of the site:

(circle one): Flat, rolling, hilly, steep slopes, mountainous, other (aquatic)

b. What is the steepest slope on the site (approximate percent slope)?
The Project area is generally flat. Bathymetry of the Project area slopes gently from nearshore towards the midpoint of the navigation channel.

c. What general types of soils are found on the site (for example, clay, sand, gravel, peat, muck)? If you know the classification of agricultural soils, specify them and note any agricultural land of long-term commercial significance and whether the proposal results in removing any of these soils.
Project soils include a mix of native and non-native sediments common to Lake Washington. The material to be removed from the berth area primarily consists of sand and gravel aggregate material that was historically released during offloading of barges at the facility. No prime farmland soil exists on the site.

d. Are there surface indications or history of unstable soils in the immediate vicinity? If so, describe.
There are no surface indications or history of unstable soils in the immediate vicinity of the Project.

e. Describe the purpose, type, total area, and approximate quantities and total affected area of any filling, excavation, and grading proposed. Indicate source of fill.
No filling or grading activities are proposed. Approximately 400 cy of sand and gravel aggregate material is proposed to be dredged from the berth.

f. Could erosion occur as a result of clearing, construction, or use? If so, generally describe.
No erosion is anticipated to result from the Project.

g. About what percent of the site will be covered with impervious surfaces after project construction (for example, asphalt or buildings)?

The Project will not increase impervious surfaces at the site.

h. Proposed measures to reduce or control erosion, or other impacts to the earth, if any:

No erosion is anticipated to result from the Project.

2. Air [help]

a. What types of emissions to the air would result from the proposal during construction, operation, and maintenance when the project is completed? If any, generally describe and give approximate quantities if known.

The Project will have short-term emissions from the heavy equipment used to complete the proposed maintenance dredging activities. No long-term emissions will result from the completed Project. The Project will maintain and allow more efficient operation of vessels that use the terminal, which will decrease air emissions in the long-term compared to existing conditions. There will be no change in frequency, duration, or volume of ship berthing activity.

b. Are there any off-site sources of emissions or odor that may affect your proposal? If so, generally describe.

There are no off-site sources of emissions or odor that may affect the Project.

c. Proposed measures to reduce or control emissions or other impacts to air, if any:

The Project will adhere to applicable regulations for the reduction or control of emissions. BMPs will be implemented to avoid or minimize adverse impacts to the air during maintenance dredging activities. BMPs include conducting inspections of equipment to ensure that uncontrolled emissions do not occur.

3. Water [help]

a. Surface Water: [help]

1) Is there any surface water body on or in the immediate vicinity of the site (including year-round and seasonal streams, saltwater, lakes, ponds, wetlands)? If yes, describe type and provide names. If appropriate, state what stream or river it flows into.

The Project occurs within Lake Washington.

2) Will the project require any work over, in, or adjacent to (within 200 feet) the described waters? If yes, please describe and attach available plans.

Maintenance dredging will occur entirely within the existing berth in Lake Washington.

3) Estimate the amount of fill and dredge material that would be placed in or removed from surface water or wetlands and indicate the area of the site that would be affected. Indicate the source of fill material.

No fill is proposed as part of the Project. Approximately 400 cy will be dredged. The material is clean sand and gravel deposited during barge offloading. Nearly all the material was deposited after maintenance dredging was last completed in 2004 and prior to implementation of operational BMPs such as reconfiguration of the hopper and offloading conveyor in 2010.

4) Will the proposal require surface water withdrawals or diversions? Give general description, purpose, and approximate quantities if known.

The Project will not require any surface water withdrawals or diversions.

5) Does the proposal lie within a 100-year floodplain? If so, note location on the site plan.

No. The Project will occur within or adjacent to the Federal Emergency Management Agency floodplain designated as "Zone X" (FEMA 2020). Areas designated as "Zone X" indicate areas of minimal flood hazard. Lake Washington is a managed water feature with water levels managed by USACE.

6) Does the proposal involve any discharges of waste materials to surface waters? If so, describe the type of waste and anticipated volume of discharge.

The Project does not involve discharge of waste to surface waters.

b. Ground Water: [help]

1) Will groundwater be withdrawn from a well for drinking water or other purposes? If so, give a general description of the well, proposed uses and approximate quantities withdrawn from the well. Will water be discharged to groundwater? Give general description, purpose, and approximate quantities if known.

Groundwater will not be discharged or withdrawn as part of the Project.

2) **Describe waste material that will be discharged into the ground from septic tanks or other sources, if any (for example: Domestic sewage; industrial, containing the following chemicals. . . ; agricultural; etc.). Describe the general size of the system, the number of such systems, the number of houses to be served (if applicable), or the number of animals or humans the system(s) are expected to serve.**

No waste material will be discharged to ground as part of the Project.

c. Water runoff (including stormwater):

1) Describe the source of runoff (including storm water) and method of collection and disposal, if any (include quantities, if known). Where will this water flow? Will this water flow into other waters? If so, describe.

The Project will not increase impervious area or impact the volume/composition of water discharged at the site.

2) Could waste materials enter ground or surface waters? If so, generally describe.

It is unlikely that waste materials would enter ground or surface waters as a result of the Project. It is possible that a minor oil or fuel spill could occur during dredging and enter surface water. The contractor will be required to develop and implement measures outlined in a spill plan designed to prevent and, if necessary, respond to any leaks or spills.

3) Does the proposal alter or otherwise affect drainage patterns in the vicinity of the site? If so, describe.

The Project will not alter or affect drainage patterns in the vicinity of the site.

d. Proposed measures to reduce or control surface, ground, and runoff water, and drainage pattern impacts, if any:

BMPs will be employed to avoid or minimize impacts to surface waters during dredging as follows:

- Turbidity and other water quality parameters will be monitored to ensure that construction activities are in compliance with Washington State Surface Water Quality Standards per WAC173-201A (see Water Quality Monitoring Plan in Attachment 1).
- Appropriate BMPs will be employed to minimize sediment loss and turbidity generation during dredging. BMPs may include, but are not limited to, the following:
    - Eliminating multiple bites while the bucket is on the bottom
    - No stockpiling of dredged material on the lake bed
    - No lake bed leveling
- No free water from the dredged sediment will be directly discharged back into the surface waters without passing through the filter media to minimize the release of suspended sediments.
- The dredging contractor will inspect fuel hoses, oil or fuel transfer valves, and fittings on a regular basis for drips or leaks in order to prevent spills into the surface water.
- The contractor shall be responsible for the preparation of a spill plan to be used for the duration of the Project to safeguard against an unintentional release of fuel, lubricants, or hydraulic fluid from construction equipment.

4. Plants [help]

a. Check the types of vegetation found on the site:

__x__deciduous tree: alder, maple, aspen, other
____evergreen tree: fir, cedar, pine, other
__x__shrubs
__x__grass
____pasture
____crop or grain
____ Orchards, vineyards or other permanent crops.
____ wet soil plants: cattail, buttercup, bullrush, skunk cabbage, other
____water plants: water lily, eelgrass, milfoil, other
____other types of vegetation

b. What kind and amount of vegetation will be removed or altered?

No vegetation or aquatic vegetation will be removed or altered as part of the Project.

c. List threatened and endangered species known to be on or near the site.

No threatened or endangered vegetation is known to be on or near the site.

d. Proposed landscaping, use of native plants, or other measures to preserve or enhance vegetation on the site, if any:

No landscaping or vegetation enhancement is proposed as part of the Project.

e. List all noxious weeds and invasive species known to be on or near the site.

The upland area adjacent to the Project location is paved. Invasive species such as Himalayan blackberry (*Rubus armeniacus*) and other weedy species are known to occur on other areas of the property.

5. Animals [help]

a. List any birds and other animals which have been observed on or near the site or are known to be on or near the site.

Examples include:

birds: hawk, heron, eagle, songbirds, other:
mammals: deer, bear, elk, beaver, other:
fish: bass, salmon, trout, herring, shellfish, other _____

Lake Washington provides habitat to a variety of wildlife species. ESA-listed species that may occur in the vicinity of the Project are described in Section B.5.b. In addition, the WDFW's Priority Habitats and Species map identifies the following species and habitat occurrence in or near the Project area (WDFW 2022):

- Chinook salmon (*Oncorhynchus tshawytscha*)
- Steelhead trout (*O. mykiss*)
- Bull trout (*Salvelinus confluentus*)
- Sockeye salmon (*O. nerka*)
- Coho salmon (*O. kisutch*)
- Resident coastal cutthroat (*O. clarki*)
- Little brown bat (*Myotis lucifugus*)

b. List any threatened and endangered species known to be on or near the site.

The following table presents a summary of threatened and endangered species potentially occurring in the action area (NOAA Fisheries 2022; USFWS 2022). Listed species under NMFS and USFWS jurisdiction are identified based on the geographic boundaries of Distinct Population Segments (DPSs) and Evolutionarily Significant Units (ESUs). The table also identifies whether critical habitat has been designated by NMFS or USFWS for those species within the Project vicinity. The Project will occur during the approved in-water work window for the site when the species listed in the following table are unlikely to be present.

Species and Critical Habitat with Federal ESA Status That May Occur in the Action Area

Common Name (Scientific Name)	Jurisdiction	ESA Status	Critical Habitat
Chinook salmon (*Oncorhynchus tshawytscha*) Puget Sound ESU	NMFS	Threatened	Designated
Steelhead trout (*O. mykiss*) Puget Sound DPS	NMFS	Threatened	Designated
Bull trout (*Salvelinus confluentus*) Coastal-Puget Sound DPS	USFWS	Threatened	Designated
Marbled murrelet (*Brachyramphus marmoratus*)	USFWS	Threatened	None designated within the action area

USFWS identifies the additional species of North American wolverine (*Gulo gulo luscus*) and yellow-billed cuckoo (*Coccyzus americanus*) as potentially affected by activities in the action area (USFWS 2022). However, these species are not addressed in the BE due to lack of suitable habitat within and adjacent to the action area (Attachment 1).

c. Is the site part of a migration route? If so, explain.

The site is within the Pacific Flyway for migratory birds. During the migratory season, the Project site could be visited by migrating waterfowl. Fish are known to migrate through Lake Washington to and from the nearby Sammamish River.

d. Proposed measures to preserve or enhance wildlife, if any:
The Project will adhere to applicable regulatory requirements related to the preservation of animals. The BE in Attachment 2 has been developed for the Project to address impacts to the federally listed species. Work will be completed during regulatory approved work windows or an approved extension. Conservation measures included in the BE will be employed to minimize impacts to federally listed species and will also provide protections for non-listed wildlife.

e. List any invasive animal species known to be on or near the site.
There are no invasive animal species known to be on or near the property.

6. Energy and Natural Resources [help]

a. What kinds of energy (electric, natural gas, oil, wood stove, solar) will be used to meet the completed project's energy needs? Describe whether it will be used for heating, manufacturing, etc.
Fossil fuels will be used to power dredging and construction equipment. The completed Project will not require any energy sources.

b. Would your project affect the potential use of solar energy by adjacent properties? If so, generally describe.
No. No permanent structures are proposed as part of the Project, and the Project will not affect the potential use of solar energy by adjacent properties.

c. What kinds of energy conservation features are included in the plans of this proposal? List other proposed measures to reduce or control energy impacts, if any:
No energy conservation features are proposed as part of the Project.

7. Environmental Health [help]

a. Are there any environmental health hazards, including exposure to toxic chemicals, risk of fire and explosion, spill, or hazardous waste, that could occur as a result of this proposal? If so, describe.
There is potential for an unintentional release of fuel, oil, or lubricants from construction equipment. The contractor will be required to develop and implement measures outlined in a spill plan to prevent and, if necessary, respond to any leaks or spills.

1) Describe any known or possible contamination at the site from present or past uses.
There is a possibility for contaminated sediment in Lake Washington from historic industrial activity. However, maintenance dredging activities will occur entirely within the existing berth area and will be confined within the previously maintained dredged footprint. Additionally, dredging will be mostly limited to the removal of historically accumulated sand and gravel aggregate material that was deposited prior to operational BMPs being implemented at the berth to avoid or minimize spillage. The depth of dredging will be limited to avoid damaging existing toe protection armoring, which is composed of quarry spall material the extends up to +4.47 feet (USACE Kenmore Datum).

2) **Describe existing hazardous chemicals/conditions that might affect project development and design. This includes underground hazardous liquid and gas transmission pipelines located within the project area and in the vicinity.**
There are no known hazardous chemicals or conditions that might affect the Project.

3) **Describe any toxic or hazardous chemicals that might be stored, used, or produced during the project's development or construction, or at any time during the operating life of the project.**
No toxic or hazardous chemicals will be stored, used, or produced during the Project.

4) **Describe special emergency services that might be required.**
It is unlikely that special emergency services would be required during or after Project construction.

5) **Proposed measures to reduce or control environmental health hazards, if any:**
BMPs will be implemented during construction to avoid or minimize health hazards as described previously.

b. Noise

1) What types of noise exist in the area which may affect your project (for example: traffic, equipment, operation, other)?

The Project is located in a busy suburban waterfront with vessel traffic, nearby automobile traffic, and a nearby seaplane harbor. These noise sources are not expected to impact the Project.

2) What types and levels of noise would be created by or associated with the project on a short-term or a long-term basis (for example: traffic, construction, operation, other)? Indicate what hours noise would come from the site.
Noise impacts from construction and dredging activities are not anticipated because in-air and in-water noise levels will be at or below existing ambient noise levels for the Project area.

3) Proposed measures to reduce or control noise impacts, if any:
Construction activities will be performed in accordance with the City of Kenmore noise ordinance (Kenmore Municipal Code Chapter 8.05)

8. Land and Shoreline Use [help]

a. What is the current use of the site and adjacent properties? Will the proposal affect current land uses on nearby or adjacent properties? If so, describe.
The upland property is owned by Glacier and is used as a ready-mix concrete plant. Aggregate materials are imported by barge to feed the ready-mix plant. The adjoining properties are currently used in various industrial capacities. Kenmore Air is west-adjoining, and various warehouses including Alaska General Seafoods are east-adjoining.

b. Has the project site been used as working farmlands or working forest lands? If so, describe. How much agricultural or forest land of long-term commercial significance will be converted to other uses as a result of the proposal, if any? If resource lands have not been designated, how many acres in farmland or forest land tax status will be converted to nonfarm or nonforest use?
The site has not been used as working farmland, and no agricultural or forest land will be converted as a result of the Project.

1) Will the proposal affect or be affected by surrounding working farm or forest land normal business operations, such as oversize equipment access, the application of pesticides, tilling, and harvesting? If so, how:

No farmland or forest land are in the vicinity of the site.

c. Describe any structures on the site.

A concrete batch plant, an asphalt batch plant, six silos, and an associated network of conveyors occupy the upland property. Additionally, there are multiple secondary structures including admixture storage, a boiler enclosure, and a roofed bin for storage. Existing structures in the Project's immediate vicinity include a bulkhead wall along the face of the dock where barges are moored, a hopper and gravel conveyor system, a barge ramp, two large cylindrical above-ground stormwater treatment tanks, and bunkers partially lined with concrete block walls used to retain aggregate stockpiles. The structures and plant equipment are in operable condition.

d. Will any structures be demolished? If so, what?

