CRITICAL AREAS REPORT

June 11, 2025

Al Helenberg Memorial Boat Launch Maintenance Dredging

Castle Rock, Washington

Prepared for

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SIGNATURE PAGE

The information and data in this report were compiled and prepared under the supervision and direction of the undersigned.

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INTRODUCTION

Ecological Land Services, Inc. (ELS) has completed this critical areas habitat assessment on behalf of the applicant, City of Castle Rock (City) to continue dredging at the Al Helenberg Memorial Boat Launch. The project is on Cowlitz County Parcel Numbers 308770100 and 308800100 accessed from 5040 Westside Highway with an address of 240 North County Drive in Castle Rock, Washington, 98611 within in a portion of Section 10, Township 9 North, and Range 2 West, of the Willamette Meridian (see Sheet 1). The City is applying for dredging permits that includes a small increase of the dredging prism that was previously permitted. ELS has written this report as required under *Castle Rock Municipal Code (CRMC) Chapter 18.10.080*.

Project impacts will be fully compensated by enhancing the riparian buffer of Whittle Creek, a nearby stream southwest of the site. Its confluence with the Cowlitz River is downstream of the boat launch, it is within City limits, and it is in the same section as the boat launch.

Critical aeras consist of five categories: wetlands, fish and wildlife conservation areas, frequently flooded areas, geological hazard areas, and critical aquifer recharge areas. There are no wetlands in the project vicinity or at the proposed mitigation site. The only project area in the 100-year floodplain is the dredging prism. Potential geological hazards are liquefaction and a volcanic hazard; these do not require a separate report. There are no critical aquifer recharge areas in the vicinity according to the county EPIC data. Therefore, this report only addresses fish and wildlife conservation areas.

PROJECT NEED AND PURPOSE

The proposed maintenance dredging needs to be expanded beyond the original dredging prism to allow for changing sedimentation rates due to the increasing amount of sediment from the Toutle River. The sediment retention dam is full, and so there has been a significant increase in the amount of sediment discharging from the Toutle River.

During some high flow events, the log boom, launch, and dock, accumulate significant amounts of sediment and woody debris. The sediment and debris must be removed to prevent structural damage and maintain water depth at the ramp and dock and to allow its continued use for recreation and emergency services (see Sheet 2). To continue maintaining this boat launch, maintenance dredging permits need to be updated.

EXISTING CONDITIONS

The general vicinity west of the Cowlitz River was used by the U.S. Army Corps of Engineers for placing dredged material from the emergency dredging in the Cowlitz River in the early 1980s after the Mount St. Helens eruption of 1980. The project is bordered to the north and west by property owned by the Castle Rock School District. Properties to the south consist of small

residential lots containing single-family homes, and the site is accessed from the West Side Highway, west of the boat launch.

The property has generally flat topography with an approximately 35 percent slope along the shoreline of the Cowlitz River. Riprap is present along the toe of the stream banks upstream and downstream of the project area. Vegetation consists of mowed grass with a thin stand of black cottonwood trees along the shoreline.

The Al Helenberg Memorial Boat Launch was constructed in 2010 within Castle Rock city limits approximately 1,300 feet upstream of the State Route 411 Bridge (see Sheet 1) to provide safe and reliable access to the Cowlitz River. The facility consists of a parking lot, various outbuildings, walking trails, two-lane boat ramp, fully grated boarding floats on each side of the ramp, and a floating dock on the downstream side of the ramp parallel to the shoreline. Upstream of the ramp is a log-boom anchored with piling to deflect debris from the boat ramp and dock (see Sheet 2 and photoplate).

AQUATIC HABITAT

The site is in the 6th field Hydraulic Unit Code 170800050904 (Whittle Creek-Cowlitz River) and is in Water Resources Inventory Area 26 (Cowlitz watershed). The site is at River Mile 17.4 of the Cowlitz River.

There is no aquatic vegetation in or near the proposed dredging prism. Sediment near the project site consists mostly of sand with some gravel and finer material. The deepest river depth at the boat launch in the bathymetric survey (WEST 2016) was about 20 feet below the OHWM at the thalweg. The riverbank at the boat launch and on both sides of the river has a layer of rock at its base to prevent erosion. There are no active areas of bank erosion near the boat launch.

HYDROLOGY

A WEST Consultants memorandum (WEST 2016) to the City of Castle Rock discusses hydrology in the project area. The memorandum states that there is a U.S. Geological Survey river gage 142430000 Cowlitz River at Castle Rock located approximately 1,400 feet downstream of the boat launch at the Highway 411 Bridge (A Street) with a 90-year period of record (1926 to 2016). Mean daily flow records for 10 years (2006 through 2016) and mean stages are available for the prior years. Mean daily flow data for 2006 through 2016 were determined as follows:

- 30,000 cfs – approximate upper limit of usability of the boat launch.
- 9,000 cfs – typical winter flow rate.
- 5,000 cfs – typical summer flow rate.

WATER QUALITY

The latest approved 303(d) list shows no listings for Category 5 water-quality impairments in the area (Ecology 2025a).

SEDIMENT TRANSPORT, DEPOSITION, AND DISPOSAL

High concentrations of suspended sediments occur in the Cowlitz River at the project site, especially during heavier rainfall events. The project is approximately 2.4 river miles downstream

from the Toutle River confluence with the Cowlitz River. The sediment dam reservoir on the Toutle River is full and no longer holds back sediment that is continually eroding from the Mount St. Helens eruption in 1980.

The following information about sedimentation at the boat launch was provided in a technical memorandum by WEST Consultants, Inc. (WEST 2016).

> Sediment transport conditions in the Cowlitz River are highly influenced by the delivery of sediment from the Toutle River, which flows into the Cowlitz River about 2.4 miles upstream of the project site. The Toutle River continues to deliver significant quantities of silt- and sand-sized sediment as a result of continued erosion of the debris avalanche created by the eruption of Mount Saint Helens in May 1980. The U.S. Army Corps of Engineers has continued to manage sediment in the Toutle River, most recently raising the spillway elevation at the Sediment Retention Structure to improve the sediment trapping efficiency. They have also dredged the lower portion of the Cowlitz River near the confluence with the Columbia River. However, significant quantities of sand-sized material will continue to be transported through the project reach as both bed load and suspended load.
>
> Much of the fine sediment in the Cowlitz River is transported as suspended load during high flow events. As a result, sediment deposition occurs in areas of low velocity and low shear stress such as the areas along the banks, the inside of channel bends, and near obstructions to flow. During the December 2015 high water event (Q = 83,700 cfs), significant sedimentation occurred at the boat launch. The surface of the ramp was buried in as much as 2.5 feet of sand-sized material. Post-flood photographs indicate that some amount of the deposited sediment located near the base of the ramp was eroded as the river's discharge decreased. However, a significant amount of sediment remained in the immediate vicinity of the transverse floats, causing them to be partially grounded during low water conditions. A significant portion of the sediment that was deposited at the ramp was likely conveyed by the river as suspended load.

The spillway at the Sediment Retention Structure was raised in 2012, and there are plans to raise it again although there has not been a date set for construction. The Corps' 2024 report states that sediment trapping efficiencies were down to 16%. Because of this situation and the resulting bank erosion along the Toutle and Cowlitz rivers upstream of the boat launch, there will be increasingly more sediment settling in the dredging prism.

SEDIMENT QUALITY

Under DMMP guidelines, projects for which upland disposal is planned do not ordinarily require testing the dredged material but do require evaluation under the Department of Ecology's antidegradation standard. Much of the sediment load carried by the Cowlitz River is of volcanic origin, emanating from the Mount St. Helens impact area. Chemical testing of Cowlitz River sediment by the Corps' Portland District has shown it to be of low concern for chemical contamination (USACE 2007). An Environmental Information Management database (EIM) query shows that no sediment data have been collected from within or near the project area, which may be an indication that there are no sediment contaminant issues in the vicinity of the project. A review of EPA's *Cleanups in My Community* database and Ecology's *Integrated Site Information System* did not reveal any cleanup sites within or near the project area. In August

2015, the DMMP agencies provided a no-test determination for sediment removal from the project site with adjacent upland disposal (DMMP 2015, see Appendix A).

Terrestrial Habitat

There is no native terrestrial habitat within the proposed dredging prism or upland placement areas. Placement areas are flat with either nearly bare ground or herbaceous vegetation that includes non-native plants. Staging areas will be on the ramp, paved areas, and a dewatering area.

Previous Sediment Removal Events

Since the boat launch was constructed in 2010, previous dredging permits allowed sediment removal above the waterline on the boat ramp and dock with a skid steer, excavator, or hand tools for up to 200 cubic yards per year. Dredged material was transferred into dump trucks and placed in upland areas near the site. In August 2015, the DMMP agencies provided a no-test determination for the removal of sediment from the project site with adjacent upland disposal (DMMP 2015). The table below summarizes volumes of sediment removed since 2018. No records are available before 2018.

Table 1. Dredged Material Removed in Previous Dredging Events since 2018.

Date	Volume Removed (cubic yards)
February 8, 2018	20
March 14, 2018	10
May 3, 2018	40
January 2, 2019	5
December 30, 2019	10
February 11, 12, 2020	90
February 20, 2020	5
2021	68
2022	105
2023	47
2024	49

Project Description

Proposed Sediment Removal

For the new 10-year permit, the City proposes to remove a total of up to 500 cubic yards per year of accumulated sediment in up to six events each year from two areas: above the waterline on the boat ramp and floating dock and from hydraulic dredging below the waterline from areas shown on Sheets 2 and 3. For the 10-year permit, this will be an estimated total of approximately 5,000 cubic yards in 10 years). The term "dredging" in this report will refer to removing sediment below the waterline.

Above the Waterline

Sediment above the water line deposited on the ramp and dock will be allowed to dewater in-place and then will be removed with a skid steer, excavator, or hand tools. The material will be placed in the adjacent uplands within the park. This sediment removal typically occurs during the fall, winter, and occasionally in the spring, and it takes 1 to 5 days.

During periods of high water and associated high turbidity, the City proposes to flush accumulated sediment from the ramp and floating docks back into the river using a pump with a hose and a spray nozzle. Sediment deposited in these areas typically occurs during the fall, winter, and early spring.

Below the Waterline

The proposed dredging prism is approximately 0.68 acres (about 29,600 square feet). This volume and area are larger than the original dredging prism that was proposed before the boat-launch facility was constructed because sediment accumulation has occurred over a larger dredging prism than was anticipated. A larger prism is necessary to maintain usable depths for boaters and to remove enough sediment so less frequent dredging is required. Also, the time that most of the sediment is deposited in the dredging prism is during the late fall and winter months during high river flows. Unfortunately for the City and boaters, dredging has to wait until the in-water work window in August to remove accumulated sediment.

Dredging below the water line will be performed during the in-water work window of August 1 through August 31. Sheet 3 shows cross sections of the proposed dredging prism. The deepest proposed dredging elevation is 23 feet NAD83. Existing riverbed contours were obtained from the Corps bathymetric survey in April 2025; however, there were no survey points near the dredging prism. Therefore, the 2016 survey of the dredging prism has been used for the cross sections.

The time to offload and dewater the material and load trucks will be about 4 to 5 days, and the volume of sediment removed will be reported based on the number of truckloads taken to upland disposal areas and not based on a subsequent survey.

Hydraulic dredging may be performed with divers, a vacuum truck, or from a barge; any method will use a pump and hose with a fish screen. During dredging, material will be pumped into a dewatering facility constructed with Ecology blocks and a liner. Dredged material will be passively dewatered by allowing the sediment to settle, and then the water will pass through geotextile fabric or hay bales before draining back into the Cowlitz River through a hose. Consistent with the authorized dredging for other projects, visual water-quality monitoring for turbidity will be conducted.

The estimated volume of material to be removed initially is approximately 500 cubic yards. During a site visit on June 2, 2025, it was noted that a significant sediment build-up has occurred between the dock and the shoreline, as shown on the photoplate. It compares a photograph taken in June 2020 with photographs taken on June 2, 2025.

Upland Material Placement

After material is dewatered, an excavator will move the material onto dump trucks and place it in areas indicated on Sheets 1, 4, and 6. There are no wetland or riparian buffers in these proposed placement areas. After the material has been dewatered, trucks will haul it to the placement areas and used in landscaped areas around the park. Native seed mixes do not grow in this sandy material; it does not erode and is not a source of blowing dust, so no seeding is necessary after material placement.

Debris Removal

The City proposes to relocate large woody material from the log boom, ramps, or docks to the river or remove it using mechanical methods with skid steer, excavator, or hand tools. Small debris will be swept off, or it will be washed off with river water using a pump, hose, and spray nozzle. Any artificial debris will be properly disposed as solid waste. Large material will be removed using chains and an excavator located above the water.

Secondary Project Features

Interdependent Activities

Interdependent activities are part of a larger action, have no independent purpose, and would only occur if the project occurs. The dewatering structure and moving dredged material to upland areas of the property are interdependent activities.

Interrelated Activities

Interrelated activities are a part of a larger action; however, they could be performed separately from the larger action. The City proposes to enhance the riparian buffer in areas of lower Whittle Creek (see Sheet 5) that currently has only herbaceous vegetation (see Sheets 6, and 7), which is an interrelated activity. The in-water dredging prism is 0.68 acres, and the enhancement areas are a total of 0.69 acres). The mitigation plan is in Appendix B.

Impact Avoidance and Minimization Measures

The project has been designed to avoid and minimize impacts to habitats and species that may potentially occur in the vicinity of the project. This will be accomplished by using the following measures:

1. Conditions in local, state, and federal permits will be followed.
2. Avoids exposing dredged material because the Dredged Material Management Program has determined this site does not require sediment testing due to its geographic location.
3. Avoids contamination from heavy equipment working in the water because equipment will have vegetable-based hydraulic fluid.
4. Avoids contamination from refueling because heavy equipment will be fueled at least 150 feet from any waterbody.
5. Avoids peak juvenile salmon outmigration; in-water work will occur within the approved work window of August 1 through August 31.
6. Avoids entraining fish because hoses used for hydraulic dredging will be fitted with a fish screen.

7. Minimizes suspended sediments - dewatering will occur in an upland structure to settle out and be filtered through geofabric and/or hay bales.
8. Minimizes suspended sediments by visually monitoring turbidity during sediment removal below the waterline because hydraulic dredging produces relatively little turbidity. The point of compliance will be 300 feet downstream of in-water dredging. If significant turbidity is observed, dredging will stop until a plume is no longer visible.

METHODS

ELS evaluated the property for the presence of critical areas on May 8, 2019. The ordinary high water mark (OHWM) of the Cowlitz River was delineated within 300 feet of the study area using standard methodology as described in the Washington State Department of Ecology (Ecology) manual: *Determining the Ordinary High Water Mark on Streams in Washington State* (Olson and Stockdale 2010). The OHWM was found by examining the bed and banks and determining "the presence and action of waters are so common and usual and so long continued in all ordinary years as to mark upon the soil a character distinct from that of the abutting upland." The main indicator used to determine the OHWM was water marks along the boat launch, existing riprap, and shoreline.

CRITICAL AREAS HABITAT SUMMARY

According to *CRMC Chapter 18.10.130 Table 7* the Cowlitz River is a fish and wildlife conservation area with designations of Classification 1 (areas with which state/federal-designated endangered, threatened, candidate, or sensitive species have a primary association), Classification 3 (species of candidate designation), Classification 5 (kelp and eelgrass beds; herring and smelt spawning areas – although the designation was meant to apply only to smelt in marine and estuarine areas), and Classification 7 (waters of the state). Because the dredging prism is within shoreline jurisdiction, Castle Rock Shoreline Master Program (2022) is used to determine riparian buffers. Tables 7 and 8 in the Appendix B Section 2.5 show that for a Type S stream, Table 7-1 refers the reader to Table 8. The boat launch is within Code Reach 13 which states that the shoreline reach-based buffer is from the OHWM to the waterward side of the boat launch, so there is no riparian habitat buffer landward of the boat launch.

The mitigation site is in the riparian buffer of Whittle Creek, which meets the definitions of Classifications 1, 3, and 7. It is a Type F stream and is not a shoreline of the state, so riparian buffers are determined by *CRMC Chapter 18.10.130 Table 7*. Whittle Creek is between 5 and 20 feet wide, so it has a riparian buffer of 200 feet.

PROJECT EFFECTS

DIRECT EFFECTS

Direct effects are those effects that take place at or near the time of construction. The following aquatic and terrestrial habitat effects are anticipated.

AQUATIC HABITAT

Underwater Noise and Disturbances

Underwater disturbances during August dredging will occur near the ramp and dock in shallow water. However, this area frequently experiences these effects from boating activities, so dredging is not expected to create noise or disturbance above background levels.

Elevated Suspended Sediment Concentrations

Sediment removal on the ramp, dock, and by hydraulic dredging is expected to temporarily increase suspended sediment concentrations (measured by turbidity) in the project area for a minimal distance downstream. Washington Administrative Code allows a temporary area of mixing during and immediately after necessary in-water construction activities that result in the disturbance of in-place sediments. The point of compliance for water volumes above 100 cubic feet per second flow at the time of construction is 300 feet downstream of the activity causing the turbidity exceedance.

The Ecology water quality standard for turbidity in the project vicinity is based on aquatic life for salmon and steelhead use in the area that includes spawning, rearing, and migration. It states that turbidity shall not exceed the following levels:

- 5 nephelometric turbidity units (NTU) over background when the background is 50 NTU or less; or
- A 10 percent increase in turbidity when the background turbidity is more than 50 NTU.

Sediment Removal above the Waterline

When water velocities and turbidity are high, which typically occurs in late fall, winter, or spring, material deposited above the waterline will be swept from the ramp and dock back into the water or washed off with river water. This occurs during high turbidity conditions in the river and is not expected to create significantly higher turbidity levels in this river reach because background turbidity levels below the Toutle River mouth are estimated to be in the hundreds of NTUs. Under these conditions, it will not likely exceed water quality standards or noticeably raise suspended sediment concentrations above background levels.

Sediment Removal below the Waterline

In-water hydraulic dredging in August is expected to increase elevated suspended sediment concentrations somewhat, but they are expected to return to background levels before reaching the 300-foot point of compliance. This also applies to return water entering the river from the dewatering structure that will allow sediments to settle and be filtered prior to being released.

TERRESTRIAL HABITAT

There will be no direct effects to terrestrial habitat from in-air noise or disturbances above typical background noises in the area that include vehicle traffic, boat launching, and boat operations. Dredged material will be placed in developed upland areas of the site and are outside of wetland or riparian buffers. These areas are mowed frequently and have no woody vegetation, so they have

low levels of habitat functions. To avoid erosion, dredged material will be stabilized before the rainy season with an erosion-control seed mix.

Delayed Consequences

Delayed consequences are also referred to as indirect effects. They are defined as those effects resulting from the proposed action and are later in time than construction but are still reasonably certain to occur. The only potential delayed consequence would be to the aquatic food web from temporarily reduced benthic invertebrate populations in sediments after dredging. Benthic populations typically recover within 6 months of disturbance.

The river's bedload moves in this high-velocity reach, so sediments are often being buried and exposed by the current as the river velocity increases or decreases. Dredging will have no effect on the benthic communities above naturally occurring sediment dynamics in this river reach. For these reasons, dredging will have no long-term impact to the food web or riverbed composition.

Effects from Interdependent Actions

The dewatering structure will be temporary and will be disassembled after the dredging event. Dredged material will be placed in upland areas and stabilized with a seed mix. There will be no effects from these interdependent activities because the material will not be placed in natural upland habitats that have low habitat functions, and will not be placed in waterbodies, riparian buffers, or wetland buffers, and the material will be reseeded.

Effects from Interrelated Actions

Interrelated actions include activities involved with enhancing the riparian buffer along lower Whittle Creek. No negative impacts are anticipated from mitigation plantings or maintenance.

Listed Species and Habitats

Information on the current ESA listings and critical habitat designations were obtained from the following agencies:

- National Marine Fisheries Services (NMFS) website research (NMFS 2025).
- Northwest Indian Fisheries Commission (NWIFC) website research (NWIFC 2025).
- U.S. Fish and Wildlife Service (USFWS) website research on the *IPaC - Information, Planning, and Conservation System*, (USFWS 2025a; see Appendix C).
- Washington Department of Fish and Wildlife (WDFW) Priority Habitats and Species (PHS) List.
- Washington Department of Natural Resources Natural Heritage website (WDNR 2025)

Species and Habitats Not Affected by the Project

The following table shows federally endangered, threatened, proposed, and candidate species that is listed on the USFWS IPaC report and internet sites listed above but that do not have suitable habitat or critical habitat affected by the project.

Table 2. Endangered, Threatened, and Proposed Species and Critical Habitat with No Suitable Habitat in the Action Area.

Species, ESU, or DPS	State Status	Federal Status	Critical Habitat in Action Area?
Bull Trout – Columbia River DPS *(Salvelinus confluentus)*	Threatened	Threatened	No
Marbled Murrelet *(Brachyramphus marmoratus)*	Endangered	Threatened	No
Yellow-Billed Cuckoo – Western DPS *(Coccyzus americanus)*	---	Threatened	No
Streaked Horned Lark *(Eremophila alpestris strigata)*	Endangered	Threatened	No
Kincaid's Lupine *(Lupinus sulphureus ssp. kincaidii)*	Threatened	Threatened	No
Northwestern Pond Turtle *(Actinemys marmorata)*	Endangered	Proposed Threatened	None Proposed

BULL TROUT

The official USFWS species list on the IPaC website shows species under their jurisdiction potentially present in the action area, which are listed in the table above. However, those species listed do not necessarily apply to the small scale of the action area for this project. Bull trout are adversely affected by high stream temperatures, lack of degraded spawning and rearing habitat, and lack of preferred food (Rodrick and Milner 1991), which describes conditions in the action area. Therefore, the project will have **no effect on bull trout**. The IPaC report states that there is no designated critical habitat for bull trout in the action area, which is consistent with the Federal Register documents for these species (Federal Register 2010). Therefore, the project will have **no effect on designated critical habitat for bull trout**.

