



CRITICAL AREAS REPORT AND HABITAT MANAGEMENT PLAN

July 28, 2020



Al Helenberg Memorial Boat Launch Safety Improvements *Castle Rock, Washington*

Prepared for
City of Castle Rock
360 A Street
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 102.76

SIGNATURE PAGE

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

Kate'Lyn Wills

Kate'Lyn (KT) Wills

Biologist/Environmental Scientist IV

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INTRODUCTION

Ecological Land Services, Inc. (ELS) has completed this critical areas report on behalf of the applicant, City of Castle Rock (City). The study area consists of Cowlitz County Parcel Number 308770100, at the Al Helenberg Memorial Boat Launch located at 5040 Westside Highway in Castle Rock, Washington, within a portion of Section 10, Township 9 North, and Range 2 West, of the Willamette Meridian (Sheet 1). The applicant is proposing to address current dangerous stream flow conditions by constructing a structure to reduce flow velocities. ELS conducted a site visit on May 8, 2019 to inventory site conditions within the study area for the preparation of this critical areas report as required under *Castle Rock Municipal Code (CRMC) Chapter 18.10.080*.

SITE DESCRIPTION

The property is zoned for “Parks, Recreation, and Open Space”. The site currently consists of a parking lot, boat launch, floating docks, various outbuildings, and walking trails. The land westerly adjacent to the Cowlitz River had been used as a location for dredge spoils from the emergency clean-up efforts after the eruption of Mount St. Helens in 1980. The site is defined by generally flat topography with an approximately 35 percent slope along the shoreline of the Cowlitz River which comprises the eastern project boundary. Riprap is present along the toe of the stream banks upstream and downstream of the project area. The vegetation onsite consists of mowed and maintained yard grass with a thin stand of black cottonwood (*Populus balsamifera*) trees along the shoreline. The study area is bordered to the north and west by property owned and utilized by the Castle Rock School District. Properties to the south consist of small residential lots containing single-family dwellings (Sheet 2). 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 17 miles downstream.

PROJECT DESCRIPTION

Project History/Project Need and Purpose

The Al Helenberg Memorial Boat Launch was constructed approximately 1,300 feet upstream of the State Route 411 Bridge to provide recreational boat access to the Cowlitz River in 2010. Since the construction of the boat launch, boaters have indicated through town hall meetings and letters to the City, that streamflow velocities at the boat ramp frequently make use of the ramp difficult or even dangerous. Emergency services have also indicated to the City the need for safety improvements at the boat launch in order to access to the Cowlitz River for rescues and recovery efforts. Currently, the nearest access for emergency services to the Cowlitz River is approximately 10 miles to the south in Kelso. Due to these increasing safety concerns, usage of the boat launch has steadily declined over the last few years as evidenced by the permit totals in Table 1 below. To address safety concerns, the City of Castle Rock proposes to construct a structure that will reduce streamflow velocities at the boat ramp to improve both safety and access for boaters.

Project Overview

The project has been designed based on the recommendations by WEST Consultants, dated November 1, 2016 (West 2016). This project proposes to construct a structure consisting of two reinforced 30-foot long cast-in-place concrete panels supported by a combination of vertical, diagonal, and battered-in H-piles. The panels are designed to improve safety at the boat launch by slowing the velocity of the water upstream while also maintaining adequate water velocity to

minimize material deposition. The walls are proposed approximately 300 feet upstream of the launch, which will necessitate 1) construction of an access road to the work area (north maintenance access road); 2) installation of a steel sheet-pile cofferdam around of the work area; and 3) replacement of riprap on the riverbank in the project area. The access road functions to provide access to the work area but will ultimately be used as a maintenance access to the riprap revetment to assess potential failures of the erosion control measures. A second road (south maintenance access road) is proposed on the opposite side of the boat launch for the future maintenance access. Construction of the proposed facility improvements will necessitate the removal of 24 black cottonwood (*Populus balsamifera*) trees to facilitate construction of the north access road and direct access to the in-river work area. Maintenance dredging is on-going to maintain water depths suitable for launching boats and will continue after the walls are constructed.

A more detailed description of project activities as well as avoidance and minimization measures including best management practices (BMPs) and mitigation sequencing is described in the *Bank Use Plan for the Al Helenberg Memorial Boat Launch Safety Improvements, Castle Rock, Washington* (ELS 2020a). These measures will compensate for unavoidable project impacts within the inner RHA of the Cowlitz River, resulting in no net loss of riparian habitat function. A more detailed assessment of biological effects to listed species and habitat is described in the *Biological Assessment for the Al Helenberg Memorial Boat Launch Safety Improvements, Castle Rock, Washington* (ELS 2020b).

