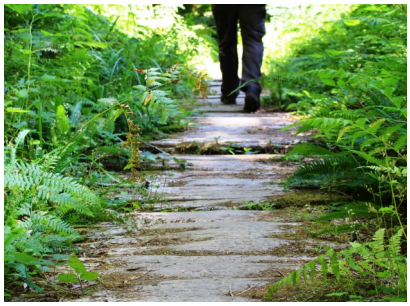
CRITICAL AREAS AND FWHCA REPORT

Updated May 3, 2023



Rock Creek Cove Hospitality

Stevenson, Washington

Prepared for

FDM Development
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Prepared by

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(360) 578-1371 • Project Number 2682.02

SIGNATURES

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Introduction

Ecological Land Services (ELS) has prepared the following critical areas report and compensatory mitigation plan for FDM Development (the applicant) as a component of the proposed mixed-use hospitality development adjacent to Rock Creek Cove on parcels 02070100130300, 02070100130400, and 02070100130200 (study area) in the City of Stevenson, Skamania County, Washington. The study area is in the SW ¼ of the NW ¼ of Section 1, Township 2 N, and Range 7 East of the Willamette Meridian, coordinates 45.6890, -121.8992, and is accessed from SW Rock Cove Dr (Figure 1). The study area's zoning is "Commercial" (C1). This report provides a description of existing critical areas on the proposed development site, a summary of proposed impacts from development, and a mitigation proposal for unavoidable impacts.

SMC 18.13.050 - Critical areas report requirements

A. Qualified Professional. When required by this chapter, the applicant shall submit a critical area report prepared by or under the direct supervision of a qualified professional as defined herein.[1]

> Ecological Land Services Inc. (ELS) is an environmental consulting firm with twenty-four years' experience specializing in natural resources management and land use planning. Andrew Allison has been employed by ELS for 9 years and has a total of 12 years' experience in critical areas analyses that include habitat associated with wetlands, streams, woodlands, and agriculture. He has completed critical areas assessments, prepared critical area determination reports, and designed wetland and habitat mitigation plans in Southeast Alaska, Washington, and Oregon that include urban, rural, and wilderness environments.

B. Best Available Science. The critical area report shall use scientifically valid methods and studies in the analysis of critical area data and field reconnaissance and reference the source of science used. The critical area report shall evaluate the proposal and all probable impacts to critical areas in accordance with the provisions of this chapter.

> Stream Assessment:
> ELS uses guidance provided by the Washington State Department of Ecology[2] (Ecology) and the U.S. Environmental Protection Agency[3] (EPA) to inform decisions about the location of an ordinary high water mark (OHWM) and to make determinations about stream characteristics, including habitat functions and flow dynamics. The Shoreline Management Act (SMA) of Washington State defines OHWM as a mark "…found by

1 "Qualified professional" means a person with experience and training in accordance with WAC 365-195-905(4).

[2] Publication No. 16-06-029: "Determining the Ordinary High Water Mark for Shoreline Management Act Compliance in Washington State", revised October 2016.

[3] Publication No. 910-K-14-001: "Streamflow Duration Assessment Method for the Pacific Northwest", November 2015.

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…" (RCW 90.58.030(2)). ELS, in collaboration with Ecology staff, used principles in this guidance as well as site-specific indicators to identify the OWHM of the Columbia River within the study area boundary. Site specific indicators included transitions in vegetation, wrack lines, scouring under trees and exposed roots, and breaks in topography.

Wetland Assessment:

ELS follows the Routine Determination Method developed by the U.S. Army Corps of Engineers (Corps) for wetland delineation.[4] The Routine Determination Method examines vegetation, soils, and hydrology to determine if wetland is present. EPA defines wetlands as "…areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions."

C. Minimum Report Contents. At a minimum, the report shall contain the following:

1. The name and contact information of the applicant and landowner (if different).

Applicant:	Landowners (represented by the applicant):
FDM Development, Inc.	Erwin L&K, LLC
5101 NE 82nd Ave, Suite 200	OPH DBD, LLC
Vancouver, WA 98662	Rawlings Family Investments, LLC
(210) 849-5592	

2. The street address and tax lot number of the site proposed for the regulated activity.

Parcel Numbers:	02070100130200, 02070100130300, 02070100130400
Map Number:	U-CR-P
Site Address:	Rock Creek Dr.
Description:	Lot 2 BK T/PG 100
Total Acreage	6.40
Zoning:	Commercial Recreation (CR)

3. A description of the proposal and identification of the permit requested.

Rock Creek Cove Hospitality project is a mixed-use development adjacent to Rock Creek Cove on the former Hegewald Lumber Mill Site in Stevenson, WA. The project seeks to

[4] "Corps of Engineers Wetlands Delineation Manual", Wetlands Research Program Technical Report Y-87-1 (Environmental Laboratory 1987) and the "Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys and Coast Region (Version 2.0)" (U.S. Army Corps of Engineers, May 2010)

complement the existing tourism industry in Stevenson by offering condo- and studio-sized units available for nightly and weekly rental, totaling 48 available bedrooms. A 15,000 square-foot commercial venue space will anchor the development and provide wide views of Rock Creek Cove and the Columbia River Gorge. The conceptual space planning of the commercial building consists of 5,000 open venue space, supported by 10,000 square feet of service, food preparation, and guest lounging area. The development seeks to attract both local and regional visitors, with venue space available for weddings, company parties, family reunions, and corporate retreats.

The project is proposed in three phases of development: Phase 1 includes condo-style units, operated by a single ownership group. Phase 2 will add the commercial venue space and restore water-side portions of the property for enhanced, publicly-accessible observation and enjoyment. Phase 3 completes the development with the studio-sized units, operated under the same ownership group as the remainder of the property.

The applicant is seeking a Critical Areas Permit from the City of Stevenson for an approximate 0.19-acre impact to the Columbia River's fish and wildlife habitat conservation area (FWHCA) (Figure 3).

4. A detailed plan of the proposal site and all adjoining areas within 100 feet, drawn to a standard engineering scale and submitted on 8 ½"×11" or 11"×17" paper.

The existing and proposed conditions are included with this report as Figures 2, 3, and 4. Its scale is 1:200 and it is on 11x17 paper. These figures include:

a. location and description of critical areas and buffers
b. existing conditions of the property
c. location, species, and diameter of significant trees
d. location and extent of proposed regulated activities

Details related to stormwater management are included in the engineer's drawing, included with this report's Appendix.

5. The dates, names, and qualifications of the persons preparing the report and documentation of any fieldwork performed on the site.

ELS (Andrew Allison, qualifications provided above) and Ecology (Rebecca Rothwell, Wetlands and Shorelands Technical and Regulatory Lead) completed fieldwork on December 30, 2019. We assessed critical areas and fish and wildlife habitat in the study area together, and physically demarcated the OHWM of the Columbia River in the study area using consecutively numbered fluorescent tape flagging. S&F Land Services, a

professional surveyor, recorded the flag locations on the same day. ELS and Ecology agreed wetlands were not present in the study area.[5]

6. Identification and characterization of all critical areas, wetlands, water bodies, and buffers adjacent to the proposed project area. For areas off site, estimate conditions within 300 feet of the project boundaries using the best available information.

ELS and Ecology identified one unnamed tributary to the Columbia River at the north end of the study area; the tributary is designated "Type F" by Washington Department of Natural Resources (DNR) (Figure 6). The Columbia River is designated "Type S" and is a shoreline of statewide significance. Rock Cove, a side channel of the Columbia River, surrounds the study area on three sides (Figures 2 and 3). According to SMC 18.13.095(D), the area designated as a fish and wildlife habitat conservation area (FWHCA) for Type F waters is 100 feet and Type S waters is 150 feet.[6] Existing conditions within 300 feet of the study area include SW Rock Creek Drive and single family residences to the west, an assisted living community to the south, and Rock Cove (open water) to the north and east.

Vegetation in the study area's FWHCA consists of mature deciduous and evergreen trees spaced along the north, east, and southwest shoreline with an understory of woody shrubs and herbaceous species. Shrub species are best established between the study area and SW Rock Creek Drive, roughly the northwest and southeast portions of the subject shoreline; elsewhere, shrubs and herbaceous vegetation are sparse or absent due to existing impervious surfaces, riprapped embankments, and historic disturbances from industrial activities that include uses by the timber industry and municipal materials storage. Approximately 70 percent of the study area's shoreline is armored with riprap-like material that consists of loose stones, gravel, fragments of concrete, and large pieces of metal (i.e. rebar, logging cable, nonspecific steel remnants). Derelict pilings are located a few feet offshore near the northeast portion of the study area.

In most places the transition from top-of-bank to the OHWM is relatively steep. Erosion control in the steeper portions of the shoreline has been historically achieved with riprap-like armoring. Approximately 65 percent of the shoreline is armored with material that consists of loose stones, gravel, fragments of concrete, and large pieces of metal (i.e. rebar, logging cable, and non-specific steel remnants). Derelict in-water pilings are located along the southeast shoreline of the study area and formerly supported timber industry infrastructure.

