

FINAL

Environmental Report for Seal Rock Water District, Oregon: Beaver Creek Water Supply Project

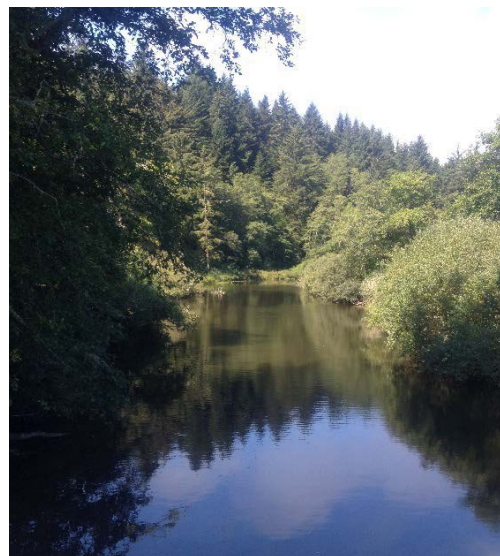
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Acronyms and Abbreviations

A-C	Agricultural Conservation
ac	acre(s)
Agency	USDA Rural Development Loan Program
APE	Area of Potential Effect
BLM	Bureau of Land Management
BMP	best management practice
CH2M	CH2M HILL Engineers, Inc.
CZMA	Coastal Zone Management Act
DEQ	Oregon Department of Environmental Quality
District	Seal Rock Water District
DLCD	(Oregon) Department of Land Conservation and Development
DSL	Oregon Department of State Lands
EFH	Essential Fish Habitat
EPA	U.S. Environmental Protection Agency
ESA	Endangered Species Act
ESCP	Erosion and Sediment Control Plan
ESU	evolutionarily significant unit
FEMA	Federal Emergency Management Agency
HDD	horizontal directional drill
IPaC	Information for Planning and Conservation (
LCC	Lincoln County Code
LOP	limited operating period
MSA	Magnuson-Stevens Fishery Conservation and Management Act
NMFS	National Marine Fisheries Service
NOAA	National Oceanic and Atmospheric Administration
NPDES	National Pollution Discharge Elimination System
NRCS	USDA Natural Resources Conservation Service
NWP	Nationwide Permit
OCMP	Oregon Coastal Management Program
ODA	Oregon Department of Agriculture
OHWE	ordinary high water elevation
ORBIC	Oregon Biodiversity Information Center
OWRD	Oregon Water Resources Department

ACRONYMS AND ABBREVIATIONS

project	proposed new water supply system
ROW	right-of-way
SHPO	Oregon State Historic Preservation Office
SWOT	strengths-weaknesses-opportunities-threats\
T-C	Timber Conservation
USACE	U.S. Army Corps of Engineers
USDA	United States Department of Agriculture
USDI	United States Department of Interior
USFS	U.S. Forest Service
USFWS	U.S. Fish and Wildlife Service
WTP	water treatment plant

Purpose and Need for the Proposal

The Seal Rock Water District (District) provides water for a service area that stretches from Waldport to Newport, Oregon, in Lincoln County. The District may apply for a grant and loan from the United States Department of Agriculture (USDA) Rural Development Loan Program (Agency) to partially fund a new water supply project targeted to serve 2,600 current customers in the service area. The issuance of grant and loan funding by the USDA is the Proposed Action whose environmental effects are evaluated in this Environmental Report. This section describes the District's project and establishes the underlying purpose and need to which the Agency is responding.

1.1 Project Description (Proposed Action)

The Agency may provide a grant and loan to the District to develop a new water supply system. The District is a municipal drinking water provider, with the federal and state public water system identification No. 00798.

1.1.1 Water Supply System Components

The water supply system would include the following components:

- Water intake structure at or below ordinary high water elevation (OHWE) in the mainstem of Beaver Creek.
- Electrical building up-bank from the water intake structure.
- Gravel improvement of an existing access road.
- 14-inch-diameter high-density polyethylene raw water pipeline running from the intake structure to the proposed water treatment plant (WTP) site. The route would extend southeast to South Beaver Creek Road, then north along South Beaver Creek Road with a horizontal directional drill (HDD) crossing of Beaver Creek, then west along North Beaver Creek Road, and finally along an unnamed gravel road on private property.
- WTP on District-owned land, just east of the Makai housing development.
- 2-inch-diameter backwash line to carry backwash water to the mainstem of Beaver Creek. Backwash would be generated at the WTP to flush and clean the membrane filters, and would be discharged at Beaver Creek where there is adequate mixing capability. The route from the WTP would follow the private gravel road, then traverse west for a short distance on North Beaver Creek Road.
- Backwash water outfall to the mainstem of Beaver Creek.
- Finished water line running west from the WTP to the nearest point of system interconnection adjacent to the Makai housing development.

Figure 1 (Appendix A; all figures are located in Appendix A) presents an overview map of the water supply project for proposed funding. Individual project features are shown on resource-specific maps referenced in Section 3.0.

1.1.2 Construction Methods

Details of the construction methods are presented in the project's Preliminary Engineering Report. General construction methods would include nonmechanized clearing in riparian areas adjacent to the intake structure, mechanized clearing outside of the riparian corridor, grading and benching of the slope

for installation of the electrical building, trenching the raw water pipeline to the HDD entry point, a HDD crossing of Beaver Creek with the receiving pit within the county right-of-way (ROW), trenching of the raw water pipeline in the county ROW and then a private road up to the WTP (with co-location of the backwash line back to North Beaver Creek Road), in-road trenching to bring the backwash line north to the west side of the road adjacent to Beaver Creek, installation of the backwash outfall, mechanized clearing of the WTP site expansion areas, grading and construction of the WTP, and trenching of the finished water line to the point of system interconnection.

The pipeline trench would be approximately 2.5 feet wide and 5 feet deep. However, a disturbance corridor of up to 20 feet has been used in the temporary disturbance estimate to conservatively allow for construction equipment access. Where the pipeline is sited within the ROW, construction disturbance would be restrained to paved or graveled areas. Estimates of project impact areas based on the preliminary design are provided in Table 1-1.

Table 1-1. Project Area Estimated Disturbance

Seal Rock Water District, Oregon: Beaver Creek Water Supply Project Environmental Report

Project Component	Length (mile)	Temporary (acre)	Permanent (acre)
Intake	N/A	0.024	0.0068
Access Road ^a	0.02	0	0.043
Electrical Building	N/A	0.038	0.0086
HDD Entry	N/A	0.688	0
Raw Water pipeline ^b	1.6	3.88	0
HDD Exit	N/A	0.057	0
Backwash line (where not co-located with Raw water line) ^b	0.1	0.214	0
WTP	N/A	0	1.89 ^c
Finished Water Line ^b	0.3	0.723	0
Total	2.02	5.62	1.95

^a Access road improvement area is 125 feet by 15 feet wide.

^b Pipeline temporary disturbance is based on 20-foot-wide construction corridors; however, actual trench dimensions are not expected to exceed 2.5 feet wide and where located in ROW, temporary disturbance would be restrained to roadway and shoulder. Hence, this is a conservative estimate.

^c Only 0.89 acre is new disturbance and 1.0 acre of the existing site is previously disturbed.

Note:

N/A = not applicable

Staging areas for construction would be located within proposed temporary disturbance areas in the ROW or road shoulder, or within the site boundaries of the WTP site. The improved gravel access road would reach only to the electrical building. After construction, vehicle access would be limited to the electrical building. Only pedestrian access to the intake structure is anticipated.

1.2 Purpose and Need of the Proposal

1.2.1 Purpose

The purpose of the Agency's grant and loan is to partially fund a safe, sustainable, resilient, and scalable drinking water supply for the District's customers. Currently, the District obtains all of its water as treated, potable water from the City of Toledo, as a bulk purchasing customer. The supply from Toledo has inherent vulnerabilities. Additionally, the District is faced with a significant capital investment to maintain the Toledo supply. As an alternative to this vulnerable supply, the District intends to develop its own water supply system from Beaver Creek, which is centrally located within the District's service boundaries (Figure 1).

1.2.2 Need

The District's current water supply, which is purchased treated water from the City of Toledo, is vulnerable to landslides, flooding, and major earthquakes. The existing transmission pipeline from Toledo has proven to be vulnerable to leaks and breaks from slides and ground movement that occur periodically along the alignment, and the District has had to complete a series of costly repairs in recent years. The existing pipeline is vulnerable to a potential Cascadia Subduction Zone earthquake.

Part of the challenge and cost of repairing the existing 8-mile-long, 12-inch-diameter water line from Toledo is that it was constructed in the 1970s and shows signs of deterioration. The existing water line is constructed mostly of asbestos cement material, which softens as this pipeline ages and contributes to failures. Toledo's water pump station and reservoir also show signs of age and deterioration.

The District selected the proposed water supply project as most favorable in terms of overall benefit and financial viability, based on a cost-benefit analysis (Antares Planning Group, LLC, 2017). Additionally, the proposed project would scale to sufficiently meet reasonable growth estimates for water demand in the District.

1.2.3 No Action Alternative

Under the No Action Alternative, the Agency would not issue a grant or loan for water supply development to the District. Without the grant and loan, the District may not be able to develop a new safe, sustainable, resilient, and scalable drinking water supply for service area customers, and would continue to purchase water from the City of Toledo, at greater cost, lower reliability, and inability to meet future demand.

Alternatives to the Proposed Action

The Agency proposes to issue a loan to the District to develop a new water supply system. This section discusses alternative water source selection, engineering design and siting, and WTP site alternatives that the District considered for water supply development. The District's Preliminary Engineering Report describes the alternatives in detail, and includes the specific studies referenced in this section. Only reasonable and practicable alternatives that meet the purpose and need were evaluated in detail.

2.1 Water Source Selection

The District performed a high-level analysis of potential water sources that could be developed as alternatives to the City of Toledo (Civil West Engineering Services, Inc., 2015). Using a set of management objectives and guiding principles, the analysis evaluated potential raw water sources that were selected because the District already had an existing water right, or because the source had sufficient supply to meet the District's water supply needs.

Initially, seven alternative sources were considered—Henderson Creek, Thiel Creek, Hill Creek, Collins Creek, Beaver Creek, small lakes in the area of Lost Lake, and Drift Creek. However, early screening eliminated three of these sources from further analysis because of insufficient stream flow, poor water quality, or limited access options. The remaining four sources—Henderson Creek, Thiel Creek, Beaver Creek, and Drift Creek—were evaluated against the following criteria:

- Water quality
- Supply sufficiency
- Resiliency/risk
- Environmental impacts
- Regulatory complexity
- Capital cost
- Operations and maintenance cost

Of the four alternative sources evaluated against these criteria, Beaver Creek is the only source that has sufficient flows to meet the current and future year-round demands of the District. Furthermore, Beaver Creek scored equally as well as any of the other three alternatives in the categories of water quality (Beaver Creek has no specific source water quality concerns), resiliency and risk (Beaver Creek would minimize humanmade risks and provide a resilient supply), environmental impacts, and regulatory complexity.

2.2 Engineering Design and Siting

2.2.1 Intake Location and Type Alternatives

Once Beaver Creek was selected as the preferred water source, the District proceeded to file a water rights permit application with the Oregon Water Resources Department (OWRD) in August 2015. OWRD issued a proposed final order in June 2016 and no protests were received during the protest period, which ended in August 2016. The permit was subsequently issued with a priority date of August 26, 2016.