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 ascertaining where 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 rip rap, and shoreline.

CRITICAL AREAS SUMMARY

Cowlitz River

The Cowlitz River is a Classification 1 fish and wildlife conservation area according to CRMC *Chapter 18.10.130 Table 7* which are defined as; “areas with which state/federal-designated endangered, threatened, candidate, or sensitive species have a primary association”. The CRMC follows the Washington State Department of Natural Resources (DNR) stream typing methodology, which indicates that the Cowlitz River is also considered a Type 1 stream. According to the CRMC *Chapter 18.10.130 Table 8*, the designated riparian buffer width for a Type 1 stream is 250 feet. The riparian buffer of the Cowlitz River is functionally isolated by Mosier Road and the parking area for the boat launch in the southern portion of the project area and is functionally isolated by a frequently used and maintained gravel access road that runs from the parking area, north along the parcel boundary at the top of the shoreline slope for the extent of the project area (Sheet 2). Additionally, the Cowlitz River is a Classification 5 fish and wildlife conservation area due to smelt spawning along the shorelines. The Cowlitz River also is designated

as a Type S (shoreline) by Department of Natural Resources (DNR), and is considered a shoreline of statewide significance and as such is subject to shoreline regulations according to the City’s Shoreline Master Program (SMP) (City 2016). Shoreline jurisdiction extends for 200 feet from the ordinary high water mark (OHWM) of the Cowlitz River. Table 1 below summarizes the critical areas onsite.

Table 1. Summary of Critical Areas.

Critical Area	Stream Type	Stream Buffer Width ¹	Shoreline Jurisdiction ²
Cowlitz River	Type S, “Shoreline of the State”	250 feet	200 feet

¹ICRMC 18.10.130 Table 8

²CCSMP 3.1A.1.

LISTED SPECIES AND HABITATS IN THE PROJECT VICINITY

The potential presence of listed species that have a primary association with the habitat on or adjacent to the project area was evaluated during the site visit, and by reviewing aerial photographs, the Washington Department of Fish and Wildlife (WDFW) SalmonScape and Priority Habitat and Species (PHS) websites (WDFW 2020 and 2020b), the U.S. Fish and Wildlife Service IPaC website (USFWS 2020), National Marine Fisheries Service website (NMFS 2020), and the Washington Department of Natural Resources Natural Heritage website (WDNR 2020). No official botanical surveys were conducted during the identification window for the plant species listed below to confirm their presence or absence onsite. Table 2 below contains a summary of listed species that have a primary association within or adjacent to the project area.

Table 2. Endangered, Threatened, Candidate, Sensitive, and Priority Species that have Primary Association with Habitat on or Adjacent to the Project Area.

Species, ESU ¹ or DPS ²	State Status ³	Federal Status ³	Critical Habitat ⁴ in Project Vicinity
<i>Fish</i>			
Lower Columbia River ESU Chinook Salmon (<i>Onchorhynchus tshawytscha</i>)	Candidate	Threatened	Yes
Columbia River ESU Chum Salmon (<i>Onchorhynchus keta</i>)	Candidate	Threatened	Yes
Lower Columbia River ESU Coho Salmon (<i>Onchorhynchus kisutch</i>)	Candidate	Threatened	Yes
Lower Columbia River DPS Steelhead (<i>Onchorhynchus mykiss</i>)	Candidate	Threatened	Yes
Columbia River DPS Bull Trout (<i>Salvelinus confluentus</i>)	Threatened	Threatened	No
Southern DPS (Columbia River Smelt) Eulachon (<i>Thaleichthys pacificus</i>)	Threatened	Threatened	Yes
<i>Plants</i>			
Golden Paintbrush (<i>Castilleja levisecta</i>)	Threatened	Threatened	None Listed
Kincaid’s Lupine (<i>Lupinus sulphureus</i>)	Threatened	Threatened	No

<i>Birds</i>			
Marbled Murrelet (<i>Brachyramphus marmoratus</i>)	Endangered	Threatened	No
Streaked Horned Lark (<i>Eremophila alpestris strigata</i>)	Endangered	Threatened	No
Yellow-billed Cuckoo (<i>Coccyzus americanus</i>)	Threatened	Threatened	No

1) ESU - Evolutionarily Significant Unit. A distinct group of Pacific salmon.

