STILLING BASIN SEDIMENT REMOVAL

Appendix B
Clean Water Act Section 404(b)(1) Evaluation

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Walla Walla District
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1. BACKGROUND INFORMATION

1.1. 404(b)1 Guidelines

Section 404 of the Clean Water Act of 1977 (the “Act”) requires that all projects involving the discharge of dredged or fill material into waters of the United States be evaluated for water quality and other effects prior to making the discharge. This Section 404(b)(1) Evaluation addresses water quality effects of a proposed in-water disposal of materials dredged from the forebay stilling basins of Lower Granite, Little Goose, and Lower Monumental dams (Projects). This work includes the dredging and disposal of approximately 36,150 cubic yards (cy) of coarse sediments from the Projects. This work is to occur at Lower Granite and Lower Monumental from December 2024 to March 2025 followed by Little Goose which would be completed from December 2025 to March 2026.

This evaluation assesses the potential effects of the proposed discharge and possible alternatives utilizing guidelines established by the U.S. Environmental Protection Agency (EPA) under Section 404(b)(1) of the Act (40 C.F.R. 230). Although USACE does not process and issue permits for its own activities (33 C.F.R. 336.1(a)), USACE authorizes its own discharges of dredged or fill material by applying all applicable substantive legal requirements, including application of the section 404(b)(1) guidelines and associated evaluation factors in 33 C.F.R. 336.1(c).

1.2. USACE Authority, Purpose and Need

USACE authority to construct, operate, and maintain the Lower Snake River Projects (LSRP) was first established in Section 2 of the River and Harbor Act (Public Law (PL) 79-14) and approved March 2, 1945, in accordance with House Document 704, 75th Congress, 3rd Session. The Projects are covered under the River and Harbor Act and the Flood Control Act of 1944 (PL 78-534), both Acts grant USACE authority to construct, operate, and maintain these facilities.

USACE proposes to remove accumulated debris and sediment, dispose of the removed debris, and survey the stilling basins at Lower Granite, Little Goose, and Lower Monumental dams. An action is needed large cobble is drawn into the stilling basins, where is circulates in strong, spill-driven eddies. The cobble both damages and obscures the spillway aprons, creating unknown, but potentially hazardous conditions. Without periodic inspection and completed of appropriate repairs, the spillways could adversely affect authorized project purposes.

The purpose of the action is to identify existing and prevent further damage to the stilling basins at the Projects. The selected alternative should clear cobbles and sediment from the stilling basins to expose the basins for inspection. Removal of cobbles would also prevent further damage to the basins, at least in the short-term.

2. PROPOSED ACTION DESCRIPTION

2.1. Location of the Proposed Action

The proposed actions would take place in Columbia, Franklin, Garfield, Walla Walla, and Whitman counties, Washington.

Lower Granite Dam is located approximately 27 miles northeast of Pomeroy, Washington, and southwest of Pullman, Washington at River Mile (RM) 107.5 on the Snake River (Figure 1 2). This dam is about 32 miles downstream from the Snake/Clearwater River confluence. The dam straddles Garfield and Whitman Counties, Washington and the reservoir impoundment, Granite Lake, extends up the Snake River into Asotin County, Washington, and up the Clearwater River into Nez Perce County, Idaho.