The point of diversion listed in the permit is at the South Beaver Creek Road Bridge, which is just downstream of the confluence of South Beaver Creek with the mainstem of Beaver Creek. South Beaver Creek provides approximately one-third of the overall Beaver Creek flow and, therefore, it was

necessary to locate the diversion downstream of the confluence to obtain sufficient year-round water quantity.

The District examined options for a subsurface withdrawal system, using a shallow riverbank well or an infiltration gallery (GSI Water Solutions, Inc., 2015). The analysis examined three potential locations, one at the bridge and two 1,000 to 2,000 feet downstream of the bridge. The analysis concluded that the soil types were not conducive to a subsurface withdrawal system.

The District also examined potential locations for a direct river withdrawal system and concluded that the only feasible option was at the bridge location, on the downstream left bank (CH2M, 2016). The river depth and curvature are favorable for an intake at this location. Furthermore, it is the only location with land above the 100-year floodplain in proximity. Land above the 100-year floodplain within 500 feet and, ideally, within 100 feet of the intake pumps is needed for locating the electrical building with motor starters for the pumps. This site also offers convenient and reliable access from the existing county road. Other sites that were considered would have involved extensive road access construction through wetland areas and the supporting electrical building would need to have been located more than 500 feet away from the pumps.

As described in the CH2M (2016) report, the intake withdrawal structure design was constrained by the need to comply with fish protection requirements and a need to minimize impacts to a popular recreational creek. The design alternatives were examined against the following criteria and regulatory requirements:

- Minimize visual and noise impacts for recreational users of Beaver Creek.
- Provide a facility with maximum seismic/tsunami resiliency.
- Minimize maintenance, particularly in-water maintenance activities.
- Maximize operator and public safety.
- Comply with the water rights permit conditions of the OWRD, including the monitoring requirements of the Oregon Department of Environmental Quality (DEQ) stated in the permit.
- Comply with the fish protection and other design criteria of the Oregon Drinking Water Services section of the Oregon Health Authority.
- Comply with the fish protection and other design criteria of the Oregon Department of Fish and Wildlife and the National Marine Fisheries Service (NMFS).

The resulting design concept uses a slant wedge-wire fish screen set parallel to the creek flow. The portion of the structure extending into the creek would be subsurface, with the screen face only visible during low flows. This minimizes visual impacts for kayakers and canoeists using the creek. The intake pumps are to be a submersible type, minimizing visual and noise impacts.

2.2.2 Water Treatment Plant Site Alternatives

The District evaluated three treatment plant site alternatives (CH2M, 2016). The three alternatives had previously been identified by the District based on their proximity to Beaver Creek and their shared characteristics of relatively flat ground of sufficient size, elevation above the tsunami inundation zone, and availability for purchase or already owned by the District.

The three properties were designated as the south, north, and Makai sites. The south site is located south of the proposed intake site along South Beaver Creek Road. The north site is located northwest of the intersection of Beaver Creek and South Beaver Creek Roads. The Makai site is already owned by the District and is the site of the abandoned Makai storage tank.

A strengths-weaknesses-opportunities-threats (SWOT) analysis was used to compare the three alternative sites. The SWOT analysis was applied to the plant site itself, to the required access road to the site, and to the necessary raw and finished water pipelines for each alternative. Based on this analysis and conceptual-level costs, the Makai site was selected as the preferred alternative.

2.2.3 Raw Water Pipeline Alternatives

Alternative alignments or construction approaches were examined for two sections of the raw water line. The proposed intake location on the southwest corner of the bridge requires that the raw water pipeline cross Beaver Creek from the south to the north. Two alternatives were considered for this crossing. One was to use a bored approach to install the pipeline under the creek. The second alternative was to hang the pipeline on the underside of the county bridge. The installation on the bridge would be less expensive than a bored approach but the pipeline would be more vulnerable to flood impacts and vandalism. Additionally, Lincoln County was contacted about the possibility of mounting the pipeline on the county-owned bridge and they objected due to concern about bridge condition. Therefore, the proposed creek crossing is to install the pipeline using HDD.

For much of the raw water pipeline alignment, the only feasible alternative for about 7,000 feet is to locate the pipeline in public ROW (alongside of South Beaver Creek Road and Beaver Creek Road). Other alignments would be off-road on privately held property, and involve wetland impacts or result in a longer pipeline.

The proposed approach for the raw water pipeline for about 1,500 feet at the westerly end is to turn north from Beaver Creek Road and cross private properties to the Makai WTP site. This is contingent on obtaining easements through private property. The District considered a pipeline alignment alternative along Beaver Creek Road, then north on Highway 101, and then return to the east on NW Estate Drive through residential neighborhood to the Makai WTP site. This latter alignment would be in public ROW but would add significantly to the length. Because the proposed pipeline material is high-density polyethylene with fused joints, there would be infrequent maintenance so the access benefits gained by keeping it within public ROW are very minimal. Therefore, as a cost-saving measure, and as an approach to reduce construction within the 100-year floodplain, the proposed alignment is to turn north from Beaver Creek Road and cross private property.

2.2.4 Treatment Process Alternatives

The District considered two water treatment processes—a conventional media filtration system and low-pressure membrane filtration system (CH2M, 2016). The low-pressure membrane filtration system was selected primarily because the District believes the skills required for a membrane filtration plant are more in line with current and projected staffing than would be the skills for a conventional media filtration plant. Additionally, low-pressure membrane filtration provides an absolute barrier against pathogens. The reliability of membrane filtration treatment addresses one of the District's overall goals for achieving a reliable water supply.

2.2.5 Water Treatment Plant Backwash Waste Disposal Alternatives

Approximately 6 percent of the pumped raw water flow would be used for backwashing the membrane filters. Two options were considered for handling this waste flow. One is to install pumping and treatment systems to allow much of this flow to be recycled through the plant to be recovered as finished water. The other is to discharge this waste flow to Beaver Creek. Recycle is not recommended because it requires substantial cost for a relatively small gain in finished water plant capacity and because it adds significantly to the complexity of the system. Hence, the selected option is for waste flow from the backwash ponds to be piped to an outfall at Beaver Creek. The DEQ is receptive to this solution.

2.2.6 Water Treatment Plant Clearwell Tank Alternatives

A treatment plant clearwell tank is a necessary water supply project component (CH2M, 2016). Several design alternatives were considered for the clearwell tank, including the tank material, the tank dimension(s), the storage volume, and the number of tanks. Based on cost factors, reliability, and available space at the WTP site, a painted, welded steel tank was selected. While the selected alternative would eventually require the construction of a second tank to allow for maintenance (repainting), the second tank may not be needed for 20 to 30 years.

2.2.7 Electrical Service and Backup Power

Permanent electrical service would be run from the local power company to the water intake site and WTP site.

In keeping with the desire for a reliable and resilient water supply, power alternatives were considered for providing backup electrical power for the water intake and WTP equipment. To minimize the footprint of facilities at the water intake, avoid development in the 100-year floodplain, and reduce visual and noise impacts to recreational creek users, the District would obtain a trailer-mounted backup generator that can be moved to the intake when needed.

The WTP site is appropriate for a permanent backup generator. It is an isolated site where the regular operation of a generator for maintenance and testing would have no noise impacts on neighbors or recreational users. There is sufficient property and it would be enclosed in a fenced area.

2.3 Alternatives Considered, but not Considered in Detail

The proposed project is the result of extensive water source, site, and engineering design-based alternatives analysis. Accordingly, the District views it as the superior alternative for the Agency to fund and the District to develop. No other reasonable action alternatives have been identified. Therefore, only one action alternative (funding the proposed project) will be evaluated in detail for the purposes of this Environmental Report. Table 2-1 presents a summary of the criteria met in analyzing the proposed project's purpose and need and the alternatives considered.

Table 2-1. Evaluations Assigned in Analyzing the Proposal's Purpose and Need and the Alternatives Considered^a
Seal Rock Water District, Oregon: Beaver Creek Water Supply Project Environmental Report

Alternative	Safe	Sustainable	Resilient	Scalable
Water Source				
Henderson Creek, Thiel Creek, Hill Creek	R	R	R	R
Collins Creek	G	R	Y	R
Beaver Creek	G	G	G	G
Small lakes in the area of Lost Lake	G	R	Y	R
Drift Creek	G	R	Y	R
Water Intake Location				
South Beaver Creek Road Bridge	G	G	G	G
1,000 feet downstream	Y	R	R	R
Y2,000 feet downstream	Y	R	R	R
Water Intake Type				

Table 2-1. Evaluations Assigned in Analyzing the Proposal’s Purpose and Need and the Alternatives Considered^a
Seal Rock Water District, Oregon: Beaver Creek Water Supply Project Environmental Report

Alternative	Safe	Sustainable	Resilient	Scalable
Shallow riverbank well/infiltration gallery	G	R	R	R
Slant wedge-wire fish screen	G	G	G	G
Water Treatment Plant Site				
South property	Y	Y	Y	Y
North property	Y	Y	Y	Y
Makai property	G	G	G	G
Raw Water Pipeline				
Cross Beaver Creek by HDD	G	G	G	G
Cross Beaver Creek by hanging pipe off bridge	R	R	R	R
5,000 feet in South Beaver Creek Road and Beaver Creek Road	G	G	G	G
5,000 feet off road	R	R	R	R
2,000 feet across private properties	G	G	G	G
2,000 feet along Beaver Creek Road, Highway 101, and NW Estate Drive	G	R	G	G
Water Treatment Process				
Conventional media filtration system	Y	R	G	G
Low-pressure membrane filtration system	G	G	G	G
Water Treatment Plant Backwash Waste Disposal				
Pump and treat recycling system	G	Y	G	Y
Discharge to Beaver Creek	Y	G	G	G
Water Treatment Plant Clearwell Tank				
Single painted, welded steel tank	G	Y	G	G
Alternative tank material, size, and configuration	G	Y	G	G
Electrical Service and Backup Power				
Portable generator at intake/permanent backup generator at WTP	G	G	G	G
Permanent generator at intake/permanent backup generator at WTP	G	Y	G	G

^a **Green** = Most practicable; **Yellow** = Moderately practicable; **Red** = Least practicable. Weighting criteria are equal for design alternatives.

Affected Environment/Environmental Consequences

The planning area under primary consideration for the District's new water supply project encompasses the water intake at Beaver Creek, electrical building location, raw water pipeline and backwash line, WTP site, and finished water pipeline, as well as any areas immediately adjacent to the project footprint where construction or operation may have effects.

The following sections describe the environmental resources of the planning area that would be affected by the Agency's decision to fund the District's proposal, the potential environmental consequences, and proposed mitigation measures necessary to avoid or minimize any adverse impacts on specific environmental resources.

3.1 Land Use/Important Farmland/Formally Classified Land

3.1.1 Affected Environment

3.1.1.1 Land Use

The proposed project falls within two primary land use zones designated by Lincoln County—Timber Conservation (T-C) and Agricultural Conservation (A-C), as shown on Figure 2.