2) DPS – Distinct Population Unit.

All species and critical habitats listed under NMFS jurisdiction on their website are addressed in this report and are listed in the table above. WDNR National Heritage Features website shows no rare plants in the project’s section.

The official USFWS IPaC species list showed the following threatened species and critical habitats as potentially present in the action area: North American wolverine (*Gulo gulo luscus*), marbled murrelet (*Brachyramphus marmoratus*), streaked horned lark (*Eremophila alpestris strigata*), the Western DPS of the yellow-billed cuckoo (*Coccyzus americanus*), golden paintbrush (*Castilleja levisecta*), and Kincaid’s lupine (*Lupinus sulphureus ssp. kincaidii*). There is no suitable habitat in the action area for these listed species because the upland areas of the site are already developed, and there is no designated critical habitat for USFWS species. Bull trout (*Salvelinus confluentus*), was also shown on the USFWS IPaC list; however, the presence of bull trout is highly unlikely due to lack of the following key habitat requirements; complex stream habitat, deep pools, overhanging banks, and spawning and rearing areas. USFWS indicates that bull trout currently occur in the Columbia River but not the Cowlitz.

POTENTIAL EFFECTS OF THE PROJECT ON LISTED SPECIES AND HABITAT

Direct and Indirect Effects

The construction of the two 30-foot by 1.5-foot wall sections will permanently impact approximately 0.002 acres (90 sq. ft.) of stream channel below the OHWM. In order to construct the wall sections, 24 mature black cottonwood trees with a combined canopy of 0.45 acres (19,578 sq. ft.) will be removed from the shoreline, as well as 0.07 acres (3,188 sq. ft.) and 0.05 acres (2,271 sq. ft.) of gravel will be compacted north and south of the boat ramp (respectively) to create maintenance and construction access to the project site. A total of 0.002 acres (90 sq. ft.) of aquatic impacts are proposed waterward of the OHWM while 0.57 acres (25,037 sq. ft.) of riparian impacts are proposed landward of the OHWM (Sheet 3).

Potential indirect impacts from the project include an increase in runoff from impervious surfaces in the buffer, however there are no anticipated negative effects. There is anticipated in-air noise expected with the installation of the wall sections as vibratory hammering will be used. There are no anticipated erosive impacts and there will be only a restorative increase in traffic and human activity due to the proposed project.

Avoidance and minimization measures including best management practices (BMPs) as well as mitigation sequencing is described in the *Bank Use Plan for the Al Helenberg Memorial Boat Launch Safety Improvements, Castle Rock, Washington* (ELS 2020). These measures will

compensate for unavoidable project impacts within the inner RHA of the Cowlitz River, resulting in no net loss of riparian habitat function. A more detailed assessment of biological effects to listed species and habitat is described in the *Biological Assessment for the Al Helenberg Memorial Boat Launch Safety Improvements, Castle Rock, Washington* (ELS 2020).

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. Items 1, 3, 4, 5, 6, 7, 8, 9, and 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. For Item 2, this project cannot restore floodplain function and will not restore stream habitat diversity because the project is limited in scope. Limited areas of vegetation are to be removed, however, the proposed mitigation will replace lost riparian functions, so riparian function will not be reduced.

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 remove some vegetation in the riparian buffer of a fish-bearing stream; however, the project will not impede natural movements of fish. Proposed mitigation will ensure no net loss

of ecological function. No herbicides are proposed. 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 allowed. WDFW does not currently have specific documents that have a list of management recommendations for Eulachon, however, National Marine Fisheries Service developed a Recovery Plan in 2017. The key recovery objectives are:

- 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. For this reason, this project will not adversely affect eulachon.