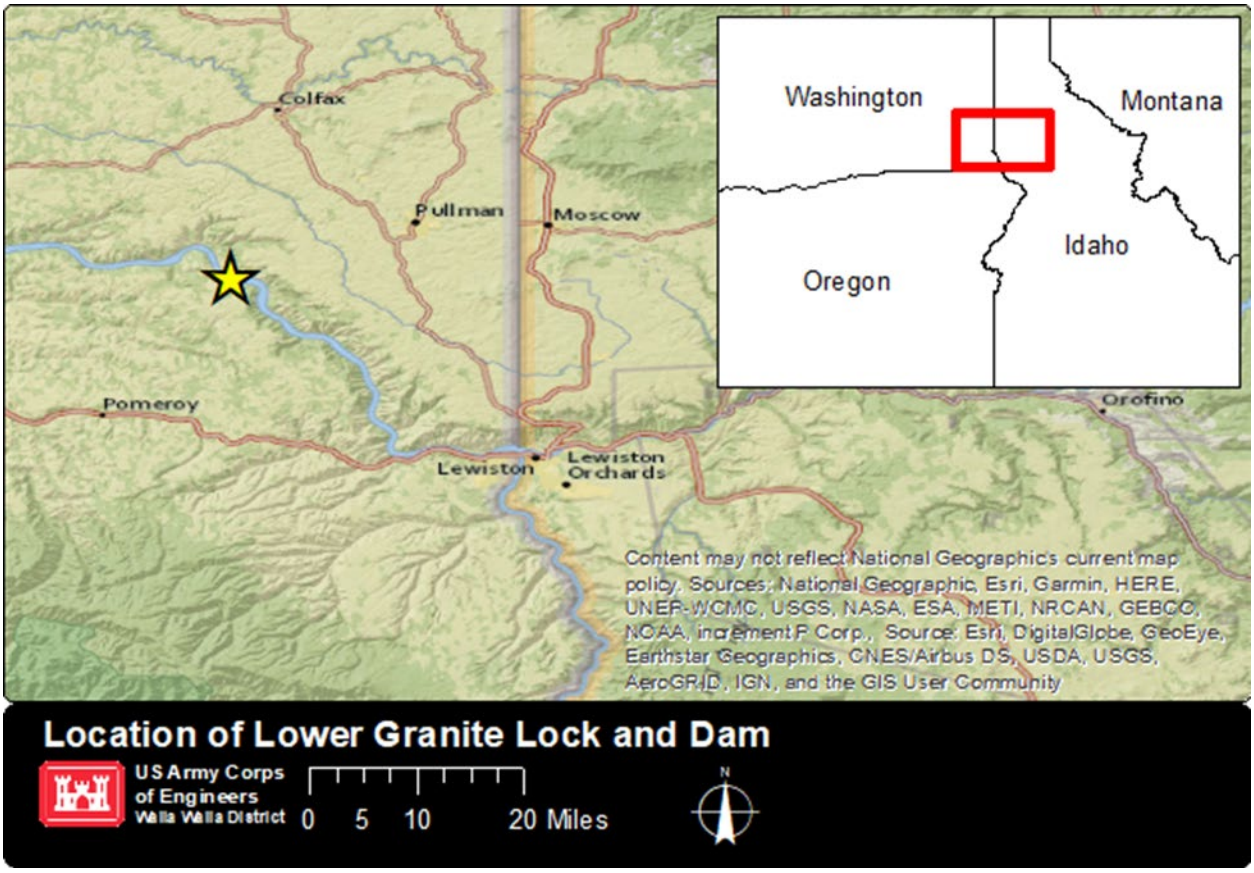

Figure 1. The Location of Lower Granite Lock and Dam

Little Goose Lock and Dam is located on the Snake River, at RM 70.3 (Figure 1 3). The dam and reservoir lie in southeastern Washington, with the right abutment of the dam in Whitman County and the left abutment in Columbia County. The reservoir impoundment of the Snake River, called Lake Bryan, extends 37.2 miles east to the base of Lower Granite Lock and Dam near Pomeroy, Washington at approximately RM 107.5.

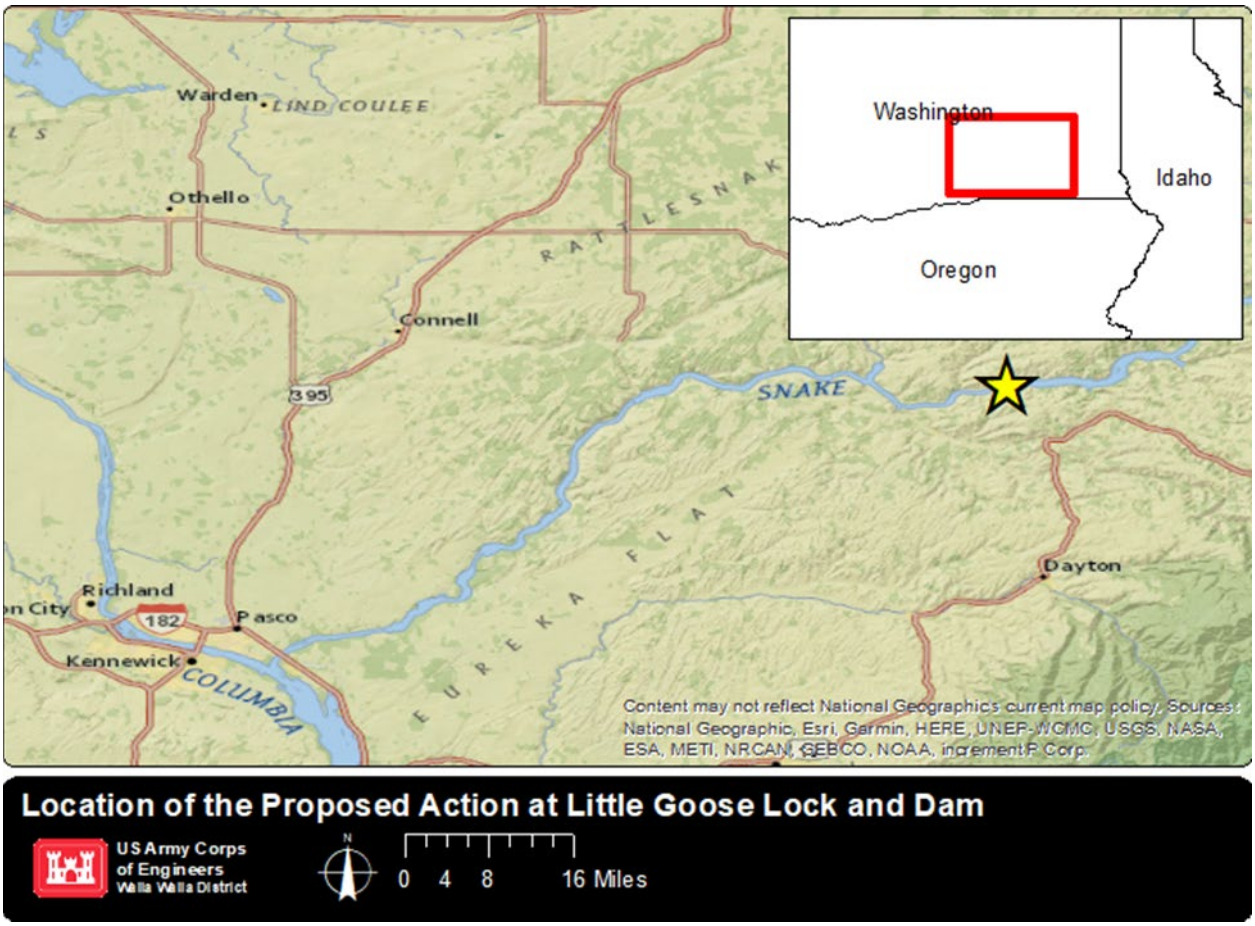

Figure 2. The Location of Little Goose Lock and Dam

Lower Monumental Lock and Dam is located on the Snake River, at RM 41.6 (Figure 1 4). The dam and reservoir lie in southeastern Washington, with the right abutment of the dam in Franklin County and the left abutment in Walla Walla County Washington. The reservoir impoundment of the Snake River, called Lake Herbert G. West, extends 28 miles east to the base of Little Goose Lock and Dam near Starbuck, Washington at approximately RM 70.3.