[5] The National Wetlands Inventory (NWI) maps one wetland in the study area, identified as PEM1/UBFh (Figure 7). ELS and Ecology reviewed the area mapped as wetland by the NWI and determined it is part of Rock Cove, within the OHWM of the Columbia River, and not an independent wetland unit.
[6] Table 18.13.095-1

7. *A statement specifying the accuracy of the report, and all assumptions made and relied upon*.

ELS bases this report's determinations on standard scientific methodology and best professional judgment. In our opinion, local, state, and federal regulatory agencies will agree with our determinations; however, the information contained in this report should be considered preliminary and used at your own risk until it has been approved in writing by the appropriate regulatory agencies. ELS is not responsible for the impacts of any changes in environmental standards, practices, or regulations after the date of this report.

8. A discussion of the regulatory standards applicable to the critical areas and proposed activities.

Regulatory standards that apply to the applicant's proposed development include compliance with the City of Stevenson's December 2018 Shoreline Master Program (SMP), and SMC Chapter 18.13 *Critical areas and natural resource lands.*

a. SMP requirements: The standard shoreline management area (or shoreline setback) for all designated shorelines in Washington State is 200 feet, measured landward from the OHWM. The study area is zoned "active waterfront"; according to Stevenson's 2018 SMP, setbacks for development proposed in active waterfront is typically 50 feet. Accordingly, the applicant is keeping all development outside of the 50-foot setback as demonstrated in Figure 3.

   Regarding improvements from prior industrial land uses including concrete and gravel surfaces, gravel roads, the graveled boat launch, and riprap embankments, a shoreline use that was lawfully constructed prior to the effective date of the SMA or the December 2018 SMP and that does not conform to the current SMP standards is considered a nonconforming use. For the purposes of the December 2018 SMP, existing roads (whether asphalt, gravel, or dirt) are considered nonconforming uses and do not need a Shoreline Conditional Use Permit to be retained or improved (SMP 2018).

b. This report is a discussion of all other regulatory standards applicable to SMC Chapter 18.13 *Critical areas and natural resource lands*.

9. A description of efforts to apply mitigation sequencing pursuant to SMC 18.13.055 specific to avoidance, minimization, compensation, and preservation measures proposed for the critical areas.

Rock Creek Cove Hospitality is proposed on the former Hegewald Lumber Mill Site which was active from the 1950's through the 1970's. The Natural Resource Conservation

Service (NRCS) describes soils in the study area as Arents 0 to 5 percent slopes. Arents do not have diagnostic horizons because they have been deeply mixed by plowing, spading, or other methods of moving by humans (NRCS 2020). Existing conditions indicate the site's history of disturbance from industrial timber processing; these conditions can be roughly categorized as impervious surface, disturbed/maintained pervious surfaces, and moderately vegetated shoreline.

Impervious surface occupies approximately 1.25 acres and consists of compacted gravel, asphalt, or concrete formerly used for roads, staging pads, or parking areas, and a boat launch. Disturbed/maintained pervious surfaces occupy approximately 4 acres are characterized by areas with little to no plant cover, low plant species diversity, and that have stockpiles of rock or woody materials. Moderately vegetated shoreline occupies approximately 1.22 acres. These areas show signs of prior industrial land use but have not been maintained and, in the absence of maintenance, reestablished trees and shrubs with moderate levels of diversity and interspersion. Critical areas in the study area are the FWHCA for Rock Cove and the unnamed tributary to Rock Cove, and one Oregon white oak tree (Figure 2). The FWHCA is primarily within moderately vegetated shoreline.

In adherence to mitigation sequencing pursuant to SMC 18.13.055 and with specificity to avoidance, the applicant is proposing most development in areas that are either existing impervious surfaces, previously disturbed ground, or that are otherwise prevented from providing buffer functions by shoreline armoring (Figures 2, 3, and 4). Pursuant to minimization, the applicant is proposing a 0.19-acre impact to Rock Cove's FWHCA in the southwest portion of the study area in a part of the buffer that, in addition to prior industrial land use, was used for storing rock, cobbles, and other materials until sometime after 2007 (Figure 4, 2007 aerial base map). The proposed impact area meets the definition of a "degraded" buffer as it is defined in SMC 18.13.010(B)(15).[7] Proposed mitigation for these impacts is discussed below in the requirements for FWHCA reports, SMC 18.13.095(F) *Habitat Mitigation*.

10. Any additional information required for the critical area as specified in the corresponding section.

SMC 18.13.095(D)(3) identifies functionally isolated buffer as lawns, pre-existing roads and structures, vertical separation, and other areas that do not protect the FWHCA from adverse impacts. Shoreline armoring meets the description of a preexisting structure that that does afford protection from adverse impacts. It lacks pervious surfacing for detaining and/or filtering sediment loads in surface runoff, an established and diverse native

[7] Areas of the FWHCA that are dominated by more than 30 percent aerial coverage of invasive vegetation (primarily Himalayan blackberry (*Rubus armeniacus*)) and/or by fill, gravel, debris, asphalt, and other non-native material.

vegetation community able to provide forage, screening, refuge, or denning opportunities for wildlife species, and over-water shading for near-shore aquatic wildlife in the Columbia River. Accordingly, those portions of the study area that contain armoring satisfy the buffer exemption criteria per SMC 18.13.095(B)(3) (Figure 2).[8] Additional areas of buffer isolation are located near the entryway to the study area from Rock Creek Drive and consist of maintained vegetation adjacent to impervious surfaces (Figure 2).

SMC 18.13.095 - Fish and wildlife habitat conservation areas

C. FWHCA Reports

1. In order to determine the extent of the appropriate buffers on a site when the nature of the fish and wildlife habitat conservation area is unclear, the applicant may submit a preliminary habitat assessment report as prepared by a qualified professional.

ELS prepared a critical areas' report and conceptual mitigation plan for the preliminary review of this application, dated June 16, 2020. The city's environmental consultant, Olson Environmental LLC (OE), provided review and comments on this report dated June 17, 2020. OE's findings for the preliminary report concur with FWHCA buffer isolation. A copy of ELS's preliminary report and OE's findings letter is included with this report for reference (Appendix).

In addition to the minimum requirements for critical area reports contained in SMC 18.13.050, a preliminary FWHCA report should also contain the following information:

a. Confirmation or correction of the classifications for the FWHCA and/or stream type as defined in this chapter.

ELS confirms there are FWHCAs in the study area for the unnamed tributary to Rock Cove (Type F) and for Rock Cove, a side channel of the Columbia River (Type S). ELS does not recommend revising the stream types or the FWHCA classifications.

b. Characterization of riparian vegetation species, composition, and habitat function.

Vegetation in Rock Cove's FWHCA consists of mature deciduous and evergreen trees spaced along the north, east, and southwest shoreline with an understory of woody shrubs and herbaceous species. Tree species include red alder (*Alnus rubra*), Douglas fir (*Pseudotsuga menziesii*), black cottonwood (*Populus trichocarpa*), and one Oregon white oak (*Quercus garryana*). Shrub species were best established between the study area and SW Rock Creek Drive, roughly the northwest and southeast portions of the subject

[8] Armoring occupies approximately 65 percent of the shoreline. The remaining 25 percent is moderately well vegetated; moderately well vegetated areas are the northwest and southwest potions of the site (Figure 2).

shoreline; elsewhere, shrubs and herbaceous vegetation are sparse or absent due to existing impervious surfaces, riprapped embankments, and historic disturbances from industrial activities that include uses by the timber industry and municipal materials storage. Shrub species include common snowberry (*Symphoricarpos albus*), beaked hazelnut (*Corylus cornuta*), spirea (*Spiraea douglasii*), and Himalayan blackberry (*Rubus armeniacus*). Himalayan blackberry is common throughout Rock Cove's FWHCA. Herbaceous vegetation was primarily established in the transition zone above and below OHWM with reed canarygrass (*Phalaris arundinacea*), soft rush (*Juncus effuses*), dogwood (*Cornus sericea*), and spirea rooted at or below ordinary high and common grasses rooted above.

A small portion of the study area intersects with the FWHCA for the unnamed tributary in the northwest corner adjacent to SW Rock Creek Dr. Vegetation at this intersection point is characterized by a canopy and understory as discussed above for Rock Cove.

c. Description of the soil types adjacent to and underlying the stream, using the Soil Conservation Service soil classification system.

ELS uses the Natural Resource Conservation Service (NRCS) map unit descriptions to gather baseline soil data. NRCS identifies soils in the study area as Arents 0 to 5 percent slopes. Arents is described by NRCS as a well-drained, terraced soil with more than 80 inches depth to the groundwater table. A typical profile includes gravelly sandy loam from 0 to 24 inches and extremely gravelly sandy loam between 24 and 60 inches. As mentioned previously, Arents do not have diagnostic horizons because they have been deeply mixed by plowing, spading, or other methods of moving by humans (NRCS 2020). ELS did not collect soils data additional to the existing NRCS mapping data due to the prevalence of impervious and disturbed soil conditions, and consensus with Ecology that collecting soils data to demonstrate the absence of wetlands was not necessary for Ecology's purposes in the study area.

d. Identification of the qualities of the area that are essential to maintain feeding, breeding, and nesting, and an assessment of potential project impacts to the use of the site by the species.