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 *Bank Use Plan for the Castle Rock Boat Launch Safety Improvements, Castle Rock, Washington* (ELS 2020). These measures will compensate for unavoidable project impacts within the inner RHA of the Cowlitz River, resulting in no net loss of riparian habitat function. Therefore, the project generally 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 considered a preliminary jurisdictional determination and 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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- City of Castle Rock. 2016. *Shoreline Master Program*, Washington State Department of Ecology Partnership. September 2016.
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FIGURES & PHOTOPLATES

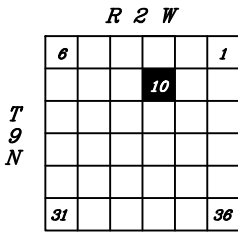
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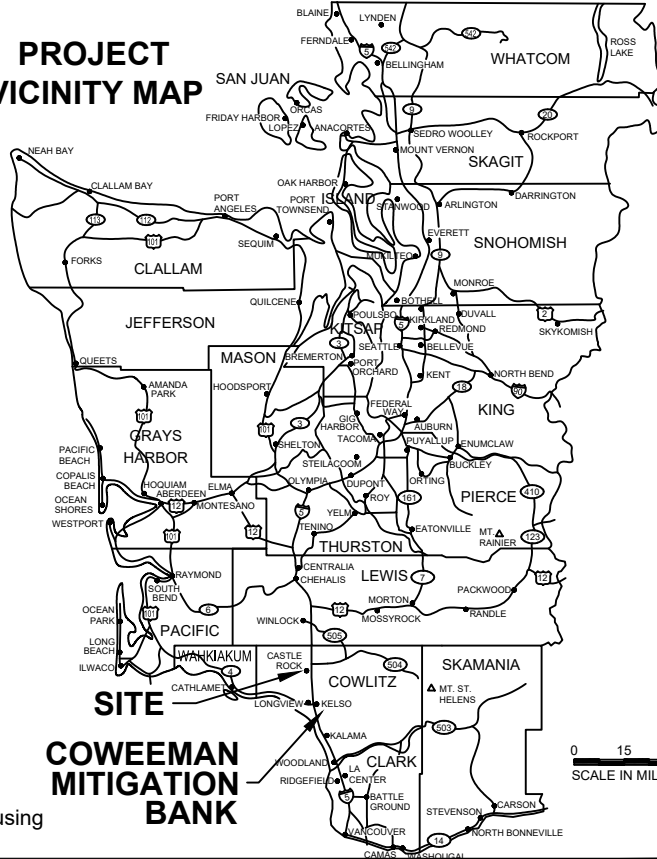
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LOCATION MAP



NOTE:
USGS topographic quadrangle map reproduced using MAPTECH Inc., Terrain Navigator Pro software.