MARBLED MURRELET

Marbled murrelets require marine waters for foraging and mature or old-growth forests for nesting habitat, which do not occur in the action area. Therefore, the project will have **no effect on marbled murrelets**. The IPaC document states there is no critical habitat in the action area, so the project will have **no effect on marbled murrelet designated critical habitat.**

YELLOW-BILLED CUCKOO

There is no designated critical habitat in Washington, or Oregon (Federal Register 2020). Suitable breeding habitat for the cuckoo is defined as patches of mature willow and cottonwood riparian vegetation along the Willamette and Columbia Rivers that are greater than 50 acres in size. This habitat does not occur in the action area. Cuckoos generally arrive on breeding grounds in mid-June and most have left breeding grounds by mid-September. During migration, which is likely from approximately May through mid-October, yellow-billed cuckoos are found in a variety of vegetation types including coastal scrub, secondary-growth woodland, hedgerows, humid lowland

forests, and forest edges from sea level to 8,125 feet. During migration, they may also use smaller riparian patches than those in which they typically nest (USFWS 2015).

The closest suitable nesting habitat is miles from the project site. Dredging and material placement, will take place in developed areas, and mitigation planting will occur in areas not suitable during migration for foraging or resting. Therefore, the project will have **no effect on yellow-billed cuckoos**. The IPaC document states there is no critical habitat in the action area, so the project will have **no effect on yellow-billed cuckoo designated critical habitat.**

Streaked Horned Lark

A key attribute of habitat used by larks is an open-landscape context. Data indicate that sites used by larks are generally found in open, flat (less than 5 percent slopes), and treeless landscapes of 300 acres or more. Some patches may be smaller if they have the appropriate characteristics of bare ground or low-stature, sparse vegetation if there are adjacent fields or water to provide the required open-landscape context. This situation is common in agricultural habitats and on sites next to water, which provides the landscape context needed (USACE 2014). Larks have been documented nesting at many dredge deposit sites along the Columbia River, including industrial and port properties.

This project proposes to apply a seed mix to dredged material placement to avoid erosion. As the plants grow in the fall, they will make the habitat unsuitable for larks that use sites that will not have sparse vegetation. Therefore, the project will have **no effect on streaked horned larks.**

The IPaC document states there is no critical habitat in the action area, so the project will have **no effect on streaked horned lark designated critical habitat.**

Northwestern Pond Turtle

In Washington, northwestern pond turtles are only known to inhabit ponds and lakes, particularly around dense vegetation, which provides a high density of invertebrate prey, aquatic animals, including insects and amphibians, as well as aquatic plants and safe nursery habitat for young turtles with plenty of food and cover (WDFW 2024). Submerged logs and cut banks provide protection from underwater predators and underwater refugia (ODFW 2015). These turtles spend a great deal of time basking on logs at the surface of ponds.

Nesting and aestivating sites (for hibernating or taking shelter in the summer) are in grasslands and open woodland around ponds that have sparse vegetation with sandy, silty, or gravelly soils, and good solar exposure, typically within 200 yards of water in areas with little vegetation and plenty of sunlight. However, they may occur within 500 feet of aquatic areas to disperse or aestivate. In Washington, when they are in upland habitats, they occur near open areas that receive extensive sun exposure (ODFW 2015).

At the project site and within 500 feet, there is no suitable aquatic habitat for these turtles because there are no lakes or ponds with a high density of food, cover, and aquatic refugia with open areas and logs for basking. Additionally, the action area is not within 200 yards of aquatic habitat

suitable for these turtles. For these reasons, the project will have **no effect on northwestern pond turtles**. No critical habitat has been proposed for northwestern pond turtles (USFWS 2024).

Kincaid's Lupine

Kincaid's lupine currently occurs in the Willamette Valley and southwestern Washington. The closest designated critical habitat is in Lewis County. Kincaid's Lupine is found on upland prairie remnants where the species occurs in small populations at widely scattered sites (USFWS 2010). The project area and mitigation sites were not in upland prairie remnants; they were covered with dredged material in the early 1980s by the U.S. Army Corps of Engineers after the Mount St. Helens eruption and then the project area was developed. Upland habitats within the action area are mowed and dredged material will be reseeded after placement. Therefore, there is no suitable habitat for Kincaid's lupine, so the project will have **no effect on Kincaid's lupine**. The IPaC document states there is no critical habitat in the action area, so the project will have **no effect on designated critical habitat for Kincaid's lupine.**

Potential Effects of the Project on Listed Species and Habitat

Species and Habitats Potentially Affected by the Project

The following tables show state-listed ESA species and priority habitats, federally listed species and critical habitats, and candidate species that could be present in the action area.

Table 3. Listed and Proposed Species and Critical Habitat Potentially Affected.

Species, ESU, or DPS	State Status	Federal Status	Critical Habitat in Action Area?
Chinook Salmon (*Onchorhynchus tshawytscha*) Lower Columbia River Chinook ESU	Candidate	Threatened	Designated
Chum Salmon (*Onchorhynchus keta*) Columbia River Chum Salmon ESU	Candidate	Threatened	Designated
Coho Salmon (*Onchorhynchus kisutch*) Lower Columbia River Coho Salmon ESU	Candidate	Threatened	Designated
Steelhead (*Onchorhynchus mykiss*) Lower Columbia River Steelhead DPS	Candidate	Threatened	Designated
Eulachon (Columbia River Smelt - *Thaleichthys pacificus*) -- Southern DPS	---	Threatened	Designated
Monarch Butterfly (*Danaus plexippus*)	---	Proposed Threatened	No
Suckley's Cuckoo Bumble Bee *(Bombus suckleyi)*	---	Proposed Endangered	None Proposed
River Lamprey *(Lampetra fluviatilis)*	Candidate	Proposed Threatened	None Proposed
Coastal Resident/Searun Cutthroat Trout *(Oncorhynchus clarkii clarkii)*	Candidate	Proposed Threatened	None Proposed

Species, ESU, or DPS	State Status	Federal Status	Critical Habitat in Action Area?
Instream Habitat	Priority Habitat	---	---
Riparian Habitat	Priority Habitat	---	---

ESU = Evolutionarily Significant Unit DPS = Distinct Population Segment

The following effect determinations were made in the biological evaluation for the Endangered Species Act consultations with NMFS and USFWS.

SALMON AND STEELHEAD

The NWIFC website shows spawning habitat in the Cowlitz River at the project site for Chinook and steelhead, and the documented presence of chum and coho that would use the area as a migration corridor. There is no juvenile rearing habitat in the vicinity, so salmonid juveniles would only use the Cowlitz River near the boat launch for migration. Details below compare these species life histories with the proposed August 1 through August 31 in-water work window for hydraulic dredging.

Chinook

Spring Chinook enter the Cowlitz River from March through June and migrate through the action area to spawn in the Toutle River and other upper-river watersheds. Spring Chinook emigrate in their second spring as age-2 smolts in the spring (LCFRB 2010). This document assumes that they would not be present as adults or juveniles in the August in-water work window.

Fall Chinook enter the Cowlitz River from early September to late November. Natural spawning in the Cowlitz River occurs between October and November, and the peak usually occurs during first week of November (LCFRB 2010), so adults will not likely be spawning or migrating during the August 1 to August 31 in-water work window. Fall Chinook juveniles spend the spring in fresh water and emigrate in the summer as sub-yearlings (LCFRB 2010), so they could be present in the action area during hydraulic dredging. The *Effects Determination* section below discusses potential effects to fall Chinook juveniles.

Chum

Current adult chum returns to the Cowlitz watershed are very low, likely less than 150 fish. Summer and fall chum are genetically distinct from each other in the lower Cowlitz watershed and its tributaries. The peak fall run is generally in mid-October through November (LCFRB 2010). Little is known about the current condition of the summer run; however, there have been recurring observations of early-returning, summer-run chum salmon in the Cowlitz River, primarily at the Cowlitz Salmon Hatchery trap (Ford 2022), so it is assumed that they could be present in the action area in August. Adult fall chum migrate in the late fall do not spawn in the action area (NWIFC 2025). Juvenile chum migrate downstream from March to May as soon as they emerge from the

gravel, so they will not occur in the August in-water work window. The *Effects Determination* section below discusses potential effects to summer chum adults.

Coho

Adults enter the Columbia River from August through January (early stock primarily from mid-August through September and late stock primarily from late September to October). Peak spawning occurs in Cowlitz tributaries in late October for early stock and December to early January for late stock. Coho spend one year in fresh water, and emigrate as age-1 smolts in the spring (LCFRB 2010). Early-run adults could be migrating through the action area during the August in-water work window. The *Effects Determination* section below discusses effects to adult coho.

Steelhead

Historically, few summer steelhead were produced in the Cowlitz River watershed. Summer steelhead are currently managed in the watershed to support a sport fishery. Adults return to the Cowlitz River from June through August. They are produced in hatcheries within the watershed for a sport fishery, and the recovery plan does not state migration timing for adults or juveniles (LCFRB 2010).

Adult migration timing for Cowlitz winter steelhead is from December through April. Spawning in the Cowlitz watershed is generally from early March to early June. Wild steelhead fry generally rear in fresh water for two years, and juvenile emigration occurs from April to May, with peak migration in early May (LCFRB 2010). For these reasons, adult and juvenile winter steelhead will not be present during the August in-water work window, so *the project will have no effect on the Lower Columbia River Steelhead ESU.*

Whittle Creek

NWFIC shows the presence of coho and steelhead in Whittle Creek to areas upstream of the proposed mitigation site. Chinook juveniles could use the mouth of Whittle Creek to forage and rest during their downstream migration.

PROJECT EFFECTS TO SALMON AND STEELHEAD

Hydraulic dredging will create temporary negative effects to salmon and steelhead that will include increased suspended sediment concentrations, potential entrainment, and food-web disturbances to the benthic community. Effects from interrelated actions that include mitigation plantings along Whittle Creek will fully compensate for the proposed increased size of the dredging prism.

The previous discussion of direct impacts from suspended solids during in-water dredging in August included the following salmon runs and life forms:

- Fall Chinook juveniles.
- Summer chum adults.
- Early-run coho adults.

Underwater Disturbances

Underwater disturbances during August dredging will occur near the ramp and dock in shallow water and not in deep-water habitat where adult fish may be migrating upstream. However, these are not expected to be above background disturbances at this location because there is substantial use of the boat launch and dock. There will be *no effect* to summer chum adults or early-run coho adults from this activity.

Fall Chinook juveniles could be emigrating during August and are expected to stay near the shoreline, so they could be exposed to underwater dredging disturbances. Disturbances are common at the boat ramp and dock and are not anticipated to be above background levels, so it There will be *no effect* to fall Chinook juveniles.

Entrainment

Adults will not be entrained by hydraulic dredging because adults will be migrating in deep-water habitat away from the dredging prism and there would be *no effect* to summer chum or early coho adults from entrainment.

Juvenile fall Chinook could be present during the August dredging events; however, they will not be entrained by the equipment because the additional activities from dredging will likely prevent them from approaching the hydraulic head, and fish screens on the equipment will provide additional protection. For these reasons, there will be *no effect* to fall Chinook juveniles from entrainment.

Suspended Sediments

As discussed above in the *Direct Effects* section, when river's suspended sediment concentrations are high in the fall, winter, and spring, and when deposited sediment from sweeping the ramp and dock are returned to the river, there will be no detectable increase in suspended sediments in deep-water habitat where adult fish could be migrating upstream. Therefore, sediment removal from the ramp and dock will cause *no effect* to any adult or juvenile salmon.

During August dredging events, adult salmon will be migrating in deep water, and the increased suspended sediments will not span the width of the river. If necessary, they can easily avoid suspended sediment plumes in August during low river velocities because of where they migrate and because of their swimming abilities. This activity will have *no effect* on adult salmon.

Fall Chinook juveniles could be emigrating during August and are more likely to emigrate near the shoreline, so they could be exposed to suspended sediment increases within the action area. These juveniles may respond with eye and gill irritation and reduced visual distance so they are may be more susceptible to predation or could be better able to hide from predators. Because these effects will be temporary and minor, effects will be *insignificant*.

Food Web Disturbances

As discussed above in the *Direct Effects* section, the river sediments in the small dredging prism in shallow-water habitat supports benthic invertebrate populations consumed by juvenile salmon in this high-velocity reach that are frequently being buried and exposed by the current. Also, the

dredging prism is very small when compared to the rest of the Cowlitz River food web, and benthic populations recover quickly from temporary disturbances, which are also part of the baseline conditions. Therefore, dredging will have no effect on the benthic communities above naturally occurring sediment dynamics in this river reach. For these reasons, dredging will have no effect on the food web and therefore *no effect* on salmon and steelhead.

Effects from Interrelated Activities

Mitigation plantings in the riparian areas along Whittle Creek will provide material to the aquatic food web, as well as stream shading and large woody material. This will benefit juvenile coho and steelhead that rear and migrate in Whittle Creek. Also, juvenile Chinook may rest and feed during their migration at the creek's confluence with the Cowlitz River. Because the project will benefit these species, the project **may affect and is not likely to adversely affect Chinook, coho, and steelhead.**

Summary

There will be insignificant effects from temporary suspended sediments within 300 feet downstream of the dredging prism in the August work window in shallow-water habitat and improved aquatic-habitat conditions in Whittle Creek from mitigation plantings, the project **may affect and is not likely to adversely affect the Lower Columbia Chinook ESU, Lower Columbia Coho ESU, and the Lower Columbia Steelhead DPS**. There will be **no effect to the Columbia Chum ESU.**

SALMON AND STEELHEAD CRITICAL HABITAT

There is designated critical habitat in the action area for the four populations of salmon and steelhead (Federal Register 2005) in the Cowlitz River and for coho and steelhead in Whittle Creek. The following tables show primary biological features (PBFs) for salmon and steelhead ESUs/DPSs critical habitat present in the action area.

Table 4. PBFs of Designated Critical Habitats for ESA-Listed Salmon and Steelhead in the Action Area (except Coho; NMFS 2020).

Primary Biological Features		Species Life History Event
Site Type	**Site Attribute**	
Freshwater Rearing	Floodplain Connectivity	Fry emergence from gravel. Fry/parr/smolt growth and development
	Forage	
	Natural Cover	
	Water Quality	
	Water Quantity	
Freshwater Migration	Free of artificial obstruction	Adult sexual maturation Adult upstream migration and holding Kelt (steelhead) seaward migration Fry/parr/smolt growth, development, and seaward migration
	Natural Cover	
	Water Quality	
	Water Quantity	

Table 5. Habitats and Essential PBFs of Critical Habitats Designated for Coho ESUs (NMFS 2020).

Essential Features		Species Life History Event
Site	**Site Attribute**	
Spawning and Juvenile Rearing Areas	Cover/shelter Food (juvenile rearing) Riparian vegetation Space Spawning gravel Water quality Water quantity	Adult spawning Embryo incubation Alevin growth and development Fry emergence from gravel Fry/parr/smolt growth and development
Adult and juvenile migration corridors	Cover/shelter Food (juvenile) Riparian vegetation Safe passage Space Substrate Water quality Water quantity Water temperature Water velocity	Adult sexual maturation Adult upstream migration and holding Kelt (steelhead) seaward migration Fry/parr/smolt growth, development, and seaward migration
Areas for growth and development to adulthood	Ocean areas – not identified ***(Not present in the action area)***	Nearshore juvenile rearing Subadult rearing Adult growth and sexual maturation Adult spawning migration

Negative effects from dredging within the Cowlitz River include a temporary increase in suspended sediments in shallow-water habitat in the August work window that will temporarily affect the water quality PBF and the free of artificial obstruction/safe passage PBFs. The mitigation plantings in Whittle Creek will benefit the water quality, food/forage, and riparian vegetation PBFs. Therefore, the project **may affect and is not likely to adversely affect designated critical habitat for the Lower Columbia Chinook ESU, Columbia Chum ESU, Lower Columbia Coho ESU, and Lower Columbia Steelhead ESU**.

EULACHON

Eulachon adults, eggs, and larvae will not be present during the August in-water work window in the Cowlitz River. Adult and spawning have occurred in this area from late November through April, and their eggs and larvae may be present for a few additional weeks, but no life-history forms occur in the summer. Therefore, this project will have **no effect on the Eulachon Southern DPS**.

EULACHON CRITICAL HABITAT

Critical habitat has been designated (Federal Register 2011) within the Cowlitz River, and the following table shows PBFs for the Southern DPS of eulachon present in the action area.

Table 6. PBFs of Critical Habitat Proposed for the Southern DPS of Eulachon in the Action Area.

Primary Biological Features		Species Life History Event
Site Type	**Site Attribute**	
Freshwater Spawning and Incubation	Flow	Adult spawning. Incubation.
	Water Quality	
	Water Temperature	
	Substrate	
Freshwater Migration	Migratory Corridor	Adult and larval mobility. Larval feeding.
	Flow	
	Water Quality	
	Water Temperature	
	Food	

The project will occur in two site types of designated critical habitat for eulachon shown in the table: freshwater spawning and incubation and freshwater migration. PBFs that may affect these site types include migration corridor and water quality for spawning and incubation, and the freshwater migration PBFs include water quality and substrate. Effects will be temporary, so effects will be insignificant. A temporary increase in suspended sediment **may affect, and is not likely to adversely affect designated critical habitat for eulachon.**

MONARCH BUTTERFLY

The monarch butterfly was proposed as threatened in December 2024. There is no proposed critical habitat in the action areas, and the closest proposed critical habitat is along the Pacific coast in central and southern California (Federal Register 2024). The migratory group of monarch butterflies west of the Rocky Mountains overwinters in coastal California and Baja California and migrates to their breeding grounds in southern British Columbia in the spring and then migrate south in the fall. Adult monarchs feed on nectar from a wide variety of flowers. Coastal regions are important migratory flyways, so nectar (wild or in gardens) is an important resource. Monarch butterflies occur in herbaceous and shrub-shrub wetlands, forests, dunes, cropland, grassland, suburban areas, orchards, shrublands, and old fields. Recommended conservation measures include avoiding pesticide use and planting native nectar plants (USFWS 2025b).

The upland areas used for material dewatering and placement are in mowed or bare uplands, so there is little suitable foraging habitat in these areas and they will not be negatively affected by upland material placement. After the riparian-buffer enhancement plantings along Whittle Creek mature for a few years, these 0.69 acres will provide more nectar sources than what currently exist, and they can use the forested areas for resting, so there will be an overall beneficial effect. Therefore, this project **will not jeopardize the continued existence of monarch butterflies.**

If this species is listed before ESA consultation is finished, the following effect determination can be used for reasons stated above: the project **may affect and is not likely to adversely affect monarch butterflies**.

Suckley's Cuckoo Bumble Bee

Suckley's cuckoo bumble bee (*Bombus suckleyi*) was proposed as endangered in December 2024; there is no proposed critical habitat at this time. It is a social parasite, and nesting occurs exclusively in the nests of other bees because it has lost the ability to collect pollen and to rear its broods. Its known breeding host is the western bumblebee (*Bombus occidentalis*), but it has also been recorded as present in colonies of other *Bombus* species. Bumble bees require above- and below-ground micro sites for overwintering and nesting, including logs, stumps, and abandoned nests of rodents and ground-nesting birds (WDFW 2025).

Suckley's cuckoo bumble bee occurs in habitats of its known host species, the western bumble bee: open grassy areas, urban parks and gardens, chaparral and shrub areas, and mountain meadows. In general, bumble bees depend on habitats with rich floral resources, feed on nectar and pollen, and do not require native vegetation. Gardens and agricultural crops can provide them with food (WDFW 2025).

Potential threats to Suckley's cuckoo bumble bee include habitat loss from livestock grazing and fire management, loss of hosts, transmission of diseases from hosts, pesticide use, agricultural development, climate change, loss of genetic diversity, and compounding effects (USFWS 2025c). The rarity of its known host, the western bumble bee, is likely to affect its own survival. No Suckley's cuckoo bumble bees were identified in a bumblebee survey throughout Washington, Oregon, and Idaho from March 2018 through November 2020 (Xerces Society *et al* 2021).

Mitigation for this dredging project includes enhancing the riparian buffer along Whittle Creek with 0.69 acres native shrubs and trees that will create pollinator habitat that does not exist in the action area. In addition to riparian plantings along Whittle Creek, upland areas that will be used for dredged material placement will be stabilized with a native seed mix, which will provide food for bumblebees. These activities will provide improved foraging habitat for bumblebees.

This project **will not jeopardize the continued existence** of Suckley's cuckoo bumble bee because it is rare and unlikely to be present, so negative effects to potential nesting habitat from dredged material placement is discountable. Additionally, mitigation plantings will increase in the number of flowers for nectar sources, so food sources will increase to create a beneficial effect.

If this species is listed before the informal ESA consultation is finished, the following effect determination can be used for the reasons listed above: the project **may affect and is not likely to adversely affect** Suckley's cuckoo bumble bee.