Timber Conservation (T-C). The following project components fall within the T-C zone: the intake structure, the electrical building, a short stretch of gravel road, a portion of the raw water pipeline running from the intake to the HDD entry point on South Beaver Creek Road, a portion running in North Beaver Creek Road to the WTP site, the backwash line from the WTP to Beaver Creek and associated outfall, and the finished water line leaving the WTP and running west to the system interconnection point. Of these components, only the electrical building and WTP would be above ground. Under Chapter 1 of the Lincoln County Code (LCC), "water intake facilities, related treatment facilities, pumping stations, and distribution lines" are permitted in the T-C zone as a Conditional Use (Lincoln County, 2013).

Agricultural Conservation (A-C). The only portion of the project that falls within the A-C zone is a portion of the raw water pipeline. The totality of the pipeline in this zone would be subsurface as part of the HDD under Beaver Creek or buried in the road prism. Utility facilities necessary for public service are allowed in the A-C zone as a permitted Conditional Use under Chapter 1 of the LCC (Lincoln County, 2013).

The new WTP would be sited at the existing Makai Storage Tank site. The District would need to purchase or include (from current District-owned areas) an additional 0.89 acre of land at the western and southern sides of the WTP to facilitate an efficient and code-compliant layout.

Land disturbance for the project is as follows:

- 1.89 acre of permanent disturbance at the WTP site. About 1 acre of this amount was previously disturbed.
- Less than 4.8 acres of temporary disturbance for pipeline trenching, with only 0.6 acre of this being the actual trench excavation area. However, the majority of the project pipelines would be located within public ROW; that is, the county road prism, which is previously disturbed. Only the finished water pipeline from the WTP would require trenching in previously undisturbed/undeveloped area.

- 0.058 acre of permanent and 0.038 acre of temporary disturbance for installation of the water intake structure, intake electrical building, and associated improved access road (all impacts associated with the access road are counted as permanent).
- 0.69 acre of temporary disturbance at the HDD entry/laydown area, and 0.06 acre of temporary disturbance at the HDD exit location, within the South Beaver Creek Road ROW.

Few homes or businesses are in proximity to the proposed project such that they would be affected. Approximately eight residences are within 500 feet of a project component, and no businesses have been identified within this distance. The closest residential development/community is the Makai housing development approximately 0.2 mile west of the WTP site.

3.1.1.2 Important Farmland

Most of the proposed project falls in areas mapped as “not prime farmland” by the Natural Resources Conservation Service (NRCS). However, a portion of the project falls within NRCS-mapped “farmland of statewide importance.” Approximately 0.7 mile of pipeline and the WTP site are located in areas mapped as “farmland of statewide importance” by the NRCS (Figure 3). These areas fall within the Lincoln County T-C zone, but are not actively farmed or in timber production. The portion of the raw water and backwash water line within this mapped area is located within a graveled private road, which would not be considered functional prime farmland. The WTP site was previously cleared and developed, with the exception of the 0.89 acre of land to the east and north that would be added to the final WTP site footprint.

3.1.1.3 Formally Classified Land

The proposed project does not cross any formally designated land, such as parks or natural areas. Brian Booth State Park, which encompasses both Ona Beach State Park and the Beaver Creek State Natural Area, is outside the planning area. Federal land managed by the Bureau of Land Management (BLM)-Salem District lies outside the planning area northeast of the proposed project (BLM, 1995). The closest formally classified federal land is a portion of the Siuslaw National Forest located approximately 1.5 miles east of the water intake location on Beaver Creek). The proposed project is not located on or near any federally designated Wild and Scenic Rivers (USFWS, 2017a). Additionally, the project does not fall on Tribal land (Bureau of Indian Affairs, 2014).

3.1.2 Environmental Consequences

The proposed project would not interfere with the existing land uses and is conditionally consistent with Forest Land or Agricultural Land designations, as defined in the *Lincoln County Comprehensive Plan* (Lincoln County, 2013) and zoning regulations. Further, the proposed project would be permitted as a conditional use in the T-C and A-C land use zones. As such, no adverse impacts related to land use are anticipated.

With regard to potential conversion of prime farmland, the proposed project would not interfere with current land use in the planning area and would not prevent adjacent parcels from being utilized for agriculture. Hence, no significant impacts to Important Farmland are anticipated to occur.

As the proposed project is not located on or immediate adjacent to any formally classified land, no effects on designated lands would occur.

Development of the proposed project would provide a reliable and resilient drinking water supply to District customers in order to meet anticipated future growth. While scalable, the development of a new water supply would not unduly increase area growth as both residential and industrial development of this area are limited by other constraints. These constraints include proximity to population centers and commercial markets.

3.1.3 Mitigation

As no adverse effects related to land use conversion or disruption have been identified, no mitigation relevant to land use is proposed.

3.2 Floodplains

3.2.1 Affected Environment

As defined by the LCC, "areas of special flood hazard" means land in the floodplain where a one percent or greater chance of flooding in any given year occurs, which is known as the 100-year floodplain as defined by the Federal Emergency Management Agency (FEMA). As shown on Figure 4, approximately two-thirds of the raw water pipeline, approximately 1 mile, occurs within the 100-year floodplain (defined by FEMA as Zone A). However, this portion of the pipeline would be located entirely underground, either by HDD undercrossing of Beaver Creek or by trenching in the South or North Beaver Creek Road ROW.

The water intake structure would be within the 100-year floodplain, but would be below ground elevation. Beaver Creek at this location is not Designated Floodway. No portion of the project outside 100-year floodplain would be within the 0.2 percent or 500-year floodplain.

In Lincoln County, a Flood Hazard overlay zone applies to all areas of special flood hazard identified by FEMA in *Flood Insurance Study for Lincoln County and Incorporated Areas* (FEMA, 2009) with accompanying Flood Insurance Rate Maps. Data from this FIRM map are represented on Figure 4. Any development within a designated floodplain would require a Floodplain Development Permit specifically authorizing the proposal from Lincoln County. The LCC defines development within areas of special flood hazard as "any man-made change or improvement involving buildings, structures, mining, dredging, filling, grading, paving, excavation or drilling that alters in any way the flood plain."

3.2.2 Environmental Consequences

Extensive analysis went in to the development of the proposed project. The location of the project as proposed was selected as a result of physical (location of the water source), financial, and operational constraints as well as numerous impact minimization measures. The water source proposed for development—Beaver Creek—is in the 100-year floodplain. Hence, locating the project elsewhere, outside of the 100-year floodplain is not practicable. Therefore, portions of the proposed project pipelines and intake structure would be considered "development" within the 100-year floodplain and likely trigger the need for a Lincoln County Floodplain Development Permit.

As the intake structure and pipeline would be located below ground and excavated materials would be disposed of offsite in approved upland areas located outside of the 100-year flood plain, no net rise or elevation change within the 100-year floodplain would occur. Further, no above ground structures that could impede floodwaters, be damaged or destroyed by floodwaters, or require federal flood insurance are proposed within the 100-year floodplain. Hence, no adverse effects related to disruption of floodwater flows are anticipated.

3.2.3 Mitigation

As no adverse effects related to flooding or flood rise have been identified, no mitigation relevant to this environmental resource is proposed.

3.3 Wetlands

3.3.1 Affected Environment

Beaver Creek qualifies as a water of the U.S. and water of the State of Oregon. The planning area is surrounded by extensive coastal wetland complex that includes freshwater emergent, forested, and scrub-shrub wetlands (Figure 5). However, of all the proposed project features, only the intake would fall within Beaver Creek and the backwash pipeline outfall would fall within a mapped wetland feature (National Wetlands Inventory, 2017). Wetland and water avoidance would be accomplished by undercrossing Beaver Creek via HDD, locating the exit pit in the roadway prism of South Beaver Creek Road, and placing the majority of the raw water pipeline and a portion of the backwash line in North Beaver Creek Road.

3.3.2 Environmental Consequences

While the proposed project is surrounded by extensive wetlands and nonwetland waterways, impact minimization measures including co-location of the proposed pipeline in existing road ROW have reduced this impact to negligible levels. Only the intake structure would be located below OHWE of Beaver Creek and a short portion of the backwash pipeline and outfall would be within mapped wetland. The intake structure may require a temporary water impact of about 20 feet by 25 feet for construction within a cofferdam or other diversion structure. The temporary wetland disturbance for the backwash line is estimated to be approximately 0.001 acre or 12 cubic yards. There is no other practicable alternative to the proposed limited temporary disturbance in wetland/water areas. With the implementation of project minimization measures, project effects on wetlands and nonwetland waters would be negligible even after adjustments for final design.

Although the pipelines would be mostly outside of regulated wetlands, there could be a possible inadvertent effect of draining wetland areas via the gravel bedding and backfill in the adjacent pipeline trench. To prevent an indirect French drain effect on adjacent wetlands, trench cutoff walls (sometimes known as plugs) would be installed at regular intervals along the pipeline trench. Therefore, no potential indirect impacts to wetlands would occur as a result of the Proposed Action and resulting project.

Because wetland and water impacts would be negligible, no cumulative wetland impacts are anticipated.

Federal and state wetland removal-fill permits would be required. As less than 0.1 acre of temporary wetland disturbance is expected, preconstruction notification under a U.S. Army Corps of Engineers (USACE) Nationwide Permit (NWP) (such as NWP 12-Utility Lines) may not be required; however, compliance with all applicable Regional and General NWP conditions would be required. In addition, the standard Oregon Coastal Management Program (OCMP) Coastal Zone and DEQ Section 401 Water Quality Certification conditions would apply. Beaver Creek is not a federal navigable water under Section 10 of the Rivers and Harbors Act; hence a Section 10 permit from the USACE would not be required.

Temporary impacts below OHWE of Beaver Creek and in wetlands would be permitted through the Oregon Department of State Lands (DSL). There is no impact threshold for DSL because Beaver Creek is designated Essential Salmonid Habitat, as discussed in greater detail in Section 3.5 below.

3.3.3 Mitigation

To confirm wetland/water impact estimates, formal wetland delineation would be conducted during final design in areas of potential project impact. Indirect effects, such as inadvertent draining of wetland areas adjacent to pipeline trenching, would be avoided through the installation of trench cutoff walls at set minimum intervals.

Compensatory wetland mitigation for the negligible project effects would be determined based on agency precedents during USACE and DSL permit processes. No additional mitigation beyond that required by federal and state permits is proposed.

3.4 Historic Properties

3.4.1 Affected Environment

3.4.1.1 Cultural Resources

A State Historic Preservation Office (Oregon SHPO) file search revealed previously conducted cultural resource investigations and previously recorded archaeological and built environment resources for the project Area of Potential Effect (APE) (Sheldon, 2017a). The file search used a study area consisting of a 1-mile radius around the APE. No previous cultural resource investigations or previously recorded sites or structures were identified within the project APE. A total of seven cultural investigations have been conducted within 1 mile of the project APE. All but two were concentrated near the confluence of Beaver Creek and the ocean shore. The exceptions were a single investigation consisting of a surface survey conducted 0.2 mile east of the project APE and a single surface survey conducted adjacent to the northern end of the project APE.

Two archaeological resources were documented within 1 mile of the project footprint, the Kitau Shell Midden Site (35LNC00086) and a burial reported on a former Oregon SHPO map. Site 35LNC00086 is located within Ona Beach State Park, approximately 0.3 mile west of the project footprint. The site consists of a buried shell midden that radiocarbon dates to approximately 1,700 AD. The site is currently listed as “unevaluated” in the Oregon SHPO database; however, initial testing led to a recommendation that it be considered eligible for listing to the National Register of Historic Places. No formal documentation exists for the reported burial; however, it is listed approximately 0.5 mile west of the project footprint.