PROJECT VICINITY MAP



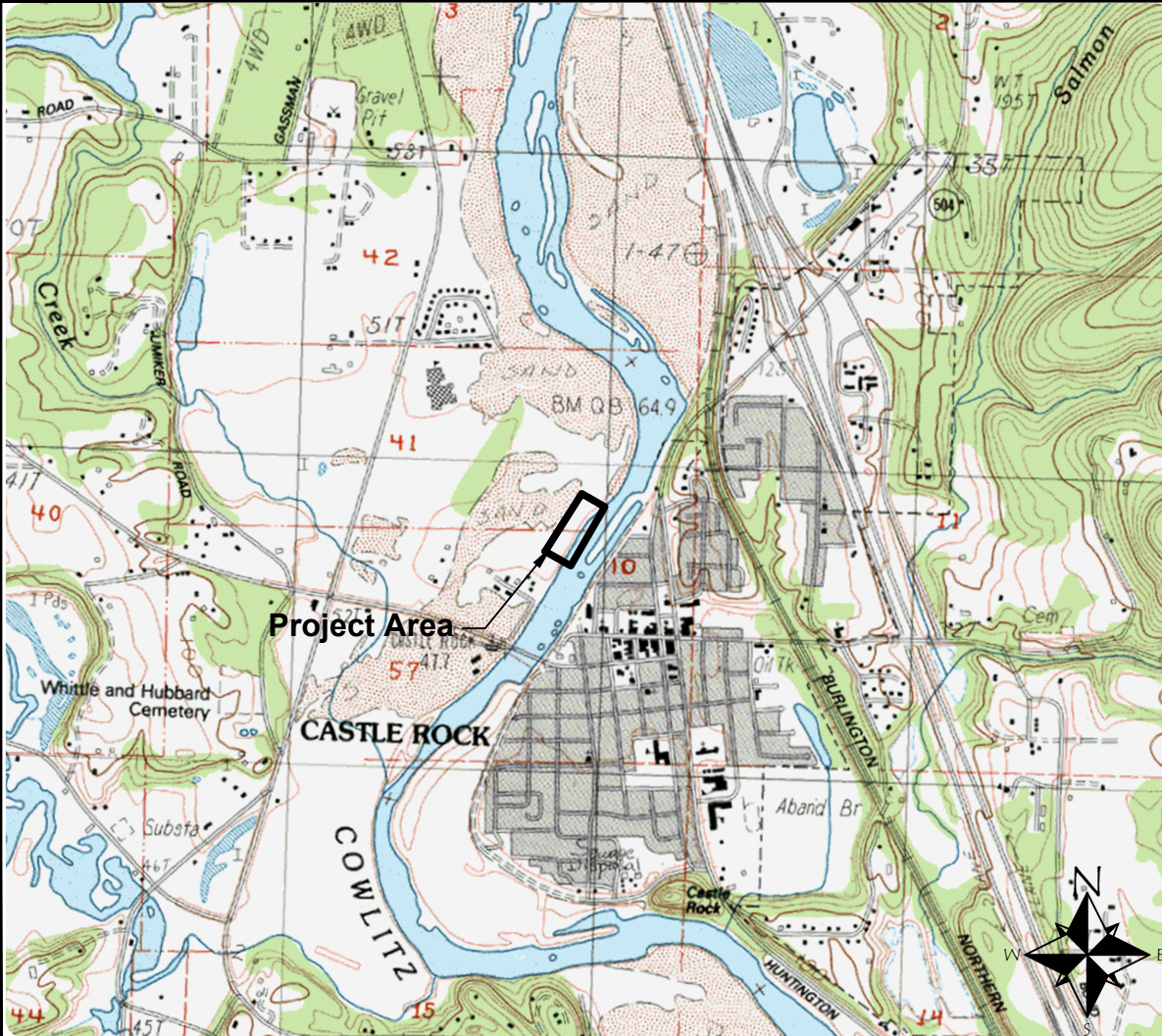
SITE
COWEEMAN MITIGATION BANK

PROPOSED: Construction of structure to reduce streamflow velocities in Cowlitz River
NEAR: Castle Rock
COUNTY: Cowlitz
STATE: WA
SHEET 1 OF 5
DATE: 7/28/20

VICINITY MAP
APPLICANT: City of Castle Rock
PROJECT NAME: C.R. Boat Launch Safety Improvements