No.

e. What is the current zoning classification of the site?

The site is zoned Regional Business (City of Kenmore 2019a).

f. What is the current comprehensive plan designation of the site?

The City of Kenmore Comprehensive Plan designation of the site is Regional Business (City of Kenmore 2021).

g. If applicable, what is the current shoreline master program designation of the site?

Downtown Waterfront (DW; City of Kenmore 2020)

h. Has any part of the site been classified as a critical area by the city or county? If so, specify.

The Project vicinity has been designated a wetland and a seismic hazard area by the City of Kenmore (City of Kenmore 2019b, 2019c).

i. Approximately how many people would reside or work in the completed project?

No people would work or reside in the completed Project.

j. Approximately how many people would the completed project displace?

No people would be displaced as a result of the Project.

k. Proposed measures to avoid or reduce displacement impacts, if any:

Not applicable.

L. Proposed measures to ensure the proposal is compatible with existing and projected land uses and plans, if any:

The proposed measures will result in continued use of the property as an industrial facility, which is compatible with the current land uses. The batch plant is an existing legal non-conforming use. The proposed Project will not expand the capacity of the current operation or materially change the existing use.

m. Proposed measures to reduce or control impacts to agricultural and forest lands of long-term commercial significance, if any:

No impacts to agricultural or forest lands will result from the Project.

9. Housing [help]

a. Approximately how many units would be provided, if any? Indicate whether high, middle, or low-income housing.

None.

b. Approximately how many units, if any, would be eliminated? Indicate whether high, middle, or low-income housing.

None.

c. Proposed measures to reduce or control housing impacts, if any:

Not applicable.

10. Aesthetics [help]

a. What is the tallest height of any proposed structure(s), not including antennas; what is the principal exterior building material(s) proposed?

No structures are proposed.

b. What views in the immediate vicinity would be altered or obstructed?

Views in the vicinity will not be obstructed or altered as a result of the Project.

b. Proposed measures to reduce or control aesthetic impacts, if any:

Not applicable.

11. Light and Glare [help]

a. What type of light or glare will the proposal produce? What time of day would it mainly occur?

The existing light and glare at the property is typical of industrial sites. During the maintenance dredging, additional temporary lighting during dawn and dusk may be necessary for safety purposes.

b. Could light or glare from the finished project be a safety hazard or interfere with views?

Light and glare from the Project will not be a safety hazard or interfere with views.

c. What existing off-site sources of light or glare may affect your proposal?

No existing off-site sources of light or glare will affect the Project.

d. Proposed measures to reduce or control light and glare impacts, if any:

Because there are no proposed impacts, no measures are proposed to reduce or control light and glare impacts.

12. Recreation [help]

a. What designated and informal recreational opportunities are in the immediate vicinity?

Water-related recreation activities such as recreational boating and fishing occur on Lake Washington.

b. Would the proposed project displace any existing recreational uses? If so, describe.

The Project will occur within the active Glacier berth area and will not displace any existing recreational uses.

c. Proposed measures to reduce or control impacts on recreation, including recreation opportunities to be provided by the project or applicant, if any:

No impacts to recreation are anticipated from the Project; therefore, no measures to reduce or control impacts are proposed.

13. Historic and cultural preservation [help]

a. Are there any buildings, structures, or sites, located on or near the site that are over 45 years old listed in or eligible for listing in national, state, or local preservation registers? If so, specifically describe.

There are no known places or objects listed on or proposed for the national, state, or local preservation registers on the site (DAHP 2021). The nearest register-listed properties are the William Harper Thorton House and the Faust-Ryan House, approximately 2.3 and 3.6 miles east of the Project, respectively. The nearest local landmark is the Charles M. Thomsen Estate, approximately 1 mile southeast of the Project.

b. Are there any landmarks, features, or other evidence of Indian or historic use or occupation? This may include human burials or old cemeteries. Are there any material evidence, artifacts, or areas of cultural importance on or near the site? Please list any professional studies conducted at the site to identify such resources.

There are no known landmarks, features, or other evidence of Indian or historic use or occupation on or near the site (DAHP 2021). Further, there are no known material evidence, artifacts, or areas of cultural importance on or near the site. The Project will take place entirely in-water, within the demonstrated extent of previous maintenance dredging activities. No native sediments will be encountered, and there is little to no potential for significant archaeological resources to be present in the area of disturbance.

c. Describe the methods used to assess the potential impacts to cultural and historic resources on or near the project site. Examples include consultation with tribes and the department of archeology and historic preservation, archaeological surveys, historic maps, GIS data, etc.

Methods used to assess the potential impacts to cultural and historic resources on or near the Project area include reviewing records and reports from the Washington State Department of Archaeology and Historic Preservation's Washington Information System for Architectural and Archaeological Records Data (DAHP 2021), historic maps and aerial photographs, and an assessment of the archaeological potential based on the limits of previous disturbance.

d. Proposed measures to avoid, minimize, or compensate for loss, changes to, and disturbance to resources. Please include plans for the above and any permits that may be required.

Because no impacts to historic or archaeological resources are proposed, no measures to reduce or control impacts are proposed.

14. Transportation [help]

a. Identify public streets and highways serving the site or affected geographic area and describe proposed access to the existing street system. Show on site plans, if any.
The property can be accessed via Northeast 175th Street.

b. Is the site or affected geographic area currently served by public transit? If so, generally describe. If not, what is the approximate distance to the nearest transit stop?
The property is not currently served by public transit. The approximate distance to the nearest transit stop is 0.2 mile from the Project site.

c. How many additional parking spaces would the completed project or non-project proposal have? How many would the project or proposal eliminate?
The Project will not create or eliminate parking spaces at the property.

d. Will the proposal require any new or improvements to existing roads, streets, pedestrian, bicycle or state transportation facilities, not including driveways? If so, generally describe (indicate whether public or private).
The Project will not require any new or improvement to existing roads, streets, or pedestrian, bicycle, or state transportation facilities.

e. Will the project or proposal use (or occur in the immediate vicinity of) water, rail, or air transportation? If so, generally describe.
The Project will use water-based equipment for maintenance dredging activities. The dredge material will be transferred by barge to an appropriate upland off-site facility designated for this purpose.

f. How many vehicular trips per day would be generated by the completed project or proposal? If known, indicate when peak volumes would occur and what percentage of the volume would be trucks (such as commercial and nonpassenger vehicles). What data or transportation models were used to make these estimates?
No vehicular trips will be generated by the completed Project.

g. Will the proposal interfere with, affect or be affected by the movement of agricultural and forest products on roads or streets in the area? If so, generally describe.
The Project will not interfere with, affect, or be affected by the movement of agricultural and forest products on roads or streets in the area.

h. Proposed measures to reduce or control transportation impacts, if any:
The Project is not anticipated to result in transportation impacts; therefore, no measures to reduce or control impacts are proposed.

15. Public Services [help]

a. Would the project result in an increased need for public services (for example: fire protection, police protection, public transit, health care, schools, other)? If so, generally describe.
The proposed Project is not anticipated to create an increased need for public services.

b. Proposed measures to reduce or control direct impacts on public services, if any.
The proposed Project is not anticipated to result in impacts to public services; therefore, no measures to reduce or control impacts are proposed.

16. Utilities [help]

a. Circle utilities currently available at the site:
electricity, natural gas, water, refuse service, telephone, sanitary sewer, septic system, other _____

b. Describe the utilities that are proposed for the project, the utility providing the service, and the general construction activities on the site or in the immediate vicinity which might be needed.
No utilities are proposed for the Project.

C. Signature [HELP]

The above answers are true and complete to the best of my knowledge. I understand that the lead agency is relying on them to make its decision.

Signature: _____

Name of signee Pete Stoltz

Position and Agency/Organization Manager of Permitting / Glacier Northwest dba Cal Portland

Date Submitted: 04/18/2023

References

City of Kenmore, 2019a. City of Kenmore Official Zoning Map. Accessed November 14, 2022. Available at: https://www.kenmorewa.gov/home/showpublisheddocument/648/637221184319170000.

City of Kenmore, 2019b. Kenmore Critical Areas: Streams and Wetlands. Accessed November 14, 2022. Available at: https://www.kenmorewa.gov/home/showpublisheddocument/624/637221184272930000.

City of Kenmore, 2019c. Kenmore Critical Areas: Geologically Hazardous Areas. Accessed November 14, 2022. Available at: https://www.kenmorewa.gov/home/showpublisheddocument/622/637221184269970000.

City of Kenmore, 2020. City of Kenmore Comprehensive Plan Shoreline Sub-Element. March 2020. Accessed November 14, 2022. Available at: https://fortress.wa.gov/ecy/ezshare/SEA/FinalSMPs/KingCounty/Kenmore/KenmoreSMPMar2020.pdf.

City of Kenmore, 2021. City of Kenmore Comprehensive Plan. January 2021. Accessed November 14, 2022. Available at: https://www.kenmorewa.gov/home/showdocument?id=1539&t=637469151985830000.

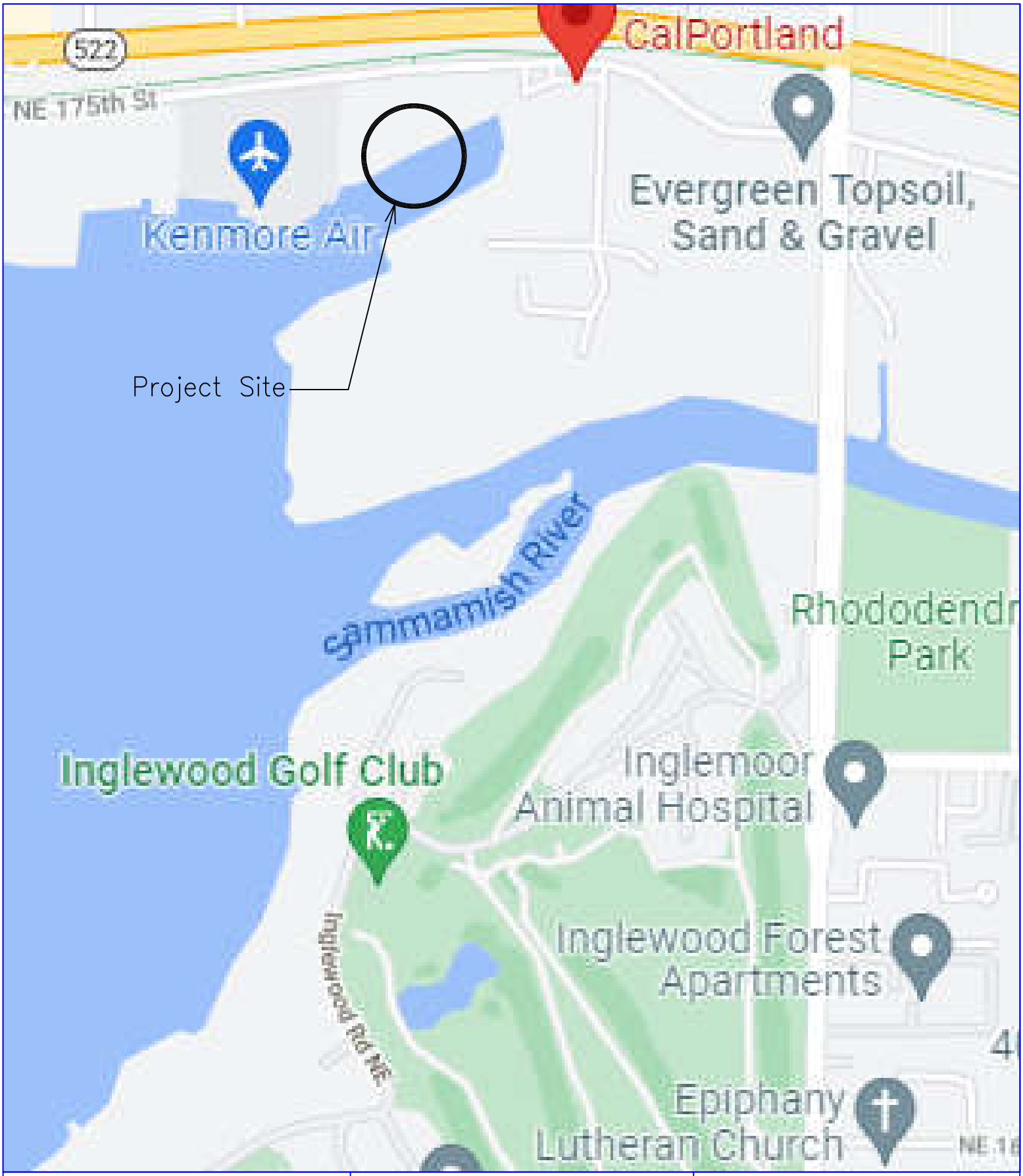
DAHP (Washington State Department of Archaeology and Historic Preservation), 2021. Washington Information System for Architectural and Archaeological Records Data (WISAARD) webpage. Available at: https://wisaard.dahp.wa.gov/.

FEMA (Federal Emergency Management Agency), 2020. FEMA Flood Insurance Rate Map (FIRM) for King County, Washington, and Incorporated Areas. Community Panel Number 53033C0044G, panel 44 of 1725. Map revised August 19, 2020.