3.4.1.2 Historic Structures

A review of the Oregon SHPO Historic Sites Database was conducted (Sheldon, 2017b). No previously recorded historic structures were recorded within 1 mile of the project footprint. Few standing structures exist in the vicinity of the project footprint. There is a low potential for these structures to exceed the 50-year threshold for consideration as historic properties.

3.4.2 Environmental Consequences

Based on Oregon SHPO data sources, there are no known cultural or historic properties in the vicinity; however, the background research suggests the potential exists for encountering buried archaeological resources within the project footprint.

With the completion of mitigation measures (below), no adverse impacts related to cultural or historic properties are anticipated. Similarly, by completing the Section 106 process, any indirect or cumulative effects would be identified and mitigated.

As the majority of the proposed project is below ground, or located on private property away from public view, potential visual impacts to historic properties are not anticipated.

3.4.3 Mitigation

An archaeological field investigation would be completed to identify previously unrecorded historic properties that may exist within the project footprint. The District would abide by the recommendations of the cultural survey report prepared in accordance with Section 106 by a professional archeologist and complete any mitigation determined necessary as part of the Section 106 Process.

A desktop review of county property records would be conducted to confirm that none of the parcels adjacent to the project area contain structures constructed more than 50 years ago.

Based on feedback from Oregon SHPO and the project’s professional archeologist, the Tribal Historic Preservation Office may be consulted.

Mitigation requirements would be determined through the Section 106 process from the results of the file search as well as through the results of the pedestrian survey. Mitigation for potential unanticipated direct effects would, at a minimum, include an Unanticipated Discovery Plan.

3.5 Biological Resources

3.5.1 Affected Environment

3.5.1.1 Wildlife

A search of the Oregon Biodiversity Information Center (ORBIC) database for rare, threatened, or endangered plants and animals (ORBIC, 2017) revealed 29 records within 2 miles of proposed project footprint (Figure 6). No federally listed wildlife species have been recorded in the proposed project disturbance areas (ORBIC, 2017).

ORBIC results indicate a bald eagle nest site was sighted about 0.25 mile west of the raw water pipeline in North Beaver Creek Road. This record appears to be a breeding site, but the last activity record was in 2006.

The U.S. Fish and Wildlife Service (USFWS) Information for Planning and Conservation (IPaC) system indicates three species listed under the federal Endangered Species Act (ESA), one candidate species, and 11 migratory birds that may occur in the planning area (USFWS, 2017b). Species ESA-listed as federally threatened that could be potentially affected by activities in the proposed project location are marbled murrelet (*Brachyramphus marmoratus*), northern spotted owl (*Strix occidentalis caurina*), and western snowy plover (*Charadrius alexandrinus nivosus*). All three of these bird species are also listed as Threatened under the state ESA. None of these species are known to occupy the project site. While suitable habitat for snowy plover does not appear to be present in the project planning area, potential dispersal habitat for marbled murrelet and northern spotted owl may be present. The IPaC System does not identify any federally-designated critical habitat in the immediate project vicinity.

3.5.1.2 Fish

A search of the ORBIC database for rare, threatened, and endangered plants and animals revealed records for one ESA-listed fish species and two fish Species of Concern, under National Oceanic and Atmospheric Administration (NOAA) Fisheries jurisdiction (ORBIC, 2017).

One federal ESA-listed anadromous fish species—coho salmon, Oregon Coast evolutionarily significant unit (ESU) (*Oncorhynchus kisutch* pop. 3)—occurs at Beaver Creek at the intake and backwash outfall locations. Coho salmon are ESA-listed as threatened. They use the mainstem of Beaver Creek for rearing and migration. NOAA Fisheries identifies Beaver Creek as critical habitat for coho salmon.

Winter run steelhead, Oregon Coast ESU (*Oncorhynchus mykiss* pop. 31) are not federally ESA-listed threatened or endangered; however, they are a Species of Concern and use the mainstem of Beaver Creek for spawning and rearing.

The Pacific lamprey (*Entosphenus tridentatus*) is a federal Species of Concern and is documented to occur in the mainstem of Beaver Creek.

A standard data query for fish species using the StreamNet database revealed presence of one additional fish species beyond those identified by ORBIC—fall run Chinook salmon (StreamNet, 2017).

Chinook salmon use the lower portion of the mainstem of Beaver Creek for rearing and migration and areas above river mile 5 for spawning and rearing.

Essential Fish Habitat (EFH) is broadly defined by the Magnuson-Stevens Fishery Conservation and Management Act (MSA) to include “those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity.” The MSA requires consultation for all actions that may adversely affect Coho and Chinook salmon EFH, regardless of ESU status.

The presence of a listed fish species in Beaver Creek also triggers its classification as Essential Salmonid Habitat by DSL. Essential Salmonid Habitat designations are given to stream reaches that support spawning and rearing of state and federally listed anadromous fish species.

3.5.1.3 Vegetation

No federally or state listed plants were identified as occurring or likely to occur in proposed project planning area (ORBIC, 2017; USFWS, 2017b).

Federal Species of Concern that occur in Lincoln County include: pink sandverbena (*Abronia umbellata* var. *breviflora*) (state listed Endangered); Point Reyes bird's-beak (*Cordylanthus maritimus* ssp. *palustris*) (state listed Endangered); and Coast Range fawn lily (*Erythronium elegans*) (state listed Threatened). However, suitable habitat for these species is broad beaches in fine sand, maritime salt marshes in sandy substrates, or peaks and ridges; none of which is present in the planning area (ODA, 2017).

Several trees less than 12 inches in diameter at breast height would be removed in the riparian area along Beaver creek at the location of the intake structure and raw waterline. If any trees 12 inches or greater in diameter at breast height would be removed, likely closer to the road to facilitate access, similar species would be replanted during site restoration. The cleared area for pipe trench construction running from the intake to the HDD entry point would be up to 20 feet wide.

Approximately 0.89 acre of forest land would be cleared for the WTP site expansion, permanently removing this private land from potential timber production.

3.5.2 Environmental Consequences

3.5.2.1 Wildlife

Based on review of the project plans, ORBIC data, the potential species list generated by IPaC, and air photo interpretation of onsite habitats (Appendix B), the proposed project is not anticipated to have important effects on listed wildlife species. Vegetation clearing would be performed between August and February to avoid impacts to nesting migratory birds, unless preconstruction avian surveys verify that actively nesting migratory birds are not present, as required by the Migratory Bird Treaty Act.

Harassment of bald eagles would be avoided, as required by the Bald and Golden Eagle Protection Act. Blasting if required, would be confined to between September 1 and October 30. High noise-producing (nonblasting) construction activities would not occur within 0.25 mile, or 0.5 mile visually (i.e., line-of-site), of a known nest or communal roost during January 1 to August 31. Nonblasting high noise-producing construction activities conducted from November 1 to December 31 shall implement a daily limited operating period (LOP) of daytime work being conducted from two hours after sunrise to two hours before sunset. Staging areas and detour routes would be kept as far from a nest as practicable.

The District would undertake ESA Section 7 consultation with USFWS and NOAA Fisheries to identify specific listed species concerns and recommendations for design and construction. If the Services require formal consultation, the District would complete a Biological Assessment.

3.5.2.2 Fish

The water intake structure would require a temporary construction disturbance area of about 20 feet x 50 feet along the Beaver Creek streambank and extending into the creek. The proposed action would require in-water work, including in-water work containment (ex. cofferdam), excavation, concrete formwork, and backfilling. Short-term turbidity is expected during construction. The backwash outfall to Beaver Creek would be an armored energy dissipation riprap pad designed to minimize impacts to fish and aquatic habitat. Conservation measures and general construction measures similar to those in the NMFS SLOPES V programmatic biological opinion. In-water work construction would be limited to the preferred work window for coastal tributaries in the North Coast Watershed District—July 1- September 15. In-water work isolation (i.e., cofferdam or similar device) would separate excavation, concrete formwork, and backfilling from the flowing stream. Fish salvage would be performed if fish become temporarily trapped behind containment, despite attempts to exclude them (such as leaving the downstream end of the diversion device open to the creek flow). Erosion and sediment control measures and turbidity controls would be implemented during construction to limit suspended sediments to levels allowed by the National Pollution Discharge Elimination System (NPDES) Construction General Stormwater Discharge Permit from DEQ. Streambanks and riparian areas would be restored using bioengineering techniques and native species planting.

During operation, the in-water features should have minimal effects on listed species. The water right granted by OWRD assures that adequate water would be available for fish after taking into account the amount proposed for source development from Beaver Creek. The water intake screen design would meet NOAA Fisheries anadromous salmonid passage facility design criteria (NMFS, 2011). The District would obtain a NPDES discharge permit from DEQ to ensure that the mixing zone at the backwash outfall would not exceed water quality standards or preclude fish migration. Furthermore, the Oregon Department of Fish and Wildlife would review the fish passage plan to ensure that neither the intake facility or outfall would impede passage of native migratory fish.

The proposed action may affect but is not likely to adversely affect listed coho salmon and their Critical Habitat. Additionally, the project may adversely affect Pacific Coast Salmon EFH, but long-term negative effects on EFH are not expected to occur.

As discussed above, the District would undertake ESA Section 7 consultation with USFWS and NOAA Fisheries to identify specific listed species concerns and recommendations for design and construction. If the Services require formal consultation, the District would complete a Biological Assessment.

3.5.2.3 Vegetation

The proposed project would have no important effects on listed plant species because none are known or expected to be present. Vegetation clearing would occur in the riparian zone for the intake structure and short segment of the raw water pipeline where approximately three trees less than 12 inches diameter at breast height would be removed. However, the vegetation gap would be narrow and low growing ground cover, and native shrubs would become quickly reestablished.

Temporary disturbance to the Beaver Creek streambanks would be rapidly restabilized, in part, with vegetation. Restoration to restore the streambanks would be performed by bank shaping and installation of coir logs or other soil reinforcements as necessary to support riparian vegetation, or by planting or installing large wood, trees, shrubs, and herbaceous cover as necessary to restore ecological function in riparian and floodplain habitats.

Although about 0.89 acre of private land would be permanently removed from timber production to expand the WTP, this amount of conversion would not impact the viability of the remaining land use for timber production and have only a minor impact to the residual forest production.

3.5.3 Mitigation

The proposed project is designed to avoid and minimize adverse effects on biological resources. Conservation measures and general construction measures would be incorporated into the project design to reduce impacts to minor or incidental levels. Therefore, additional mitigation of biological impacts is not proposed.