REFERENCE #: Not Yet Assigned
SITE LOCATION ADDRESS: R.M. 17.6 Access at 5040 Westside Highway
Castle Rock, WA 98611

PURPOSE: Safety and access improvements at boat launch
DATUM: NAD83
ADJACENT PROPERTY OWNERS:

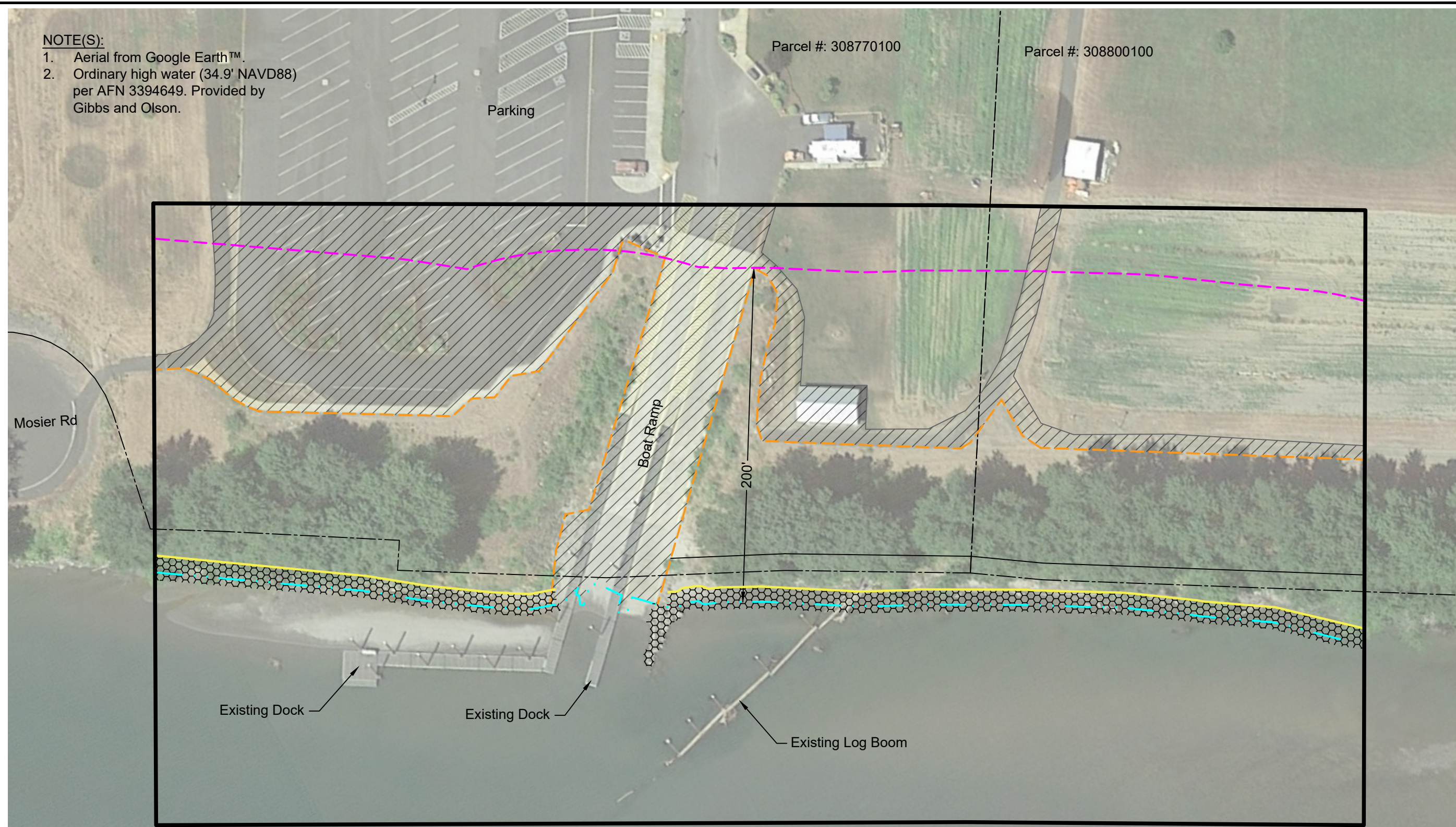
1157 3rd Ave., Suite 220A
Longview, WA 98632
Phone: (360) 578-1371