Management Recommendations

Salmon and Steelhead

Federal

The Lower Columbia Salmon Recovery and Fish and Wildlife Subbasin Plan (LCFRB 2010) is being used as a recovery plan for salmon and steelhead by the National Marine Fisheries Service.

This plan gives the following key recovery priorities in the lower Cowlitz subbasin to attain recovery of listed salmon and steelhead:

1. Manage regulated stream flows through the hydropower system.
2. Restore floodplain function, riparian function, and stream habitat diversity.
3. Protect intact forest in headwater basins.
4. Manage growth and development to protect watershed processes and habitat conditions.
5. Address immediate risks with short-term habitat fixes.
6. Manage forest lands to protect and restore watershed processes.
7. Restore passage at culverts and other artificial barriers.
8. Align hatchery priorities consistent with conservation objectives.
9. Manage fishery impacts so they do not impede progress toward recovery.
10. Reduce out-of-subbasin impacts so that the benefits of in-basin actions can be realized.

This project is limited in scope and only proposes maintenance of existing infrastructure. Items 1 through 10 either do not apply to this project, can only be done by governments or agencies, or cannot be met within the limited area of this project.

STATE

WDFW does not have specific documents that have a short list of management recommendations for salmon; however, they do provide them for rainbow trout/steelhead (Rodrick and Milner 1991). Steelhead and salmon have similar life histories and habitat needs, so they are expected to be similar, if not identical. The following are management recommendations for steelhead:

- Buffer zones of at least the width of the height of the tallest tree should be maintained along stream banks, which provide rainbow trout and steelhead habitat, and any other stream which directly or indirectly influences rainbow trout and steelhead habitat.
- Road construction and maintenance activities should be avoided adjacent to streams which provide rainbow trout and steelhead habitat.
- Instream structures, such as bridges, piers, boat ramps, or culverts must not impede the natural movements of rainbow trout and steelhead.
- Waters inhabited by steelhead parr should not be treated with metal-based herbicides during the period March 1 through June 15.

This project will not remove native vegetation, and this project is limited in scope and only proposes maintenance of existing infrastructure. Natural movements of fish may be created by underwater disturbances from dredging for 1 to 2 days during August. No herbicides are proposed. Proposed mitigation will ensure no net loss of ecological function. For these reasons, the project meets steelhead management recommendations.

EULACHON

In 2001, WDFW issued management recommendations for eulachon or smelt fisheries. In 2010 commercial smelt fisheries were permanently closed, leaving only permitted seasonal recreational fishing. WDFW does not currently have specific documents that have a list of management

recommendations for eulachon; however, NMFS developed a recovery plan in 2017. Key recovery objectives are as follows:

- Ensure subpopulation viability.
- Conserve spatial structure and temporal distribution patterns.
- Conserve existing genetic and life history diversity and provide opportunities for interchange of genetic material between and within subpopulations.
- Eliminate or sufficiently reduce the severity of threats.

This project will not occur during the smelt spawning season or times when eggs or larvae are migrating downstream. Therefore, eulachon management recommendations will be met.

River Lamprey, Cutthroat Trout

There are no federal or state management recommendations specifically for river lamprey or cutthroat trout. However, management recommendations for salmon and steelhead will provide sufficient guidance for other fish species in the Cowlitz River, and salmon and steelhead management recommendations will be met.

Monarch Butterfly, Suckley's Cuckoo Bumble Bee

There are no federal or state management recommendations specifically for these species. However, WDFW has published *Management Recommendations for Washington's Priority Habitats and Species: Riparian Pollinators* (Martin and Azerrad 2023). It has management recommendations for many land uses and is not exclusive to riparian habitat, so these recommendations can also be used in upland habitat. Recommendations include conserving and restoring the habitat pollinators need for feeding, nesting, and overwintering, and by protecting that habitat from pesticides, pathogens, changes in land use, as well as other negative influences. Recommendations are included below:

Feeding

Many of the following considerations for feeding habitat require careful selection of plants. See the "Habitat Installation" section in Appendix 1 of (Martin and Azerrad 2023) for a list of useful plant-selection reference guides.

- Maintain a diversity of flowering plants. Carefully select plant species to ensure continuous blooming from spring through fall. Also, choose plants that will provide a diverse range of flower colors, shapes, sizes, and plant structures. Pay particular attention to maintaining ample foraging resources (i.e., plants in flower) during early spring for colony initiation and late summer when landscapes dry out and resources are more limited.
- Prioritize the conservation and/or selection of host plants for butterfly species of conservation concern (Appendix 3 of Martin and Azerrad 2023).
- Select native plants appropriate to your region, and not horticultural varieties that may not produce as plentiful or high-quality nectar and pollen. In riparian ecosystems, willow and other native flowering plants should not be replaced with woody non-native plants. Woody non-native plants can negatively impact the pollinator community, especially bees. Non-native, invasive plants directly compete with native plants for light, water, and nutrients, compete for visits from pollinators, further limiting propagation and biodiversity, and

produce shade which reduces the presence of bees and butterflies. When creating foraging habitat in arid landscapes, choose plants that tolerate heat and drought.
- Exclude grazing or implement conservation grazing practices to avoid competition for floral resources.
- Avoid applying pesticides to pollinator habitat.

NESTING

- Preserve structural complexity including downed wood, rock piles, and tall grasses.
- Preserve undisturbed ground in the broader landscape.
- Exclude grazing and avoid mowing and burning on and around known or potential nesting habitat to avoid impacts to ground-nesting bees. See the 'Nesting and Overwintering Habitat' section above for characteristics of potential nesting habitat.
- Extend habitat management/conservation for bees at least 100 meters into habitats (e.g., woodlands and forests) beyond what might traditionally be considered high quality pollinator habitat (e.g., areas of abundant flowering resources

OVERWINTERING Maintain undisturbed microhabitat features including rodent burrows, moss, leaf litter (both broad leaves and evergreen needles), and loose organic material in the vicinity of feeding and nesting habitat.

EFFECTS OF PROPOSED PROJECT

This project does not propose to impact riparian habitat, and the only impacts to terrestrial habitat is the temporary dewatering structure near the boat ramp and the material placement sites that currently have weedy herbaceous plants. This project will plant native trees and shrubs in the riparian habitat along Whittle Creek as mitigation, and a native seed mix will be seeded on disturbed upland areas that will provide food for pollinators. No pesticides are proposed. Nesting and overwintering habitat will be preserved except in areas stated above. Therefore, management recommendations will be met for monarch butterflies and Suckley's cuckoo bumble bee.

INSTREAM HABITAT

WDFW does not have specific documents that have a short list of management recommendations for instream habitat. Aquatic Habitat Guidelines are a series of documents with guidelines to facilitate the consistent application of good science and practice for resources and habitat management, project design, construction, and operation in, near, or affecting aquatic systems. This project has been designed according to these documents that are available on the WDFW website.

RIPARIAN HABITAT

The WDFW management recommendation for riparian habitat is to "protect riparian habitat areas" (Knutson and Naef 1997). Avoidance and minimization measures including BMPs as well as mitigation sequencing is described in the mitigation plan for this project. This project will not negatively impact riparian habitat except that the mitigation project will enhance riparian habitat in Whittle Creek, so the project meets riparian management recommendations.

LIMITATIONS

ELS bases the above-listed determinations and conclusions on standard scientific methodology and best professional judgment. In our opinion, the conclusions should agree with local, state, and federal regulatory agencies. However, this should be used at your own risk until it has been reviewed and approved in writing by the appropriate regulatory agencies.

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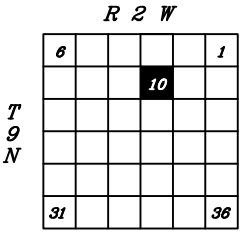
FIGURES AND PHOTOPLATE

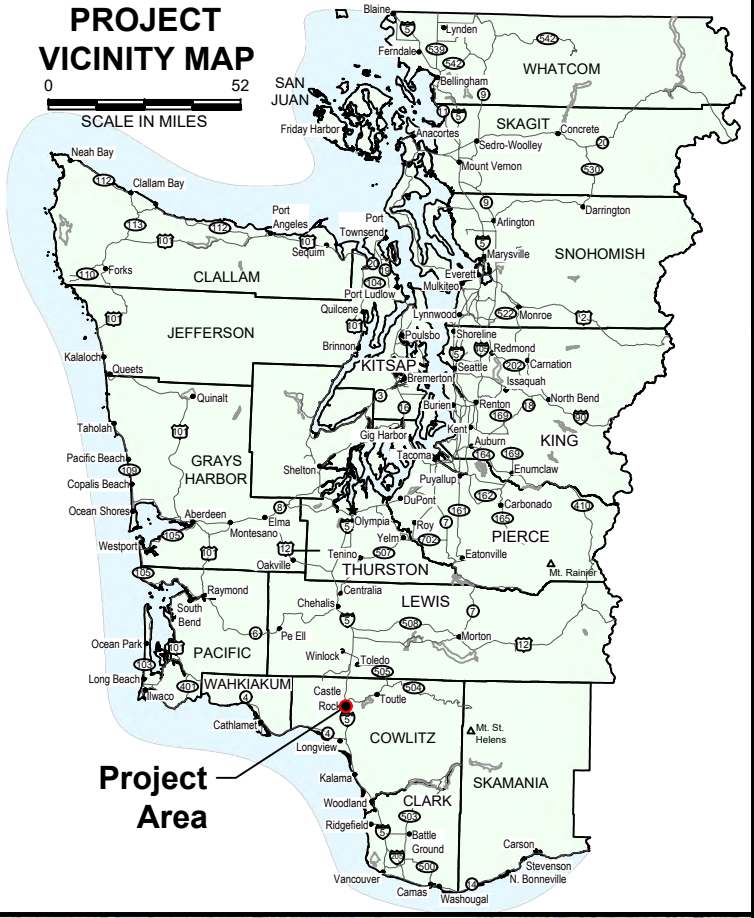
WASHINGTON

46.2784° Latitude
-122.9125° Longitude

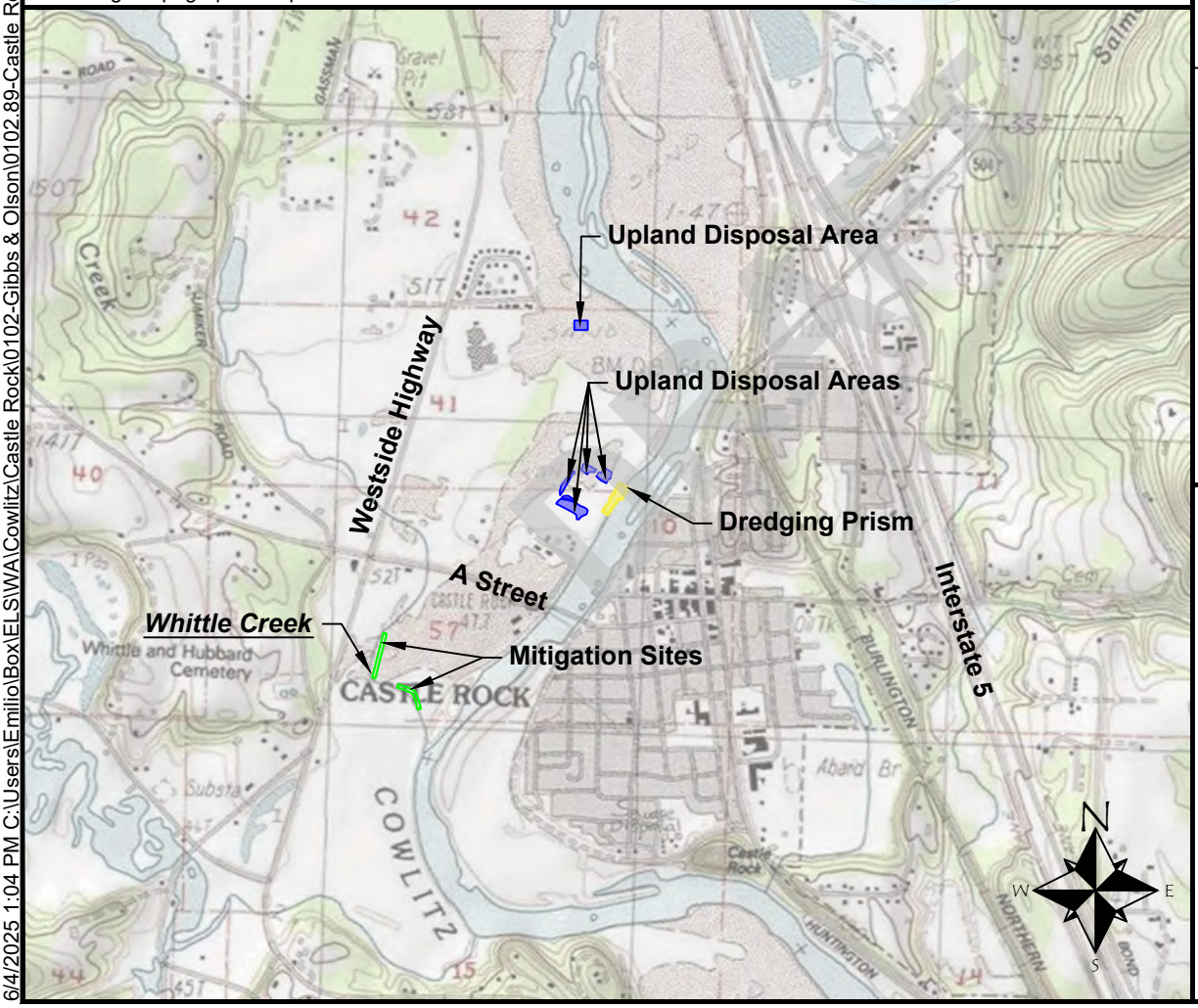
LOCATION MAP



PROJECT VICINITY MAP



NOTE:
Quadrangle topographic map from USGS.



PROPOSED: Maintenance Dredging

IN Cowlitz River
NEAR: Castle Rock
COUNTY: Cowlitz **STATE:** WA
SHEET 1 **OF** 7
DATE: 6/4/25

VICINITY MAP
APPLICANT: City of Castle Rock
PROJECT NAME: Castle Rock Boat Launch Dredging
REFERENCE #: Not Yet Assigned.
SITE LOCATION ADDRESS:
RM 17.6 - Access Rd 5040 Westside Hwy

PURPOSE: Maintain Water Depth at Boat Launch.

DATUM: NAD83
ADJACENT PROPERTY OWNERS:
See JARPA

SCALE IN FEET
0
2000
4000

1157 3rd Ave., Suite 220A
Longview, WA 98632
Phone: (360) 578-1371

Ecological Land Services

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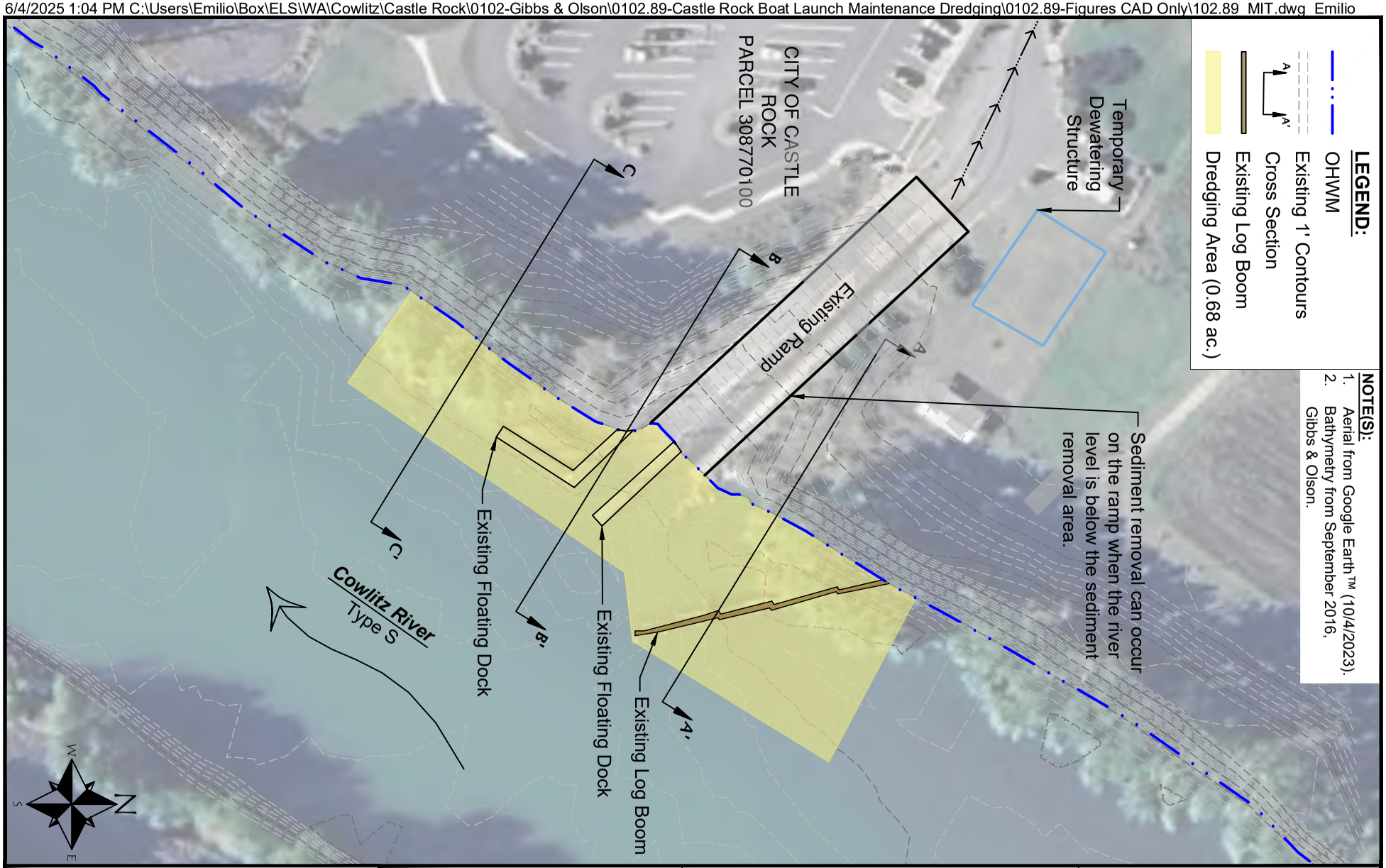

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Ecological Land Services
1157 3rd Ave., Suite 220A
Longview, WA 98632
Phone: (360) 578-1371

PURPOSE: Maintain Water Depth at Boat Launch.

DATUM: NAD83

ADJACENT PROPERTY OWNERS: See JARPA

DREDGING PRISM

APPLICANT: City of Castle Rock

PROJECT NAME: Castle Rock Boat Launch Dredging

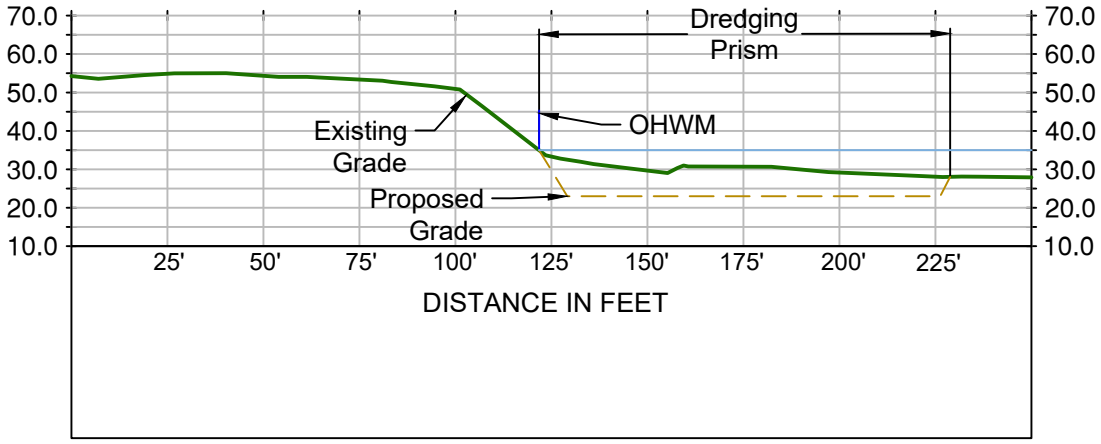
REFERENCE #: Not Yet Assigned.