Given the potential for dispersal habitat to be present for the marbled murrelet and northern spotted owl, additional conservation/minimization measures that may be adopted if recommended by USFWS include the following:

- **Marbled Murrelet.** For high noise-producing activities within 1 mile of suitable nesting habitat and nonblasting high noise-producing activities within 300 feet of suitable nesting habitat:
 - **Inventory.** Identify areas of suitable nesting habitat within 1 mile of the construction site.
 - **Avoidance.** All blasting activities within 1 mile of suitable nesting habitat would be conducted from September 15 to March 30. All nonblasting, high noise-producing construction activities would be conducted outside the critical nesting period of April 1 to August 5. Nonblasting, high noise-producing construction activities conducted from August 6 to September 15 shall implement a daily LOP of daytime work being conducted from 2 hours after sunrise to 2 hours before sunset. If night construction is needed, then activity would be conducted 1 hour after sunset to 1 hour before sunrise.
 - **Minimization.** High noise-producing construction activities may be conducted between April 1 and August 5, following the LOP with a variance from the USFWS.
- **Northern Spotted Owl.** For blasting activities within 1 mile of suitable nesting and roosting habitat and nonblasting construction activity within 195 feet of nesting and roosting habitat:
 - **Inventory.** Inventory the area of potential harassment for nesting and roosting habitat.
 - **Avoidance.** If nesting and roosting habitat is present, then prohibit blasting and high noise-producing activities during the following critical nesting periods: March 1 to July 7 for the North Coast Province.
 - **Minimization.** High noise-producing activity within the provincial critical nesting periods may be conducted with a variance from the USFWS.

3.6 Water Quality Issues

3.6.1 Affected Environment

Beaver Creek is a 32,500-acre, 5th field watershed that lies between Yaquina Bay to the north, and Alsea Bay to the south. The Beaver Creek watershed has an unusually high proportion of low-gradient streams flowing through broad, unconfined valleys. It is relatively intact, with little urban development, low recreational use and moderate amounts of logging (USFS, 2001). Observationally, the mainstem of Beaver Creek in the vicinity of the proposed project appears to have moderate to high recreational use, particularly for boating.

Beaver Creek is a dynamic system, with sediment, nutrients, food, and wood moving down the channel during high flow events and becoming deposited downstream, where they contribute to critical fish habitat (USFS, 2001). Settlement activities such as logging, stream cleanout, agriculture, and building valley bottom roads along depositional reaches have affected the functioning and quality of the fish habitat.

Habitat conditions over the entire watershed are good, but below their potential (USFS, 2001). Only one of the surveyed reaches met properly functioning criteria for large woody material; others mainly met criteria for temperature, various aspects of pools, and access. No quantitative measures of estuarine habitats were available, but Highway 101 and Ona Beach State Park may have modified the mouth of Beaver Creek to the degree that it is not functioning properly.

Beaver Creek is not Section 303(d)-listed by DEQ as water quality impaired (DEQ, 2012).

There are no U.S. Environmental Protection Agency (EPA) sole source aquifers in the project vicinity (EPA, 2017). Additionally, the DEQ Drinking Water Protection Program interactive mapping tool does not identify any wellhead protection areas, surface or groundwater drinking water sources in the vicinity of the project.

OWRD granted the District a water right for Beaver Creek in 2015.

3.6.2 Environmental Consequences

The proposed project would not directly affect surface waters, except at Beaver Creek where the District would install a water intake structure and backwash outfall. Potential short term water quality effects during construction include elevated turbidity and inadvertent release of construction materials. At the intake location, a temporary cofferdam of sandbags would be used to divert water around work below OHWE.

The proposed project would require coverage under the NPDES Construction Stormwater Discharge 1200-C permit because more than 1 acre of ground would be disturbed. As part of the permit, a site specific Erosion and Sediment Control Plan (ESCP) that details best management practices (BMPs) to control erosion and limit sediment discharges would be created, implemented, and maintained. BMPs can include silt fencing, straw wattles, soil tackifiers on slopes, and in-stream silt curtains. Implementation of appropriate BMPs would ensure compliance with state water quality standards.

All in-water work would be completed during summer low flows to minimize potential turbidity and erosion impacts.

In regards to the potential inadvertent release of construction fluids such as fuel or oil, the ESCP would include a Spill Prevention, Containment, and Countermeasures Plan and BMPs to minimize this risk, such as minimum distances from jurisdictional areas for refueling and maintaining construction equipment in good working order. Additionally, the construction contractor would have on hand a spill kit to allow immediate response to any such release. With these conservation measures in place, effects related to an inadvertent release are considered minimal.

Some riparian clearing would be required at the intake structure and backwash outfall, including removal of approximately three trees less than 12 inches in diameter at breast height in the vicinity of the intake structure. Clearing would be performed after erosion and sediment controls are placed, using excavators, backhoes, and chainsaws. The disturbance area would be stabilized and revegetated after construction. While no trees would be replanted on or immediately adjacent to the intake structure, the surrounding canopy is of sufficient density that little loss of shading to the creek is anticipated. The disturbed riparian area would be a very small portion of the entire riparian system, so the small canopy gaps would have a minor effect on water temperature or other aquatic habitat functions. Riparian vegetation would respond to limited clearing for pipeline construction within the first few years after construction, except for an intake access panel at ground elevation along the top of the bank.

Once the pipeline is installed, hydrostatic testing of the pipelines would be performed. Untreated river water would be used for testing of the raw water line. This water would not need to be drained and discharged to Beaver Creek, unless the pipe test fails. If this were to occur, the raw water would be released back into Beaver Creek with appropriate velocity reduction methods in place. Potable water

would be used for hydrostatic testing and flushing of the finished water line. It would be released through a temporary dechlorination arrangement into a nearby natural drainage.

During operation, the District would withdraw water via the intake up to their water right. OWRD has determined that the certificated amount of withdrawal would not compromise the creek's beneficial uses.

Early consultation with DEQ indicates that the mainstem of Beaver Creek is the preferred location of the backwash pipeline outfall to meet minimum mixing and dilution criteria. The backwash water would contain slightly elevated levels of total dissolved solids and total suspended solids. It is anticipated that this discharge would be permitted through DEQ with coverage under the 200-J Filter Backwash General NPDES permit. DEQ indicates the mainstem of Beaver Creek provides an acceptable 30:1 minimum dilution ratio with the effluent and would ensure the mixing zone does not exceed the 30-foot downstream limit established by the 200-J General Permit. Also, water temperature is not expected to increase from backwash mixing and dilution. Final design of the outfall would determine if any permanent underlayment such as riprap or porous cement blocks would be required under the outfall to avoid erosion.

With the implementation of the avoidance and minimization measure discussed above, no remaining adverse impacts would occur.

3.6.3 Mitigation

No mitigation beyond the avoidance minimization measures included in the NPDES permits and discussed above would be required.

3.7 Coastal Resources

3.7.1 Affected Environment

The proposed project falls within Oregon's coastal zone as defined in the Coastal Zone Management Act (CZMA). The federal consistency provision of the CZMA requires that any federal action occurring in or outside of a state's coastal zone, which has a reasonably foreseeable effect on land uses, water uses, or natural resources of the coastal zone, must be consistent with enforceable policies contained in the state's federally-approved coastal management plan. At the state level, coastal states apply federal consistency provisions via state coastal management plans. In Oregon, this is the OCMP.

As the Proposed Action is to provide federal funding to a project proposed within Oregon's coastal zone, the project must meet federal consistency requirements in regards to the CZMA. Additionally, if a federal permit such as a USACE NWP for wetland or waters impacts is required, the project must also have Oregon Department of Land Conservation and Development (DLCD) concurrence regarding consistency with the OCMP. DLCD does not exercise direct regulatory authority as it pertains to federal consistency, rather, the networked local governments and state agencies administer the coastal program laws that contain enforceable policies.

In order to be consistent with the OCMP, the proposed project must be consistent with enforceable policies contained within three program components: the statewide planning goals, applicable acknowledged local comprehensive plans and land use regulations, and specific state agency authorities (e.g., Oregon Removal-Fill Law).

3.7.2 Environmental Consequences

The proposed project would be subject to state and local development permits. Specifically, the primary land use approval for the project would come from Lincoln County in the form of a conditional use permit. In the process of this permit review and approval, consistency with statewide planning goals, the

Lincoln County Comprehensive Plan (Lincoln County, 2013), and other land use regulations would be assured. A conditional use permit would only be approved by Lincoln County if the project, with the inclusion of any reasonable permit conditions, would be consistent with these regulations.

Applicable state level permits, such as the DSL Removal-Fill permit for impacts within Waters of the State, would be reviewed by the county for compliance with the comprehensive plan (Lincoln County, 2013). This would be accomplished via the Land Use Compatibility Statement, which would ensure federal CZMA consistency.

3.7.3 Mitigation

As the proposed project would be permitted and conditioned such that it would be found consistent with the CZMA, no mitigation in regard to coastal resources would be required.

3.8 Socioeconomic/Environmental Justice Issues

3.8.1 Affected Environment

The proposed project would serve the District's 2,600 customer accounts. The project is being undertaken to develop a more resilient, dependable drinking water supply for a small coastal community. The community served by this project is less affluent and physically located away from concentrated residential development.

The EPA EJSCREEN mapping tool, for a 1-mile buffer around the project features, reported lower percentage values for the overall Demographic Index, as well as for the subcategories of Minority Population, Low Income Population, Linguistically Isolated Population, and Population with Less than High School Education than State, EPA Region, or overall national averages. This suggests the population is not socioeconomically sensitive. Similarly, all of the environmental indicators evaluated for this area, were considerably lower than the comparative values provided for the State, EPA region, and national averages. Hence, the population in the vicinity of the proposed project is exposed to lower levels of potential environmental harm, on average, than state, regional or national populations.

3.8.2 Environmental Consequences

The proposed project has limited environmental impacts, all of which would be mitigated. Hence the corresponding potential for environmental justice impacts is low. Additionally, the local population being served by the project would receive the beneficial effect of a more stable and resilient long-term water supply. Given the demographic information on the community in the vicinity of the project and the extremely limited environmental impacts of this project, implementation of this project would not have a disproportionate environmental effect on minority or low-income populations.

3.8.3 Mitigation

As no disproportionate adverse environmental effects on minority or low-income populations are anticipated, no mitigation measures related to socioeconomics or environmental justice are proposed.

3.9 Miscellaneous Issues

The following environmental topics are not expected to receive adverse effects. As such, potential impacts are evaluated at a lesser level of detail.

3.9.1 Air Quality

The Beaver Creek watershed is in a DEQ-designated air quality attainment area. Limited short-term impacts to local air quality due to construction equipment emissions and potential fugitive dust would occur during construction. BMPs such as maintaining construction equipment in good working order, dust suppression, and keeping loose sediment from being tracked into driving lanes would minimize the potential short-term effects on air quality. The backup generator located at the WTP would be tested once a month creating a potential long-term air quality impact. However, as the potential effect is very limited, and the WTP site is located in an air quality attainment area, this impact would not be significant. As the proposed backup generator is only 250 kilowatts, it falls below permit thresholds and no air permit would be required. The mobile backup generator proposed to be brought in for emergency use at the intake structure is even smaller than that proposed for use at the WTP and would not be regularly housed or tested onsite. As such, no air quality impacts or permits would be required for this backup generator.

3.9.2 Noise

Potential construction-related noise effects would be minor and temporary. No noise receptors are present. Operational noise would be infrequent, and include monthly testing of the backup generator at the WTP site. However, the WTP site is not adjacent to residential or noise-sensitive uses, so no adverse impact is anticipated. The nearest residence to the WTP site is approximately 1,200 feet away.