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NOTE(S):

1. Aerial from Google Earth™.
2. Ordinary high water (34.9' NAVD88) per AFN 3394649. Provided by Gibbs and Olson.



LEGEND:

- Project Area
- Parcel Boundaries
- Stream with Flow Direction
- OHWM

LEGEND:

- Shoreline Jurisdiction (200')
- Functionally Isolated Shoreline Buffer (250')
- Existing Impervious Surface
- Existing Rip Rap
- Existing Levee

Cowlitz River (Type S, Shoreline of Statewide Significance)



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



PURPOSE: Safety and access improvements at boat launch

DATUM: NAD83

ADJACENT PROPERTY OWNERS:

EXISTING CONDITIONS

APPLICANT: City of Castle Rock
PROJECT NAME: C.R. Boat Launch Safety Improvements
REFERENCE #: Not Yet Assigned
SITE LOCATION ADDRESS:
 R.M. 17.6 Access at 5040 Westside Highway
 Castle Rock, WA 98611

PROPOSED: Construction of structure to reduce streamflow velocities

IN Cowlitz River
NEAR: Castle Rock
COUNTY: Cowlitz
STATE: WA
SHEET 2 OF 5
DATE: 7/28/20

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LEGEND:

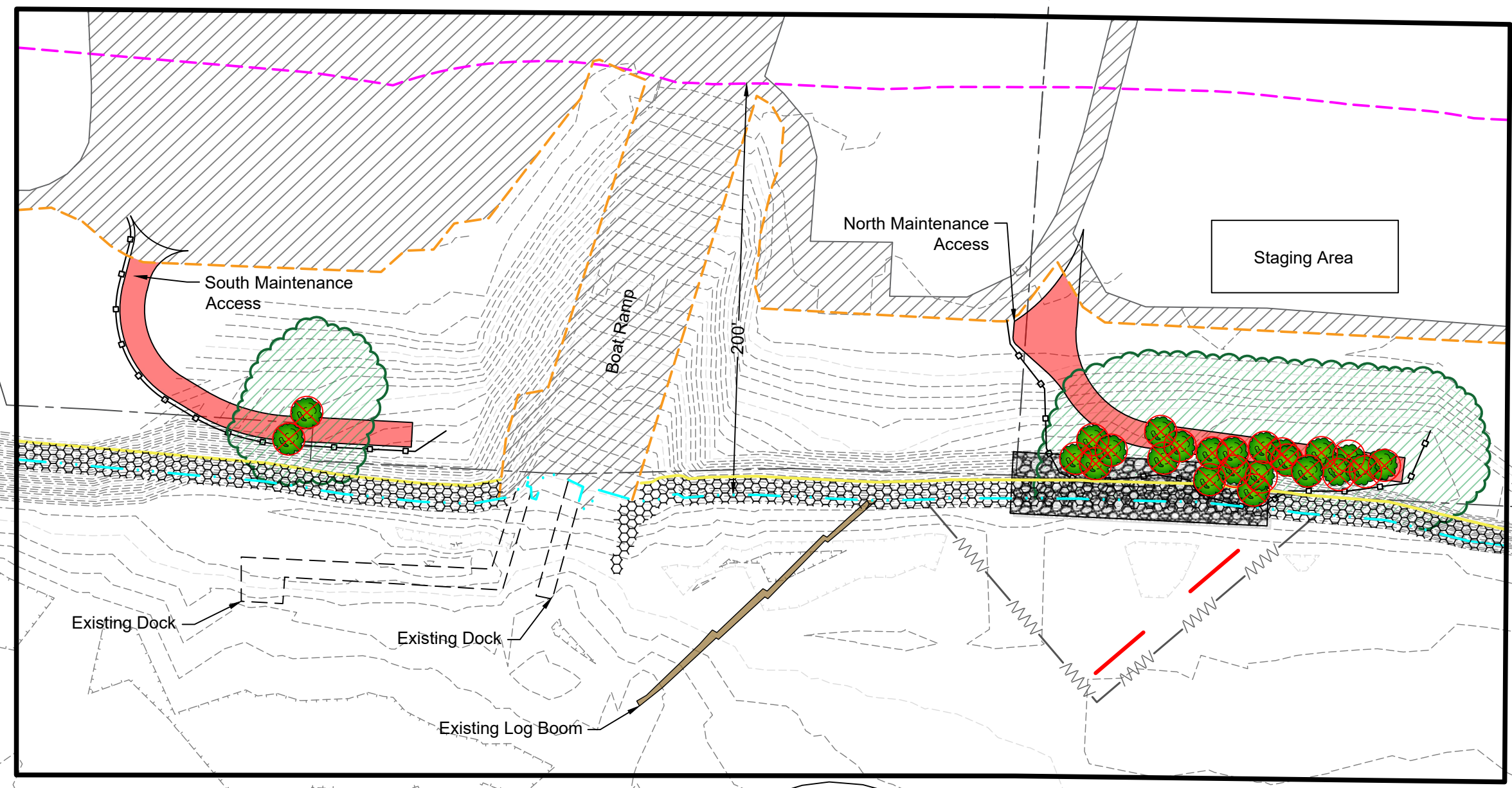
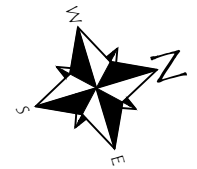
- Project Area
- Parcel Boundaries
- Shoreline Jurisdiction (200')
- Functionally Isolated Shoreline Buffer (250')
- OHWM
- Existing Impervious Surface
- Existing Rip Rap
- Existing Levee

LEGEND:

- Silt Fence
- Gravel Maintenance Access Impacts
North - (0.07 ac./ 3,188 sq. ft.)
South - (0.05 ac./ 2,271 sq. ft.)
- Riprap to be Replaced
Landward of OHWM - (0.06 ac./ 2,400 sq. ft.)
Waterward of OHWM - (0.03 ac./ 1,200 sq. ft.)
- Cofferdam
- Wall Sections (30' x 1'6" x 45')(0.001 ac./ 45 sq. ft. Each)

Cottonwood Trees to be Removed

- Stems (24 Total)
- Canopy (0.45 ac./ 19,578 sq. ft.)



Mosier Rd

South Maintenance Access

Boat Ramp

North Maintenance Access

Staging Area

Existing Dock

Existing Dock

Existing Log Boom

Cowlitz River (Type S, Shoreline of Statewide Significance)

NOTE(S):

1. Site plan, topography, and bathymetry from Gibbs and Olson.
2. Ordinary high water (34.9' NAVD88) per AFN 3394649. Provided by Gibbs and Olson.