SITE LOCATION ADDRESS: RM 17.6 - Access Rd 5040 Westside Hwy

PROPOSED: Maintenance Dredging

IN Cowlitz River
NEAR: Castle Rock
COUNTY: Cowlitz **STATE:** WA
SHEET 2 **OF** 7
DATE: 6/4/25

Cross Section A-A'



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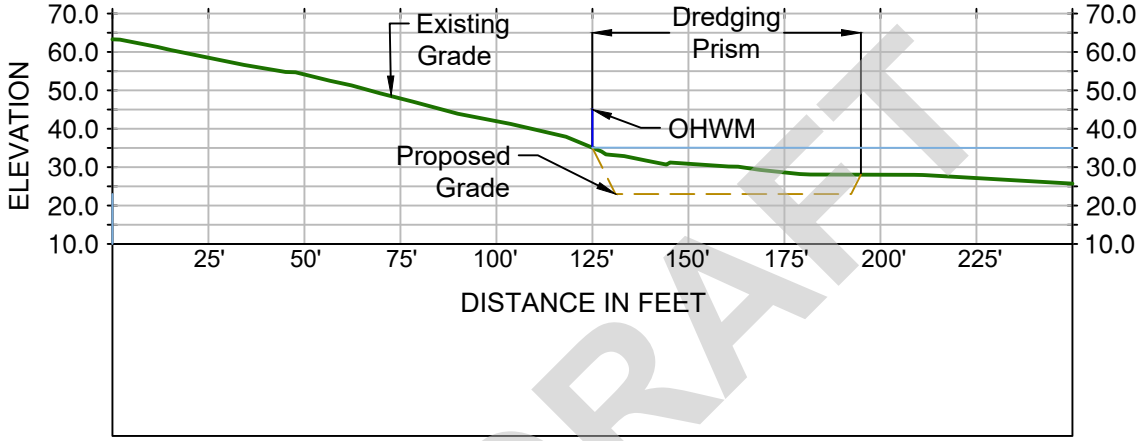
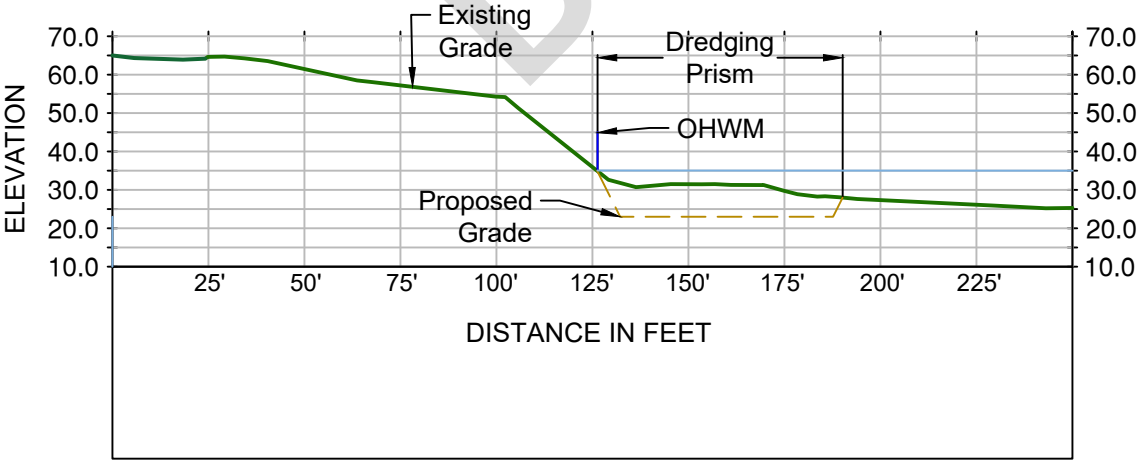


Cross Section C-C'



NOTE(S):

1. Green lines indicate existing grade from 2016 bathemetric survey.

CROSS SECTIONS

APPLICANT: City of Castle Rock
PROJECT NAME: Castle Rock Boat Launch Dredging
REFERENCE #: Not Yet Assigned.
SITE LOCATION ADDRESS: RM 17.6 - Access Rd 5040 Westside Hwy

PURPOSE: Maintain Water Depth at Boat Launch.

DATUM: NAD83
ADJACENT PROPERTY OWNERS: See JARPA

PROPOSED: Maintenance Dredging
IN Cowlitz River
NEAR: Castle Rock
COUNTY: Cowlitz **STATE:** WA
SHEET 3 **OF** 7
DATE: 6/4/25

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1157 3rd Ave., Suite 220A
Longview, WA 98632
Phone: (360) 578-1371
Ecological Land Services

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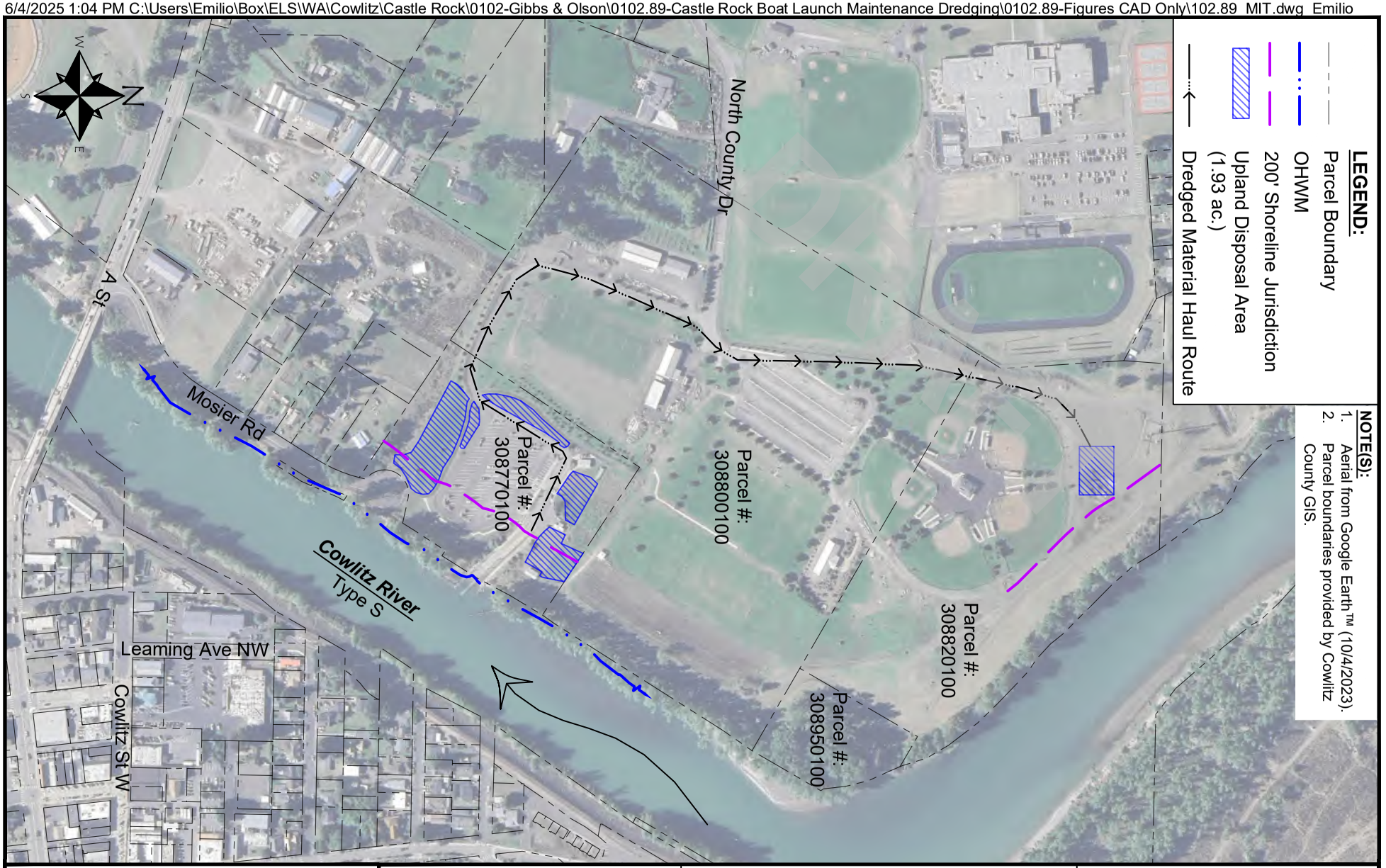

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SCALE IN FEET

Ecological Land Services
1157 3rd Ave., Suite 220A
Longview, WA 98632
Phone: (360) 578-1371

PURPOSE: Maintain Water Depth at Boat Launch.

DATUM: NAD83

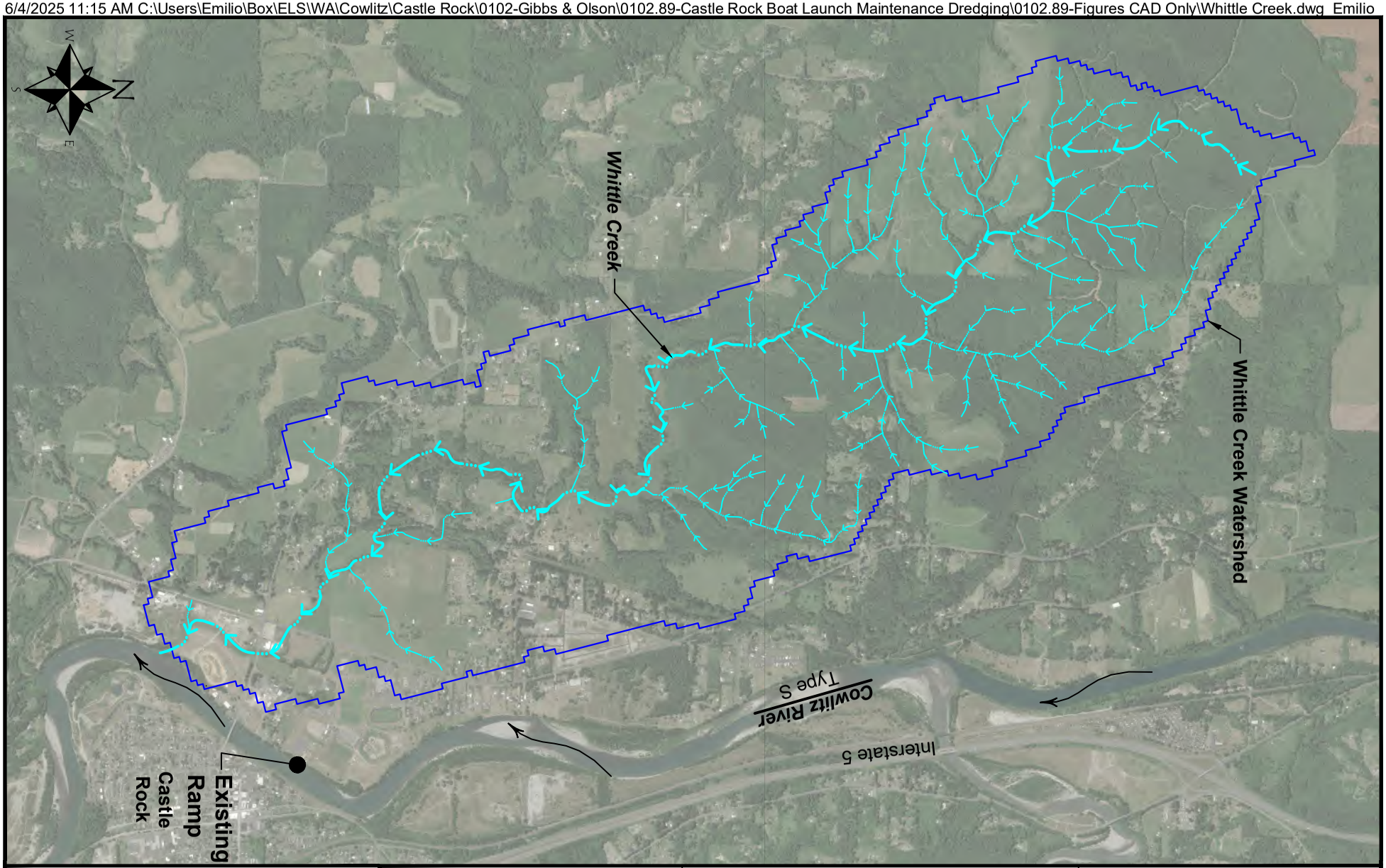
ADJACENT PROPERTY OWNERS: See JARPA

UPLAND DISPOSAL AREAS

APPLICANT: City of Castle Rock
PROJECT NAME: Castle Rock Boat Launch Dredging
REFERENCE #: Not Yet Assigned.
SITE LOCATION ADDRESS: RM 17.6 - Access Rd 5040 Westside Hwy

PROPOSED: Maintenance Dredging

IN Cowlitz River
NEAR: Castle Rock
COUNTY: Cowlitz **STATE:** WA
SHEET 4 **OF** 7
DATE: 6/4/25



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SCALE IN FEET

Ecological Land Services
1157 3rd Ave., Suite 220A
Longview, WA 98632
Phone: (360) 578-1371

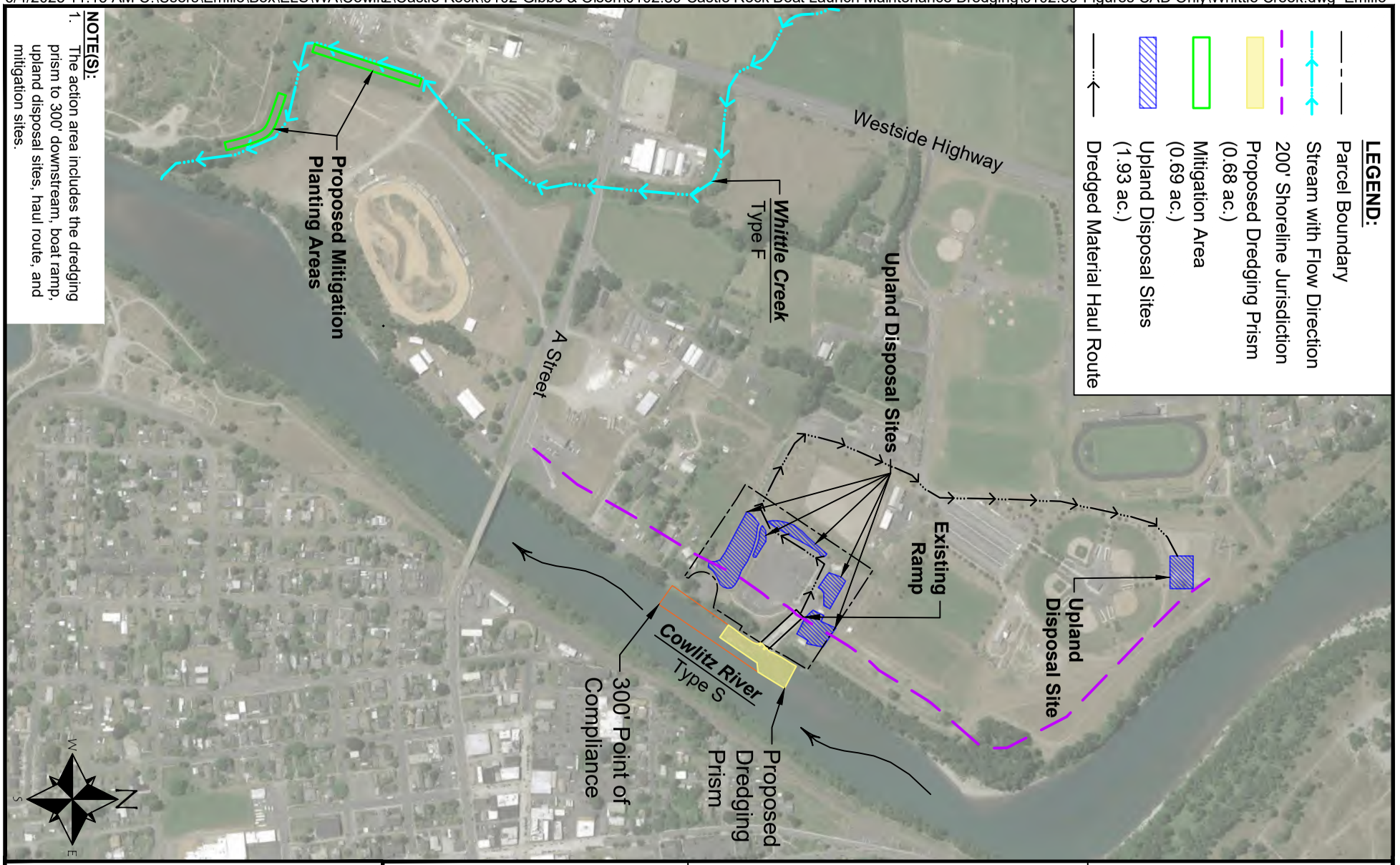
PURPOSE: Maintain Water Depth at Boat Launch.

DATUM: NAD83
ADJACENT PROPERTY OWNERS: See JARPA

WHITTLE CREEK WATERSHED
APPLICANT: City of Castle Rock
PROJECT NAME: Castle Rock Boat Launch Dredging
REFERENCE #: Not Yet Assigned.
SITE LOCATION ADDRESS: RM 17.6 - Access Rd 5040 Westside Hwy

PROPOSED: Maintenance Dredging

IN Cowlitz River
NEAR: Castle Rock
COUNTY: Cowlitz **STATE:** WA
SHEET 5 **OF** 7
DATE: 6/4/25



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Ecological Land Services
1157 3rd Ave., Suite 220A
Longview, WA 98632
Phone: (360) 578-1371

PURPOSE: Maintain Water Depth at Boat Launch.

DATUM: NAD83
ADJACENT PROPERTY OWNERS: See JARPA

ACTION AREA MAP
APPLICANT: City of Castle Rock
PROJECT NAME: Castle Rock Boat Launch Dredging
REFERENCE #: Not Yet Assigned.
SITE LOCATION ADDRESS: RM 17.6 - Access Rd 5040 Westside Hwy

PROPOSED: Maintenance Dredging

IN Cowlitz River
NEAR: Castle Rock
COUNTY: Cowlitz **STATE:** WA
SHEET 6 **OF** 7
DATE: 6/4/25

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Plant Specifications (0.69 acres).

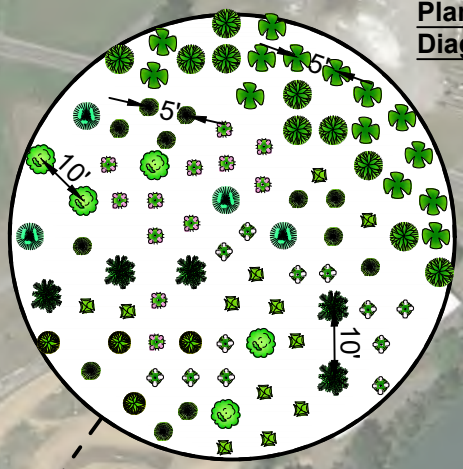
Species	Spacing (feet)		Minimum Size and Type	Quantity
Plant Near the Water – lower 11' (0.23 acres – 10,019 sf)				
Sitka Willow (*Salix sitchensis*)	5		3' cuttings	200
Red-Osier Dogwood (*Cornus sericea*)	5		3' cuttings or 1-gallon container or larger	200
Plant In Drier Soils Higher up the Bank – upper 24' (0.46 acres – 20,038 sf)				
Black Cottonwood (*Populus balsamifera*)	10' from other trees		3' cuttings, bareroot, or 1-gallon container or larger	67
Douglas Fir (*Pseudotsuga menziesii*)	10' from other trees		Bareroot or 1-gallon container minimum	67
Grand Fir (*Abies grandis*)	10' from other trees		Bareroot or 1-gallon container or larger	67
Vine Maple (*Acer circinatum*)	10' from other trees		1-gallon container or larger	67
Oceanspray (*Holodiscus discolor*)	5' from other shrubs and trees		1-gallon container or larger	150
Nootka Rose (*Rosa nutkana*)	5' from other shrubs and trees		1-gallon container or larger	150
Snowberry (*Symphoricarpos albus*)	5' from other shrubs and trees		1-gallon container or larger	150
Salal (*Gaultheria shallon*)	5' from other shrubs and trees		1-gallon container or larger	150
			Total Plants	1,286

LEGEND:

- Parcel Boundary
- Stream with Flow Direction
- Mitigation Area (0.69 ac.)

Whittle Creek
Type F

Planting Diagram:



490' x 35'
17,150 sq.ft.
0.39 ac.

370' x 35'
12,950 sq.ft.
0.30 ac.

Cowlitz River
Type S

N
W
E
S

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SCALE IN FEET

1157 3rd Ave., Suite 220A
Longview, WA 98632
Phone: (360) 578-1371

Ecological Land Services

PURPOSE: Maintain Water Depth at Boat Launch.

DATUM: NAD83

ADJACENT PROPERTY OWNERS: See JARPA

PLANTING PLAN

APPLICANT: City of Castle Rock

PROJECT NAME: Castle Rock Boat Launch Dredging

REFERENCE #: Not Yet Assigned.

SITE LOCATION ADDRESS: RM 17.6 - Access Rd 5040 Westside Hwy

PROPOSED: Maintenance Dredging

IN Cowlitz River
NEAR: Castle Rock
COUNTY: Cowlitz **STATE:** WA
SHEET 7 **OF** 7
DATE: 6/4/25

Photo 1. Taken June 2020. Dock at boat launch on the Cowlitz River facing downstream.

Photo 2. Taken June 2025. Looking downstream at dock shown in Photo 1. Both photos were taken at similar river levels. Photo 2 shows significant sediment accumulation.

Photo 3. Taken June 2025 from end of dock looking upstream at ramp and log boom.

Photo 4. Looking upstream at log boom. Photo taken June 2025.

Ecological Land Services

1157 3rd Avenue, Suite 220A
Longview, WA 98632
Phone: (360) 578-1371
Fax: (360) 414-9305

DATE: 06/02/25
DWN: LS
PRJ. MGR: LS
PROJ.#: 102.89

Photoplate 1
Castle Rock Boat Launch Maintenance Dredging
Castle Rock, Washington
Section 10, Township 9N, Range 2W, W.M.

APPENDIX A

SUITABILITY DETERMINATION

CENWS-ODS-ND

MEMORANDUM FOR FILE **February 8, 2018**

SUBJECT: DMMP TIER 1 EVALUATION OF THE CITY OF CASTLE ROCK — BOAT LAUNCH AND FLOATING DOCK MAINTENANCE DREDGING, COWLITZ RIVER, WITH UPLAND AND/OR FLOWLANE DISPOSAL.