3.9.3 Recreation

Beaver Creek is a popular recreational resource, used for fishing and boating as well as nature viewing. Many kayakers and canoe enthusiasts put in to the creek near the South Beaver Creek Road Bridge where the intake structure would be located, as the public ROW provides access. While the intake structure would be located on private land (as well as a State of Oregon waterway easement), the landowner tolerates this public use. The proposed improvements to the existing access road, primarily surface graveling, have the potential to make this access point more attractive and increase public use. The District proposes a movable barrier of cement ecoblocks or other material to limit public access beyond the first hundred feet of the existing access road, but allow maintenance access to the intake. This access control would reduce the liability exposure of the landowner to public trespass.

Recreational boaters and other users of Beaver Creek would be temporarily inconvenienced during the installation of the intake structure; less so the electrical building. The work area would be signed to alert boaters that a flow shift might be experienced during intake construction.

The intake structure has been designed to be mostly below OHWE with portions nearly flush with the top of bank. Additionally, it would be mostly covered by soil and revegetated, minimizing visual impacts to recreational users. The selected pumps are submersible type; the submerged motors will minimize noise impacts. Therefore, long-term operational impacts of the intake would be insubstantial.

Construction of the backwash outfall would occur during summer months to minimize impacts to fish, but at a time recreational boating use of the creek is high. However, the outfall would be off the thalweg, so the temporary impact to recreation would be minor and hence not considered significant.

3.9.4 Traffic

The average daily traffic using this stretch of North and South Beaver Creek Road is low. Installation of the raw water pipeline would involve temporary road traffic delays or closures during construction. It is anticipated that flaggers would maintain two-way traffic flow using single lane closures. Appropriate temporary road closure permits would be obtained from Lincoln County. No detours would be required, and no permanent creation or removal of traffic lanes or alteration of existing traffic patterns would

occur. Although most of the pipeline construction in the road prism would be in the shoulder, the pavement would be rehabilitated/overlayed to the centerline if any asphalt would be disturbed. Permits for any oversized construction equipment or project components would be obtained by the contractor, if necessary. With the inclusion of the traffic impact minimization measures described above and compliance with any applicable permits, no adverse impacts are anticipated.

Summary of Mitigation

With the implementation of project-specific BMPs and impact minimization measures discussed in Section 3.0, as well as adherence to applicable permit conditions, additional mitigation measures required for the proposed project are limited to the following:

- Cultural Resources
 - Completion of pedestrian survey and any mitigation required through Section 106
 - Desktop review of county records to identify any nearby structures greater than 50 years of age
 - Creation of an Unanticipated Discovery Plan
- Biological Resources
 - Consultation with USFWS and NOAA Fisheries
 - Application of conservation measures specific to marbled murrelet and northern spotted owl if deemed appropriate during consultation with USFWS

Correspondence

While initial verbal coordination with DEQ in regards to backwash outfall placement has been conducted, no formal consultation with agencies has yet been completed.

Maps

Appendix A contains a series of maps presented as Figures 1 through 6, titled as follows:

Figure 1: Overview Map

Figure 2: Land Use/Zoning

Figure 3: NRCS Important Farmland

Figure 4: Flood Hazard

Figure 5: Wetlands and Waters

Figure 6: Biological Resources

List of Preparers

Table 7-1 contains a list of individuals who were instrumental in preparing this environmental report.

Table 7-1. List of Preparers

Seal Rock Water District, Oregon: Beaver Creek Water Supply Project Environmental Report

Name	Role	Title
Paul Berg, P.E.	Water Systems Engineer	Project Manager
Dana Larson, M.E.S.M.	Environmental Scientist	Author and Task Lead
Steve Mader, Ph.D.	Biologist/Wetland Scientist	Senior Technical Reviewer
Stephen Smith	GIS Technician	Mapping and Database Search

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SECTION 8.0 – REFERENCES

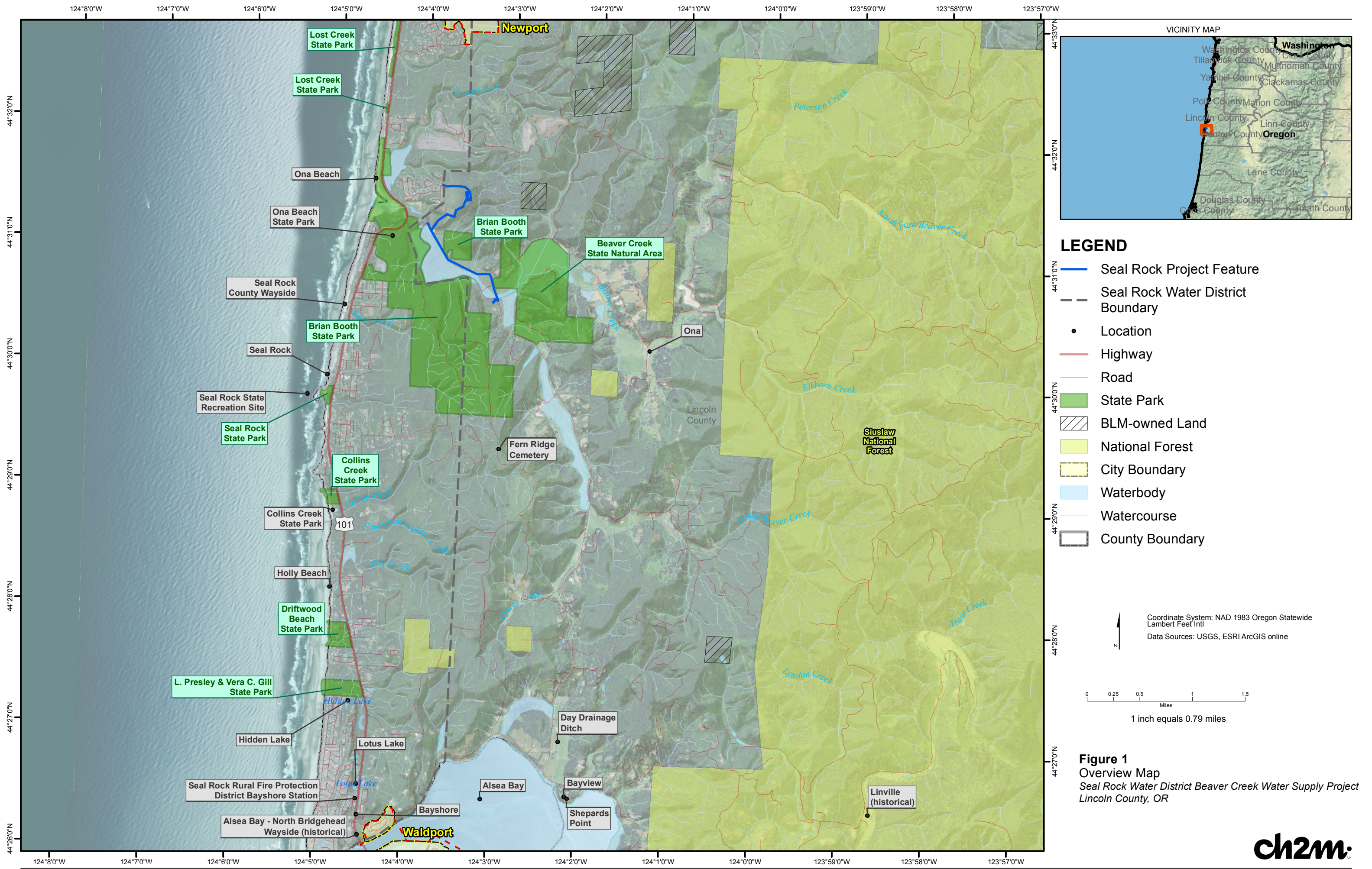
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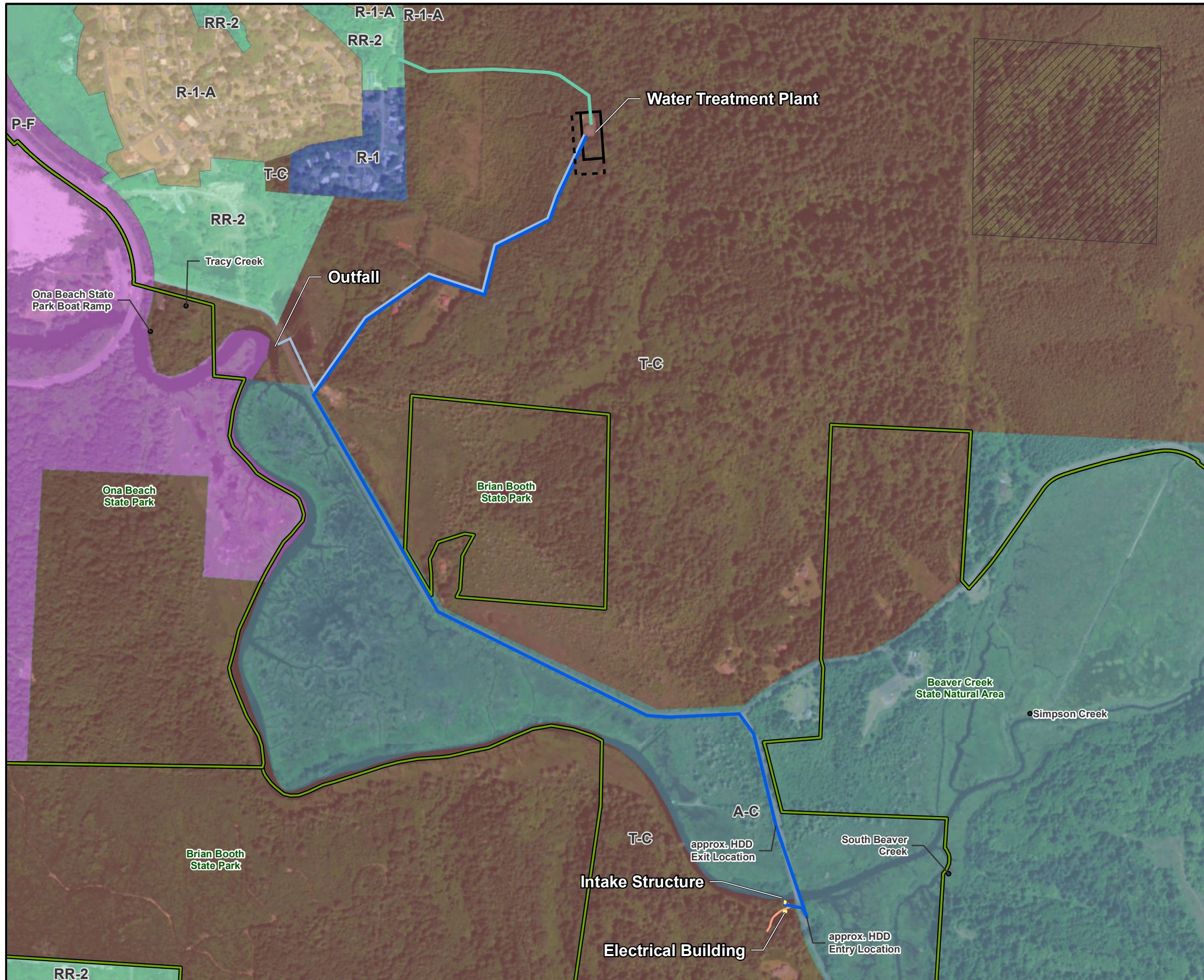
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Appendix A

Figures





LEGEND

- Water Treatment Plant Property Line
- Water Treatment Plant Property Line Expansion
- Raw Water Line
- Finished Water Line
- Backwash Line
- Proposed Building
- Proposed Gravel Road
- State Park
- BLM-owned Land

