

CRITICAL AREAS REPORT

Fiber Optic Cable Line Project

Applicant:

Cannon Companies

406 Porter Way
Milton, Washington 98354

Prepared by:

David Evans and Associates, Inc.



**DAVID EVANS
AND ASSOCIATES INC.**

February 2026

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Reviewed by:

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Senior Biologist



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EXECUTIVE SUMMARY

The purpose of the Fiber Optic Cable Line Project is to improve communication and data transmission by expanding affordable fiber optic access in Grays Harbor County, Thurston County, Lewis County; the cities of Aberdeen, Centralia, Elma, Hoquiam, Montesano, and Oakville in the state of Washington. Current access to broadband in this area is expensive and unreliable. The project alignment is broken into three segments across these jurisdictions.

This report identifies key environmental discriminators and constraints, and possible permitting implications related to the API. This report summarizes the findings from the project's critical area study on wetlands, streams, and fish and wildlife habitat conservation areas. This critical areas study identified 239.82 acres of wetlands, 134 total streams, and fish and wildlife habitat conservation areas within the API. There are also associated wetland and stream buffers.

Project design will favor HDD method of installation to the greatest extent practicable to avoid and minimize wetland and stream impacts. Project design is adapting as field conditions are discussed closely with the design team. At the time that this report was written, the project is likely to temporarily impact a total of 3.19 acres of wetlands, 0.03 acres of streams, and 964.68 acres of wetland and/or stream buffers. All proposed impacts are temporary. For design measures that resulted in unavoidable impacts, on site restoration will result in long-term improvement of aquatic habitat and their associated buffers.

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ACRONYMS AND ABBREVIATIONS

AMC	Aberdeen Municipal Code
API	area of potential impact
BA	biological assessment
BAS	best available science
BMP	best management practice
CARA	critical aquifer recharge area
CFR	Code of Federal Regulations
CMC	Centralia Municipal Code
DEA	David Evans and Associates, Inc.
DEP	Depressional
DNR	Washington State Department of Natural Resources
E1UBL	estuarine subtidal unconsolidated bottom subtidal
E2EM1P	estuarine intertidal emergent persistent irregularly flooded
Ecology	Washington State Department of Ecology
EFH	Essential Fish Habitat
EIA	Ecological Integrity Assessment
EMC	Elma Municipal Code
EPA	Environmental Protection Agency
ESA	Endangered Species Act
FEMA	Federal Emergency Management Agency
FPARS	Forest Practices Application Review System
FWHCA	fish and wildlife habitat conservation areas
GHCC	Grays Harbor County Code
GIS	geographic information system
HDD	horizontal directional drilling
HGM	hydrogeomorphic
HMC	Hoquiam Municipal Code
IPaC	Information for Planning and Consulting
LCC	Lewis County Code
MMC	Montesano Municipal Code
NMFS	National Marine Fisheries Service
NWI	National Wetlands Inventory
NWIFC	Northwest Indian Fisheries Commission
OHWM	ordinary high water mark
OMC	Oakville Municipal Code
PEM	palustrine emergent
PEM1A	palustrine emergent persistent temporarily flooded
PEM1C	palustrine emergent persistent continuously saturated
PFO	palustrine forested
PFOC	palustrine forested seasonally flooded
PHS	Priority Habitats and Species
PSS	palustrine scrub-shrub
PSSC	palustrine scrub-shrub seasonally flooded
project	Fiber Optic Cable Line Project
R2UBH	riverine lower perennial unconsolidated bottom permanently flooded
R3UBH	riverine upper perennial unconsolidated bottom permanently flooded
R4SBC	riverine intermittent streambed seasonally flooded
R5UBH	riverine unknown perennial unconsolidated bottom permanently flooded
RIV	Riverine
ROW	right-of-way
Sackett	Sackett Et Ux. V EPA Et Al
SMZ	Shoreline Management Zone
SR	state route
SWIFD	Statewide Washington Integrated Fish Distribution
TCC	Thurston County Code
TESC	temporary erosion and sediment control