1. **Introduction**. This memorandum documents the Tier 1 evaluation by the Dredged Material Management Program (DMMP) agencies (U.S. Army Corps of Engineers, Washington Departments of Ecology and Natural Resources, and the Environmental Protection Agency) of the City of Castle Rock's boat ramp and floating dock maintenance dredging (Figure 1). This evaluation resulted in a no-test determination.

2. **Project.** The City of Castle Rock (City) Al Helenberg Memorial boat launch and floating dock were constructed in 2010 to provide safe and reliable access to the Cowlitz River. The structures are located on the west bank of the Cowlitz River, approximately 2.5 miles downstream of the confluence of the Toutle River and the Cowlitz River. During some high water/high flow events, the launch and dock accumulate significant sediment and woody debris. The sediment and debris must be removed to prevent structural damage to the launch and ramp, and allow their continued use.

   In August 2015, the DMMP agencies provided a no-test determination for the removal of sediment from the project site with adjacent upland disposal (DMMP, 2015). The USACE permit associated with that JARPA was not issued and no work was performed.

   Subsequently, the City has submitted a new JARPA with a proposed 10-year maintenance plan to remove up to 500 cubic yards (CY) of sediment per event from the boat launch and floating dock. Up to 6 events per year are anticipated. The sediment above the water line will be removed and placed in the adjacent uplands through the use of a vacuum truck, mechanical methods, and/or manual labor. Removal of sediment from below the water line, if needed, will be performed using a curtain to isolate the area of removal. The silt curtain would only be used during times of low flow and low turbidity. In-water sediment removal will be limited to the ramps and 20 feet around the floats' perimeter. During periods of high water and associated high turbidity, the City proposes to flush accumulated sediment back into the river; a silt curtain would not be used during high flows and high turbidity.

   The City proposes to relocate natural large woody debris within the river or remove it, if necessary, using mechanical methods. Small debris will be swept off if possible or washed off with river water.

3. **Evaluation.** Under DMMP guidelines, projects for which upland disposal is planned do not ordinarily require testing of the dredged material, but do require evaluation under the Department of Ecology's antidegradation standard. Much of the sediment load carried by the Cowlitz River is of volcanic origin, emanating from the Mount St. Helens impact area. Chemical testing of Cowlitz River sediment by Portland District has shown it to be of low concern for chemical contamination (USACE, 2007). An EIM query shows that no sediment data have been collected from within or near the project area, which may be an indication that there are no sediment contaminant issues in the vicinity of the project. A review of EPA's Cleanups in My Community database and Ecology's Integrated Site Information System did not reveal any cleanup sites within or near the project area.

4. **Debris Management.** Large woody debris is the main concern at this project site, as documented by historical photographs and information provided by the City. Although uncommon, anthropogenic debris, if encountered, must be removed and disposed at an appropriate upland location.

5. **Tier 1 Determination.** This project is located in an area of low concern, with proposed upland disposal as the primary method of sediment placement. The DMMP agencies have determined that the sediment that accumulates at the site is of low concern for contamination, and that the sediment exposed by dredging will meet the State of Washington antidegradation standard. Therefore, no DMMP testing is required for this project.

   This determination does ***not*** constitute final agency approval of the project. During the public comment period that follows a public notice, resource agencies will provide input on the overall project. A final decision will be made after full consideration of agency input, and after an alternatives analysis is done under section 404(b)(1) of the Clean Water Act.

5. **References.**

DMMP, 2015. *DMMP Tier 1 Evaluation of the City of Castle Rock – Boat Launch and Floating Dock Maintenance Dredging (NWS-2015-816), Cowlitz River, with Upland Disposal*. August 26, 2015.

USACE 2007. *Cowlitz River Federal Project – Sediment Quality Evaluation Report*. U.S. Army Corps of Engineers, Portland District. March 2007.

6. Signatures.

2/8/18
Date

Heather Whitney Fourie
Heather Whitney Fourie - Seattle District Corps of Engineers

2/8/18
Date

Justine S. Barton
Justine Barton - Environmental Protection Agency

02/08/2018
Date

Laura Inouye
Laura Inouye, Ph.D. - Washington Department of Ecology

2/8/18
Date

Celia Barton
Celia Barton - Washington Department of Natural Resources

Copies Furnished:
Danette Guy, Corps Regulatory
Laura Inouye, PhD., Ecology
Justine Barton, EPA
Celia Barton, DNR
DMMO File

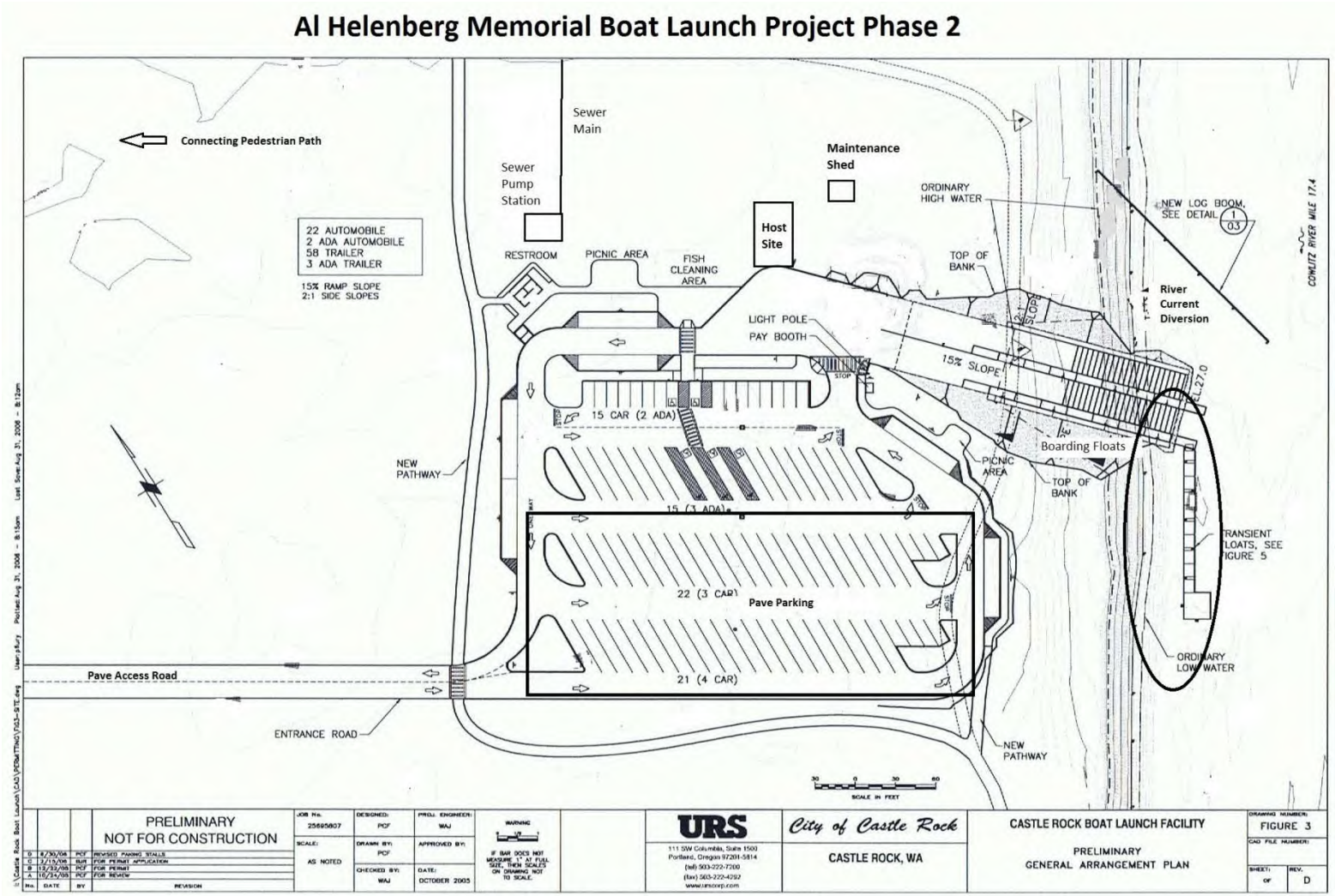


Figure 1. City of Castle Rock Boat Launch Maintenance.

Approximate dredge area shown in oval circle.

APPENDIX B

MITIGATION PLAN

MITIGATION PLAN

June 11, 2025

Al Helenberg Memorial Boat Launch Maintenance Dredging

Castle Rock, Washington

Prepared for

City of Castle Rock
P. O. Box 370
Castle Rock, Washington 98611
(360) 274-7478

Prepared by

Ecological Land Services
1157 3rd Avenue, Suite 220A • Longview, WA 98632
(360) 578-1371 • Project Number 102.89

SIGNATURE PAGE

The information and data in this report were compiled and prepared under the supervision and direction of the undersigned.

Lynn Simpson
Senior Environmental Scientist

TABLE OF CONTENTS

LIST OF TABLES (IN TEXT)

FIGURES AND PHOTOPLATES (APPENDED)

APPENDIX

CONTACTS

Landowner and Responsible Party for Mitigation
City of Castle Rock
Contact: Dave Vorse, Public Works Director
360 A Street SW
Castle Rock, Washington 98611
360-274-7478
Email: crpwd@ci.castle-rock.wa.us

Environmental Consultant and Mitigation Plan Author
Lynn Simpson
Ecological Land Services, Inc.
1157 3rd Avenue, Suite 220A
Longview, Washington 98632
(360) 578-1371

INTRODUCTION

Ecological Services, Inc. (ELS) has completed report on behalf of the City of Castle Rock, Washington, for maintenance dredging at the existing Al Helenberg Memorial Boat Launch on the Cowlitz River. Figures and photoplates are attached.

PROPONENT AND LOCATION

The project is located within the Castle Rock city limits in Cowlitz County, Section 20 of Township 6 North, Range 1 West of the Willamette Meridian (see Sheet 1), and the 170800050904 Whittle Creek-Cowlitz River 6th field Hydraulic Unit Code and Water Resources Inventory Area 26 (Cowlitz watershed). The site is at River Mile 17.4 of the Cowlitz River, and the site address is 240 North County Drive.

PROJECT PURPOSE AND NEED

The structures are located on the west bank of the Cowlitz River, approximately 2.5 miles downstream of the confluence of the Toutle River and the Cowlitz River. During some high water/high flow events, the launch, dock, and log boom accumulate significant amounts of sediment and woody debris. The sediment and debris must be removed to prevent structural damage and maintain water depth at the ramp and dock and to allow its continued use for recreation and emergency services (see Sheet 2). To maintain this boat launch, permits for maintenance dredging need to be updated.

EXISTING CONDITIONS

LANDSCAPE POSITION

The project is within lower portion of Watershed Resource Inventory Area (WRIA) 26 – Cowlitz Watershed, and is within the 12-digit Hydrologic Unit Code (HUC) 170800050904, within the Whittle Creek-Cowlitz River subwatershed and within Water Resources Inventory Area 26 (Cowlitz River). The Toutle River is one of the largest tributaries to the Cowlitz River, with the confluence approximately 2.4 miles upstream of the site, and the confluence of the Cowlitz River and Columbia River is approximately 16.5 miles downstream of the site.

Dam construction upstream of the project on the Cowlitz River changed many of the baseline conditions, including habitat-forming processes, habitat types, primary productivity, the food web, access to habitats, and predation. In the 1970s, artificial levees were constructed on both sides of the Cowlitz River through the City of Castle Rock, Kelso, and Longview to prevent flooding.

The 1980 Mount St. Helens eruption changed the nature of the river below the Toutle River. The mudflow that was conveyed down the Toutle River and into the Cowlitz raised the bottom depth by up to 15 feet in some areas, greatly reducing the flood-carrying capacity. Since the eruption, the Toutle River has continued to move sediment-laden water into the Cowlitz and Columbia rivers. The sediment retention dam on the Toutle River is full and no longer holds back sediment that is continually eroding from the Mount St. Helens eruption deposits in 1980.

Land Uses in and around the Project Area

The property is zoned for "Parks, Recreation, and Open Space". It currently consists of a parking lot, boat launch, floating docks, various outbuildings, and walking trails. The land adjacent to the Cowlitz River had been used for dredged material placement from the emergency dredging after the Mount St. Helens eruption in 1980. The area to the north and west of the site is property owned and used by the Castle Rock School District. Properties to the south consist of small residential lots with single-family dwellings. Across the river is the City of Castle Rock.

The general vicinity west of the Cowlitz River was used by the U.S. Army Corps of Engineers for placing dredged material from the emergency dredging in the Cowlitz River in the early 1980s after the Mount St. Helens eruption of 1980. The project is bordered to the north and west by property owned by the Castle Rock School District. Properties to the south consist of small residential lots containing single-family dwellings, and the site is accessed from the West Side Highway, west of the boat launch.

The property has generally flat topography with an approximately 35 percent slope along the shoreline of the Cowlitz River. Riprap is present along the toe of the stream banks upstream and downstream of the project area. Vegetation consists of mowed grass with a thin stand of black cottonwood trees along the shoreline.

The Al Helenberg Memorial Boat Launch was constructed in 2010 within Castle Rock city limits approximately 1,300 feet upstream of the State Route 411 Bridge (see Sheet 1) to provide safe and reliable access to the Cowlitz River. The facility consists of a parking lot, various outbuildings, walking trails, two-lane boat ramp, fully grated boarding floats on each side of the ramp, and a floating dock on the downstream side of the ramp parallel to the shoreline. Upstream of the ramp is a log-boom anchored with piling to deflect debris from the boat ramp and dock (see Sheets 2, 3, and photoplate).

Aquatic Habitat

There is no aquatic vegetation in or near the proposed dredging prism. Sediment near the project site consists mostly of sand with some gravel and finer material. The deepest river depth at the boat launch in the bathymetric survey (WEST 2016) was about 20 feet below the OHWM at the thalweg. The riverbank at the boat launch and on both sides of the river has a layer of rock at its base to prevent erosion. There are no active areas of bank erosion near the boat launch.

Hydrology

A WEST Consultants memorandum (WEST 2016) to the City of Castle Rock discusses hydrology in the project area. The memorandum states that there is a U.S. Geological Survey river gage 142430000 Cowlitz River at Castle Rock located approximately 1,400 feet downstream of the boat launch at the Highway 411 Bridge (A Street) with a records beginning in 1926. Mean daily flow data for 2006 through 2016 were determined as follows:

- 30,000 cfs – approximate upper limit of usability of the boat launch.
- 9,000 cfs – typical winter flow rate.
- 5,000 cfs – typical summer flow rate.

Water Quality

The latest approved 303(d) list shows no listings for Category 5 water-quality impairments in the area (Ecology 2025a).

Sediment Transport, Deposition, and Disposal

High concentrations of suspended sediments occur in the Cowlitz River at the project site, especially during heavier rainfall events. The project is approximately 2.4 river miles downstream from the Toutle River confluence with the Cowlitz River. The sediment retention dam on the Toutle River is full and no longer holds back sediment that is continually eroding from the Mount St. Helens eruption in 1980.

The following information about sedimentation at the boat launch was provided in a technical memorandum by WEST Consultants, Inc. (WEST 2016).

> Sediment transport conditions in the Cowlitz River are highly influenced by the delivery of sediment from the Toutle River, which flows into the Cowlitz River about 2.4 miles upstream of the project site. The Toutle River continues to deliver significant quantities of silt- and sand-sized sediment as a result of continued erosion of the debris avalanche created by the eruption of Mount Saint Helens in May 1980. The U.S. Army Corps of Engineers has continued to manage sediment in the Toutle River, most recently raising the spillway elevation at the Sediment Retention Structure to improve the sediment trapping efficiency. They have also dredged the lower portion of the Cowlitz River near the confluence with the Columbia River. However, significant quantities of sand-sized material will continue to be transported through the project reach as both bed load and suspended load.
>
> Much of the fine sediment in the Cowlitz River is transported as suspended load during high flow events. As a result, sediment deposition occurs in areas of low velocity and low shear stress such as the areas along the banks, the inside of channel bends, and near obstructions to flow. During the December 2015 high water event (Q = 83,700 cfs), significant sedimentation occurred at the boat launch. The surface of the ramp was buried in as much as 2.5 feet of sand-sized material. Post-flood photographs indicate that some amount of the deposited sediment located near the base of the ramp was eroded as the river's discharge decreased. However, a significant amount of sediment remained in the immediate vicinity of the transverse floats, causing them to be partially grounded during low water conditions. A significant portion of the sediment that was deposited at the ramp was likely conveyed by the river as suspended load.

The spillway at the Sediment Retention Structure was raised in 2012, and there are plans to raise it again although there has not been a date set for construction. The Corps' 2024 report states that sediment trapping efficiencies were down to 16%. Because of this situation and the resulting bank erosion along the Toutle and Cowlitz rivers upstream of the boat launch, there will be increasingly more sediment settling in the dredging prism.

Sediment Quality

Under DMMP guidelines, projects for which upland disposal is planned do not ordinarily require testing the dredged material but do require evaluation under the Department of Ecology's antidegradation standard. Much of the sediment load carried by the Cowlitz River is of volcanic origin, emanating from the Mount St. Helens impact area. Chemical testing of Cowlitz River sediment by the Corps' Portland District has shown it to be of low concern for chemical contamination (USACE 2007). An Environmental Information Management database (EIM)

query shows that no sediment data have been collected from within or near the project area, which may be an indication that there are no sediment contaminant issues in the vicinity of the project. A review of EPA's *Cleanups in My Community* database and Ecology's *Integrated Site Information System* did not reveal any cleanup sites within or near the project area. In August 2015, the DMMP agencies provided a no-test determination for sediment removal from the project site with adjacent upland disposal (DMMP 2015, see Appendix A).

Terrestrial Habitat

There is no native terrestrial habitat within the proposed dredging prism or upland placement areas. Placement areas are flat with either nearly bare ground or herbaceous vegetation that includes non-native plants. Staging areas will be on the ramp, paved areas, and a dewatering area.

Previous Sediment Removal Events

Since the boat launch was constructed in 2010, previous dredging permits allowed sediment removal above the waterline on the boat ramp and dock with a skid steer, excavator, or hand tools for up to 200 cubic yards per year. Dredged material was transferred into dump trucks and placed in upland areas near the site. In August 2015, the DMMP agencies provided a no-test determination for the removal of sediment from the project site with adjacent upland disposal (DMMP 2015). The table below summarizes volumes of sediment removed since 2018. No records are available before 2018.

Table 1. Dredged Material Removed in Previous Dredging Events since 2018.

Date	Volume Removed (cubic yards)
February 8, 2018	20
March 14, 2018	10
May 3, 2018	40
January 2, 2019	5
December 30, 2019	10
February 11, 12, 2020	90
February 20, 2020	5
2021	68
2022	105
2023	47
2024	49

Project Description

Proposed Sediment Removal

For the new 10-year permit, the City proposes to remove a total of approximately 500 cubic yards per year of accumulated sediment in up to six events each year from two areas: above the waterline on the boat ramp and floating dock and from hydraulic dredging below the waterline from areas

shown on Sheets 2 and 3. The term "dredging" in this report will refer to removing sediment below the waterline.

ABOVE THE WATERLINE

Sediment above the water line deposited on the ramp and dock will be allowed to dewater in-place and then will be removed with a skid steer, excavator, or hand tools. The material will be placed in the adjacent uplands within the park. This sediment removal typically occurs during the fall, winter, and occasionally in the spring and will take 1 to 5 days.

During periods of high water and associated high turbidity, the City proposes to flush accumulated sediment from the ramp and floating docks back into the river using a pump with a hose and a spray nozzle. Sediment deposited in these areas typically occurs during the fall, winter, and early spring.

BELOW THE WATERLINE

The proposed dredging prism is approximately 0.68 acres (about 29,600 square feet). This volume and area are larger than the original dredging prism that was proposed before the boat-launch facility was constructed because sediment accumulation has occurred over a larger dredging prism than was anticipated. A larger prism is necessary to maintain usable depths for boaters and to remove enough sediment so less frequent dredging is required. Also, the time that most of the sediment is deposited in the dredging prism is during the late fall and winter months during high river flows. Unfortunately for the City and boaters, dredging has to wait until the in-water work window in August to remove accumulated sediment.

Dredging below the water line will be performed during the in-water work window of August 1 through August 31. Sheet 3 shows cross sections of the proposed dredging prism. The deepest proposed dredging elevation is 23 feet NAD83. Existing riverbed contours were obtained from the Corps bathymetric survey in April 2025; however, there were no survey points near the dredging prism. Therefore, the 2016 survey of the dredging prism has been used for the cross sections.

The time to offload and dewater the material and load trucks will be about 4 to 5 days, and the volume of sediment removed will be reported based on the number of truckloads taken to upland disposal areas and not based on a subsequent survey.

Hydraulic dredging may be performed with divers, a vacuum truck, or from a barge; any method will use a pump and hose with a fish screen. During dredging, material will be pumped into a dewatering facility constructed with Ecology blocks and a liner. Dredged material will be passively dewatered by allowing the sediment to settle, and then the water will pass through geotextile fabric or hay bales before draining back into the Cowlitz River through a hose. Consistent with the authorized dredging for other projects, visual water-quality monitoring for turbidity will be conducted.

The estimated volume of material to be removed initially is approximately 500 cubic yards. During a site visit on June 2, 2025, it was noted that a significant sediment build-up has occurred between

the dock and the shoreline, as shown on the photoplate. It compares a photograph taken in June 2020 with photographs taken on June 2, 2025.