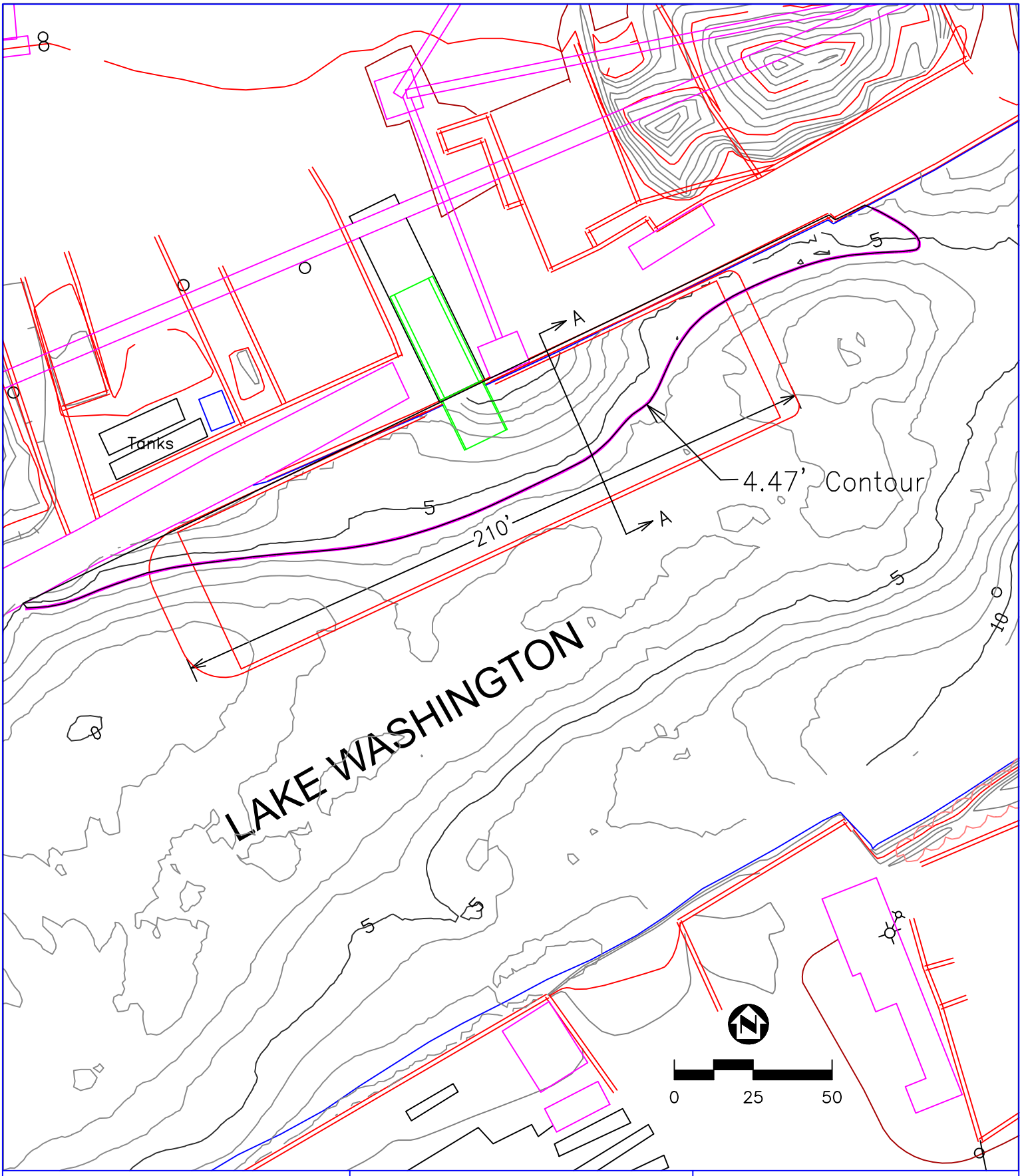
NOAA Fisheries, 2022. Species Directory. NOAA Fisheries West Coast Region. Accessed November 14, 2022. Available at: https://www.fisheries.noaa.gov/species-directory/threatened-endangered.

USFWS, (U.S. Fish and Wildlife Service), 2022. List of Threatened and Endangered Species That May Occur in Your Proposed Project Location, and/or May Be Affected by Your Proposed Project. USFWS Information for Planning and Consultation. November 14, 2022.

JARPA Plan Set



Proposed: Dredge Approx. 400 Cubic Yards of Material.	Proposed Dredging Site Location	Applicant: Glacier Northwest 6423 N.E. 175th St, Kenmore Waterway: Lake Washington Sec. 11 26T. 4E R.

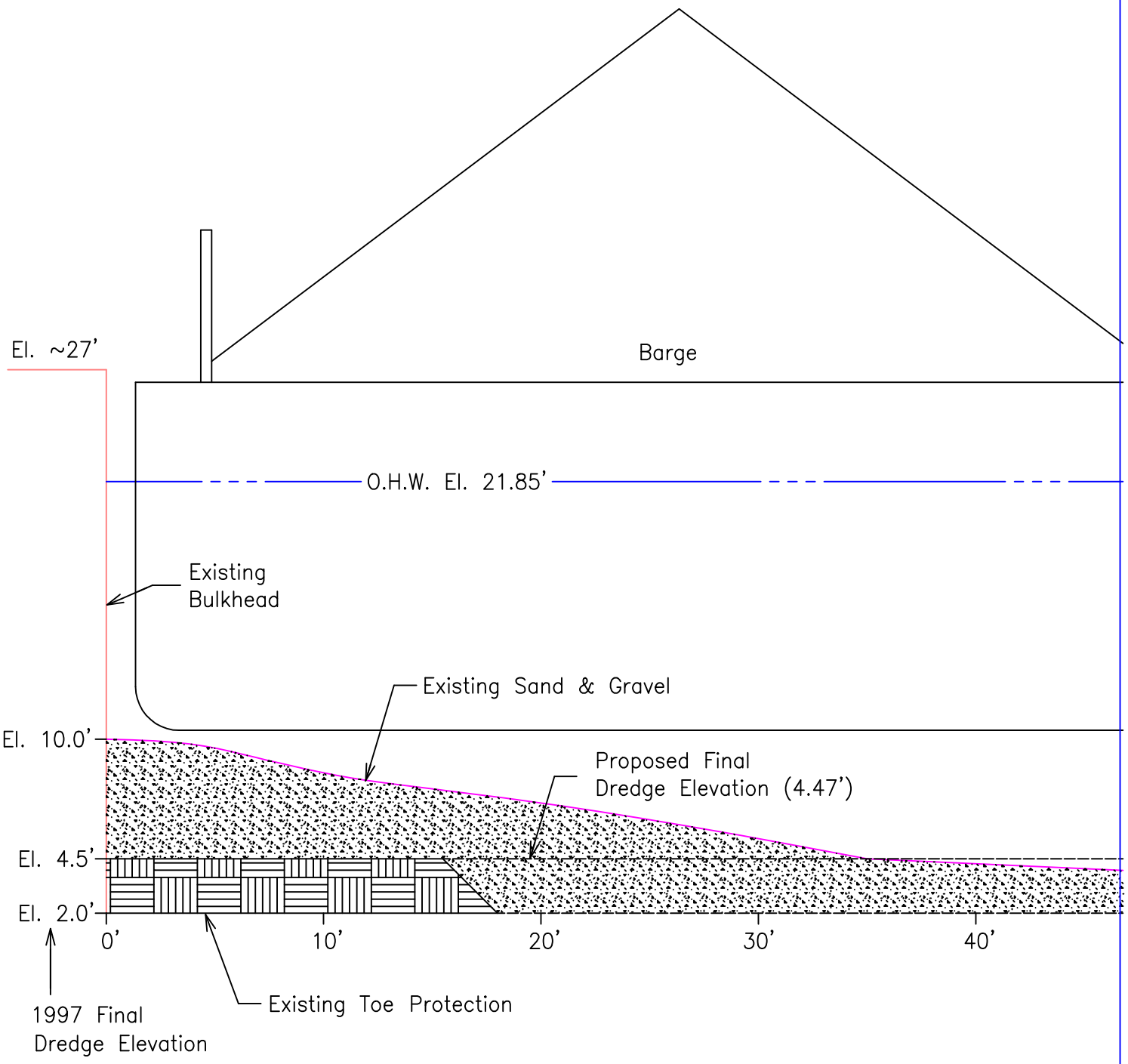


Proposed: Dredge Approx. 400 Cubic Yards of Material.

Vertical Datum: Corps of Engineers Lake Washington Datum

Proposed Dredging
Plan View

Applicant: Glacier Northwest
6423 N.E. 175th St, Kenmore
Waterway: Lake Washington
Sec. 11 26T. 4E R.



Section A–A

Proposed: Dredge Approx. 400 Cubic Yards of Material.

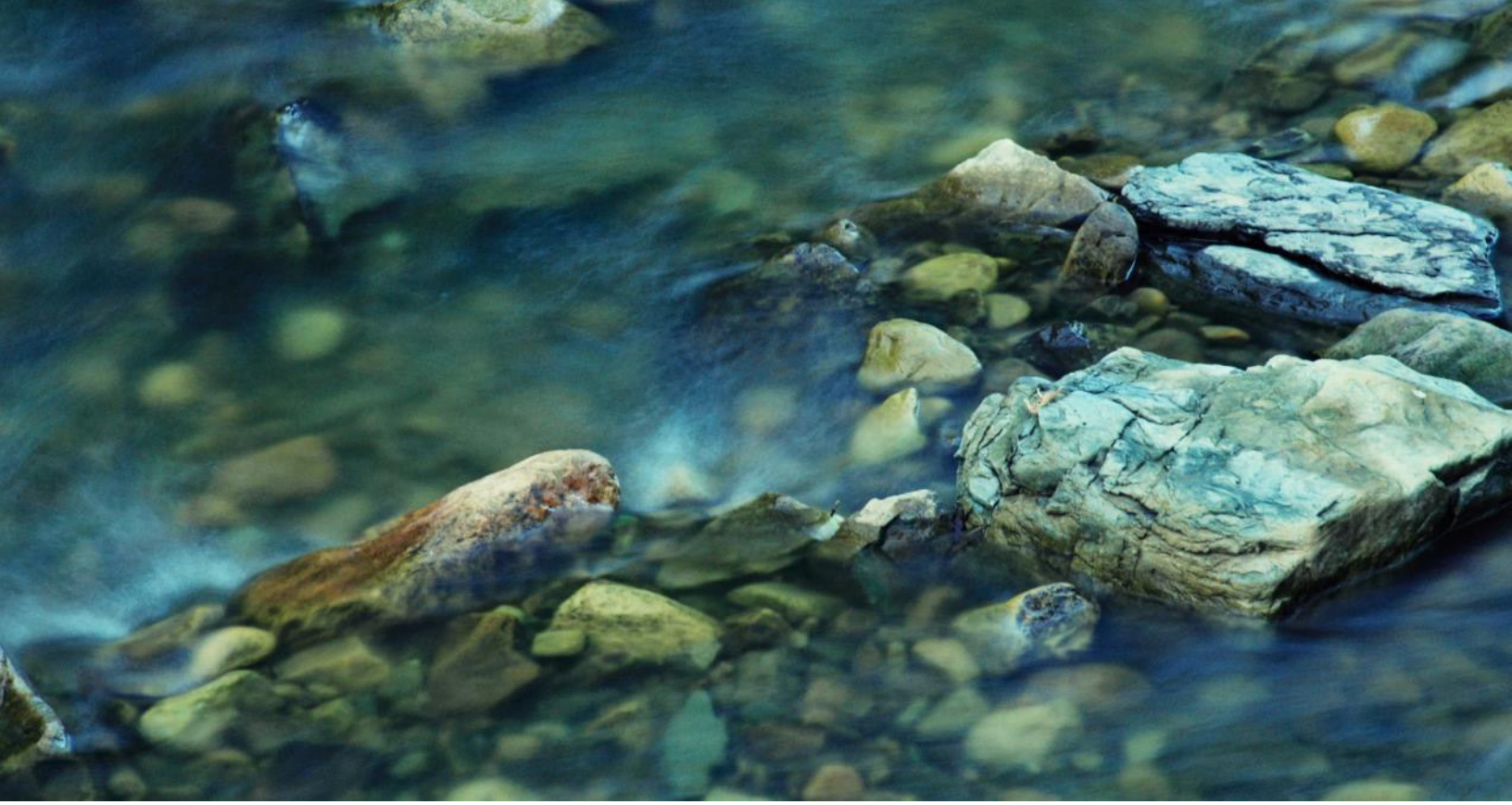
Vertical Datum: Corps of Engineers Lake Washington Datum

Proposed Dredging Elevation View

0 2 4 8

Applicant: Glacier Northwest
6423 N.E. 175th St, Kenmore
Waterway: Lake Washington
Sec. 11 26T. 4E R.

Attachment 1
Water Quality Monitoring Plan



December 2022
Glacier Northwest, Inc. (dba CalPortland)
Kenmore Berth Maintenance Dredging Project

ANCHOR QEA

Water Quality Monitoring Plan

Prepared for Glacier Northwest, Inc. (dba CalPortland)

December 2022
Kenmore Berth Maintenance Dredging Project

Water Quality Monitoring Plan

Prepared for
Glacier Northwest, Inc. (dba CalPortland)
3450 South 344th Way
Federal Way, Washington 98001

Prepared by
Anchor QEA, LLC
1201 3rd Avenue, Suite 2600
Seattle, Washington 98101

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FIGURES

APPENDICES

ABBREVIATIONS

BMP	best management practices
Ecology	Washington State Department of Ecology
Glacier	Glacier Northwest, Inc.
NTU	Nephelometric Turbidity Unit
Project	Kenmore Berth Maintenance Dredging Project
USACE	U.S. Army Corps of Engineers
WAC	Washington Administrative Code
WQMP	Water Quality Monitoring Plan

1 Introduction

Glacier Northwest, Inc. (Glacier; dba CalPortland) is proposing a Kenmore Berth Maintenance Dredging Project (Project) at their ready-mix plant and aggregate yard located near the north end of Lake Washington at 6423 Northeast 175th Street in Kenmore, Washington (Figure 1). The Project is proposed to provide safe access for vessels and barges to the terminal by removing sand, gravel, and minor amounts of sediment from the berth area through maintenance dredging. The sand and gravel proposed for removal is clean construction aggregate that was historically released during offloading of barges at the facility. Nearly all of the material was deposited after maintenance dredging was last completed in 2004 and prior to 2010 when the hopper and conveyor used to offload barges were replaced with a system designed to minimize material spillage. In addition to the changes to the offloading equipment, CalPortland has implemented a variety of operational best management practices (BMPs) to minimize spillage including equipment maintenance, employee training, barge housekeeping programs, and a spill inspection and reporting program. These BMPs are effective at avoiding or minimizing spillage of aggregate material during operations. This document presents the Water Quality Monitoring Plan (WQMP) for the Project in compliance with the Washington State Department of Ecology (Ecology) 401 Water Quality Certification.

The Project includes removing approximately 400 cubic yards of material within the approximately 16,000-square-foot berth area. Loaded barges typically draft 15 feet of water. Water levels in Lake Washington vary by approximately 2 feet, ranging from approximately +20 feet (U.S. Army Corps of Engineers [USACE] Kenmore Datum) in winter to approximately +22 feet (USACE Kenmore Datum) in summer. Therefore, maintenance dredging is proposed to a depth of +4.47 feet (USACE Kenmore Datum) to allow berthing of loaded barges under normal conditions. Maintenance dredging activities will occur entirely within the existing berth area and will be designed to avoid damaging the existing toe protection armoring, which is composed of quarry spall material that extends up to +4.47 feet (USACE Kenmore Datum). The toe protection feature was installed in the late 1990s to protect the adjacent bulkhead. A similar maintenance dredging action was permitted and occurred in 2004 (under USACE Reference No. 200300781).

Maintenance dredging will be performed within the existing approximately 16,000-square-foot berth area. A clamshell dredge deployed from a derrick (barge-mounted crane) will be used to remove the material. Dredged material will be placed directly into a bunker used to retain aggregate material at the upland portion of the plant and used as aggregate material. Water from the dredged material will flow through a clean sand berm placed around the bunker before being processed with other water on the site and prior to being discharged to the County sewer system under discharge authorization No. DA 7740-05.

This WQMP has been prepared to support compliance with the requirements of Washington State's Water Quality Standards for Surface Water (Washington Administrative Code [WAC] 173-201A). The water quality monitoring program described herein is designed to provide constant visual water quality monitoring throughout the duration of construction and in situ water quality monitoring for at least half of the time that active maintenance dredging activities are occurring. This WQMP includes the following information:

- Water quality monitoring program (Section 2)
- Contingency measures (Section 3)
- Reporting (Section 4)

2 Water Quality Monitoring Program

This section describes the proposed water quality monitoring program, including field methods for conducting water quality monitoring during maintenance dredging activities. This WQMP will be implemented in compliance with the water quality standards in WAC 173-201A as described below.