U.S.	United States
US-12	U.S. Route 12
USACE	U.S. Army Corps of Engineers
USDA	U.S. Department of Agriculture
USFWS	U.S. Fish and Wildlife Service
WAC	Washington Administrative Code
WDFW	Washington State Department of Fish and Wildlife
WNHP	Washington State Natural Heritage Program
WOTUS	Waters of the U.S.
WRIA	Water Resource Inventory Area

1.0 INTRODUCTION

A consultant team led by David Evans and Associates, Inc. (DEA) has been hired by Cannon Companies to support permitting efforts and site research for the Fiber Optic Cable Line Project (project). The purpose of this report is to summarize findings from critical area study on wetlands, streams, and fish and wildlife habitat conservation areas (FWHCAs). Sources of information used to prepare this report included field visits, a desktop review of critical areas maps, environmental information, demographic and economic information, and geographic information system (GIS) data from numerous jurisdictions and state and federal agencies.

The proposed project alignment spans the following jurisdictions: Grays Harbor County, Thurston County, Lewis County; the cities of Aberdeen, Centralia, Elma, Hoquiam, Montesano, and Oakville. The project is in Water Resource Inventory Areas (WRIA) 22, Lower Chehalis and 23, Upper Chehalis (Ecology 2026). The project vicinity map is displayed in **Appendix A** (Figure A-1).

1.1 Project Description

The Grays Harbor Fiber Optic Cable project will install a new fiber optic cable underground along an approximately 79-mile route from just east of Centralia, Washington to near Ocean Shores, Washington (the “fiber optic route”). The line will be installed primarily within existing road and railroad rights of way (ROW).

The project alignment is broken into three segments:

- Segment 1 runs adjacent to State Route (SR) 109 beginning on the east edge of Hogans Corner in Unincorporated Grays Harbor County at the intersection of SR-109 and Hale Avenue, and continues east to the intersection of SR-109 and Paulsen Road within the City of Hoquiam.
- Segment 2 runs adjacent to the railroad ROW from the intersection of SR-109 and Paulsen Road within the City of Hoquiam, to just east of the intersection of South Fleet Street and United States (U.S.) Route 12 (US-12) within the City of Aberdeen, where the fiber optic line then changes course to be adjacent to US-12. From there, the fiber optic line continues along US-12, turning south along Aldergrove Drive just west of the City of Montesano, until it returns to its course along the railroad ROW. From there, the fiber optic line continues east along the railroad ROW through multiple jurisdictions until reaching the intersection of North Tower Avenue & East 6th Street in the City of Centralia.
- Segment 3 runs adjacent to arterial roadways between the intersection of North Tower Avenue and East 6th Street in the City of Centralia and the intersection of Little Hanaford Road and Jones Road just east of Nulls Crossing in Unincorporated Lewis County.

The fiber optic line will consist of two 2-inch conduits buried underground using trenching or horizontal directional drilling (HDD). Burial depth will be between 3.5 feet to 5 feet below ground surface; however, the burial depth below a stream crossing will be at a minimum of 10 feet below the estimated depth of scour. Crossing at major rivers, such as the Wishkah and Hoquiam Rivers, will be considerably deeper, typically at least 25 feet below scour depth.

The fiber optic line will be installed adjacent to paved road surfaces or within the railroad ROW. For installation adjacent to roads, the line will be installed either on the gravel shoulder or side slope of the roadway fill prism. For installation within the railroad ROW, the line will typically be installed 25 feet from the tracks but in some locations it could be as close as 10 feet from the tracks depending on local topography and obstacles. A typical working area 10 feet wide will be utilized, expanded, contracted, or utilizing lane closures as needed to accommodate local topography and avoid wetland impacts.