Upland Material Placement

After material is dewatered, an excavator will move the material onto dump trucks and place it in areas indicated on Sheets 1, 4, and 6. There are no wetland or riparian buffers in these proposed placement areas. After the material has been dewatered, trucks will haul it to the placement areas and used in landscaped areas around the park. Native seed mixes do not grow in this sandy material; it does not erode and is not a source of blowing dust, so no seeding is necessary after material placement.

Debris Removal

The City proposes to relocate large woody material from the log boom, ramps, or docks to the river or remove it using mechanical methods with skid steer, excavator, or hand tools. Small debris will be swept off, or it will be washed off with river water using a pump, hose, and spray nozzle. Any artificial debris will be properly disposed as solid waste. Large material will be removed using chains and an excavator located above the water.

Secondary Project Features

Interdependent Activities

Interdependent activities are part of a larger action, have no independent purpose, and would only occur if the project occurs. The dewatering structure and moving dredged material to upland areas of the property are interdependent activities.

Interrelated Activities

Interrelated activities are a part of a larger action; however, they could be performed separately from the larger action. The City proposes to enhance the riparian buffer in areas of lower Whittle Creek (see Sheet 5) that currently has only herbaceous vegetation (see Sheets 6, and 7), which is an interrelated activity. The in-water dredging prism is 0.68 acres, and the enhancement areas are a total of 0.69 acres).

Impact Avoidance and Minimization Measures

The project has been designed to avoid and minimize impacts to habitats and species that may potentially occur in the vicinity of the project. This will be accomplished by using the following measures:

1. Conditions in local, state, and federal permits will be followed.
2. Avoids exposing dredged material because the Dredged Material Management Program has determined this site does not require sediment testing due to its geographic location.
3. Avoids contamination from heavy equipment working in the water because equipment will have vegetable-based hydraulic fluid.
4. Avoids contamination from refueling because heavy equipment will be fueled at least 150 feet from any waterbody.
5. Avoids peak juvenile salmon outmigration; in-water work will occur within the approved work window of August 1 through August 31.

6. Avoids entraining fish because hoses used for hydraulic dredging will be fitted with a fish screen.
7. Minimizes suspended sediments - dewatering will occur in an upland structure to settle out and be filtered through geofabric and/or hay bales.
8. Minimizes suspended sediments by visually monitoring turbidity during sediment removal below the waterline because hydraulic dredging produces relatively little turbidity. The point of compliance will be 300 feet downstream of in-water dredging. If significant turbidity is observed, dredging will stop until a plume is no longer visible.

UNAVOIDABLE IMPACTS

DIRECT EFFECTS

Direct effects are those effects that take place at or near the time of construction. The following aquatic and terrestrial habitat effects are anticipated.

AQUATIC HABITAT

Underwater Noise and Disturbances

Underwater disturbances during August dredging will occur near the ramp and dock in shallow water. However, this area frequently experiences these effects from boating activities, so dredging is not expected to create noise or disturbance above background levels.

Elevated Suspended Sediment Concentrations

Sediment removal on the ramp, dock, and by hydraulic dredging is expected to temporarily increase suspended sediment concentrations (measured by turbidity) in the project area for a minimal distance downstream. Washington Administrative Code allows a temporary area of mixing during and immediately after necessary in-water construction activities that result in the disturbance of in-place sediments. The point of compliance for water volumes above 100 cubic feet per second flow at the time of construction is 300 feet downstream of the activity causing the turbidity exceedance.

The Ecology water quality standard for turbidity in the project vicinity is based on aquatic life for salmon and steelhead use in the area that includes spawning, rearing, and migration. It states that turbidity shall not exceed the following levels:

- 5 nephelometric turbidity units (NTU) over background when the background is 50 NTU or less; or
- A 10 percent increase in turbidity when the background turbidity is more than 50 NTU.

Sediment Removal above the Waterline

When water velocities and turbidity are high, which typically occurs in late fall, winter, or spring, material deposited above the waterline will be swept from the ramp and dock back into the water or washed off with river water. This occurs during high turbidity conditions in the river and is not expected to create significantly higher turbidity levels in this river reach because background turbidity levels below the Toutle River mouth are estimated to be in the hundreds of NTUs. Under

these conditions, it will not likely exceed water quality standards or noticeably raise suspended sediment concentrations above background levels.

Sediment Removal below the Waterline
In-water hydraulic dredging in August is expected to increase elevated suspended sediment concentrations somewhat, but they are expected to return to background levels before reaching the 300-foot point of compliance. This also applies to return water entering the river from the dewatering structure that will allow sediments to settle and be filtered prior to being released.

TERRESTRIAL HABITAT
There will be no direct effects to terrestrial habitat from in-air noise or disturbances above typical background noises in the area that include vehicle traffic, boat launching, and boat operations. Dredged material will be placed in developed upland areas of the site and are outside of wetland or riparian buffers. These areas are mowed frequently and have no woody vegetation, so they have low levels of habitat functions.

DELAYED CONSEQUENCES
Delayed consequences were formerly referred to as indirect effects. They are defined as those effects resulting from the proposed action and are later in time but are still reasonably certain to occur. The only potential delayed consequence would be to the aquatic food web from temporarily reduced benthic invertebrate populations in sediments after dredging. Benthic populations typically recover within 6 months of disturbance.

The river's bedload moves in this high-velocity reach, so sediments are often being buried and exposed by the current as the river velocity increases or decreases. Dredging will have no effect on the benthic communities above naturally occurring sediment dynamics in this river reach. For these reasons, dredging will have no long-term impact to the food web or riverbed composition.

EFFECTS FROM INTERDEPENDENT ACTIONS
The dewatering structure will be temporary and will be disassembled after the dredging event. Dredged material will be placed in upland areas. There will be no effects from these interdependent activities because the material will not be placed in natural upland habitats that have low habitat functions, and will not be placed in waterbodies, riparian buffers, or wetland buffers.

EFFECTS FROM INTERRELATED ACTIONS
Interrelated actions include activities involved with enhancing the riparian buffer along lower Whittle Creek. No negative impacts are anticipated from mitigation plantings or maintenance.

Mitigation Approach

Mitigation Sequencing

The preferred mitigation sequencing of first avoidance, then minimization, and finally compensation for unavoidable habitat impacts was taken into consideration during the project design process; however, due to the nature of the project, certain impacts are unavoidable.

The project has been designed to avoid and minimize impacts to habitats and species that were previously described in the *Project Description* section.

Proposed Mitigation

Mitigation Goal

The mitigation goal is to compensate for unavoidable project impacts to aquatic and riparian habitats that affect juvenile, ocean-type salmon (fall Chinook and chum) and their designated critical habitats near the project site.

Mitigation Strategy

Although agencies prefer to use a mitigation bank for mitigation projects, ELS proposed to purchase mitigation credits at the Coweeman River Mitigation Bank for a previous project in the Cowlitz River, and this concept was approved by the WDFW area habitat biologist and the Corps. However, when the National Marine Fisheries Service (NMFS) biologists reviewed the biological assessment and bank-use plan, they expressed concern that juvenile fall Chinook and chum are from stocks so important to the existence and recovery of the large Evolutionarily Significant Units (ESUs) that any compensatory mitigation not close to the impact site would not provide appropriate mitigation for project effects to these stocks or to their designated critical habitats. Therefore, a bank-use plan will not alleviate impacts to the affected fish stocks, and mitigation near the site must be proposed. The mitigation approach described in this plan uses a watershed approach.

There is no reasonable way to avoid, minimize, or provide compensatory mitigation for these small juvenile salmon at the project site because there are no existing off-channel habitats or areas of slow-moving water immediately downstream of the site to enhance for the affected fish stocks to use. The closest place for mitigation that can benefit these stocks is in Whittle Creek, approximately 2,500 feet downstream of the site. The City is proposing to enhance riparian buffers for these small juveniles to use the lower reaches of Whittle Creek as resting habitat during their downstream migration. Riparian plantings are proposed upstream of this area in a reach with no shrubs or trees to support the aquatic food web and to provide water-quality improvement, bank stabilization, and shade the water.

Existing Conditions – Whittle Creek

The Whittle Creek watershed is shown on Sheet 5 and is primarily used by coho and winter steelhead for spawning, rearing, and migration. It is designated critical habitat for the Lower

Columbia River Coho ESU and the Lower Columbia River Steelhead DPS. Other species migrating down the Cowlitz River may use the lower areas of Whittle Creek as refugia.

The watershed is about 1 mile wide and 4 miles long from its mouth to the headwaters in hills to the northwest (about 1,000 feet in elevation) that are under private and industrial forest ownership. This upper half of the watershed is used to grow timber, and most of the riparian buffers in timberland are not harvested. The middle section of the watershed has riparian buffers with trees, and there are wetlands associated with the stream. The lower half of the watershed consists of agricultural land used for pastures and hay, as well as for single-family homes.

Lower Whittle Creek below the West Side Highway was re-routed by the Corps soon after the 1980 eruption of Mt. St. Helens. Significant amounts of dredged material from the Cowlitz River were placed in the areas shown on Sheet 1 as "Sand". The Corps also re-routed the Whittle Creek channel in these areas to its current location and increased the height of the surrounding dredged material around the creek banks so that the creek is approximately 10 to 15 feet below the level of the surrounding dredged material that primarily consists of sand. The stream substrate in these areas are mainly sand with some gravel. Riparian buffers in these areas were not planted with trees or shrubs after the dredged material was placed. In a typical year, Whittle Creek has seasonal flows in its lower reaches from when the fall rains begin between late September to mid-October and continues flowing until about June.

The lower quarter of the watershed is on flat land with more development and open pastures, and it generally had no riparian buffer vegetation until the early 2000s when riparian plantings were installed along portions of the creek to mitigate impacts from other local projects. The lowest reach of Whittle Creek was stabilized in 2005 with willows and pillows because the banks of dredged material were sloughing into the creek. The City, in partnership with the high school, planted the west bank with native trees and shrubs after it was stabilized. Other riparian planting projects have been completed in lower Whittle Creek. One was compensatory mitigation for the Lexington Bridge project and the other was for constructing the boat launch that was planted in 2009. Tree plantings in these areas are beginning to provide improved riparian functions.

Rationale for Mitigation in Whittle Creek

There are several reasons for selecting permittee-responsible mitigation in Whittle Creek:

- It is the closest tributary downstream of the mitigation site on the same side of the river.
- It is designated as critical habitat for coho and steelhead from the same ESUs/DPSs as occur at the project site.
- The lower portion of Whittle Creek can be used as refugia for the small juveniles that may be most affected by the project as well as other listed juvenile salmonids.
- Previous mitigation projects in lower Whittle Creek have been restoring the riparian buffers since the 1980s when Whittle Creek was re-routed by the Corps so that dredged material could be placed in very large areas.
- Most of the watershed has forested riparian buffers, but the lower reaches still need to be restored.
- Proposed riparian plantings for this project are in a reach that has not had riparian-buffer restoration, so there will be significant improvement to riparian functions in the lower

watershed.

- Shade provided at project site cannot lower water temperature in the lower Cowlitz River because of the large width and water volume. Shade provided along lower Whittle Creek where there is no existing shade will lower water the temperature in Whittle Creek where impacted juvenile fall Chinook and chum will find refugia
- There is a low risk of failure and high likelihood of success for riparian plantings because it has partnered with the high school to install the riparian plantings as part of their ongoing partnership with other City projects. There are plans for students to monitor and maintain the planting areas, and their previous planting areas have been a success.

An additional benefit will be the opportunity to use this as an "outdoor classroom" which will involve high school students in the practical application of environmental sciences as it relates to these mitigation efforts. Students will have onsite instruction by professionals in this field followed by involvement in the planting, maintenance, and future monitoring of these planted areas under the direction of the City.

MITIGATION PROPOSED

The City proposes to mitigate riparian impacts at the project site by installing native trees and shrubs along two lower portions of Whittle Creek that does not have trees or shrubs (see Sheet 7). Approximately 860 linear feet of streambank 35 feet wide will be planted on the streambank (0.69 acres). These plantings will improve riparian functions such as providing organic input, preventing erosion, filtering stormwater runoff to protect and improve water quality, and eventually, providing instream woody material.

MITIGATION GOAL, OBJECTIVES, AND PERFORMANCE STANDARDS

The mitigation goal is to provide refugia downstream of the project site for juvenile fall Chinook during their migration.

Objective 1: **Improve riparian habitat functions along 860 linear feet of lower Whittle Creek.**

Performance Standard 1a: Install native trees and shrubs in 0.69 acres in the riparian buffer of lower Whittle Creek.

This performance standard will be met when the as-built report showing that these areas have been planted with native trees and shrubs is submitted to the City of Castle Rock, Washington Department of Fish and Wildlife, Washington Department of Ecology, and the U.S. Army Corps of Engineers within 3 months of project completion.

Performance Standard 1b. In Year 1 and Year 2 (Year 1 begins after the first full growing season after planting) native trees and shrubs will achieve 100 percent survival.

If dead plants are replaced, this performance standard will be met.

Performance Standard 1c. In Years 3 through 5, there will be at least 80 percent survival of planted shrubs and trees.

This performance standard will be met if dead plants are replaced to achieve this survival requirement - or if natural colonization results in an 80 percent stem count of the original number of plants.

Planting-Area Protections

One of the planting area is owned by the City and one is owned by the Mt. St. Helens Motorcycle Club. These areas are within riparian buffers protected under the critical areas ordinance and are in the inner riparian buffers, so deed restrictions are not necessary.

Planting Plan

Native species were selected based on their ability to grow in sandy dredged material along the Whittle Creek banks that can provide shade, organic material input into the creek, and food and shelter for terrestrial wildlife. Conifers will provide these functions and will eventually provide large wood to the creek to create instream habitat complexity. Native shrub species were selected that will grow in the sun before the tree species produce shade and that can tolerate more shade as the trees grow. This will create a multi-layered canopy.

Any garbage and invasive blackberries in planting areas will be removed prior to planting and will continue to be controlled during the maintenance and monitoring period. Approximately 0.69 acres of trees will be planted on 10-foot centers (100 square feet per plant) and shrubs will be planted on 5-foot centers (25 square feet per plant). Each species will be planted in groups of between five and 12 plants to mimic natural colonies. Planting details are summarized in the following table.

Table 2. Plant Specifications (total of 0.69 acres planted).

Species	Spacing (feet)	Minimum Size and Type	Quantity
Plant Near the Water – lower 10' (0.09 acres – 3,920 sf)			
Sitka Willow (*Salix sitchensis*)	5	3' cuttings	**86**
Red-Osier Dogwood (*Cornus sericea*)	5	3' cuttings or 1-gallon container or larger	**86**

Plant In Drier Soils Higher up the Bank – upper 25' (0.21 acres – 9,148 sf)			
Black Cottonwood (*Populus balsamifera*)	10' from other trees	3' cuttings, bareroot, or 1-gallon container or larger	**27**
Douglas Fir (*Pseudotsuga menziesii*)	10' from other trees	Bareroot or 1-gallon container minimum	**27**
Grand Fir (*Abies grandis*)	10' from other trees	Bareroot or 1-gallon container or larger	**27**
Vine Maple (*Acer circinatum*)	10' from other trees	Bareroot or 1-gallon container or larger	**27**
Oceanspray (*Holodiscus discolor*)	5' from other shrubs and trees	1-gallon container or larger	**80**
Snowberry (*Symphoricarpos albus*)	5' from other shrubs and trees	1-gallon container or larger	**80**
Serviceberry (*Amelanchier alnifolia*)	5' from other shrubs and trees	1-gallon container or larger	**80**
		Total Plants	**520**

Notes:

1. If a shrub species listed above is not available at the time of planting, it can be substituted with another shrub; however, it must match the same wet or dry soil requirements as the shrub that was not available.
2. Plant numbers above represent final live plant numbers. Order some extra of each species to account for damaged or missing plants from the order.

PLANT MATERIALS AND PLANTING SPECIFICATIONS

The native trees and shrubs will be installed during the late fall to early spring (October-March) when the plants are dormant and the soil moisture conditions are favorable for planting. Native plants specified for mitigation are designed to enhance riparian and aquatic habitats. Plants are best installed in the late fall but can also be installed into early spring when the site conditions are wettest and the cuttings are dormant.

General Plant Specifications

- Plant the native trees and shrubs during the late fall to early spring (October-March) at the spacing identified in the planting table.
- Group the plants in uneven patches of 5 to 12 plants of a single species, with patches interspersed among one another.
- All plant materials will be kept cool and moist prior to installation.
- All plant materials will have well developed roots and sturdy stems, with an appropriate root to shoot ratio.
- No damaged or desiccated roots or diseased plants will be accepted.

Cuttings

- Cuttings will be purchased from a native-plant nursery or cut from a local source.
- Cuttings will be a minimum of 3-feet long and between ½- to 1-inch in diameter.
- Cuttings will be kept cool and moist prior to being planted.
- Cutting stock should be installed within 1 to 2 days of cutting.
- Unplanted cutting stock will be properly stored at the end of each planting day to prevent desiccation.
- The cutting stock should be inspected by a person experienced in determining high-quality stock, and they should reject unacceptable plant materials.
- At least two-thirds of each cutting will be inserted into the soil, and at least two buds will be above ground.
- A planting bar may be necessary to install the cutting to the correct depth.

Plant Bareroot/Containerized Trees and Shrubs

- Dig the hole several inches wider than the size of the root system.
- Position the planted species' root collar so that it is at or slightly above the level of the surrounding soil to allow for settling.
- Backfill the hole with soil.
- Gently compact the soil around the planted species to eliminate air spaces.
- Irrigate all newly installed plants as site and weather conditions warrant.

MONITORING AND REPORTING, MAINTENANCE PLAN, CONTINGENCY PLAN, AND IMPLEMENTATION SCHEDULE

MONITORING

The City anticipates that high school students will conduct, maintain, monitor, and report for this project, so vegetative monitoring will be conducted in May or September once each of the five years between late spring and late summer to allow students to accomplish this work during the school year. When a month is selected for monitoring, preferably within a 2-week period every year to obtain comparable results. The following information will be gathered during each monitoring event:

- Determine the percent survival.
- Determine the general health of plants in the monitoring plot, noting specific problems and potential causes.
- Document area with photographs of vegetative changes over time from photopoints that will be established during plant installation. Photograph locations will be shown on a map and will be included in each monitoring report.

AS-BUILT REPORT

An as-built report submitted within three months of planting completion to the U.S. Army Corps of Engineers, the Washington Department of Ecology, Washington Department of Fish and Wildlife, Washington Department of Natural Resources, and the City of Castle Rock. It will include the following items:

- Completed as-built report approximately one page long (see Appendix) and summarizing any deviations from the plan.
- A site plan showing changes that occurred to the planting area during plant installation and establishes permanent locations (photopoints) from which photographs will be taken to document plant growth. The drawing will be labeled "as-built" and will include the as-built monitoring date(s).
- Photos of the installed plants at photopoints that include all mitigation planting areas.

Monitoring Report

Monitoring reports will be submitted no later than December 31 for 5 years to the U.S. Army Corps of Engineers, the Washington Department of Ecology, Washington Department of Fish and Wildlife, Washington Department of Natural Resources, and the City of Castle Rock. Reports will discuss how performance standards are being met. The following items will be included in the report:

- One page monitoring report that includes content required by the Corps (see Appendix).
- The as-built site plan updated to show any changes that have occurred to the mitigation planting area since the last report, such as plants that have died and been replaced.
- Photographs taken from established photopoints during monitoring.

Maintenance Plan

Planted trees and shrubs will be maintained as often as necessary to ensure that the performance standards are met. Maintenance includes performing the following actions:

- Inspect the plantings at least twice annually, or more often as appropriate to control invasive species and to achieve the performance standards specified in the subsection titled "Mitigation Goals, Objectives, and Performance Standards."
- Irrigate planted trees and shrubs during the dry season for the first 2 to 3 years after planting. Water should be delivered at a minimum rate of 1 gallon per plant every 4 weeks. Adjust as necessary based on site and weather conditions.
- Remove competing vegetation from around the base of plant species during first 2 to 3 years after planting and as needed thereafter.
- Replace dead or failed plants to meet the minimum performance standards. Replaced plants will be installed as described for the original installation.

Contingency Plan

If mitigation areas are failing or the performance criteria are not met, steps will be taken to correct the situation in a timely manner. The following steps will be implemented when an area is identified as failing or potentially failing:

1. Identify the cause(s) of the failure or potential failure.
2. Identify the extent of the failure or potential failure.
3. Implement corrective actions such as irrigating and replanting.
4. Document the activities and include this data in the monitoring reports.
5. In the event that a routine corrective action will not correct the problem, immediately consult with the appropriate agencies.
6. Evaluate recommendations from resource agency staff and implement recommendations in a timely manner.

RESPONSIBLE PARTY

Funding for corrective actions will be the responsibility of the City of Castle Rock.

MITIGATION SCHEDULE

The following schedule shows anticipated timing for completing the tasks outlined in this plan.

First Dredging Year (estimated to be August 2026)

October 2026 to - March 2027	Plant shrubs and trees.
May - November	Ongoing maintenance and watering, as needed.
January 2026 to June 2026	As-built report (see Appendix) submitted within 3 months from planting date.

Year 1 (2027)

May or September	Vegetative monitoring.
May - November	Ongoing maintenance and watering, as needed.
December 31	Monitoring report submitted (see Appendix).

Year 2 (2028)

May or September	Vegetative monitoring during the same month as in Year 1.
May - November	Ongoing maintenance and watering, as needed.
December 31	Monitoring report submitted (see Appendix).