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



PURPOSE: Safety and access improvements at boat launch	PROPOSED CONDITIONS	PROPOSED: Construction of structure to reduce streamflow velocities
DATUM: NAD83	APPLICANT: City of Castle Rock	IN: Cowlitz River
ADJACENT PROPERTY OWNERS:	PROJECT NAME: C.R. Boat Launch Safety Improvements	NEAR: Castle Rock
	REFERENCE #: Not Yet Assigned	COUNTY: Cowlitz STATE: WA
	SITE LOCATION ADDRESS: R.M. 17.6 Access at 5040 Westside Highway Castle Rock, WA 98611	SHEET 3 OF 5
		DATE: 7/28/20



Mapped water bodies indicated onsite by the Washington State Department of Natural Resources (DNR).

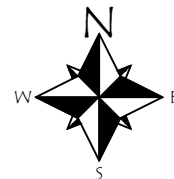
LEGEND:

— Project Area

Streams

Streams

- Type S
- Type F
- Type N, Np, Ns
- U, unknown
- X, non-typed per WAC 222-16
- ▨ Open Water



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



PURPOSE: Safety and access improvements at boat launch

DATUM: NAD83

ADJACENT PROPERTY OWNERS:

DNR STREAM TYPE MAP

APPLICANT: City of Castle Rock
PROJECT NAME: C.R. Boat Launch Safety Improvement
REFERENCE #: Not Yet Assigned
SITE LOCATION ADDRESS:
 R.M. 17.6 Access at 5040 Westside Highway
 Castle Rock, WA 98611

PROPOSED: Construction of structure to reduce streamflow velocities in Cowlitz River

NEAR: Castle Rock
COUNTY: Cowlitz
STATE: WA
SHEET 4 OF 5
DATE: 7/28/20

NOTE: Map provided online by Washington State Department of Natural Resources at web address: <https://fortress.wa.gov/dnr/protectiongis/fpamt/index.html>



NOTE: Map provided on-line by Washington State Department of Fish & Wildlife at web address: <http://apps.wdfw.wa.gov/phsontheweb/>

LEGEND:

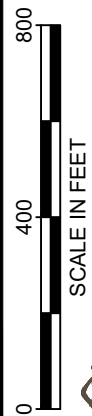
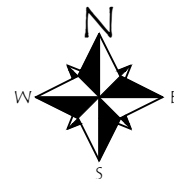
— WDFW PHS Species and Habitat Lines/Salmonscape Species

PHS Species

- Chinook - Occurance
- Cutthroat - Occurance
- Coho - Occurance/Migration
- Fall Chinook - Breeding Area
- Fall Chum - Occurance/Migration
- Rainbow Trout - Occurance/Migration
- Resident Coastal Cutthroat - Occurance/Migration
- Spring Chinook - Occurance/Migration
- Steelhead - Occurance
- Summer Steelhead - Occurance/Migration
- Winter Steelhead - Breeding Area

Salmonscape Species

- Coho - Documented Presence
- Fall Chinook - Documented Spawning
- Fall Chum - Documented Presence
- Spring Chinook - Documented Presence
- Summer Steelhead - Documented Presence
- Winter Steelhead - Documented Spawning



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 Longview, WA 98632
 Phone: (360) 578-1371

PURPOSE: Safety and access improvements at boat launch

DATUM: NAD83

ADJACENT PROPERTY OWNERS:

PRIORITY SPECIES & SALMONSCAPE MAP

APPLICANT: City of Castle Rock

PROJECT NAME: C.R. Boat Launch Safety Improvements

REFERENCE #: Not Yet Assigned

SITE LOCATION ADDRESS:
 R.M. 17.6 Access at 5040 Westside Highway
 Castle Rock, WA 98611

PROPOSED: Construction of structure to reduce streamflow velocities in Cowlitz River

NEAR: Castle Rock

COUNTY: Cowlitz

STATE: WA

SHEET: 5 OF 5

DATE: 7/28/20



Photo 1. This photo was taken from the top of the boat ramp facing east towards the Cowlitz River.



Photo 2. This photo was taken from the central dock facing south/downstream.



Photo 3. This photo was taken from the central dock facing north/upstream. Note the obstruction in the log boom on the right side of the frame.



Photo 4. This photo was taken from the existing maintenance access Road upslope from the Cowlitz River and north of the boat ramp.



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

DATE: 6/17/20
DWN: KT
PRJ. MGR: KT
PROJ.#: 102.76

Photoplate 1

Castle Rock Boat Launch Safety Improvements
Critical Areas Report and Habitat Management Plan
Castle Rock, Washington
Section 10, Township 9N, Range 2W, W.M.