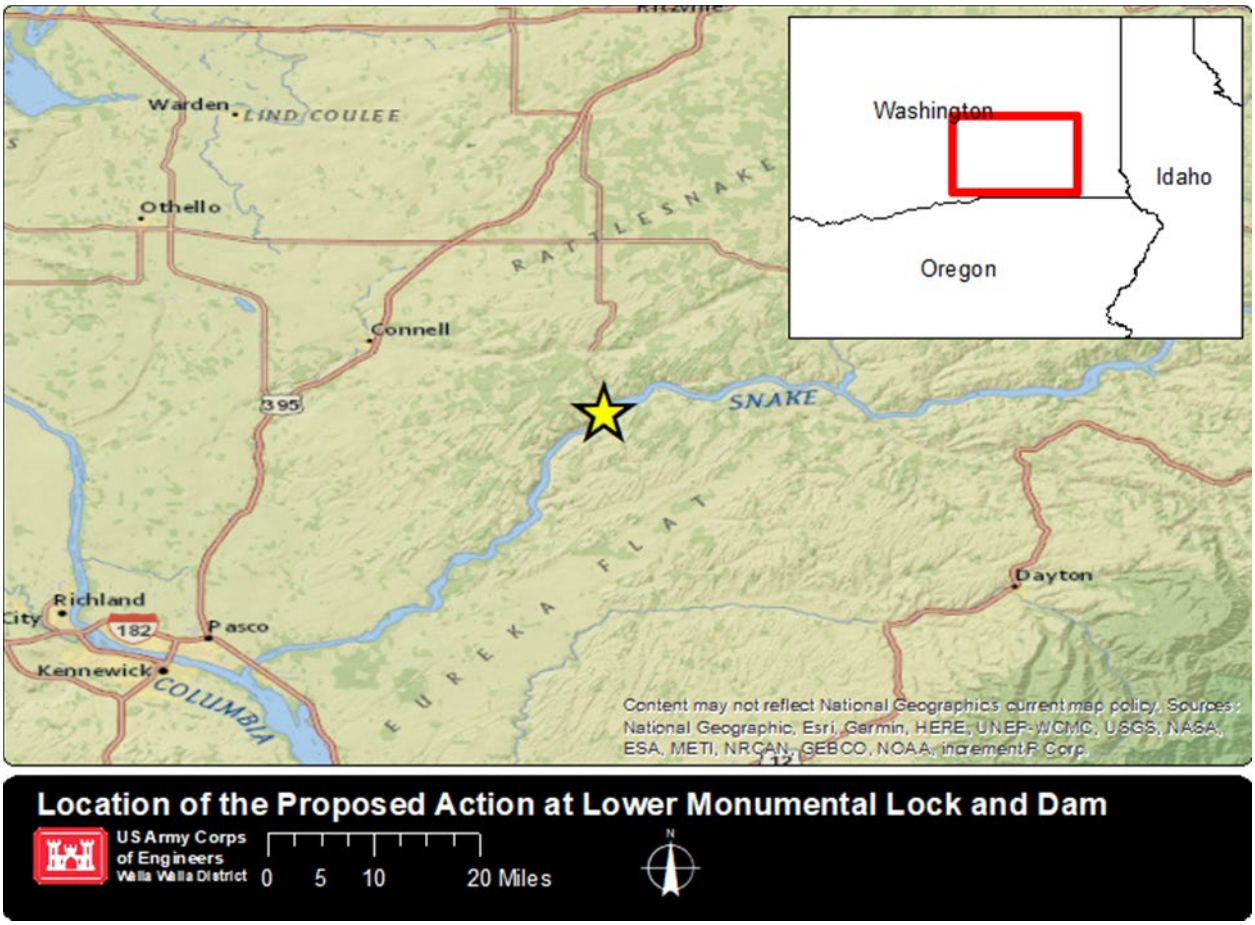

Figure 3. The Location of Lower Monumental Lock and Dam

All dredged material will be disposed of in the river at one of two disposal sites (Figure 1-4): near Swift Bar HMU (below Lower Granite Dam) at river mile (RM) 96 for the sediment from Lower Monumental stilling basin and Lower Granite stilling basin, and near Joso HMU (below Little Goose Dam) at RM 57 for the Little Goose stilling basin material. Disposed material will be placed in a manner to minimize piling of the material that could create predatory fish habitat. The final grade of the material is expected to create a gentle slope with no dramatic contours. The material would also not be placed within the deepest parts of the river near the disposal areas which will protect cold-water refugia for fish.