A Health and Safety Plan will be adhered to during monitoring activities. If unsafe conditions are present that would put the field team or contractor at risk, water quality monitoring activities may be temporarily discontinued. Any deviations due to health and safety concerns will be documented during reporting procedures (Section 4).

2.1 Water Quality Standards

The area of mixing point of compliance for turbidity during dredging will be 300 feet from the point of dredging (Figure 2). At the point of compliance, turbidity shall not exceed 5 Nephelometric Turbidity Units (NTUs) more than background turbidity when the background turbidity is 50 NTUs or less, or there shall not be more than a 10% increase in turbidity when the background turbidity is more than 50 NTUs. Turbidity measurements will be collected in real time and will not be averaged over time or depth.

2.2 Monitoring Locations and Depths

2.2.1 Background Monitoring Locations

The background station will be located a minimum of 600 feet from active in-water work in an area unaffected by the active work (Figure 2). Measurements collected at this station will be used as baseline data for determining the appropriate exceedance criteria and for comparison purposes.

2.2.2 Monitoring Locations

There are two monitoring locations: the early warning station and the compliance station. The monitoring distances for water quality measurements are on 150- and 300-foot radii from the activity site. One station will be measured on each radius (Figure 2). Monitoring locations may be adjusted based on the location of active in-water work. The early warning station will be located on a point along the radius 150 feet from the construction activity unless safety concerns require additional offset from the work. If the early warning station location is modified to accommodate safety concerns it will be documented during reporting procedures (Section 4).

Measurements at the early warning station will serve as an interim indicator of water quality closer to the site work activity. Elevated measurements indicate the potential for a subsequent exceedance at the compliance station, and this early warning would allow modification of the operation of the activity to potentially avoid exceedances.

The compliance station will be located at a point along the 300-foot radius from the construction activity. Measurements from the compliance station will be used to determine if water quality conditions meet water quality standards for the Project.

2.2.3 Monitoring Depth

Water depth will be determined using a lead line at the monitoring location and will be recorded on the Water Quality Monitoring Form (Appendix A). At each station, water quality parameters will be measured at 3 feet below the water surface, the mid-point of the water column, and 3 feet above the sediment bed. If the water column is 10 feet or less, no mid-point sample will be collected.

2.3 Field Monitoring Frequency and Schedule

Maintenance dredging activities are anticipated to take up to 3 working days to complete and will be performed during the in-water work window, or approved extension. Monitoring frequency will be coordinated to ensure that in situ water quality monitoring is occurring for at least half of the time that active construction activities are occurring. Any changes to the monitoring plan, based on contractor schedule, field conditions, or progress, shall be submitted to Ecology for review and approval.

2.3.1 Monitoring Frequency

Two frequencies of in situ water quality monitoring are anticipated: intensive and routine monitoring.

Intensive monitoring will include 1 full day of monitoring for maintenance dredging, with water quality measurements being collected at least twice per day. Intensive monitoring will begin at the onset of the first potentially turbidity-generating activity. If no changes in turbidity (considering background station measurements and waterway vessel activity) are noted during the first day of maintenance dredging, or if the contractor is successfully able to modify operations and/or implement additional BMPs to mitigate the elevated turbidity conditions, then water quality monitoring activities will switch to routine monitoring.

A change in activities (e.g., new dredge bucket or other change in equipment) will restart the intensive monitoring cycle.

Routine monitoring will occur every other day that the potentially turbidity-generating activity occurs, through completion of the Project, commencing the day after intensive monitoring is completed. Routine monitoring activities will similarly include twice daily water quality measurements at minimum.

2.3.2 Daily Monitoring Routine

The first round of monitoring will be conducted approximately 1 hour after the start of maintenance dredging. An additional round will be conducted prior to sunset. Background stations will be measured prior to early warning and compliance stations, for each round of water quality monitoring. Additional samples at background stations may be collected if field conditions change (e.g., extreme weather shifts) or if lateral inputs are suspected to be causing increased turbidity. Monitoring data collected in the field will be recorded on the Water Quality Monitoring Form (Appendix A).

2.3.3 Visual Monitoring

Visual monitoring (e.g., identification of visible turbidity plume) will be performed by the water quality monitor during intensive and routine monitoring at each monitoring station and while moving between stations throughout the workday. Visual monitoring will also be conducted during construction by the contractor and/or other construction oversight staff or consultants.

During visual monitoring, if a visual monitor identifies potential turbidity elevated above the criterion at the compliance stations as a result of construction activities, then contingency measures will be implemented to reduce turbidity to the extent practicable as described in Section 3.

Any turbidity events resulting from construction activities that lead to a confirmed turbidity exceedance will be recorded in the Water Quality Monitoring Form (Appendix A).

2.4 Field Monitoring Methods and Equipment

This section includes information regarding monitoring location determination, water quality monitoring methods, and quality assurance/quality control.

2.4.1 Monitoring Location Determinations and Documentation

A range finder will be used to determine station locations at target monitoring distances in relation to dredging activities. Once the vessel is on station, the vessel operator will maintain the position while monitoring occurs. GPS coordinates and the monitoring station name will be recorded on the Water Quality Monitoring Form (Appendix A). In each round of monitoring, the background station will be monitored first, followed by the early warning station and then the compliance station.

2.4.2 Turbidity Measurements

Monitoring will be performed using a calibrated multi-probe meter (e.g., Hydrolab, YSI probe, or similar) and/or a Hach turbidity meter. The depth at each station will be measured, and turbidity measurements will be collected at three depths at each of the three monitoring stations.

2.4.3 Quality Assurance/Quality Control

All field staff will be experienced in water quality monitoring. Staff will be trained in standardized field monitoring and data collection procedures, requirements, data management protocol, and quality assurance/quality control.

Instruments and equipment will be inspected before each monitoring event. Any field equipment that is faulty or not functioning properly will not be used for monitoring or sample collection. Each day and prior to use, a calibration check will be performed on the water quality meter using certified calibration standards. If water quality meter results are not consistent with standards, manufacturer's guidelines will be used to recalibrate the instrument. Standard instrument operating procedures will be used for all field instruments.

3 Contingency Measures

This section describes response actions to an elevated measurement at the early warning and compliance stations for maintenance dredging. BMPs are also outlined in this section.

3.1 Maintenance Dredging Contingency Measures

During maintenance dredging, if turbidity is elevated above the criterion at the 150-foot early warning station, the water quality monitor will notify the contractor to begin assessing BMPs and sample the 300-foot compliance station. If turbidity is elevated above the criterion at the 300-foot compliance station, the following sequence of responses will be initiated:

1. If comparison indicates that turbidity is potentially due to maintenance dredging activities, then the water quality monitor will notify the contractor and Glacier representative of the situation. The contractor will be required to pause work, assess BMPs, and determine if new BMPs should be made to reduce turbidity.

2. Field measurements will be retaken approximately 15 minutes after the initial measurements at the compliance station and compared against rechecked background measurements. Stormwater outfalls located in the vicinity of the Project area will also be checked to confirm they are not exacerbating turbidity conditions.

3. If the elevated turbidity condition is confirmed and attributed to maintenance dredging activities (and not ambient background conditions), the water quality monitor will immediately notify the contractor and Glacier representative of the situation. The contractor will be directed to immediately modify operations and/or implement additional BMPs to mitigate the elevated turbidity condition.

4. The water quality monitor will retake field measurements at the compliance station and compare them against background measurements hourly after the contractor has implemented the additional BMPs and/or operational modifications until it has been determined that the new BMPs are sufficient to reduce turbidity to compliant levels. If BMPs do not result in decreasing turbidity, work should stop until compliance is met, and restart with more intensive BMPs to address the situation.

5. Upon retaking field measurements in Step 2, Glacier or an assigned representative will notify Ecology of the elevated turbidity condition, and describe the actions taken to mitigate the condition and the results of the follow-up measurements. If an exceedance is confirmed at the point of compliance at any time during construction, an intensive monitoring cycle will be restarted as described in Section 2.3.1.

3.2 Best Management Practices

BMPs have been incorporated into the Project design to avoid or minimize environmental effects and the exposure of sensitive species to potential effects from maintenance dredging. The following BMPs will be implemented to avoid or minimize environmental impacts during the Project:

- Work will be completed during regulatory approved work windows. The work windows for northern Lake Washington are July 16 to July 31 and November 16 to February 1 of each year.
- Turbidity and other water quality parameters will be monitored to ensure that construction activities are in compliance with Washington State Surface Water Quality Standards per WAC 173-201A.
- Appropriate BMPs will be employed to minimize sediment loss and turbidity generation during dredging. BMPs may include, but are not limited to, the following:
  - Eliminating multiple bites while the bucket is on the bottom
  - No stockpiling of dredged material on the lakebed
  - No lakebed leveling
- No free water from the dredged sediment will be directly discharged back into the surface waters without passing through the filter media to minimize the release of suspended sediments.
- The dredging contractor will inspect fuel hoses, oil or fuel transfer valves, and fittings on a regular basis for drips or leaks in order to prevent spills into the surface water.
- The contractor shall be responsible for the preparation of a spill plan to be used for the duration of the Project to safeguard against an unintentional release of fuel, lubricants, or hydraulic fluid from construction equipment.

4 Reporting

At the end of each monitoring day, a brief summary of water quality monitoring activities, field datasheets, and results of the monitoring will be provided to Glacier.

In the event that a water quality turbidity exceedance is confirmed, or a visual turbidity plume associated with dredging is observed at the point of compliance, Glacier or an assigned representative will report the exceedance to the Ecology representative listed in the water quality certification within 24 hours of the exceedance.

In the event of a discharge of oil, fuel, or chemicals into surface waters of the state as defined in WAC 173-201A-020, or onto land with a potential for entry into surface waters of the state, containment and cleanup efforts will begin immediately per the contractor-prepared spill plan. Glacier or an assigned representative will immediately report the event to the Ecology representative listed in the water quality certification and Ecology's Northwest Regional 24-hour Spill Response Office at (206) 594-0000. If the spill occurs outside of normal business hours, it will be reported to the Washington Emergency Management Division 24-hour Office at 1-800-OILS-911.

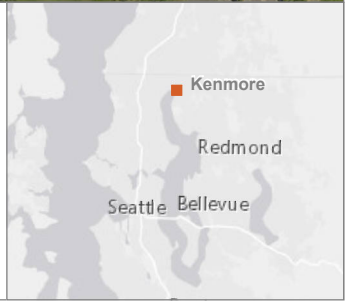
Figures

LEGEND:

Project Area

0 400

Feet



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ANCHOR QEA

Figure 1
Vicinity Map
Water Quality Monitoring Plan
Kenmore Berth Maintenance Dredging Project

LEGEND:

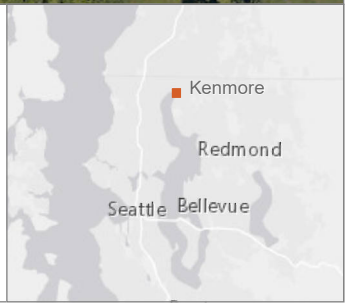
- Project Area
- Water Quality Monitoring Zones

Water Quality Monitoring Station

- 150-foot Early Warning
- 300-foot Compliance
- 600-foot Background

0 300

Feet



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ANCHOR QEA

Figure 2
Water Quality Monitoring Locations
Water Quality Monitoring Plan
Kenmore Berth Maintenance Dredging Project

Appendix A
Water Quality Monitoring Form

Maintenance Dredging Water Quality Monitoring Form

1201 3rd Avenue, Suite 2600
Seattle, Washington 98101
Phone 206.287.9130
www.anchorqea.com

Date:	Monitoring Start Time:	Monitoring Personnel:
Maintenance Dredging Start Time:		Weather Observations:

Station ID	Time	Water Depth (feet)	Coordinates		Turbidity Reading (NTU)			Exceed	Notes
			Northing Latitude	Easting Longitude	Surface	Middle	Bottom	Yes/No*	

Notes:

***Water Quality Standard: Turbidity shall be < 5.0 NTU above BG when BG < 50 NTU, and less than 10% over BG when BG is > 50 NTU.**

150EW = 150' Early Warning Station; 300**C** = 300' Compliance Station; **BG** = Background Station (600 feet from in-water work location); **NTU** = Nephelometric Turbidity Unit

Tidal Elevations	Elevation	Time	Elevation	Time
High:				
Low:				

Attachment 2
Biological Evaluation

US Army Corps of Engineers
Seattle District

BIOLOGICAL EVALUATION
FOR INFORMAL ESA CONSULTATION
For: _____ (Corps Reference Number)
Version: May 2012

***** This form is for projects that have insignificant or discountable impacts on listed species. It contains all the information required for a biological evaluation, but in abbreviated form and with minimal instructions on how to fill it out. For more detailed instructions, a format for development of a biological assessment or biological evaluation can be found on the Seattle District Corps website (www.nws.usace.army.mil – click on regulatory and then on endangered species, BA Template). You may also contact the Corps at 206-764-3495 for further information.***

Drawings and Photographs - ***Drawings and photographs must be submitted***. Photographs must be submitted showing local area, shoreline conditions, existing overwater structures, and location of the proposed project. Drawings must include a vicinity map; plan, profile, and cross-section drawings of the proposed structures; and over- and in-water structures on adjacent properties. (For assistance with the preparation of the drawings, please refer to our *Drawing Checklist* located on our website at www.nws.usace.army.mil Select Regulatory – Regulatory/Permits – Forms.) Submit the information to: U.S. Army Corps of Engineers, Regulatory Branch, P.O. Box 3755, Seattle, Washington 98124-3755.

Date: December 2, 2022

SECTION A - General Information			
1. **Applicant name**: Pete Stolz, Glacier Northwest, Inc. (Glacier; dba CalPortland)			
Mailing address: 3450 South 344th Way, Federal Way, Washington 98001			
Work phone: (206) 764-3036	Home phone:	Email: pstolz@calportland.com	Fax:
2. **Joint-use applicant name (if applicable)**:			
Mailing address:			
Work phone:	Home phone:	Email:	Fax:
3. **Authorized agent name**: Josh Jensen, Anchor QEA, LLC			
Mailing address: 1201 3rd Avenue, Suite 2600, Seattle, Washington 98101			
Work phone: (206) 903-3374	Home phone:	Email: jjensen@anchorqea.com	Fax:
4. **Location where proposed work will occur** Address (street address, city, county): 6426 Northeast 175th Street, Kenmore, King County Location of joint-use property (street address, city, county): N/A Waterbody: Lake Washington			
¼ Section: Northeast	Section: 11	Township: 26 North	Range: 04 East
Latitude: 47.75747 N		Longitude: -122.25531 W	

5. Description of Work:

Include project drawings and site photographs.

Describe the proposed project in detail. Please describe any mitigation that is being proposed for impacts from your project. Attach a mitigation plan as an appendix, if appropriate.