Bore pit entrances and exits for HDD will be located throughout the alignment. A backhoe will be utilized to excavate the bore pits. Excavated soils will be temporarily stockpiled adjacent to the active work area and utilized as backfill. Work areas at either end of bored segments will be selected by the contractor to avoid impacting native woody vegetation within wetland or stream buffers. The bore pits are anticipated to be 4 feet by 6 feet and 4 feet deep. Handhold vaults will be spaced across the alignment to allow access to the fiber optic lines. The handhole/vaults will be 3 feet by 5 feet and 3 feet deep. Small marker posts will be placed above each vault to aid in vault location and prevent accidental damage. A small electronics shed will be constructed, on disturbed ground, near the town of Elma, Wahington.

Segment 1 will have 48 vaults and 47 bore pits. Segment 2 will have 199 vaults and 227 bore pits. Segment 3 will have 30 vaults and 31 bore pits. The total estimated excavation for the 282 vaults is 470 cubic yards (45 cubic feet per handhole/vault) and for the 305 bore pits is 1,084 cubic yards (96 cubic feet per bore pit). Materials excavated from the handholes vaults and bore pits will be used as backfill as needed and/or will be disposed of according to jurisdictional requirements.

1.2 Report Limitations

This report is intended to meet the submittal requirements for wetlands and streams as described in existing critical area ordinances for each jurisdiction the project intersects. FWHCAs are described based on readily available public domain data only. Information provided does not meet critical area reporting requirements for other critical areas such as critical aquifer recharge areas (CARAs), frequently flooded areas, or geologically hazardous areas.

The wetland and stream boundaries described herein are the professional opinion of DEA staff based on the circumstances and site conditions at the time of this study, and best available science. Local, state, and federal jurisdictions make final determinations of jurisdictional boundaries.

2.0 METHODOLOGY

2.1 Preliminary Research

Wetlands, streams, and other critical areas within the area of potential impact (API) were determined and/or delineated, based on field indicators and resource data. Background information reviewed included, but was not limited to, the following sources:

- Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FEMA 2026);
- National Marine Fisheries Service (NMFS) Endangered Species Act (ESA) Essential Fish Habitat (EFH) Mapper (NMFS 2026a);
- NMFS Critical Habitat Mapper (NMFS 2026b);
- NMFS Species and Habitat Application (NMFS 2026c);
- U.S. Department of Agriculture (USDA) Natural Resources Conservation Service Web Soil Survey (USDA 2026);
- U.S. Fish and Wildlife Service (USFWS) National Wetlands Inventory (NWI) web mapper (USFWS 2026a);
- USFWS Information for Planning and Consulting (IPaC) Web Tool (USFWS 2026b);
- Northwest Indian Fisheries Commission (NWIFC) Statewide Washington Integrated Fish Distribution (SWIFD) online data portal (NWIFC 2026);
- Washington State Department of Ecology (Ecology) Water Quality Atlas tool (Ecology 2026);
- Washington State Department of Fish and Wildlife (WDFW) Washington State Fish Passage map (WDFW 2026a);
- WDFW Priority Habitats and Species (PHS) on the Web and PHS List (WDFW 2026b; WDFW 2008);
- WDFW SalmonScape web map (WDFW 2026c);
- Washington State Department of Natural Resources (DNR) Forest Practices Application Review System (FPARS) Activity Mapping Tool (DNR 2026a);
- DNR Washington State Natural Heritage Program (WNHP) Data Explorer (DNR 2026b);
- DNR WNHP Ecological Integrity Assessment (EIA) (DNR 2026c);
- DNR Geologic Information Portal (DNR 2021);
- Grays Harbor County MapSifter (Grays Harbor County 2026);
- Lewis County GIS Web Map (Lewis County 2026);
- Thurston County Show Me Everything Map (Thurston County 2026);
- City of Elma Regrid webmap (Elma 2026); and
- Google™ Earth Pro Mapping.