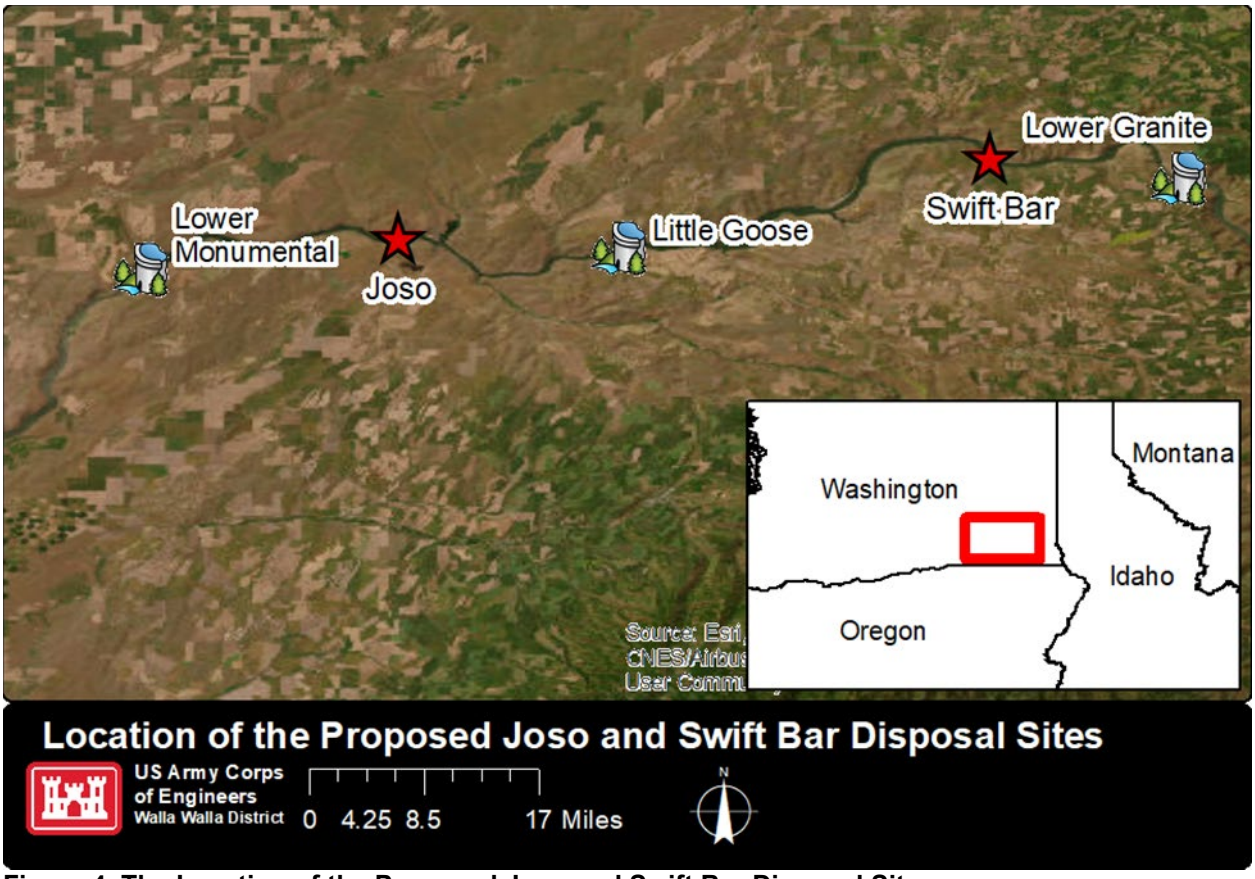

Figure 4. The Location of the Proposed Joso and Swift Bar Disposal Sites

2.2. General Description of the Proposed Action

Spill operations and the existence of spill deflectors at Lower Monumental, Little Goose, and Lower Granite create hydraulic conditions that allow recruitment of debris into the spillway stilling basins. Large vertical rollers paired with strong lateral eddies create currents within the dam tailraces capable of pulling large rock and cobble into the basin. The tailraces at the subject dams have geometries allowing for the debris to enter their respective basins. The presence of strong hydraulic currents and debris within the basins elevates the risk of abrasion and erosion of the concrete apron. The subject tailraces currently possess significant sediment that is capable of movement during spill operation.

Historical operations and configurations of the dams allowed for the end spillbays to operate during high spill events. These end bay operations, paired with a non-deflector configuration, allowed for any accumulated debris within basins to be flushed downstream on a routine yearly basis. The addition of end bay deflectors and the increased spill duration and volume for fish passage has prevented the spillway from clearing debris and allowed for sediment accumulation.

The condition of the stilling basin concrete for the three operating dam projects remains unknown since the addition of end bay spillway deflectors and the implementation of voluntary spill for downstream fish passage. Routine multibeam surveys are conducted on a 5-year interval as part of the Dam Safety program to determine if a change in condition occurs within the stilling basins. These surveys have continually demonstrated the accumulation of debris within the basins but are unable to establish the condition of the concrete due to the presence of the debris.

USACE proposes a bathymetric survey to determine the quantity and location of debris and sediments that need to be removed. Accumulated sediment would then be removed with a clamshell dredge utilizing in-water disposal methods. A hydraulic suction dredge would be used to remove sediment that cannot be removed with the clamshell. Diver assisted suction dredging would follow, performing detailed sediment removal so that a thorough condition survey of the spillway aprons and stilling basins can be accomplished and documented. Once clear of sediments and debris, the aprons and stilling basins would be post-surveyed with multibeam sonar technology and supplemented with diver collected data to perform a detailed survey of problem areas identified.

The alternative would begin by temporarily removing the avian deterrent wires from the project spillways, then documenting the existing conditions with a pre-dredge condition bathymetric survey. Following the acceptance of the pre-dredge survey, accumulated sediments will be removed with a clamshell dredge utilizing in-water disposal downstream of the work site. To remove the sediments (cobble and large debris), the c a barge mounted clamshell dredge bucket would be used to remove material from the spillway aprons and stilling basins. Removal of lighter and finer materials with the dredge plant requires a slower and more targeted approach to dredging than standard production dredging. A hydraulic suction dredge would be used to remove sediment from tight areas between structures such as the baffle blocks at the downstream end of the stilling basins.

Not all the sediment can be removed by the clamshell or hydraulic dredge. Sediments that are inaccessible by the clamshell or hydraulic dredge (possibly between the baffle blocks, such as those at Little Goose; in damaged areas of the concrete; in corners, etc.) would be removed by divers utilizing hand operated equipment. A diver-operated suction dredge will be used to assist the divers in removing the sediment from around the baffle blocks and similar areas that cannot be accessed by the other dredging methods.

All dredged material will be disposed of in the river at one of two disposal sites (Figure 4): near Swift Bar HMU (below Lower Granite Dam) at river mile (RM) 96 for the sediment from Lower Monumental stilling basin and Lower Granite stilling basin, and near Joso HMU (below Little Goose Dam) at RM 57 for the Little Goose stilling basin

material. Disposed material will be placed in a manner to minimize piling of the material that could create predatory fish habitat. The final grade of the material is expected to create a gentle slope with no dramatic contours. The material would also not be placed within the deepest parts of the river near the disposal areas which will protect cold-water refugia for fish. Approximately 36,150 cubic yards (cy) of cobble and sediment would be removed and disposed of; 8,000 cy from Lower Granite, 28,000 cy from Little Goose, and 150 cy from Lower Monumental (Table 1).