Some of the study area's northern and southern FWHCA, as well as the entirety of Rock Cove, is identified by Washington Department of Fish and Wildlife's (WDFW) Priority Habitat and Species (PHS) mapping as a breeding area for Canadian geese (*Branta canadensis*) (Figure 9). Rock Cove is also identified by PHS as providing habitat for resident coastal cutthroat (*Oncorhynchus clarki*), Fall Chinook (*Oncorhynchus tshawytscha*), Winter Steelhead (*Oncorhynchus mykiss*), and rainbow trout (*Oncorhynchus mykiss*) (WDFW 2020) (Figure 9). Canada geese are not sensitive, threatened, or endangered, and FWHCA in the study area does not provide habitat that

is unique, important, or necessary for the species. As stated by WDFW, "…northwest Oregon and southwest Washington are now wintering more Canada geese than at any other time in recorded history" (WDFW 2015). ELS did not observe goose nests in the study area, or evidence that geese use the site (tracks, feathers, and droppings were absent). The applicant is not proposing in-water work or work within 50 feet of the OHWM; accordingly, there are no anticipated impacts to fish or Canada geese from the proposed development.

The study area is in a northern spotted owl management buffer. Spotted owl habitat usually consists of mature and old-growth coniferous forests with high canopy cover, trees of varying sizes, snags, and large downed wood (Buchanan, J.B. 2016). Suitable old-growth forests are approximately 150-200 years old. The study area and surrounding properties are managed for timber production; consequently, they do not meet criteria for spotted owl habitat.

e. A discussion of any federal, state, or local species/habitat management recommendations, including the WDFW habitat management recommendations that have been developed for the identified species or habitat.

There are no specific management recommendations for Canada geese as regards the success of the species. WDFW published a document titled "Living with Wildlife: Canada Geese" in 2005. This document in referenced in WDFW's Priority Habitat and Species List published in 2008 and updated in February 2020. The document provides options for coexisting with geese and resolving conflicts that arise between geese and human land uses, resulting from populations of resident Canada geese "…dramatically increas[ing] over the past 25 years, particularly in urban areas where there are few predators, prohibitions on hunting, and a dependable year-round supply of food and water" (WDFW 2005). A copy of this document in included in the Appendix of the report for reference.

The applicant is not proposing in-water work or work within 50 feet of the OHWM; accordingly, there are no anticipated impacts to fish. The applicant will follow appropriate BMPs during construction and meet the requirements outlined in Ecology's Stormwater Management Manual for Western Washington (Ecology 2019) to further ensure Rock Cove does not receive sediment, surface runoff, or any other input that would potentially affect water quality or fish habitat as a result of project construction.

f. Recent photographs of the property, including detailed photographs of the habitat resource in question.

On-the-ground color photographs of the study area taken by ELS in December 2019 are included with this report (Photoplates, Appendix).

g. An outline of standard buffer widths, available buffer reductions, or potential opportunities for enhancement/mitigation.

SMC 18.13.095(D) identifies the FWHCA for Type F waters as 100 feet and Type S waters as 150 feet. There are no proposed buffer reductions for this project, which is a revision from the preliminary critical areas report and conceptual mitigation plan prepared by ELS and reviewed by OE. After reviewing OE's findings letter with the applicant and OE's representative, and reviewing SMC 18.13, ELS concluded that eliminating buffer reduction from the proposal increases the amount of buffer enhancement available for mitigating the proposed buffer impact onsite. With the standard 150-foot FWHCA applied and adjusted for functional isolating features, the applicant is proposing approximately 0.19-acre buffer impact (Figures 3 and 4). Impacts include permanent development in a portion of the buffer that is already degraded from historic land uses. As mitigation, the applicant is proposing approximately 1.12 acres of buffer enhancement by densely planting the remaining buffer area with native shrubs and removing non-native invasive Himalayan blackberry, a dominant invasive plant in the study area. Blackberry removal and shrub installation will increase native plant diversity, improve habitat opportunities for a variety of native birds and mammals (both water-dependent and terrestrial), increase foraging value, and decrease opportunities for non-native plants and animals to occupy the site. The proposed mitigation is in-kind buffer enhancement at a 5.9:1 ratio, significantly exceeding the 1:1 enhancement ratio requirement for onsite FWHCA mitigation per SMC 18.13.095-3.

SMC 18.13.095(F) - Habitat mitigation

1. Compensatory mitigation for impacts to FWHCA's shall achieve equivalent or greater functions as those affected by the proposed project.

The proposed FWHCA enhancement increases the existing buffer functions and values.

2. FWHCA Mitigation Plan. When a project involves FWHCA or FWHCA buffer impacts, enhancements, or reductions, a habitat mitigation plan by a qualified professional shall be required. At a minimum, the habitat mitigation plan must contain the following information:

a. All the information required in the FWHCA Report prepared under SMC 18.13.095(C).

The report is a fulfillment of this requirement.

b. A copy of the site plan for the development proposal.

The site plan is included in Figures 3 and 4, and in the engineer's drawing in the Appendix.

c. *A description of the mitigation sequence developed for the project according to SMC 18.13.055.*

Please refer to item 9, page 7 of the report for the discussion of the applicant's mitigation sequencing.

i. Existing conditions of the enhancement area, including location:

The proposed enhancement areas are a combination of moderately vegetated shoreline and previously disturbed ground at the north and south ends of the study area (Figures 3 and 4). These are portions of the FWHCA that have not been regularly maintained or have been minimally maintained during the last 10 to 15 years, and longer in some places. Existing tree species include red alder, Douglas fir, and black cottonwood; cottonwood and alder are closer to the OHWM, fir is mid-slope to top-of-bank. Shrub species are sparsely to moderately interspersed under tree canopy and include common snowberry, beaked hazelnut, and Himalayan blackberry.

ii. *Rational for site selection*

The study area's history of industrial use provides an opportunity for onsite habitat improvement. The areas selected for improvement have existing canopy cover, lack armored shoreline, and are adjacent to sheltered coves formed by the topographic configuration of the study area. The existing canopy cover provides cooler temperatures and higher, more consistent soil moisture for installed native shrubs, and will help minimize potential regrowth of Himalayan blackberry through shading. The absence of shoreline armoring increases soil availability for installed plants' root establishment, decreases the amount of time and equipment necessary to prepare the site for enhancement, which together improves the overall likelihood that installed plants will succeed quickly. Lastly, sheltered coves provide unique attributes that increase habitat potential: they are more secluded than other parts of the study area's shoreline, both from natural elements such as wind and wave action, as well as minimizing future opportunities for human disturbance through topographic positioning; they have shallower water levels and consequently provide greater accessibility to habitats for birds, terrestrial mammals, and water-dependent species; and they have increased opportunity to provide off-channel salmonid habitat which would be improved by the proposed riparian vegetation enhancement.

iii. *Estimated future condition of the enhancement area*

Successful riparian vegetation enhancement will include a diverse native shrub understory, the absence or minimal presence of Himalayan blackberry (less than 10 percent cover), and evidence of frequent or ongoing seasonal native wildlife use.

iv. An assessment of all appropriate technical information necessary to assess the compensatory mitigation proposed.

This report is a fulfilment of the requirement.

d. The environmental goals and objectives of the mitigation

SMC 18.13.059 - Performance and monitoring standards

The goal of FWHCA enhancement is to provide high quality riparian habitat functions onsite using the following objectives and performance standards:

Objective 1. Provide high quality riparian habitat functions onsite.

- *Performance Standard 1a.* Enhance 1.12 acres of existing, moderately to poorly functioning FWHCA onsite. This performance standard is completed when the enhancement area is documented in the Year 1 Monitoring Report.
- *Performance Standard 1b.* Remove non-native invasive Himalayan blackberry from the enhancement site and areas adjacent to the enhancement site.
- *Performance Standard 1c.* Plant native shrubs trees and open areas in the understory and in areas formerly occupied by Himalayan blackberry. Plantings will achieve 100 percent survival in Year 1. Dead plants will be replaced if this performance standard is not met.
- *Performance Standard 1d.* Native shrubs will achieve at least 90 percent survival in Year 2. Dead plants will be replaced if this performance standard is not met.
- *Performance Standard 1e.* Native shrubs will achieve at least 80 percent survival in Year 3. Dead plants will be replaced if this performance standard is not met.
- *Performance Standard 1f*. Native shrubs will achieve at least 75 percent survival in Year 5. Dead plants will be replaced if this performance standard is not met.
- *Performance Standard 1g*. In all years, non-native invasive plant species will not exceed 10 percent cover in the enhancement area.

- *Performance Standard 1h*. In all years, native volunteer plants will be included in the survival calculation. If an installed plant dies and a volunteer plant emerges, the survival standard will be met.

Objective 2. Provide signage between the enhancement area and the development.

- *Performance Standard 2a*. Install FWHCA signs at a minimum of 50-foot intervals along the perimeter of the enhancement area facing the proposed development. This performance standard is complete when signs are installed and documented in a monitoring report.
- *Performance Standard 2b*. Install natural barriers where needed around the perimeters of the enhancement area. The need for barriers may not be apparent until after the development is complete. If needed/required, this performance standard is complete when the natural barriers are installed and documented in a monitoring report or memo.

Objective 3. Provide legally binding protection for the enhancement area.