Glacier is proposing the Kenmore Berth Maintenance Dredging Project (Project) at their ready-mix plant and aggregate yard located near the north end of Lake Washington at 6423 Northeast 175th Street in Kenmore, Washington. The Project includes removing approximately 400 cubic yards of material within the approximately 16,000-square-foot berth area.

The Project is proposed to provide safe access for vessels and barges to the terminal by removing sand, gravel, and minor amounts of sediment from the berthing area through maintenance dredging. The sand and gravel proposed for removal is clean construction aggregate released during offloading of barges at the facility. Nearly all of the material was deposited after maintenance dredging was last completed in 2004 and prior to 2010 when the hopper and conveyor used to offload barges were replaced with a system designed to minimize material spillage. In addition to the changes to the offloading equipment, CalPortland has implemented a variety of operational best management practices (BMPs) to minimize spillage including equipment maintenance, employee training, barge housekeeping programs, and a spill inspection and reporting program. These BMPs are effective at avoiding or minimizing spillage of aggregate material during operation. The prior, similar maintenance dredging action was permitted and occurred in 2004 under U.S. Army Corps of Engineers (USACE) Reference No. 200300781.

Loaded barges typically draft at approximately 15 feet of water. Water levels in Lake Washington vary by approximately 2 feet, ranging from approximately +20 feet (USACE Kenmore Datum) in winter to approximately +22 feet (USACE Kenmore Datum) in summer. Therefore, dredging is proposed to a depth of +4.47 feet (USACE Kenmore Datum) to allow berthing of loaded barges under normal conditions. Maintenance dredging activities will occur entirely within the existing berth area and will be designed to avoid damaging the existing toe protection armoring, which is composed of quarry spall material that extends up to +4.47 feet (USACE Kenmore Datum). The toe protection feature was installed in the late 1990s to protect the adjacent bulkhead. A similar maintenance dredging action was permitted and occurred in 2004 (under USACE Reference No. 200300781).

Until maintenance dredging of the Kenmore channel was completed recently by the USACE, the draft of barges, and therefore the load capacity of barges, that could service the Kenmore Concrete Plant was limited by shallow depths in the navigation channel. Barges were light-loaded to accommodate the shallow depths. Now that the navigation channel has been maintained, CalPortland wishes to restore the Kenmore Berth to its previously maintained depth to again accept barges loaded at their design capacity.

Conservation measures and BMPs will be implemented to avoid and minimize environmental impacts during the Project, as described in Section 11. Appendix A contains recent species lists obtained from the National Marine Fisheries Service (NMFS) and the U.S. Fish and Wildlife Service (USFWS).

For projects that include pile driving

If steel or concrete piles are being installed with an impact hammer pile driver, marbled murrelets may be adversely impacted. For installation of any type of pile with a vibratory pile driver, marine mammals may be adversely impacted. A monitoring plan may be required to ensure protection of these species.

Not applicable. Pile driving activities are not proposed.

6. Construction Techniques:
Describe methods and timing of construction to be employed in building the project and any associated features. Identify actions that could affect listed / proposed species or designated / proposed critical habitat and describe in sufficient detail to allow an assessment of potential impacts. Consider actions such as vegetation removal, temporary or permanent elevations in noise level, channel modifications, hydrological or hydraulic alterations, access roads, power lines etc. Also discuss construction techniques associated with any interdependent or interrelated projects.
Address the following:

A. Construction sequencing and timing of each stage (duration and dates):

The Project is expected to be completed in approximately 2 to 3 working days. In-water work will be performed consistent with allowable in-water work windows established by regulatory agencies to minimize potential disturbance of sensitive fish and wildlife species. Within the Lake Washington, these work windows are expected to be between July 16 to July 31 and November 16 to February 1 of each year.

B. Site preparation:

Maintenance dredging will be performed within the existing approximately 16,000-square-foot berth area. A clamshell dredge deployed from a derrick (barge-mounted crane) will be used to remove the material. Dredged material will be placed directly into a bunker used to retain aggregate material at the upland portion of the plant and used as aggregate material. Water from the dredged material will flow through a clean sand berm placed around the bunker before being processed with other water on the site and prior to being discharged to the County sewer system under discharge authorization No. DA 7740-05.

C. Equipment to be used:

The anticipated methods for dredging are described below in general terms. The dredging specifications for the Project will likely be performance-based, such that the contractor will select the specific equipment and dredging methodology best suited to Project performance requirements.

Sediment will be mechanically dredged by a crane or excavator-operated clamshell bucket mounted on a barge. Dredge controls, such as GPS-supported dredge positioning systems, will be in place during maintenance dredging to ensure a maximum depth of +4.47 feet (USACE Kenmore Datum) to avoid disturbance to the existing toe protection armoring at that elevation.

D. Construction materials to be used:

Maintenance dredging activities will not require the use of any construction materials.

E. Work corridor:

In-water work will be limited to the area adjacent to the existing dock and bulkhead.

F. Staging areas and equipment wash outs:

All materials will be staged immediately adjacent to the berth in an upland bunker designed to handle similar materials. No equipment washouts will be necessary for this Project.

G. Stockpiling areas:

Dredged material will be placed directly into a bunker used to retain aggregate material at the upland portion of the plant and used as aggregate material.

H. Running of equipment during construction:

Dredging equipment will primarily be in operation during weekday daytime hours. However, work during nighttime hours or weekends may be required depending on schedule constraints.

I. Soil stabilization needs / techniques:

This Project does not require upland soil stabilization, nor will it use any techniques for soil stabilization. Sediments will be dredged in a manner that reduces sloughing to the maximum extent possible. The berth area has been previously dredged to similar, authorized depths.

J. Clean-up and re-vegetation:

There will be no clearing or impacts to vegetation from site preparation or construction staging; therefore, no re-vegetation activities are proposed.

K. Storm water controls / management:

This Project will not introduce any new impervious surfaces; therefore, no new stormwater controls are necessary or proposed.

L. Source location of any fill used:

No fill is proposed for the Project.

M. Location of any spoil disposal:

The dredged material will be reused on site.

7. Action Area

Please describe the action area. The action area means all areas to be affected directly (e.g., earth moving, vegetation removal, construction noise, placement of fill, release of environmental contaminants) and indirectly by the proposed action. (Example: as a direct effect, the action area for pile driving would include the area out to where the noise from the pile driving falls below the level of harm or disturbance for listed species. For vibratory hammer pile driving impacts to killer whales, this level is 120 dB. Action area will include any area where the underwater noise level may exceed 120 dB).

The action area for the Project includes the geographic area potentially affected by the maintenance dredging activities. The action area will therefore include a 300-foot radius around the Project, as shown in Figure 1 below, based on the following rationale.

In-air and in-water noise from construction equipment will be generated. Average measured in-air noise levels for common construction equipment to be used for this Project (excavators, loaders, crane) range from 79 to 81 A-weighted decibels measured at 50 feet (WSDOT 2020). These levels are commensurate with existing conditions in an active marine transportation zone and near industrial facilities that use

similar equipment. As a result, noise generated from dredging and related activity is not anticipated to exceed typical background noise in the Project area.

The in-water noise generated by dredging has not been widely evaluated, but some studies have been completed. Dredging operations produce sounds that can be categorized as continuous sounds (noise produced by propellers, pumps, and generators) and repetitive sounds (produced by the dredge bucket striking the channel bottom, closing the bucket, placing material in/on a barge). The nature of the noise produced varies by the nature of material being dredged and the type and size of the dredge equipment. For example, clamshell dredging in coarse and soft sediments in Cook Inlet (using a larger bucket than is expected to be used for the Glacier site) produced noise levels ranging from 82 to 124 decibels in root-mean-square pressure (dBRMS) (Dickerson et al. 2001; NOAA Fisheries 2018).

The proposed activities would occur near industrial facilities and adjacent to an airport (Kenmore Air) where ambient elevated noise levels are common. Limited data exist on ambient in-water noise levels for Lake Washington. To be conservative, ambient in-water noise levels typical for Puget Sound waters were used for this analysis, which are approximately 135 dBRMS (MacGillivray et al. 2007). Therefore, it is expected that noise emitted from the dredging action would be below anticipated ambient noise levels for Lake Washington.

The behavioral disturbance threshold for fish is 150 dBRMS. As stated earlier, clamshell dredging using a larger bucket resulted in sound levels of 82 to 124 dBRMS, which are below this threshold. Additionally, fish are likely to swim away from dredging activities as the bucket enters the water. Therefore, it is unlikely that fish would be present in the immediate vicinity of the dredge bucket during maintenance dredging at the point of channel bottom contact when noise levels are likely to be at their peak.

The farthest-reaching effect from the proposed Project is likely to be turbidity; thus, the in-water portion of the action area is defined by the limits of turbidity. In Washington, water quality standards (Washington Administrative Code [WAC] 173-201A) specify a mixing zone in which visible turbidity must not extend more than 300 feet from the bucket location. Based on this point of compliance, a conservative action area could be based on a potential worst-case dispersion of turbidity, although it is expected that any turbidity increases would rapidly dissipate due to the nature of the site and implementation of dredging BMPs. Thus, the boundary of the in-water action area will be defined as the mixing zone at 300 feet.

Figure 1
Action Area

8. Species Information:

Identify each listed or proposed species, including terrestrial species, as well as designated or proposed critical habitat in the action area. Please include information on which listed species use are expected to be found in the action area and the potential for them to be there during project activities..

Table 1 presents a summary of threatened and endangered species potentially occurring in the action area (NOAA Fisheries 2022a; USFWS 2022a). Listed species under NMFS and USFWS jurisdiction are identified based on the geographic boundaries of Distinct Population Segments (DPSs) and Evolutionarily Significant Units (ESUs). The table also identifies whether critical habitat has been designated by NMFS or USFWS for those species within the Project vicinity. The Project will occur during the approved in-water work window for the site when the species listed in Table 1 are unlikely to be present.

Table 1
Species and Critical Habitat with Federal ESA Status That May Occur in the Action Area

Common Name (Scientific Name)	Jurisdiction	ESA Status	Critical Habitat
Chinook salmon (*Oncorhynchus tshawytscha*) Puget Sound ESU	NMFS	Threatened	Designated
Steelhead (*O. mykiss*) Puget Sound DPS	NMFS	Threatened	Designated
Bull trout (*Salvelinus confluentus*) Coastal-Puget Sound DPS	USFWS	Threatened	Designated
Marbled murrelet *(Brachyramphus marmoratus*)	USFWS	Threatened	None designated within the action area

USFWS identifies the additional species of North American wolverine (*Gulo gulo luscus*) and yellow-billed cuckoo (*Coccyzus americanus*) as potentially affected by activities in the action area (USFWS 2022a). However, these species are not addressed in this Biological Evaluation due to lack of suitable habitat within and adjacent to the action area.

To determine what listed or proposed species may occur in the action area, contact NOAA Fisheries at the address listed below and obtain a county list of federally listed/ designated and proposed species and critical habitat from the:

U.S Fish and Wildlife Service at: http://westernwashington.fws.gov/se/SE_List/endangered_Species.asp
National Marine Fisheries Service at:
510 Desmond Dr., SE # 103
Lacey, WA 98503
(360) 753-9530
http://www.nwr.noaa.gov

The following species are listed as of August 11, 2011:

USFWS SPECIES
BIRDS
Marbled murrelet
Northern spotted owl
Short-tailed albatross
Western snowy plover

MAMMALS
Canada lynx
Columbia white-tailed deer
Gray wolf (western WA)
Gray wolf (eastern WA)
Grizzly bear
Woodland caribou
Pygmy rabbit (Columbia Basin DPS)

INSECTS
Oregon silverspot butterfly

PLANTS
Bradshaw's desert parsley
Marsh sandwort
Showy stickseed
Wenatchee Mtns. Checker-mallow
Golden paintbrush
Kincaid's lupine
Nelson's checker-mallow
Water howellia
Spalding's catchfly
Ute ladies'-tresses

FISH
Bull trout, Columbia River
Bull trout, coastal-Puget Sound
Dolly varden, coastal-Puget Sound

NMFS SPECIES
FISH
Chum, Columbia River
Chum, Hood Canal summer
Chinook, lower Columbia River
Chinook, upper Columbia River spring
Chinook, Puget Sound
Chinook, Snake River fall
Chinook, Snake River spring-summer
Chinook, upper Willamette River
Coho, lower Columbia River
Sockeye, Ozette Lake
Sockeye, Snake River
Steelhead, upper Columbia River
Steelhead, middle Columbia River
Steelhead, lower Columbia River
Steelhead, Snake River
Steelhead, upper Willamette River
Steelhead, Puget Sound
Sturgeon, Green (southern DPS)
Eulachon, Pacific (southern DPS)
Bocaccio (Georgia Basin DPS)
Rockfish, canary (Georgia Basin DPS)
Rockfish, yelloweye (Georgia Basin DPS)

MARINE MAMMALS
Humpback whale
Blue whale
Fin whale
Sei whale
Sperm whale
Southern resident killer whale
Steller sea lion

REPTILES-AMPHIBIANS
Leatherback sea turtle
Loggerhead sea turtle
Green sea turtle
Olive Ridley sea turtle

9. Existing Environmental Conditions:
Describe existing environmental conditions for the following:

A. Shoreline riparian vegetation and habitat features

Upland vegetation and habitat conditions at the property are limited due to existing development adjacent to the Lake Washington shoreline. The upland portion of the property is mostly paved, with some trees and shrubs growing along the shoreline. The shoreline is defined by an existing dock, vertical bulkhead, and existing underwater toe protection armoring that extends approximately 15 feet waterward from the vertical bulkhead. No work will occur within vegetated areas.

B. Aquatic substrate and vegetation (include information on the amount and type of eelgrass or macroalgae present at the site)

The dominant aquatic vegetation within the Kenmore Navigation Channel are Eurasian watermilfoil (*Myriophyllum spicatum*) and coontail (*Ceratophyllum demersum*) (Herrera 2021). However, densities in and near the channel are very low to zero, potentially due to the regular vessel traffic within the channel. Widespread growth of noxious weeds is an ongoing concern for Lake Washington and the City of Kenmore in particular. Three aquatic noxious weeds (Eurasian watermilfoil, Brazilian Egeria, and fragrant waterlily) and two emergent weeds (garden and purple loosestrife) are identified for control (Herrera 2017). No eelgrass is present within or adjacent to the Project area (WDNR 2022).

C. Surrounding land/water uses

The property is bounded Kenmore Asphalt Materials and Kenmore Air to the north and Glacier's property to the east. The property located to the south is owned by Lakepointe, Inc. and is proposed for a mixed-use development. The property and surrounding area is currently zoned Regional Business (City of Kenmore 2019). The Kenmore Navigation Channel is located west of the Project site and is regularly used by commercial and recreational vessels as well as seaplanes.

D. Level of development

The property is currently used as a terminal that stocks a wide variety of aggregate products and ready mixed concrete. The upland property includes actively used, aboveground buildings used for cement and aggregate storage and distribution.

E. Water quality

Lake Washington in the vicinity of the Project is not listed on the Washington State Department of Ecology 303(d) List (Ecology 2022).