Year 3 (2029)

May or September	Vegetative monitoring during the same month as in Year 1.
May - November	Ongoing maintenance and watering, as needed.
December 31	Monitoring report submitted (see Appendix).

Year 4 (2030)

May or September	Vegetative monitoring during the same month as in Year 1.
May - November	Ongoing maintenance and watering, as needed.
December 31	Monitoring report submitted (see Appendix).

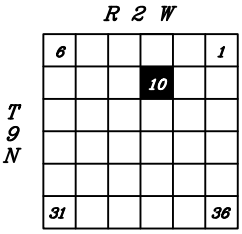
Year 5 (2031)

May or September	Vegetative monitoring during the same month as in Year 1.
May - November	Ongoing maintenance and watering, as needed.
December 31	Monitoring report submitted (see Appendix).

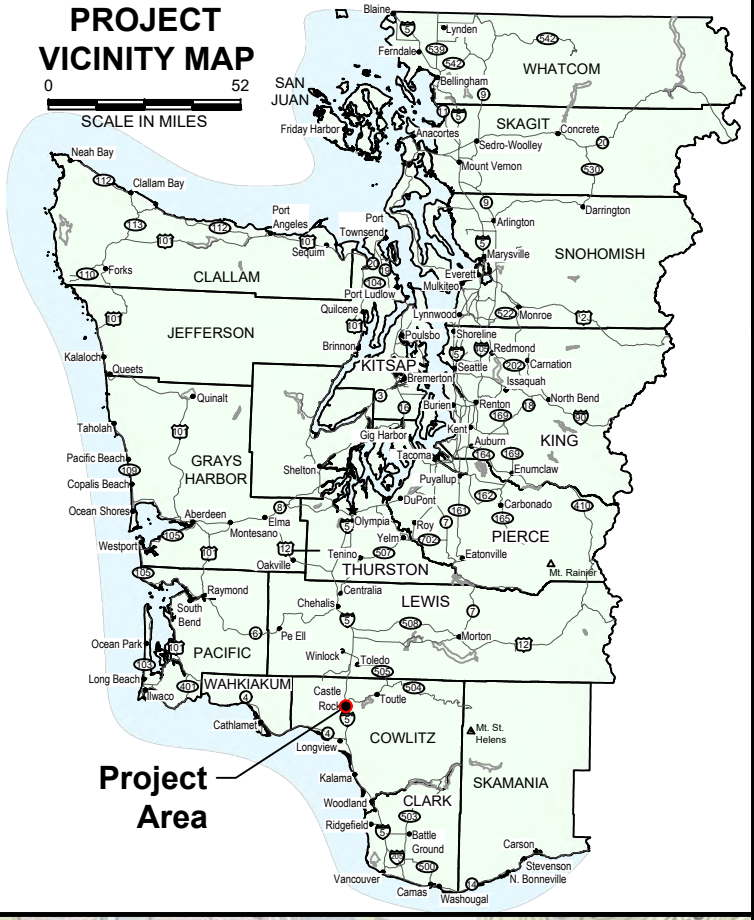
FIGURES

46.2784° Latitude
-122.9125° Longitude

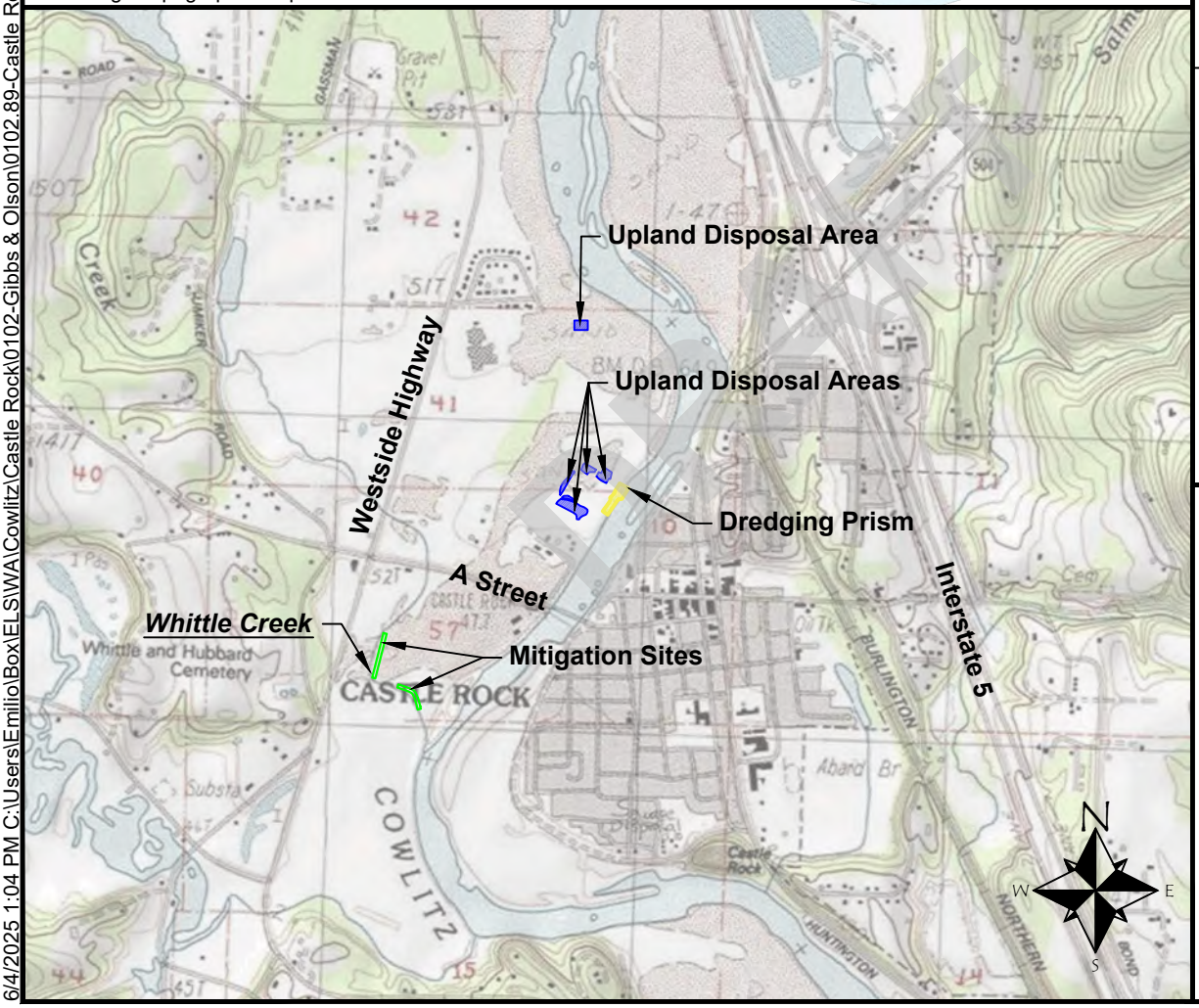
LOCATION MAP



PROJECT VICINITY MAP



NOTE:
Quadrangle topographic map from USGS.



PROPOSED: Maintenance Dredging
IN Cowlitz River
NEAR: Castle Rock
COUNTY: Cowlitz **STATE:** WA
SHEET 1 **OF** 7
DATE: 6/4/25

VICINITY MAP
APPLICANT: City of Castle Rock
PROJECT NAME: Castle Rock Boat Launch Dredging
REFERENCE #: Not Yet Assigned.
SITE LOCATION ADDRESS:
RM 17.6 - Access Rd 5040 Westside Hwy

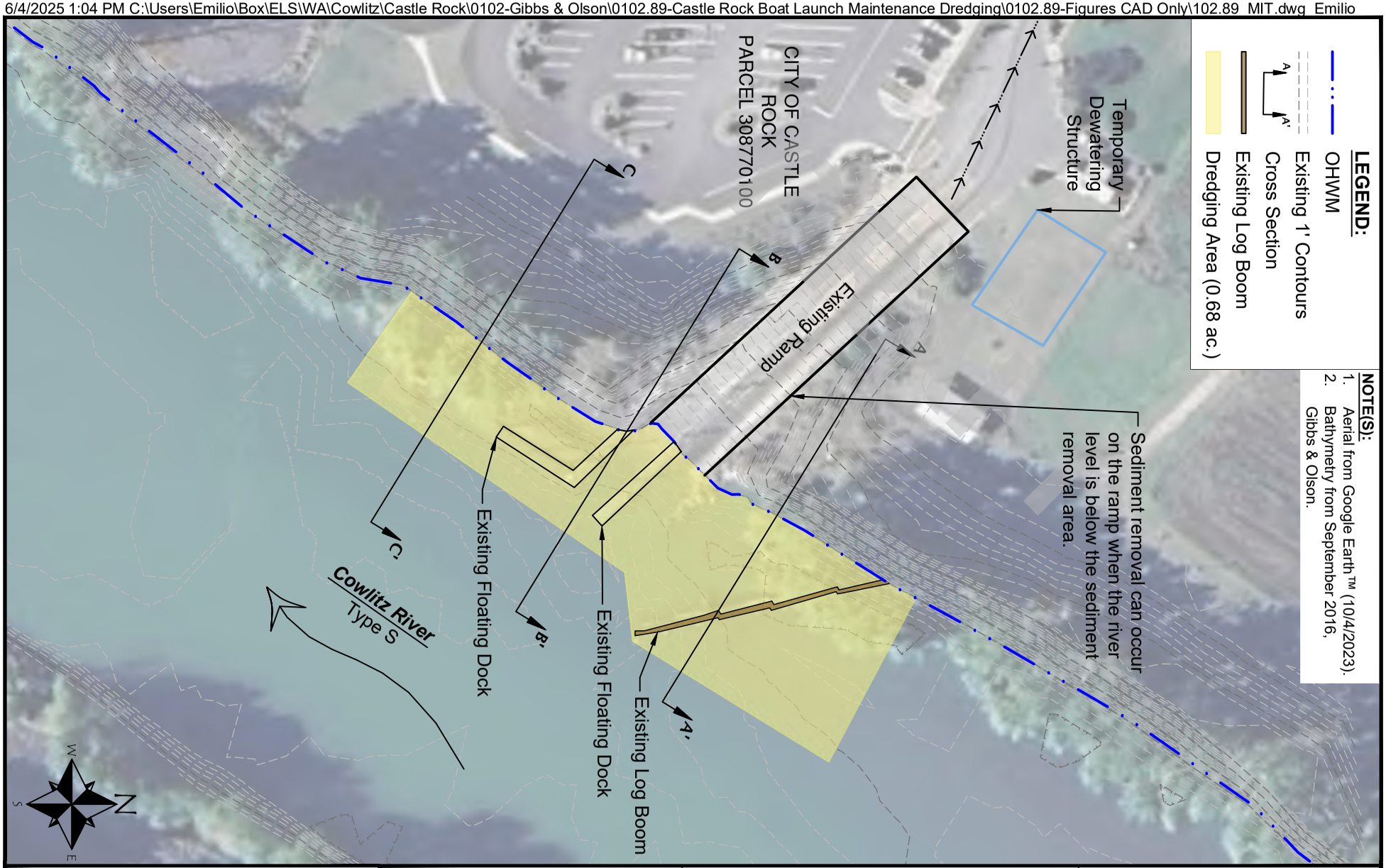
PURPOSE: Maintain Water Depth at Boat Launch.
DATUM: NAD83
ADJACENT PROPERTY OWNERS:
See JARPA

SCALE IN FEET
0
2000
4000

1157 3rd Ave., Suite 220A
Longview, WA 98632
Phone: (360) 578-1371

Ecological Land Services

6/4/2025 1:04 PM C:\Users\Emilio\Box\ELS\WA\Cowlitz\Castle Rock\0102-Gibbs & Olson\0102.89-Castle Rock Boat Launch Maintenance Dredging\0102.89-Figures CAD Only\102.89_MIT.dwg Emilio



0 80 160
SCALE IN FEET

Ecological Land Services
1157 3rd Ave., Suite 220A
Longview, WA 98632
Phone: (360) 578-1371

PURPOSE: Maintain Water Depth at Boat Launch.

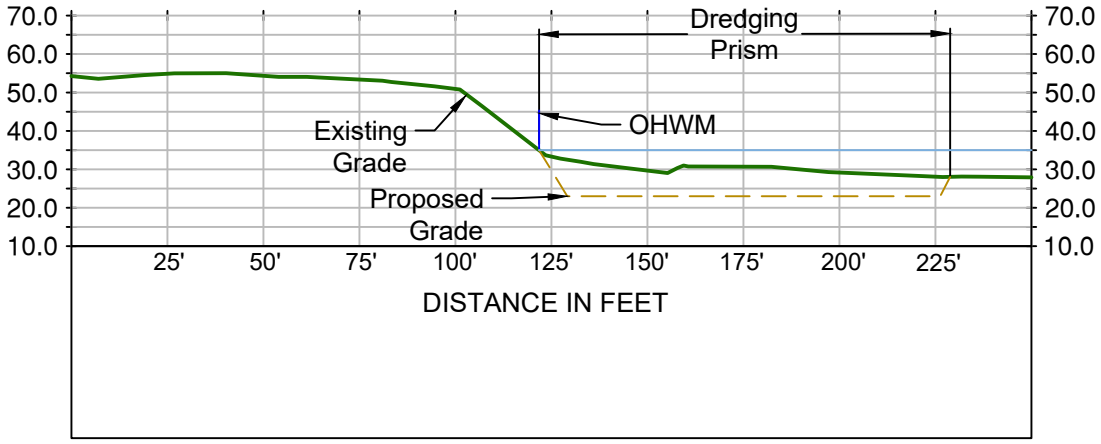
DATUM: NAD83
ADJACENT PROPERTY OWNERS: See JARPA

DREDGING PRISM
APPLICANT: City of Castle Rock
PROJECT NAME: Castle Rock Boat Launch Dredging
REFERENCE #: Not Yet Assigned.
SITE LOCATION ADDRESS: RM 17.6 - Access Rd 5040 Westside Hwy

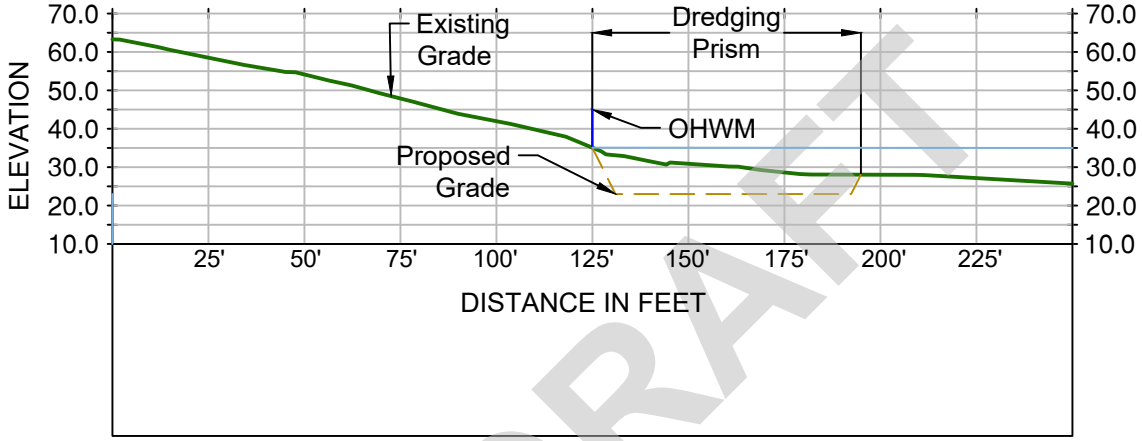
PROPOSED: Maintenance Dredging

IN Cowlitz River
NEAR: Castle Rock
COUNTY: Cowlitz **STATE:** WA
SHEET 2 **OF** 7
DATE: 6/4/25

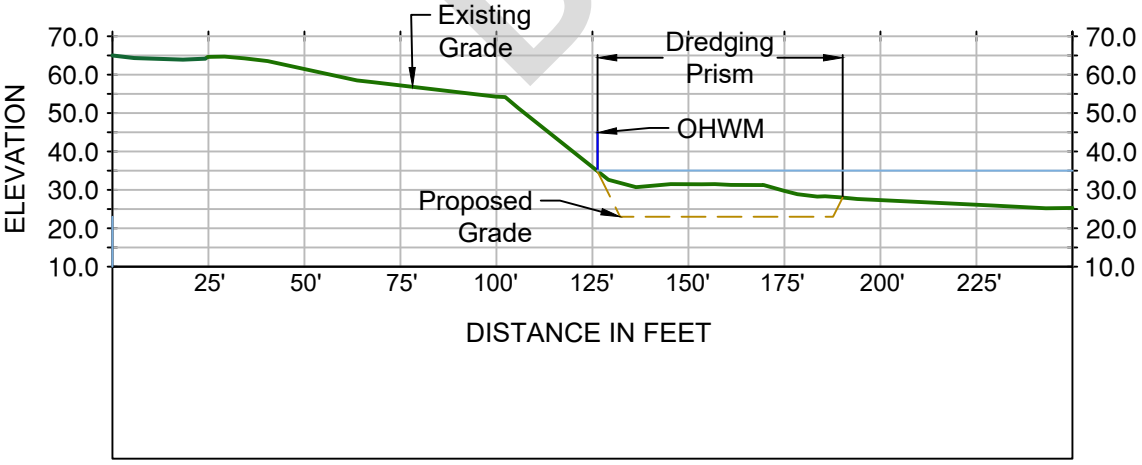
Cross Section A-A'



Cross Section B-B'



Cross Section C-C'



NOTE(S):

1. Green lines indicate existing grade from 2016 bathemetric survey.

PROPOSED: Maintenance Dredging
IN Cowlitz River
NEAR: Castle Rock
COUNTY: Cowlitz **STATE:** WA
SHEET 3 **OF** 7
DATE: 6/4/25

CROSS SECTIONS
APPLICANT: City of Castle Rock
PROJECT NAME: Castle Rock Boat Launch Dredging
REFERENCE #: Not Yet Assigned.
SITE LOCATION ADDRESS: RM 17.6 - Access Rd 5040 Westside Hwy

PURPOSE: Maintain Water Depth at Boat Launch.
DATUM: NAD83
ADJACENT PROPERTY OWNERS: See JARPA

0 50 100
SCALE IN FEET

1157 3rd Ave., Suite 220A
Longview, WA 98632
Phone: (360) 578-1371

Ecological Land Services

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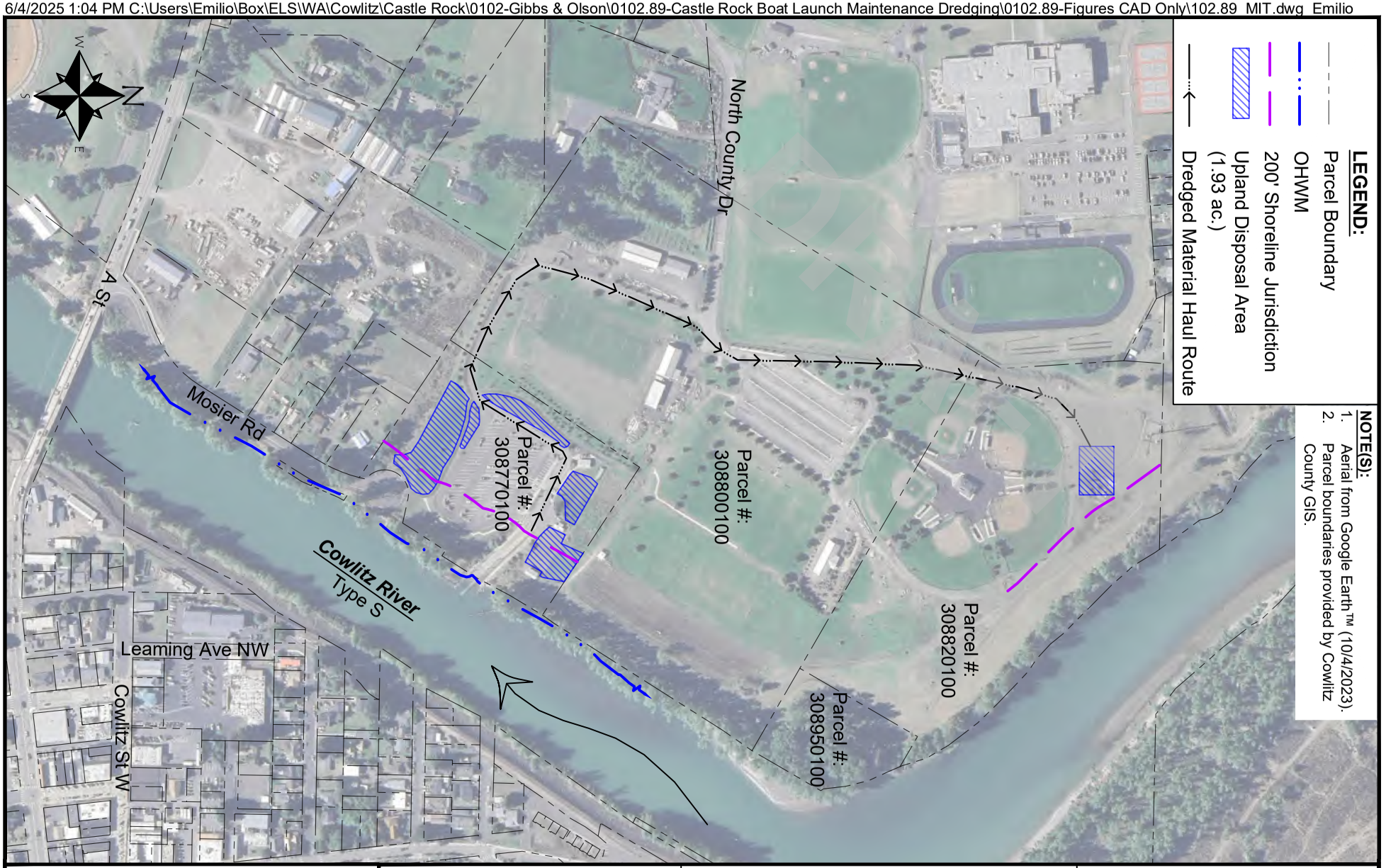

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SCALE IN FEET

Ecological Land Services
1157 3rd Ave., Suite 220A
Longview, WA 98632
Phone: (360) 578-1371

PURPOSE: Maintain Water Depth at Boat Launch.