- *Performance Standard 3a*. A conservation covenant or similar legal mechanism will be established for the enhancement area. The performance standard is complete when the City of Stevenson approves the conservation covenant or similar legal mechanism.

Planting schedule and equipment

Native shrubs will be installed in late winter or early spring when the plants are dormant, and the soil moisture conditions are favorable for planting. The following equipment may be used to prepare and install plants in the enhancement area: tree shovel, garden shovel, and power auger. Heavy equipment is not anticipated to be necessary unless remnants of industrial materials are discovered while planting and removal of such material is determined to be beneficial to enhancement goals.

Table 1: Proposed enhancement plants

Common Name/Botanical Name	Size	Spacing	Quantity
Vine maple, *Acer circinatum*	1 gallon	6-10 feet	100
Western service berry, *Amelanchier alnifolia*	1 gallon	6-10 feet	100
Oceanspray, *Holodiscus discolor*	1 gallon	6-10 feet	100
Tall Oregon grape, *Mahonia aquifolium*	1 gallon	6-10 feet	100
Common snowberry, *Symphoricarpos albus*	1 gallon	6-10 feet	100
Sword fern, *Polystichum munitum*	1 gallon	6-10 feet	100
		Total	**600**

Specifications for site preparation, planting, and maintenance

Preparing the enhancement area

- Install silt fencing where necessary to control runoff from the development.
- Install temporary construction fencing along the perimeters of the enhancement area bordering the development.
- Remove Himalayan blackberry. Selectively apply herbicide as necessary.

Installing habitat signs

- Install durable signs at a minimum of 50-foot intervals on metal or wood posts where the enhancement area is adjacent to proposed development.

General plant specifications

- Plant the native shrubs during the late winter or early spring at the spacing identified in Table 1.
- Group the plants in uneven patches dominated by a single species or interspersed with one another where no shrubs currently exist.
- 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.

Planting shrubs

- Dig the receiving hole several inches wider than the size of the root system.
- Position the planted species' root collar so that they are at or slightly above the level of the surrounding soil to allow for settling.
- Back the hole with soil.
- Gently compact the soil around the planted species to eliminate air spaces.
- Install a minimum of 3-inch depth by 4-foot diameter mulch layer around the base of planted species. The mulch will be comprised of clean, chipped wood. Avoid placing mulch directly against plant stems.
- Irrigate all newly installed plants as site and weather conditions warrant.

e. A monitoring and maintenance proposal compliant with SMC 18.13.059

ELS recommends a 5-year monitoring and maintenance schedule in accordance with SMC 18.13.059(E)(1). Monitoring will begin the first growing season after the enhancement area is planted. Annual reports will be submitted to the City of Stevenson by December 31 of each monitoring year.

Monitoring plots

During the first annual monitoring event, monitoring plots will be established as follows:

1. A minimum of two permanent monitoring plots will be established, one in each enhancement area. Monitoring plots will be staked and identified with an aluminum tag, their location will be recorded with GPS, and they will be included on the as-built site map that accompanies each monitoring report. Photo points will be taken at the monitoring plots and elsewhere as needed to accurately document conditions.

Vegetation

Vegetation monitoring will measure the following:

1. Percent aerial cover of planted and naturally recruiting native trees and shrubs
2. Percent aerial cover of non-native, invasive plants
3. Change in the plant community over time (from photo points)

Fauna

Wildlife documentation will include the following:

1. Evidence of bird use (nesting, tree excavation, tracks in shoreline sediments, etc.)
2. Evidence of mammal use (scat, tracks, shedding hair or antlers, browse, bedding, denning, etc.)

Monitoring reports

The annual monitoring reports will contain at least the following:

- Location map and as-built map, and a revised plant quantity table as needed
- Description of monitoring methods
- Documentation of the presence and legibility of FWHCA signs
- Documentation of plant survival and cover
- Assessment of non-native, invasive plant species and recommendations for management
- Observations of wildlife
- Site photographs
- Summary of maintenance and contingency measures proposed for the next season and completed for the past season.

Enhancement area maintenance

Maintenance includes the following:

- Inspect the plants at least once annually, or more often as appropriate, and maintain to achieve the performance standards.
- Irrigate as-needed.
- Replace mulch as needed.
- Replace dead or failed plants to meet the minimum annual performance standards. Replaced plants will be installed as described for the original installation.
- Implementing a fertilizing schedule.
- Repairing damaged limbs or pruning dead branches.

Responsible parties

The Applicant, their successors, and/or their designee will be responsible for implementing the enhancement plan and its maintenance and monitoring. If the performance standards are not met by Year 5 an adaptive management plan will be developed and implemented. All adaptive management actions will be undertaken only after consulting with and gaining approval from the City of Stevenson. The responsible party will complete an adaptive management plan that describes 1) the need for adaptive management, 2) proposed actions, 3) time-frame for completing actions, and 4) any additional maintenance and monitoring necessary.

f. A bond estimate for the entire enhancement and/or compensatory mitigation project per SMC 18.13.059 - Performance and monitoring standards.

Table 2 on the following page includes the bond estimate for the proposed mitigation project. The estimate assumes initial site preparation and plant installation costs, followed by one maintenance and one monitoring trip each year for the subsequent two years.

Table 2. Bond estimate for the entire enhancement project

Year 1	Year 2	Year 3	Year 5	**Years 1-5**
Plant acquisition and installation $2,500	Annual maintenance $750	Annual maintenance $750	Annual maintenance $750	**Total Estimated Mitigation Cost**
Monitoring report $4,572	Monitoring report $4,572	Monitoring report $4,572	Monitoring report $4,572	
Total = $7,072	Total = $5,322	Total = $5,322	Total = $5,322	**$23,038**

Limitations

ELS bases this report's determinations on standard scientific methodology and best professional judgment. In our opinion, local, state, and federal regulatory agencies will agree with our determinations; however, the information contained in this report should be considered preliminary and used at your own risk until it has been approved in writing by the appropriate regulatory agencies. ELS is not responsible for the impacts of any changes in environmental standards, practices, or regulations after the date of this report. Please contact Kate'Lyn (KT) Wills by email kt@eco-land.com or by phone (360) 578-1371 with any questions regarding the contents of this report.

References

City of Stevenson, Council Authorized Draft, Shoreline Master Program. December 2018.

Link, Russel. "Landscaping for Wildlife in the Pacific Northwest". University of Washington Press and the Washington Department of Fish and Wildlife. WDFW 1999.

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Stevenson Municipal Code (SMC) Chapter 18.13 *Critical Areas and Natural Resource Lands*. November 2008.

WDFW "PHS on the Web" https://geodataservices.wdfw.wa.gov/hp/phs/. Accessed July 2020.

WDFW "State of Washington Priority Habitats and Species List". Updated February 2020.

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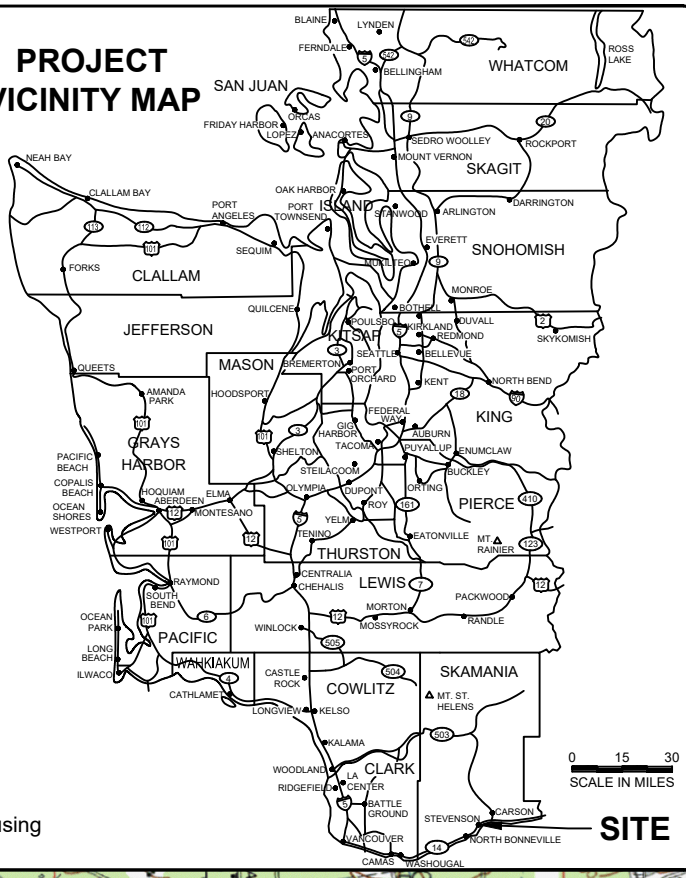
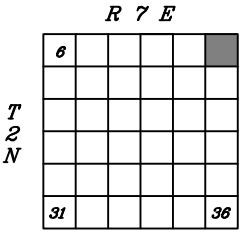
Latitude: 45.6886°
Longitude: -121.8981°