F. Describe use of the action area by listed salmonid fish species.

Chinook Salmon
The nearshore of Lake Washington is designated as critical habitat for Puget Sound Chinook salmon. Chinook salmon mostly use Lake Washington as a migratory corridor from their natal stream to the marine environment or as an extended rearing location before out-migrating to the marine environment (Tabor et al. 2006). Most of the wild juvenile Chinook salmon enter Lake Washington from the Cedar River from January through June. Most of the existing Lake Washington shoreline sustains degraded habitat poorly suited for protection from predators and migrating activities of Chinook salmon. The

shoreline lacks a shallow sloping gradient in many places, and the substrate is composed of large and small riprap, cobble, areas of concrete, rock and asphalt debris, and in some places some sand and gravel. In addition, shoreline habitat is almost devoid of any woody debris and contains many invasive plant species. Conditions in the immediate Project vicinity contain poor habitat conditions and are defined by an existing dock, vertical bulkhead, and toe protection armoring.

Very small juvenile Chinook salmon concentrate in very shallow water, approximately 0.4 meter (1.3 feet) in depth, and prefer low-gradient shorelines with small substrates such as sand and gravel (Tabor and Piaskowski 2002). As juvenile Chinook salmon grow larger, they move into 2- and 3-meter- (6.6- and 10-foot-) deep water by mid-June. Juvenile Chinook salmon also prefer a diverse shoreline with open areas, woody debris, and overhanging vegetation as refuge from predators during the day (Tabor and Piaskowski 2002). Other studies have shown that most (more than 80%) juvenile Chinook salmon are found at sites with overhanging vegetation and small woody debris, as compared to sites without vegetation and small wood (Tabor et al. 2004).

Steelhead
Two populations of Puget Sound steelhead inhabit the Lake Washington basin. The Cedar River population is of natural origin, while the north Lake Washington population is introduced. Both populations of winter-run steelhead have recently undergone steep declines in abundance.

Winter-run and ocean-maturing steelhead return as adults to Puget Sound tributaries from December to April (PSBRT 2005). Spawning occurs from January to mid-June, with peak spawning occurring from mid-April through May. The majority of steelhead juveniles reside in freshwater for 2 years prior to immigrating to marine habitats, with limited numbers migrating as 1- or 3-year-old smolts. Smoltification and seaward migration occur principally from April to mid-May (PSBRT 2005). The inshore migration pattern of steelhead in Puget Sound is not well understood; it is generally thought that steelhead smolts move quickly offshore (PSBRT 2005).

Little information is currently known about juvenile steelhead use of Lake Washington. Washington Department of Fish and Wildlife (WDFW) researchers have captured steelhead migrants in the Cedar River from mid-April through the end of May (Volkhardt et al. 2006), but if or how they use the nearshore area of the lake has not been determined.

Bull Trout
Lake Washington is documented rearing habitat for bull trout and according to WDFW (WDFW 2022a) is designated as critical habitat. Bull trout are infrequently found in Lake Washington; however, these areas are critical habitat and identified as foraging, overwintering, and migration habitat for bull trout. Over 20 years, a small number of adult and sub-adult bull trout have been observed in Lake Washington and the Hiram H. Chittenden Locks in the Lake Washington Ship Canal. Excessive summer water temperatures (July through September) probably limit bull trout use of nearshore areas of Lake Washington.

Marbled Murrelet
Marbled murrelets are small seabirds found in coastal marine areas from the Aleutian Island in Alaska along the Pacific Coast, including the Puget Sound, and into central California. Birds forage in marine waters and nest up to 36 miles inland in large trees characteristic of late-successional forests. The nesting period is between April 1 and September 15, with peak activity occurring between July and August, when adults are increasing foraging trips to feed their young. Old-growth or mature forest stands appear to be crucial for breeding and foraging, and most nests are in conifers more than 150 years old, and in trees greater than 55 inches diameter at breast height. Most nests have been found on large, flat conifer branches that are covered with thick moss (WDFW 2016).

The nearest critical habitat is approximately 30 miles east of the Project area. The Project area lacks old-growth forest habitat required for murrelet nesting, and there are no foraging opportunities within the vicinity of the Project area because murrelets utilize nearshore marine water resources (USFWS 2022b). There are no known nest sites in the vicinity of the Project (WDFW 2022b). Marbled murrelets are more commonly associated with marine waters than freshwater lake systems.

G. Is the project located within designated / proposed bull trout or Pacific salmon critical habitat? If so, please address the proposed projects' potential direct and indirect effect to primary constituent elements (Critical habitat templates can be found on the Corps website at: http://www.nws.usace.army.mil/Missions/CivilWorks/Regulatory/PermitGuidebook/EndangeredSpecies.aspx, select Forms, Tools and References; Forms and Templates; Critical Habitat Assessment Forms.

Critical habitat in the action area has been designated for the Puget Sound ESU of Chinook salmon and the Coastal-Puget Sound DPS of bull trout. Tables 2 and 3 summarize the potential Project effects on Chinook salmon and bull trout physical and biological features (PBFs).

Table 2
Potential Project Effects on Chinook Salmon and Steelhead
Physical and Biological Features

Chinook Salmon/Steelhead PBF	PBF Present	Potential Project Effects
1. Freshwater spawning sites with water quantity and quality conditions and substrate supporting spawning, incubation, and larval development.	Not present	Spawning sites are not present as lakes do not provide spawning habitat for Chinook salmon.
2. Freshwater rearing sites with water quantity and floodplain connectivity to form and maintain physical habitat conditions and support juvenile growth and mobility; water quality and forage supporting juvenile development; and natural cover such as shade, submerged and overhanging large wood, log jams and beaver dams, aquatic vegetation, large rocks and boulders, side channels, and undercut banks.	Not present	The shoreline provides some shaded areas and aquatic vegetation, but also includes an existing dock, vertical bulkhead, and toe protection armoring, and does not contain any log jams or side channels.
3. Freshwater migration corridors free of obstruction with water quantity and quality conditions and natural cover such as submerged and overhanging large wood, aquatic vegetation, large rocks and boulders, side channels, and undercut banks supporting juvenile and adult mobility and survival.	Present	Maintenance dredging activities will result in disturbance to shallow water substrates and may result in temporary, localized turbidity increases in the action area over the short term. These actions will temporarily impede migration into the action area until maintenance dredging is complete; however, it will not preclude Chinook salmon or steelhead movement through the area and effects will be temporary.

Chinook Salmon/Steelhead PBF	PBF Present	Potential Project Effects
4. Estuarine areas free of obstruction with water quality, water quantity, and salinity conditions supporting juvenile and adult physiological transitions between fresh-and saltwater; natural cover such as submerged and overhanging large wood, aquatic vegetation, large rocks and boulders, and side channels, and juvenile and adult forage, including aquatic invertebrates and fishes, supporting growth and maturation.	Not Present	N/A
5. Nearshore marine areas free of obstruction with water quality and quantity conditions and forage, including aquatic invertebrates and fishes, supporting growth and maturation; and natural cover such as submerged and overhanging large wood, aquatic vegetation, large rocks and boulders, and side channels.	Not present	N/A
6. Offshore marine areas with water quality conditions and forage, including aquatic invertebrates and fishes, supporting growth and maturation.	Not present	N/A

Table 3
Potential Project Effects on Bull Trout Physical or Biological Features

Bull Trout Physical or Biological Feature	PBF Present	Potential Project Effects
1. Springs, seeps, groundwater sources, and subsurface water connectivity (hyporheic flows) to contribute to water quality and quantity and provide thermal refugia.	Not present	N/A
2. Migratory habitats with minimal physical, biological, or water quality impediments between spawning, rearing, overwintering, and freshwater and marine foraging habitats, including, but not limited to permanent, partial, intermittent or seasonal barriers.	Present	Maintenance dredging activities will result in disturbance to shallow water substrates and may result in temporary, localized turbidity increases in the action area over the short term. These actions will temporarily impede migration into the action area until maintenance dredging is complete; however, it will not preclude bull trout movement through the area and effects will be temporary.
3. An abundant food base, including terrestrial organisms of riparian origin, aquatic macroinvertebrates, and forage fish.	Present	Substrate disturbance and disturbance of benthic and epibenthic prey will occur during in-water work. This effect will be short term and temporary due to expected rapid recovery of the benthic community following this work, and no long-term modifications of prey species habitats are expected.

Bull Trout Physical or Biological Feature	PBF Present	Potential Project Effects
4. Complex river, stream, lake, reservoir, and marine shoreline aquatic environments and processes that establish and maintain these aquatic environments, with features such as large wood, side channels, pools, undercut banks and unembedded substrates, to provide a variety of depths, gradients, velocities, and structure.	Present	The Project will have no effect on this PBF.
5. Water temperatures ranging from 2°C to 15°C (36°F to 59°F), with adequate thermal refugia available for temperatures that exceed the upper end of this range. Specific temperatures within this range will depend on bull trout life history stage and form; geography; elevation; diurnal and seasonal variation; shade, such as that provided by riparian habitat; and local groundwater influence.	Present	The Project will have no effect on this PBF.
6. In spawning and rearing areas, substrate of sufficient amount, size, and composition to ensure success of egg and embryo overwinter survival, fry emergence, and young-of-the-year and juvenile survival. A minimal amount of fine sediment, generally ranging in size from silt to coarse sand, embedded in larger substrates, is characteristic of these conditions. This size and amounts of fine sediment suitable to bull trout will likely vary from system to system.	Not present	N/A
7. A natural hydrograph, including peak, high, low, and base flows within historic and seasonal ranges or, if flows are controlled, minimal flow departure from a natural hydrograph.	Present	The Project will have no effect on this PBF.
8. Sufficient water quality and quantity such that normal reproduction, growth, and survival are not inhibited.	Present	Maintenance dredging activities will result in localized turbidity increases in the action area over the short term. No long-term adverse effects to water quality will result from the Project.
9. Sufficiently low levels of occurrence of nonnative predatory (e.g., lake trout, walleye, northern pike, smallmouth bass); inbreeding (e.g., brook trout); or competing (e.g., brown trout) species that, if present, are adequately temporally and spatially isolated from bull trout.	Present	The Project will have no effect on this PBF.

H. Describe use of the action area by other listed fish species (*green sturgeon, eulachon, bocaccio, canary rockfish and yelloweye rockfish)*.

The Project area includes freshwater habitat; there is no suitable habitat for listed marine fish species.

I. Is the project located within designated/proposed critical habitat for any of the species listed below? If so please address the proposed projects' potential direct and indirect effect to primary constituent elements. Please see the NOAA-Fisheries and US Fish and Wildlife websites (www.nwr.noaa.gov and www.fws.gov/pacific respectively) for further information.

Southern resident killer whale	*Marbled murrelet*
Northern spotted owl	*Western snowy plover*
Green sturgeon	*Eulachon*

The Project is not within critical habitat for any of the above species.

J. Describe use of action area by marbled murrelets. How far to the nearest marbled murrelet nest site or critical habitat? Some information is available on the Fish and Wildlife Service website: http://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B08C.

The Project area lacks old-growth forest habitat required for murrelet nesting, and there are no foraging opportunities within the vicinity of the Project area because murrelets utilize nearshore marine water resources (USFWS 2022b). There are no known nest sites in the vicinity of the Project (WDFW 2022b). The nearest critical habitat is approximately 30 miles east of the Project area.

K. Describe use of action area by the spotted. How far to the nearest spotted nest site or critical habitat? Some information is available on the Fish and Wildlife Service website: http://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B08B.

The Project is located in an urban-industrial environment that does not include suitable nesting and foraging habitat for northern spotted owls (*Strix occidentalis caurina*). The WDFW Priority Habitats and Species maps do not document northern spotted owls in the vicinity of the Project (WDFW 2022b). The nearest critical habitat for northern spotted owl is approximately 30 miles east of the Project area.

L. **For marine areas only:** Describe use of action area by Southern Resident killer whales. How often have they been seen in the area and during what months of the year? For information on noise impacts on killer whales and other marine mammals, please see the National Marine Fisheries website: http://www.nwr.noaa.gov/Marine-Mammals/MM-consults.cfm.

The Project is not located in a marine area.

M. **For marine areas and Columbia River:** How far is the nearest steller sea lion haulout site from the action area? Describe their use of the action area. See the National Marine Fisheries website: http://www.nwr.noaa.gov/Marine-Mammals/MM-consults.cfm for information on the steller sea lion and location of their haulout sites.

The Project is not located in a marine area or the Columbia River.

N. **For marine areas only: Forage Fish Habitat** – only complete this section if the project is in tidal waters.

Check box if Washington Department of Fish and Wildlife (WDFW) documented habitat is present. Go to the WDFW website for this information: http://wdfw.wa.gov/fish/forage/forage.htm, then search for each species under the link to Biology, then the link to Documented Spawning Grounds (if available, please attach a copy of the Hydraulic Project Approval from WDFW):

Surf Smelt: ☐ **Pacific Herring:** ☐ **Sand Lance:** ☐

Check box if the proposed action will occur in potentially suitable forage fish spawning habitat:

Surf Smelt: ☐ **Pacific Herring:** ☐ **Sand Lance:** ☐

If no boxes are checked, please explain why site is not suitable as forage fish spawning habitat.

Please describe the type of substrate and elevation and presence of aquatic vegetation at the project area. For example:
At +10 to +5 feet above MLLW, there is no aquatic vegetation, the substrate consists of large cobbles.
At +5 to +1 foot above MLLW, there is eelgrass and the substrate consists of fine sand.

The Project is not located in a marine area.

10. Effects Analysis

Describe the direct and indirect effects of the action on the proposed and listed species as well as designated and proposed critical habitat within the action area. Consider the impact to both individuals and the population. Discuss the short-term, construction-related, impacts as well as the long-term and permanent effects.

Direct Impacts

Short-term direct impacts to listed species as a result of the proposed maintenance dredging action potentially include entrainment in dredging equipment, degradation of water quality through turbidity, disturbance of benthic species and foraging opportunities, and disturbance to designated critical habitat and/or essential fish habitat (EFH). Noise impacts from construction and dredging activities are not anticipated because in-air and in-water noise levels will be at or below existing ambient noise levels for the Project area. Permanent impacts are not anticipated as a result of the Project. Impacts to critical habitat were discussed in Section 9.G. of this Biological Evaluation.

Entrainment in Dredging Equipment

Aquatic organisms, including listed species, present within the immediate dredging vicinity could potentially be injured or killed if picked up by the dredge bucket or if struck by dredge vessels. The entrainment potential for aquatic organisms is based on many factors related to both the dredging operation and behavior of the organism itself, the abundance of organisms in the area, swimming ability of the organism, behavioral responses of the organism to dredging activity, total area dredged, duration of dredging, and speed of dredging (Kimley et al. 2009). Larval, juvenile, and adult life stages that may be present in the vicinity of the dredge head may not be able to escape the entrainment field. However, larger organisms are less likely to be entrained. An assessment of organisms entrained in maintenance dredging operations in the Sacramento River Delta concluded that larger organisms are less likely to become entrained, perhaps due to their stronger swimming ability compared to smaller organisms (Kimley et al. 2009; SWCA 2009). This potential impact may be discountable and/or insignificant due to the small area in which dredging is to occur and the short-term nature of the work. Additionally, work will be conducted within the approved in-water work windows, making it unlikely that listed species will be present during this time.