Table 1. Approximate Quantities of Accumulated Sediment to be Removed from three Lower Snake River Dam Stilling Basins Measured in Cubic Yards (CY)

Dam	River Mile	Approximate Quantity to be Removed (CY)
Lower Granite	107.5	8,000
Little Goose	70.3	28,000
Lower Monumental	41.6	150

The following conservation measures would be incorporated as part of Alternative 2. Conservation measures are intended to minimize or avoid environmental impacts to listed species or critical habitats. Conservation measures are incorporated into design as a proactive means for avoiding or minimizing adverse impacts associated with construction activities. The conservation recommendations listed below are consistent with obligations to ESA compliance for dredging and disposal operations as well as for the survival and recovery of ESA-listed Snake River salmonid ESUs and DPS. Therefore, the conservation measures listed below would be implemented by USACE to avoid or minimize adverse effects to the survival and recovery of Snake River sockeye salmon, Snake River fall Chinook salmon, Snake River spring and summer Chinook salmon, Snake River basin steelhead, and bull trout, including adverse effects on designated critical habitat for these species:

1. Conduct work during the winter in-water work window of December 15 to March 1 when relatively few anadromous fish species are present. The work window could be further restricted to start January 1 when the fish ladders are taken out of service for annual maintenance.
2. Place dredged material far enough downstream that it doesn’t reenter the stilling basin.
3. Place dredged material in such a manner that it does not create steep mounds that could attract predatory fish species.
4. Avoid placing the material in the deepest parts of the river near the disposal areas.

Construction Activities and Schedule

All dredging and disposal actions would occur during the in-water work window from December 15 to March 1. This in-water work window was established through coordination with state and Federal resource agencies, as the in-water work window selected would have the least impact to Endangered Species Act listed (ESA) salmonid stocks. The work would require two in-water work windows (one for Lower Monumental and Lower Granite, and one for Little Goose) in consecutive years. Dredge plants (any type of industrial equipment, including mobile equipment) would operate 24 hours per day to complete the scope of work within the in-water work window from December 15 to March 1. The proposed schedule for the stilling basin sediment removal would be spaced out with Lower Granite and Lower Monumental to be cleaned out first from December 2024 to March 2025 followed by the clean out of Little Goose which would be completed from December 2025 to March 2026. No flow through the spillways can occur during the proposed dredging work.

2.3. Alternatives Considered

USACE considered several alternatives, including the no action, dredging with in-water disposal, and dredging with upland disposal.

3. FACTUAL DETERMINATIONS

3.1. Physical Determinations

3.1.1. Substrate Elevation and Slope

The topographies of the dredging areas are that of concrete basins constructed at the base of the dam faces. Each basin consists of a small (approximately 10-foot long) flat area at the base of the spillway that leads to a peaked tooth approximately 15-feet tall, followed by an end sill (Figure 5). The material to be excavated consists of 1-inch to 30-inch rocks that collect between the tooth and the spillway.

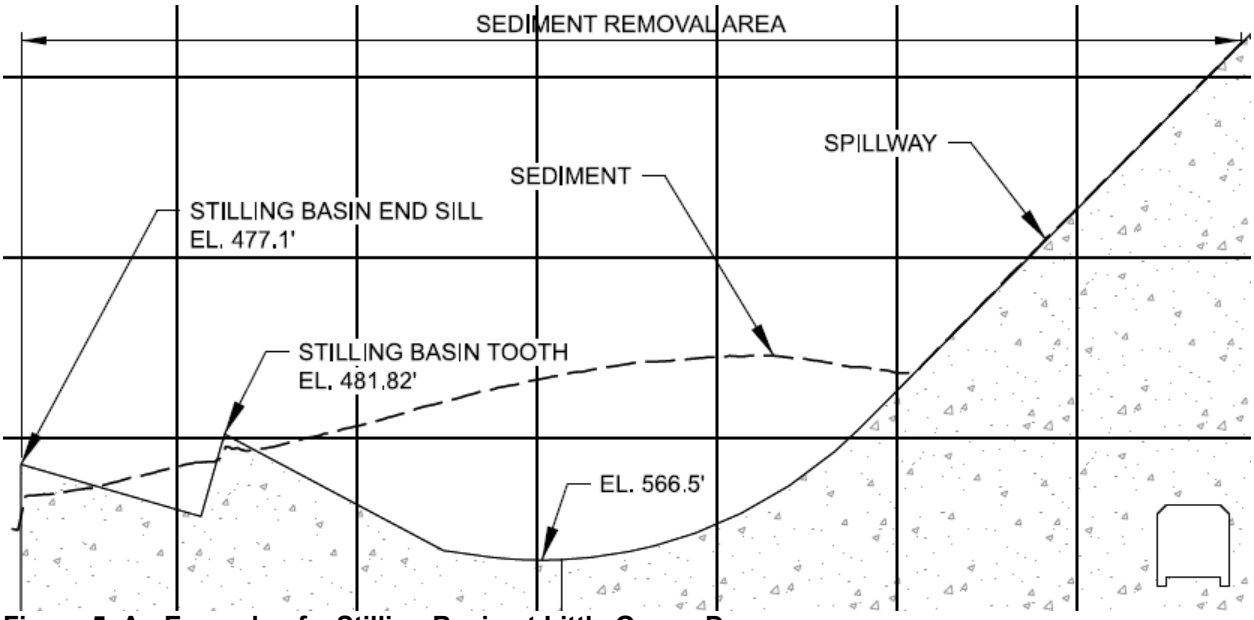

Figure 5. An Example of a Stilling Basin at Little Goose Dam

3.1.2. Sediment Type

According to surveys of the stilling basins conducted by underwater autonomous vehicles (UAV), sediments in the basins consist of 1-inch to 30-inch rocks and cobbles.

3.1.3. Excavated and Fill Material Movement

Beyond the accumulated rock and cobble to be dredged, there is no other material to be found in the dredge sites. These locations are subject to extreme scouring forces from dam spill and all fines, sand, and smaller gravels are flush from the locations. Larger rocks and cobbles have sufficient mass to settle behind the tooth. No other movement of material would occur beyond the dredging itself.

3.1.4. Physical Effects on Benthos

Due to the extreme current and force of the spillways, the accumulated cobbles do not host significant benthos, nor do the concrete spillways themselves. There are no softer sediments present for benthos to colonize, only scoured rock and cobble.