LOCATION MAP

PROJECT VICINITY MAP





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

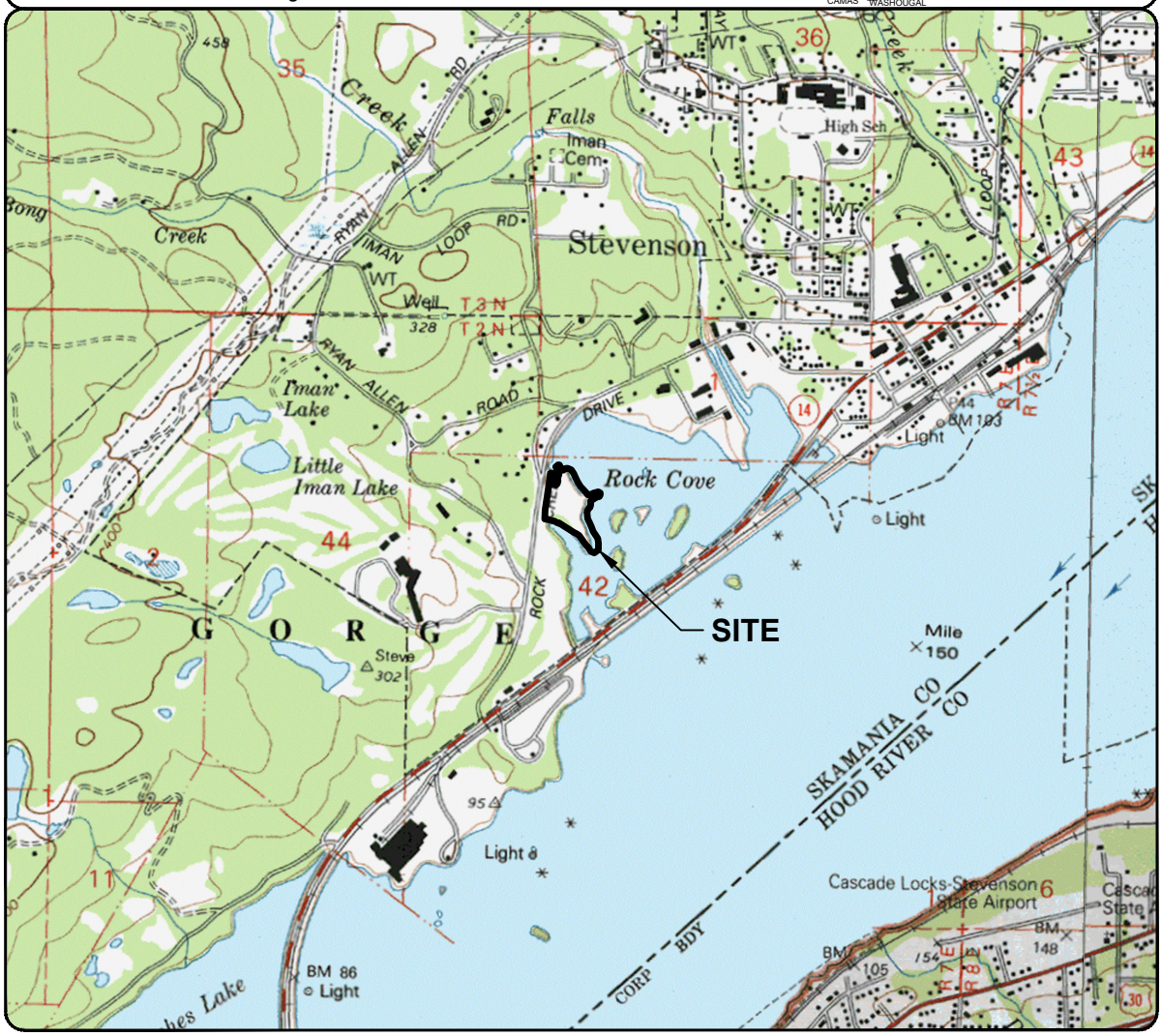


Figure 1
VICINITY MAP
Rock Cove CAR
FDM Development
City of Stevenson, Skamania County, Washington
Section 1, Township 2N, Range 7E, W.M.

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DWN: EF
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PRJ. MGR: AA
CHK: JKJ
PROJECT NO: 2682.02

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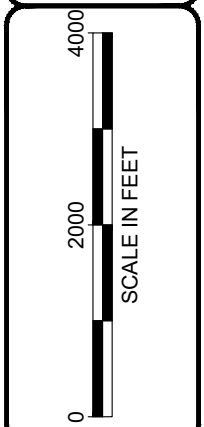

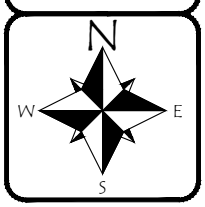

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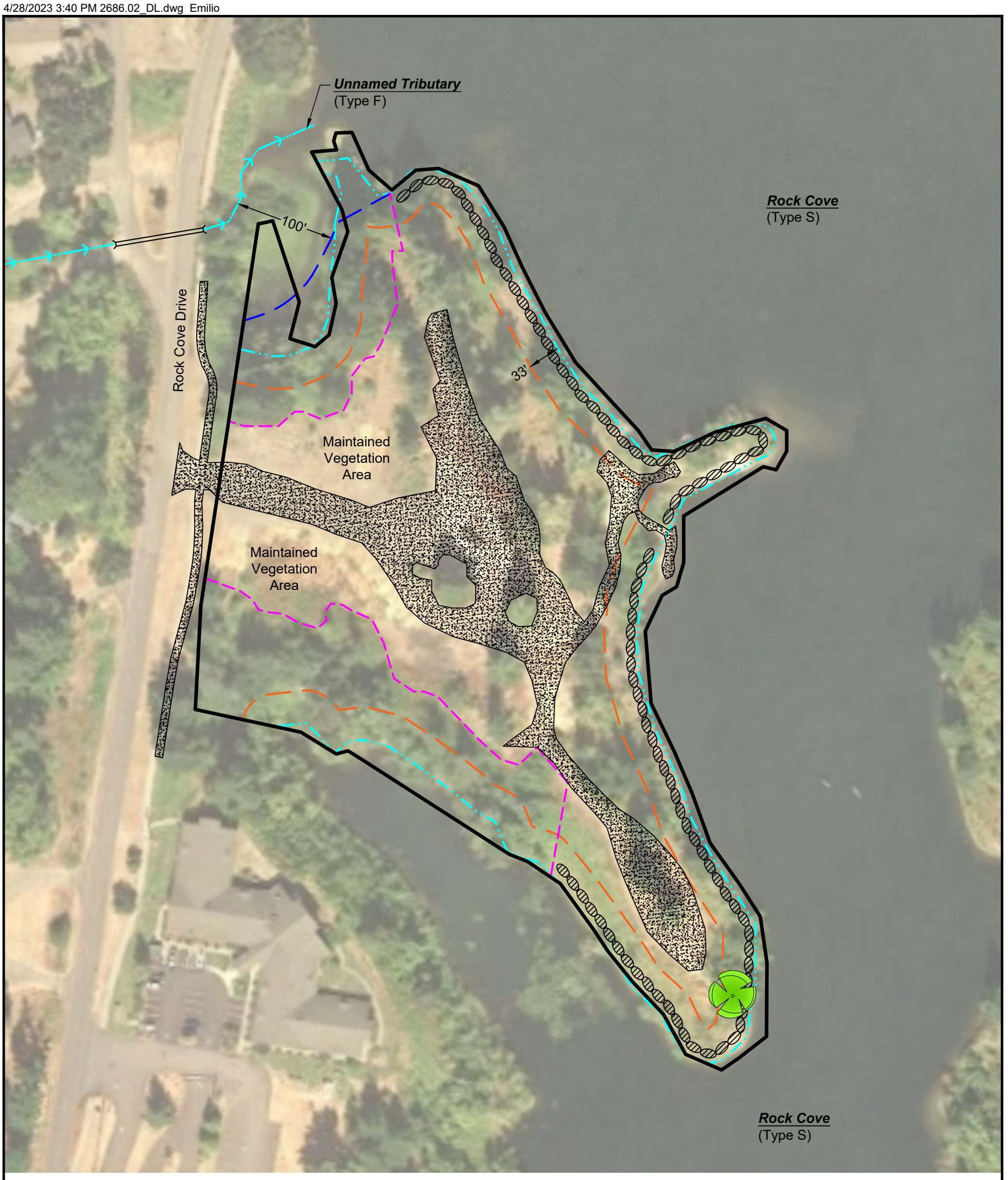

LEGEND:

- Site Boundary
- OHWM
- Stream with Flow Direction
- FWHCA Buffer for Type F
- Functionally Isolated FWHCA Buffer for Type S (150')
- 50' Shoreline Management Plan Setback
- Culvert
- Oak Tree Location
- Existing Graveled or Concrete Surfacing
- Existing Rip Rap

NOTE(S):

1. Aerial from Google Earth™. (2017)
2. OHWM line was determined through a joint effort by Ecological Land Services and Washington Department of Ecology on December 30, 2019. OHWM flags were professionally surveyed by S&F Land Services December 30-31, 2019.
3. SMC 18.13.095(D)(3) identifies functionally isolated buffer as lawns, pre-existing roads and structures, vertical separation, and other areas that do not protect the FWHCA from adverse impacts.