2.2 Field Investigation

DEA field staff performed multiple site visits in September, October, and November 2025 to assess sensitive areas and site characteristics, delineate wetlands, and assess stream ordinary high water marks (OHWMs). Wetlands were identified using the routine approach described in the Wetland Delineation Manual and the Regional Supplement to the U.S. Army Corps of Engineers (USACE) Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region (USACE 1987; USACE 2010). Wetlands were classified using the USFWS wetland classification system (Cowardin et al. 1979). Plant species were identified according to the revised National Wetland Plant List (USACE 2020) as well as A Field Guide to the Common Wetland Plants of Western Washington & Northwestern Oregon (Cooke 1997), Plants of the Pacific Northwest Coast (Pojar and MacKinnon 1994), and Flora of the Pacific Northwest (Hitchcock 2018). Wetlands were then rated using methodology outlines in Ecology's 2014 update of the Washington State Wetland Rating System for Western Washington (Hruby 2014).

Wetland boundaries, data plot, and stream OHWM locations were mapped with high accuracy Trimble DA2 GPS units. All wetland boundaries, classifications, and assigned buffer widths are subject to verification by the applicable jurisdiction.

The OHWM and the mean high water level are defined by USACE and Ecology. The USACE defines the OHWM as "that line on the shore established by the fluctuations of water and indicated by physical characteristics such as a clear, natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas." Ecology's guidance defines the OHWM for state waters similarly (Anderson et al. 2016). Typical physical characteristics used when making an OHWM determination, to the extent that they can be identified, and are deemed reasonably reliable are as follows (USACE 2005; David et al. 2025):

- Natural line impressed on the bank
- Shelving changes in the character of soil
- Destruction of terrestrial vegetation
- Presence of litter and debris wracking
- Vegetation matted down, bent, or absent
- Sediment sorting
- Leaf litter disturbed or washed away
- Scour
- Deposition
- Multiple observed flow events
- Bed and banks
- Water staining
- Change in plant community

On December 30, 2022, the Environmental Protection Agency (EPA) and the USACE announced the final "Revised Definition of 'Waters of the U.S.' (WOTUS)" rule. On January 18, 2023, the rule was published in the Federal Register, and the rule took effect on March 20, 2023. The agencies developed the 2023 Rule with consideration of the relevant provisions of the Clean Water Act and the statute as a whole, relevant Supreme Court case law, and the agencies' technical expertise after more than 45 years of implementing the longstanding pre-2015 "WOTUS" framework (SWS 2023).

On May 25, 2023, the U.S. Supreme Court issued a decision affecting the definition of WOTUS in *Sackett Et Ux. V EPA Et Al (Sackett)*. On November 17, 2025, the EPA and the USACE announced proposed further changes and clarifications to the definition of WOTUS. The proposed rule is intended to provide formal guidance in line with the Supreme Court's *Sackett* decision and is expected to significantly limit federal jurisdiction over wetlands and streams.

The new rule removes federal jurisdiction over interstate waters if the only nexus is crossing a state line. Ditches (including roadside ditches) constructed or excavated entirely in dry land will be exempt from federal jurisdiction. The proposed rule emphasizes that groundwater is not considered WOTUS. "Excluded waste treatment systems" is clarified to ensure systems are not excluded improperly. Important changes include definitions to "relatively permanent" water bodies, "continuous surface connection," "tributary," "prior converted cropland," and "excluded waste treatment systems," defined as follows:

- To ensure the *Sackett* decision is fully implemented, the term "relatively permanent" is redefined to focus on those waters that are standing or continuously flowing year-round or at least during the wet season. The proposed definition would only include waters that flow during the "wet season" and could exclude all ephemeral streams and likely exclude many intermittent streams.
- The term "tributary" is redefined to ensure only inclusion of bodies of water with relatively permanent flow and defined bed and banks that connect to a downstream traditional navigable water either directly or through one or more waters or features that convey relatively permanent flow.
- The term "continuous surface connection" is redefined to fully implement the *Sackett* decision. The proposed definition would require wetlands to meet a two-part test to be considered jurisdictional: 1) they must abut a jurisdictional water and 2) they must have surface water at a minimum during the wet season.
- The term "prior converted cropland" is clarified so that such farmland only loses its designation if it is abandoned and "has reverted to wetlands". This provides additional clarification on abandonment to help agricultural producers implementing good farming practices.