3.2. Water Circulation, Fluctuation, and Salinity Determinations

3.2.1. Water Chemistry

There are no significant fluctuations of water chemistry expected following the proposed dredging or placement, and no violations of applicable state water standards are anticipated. Impacts should be temporary in nature. Only clean rock and cobble would be dredged or placed.

3.2.2. Current Patterns and Circulation.

Water at the dredged sites spills over the face of the dams and lands in the stilling basin. While most flow is downstream, significant eddies and back currents also occur in the stilling basin, especially during higher flow and spill periods. At disposal sites, the river flows gently downstream.

3.2.3. Normal Water Level Fluctuation.

The normal water level at both the dredge and deposit locations is controlled by the operations of the Lower Snake River Dams. Water level fluctuates in the spillways and stilling basins based on the volume of spill at the moment. Outside of the stilling basins, water levels remain within an approximately five-foot range in the Lower Snake River. The normal operating range of the Lower Monumental forebay is 537 to 540 feet above mean sea level (msl), 633 to 638 feet msl at Little Goose, and 733 to 738 msl at Lower Granite.

3.2.4. Salinity Gradient.

This consideration is not applicable in the location of the proposed action.

3.3. Suspended Particulate/Turbidity Determinations

3.3.1. Expected Changes in Suspended Particulates and Turbidity Levels.

Suspended solids and turbidity values would be expected to temporarily increase during excavation and disposal of material. At the stilling basins, this would be very minimal as the material is subject to significant scour and is composed on clean rocks and cobble. Initial depositions of material may induce some turbidity due to disturbance of substrates at the disposal sites. However, subsequent material would be placed on top of the previously deposited dredged cobbles and would be unlikely to induce turbidity. A return to ambient conditions should occur within 24 hours after completion of work. No long term impacts to suspended solids and turbidity levels are anticipated.

3.3.2. Effects on Chemical and Physical Properties of the Water Column

Suspended solids and turbidity values would be expected to temporarily increase during excavation and the mobilization of accumulated sediment. A return to ambient conditions should occur within 24 hours after completion of work. No long-term impacts to suspended solids and turbidity levels are anticipated.

- **Light Penetration.** The proposed action would have short-term adverse impacts during material deposition due to localized turbidity plumes. Following work turbidity and associated light penetration would be expected to return to pre-condition levels within 24 hours.
- **Dissolved Oxygen (DO).** Excavation of material is expected to have minor short-term but no long-term adverse impacts to DO levels.
- **Toxic Metals and Organics.** The sediments are not expected to contain contaminants as the dredge locations are subject to scour from the full force of dam spill. As such the materials to be dredged and deposited and cleaned rock and cobbles.

3.4. Contaminant Determinations.

The disturbance to sediments would be localized to the dredge and disposal areas. Excavated material would be transported by barge to disposal sites. No toxic material would be introduced to the area because of the proposed activities. The dredged material would be rocks and cobbles that are scoured by dam spill.

3.5. Aquatic Ecosystem and organism Determinations.

3.5.1. Effects on Plankton.

Short-term, minimal effects on plankton are anticipated to occur because of dredge and disposal activities. No significant impacts to plankton are expected.

3.5.2. Effects on Benthos.

No significant impacts to benthos are anticipated. The benthic substrate would establish on the disposed materials. Disposed materials would collect sediment over time and therefore recolonization of benthic organisms would reestablish over a short duration.

3.5.3. Effects on Nekton.

The proposed action would have no adverse effects to fish. The dredged area does not support aquatic life because of the intensity of the spill flows. The material may benefit fish at the disposal area by providing better habitat for benthos and juvenile fish than the existing soft sediments, but this effect is expected to be negligible. The short-term effect and the long-term impact would be negligible.

3.5.4. Effects on Aquatic Food Web.

The proposed action would have no adverse effects to the aquatic food web. The disturbance to benthos at the disposal areas may cause temporary changes to the foraging behavior of some species. This small benthic loss should not result in the reduction or potential elimination of food chain in organism populations and should not cause any decrease in the overall productivity and nutrient export capability of the ecosystem.

3.6. Effects on Special Aquatic Sites

3.6.1. Sanctuaries and Refuges.

The proposed action area is not located within a designated Wildlife and Fish Refuge or sanctuary. The proposed action will not impede, hinder, or otherwise affect the physical features, location, or timing of sanctuaries, refuges, or other outdoor activities.

3.6.2. Wetlands, Mud Flats, and Vegetated Shallows.

The proposed action area does not contain wetlands, mud flats, or vegetated shallows. The dredged areas are concrete spillways and the disposal areas are located at the deepest sections of the Snake River near the dredge sites.

3.7. Effects on Threatened and Endangered Species

According to the United States Fish and Wildlife Service (USFWS) Information for Planning and Consultation (IPAC) website (https:/ipac.ecosphere.fws.gov), accessed March 29, 2024, there are three Endangered Species Act (ESA) listed species and one Candidate species within the vicinity of the proposed action: bull trout (*Salvelinus*

confluentus), Spalding's catchfly (*Silene spaldingii*), yellow-billed cuckoo (*Coccyzus americanus*) and Candidate species monarch butterfly (*Danaus plexippus*). ESA listed anadromous fish within the Lower Snake River, include Snake River Sockeye (*Oncorhynchus nerka*), Snake River Spring/Summer Run Chinook (*Oncorhynchus tshawytscha*), Snake River Fall Run Chinook (*Oncorhynchus thawytscha*) and Snake River Basin Steelhead (*Oncorhyncus mykiss*).

There may be minor short-term effects to aquatic species. Accumulated sediments would be dredged from the stilling basins and disposed at in-water locations. At dredging sites, there may be short term adverse effects to aquatic resources and fish in particular. Dredging effects on fish are generally localized and include possible entrainment, increased turbidity, noise, and changes to habitat such as substrate and depth.