DATUM: NAD83
ADJACENT PROPERTY OWNERS: See JARPA

UPLAND DISPOSAL AREAS
APPLICANT: City of Castle Rock
PROJECT NAME: Castle Rock Boat Launch Dredging
REFERENCE #: Not Yet Assigned.
SITE LOCATION ADDRESS: RM 17.6 - Access Rd 5040 Westside Hwy

PROPOSED: Maintenance Dredging

IN Cowlitz River
NEAR: Castle Rock
COUNTY: Cowlitz **STATE:** WA
SHEET 4 **OF** 7
DATE: 6/4/25

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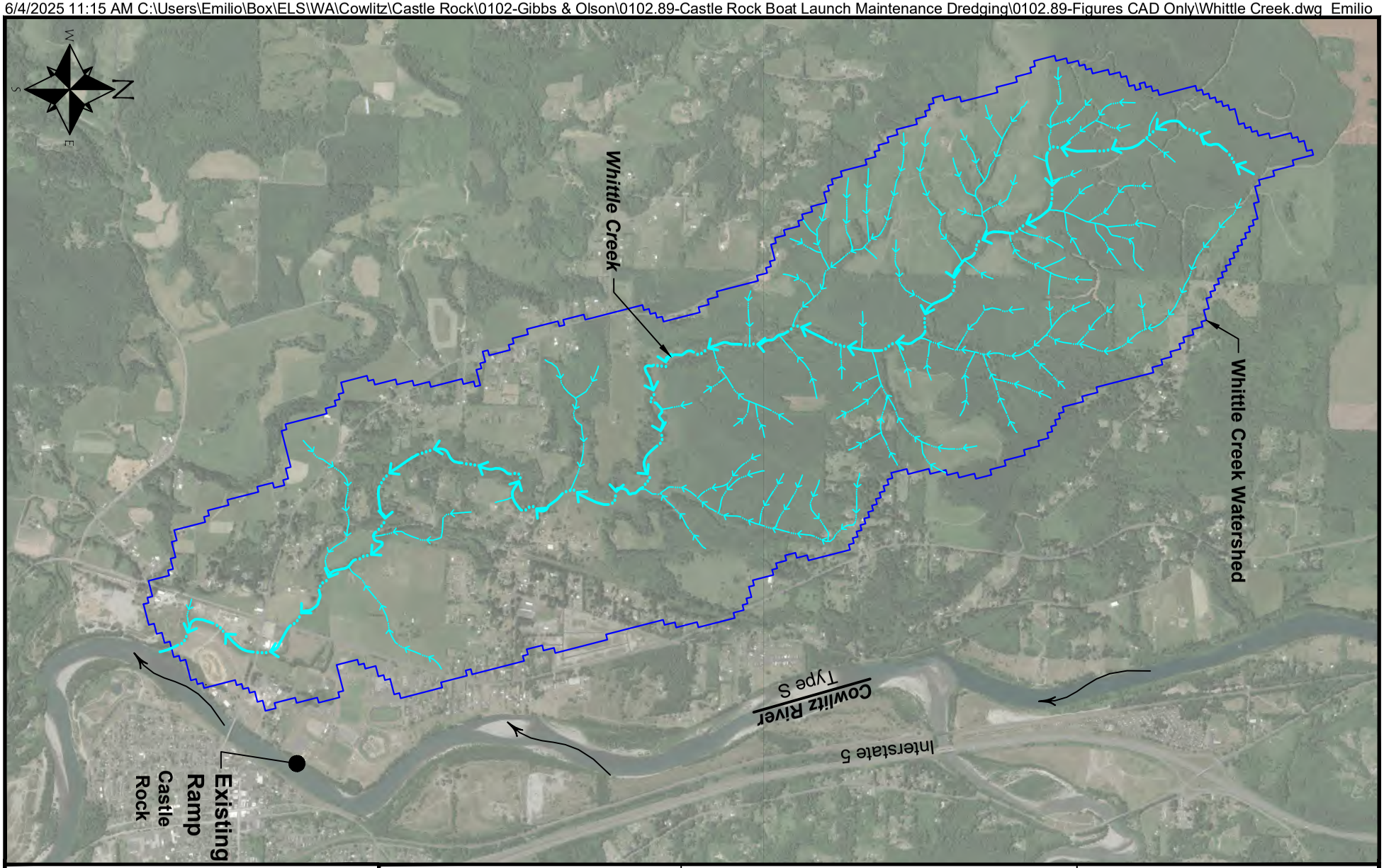

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SCALE IN FEET

Ecological Land Services

1157 3rd Ave., Suite 220A
Longview, WA 98632
Phone: (360) 578-1371

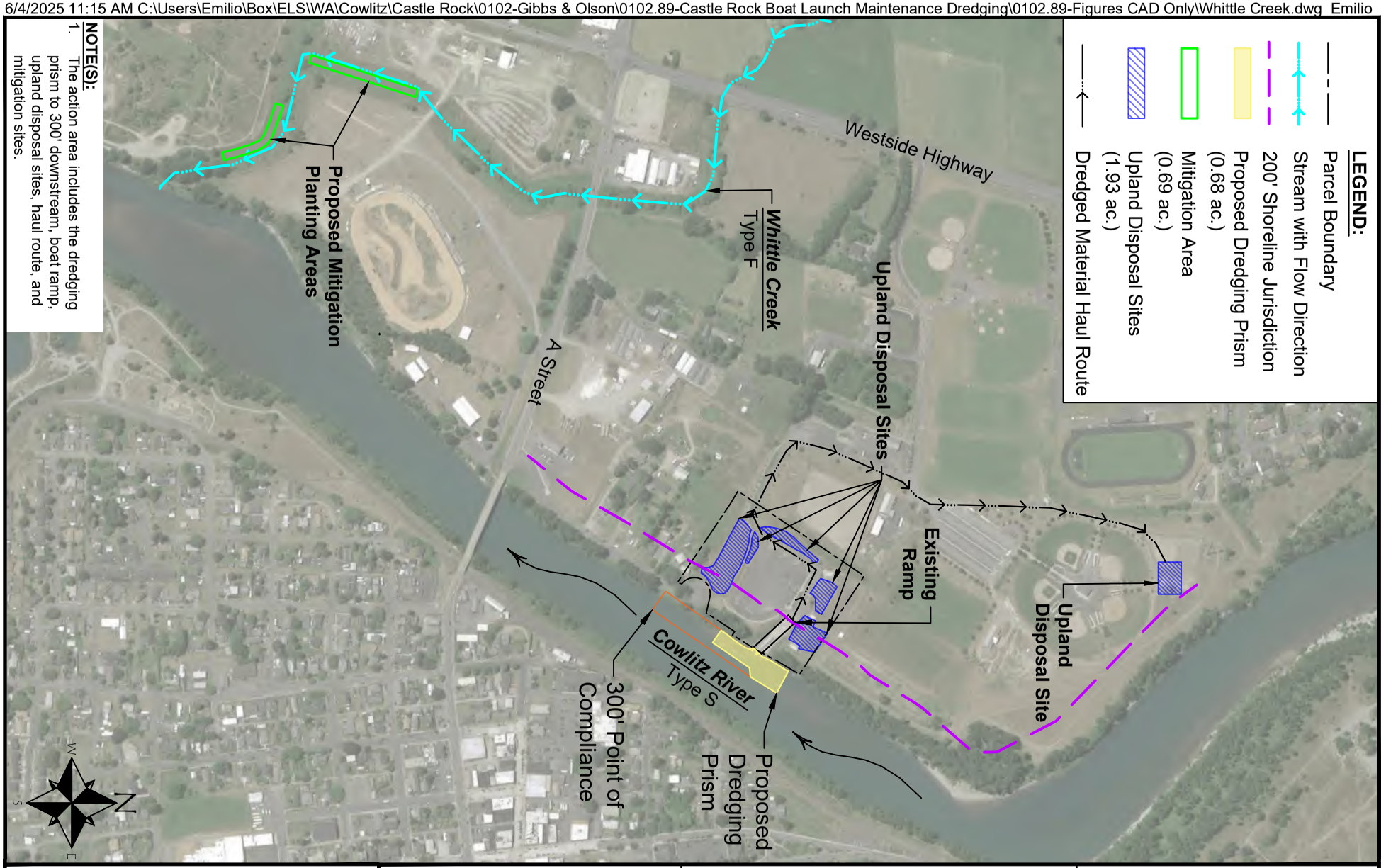
PURPOSE: Maintain Water Depth at Boat Launch.

DATUM: NAD83
ADJACENT PROPERTY OWNERS: See JARPA

WHITTLE CREEK WATERSHED
APPLICANT: City of Castle Rock
PROJECT NAME: Castle Rock Boat Launch Dredging
REFERENCE #: Not Yet Assigned.
SITE LOCATION ADDRESS: RM 17.6 - Access Rd 5040 Westside Hwy

PROPOSED: Maintenance Dredging

IN Cowlitz River
NEAR: Castle Rock
COUNTY: Cowlitz **STATE:** WA
SHEET 5 **OF** 7
DATE: 6/4/25



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SCALE IN FEET

Ecological Land Services
1157 3rd Ave., Suite 220A
Longview, WA 98632
Phone: (360) 578-1371

PURPOSE: Maintain Water Depth at Boat Launch.

DATUM: NAD83
ADJACENT PROPERTY OWNERS: See JARPA

ACTION AREA MAP
APPLICANT: City of Castle Rock
PROJECT NAME: Castle Rock Boat Launch Dredging
REFERENCE #: Not Yet Assigned.
SITE LOCATION ADDRESS: RM 17.6 - Access Rd 5040 Westside Hwy

PROPOSED: Maintenance Dredging

IN Cowlitz River
NEAR: Castle Rock
COUNTY: Cowlitz **STATE:** WA
SHEET 6 **OF** 7
DATE: 6/4/25

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Plant Specifications (0.69 acres).

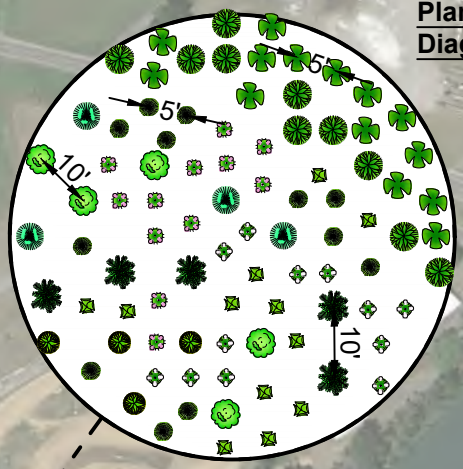
Species	Spacing (feet)		Minimum Size and Type	Quantity
Plant Near the Water – lower 11' (0.23 acres – 10,019 sf)				
Sitka Willow (*Salix sitchensis*)	5		3' cuttings	200
Red-Osier Dogwood (*Cornus sericea*)	5		3' cuttings or 1-gallon container or larger	200
Plant In Drier Soils Higher up the Bank – upper 24' (0.46 acres – 20,038 sf)				
Black Cottonwood (*Populus balsamifera*)	10' from other trees		3' cuttings, bareroot, or 1-gallon container or larger	67
Douglas Fir (*Pseudotsuga menziesii*)	10' from other trees		Bareroot or 1-gallon container minimum	67
Grand Fir (*Abies grandis*)	10' from other trees		Bareroot or 1-gallon container or larger	67
Vine Maple (*Acer circinatum*)	10' from other trees		1-gallon container or larger	67
Oceanspray (*Holodiscus discolor*)	5' from other shrubs and trees		1-gallon container or larger	150
Nootka Rose (*Rosa nutkana*)	5' from other shrubs and trees		1-gallon container or larger	150
Snowberry (*Symphoricarpos albus*)	5' from other shrubs and trees		1-gallon container or larger	150
Salal (*Gaultheria shallon*)	5' from other shrubs and trees		1-gallon container or larger	150
			Total Plants	1,286

LEGEND:

- Parcel Boundary
- Stream with Flow Direction
- Mitigation Area (0.69 ac.)

Whittle Creek
Type F

Planting Diagram:



490' x 35'
17,150 sq.ft.
0.39 ac.

370' x 35'
12,950 sq.ft.
0.30 ac.

Cowlitz River
Type S

N
W
E
S

0 400 800
SCALE IN FEET

PROPOSED: Maintenance Dredging
IN Cowlitz River
NEAR: Castle Rock **STATE:** WA
COUNTY: Cowlitz
SHEET 7 **OF** 7
DATE: 6/4/25

PLANTING PLAN
APPLICANT: City of Castle Rock
PROJECT NAME: Castle Rock Boat Launch Dredging
REFERENCE #: Not Yet Assigned.
SITE LOCATION ADDRESS:
RM 17.6 - Access Rd 5040 Westside Hwy

PURPOSE: Maintain Water Depth at Boat Launch.
DATUM: NAD83
ADJACENT PROPERTY OWNERS:
See JARPA

1157 3rd Ave., Suite 220A
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Ecological Land Services

Photo 1. Taken June 2020. Dock at boat launch on the Cowlitz River facing downstream.

Photo 2. Taken June 2025. Looking downstream at dock shown in Photo 1. Both photos were taken at similar river levels. Photo 2 shows significant sediment accumulation.

Photo 3. Taken June 2025 from end of dock looking upstream at ramp and log boom.

Photo 4. Looking upstream at log boom. Photo taken June 2025.

Ecological Land Services

1157 3rd Avenue, Suite 220A
Longview, WA 98632
Phone: (360) 578-1371
Fax: (360) 414-9305

DATE: 06/02/25
DWN: LS
PRJ. MGR: LS
PROJ.#: 102.89

Photoplate 1
Castle Rock Boat Launch Maintenance Dredging
Castle Rock, Washington
Section 10, Township 9N, Range 2W, W.M.

APPENDIX

Mitigation As-Built Report for Riparian Plantings
Mitigation Planting Monitoring Report for Riparian Plantings

Status / As-built Report for Mitigation Work Completion

Within one (1) year, or earlier if indicated on this form, of the date of permit issuance, submit this completed form to: U.S. Army Corps of Engineers, Regulatory Branch, P.O. Box 3755, Seattle, WA 98124-3755. For riparian planting mitigation, you must complete and submit a Mitigation Planting Monitoring Report annually after the Corps accepts your as-built drawings of the mitigation construction.

Corps Reference Number: NWS-_____

Date the Corps Issued Your Permit: _____

Date this Report is Due: _____

Permittee Name: _____

Address: _____

City/State/Zip Code: _____

Phone Number:

_____

Email:

_____

Type of Mitigation:

_____

☐ Riparian plantings

Attachment: ☐ Photographs of the mitigation area (preferably taken during June – August).

Conditions of your Corps permit require 100% survival of all planted trees and shrubs during the first and second years after planting. During the third through fifth years after planting, 80% survival is required. Individual plants that die must be replaced with Corps approved native species. You must protect your mitigation area—fencing is recommended.

Date of Installation	Species Name of Plants	Number of Plants Installed

Mitigation Planting Monitoring Report For Riparian Plantings

A completed form must be submitted 1, 2, 3, 4 and 5 years after the Corps accepts your as-built drawing of the mitigation planting area. Submit this completed form to:
U.S. Army Corps of Engineers, Regulatory Branch, P.O. Box 3755, Seattle, WA 98124-3755

Corps' Reference Number: NWS-__
Date This Report is Due: ___
Mitigation Monitoring Year (1-5): __
Permittee's Name: __
Address: ____
City/State/Zip Code: _
Phone Number: _____
Email:

You Must Attach to This Form:
1) Photographs of the mitigation area taken during the growing season.
2) As-built map with photo location points.

Photos must be provided at designated points; photo documentation must include a panoramic view(s) of the entire mitigation site. Submitted photos must be formatted on standard 8 ½" x 11" paper, dated with the date the photo was taken, and clearly labeled with the direction from which the photo was taken. Photo location points must be identified on as-built map(s).

Date of Inspection	Species Name of Dead Plants	Number of Dead Plants	Name of Species Replanted	Number Replanted

If there are multiple sites, fill out a separate table for each planting site.

Conclusions[1]:

[1] *If performance standards are not being met, a brief explanation of the difficulties and potential remedial actions proposed by the permittee or sponsor, including a timetable, must be provided. For any potential remedial actions identified, the permittee or sponsor must specify which remedial actions will be implemented. The Corps will ultimately determine if the mitigation site is successful for a given monitoring period.*

APPENDIX C

OFFICIAL SPECIES LIST

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Washington Fish And Wildlife Office
510 Desmond Drive Se, Suite 102
Lacey, WA 98503-1263
Phone: (360) 753-9440 Fax: (360) 753-9405

In Reply Refer To: 03/26/2025 20:57:11 UTC
Project Code: 2025-0074741
Project Name: Castle Rock Boat Launch Maintenance Dredging

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological

evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

https://www.fws.gov/sites/default/files/documents/endangered-species-consultation-handbook.pdf

Migratory Birds: In addition to responsibilities to protect threatened and endangered species under the Endangered Species Act (ESA), there are additional responsibilities under the Migratory Bird Treaty Act (MBTA) and the Bald and Golden Eagle Protection Act (BGEPA) to protect native birds from project-related impacts. Any activity, intentional or unintentional, resulting in take of migratory birds, including eagles, is prohibited unless otherwise permitted by the U.S. Fish and Wildlife Service (50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)). For more information regarding these Acts, see https://www.fws.gov/program/migratory-bird-permit/what-we-do.

The MBTA has no provision for allowing take of migratory birds that may be unintentionally killed or injured by otherwise lawful activities. It is the responsibility of the project proponent to comply with these Acts by identifying potential impacts to migratory birds and eagles within applicable NEPA documents (when there is a federal nexus) or a Bird/Eagle Conservation Plan (when there is no federal nexus). Proponents should implement conservation measures to avoid or minimize the production of project-related stressors or minimize the exposure of birds and their resources to the project-related stressors. For more information on avian stressors and recommended conservation measures, see https://www.fws.gov/library/collections/threats-birds.

In addition to MBTA and BGEPA, Executive Order 13186: *Responsibilities of Federal Agencies to Protect Migratory Birds*, obligates all Federal agencies that engage in or authorize activities that might affect migratory birds, to minimize those effects and encourage conservation measures that will improve bird populations. Executive Order 13186 provides for the protection of both migratory birds and migratory bird habitat. For information regarding the implementation of Executive Order 13186, please visit https://www.fws.gov/partner/council-conservation-migratory-birds.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Code in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List

OFFICIAL SPECIES LIST

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Washington Fish And Wildlife Office
510 Desmond Drive Se, Suite 102
Lacey, WA 98503-1263
(360) 753-9440

PROJECT SUMMARY

Project Code: 2025-0074741
Project Name: Castle Rock Boat Launch Maintenance Dredging
Project Type: Boat Ramp - Maintenance/Modification
Project Description: Maintenance Dredging
Project Location:

The approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@46.27272955,-122.91191212102356,14z

Counties: Cowlitz County, Washington

ENDANGERED SPECIES ACT SPECIES

There is a total of 8 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

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1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

BIRDS

NAME	STATUS
Marbled Murrelet *Brachyramphus marmoratus* Population: U.S.A. (CA, OR, WA) There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/4467	Threatened
Streaked Horned Lark *Eremophila alpestris strigata* There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/7268	Threatened
Yellow-billed Cuckoo *Coccyzus americanus* Population: Western U.S. DPS There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/3911	Threatened

REPTILES

NAME	STATUS
Northwestern Pond Turtle *Actinemys marmorata* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/1111	Proposed Threatened

FISHES

NAME	STATUS
Bull Trout *Salvelinus confluentus* Population: U.S.A., coterminous, lower 48 states There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/8212	Threatened

INSECTS

NAME	STATUS
Monarch Butterfly *Danaus plexippus* There is **proposed** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/9743	Proposed Threatened
Suckley's Cuckoo Bumble Bee *Bombus suckleyi* Population: No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/10885	Proposed Endangered

FLOWERING PLANTS

NAME	STATUS
Kincaid's Lupine *Lupinus sulphureus ssp. kincaidii*	Threatened

NAME STATUS

There is **final** critical habitat for this species. Your location does not overlap the critical habitat.
Species profile: https://ecos.fws.gov/ecp/species/3747

CRITICAL HABITATS

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

YOU ARE STILL REQUIRED TO DETERMINE IF YOUR PROJECT(S) MAY HAVE EFFECTS ON ALL ABOVE LISTED SPECIES.

IPAC USER CONTACT INFORMATION

Agency: Ecological Land Services, Inc.
Name: Lynn Simpson
Address: 1157 3rd Avenue, Suite 220A
City: Longview
State: WA
Zip: 98632
Email lynn@eco-land.com
Phone: 3605781371