The new regulation would limit jurisdiction to only those waterways with relatively permanent flow, connected to traditional navigable waters by waterbodies that also "convey relatively permanent flow." The proposed regulation specifies that "a tributary does not include a body of water that contributes surface water flow to a downstream jurisdictional water through a feature

such as a channelized non-jurisdictional surface water feature, subterranean river, culvert, dam, tunnel or similar artificial feature, or through a debris pile, boulder field, wetland, or similar natural feature, if such feature does not convey relatively permanent flow”. Wetlands are only regulated if touching such regulated waterbodies and have “continuous surface connection”. The revised definition could significantly limit the federal jurisdiction of streams and wetlands. More reliance on wetland and stream protection will fall on the states to regulate aquatic resources within their boundaries (SWS 2025).

3.0 REGULATORY REQUIREMENTS

3.1 Grays Harbor County Regulations

Grays Harbor County Code (GHCC) details critical area regulations under GHCC Chapter 18.06, categorized as: wetlands, CARAs, frequently flooded areas, geologically hazardous areas, and FWHCAs. Relevant to this report, the definitions for wetlands, FWHCAs, and streams are explored further below. Shoreline management zone (SMZ) regulations are detailed in Grays Harbor County Shoreline Master Program (Grays Harbor County 2023). Critical area assessment report requirements are addressed in GHCC 18.06.180. Additional critical area regulations are detailed in **Appendix B**.

3.1.1 Wetlands

Addressed in GHCC 18.02.010, "wetland" means an area that is 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. Wetlands generally include swamps, marshes, bogs, and similar areas. Wetlands do not include those artificial wetlands intentionally created from non-wetland sites, including, but not limited to, irrigation and drainage ditches, grass-lined swales, canals, detention facilities, wastewater treatment facilities, farm ponds, and landscape amenities, or those wetlands created after July 1, 1990 that were unintentionally created as a result of the construction of a road, street, or highway. Wetlands may include those artificial wetlands intentionally created from non-wetland areas to mitigate the conversion of wetlands.

3.1.2 FWHCAs

Addressed in GHCC 18.02.010, "FWHCAs" means land management for maintaining populations of species in suitable habitats within their natural geographic distribution so that the habitat available is sufficient to support viable populations over the long-term and isolated subpopulations are not created. This does not mean maintaining all individuals of all species at all times, but it does mean not degrading or reducing populations or habitats so that they are no longer viable over the long term. Cooperative planning and coordination should occur to help assure long-term population viability.

FWHCAs contribute to the state's biodiversity and occur on both publicly and privately owned lands. Designing these areas is an important part of land use planning and appropriate development densities, urban growth area boundaries, open space corridors, and incentive-based land conservation and stewardship programs.

FWHCAs include:

1. Areas where endangered, threatened, and sensitive species have a primary association;
2. Habitats and species of local importance, as determined locally;
3. Commercial and recreational shellfish areas;
4. Kelp and eelgrass beds; herring, smelt, and other forage fish spawning areas;

5. Naturally occurring ponds under twenty (20) acres and their submerged aquatic beds that provide fish or wildlife habitat;
6. Waters of the state;
7. Lakes, ponds, streams, and rivers planted with game fish by a governmental or tribal entity; and
8. State natural area preserves, natural resource conservation areas, and state wildlife areas.

3.1.3 Streams

Addressed in GHCC 18.02.010, "stream" means an area where open surface water produces a defined channel or bed, not including irrigation ditches, canals, storm or surface water runoff devices, or other entirely artificial watercourses, unless they are used by salmonids or are used to convey a watercourse naturally occurring prior to construction. A channel or bed need not contain water year-round, provided there is evidence of at least intermittent flow during years of normal rainfall.