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Figure 2
EXISTING CONDITIONS SITE MAP
Rock Cove CAR
FDM Development
City of Stevenson, Skamania County, Washington
Section 1, Township 2N, Range 7E, W.M.

NOTE(S):

1. Aerial from Google Earth™. (2017)
2. OHWM line was determined through a joint effort by Ecological Land Services and Washington Department of Ecology on December 30, 2019. OHWM flags were professionally surveyed by S&F Land Services December 30-31, 2019. .
3. Site plan provided by FDM Development, Inc.
4. SMC 18.13.095(D)(3) identifies functionally isolated buffer as lawns, pre-existing roads and structures, vertical separation, and other areas that do not protect the FWHCA from adverse impacts.

Unnamed Tributary
(Type F)

100'

33'

Rock Cove
(Type S)

Rock Cove Drive

Existing Gravel
Boat Launch

Rock Cove
(Type S)

LEGEND:

- Site Boundary
- OHWM
- Stream with Flow Direction
- Functionally Isolated FWHCA Buffer for Type S (150')
- FWHCA Buffer for Type F
- Shoreline Management Plan Setback
- Culvert
- Oak Tree Location
- Existing Rip Rap
- Existing Gravel Boat Launch
- Proposed Conrete Surfacing
- Proposed Asphalt Surfacing
- Proposed Storm Pipe
- Proposed Building
- Proposed Impacts (0.19 ac.)
- Buffer Enhancement Area (1.12 ac.)
  (1:5.9 Impact to Enhancement Area Ratio)

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Figure 3
PROPOSED CONDITIONS - 2017 AERIAL
Rock Cove CAR
FDM Development
City of Stevenson, Skamania County, Washington
Section 1, Township 2N, Range 7E, W.M.

LEGEND:

- Site Boundary
- Proposed Conrete Surfacing
- Proposed Asphalt Surfacing
- Proposed Storm Pipe
- Proposed Building

NOTE(S):

1. Aerial from Google Earth™. (2007)
2. Site plan provided by FDM Development, Inc.

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Figure 4
PROPOSED CONDITIONS - 2007 AERIAL
Rock Cove CAR
FDM Development
City of Stevenson, Skamania County, Washington
Section 1, Township 2N, Range 7E, W.M.

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Common Name/Botanical Name	Size	Spacing	Quantity
Vine maple *Acer circinatum*	1 gallon	6-10 feet	100
Western service berry *Amelanchier alnifolia*	1 gallon	6-10 feet	100
Oceanspray *Holodiscus discolor*	1 gallon	6-10 feet	100
Tall Oregon grape *Mahonia aquifolium*	1 gallon	6-10 feet	100
Common snowberry *Symphoricarpos albus*	1 gallon	6-10 feet	100
Sword fern *Polystichum munitum*	1 gallon	6-10 feet	100
		Total	**600**

NOTE(S):

1. Aerial from Google Earth™. (2017)
2. OHWM line was determined through a joint effort by Ecological Land Services and Washington Department of Ecology on December 30, 2019. OHWM flags were professionally surveyed by S&F Land Services December 30-31, 2019. .
3. Site plan provided by FDM Development, Inc.
4. SMC 18.13.095(D)(3) identifies functionally isolated buffer as lawns, pre-existing roads and structures, vertical separation, and other areas that do not protect the FWHCA from adverse impacts.
5. Plants are not to scale and locations are approximate as shown. Actual planting locations will be determined in the field, with consideration to the listed spacing and density to produce the most natural appearance possible.

Unnamed Tributary
(Type F)

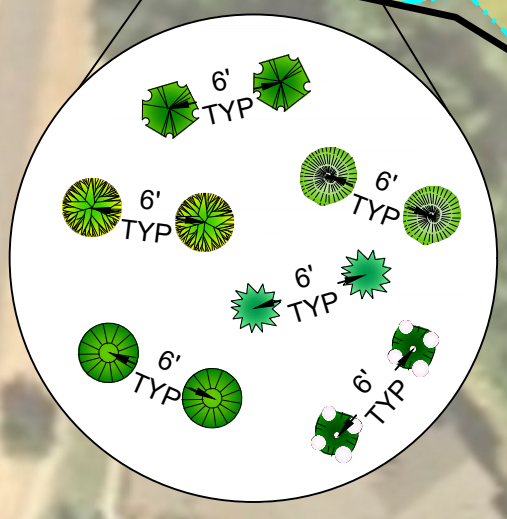
100'

33'

Rock Cove Drive

Existing Gravel
Boat Launch

Rock Cove
(Type S)



Enhancement Area
Planting Detail
NTS

LEGEND:

- Site Boundary
- OHWM
- Stream with Flow Direction
- Functionally Isolated FWHCA Buffer for Type S (150')
- FWHCA Buffer for Type F
- Shoreline Management Plan Setback
- Culvert
- Oak Tree Location
- Existing Rip Rap
- Existing Gravel Boat Launch
- Proposed Concrete Surfacing
- Proposed Asphalt Surfacing
- Proposed Storm Pipe
- Proposed Building
- Proposed Impacts (0.19 ac.)
- Buffer Enhancement Area (1.12 ac.)
  (1:5.9 Impact to Enhancement Area Ratio)

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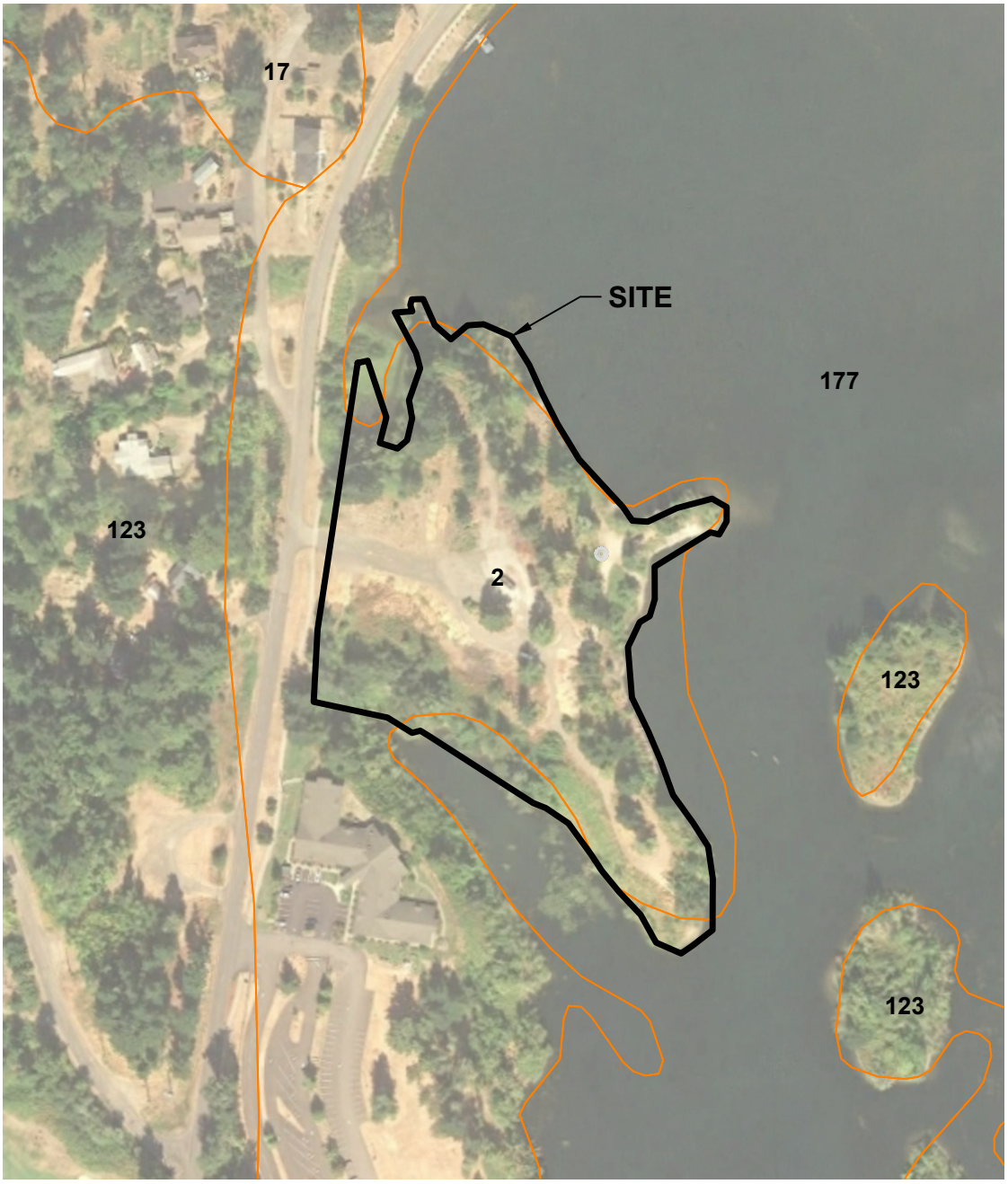
Figure 5
MITIGATION PLAN
Rock Cove CAR
FDM Development
City of Stevenson, Skamania County, Washington
Section 1, Township 2N, Range 7E, W.M.