Most anticipated navigation dredging activities would use a barge-mounted clamshell bucket to excavate and remove sediment. Clamshell buckets have a low potential to entrain fish in comparison to other dredging methods (Corps 2002a). The clamshell bucket descends to the substrate in an open position. During the descent, the bucket cannot trap or contain a mobile organism because it is open on top and bottom. The force generated by the descent drives the jaws of the bucket into the substrate, which "bites" the sediment upon retrieval, thus filling the empty bucket with sediment. The bucket bottom then closes as it is retracted from the dredged area. Clamshell dredging operations would proceed slowly and would present reasonable opportunity for fish, including adult and juvenile salmonids, to escape from a dredge area prior to commencement of the actual dredging operation.

In addition to the type of equipment used for dredging, the time of year would also reduce the possibility of affecting ESA-listed fish. Juvenile an adult coho, spring and summer Chinook, steelhead, and sockeye salmon are likely to be at the lowest densities during the winter in-water work period than other times of the year.

Dredging and in-water dredged material placement would not affect water temperature or dissolved oxygen because activity would typically take place in cold weather during the in-water work window. Dredging activities are temporary and would cause short-term and localized impacts by increasing turbidity and suspended solids, which could adversely affect fish.

Disposal of dredged material (that is, deep-water dumping of dredged material as opposed to beneficial use) would cause temporary localized increases in turbidity and suspended solids, as well as noise disturbance. These factors can affect fish in the immediate area, but their mobility would allow them to temporarily escape the disturbance and return later after the effects of the dredged material placement have dissipated. Both resident and anadromous fish could use the area upstream and downstream of the sites for refuge when dredging and placement activities would occur. The in-water dredged material placement activities would not be a continuous activity confined to a single location and fish would return to the activity areas shortly after

completion of the disposal. Potential effects of the dredged material placement operation on downstream migrating salmonids would be expected to vary depending on the timing of the downstream migrations, the amount of time the migrants spend in the affected areas, and their use of the affected areas. Both adults and juveniles of other salmon species would most likely be present within the LSR reservoirs at low densities during the in-water work window and therefore would not be affected by the temporary increases in turbidity, suspended solids, and noise from in-water disposal of dredged material.

Bull trout adults only intermittently inhabit areas of the lower mainstem of the Snake River where dredging would occur. These fish may enter the LSRP during migrations from the tributaries that they inhabit during the remainder of the year (Faler et al. 2008). These are pelagic adult fish that can actively avoid the dredging operations when noise and other disturbances associated with dredging operations occur. Spawning and juvenile rearing occurs in the upstream reaches of tributaries; therefore, dredging in the mainstem of the Snake River would not affect these life stages for bull trout.

Terrestrial threatened and endangered species are very unlikely to occur near the proposed action areas and would be unaffected by the action.

3.7.1. Other Wildlife

The proposed dredging and disposal would have no or negligible effects on wildlife. Dredging would result in intermittent and temporary disturbance or displacement of wildlife species from the operation of construction equipment. These activities are not expected to prevent wildlife from obtaining food or otherwise using the areas adjacent to the dredging. Riparian forest and shrub habitat for raptors and other birds would not be affected. Waterfowl, birds, aquatic furbearers, and other wildlife could be temporarily disturbed or displaced by activities; however, they would likely use areas upstream and downstream of the sites where dredging activities occur. Dredging and disposal of sediment would be performed in deeper water away from any terrestrial habitat. There would be negligible effects to terrestrial habitat.

3.7.2. Actions to Minimize Impacts

Conservation measures are intended to minimize or avoid environmental impacts to listed species or critical habitats. Conservation measures are incorporated into design as a proactive means for avoiding or minimizing adverse impacts associated with construction activities. The conservation recommendations listed below are consistent with obligations to ESA compliance for dredging and disposal operations as well as for the survival and recovery of ESA-listed Snake River salmonid ESUs and DPS. Therefore, the conservation measures listed below would be implemented by USACE to avoid or minimize adverse effects to the survival and recovery of Snake River sockeye salmon, Snake River fall Chinook salmon, Snake River spring and summer Chinook salmon, Snake River basin steelhead, and bull trout, including adverse effects on designated critical habitat for these species:

1. Conduct work during the winter in-water work window of December 15 to March 1 when relatively few anadromous fish species are present. The work window could be further restricted to start January 1 when the fish ladders are taken out of service for annual maintenance.

2. Place dredged material far enough downstream that it doesn't reenter the stilling basin.

3. Place dredged material in such a manner that it does not create steep mounds that could attract predatory fish species.

4. Avoid placing the material in the deepest parts of the river near the disposal areas.

4. PROPOSED DISPOSAL SITE DETERMINATIONS

4.1. Mixing Zone Determinations.

There are no wastewater treatment plants or other wastewater outfalls near the proposed dredging or disposal.

4.2. Determination of Compliance with Applicable Water Quality Standards

Section 401 of the Clean Water Act requires that applicants requesting a federal license or permit to conduct activities that may result in a discharge into waters of the United States, provide, to the licensing or remitting agency, a certification from the State that any such discharge complies with applicable provisions of the Clean Water Act and state water quality standards. The Corps applied for Section 401 Water Quality Certification from the Washington Department of Ecology (Ecology) in October, 2023 for the in-water disposal of the dredged material and anticipates receiving water quality certification from Ecology shortly. The proposed activities would not be conducted until certification was received. The Corps has determined the proposed in-water activities would meet the Washington state water quality standards for dissolved oxygen, temperature, pH, and conductivity and therefore the Corps will not monitor for those parameters during the proposed activities. The Corps has determined the proposed in-water activities will likely meet the state standards for turbidity. The Corps will monitor for turbidity during the proposed activities.

4.3. Potential Effects of Human Use Characteristics

Implementation of the proposed activiteswould have no significant adverse effects on municipal or private water supplies; recreational or commercial fisheries; water related recreation or aesthetics; parks; national monuments; or other similar preserves.

4.4. Determination of Cumulative Effects on the Aquatic Ecosystem

The impacts associated with the proposed action would not create significant effects on the aquatic ecosystem. Work would be conducted during the winter in-water work period to minimize effects to aquatic life, and turbidity would be restricted to areas surrounding the disposal area.

4.5. Determination of Secondary Effects on the Aquatic Ecosystem

No significant secondary effects should result from the proposed action.