Degradation of Water Quality
Maintenance dredging can affect water quality by suspending sediments and increasing turbidity. Turbidity occurs when suspended organic and inorganic particles in the water column scatter light wavelengths and reduce the light available to underwater environments. Sediments can be suspended during dredging activities, which increase turbidity throughout the water column at varying levels. Levels of suspended sediment are expected to be highest closest to the dredging operations. For this maintenance dredging action, larger plumes and elevated suspension levels would be expected near the area of impact of the clamshell with the river bottom. The extent of resuspension is a byproduct of several factors, including physical properties of the sediment, site conditions, nature and extent of debris and obstructions, and operational considerations of the dredge equipment and operator. Sediment plume sizes typically decrease exponentially with movement away from the dredging site both vertically and horizontally, as well as with time due to movement of suspended material downstream (Bridges et al. 2008; Nightingale and Simenstad 2001).

Suspended sediment and turbidity can affect fish (particularly salmon) via several mechanisms, including direct mortality, gill tissue damage, physiological stress, and behavioral changes. The level of impact to individuals depends on the amount of time an individual is exposed to suspended sediments, the concentration of suspended sediment in the water column, the composition of the sediments (fine-grained versus coarse-grained, chemical associations, etc.), and the concentration of contaminants associated with the sediments. Impacts could result in lethal or sublethal physical or behavioral responses from aquatic organisms. Studies have shown that typical resuspension rates range from less than 0.1% to more than 5%, with clamshell bucket type equipment more likely to produce resuspension rates at the high end of this range (Anchor 2003). Dredging BMPs described in Section 11 will be implemented during construction to limit turbidity to meet Washington State water quality standards per WAC 173-201A.

Disturbance of Benthic Species
Maintenance dredging will occur within a small area containing limited benthic species. The dredging will cause the temporary but complete removal of benthic species within the dredging footprint. This could lead to a temporary loss of foraging opportunities for aquatic species including salmonids in the vicinity of the dredging action. The recolonization of the dredged area with benthic species is expected to occur quickly within and adjacent to the dredged area.

Disturbance to Critical Habitat/EFH
Maintenance dredging actions may temporarily impact PBFs of critical habitat as previously discussed or may affect the function of EFH. Please see additional discussion in Section 13 regarding the EFH impact assessment.

Indirect Impacts

It is possible, but highly unlikely, that fuel or lubricants from the tugboat or equipment could enter the water. The tugboat and barge carry only a small amount of fuel on-board and must carry oil response cleanup equipment at all times. Crews are trained to deploy cleanup booms and materials in the event of a spill.

Effects from Interdependent Activities
Interdependent actions have no independent utility apart from the proposed action. For the Project, two interdependent activities will occur: 1) dewatering dredged material on a barge near the berth; and 2) offloading dredged material to either be reused on site, or transported to an off-site, upland management area where it will be prepared for delivery to an approved disposal facility.

Dredged material will be excavated and placed into a bunker used to retain aggregate material at the upland portion of the plant. Water from the dredged material will flow through a clean sand berm placed around the bunker before being processed with other water on the site and prior to being discharged to

the County sewer system under discharge authorization No. DA 7740-05. Dredged material will be reused as aggregate material. BMPs would be in place to avoid or minimize any material displacement during transfer.

Effects from Interrelated Activities

Interrelated actions are part of a larger action and, although they rely upon that action for their justification, the action could occur as part of another project. For this Project, there are no interrelated activities and thus no impacts will occur from interrelated activities.

11. Conservation measures:

Conservation measures are measures that would reduce or eliminate adverse impacts of the proposed activity (examples: work done during the recommended work window (to avoid times when species are most likely to be in the area), silt curtain, erosion control best management practices, percent grating on a pier to reduce shading impacts).

Conservation measures have been incorporated into the Project design in order to avoid or minimize environmental effects and the exposure of sensitive species to potential effects from maintenance dredging. The following conservation measures will be implemented to avoid or minimize environmental impacts during the Project.

- Work will be completed during regulatory approved work windows, expected to be between July 16 to July 31 and November 16 to February 1 of each year.
- Turbidity and other water quality parameters will be monitored to ensure that construction activities are in compliance with Washington State Surface Water Quality Standards per WAC 173-201A.
- Appropriate BMPs will be employed to minimize sediment loss and turbidity generation during dredging. BMPs may include, but are not limited to, the following:
  - Eliminating multiple bites while the bucket is on the bottom
  - No stockpiling of dredged material on the lakebed
  - No lakebed leveling
- The barge will be managed such that the dredged sediment load does not exceed the capacity of the barge. The load will be placed in the barge to maintain an even keel and avoid listing.
- No overtopping of the barge sideboards will be allowed during placement of dredged sediment, and no free water from the dredged sediment will be directly discharged back into the surface waters without passing through the filter media to minimize the release of suspended sediments.
- The dredging contractor will inspect fuel hoses, oil or fuel transfer valves, and fittings on a regular basis for drips or leaks in order to prevent spills into the surface water.
- The contractor shall be responsible for the preparation of a spill plan to be used for the duration of the Project to safeguard against an unintentional release of fuel, lubricants, or hydraulic fluid from construction equipment.

12. Determination of Effect:

Provide a summary of impacts concluding with statement(s) of effect, by species. Even projects that are intended to benefit the species might have short-term adverse impacts and those must be addressed. Only the following determinations are valid for listed species or designated critical habitat:

No effect. Literally no effect. No probability of any effect. The action is determined to have 'no effect' if there are no proposed or listed salmon and no proposed or designated critical habitat in the action area or downstream from it. This effects determination is the responsibility of the action agency to make and does not require NMFS review.

May Affect, Not Likely to Adversely Affect (NLAA) – Insignificant, discountable, or beneficial effects. The effect level is determined to be 'may affect, not likely to adversely affect' if the proposed action does not have the potential to hinder attainment of relevant properly functioning indicators and has a negligible (extremely low) probability of taking proposed or

listed salmon or resulting in the destruction or adverse modification of their habitat. An insignificant effect relates to the size of the impact and should never reach the scale where take occurs. A 'discountable effect' is defined as being so extremely unlikely to occur that a reasonable person cannot detect, measure, or evaluate it. This level of effect requires informal consultation, which consists of NMFS and/or USFWS concurrence with the action agency's determination.

May Affect, Likely to Adversely Affect (LAA) **This form is not appropriate for use with a project that is LAA listed species. Please see the Biological Assessment (BA) template on the Corps website:** **http://www.nws.usace.army.mil/PublicMenu/Menu.cfm?sitename=REG&pagename=mainpage_ESA**

Analysis of Effects to Species

Potential effects to the listed species include physical and behavioral impacts from temporary turbidity, entrainment, and loss of benthic food resources as a result of maintenance dredging actions. However, potential adverse effects on juvenile and adult salmonids and bull trout are not expected to be significant. Based on the guidance and definitions provided above and the previously discussed Project effects, the effect determinations for species present in Lake Washington is that the Project **may affect, but is not likely to adversely affect Puget Sound Chinook salmon, Puget Sound steelhead, and Coastal-Puget Sound bull trout.** Justification for these determinations is provided as follows:

- Turbidity effects (such as direct mortality, gill damage, stress, and behavioral changes) are not generally seen at the suspended sediment concentrations generated from dredging, particularly over a small area.
- Turbidity generated by maintenance dredging is expected to be temporary, with suspended sediment concentrations isolated to deep water areas near the bucket.
- Turbidity will be minimized during maintenance dredging through implementation of BMPs during construction, including water quality monitoring (Appendix A). It is likely that turbid sediments will disseminate to background levels within 150 feet of the bucket, in compliance with Washington State water quality standards.
- Entrainment effects will be minimal because the action takes place in deeper waters; adult salmonids are most likely to be in deeper waters and it is generally accepted that larger fish respond to pressure waves generated by the bucket and swim away.
- Substrate disturbance and disturbance of benthic and epibenthic prey will occur during in-water work. This effect will be short term and temporary due to expected rapid recovery of the benthic community following this work, and no long-term modifications of salmonid prey species habitats are expected.
- Operations will be stopped temporarily if injured, sick, or dead listed species are located in the Project area. The contractor will follow appropriate notification protocol as described in permits issued for this work.
- In-air and in-water noise from construction and dredging activities will be at or below existing ambient noise levels for the area.
- Noise levels from maintenance dredging are expected to be below both behavioral and auditory injury thresholds for fish.

Effect Determination for Critical Habitat

Based on the guidance and definitions provided above and the previously discussed Project effects, the effect determination for species likely to be present in Lake Washington is that the Project **may affect, but is not likely to adversely affect designated critical habitat for Puget Sound Chinook salmon, Puget Sound Steelhead, and Coastal-Puget Sound bull trout.** Justification for these determinations is provided as follows:

- In-water work will be restricted to the work window as described previously.
- Impacts to water column habitat could result in short-term changes in water column turbidity and suspended sediment for fish and fish prey. However, impacts to water column habitat are expected to be temporary and localized, and no long-term water quality effects are expected. Any

increase in turbidity beyond background is expected to be localized and temporary in nature, and water quality effects are not expected to be at a level that would affect the abundance of water column prey species.

- Temporary substrate disturbance will occur during dredging. However, substrate disturbance effects to prey species will be short term due to expected rapid recovery of the benthic areas following dredging, and no long-term modifications of salmonid prey species habitats are expected.
- Fish migration may be delayed during in-water work periodically for a period of hours. However, if these effects occur, they would be limited to the duration of in-water work during dredging, which will occur during the in-water work window when salmonids are expected to be present in very low numbers.
- There will be no effect on water quantity or flows.
- There will be no effect on availability of natural cover.
- There will be no effect on floodplain connectivity.
- Any spills or accidental releases of dredged material during handling will be minimized and mitigated by implementing standard and appropriate material handling and containment procedures as described in Section 11.
- Information presented earlier shows that poor conditions for rearing and migration near the Project are already significant factors for the affected species. The effects of this action will lower the value of water quality and passage in the action area over the short term, but will not affect the conservation value of the action area over the long term for the ESUs with critical habitat considered here.

13. EFH Analysis

Essential Fish Habitat (EFH) is broadly defined by the Act (now called the Magnuson-Stevens Act or the Sustainable Fisheries Act) to include "those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity". This language is interpreted or described in the 1997 Interim Final Rule [62 Fed. Reg. 66551, Section 600.10 Definitions] -- Waters include aquatic areas and their associated physical, chemical, and biological properties that are used by fish and may include historic areas if appropriate; substrate includes sediment, hard bottom, structures underlying the waters, and associated biological communities; necessary means the habitat required to support a sustainable fishery and the managed species' contribution to a healthy ecosystem; and "spawning, breeding, feeding, or growth to maturity" covers a species' full life cycle.

Additional guidance for EFH analyses can be found at the NOAA Fisheries web site under the Sustainable Fisheries Division.

A. Description of the Proposed Action (may refer to BA project description)

See description of proposed work in Section 5 of this Biological Evaluation.

B. Addresses EFH for Appropriate Fisheries Management Plans (FMP)

This document was prepared as a resource document for concurrent EFH consultation with NMFS for compliance with the Magnuson-Stevens Fishery Conservation and Management Act and the 1996 Sustainable Fisheries Act. EFH is defined by the Magnuson-Stevens Fishery Conservation and Management Act in 50 Code of Federal Regulations 600.905-930 as "those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity." The Project area includes designated EFH for Pacific salmon and groundfish (NOAA Fisheries 2022b). EFH and life history stages for these species are listed in Table 4.

The objective of this assessment is to describe potential adverse effects to designated EFH for federally managed fisheries species within the action area. It also describes conservation measures proposed to avoid, minimize, or otherwise offset potential adverse effects to designated EFH resulting from the Project.

Table 4
Magnuson-Stevens Fishery Conservation and Management Act
Managed Species and Life History Stages with Designated
Essential Fish Habitat that May Occur in the Project Vicinity

Species	Adult	Spawning/ Mating	Juvenile	Larvae	Eggs/ Parturition
Chinook salmon	X	X	X	X	X
Coho salmon	X	X	X	X	X
Groundfish	X	X	X	X	X

C. Effects of the Proposed Action

i. Effects on EFH (groundfish, coastal pelagic, and salmon EFH should be discussed separately)

Analysis of Effects on Essential Fish Habitat

The assessment of potential impacts from the proposed Project to the species' EFH is based on information in Appendix A of Amendment 14 in the Pacific Coast Salmon Plan (PFMC 1999). The specific elements of the Project that could impact EFH, and the impact mechanisms and minimization measures that avoid and minimize impacts, are identified in Table 5.

Table 5
Impact Mechanisms of Dredging on Essential Fish Habitat

Affected EFH	Impact Mechanism	Conservation Measures
Suspended sediment concentrations in water column EFH could be temporarily elevated.	Maintenance dredging could cause temporary increases in suspended sediment and turbidity in the Project area. Potential suspended sediment and turbidity impacts to salmonids may include reduction in feeding success, direct mortality, gill damage, stress, increased susceptibility to disease, or behavioral responses. Suspended sediment from dredging may affect benthic prey species. Salmonids found in Lake Washington also utilize pelagic prey in addition to benthic prey. Salmonids are mobile and generally able to distinguish and avoid areas where prey are less abundant.	Water quality parameters will be monitored to ensure compliance with all permit conditions. All material will be dewatered and either reused on site or delivered to a permitted upland transfer station.
Suspension of sediment has the potential to adversely affect water column EFH by reducing dissolved oxygen (DO).	High concentrations of suspended sediments have the potential to reduce DO levels by exposing nutrients to bacterial breakdown. LaSalle (1990) concluded that, based on the relatively low levels of suspended material generated by dredging operations and considering factors such as flushing, DO depletion around these activities should be minimal.	Water quality parameters will be monitored to ensure compliance with all permit conditions.
Water column EFH could be adversely affected by spills from construction equipment.	There is a nominal chance that an unintentional release of fuel, lubricants, or hydraulic fluid from the barge and tug could lead to adverse impacts to salmonid EFH. Salmonid species are mobile and would be expected to avoid areas where unsuitable conditions exist.	Spill control equipment is kept on-board and personnel are instructed in its use.
Temporary loss of benthic prey resources.	Dredging activity may entrain benthic prey species. Salmonids found in Lake Washington also use pelagic food webs in addition to benthic food webs. Salmonids are mobile and generally able to distinguish and avoid areas where prey are less abundant.	Benthic resources are expected to recolonize after maintenance dredging activities occur.

ii. Effects on Managed Species (unless effects to an individual species are unique, it is not necessary to discuss adverse effects on a species-by species basis)

There are no unique effects to an individual species as a result of the Project.

iii. Effects on Associated Species, Including Prey Species

No impacts on the health or availability of prey species are anticipated.

iv. Cumulative Effects

This Project will dredge to previously maintained depths within the berth area. There are no future state, tribal, local, or private actions in the vicinity of the Project that are reasonably certain to occur within the Project footprint that would result in cumulative effects to EFH.