Oregon Zoning - 2014

- A-C (Agricultural Conservation)
- R-1-A (Residential)
- T-C (Timber Conservation)
- P-F (Public Facilities)
- RR-2 (Rural Residential)
- R-1 (Residential)

Coordinate System: NAD 1983 Oregon Statewide Lambert Feet Intl
 Data Sources: Sate Of Oregon, USGS, ESRI
 ArcGIS online

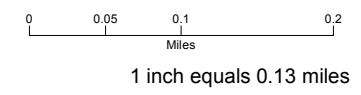
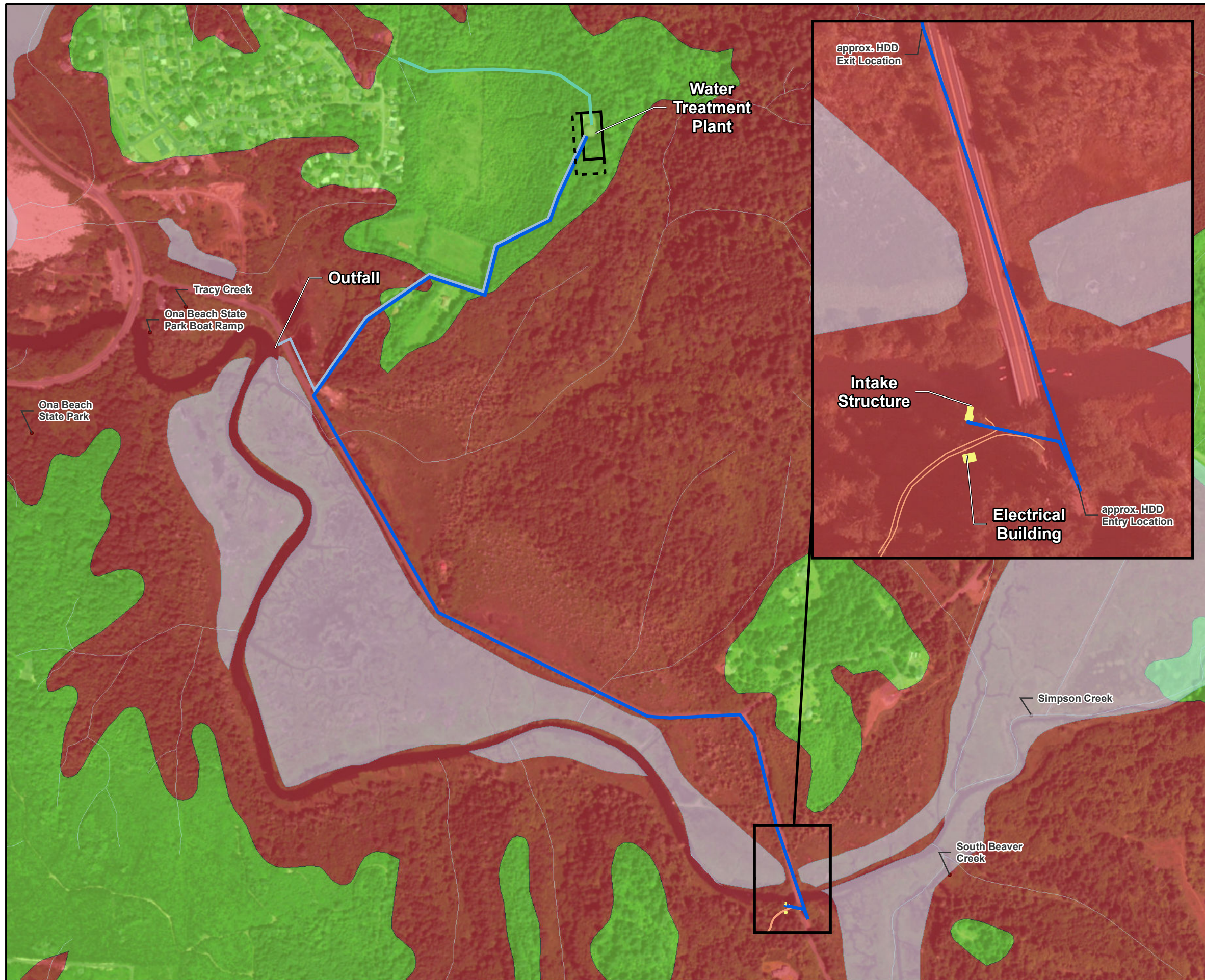


Figure 2
 Land Use/Zoning
 Seal Rock Water District Beaver Creek Water Supply Project
 Lincoln County, OR



- LEGEND**
- Water Treatment Plant Property Line
 - - - Water Treatment Plant Property Line Expansion
 - Raw Water Line
 - Finished Water Line
 - Backwash Line
 - Proposed Building
 - Proposed Gravel Road
 - Waterbody
 - Watercourse
- Natural Resources Conservation Service (NRCS) Farmland Classification**
- Farmland of statewide importance
 - Not prime farmland

Coordinate System: NAD 1983 Oregon Statewide Lambert Feet Intl
 Data Sources: NRCS, USGS, ESRI ArcGIS online

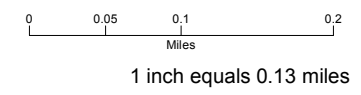
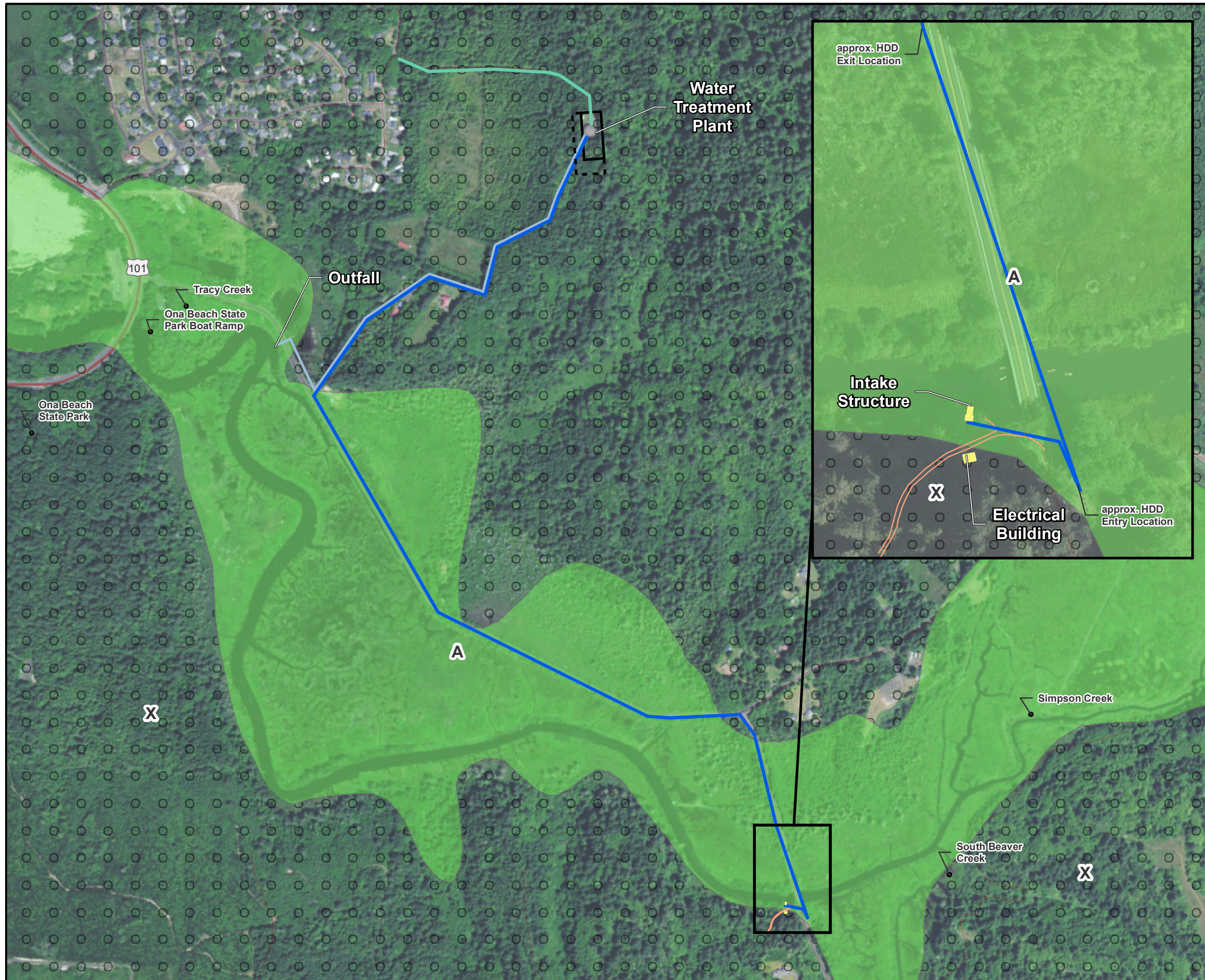


Figure 3
 NRCS Important Farmland
 Seal Rock Water District Beaver Creek Water Supply Project
 Lincoln County, OR



LEGEND

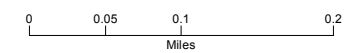
- Water Treatment Plant Property Line
- Water Treatment Plant Property Line Expansion
- Raw Water Line
- Finished Water Line
- Backwash Line
- Proposed Building
- Proposed Gravel Road
- Highway
- Major Road