LEGEND:

2	Arents, 0 to 5 percent slopes. Not hydric.
17	Bonneville stony sandy loam. Not hydric.
123	Steever stony clay loam, 2 to 30 percent slopes. Not hydric.
177	**Water.**

NOTE(S):

1. Map provided online by NRCS at web address: *http://websoilsurvey.nrcs.usda.gov/app/*

Figure 6
NRCS SOIL SURVEY
Rock Cove CAR
FDM Development
City of Stevenson, Skamania County, Washington
Section 1, Township 2N, Range 7E, W.M.

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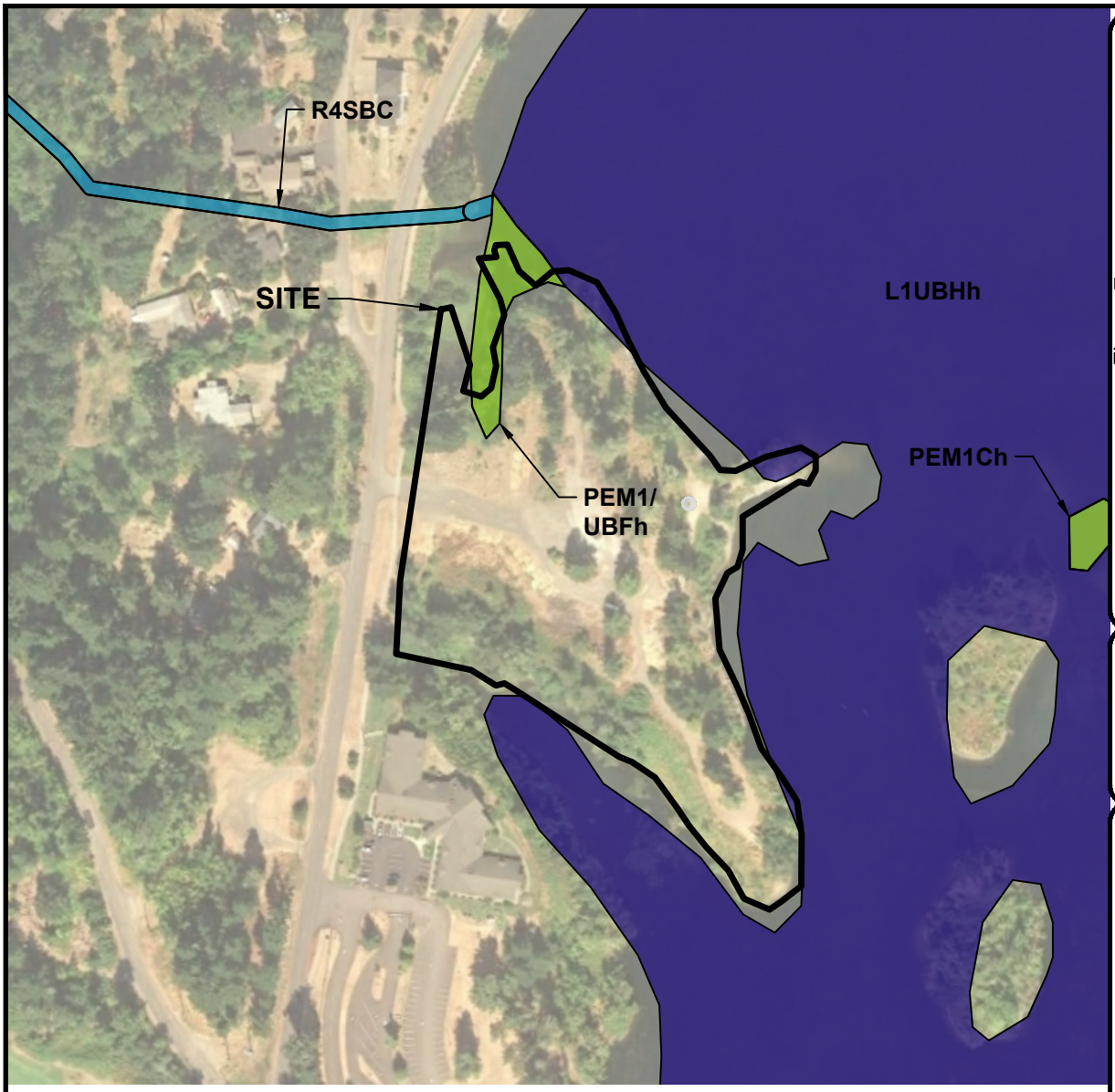

Figure 7
USFWS NATIONAL WETLANDS INVENTORY
Rock Cove CAR
FDM Development
City of Stevenson, Skamania County, Washington
Section 1, Township 2N, Range 7E, W.M.

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Mapped wetlands indicated onsite by US Fish & Wildlife Service.

LEGEND:

- Freshwater Emergent Wetland
- Lake
- Riverine

PEM1Ch	Palustrine, Emergent, Persistent, Seasonally Flooded, Diked/ Impounded.
PEM1/ UBFh	Palustrine, Emergent, Persistent, Unconsolidated Bottom, Semipermanently Flooded, Diked/ Impounded.
L1UBHh	Lacustrine, Limnetic, Unconsolidated Bottom, Permanently Flooded, Diked/ Impounded.
R4SBC	Riverine, Intermittent, Streambed, Seasonally Flooded.

NOTE(S):

1. Map provided online by US Fish & Wildlife Service at web address: *http://www.fws.gov/wetlands/data/index.html*

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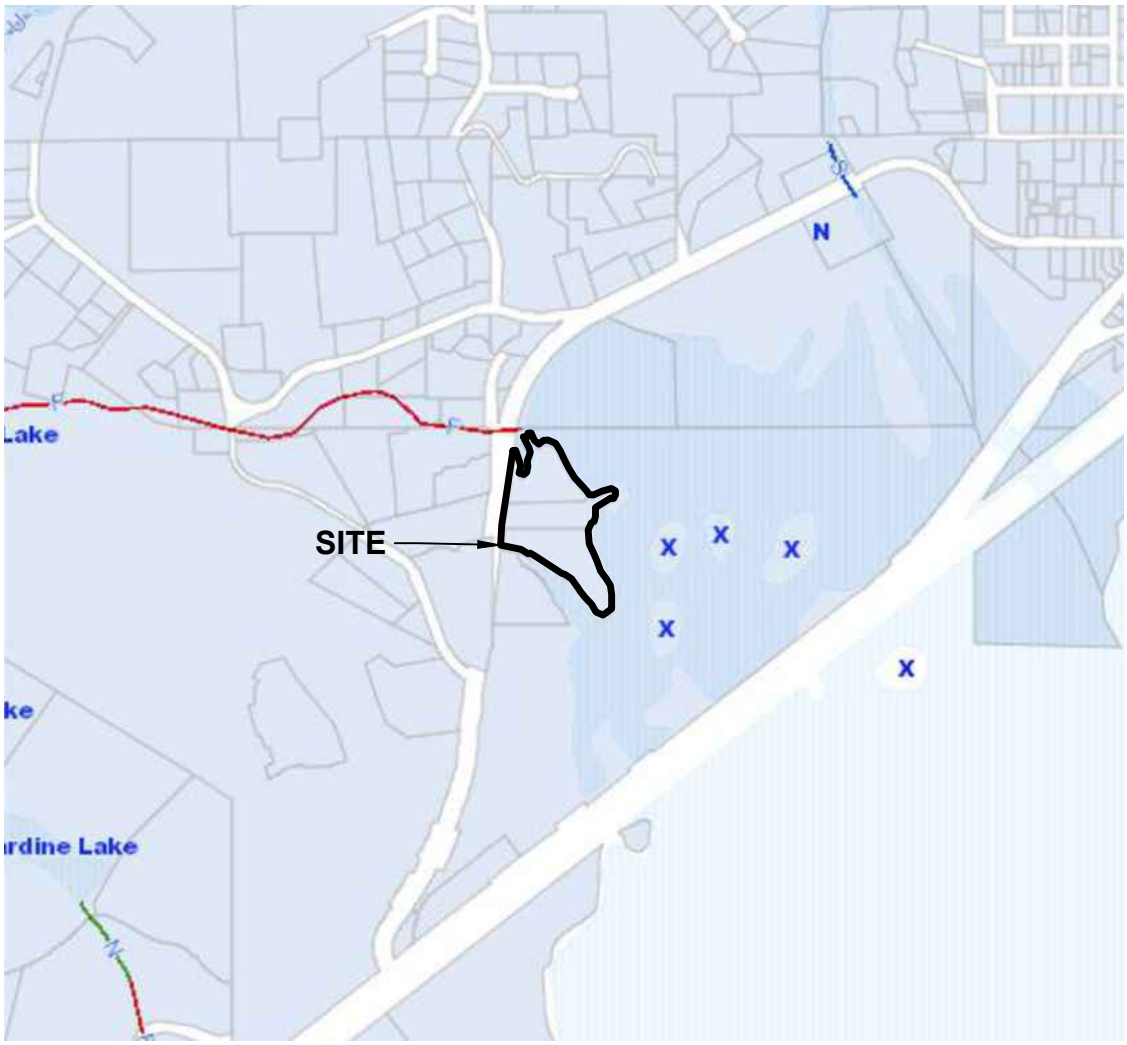

No mapped streams indicated onsite by the Washington State Department of Natural Resources (DNR).