D. Proposed Conservation Measures

See proposed conservation measures in Section 11 of this Biological Evaluation.

E. Conclusions by EFH (taking into account proposed conservation measures)

Essential Fish Habitat Determination of Effect

The impacts of the Project on EFH are discussed in Table 5. Glacier will remove material from an operational berth area. Maintenance dredging may temporarily resuspend sediments, temporarily reduce dissolved oxygen (DO), entrain benthic prey, alter benthic habitat in the action area, and could result in the unintentional release of petroleum products into the water column in the unlikely event of a spill. Potential adverse impacts are expected to be temporary. Adverse impacts to EFH by sediment resuspension will be monitored to trigger additional controls if necessary, so that turbidity does not exceed any triggers identified in the permit conditions. DO depletion around dredging activities should be minimal because the relatively low levels of suspended material generated will be counterbalanced by flushing. Salmonids and groundfish may not be substantially affected by the benthic community disturbance, as they do not rely solely upon the benthic food web. Additionally, conservation measures and BMPs as described in Section 11 of this Biological Evaluation will be implemented to avoid or minimize potential environmental impacts. Therefore, it is concluded that the Project **will not adversely affect** salmonid or groundfish EFH.

14. References:

Include any studies or papers that support statements made in this form (example: reference the source for the listed species that are covered).

Anchor (Anchor Environmental, LLC), 2003. Literature Review of Effects of Resuspended Sediments Due to Dredging Operations. Prepared for Los Angeles Contaminated Sediments Task Force Los Angeles, California. Prepared by Anchor Environmental CA, L.P. June 2003.

Bridges, T.S., S. Ells, D. Hayes, D. Mount, S. C. Nadeau, M.R. Palermo, C. Patmont, and P. Schroeder, 2008. The Four Rs of Environmental Dredging: Resuspension, Release, Residual, and Risk. Prepared for USACE Dredging Operations and Environmental Research Program. January 2008.

City of Kenmore, 2019. City of Kenmore Official Zoning Map. Accessed November 14, 2022. Available at: https://www.kenmorewa.gov/home/showpublisheddocument/648/637221184319170000.

Dickerson, C., K.J. Reine, and D.G. Clarke, 2001. Characterization of underwater sounds produced by bucket dredging operations. DOER Technical Notes Collection (ERDC TN-DOER-E14), U.S. Army Engineer Research and Development Center, Vicksburg, MS. Available at: https://www.fisheries.noaa.gov/resource/document/characterization-underwater-sounds-produced-bucket-dredging-operations.

Ecology (Washington State Department of Ecology), 2022. Washington State Water Quality Assessment. Accessed November 14, 2022. Available at: https://fortress.wa.gov/ecy/waterqualityatlas.

Herrera (Herrera Environmental Consultants, Inc.), 2017. Lake Washington and the Sammamish River within the City of Kenmore, Washington; Integrated Aquatic Vegetation Management Plan. Prepared for the City of Kenmore. June 30, 2017.

Herrera, 2021. Lake Washington and the Sammamish River within the City of Kenmore, Washington; Integrated Aquatic Vegetation Management Plan 2020 Update. Prepared for the City of Kenmore. March 19, 2021.

Kimley, A.P., M.J. Thomas, M.G. Nafus, and A.R. Hearn, 2009. Past, present and future studies of green sturgeon movements in the SF Estuary germane to dredge removal and disposal. Presentation to SFEI Symposium Sturgeon and Smelt in SF Bay. Biotelemetry Laboratory, UC Davis.

LaSalle, 1990. Physical and Chemical Alterations Associated with Dredging: an Overview. Pp. 1 to 12 in C.A. Simenstad, ed. Effects of Dredging on Anadromous Pacific Coast Fishes. University of Washington, Seattle, Washington.

MacGillivray, A., E. Ziegler, and J. Laughlin. 2007. Underwater acoustic measurements from Washington State Ferries 2006 Mukilteo Ferry Terminal Test Pile Project. Technical report prepared by JASCO Research, LTD for Washington State Ferries and Washington State Department of Transportation.

Nightingale, B. and C. Simenstad, 2001. White Paper – Dredging Activities: Marine Issues. Submitted to Washington Department of Fish and Wildlife, Washington Department of Ecology, and Washington Department of Transportation. University of Washington, School of Aquatic and Fishery Sciences, Wetland Ecosystem Team. Seattle, Washington.

NOAA Fisheries (National Oceanic and Atmospheric Administration Fisheries), 2018. Technical Guidance for Assessing the Effects of Anthropogenic Sound on Marine Mammal Hearing (Version 2.0): Underwater Thresholds for Onset of Permanent and Temporary Threshold Shifts. April 2018. Available at: https://www.fisheries.noaa.gov/resource/document/technical-guidance-assessing-effects-anthropogenic-sound-marine-mammal.

NOAA Fisheries, 2022a. Species Directory. NOAA Fisheries West Coast Region. Accessed November 14, 2022. Available at: https://www.fisheries.noaa.gov/species-directory/threatened-endangered.

NOAA Fisheries, 2022b. Essential Fish Habitat Mapper. Accessed: November 14, 2022. Available at: https://www.fisheries.noaa.gov/resource/map/essential-fish-habitat-mapper.

PFMC (Pacific Fisheries Management Council), 1999. Appendix A. Identification and Description of Essential Fish Habitat, Adverse Impacts, and Recommended Conservation Measures for Salmon. PFMC, Portland, Oregon. 146 pgs.

PSBRT (Puget Sound Biological Review Team), 2005. Status review update for Puget Sound Steelhead. National Marine Fisheries Service, Northwest Fisheries Science Center, Seattle, Washington.

SWCA (SWCA Environmental Consultants), 2009. Stockton and Sacramento Deepwater Ship Channel Maintenance Dredging Project 2008 Fish Community and Entrainment Monitoring Report. Prepared for U.S. Army Corps of Engineers Sacramento District. Prepared by SWCA Environmental Consultants, Portland OR. April 2009.

Tabor, R.A., and R.M. Piaskowski, 2002. Nearshore habitat use by juvenile Chinook salmon in lentic systems of the Lake Washington Basin. Annual Report, 2001. Seattle Public Utilities, City of Seattle, Washington.

Tabor, R.A., J.A. Scheurer, H.A. Gearns, and E.P. Bixler, 2004. Nearshore habitat use by juvenile Chinook salmon in lentic systems of the Lake Washington basin. Annual Report, 2002. Seattle Public Utilities, City of Seattle, Washington.

Tabor, R.A., H. Gearns, C. McCoy III, and S. Camacho, 2006. Nearshore Habitat Use by Juvenile Chinook Salmon in Lentic Systems, 2003 and 2004 Report. U.S. Fish and Wildlife Service Western Washington Fish and Wildlife Office. March 2006.

USFWS (U.S. Fish and Wildlife Service), 2022a. List of threatened and endangered species that may occur in your proposed project location, and/or may be affected by your proposed project. USFWS Information for Planning and Consultation. November 14, 2022.

USFWS, 2022b. Species Profile for Marbled Murrelet. USFWS Environmental Conservation Online System. Accessed: November 14, 2022. Available at: https://ecos.fws.gov/ecp/species/4467.

Volkhardt, G., D. Seiler, L. Fleischer, and K. Kiyohara, 2006. Evaluation of downstream migrant salmon production in 2005 from the Cedar River and Bear Creek. WDFW, Olympia, Washington.

WDFW (Washington Department of Fish and Wildlife), 2016. Periodic Status Review for the Marbled Murrelet. October 2016. Accessed December 2, 2021. Available at: https://wdfw.wa.gov/species-habitats/species/brachyramphus-marmoratus#desc-range.

WDFW, 2022a. SalmonScape. Accessed November 14, 2022. Available at: https://apps.wdfw.wa.gov/salmonscape/.

WDFW, 2022b. WDFW Priority Habitats and Species on the Web. Accessed November 14, 2022. Available at: https://wdfw.wa.gov/species-habitats/at-risk/phs/maps.

WDNR (Washington Department of Natural Resources), 2022. Puget Sound Seagrass Monitoring. Accessed November 14, 2022. Available at: https://www.dnr.wa.gov/programs-and-services/aquatics/aquatic-science/puget-sound-eelgrass-monitoring-data-viewer.

WSDOT (Washington State Department of Transportation), 2020. Biological assessment preparation manual and templates. Accessed November 14, 2022. Available at: https://wsdot.wa.gov/environment/technical/fish-wildlife/esa-efh/BA-preparation-manual.

15. Appendices:

As needed include mitigation, revegetation plans, monitoring plans, results of studies, water quality information, etc.

APPENDIX A
SPECIES LISTS

Washington State's Threatened & Endangered Species

As Regulated by the USFWS and NOAA Fisheries

Updated April 13, 2018

Endangered (15)

Bradshaw's Desert-parsley *(Lomatium bradshawii*)
Georgia Basin DPS Bocaccio Rockfish (*Sebastes paucispinis)*
Gray wolf *(Canis lupus)* (Northern Rocky Mt. DPS delisted May 2011)
Humpback Whale *(Megaptera novaeangliae)*
Leatherback Sea Turtle *(Dermochelys coriacea)*
Loggerhead Sea Turtle, North Pacific DPS *(Caretta caretta)* Revised in 2011
Marsh Sandwort *(Arenaria paludicola***)**
Pygmy Rabbit *(Brachylagus idahoensis)*
Short-tailed Albatross *(Phoebastria albatrus)*
Showy Stickseed *(Hackelia venusta*)
Snake River ESU Sockeye Salmon *(Oncorhynchus nerka)*
Southern Resident Killer Whale (*Orcinus orca*)
Taylor's Checkerspot Butterfly *(Euphydryas editha taylori)*
Upper Columbia River spring-run ESU Chinook Salmon *(O. tshawytscha)*
Wenatchee Mountains Checkermallow *(Sidalcea oregana* var. *calva*)
Woodland Caribou *(Rangifer tarandus caribou)*

Designated Critical Habitat (37)

Canada Lynx (revised 2014)
Coastal-Puget Sound DPS Bull trout
Columbia River ESU Chum Salmon
Columbia River DPS Bull trout
Hood Canal summer-run ESU Chum Salmon
Kincaid's Lupine
Leatherback Sea Turtle
Lower Columbia River DPS Steelhead
Lower Columbia River ESU Chinook Salmon
Marbled Murrelet (revised in 2011)
Northern Spotted Owl (revised in 2012)
Oregon spotted frog
Middle Columbia River DPS Steelhead
Ozette Lake ESU Sockeye Salmon
Pacific Coast DPS Western Snowy Plover (revised 6/19/12)
Puget Sound ESU Chinook Salmon
Snake River Basin DPS Steelhead
Snake River ESU Sockeye Salmon
Snake River fall-run ESU Chinook Salmon
Snake River spring/summer-run ESU Chinook Salmon
Southern DPS North American Green Sturgeon
Southern DPS Eulachon
Southern Resident Killer Whale
Streaked horned lark
Taylor's checkerspot butterfly
Umtanum Desert Buckwheat
White Bluffs Baldderpod
Upper Columbia River DPS Steelhead
Upper Columbia River spring-run ESU Chinook
Upper Willamette River DPS Steelhead
Upper Willamette River ESU Chinook Salmon
Wenatchee Mountains Checkermallow
Woodland Caribou
Western (Mazama) Pocket Gopher
Puget Sound Rockfish (Bocaccio and yelloweye rockfish)
Lower Columbia River ESU Coho Salmon
Puget Sound DPS Steelhead

Proposed Critical Habitat (0)

Threatened (41)

Bull trout – Columbia River DPS *(Salvelinus confluentus)*
Bull trout – Coastal-Puget Sound DPS *(S. confluentus)*
Canada Lynx *(Lynx canadensis)*
Columbian White-tailed Deer *(Odocoileus virginianus leucurus)*
Columbia River ESU Chum Salmon *(Oncorhynchus keta)*
Georgia Basin DPS Yelloweye Rockfish (*S. ruberrimus*)
Golden Paintbrush *(Castilleja levisecta*)
Green Sea Turtle *(Chelonia mydas)*
Grizzly Bear *(Ursus arctos = U. a. horribilis)*
Hood Canal summer-run ESU Chum Salmon *(O. keta)*
Kincaid's Lupine *(Lupinus sulphureus kincaidii*)
Lower Columbia River ESU Chinook Salmon *(O. tshawytscha)*
Lower Columbia River ESU Coho Salmon *(Oncorhynchus kisutch)*
Lower Columbia River DPS Steelhead *(O. mykiss)*
Marbled Murrelet *(Brachyramphus marmoratus)*
Middle Columbia River DPS Steelhead *(O. mykiss)*
Nelson's Checkermallow *(Sidalcea nelsoniana*)
Northern Spotted Owl *(Strix occidentalis caurina)*
Olive Ridley Sea Turtle *(Lepidochelys olivacea)*
Oregon Silverspot Butterfly *(Speyeria zerene hippolyta)*
Ozette Lake ESU Sockeye Salmon *(O. nerka)*
Puget Sound ESU Chinook Salmon *(O. tshawytscha)*
Puget Sound DPS Steelhead (*O. mykiss*)
Snake River fall-run ESU Chinook Salmon *(O. tshawytscha)*
Snake River spring/summer-run ESU Chinook Salmon *(O. tshawytscha)*
Snake River Basin DPS Steelhead *(O. mykiss)*
Southern DPS North American Green Sturgeon (*Acipenser medirostris*)
Southern DPS of Pacific Eulachon (*Thaleichthys pacificus*)
Spalding's Catchfly *(Silene spaldingii*)
Streaked Horned Lark *(Eremophila alestris strigata)*
Umtanum Desert Buckwheat *(Eriogonum codium*)
Upper Columbia River DPS Steelhead *(O. mykiss)*
Upper Willamette River ESU Chinook Salmon *(O. tshawytscha)*
Upper Willamette River DPS Steelhead *(O. mykiss)*
Ute ladies'-tresses *(Spiranthes diluvialis*)
Water Howellia *(Howellia aquatilis*)
Western Snowy Plover *(Charadrius alexandrinus nivosus)*
White Bluffs Baldderpod *(Physaria tuplashensis*)
Oregon Spotted frog *(Rana pretiosa)*
Yellow-billed Cuckoo *(Coccyzus americanus)*
Western (Mazama) Pocket Gopher *(Thomomys mazama)*

Proposed Species (2)

Dolly Varden (*Salvelins malma*) (This species is proposed for listing under the ESA "Similarity of Appearance" provision, section 4(e). However, WSDOT does not address this species in Biological Assessments)

Island Marble Butterfly (*Euchloe ausonides insulanus*) proposed endangered

Candidate (1)

Wolverine (Gulo gulo luscus)

ESU = *Evolutionarily Significant Unit*
DPS = *Distinct Population Segment*

Washington State Department of Transportation

Bold = USFWS Jurisdiction

Non-bold = NOAA Fisheries Jurisdiction