Flood Hazard Zones

- A
- X

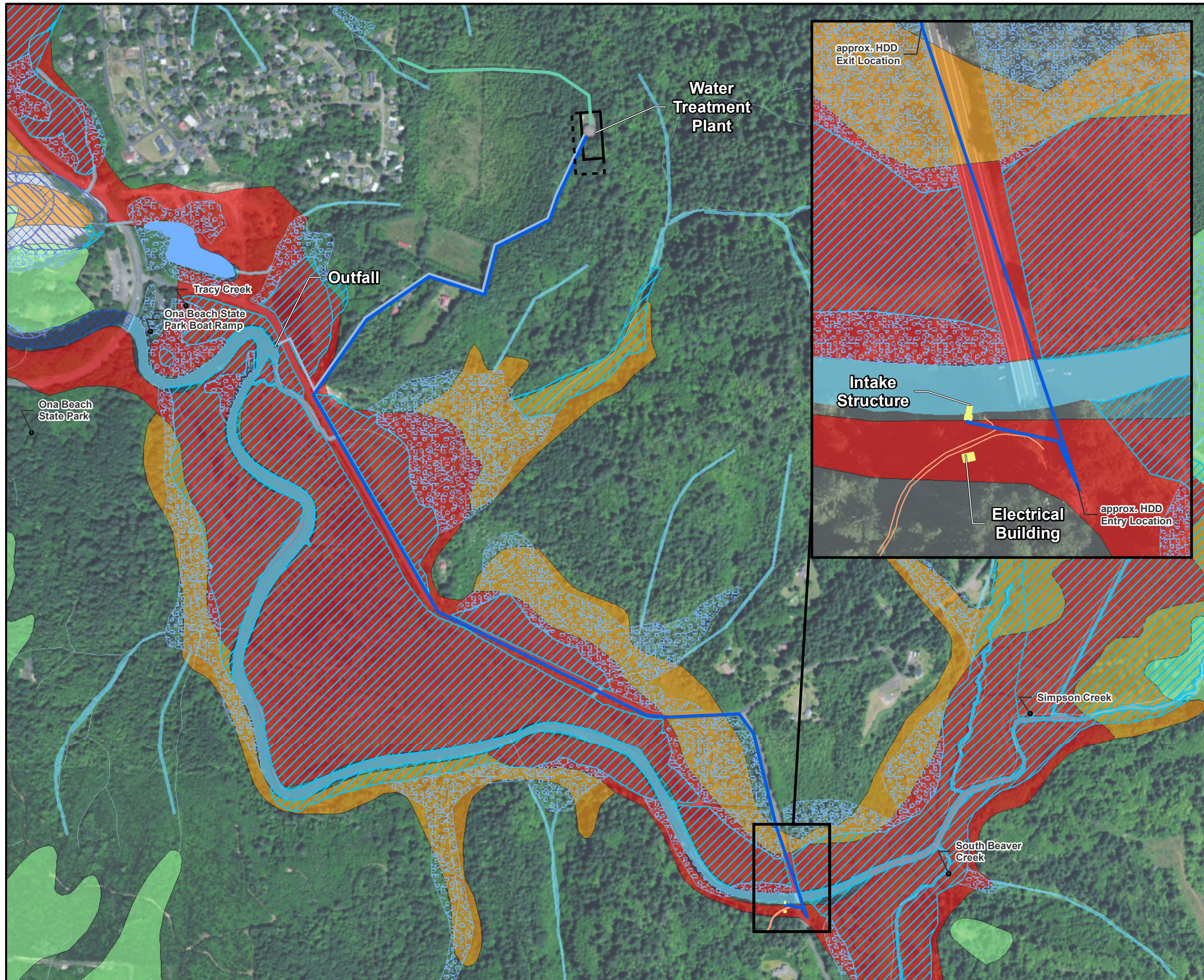


Coordinate System: NAD 1983 Oregon Statewide Lambert Feet Intl
 Data Sources: FEMA, USGS, ESRI ArcGIS online



1 inch equals 0.13 miles

Figure 4
 Flood Hazard
 Seal Rock Water District Beaver Creek Water Supply Project
 Lincoln County, OR



LEGEND

- Water Treatment Plant Property Line
- - - Water Treatment Plant Property Line Expansion
- Raw Water Line
- Finished Water Line
- Backwash Line
- Proposed Building
- Proposed Gravel Road
- NHD Watercourse

National Wetlands Inventory Type

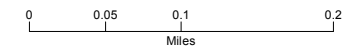
- ▨ Estuarine and Marine Deepwater
- ▨ Estuarine and Marine Wetland
- ▨ Freshwater Emergent Wetland
- ▨ Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Riverine

Hydric Soils

- Hydric (1 to 32%)
- Hydric (66 to 99%)
- Hydric (100%)

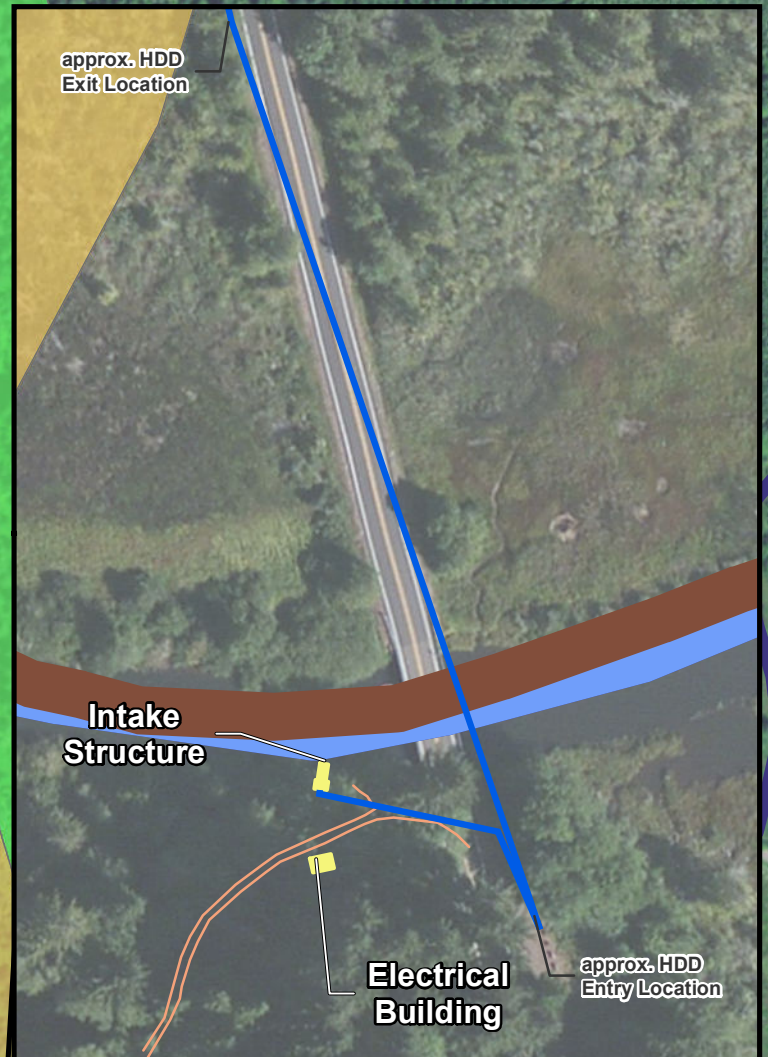
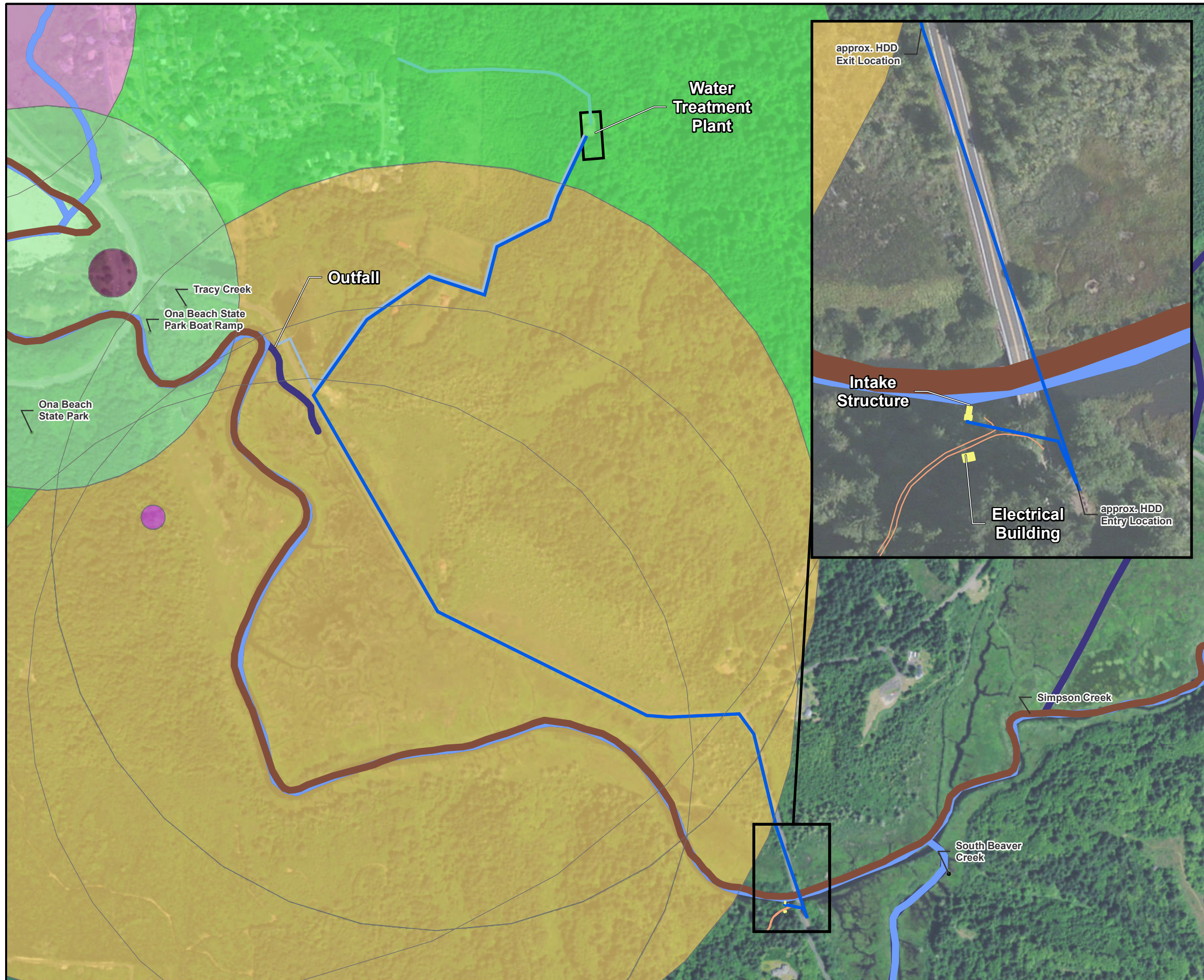


Coordinate System: NAD 1983 Oregon Statewide Lambert Feet Intl
Data Sources: NRCS, USGS, ESRI ArcGIS online



1 inch equals 0.13 miles

Figure 5
Wetlands and Waters
Seal Rock Water District Beaver Creek Water Supply Project
Lincoln County, OR



- LEGEND**
- Water Treatment Plant Property Line
 - Raw Water Line
 - Finished Water Line
 - Backwash Line
 - Proposed Building
 - Proposed Gravel Road

- ORBIC Results**
- Coho salmon (Oregon Coast ESU)
 - Pacific lamprey
 - Steelhead (Oregon Coast ESU, winter run)
 - Bald eagle
 - Beach saltbush
 - Fungus
 - Lichen
 - Northern bog clubmoss
 - Pink sandverbena
 - Three-ribbed arrow-grass

Coordinate System: NAD 1983 Oregon Statewide Lambert Feet Intl
 Data Sources: Sate Of Oregon, USGS, ESRI, ArcGIS online
 Abbreviations:
 ESU: Evolutionarily Significant Unit
 HDD: Horizontal Directional Drill
 ORBIC: Oregon Biodiversity Information Center

0 0.05 0.1 0.2
 Miles
 1 inch equals 0.13 miles

Figure 6
 Biological Resources
 Seal Rock Water District Beaver Creek Water Supply Project
 Lincoln County, OR

Appendix B
Site Photographs



Photo 1. Bank of Beaver Creek at approximate intake location.



Photo 2. Closer view of vegetation at approximate intake location (photo taken during February).



Photo 3. View of Beaver Creek south bank at approximate intake and electrical building location. Intake would be located to the right of the twin central large trees.



Photo 4. View of private road in which the raw water pipeline and backwash line would be run via trench uphill to the water treatment plant site.



Photo 5. View southeast along N. Beaver Creek Road. Raw water pipeline to be located in the southwest lane (right side of this photo).



Photo 6. View of lane and shoulder width of west lane of N. Beaver Creek Road where the raw water pipeline would be located.



Photo 7. View of backwash outfall location; N. Beaver Creek Road is immediately adjacent to the right side of this photo.