LEGEND:

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

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

Figure 8
DNR STREAM TYPE MAP
Rock Cove CAR
FDM Development
City of Stevenson, Skamania County, Washington
Section 1, Township 2N, Range 7E, W.M.

DATE: 4/28/23
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Figure 9
DNR NATURAL HERITAGE MAP
Rock Cove CAR
FDM Development
City of Stevenson, Skamania County, Washington
Section 1, Township 2N, Range 7E, W.M.

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LEGEND:

- Site Boundary
- Bog Clubmoss (Lycopodiella Inundata)
- Low Elevation Sphagnum Bog

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

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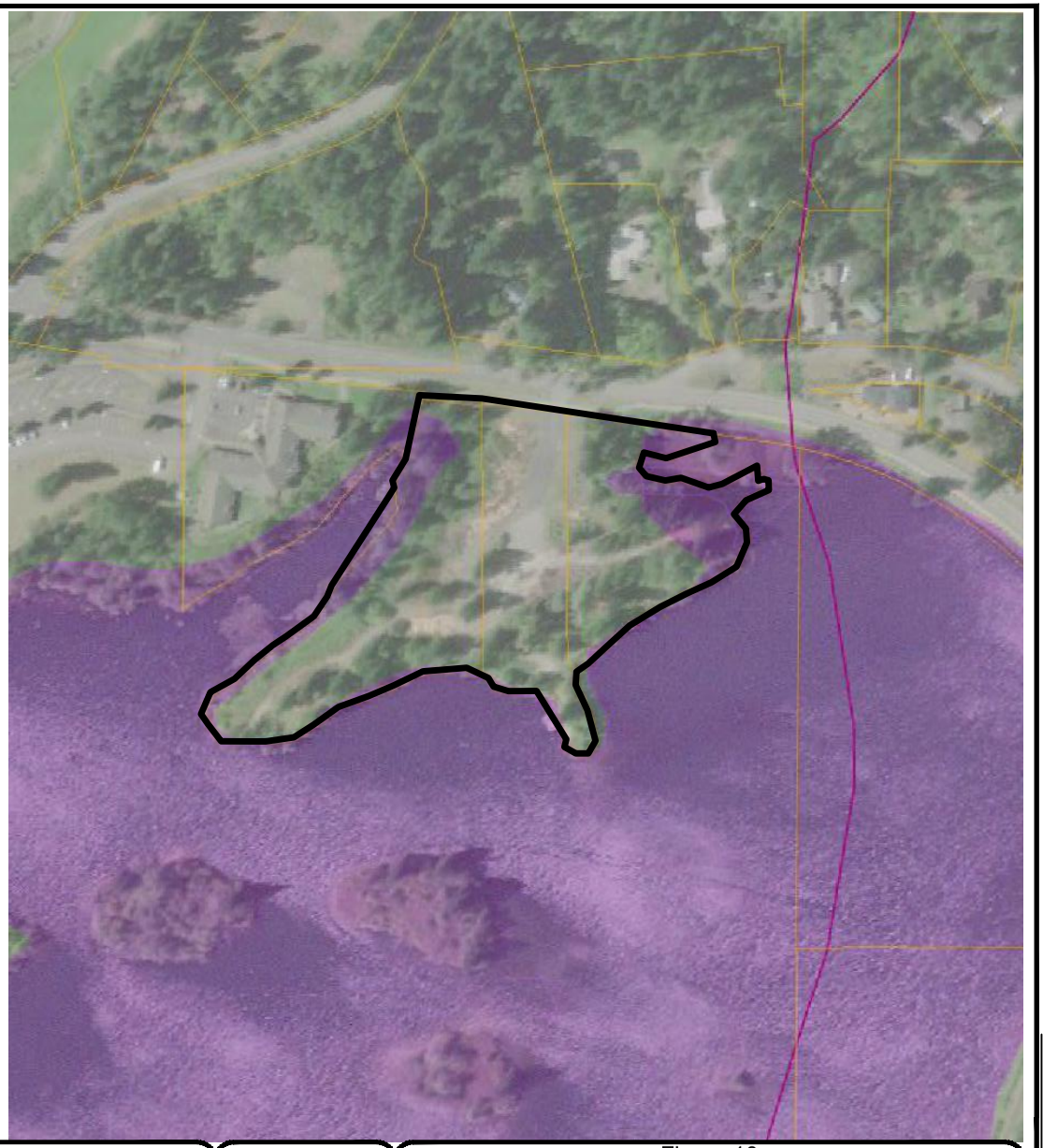

LEGEND:

- Site Boundary
- Canada Goose Northern Spotted Owl Waterfowl Concentrations
- Winter Steelhead - Occurrence/Migration Rainbow Trout - Occurrence/Migration

NOTE: Map provided online by Washington State Department of Fish and Wildlife at web address: https://geodataservices.wdfw.wa.gov/hp/phs/

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Figure 10
PRIORITY HABITAT AND SPECIES
Rock Cove CAR
FDM Development
City of Stevenson, Skamania County, Washington
Section 1, Township 2N, Range 7E, W.M.

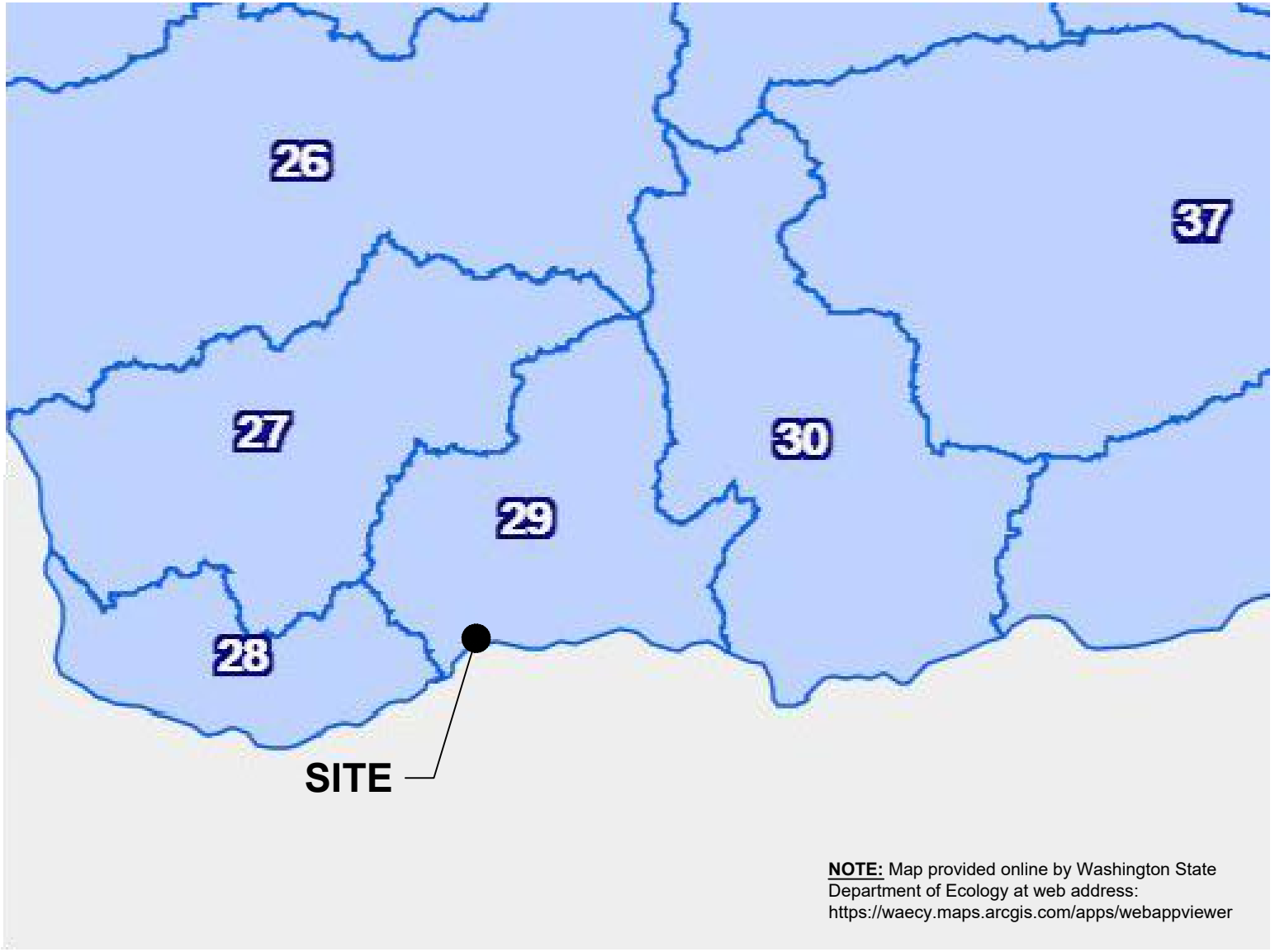

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Figure 11
WRIA MAP
Rock Cove CAR
FDM Development
City of Stevenson, Skamania County, Washington
Section 1, Township 2N, Range 7E, W.M.