5. FINDINGS OF COMPLIANCE OR NON-COMPLIANCE WITH THE RESTRICTIONS ON DISCHARGE

5.1. Adaptation of the Section 404(b)(1) Guidelines to this Evaluation

No significant adaptations of the Guidelines were made relative to this evaluation.

5.2. Evaluation of Availability of Practicable Alternatives to the Proposed Discharge Site Which Would Have Less Adverse Impact on the Aquatic Ecosystem

The Corps considered alternatives to using dredging with in-water disposal to inspect the stilling basins (see Section I above). The Corps determined the alternatives were not practicable because they were cost-prohibitive, had adverse effects on land use, or would not likely perform as needed. The preferred alternative provides the minimum impact to environmental resources and meets the intent of the purpose and need of the project.

5.3. Compliance with Applicable State Water Quality Standards

In-water disposal activities would be monitored for effects to water quality (i.e., turbidity). Actions would be taken to reduce resulting effects to a level within the criteria set forth in applicable state standards.

5.4. Compliance with Applicable Toxic Effluent Standard or Prohibition Under Section 307 of the Clean Water Act

The proposed action would not discharge effluent or toxic substances into the Snake River.

5.5. Compliance with Endangered Species Act of 1973

USACE has determined that the Proposed Action may affect and is likely to adversely affect ESA-listed fish species under NMFS jurisdiction. NMFS determined that the proposed action is covered by the 2020 Columbia River System Operation Biological Opinion and that coordination with the Fish Passage Operation and Maintenance workgroup should be conducted. That coordination was completed on May 11, 2023. USACE also believes the proposed dredging-disposal action is covered by the November 14, 2014, NMFS Biological Opinion for the Programmatic Sediment Management Plan (PSMP), which is an appendix to the PSMP EIS.
USACE determined the proposed project would be likely to affect, but not adversely affect bull trout and their Critical Habitat. USFWS also determined that the proposed action is covered by the 2020 Columbia River System Operation Biological Opinion and that coordination with the Fish Passage Operation and Maintenance workgroup should be conducted. That coordination was completed on May 11, 2023. USACE also believes the proposed dredging-disposal action is covered by the November 14, 2014, USFWS Biological Opinion for the PSMP, which is an appendix to the PSMP.

5.6. Compliance with Specified Protection Measures for Marine Sanctuaries Designated by the Marine Protection, Research, and Sanctuaries Act of 1972

Designated marine sanctuaries are not located in the proposed work area.

5.7. Evaluation of Extent of Degradation of the Waters of the United States

5.7.1. Significant Adverse Effects on Human Health and Welfare

The proposed dredging and disposal actions would have no significant adverse effects on human health and welfare.

Municipal and private water supply intakes are not located in the vicinity of the proposed discharge sites. Such water supplies are not expected to be adversely affected by the proposed in-water disposal activity.

Commercial fisheries are not present in the lower Snake and Clearwater Rivers. A Tribal fishery was initiated in 2013 just upstream of Lower Granite Dam, but is not in the vicinity of the dredging or disposal sites. Recreational fishing for Snake River steelhead and resident fish does occur in the vicinity of the dredging and the disposal sites, but not at the sites. In-water disposal activities are not expected to have an effect on recreational fishing in the vicinity of the sites as the work would take place in the winter, which is not a period of high recreational fishing use.

Localized, short-term effects to plankton, benthic communities, listed salmonids, and other fish populations would be minimized as the work would take place in the winter and at a depth of 75-100 feet. No long-term effects are antiticipated.

The effects on wildlife as a result of dredging and in-water disposal are expected to be indirect, short-term and minor, primarily as a result of displacement during the operation. The proposed dredging and disposal activities would occur within the river and would not prevent wildlife from obtaining food or otherwise using the areas adjacent to the activities.

Wetlands are not present at the dredging or disposal sites. Sanctuaries and refuges, mud flats, vegetated shallows, coral reefs, and riffle and pool complexes are not present at the disposal site.

5.7.2. Significant Adverse Effects on Life Stages of Aquatic Life and Other Wildlife Dependent on Aquatic Ecosystems

The proposed dredging and disposal would have no significant adverse effects on aquatic life or wildlife dependent upon aquatic ecosystems. The winter in-water work window has been scheduled to avoid migrations of anadromous fish. Localized, short-term effects on resident aquatic life would also be minimized by performing the work in the winter and at depths of 75-100 feet. Effects on wildlife are expected to be indirect, short-term and minor, primarily as a result of displacement during the operation.

5.7.3. Significant Adverse Effects on Aquatic Ecosystem Diversity, Productivity and Stability

The proposed dredging and disposal would have no significant adverse effects on the aquatic ecosystem. Localized, short-term effects on the productivity of plankton and benthic communities in the proposed disposal site are expected to be minimized by performing the work in winter when activity is low and performing the work at depths of 75-100 feet, far below the photic zone.

5.7.4. Significant Adverse Effects on Recreational, Aesthetic, and Economic Values

The proposed construction activities would have no significant adverse effects on recreational, aesthetic, or economic values. Adverse effects on economic values are not expected as the proposed activities support the ongoing navigation mission of the Projects. Adverse effects on recreational and aesthetic values are expected to be minor as the effects would be localized and short-term.

6. FINDING OF COMPLIANCE OR NON-COMPLIANCE

The proposed excavation and fill action complies with the Section 404(b)(1) Guidelines from EPA (40 C.F.R. 230), with the inclusion of the appropriate and practicable steps taken to minimize potential adverse effects of the discharge on the aquatic ecosystem. The preferred action is the least environmentally damaging practicable alternative as it capable of being performed and minimizes adverse effects while staying within the available budget. The preferred disposal action also complies with the applicable USACE evaluation factors in 33 C.F.R. 336.1(c)), as it provides for adequate operations and maintenance of the stilling basins while meeting the Federal standard of least costly, environmentally acceptable, and consistent with engineering requirements. Other factors identified in 33 C.F.R. 336.1(c) are adequately addressed under the Section 404(b)(1) evaluation.