3.2 Lewis County Regulations

Lewis County Code (LCC) details critical area regulations under LCC Chapter 17.38, categorized as: wetlands, FWHCAs, geologically hazardous areas, CARAs, and frequently flooded areas. Relevant to this report, the definitions for wetlands, FWHCAs, and streams are explored further below. SMZ regulations are detailed in the Lewis County Shoreline Master Program (Lewis County 2021). Critical area assessment report requirements are addressed in LCC 17.38.070. Additional critical area regulations are detailed in **Appendix B**.

3.2.1 Wetlands

Addressed in LCC 17.10.230, "wetlands" are those 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 adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas. Wetlands do not include those artificial wetlands intentionally created from nonwetland sites, including, but not limited to, irrigation and drainage ditches, grass-lined swales, canals, detention facilities, wastewater treatment facilities, farm ponds, and landscape amenities, or those wetlands created after July 1, 1990, that were unintentionally created as a result of the construction of a road, street, or highway. Wetlands may include those artificial wetlands intentionally created from nonwetland areas to mitigate the conversion of wetlands.

3.2.2 FWHCAs

Addressed in LCC 17.38.400, FWHCAs are areas with which endangered, threatened, and sensitive species have a primary association. FWHCAs also include habitats and species of local importance, including waters of the state, lakes, ponds, and terrestrial and riparian habitats that are essential to their protection.

3.2.3 Streams

Addressed in LCC 17.10.190, “streams” means those areas where naturally occurring surface waters flow sufficiently to produce a defined channel or bed which demonstrates clear evidence of the passage of water, including, but not limited to, bedrock channels, gravel beds, sand and silt beds, and defined-channel swales. The channel or bed need not contain water during the entire year. The definition does not include watercourses that were created entirely by artificial means, such as irrigation ditches, canals, roadside ditches, or storm or surface water runoff features, unless the artificially created watercourse contains salmonids or conveys a stream that was naturally occurring prior to the construction of the artificially created watercourse.

3.3 Thurston County Regulations

Thurston County Code (TCC) details critical area regulations under TCC Title 24, categorized as: CARAs, geologic hazard areas, FWHCAs, flood and channel migration hazard areas, and wetlands. Relevant to this report, the definitions for wetlands, FWHCAs, and streams are explored further below. SMZ regulations are detailed in the Thurston County Shoreline Master Program (Thurston County 2023). Critical area report requirements are addressed in TCC 24.35.260. Additional critical area regulations are detailed in **Appendix B**.

3.3.1 Wetlands

Addressed in TCC 24.03.010, "wetland" or "wetlands" means areas that are inundated or saturated by surface water 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, and other areas meeting the definition of wetland under Revised Code of Washington 36.70A.030, as amended. Wetlands generally include swamps, marshes, bogs, and similar areas. Wetlands do not include those artificial wetlands intentionally created from non-wetland sites, including, but not limited to, irrigation and drainage ditches, grass-lined swales, canals, detention facilities, wastewater treatment facilities, farm ponds, and landscape amenities, or those wetlands created after July 1, 1990, that were unintentionally created as a result of the construction of a road, street, or highway. Wetlands may include those artificial wetlands intentionally created from non-wetland areas in order to mitigate conversion of natural wetlands. Areas below the OHWM of a water body, including but not limited to marine waters, lakes, ponds, streams, and rivers, may also qualify as wetlands if they meet the criteria of the 1987 U.S. Army Corps of Engineers Wetlands Delineation Manual and the 2008 Interim Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region (USACE 1987; USACE 2008).

3.3.2 FWHCAs

Addressed in TCC 24.03.010, "FWHCAs" are areas that serve a critical role in sustaining needed habitats and species for the functional integrity of the ecosystem, and which, if altered, may reduce the likelihood that the species will persist over the long term. These areas may include, but are not limited to, rare or vulnerable ecological systems, communities, and habitat or habitat elements

including seasonal ranges, breeding habitat, winter range, and movement corridors; and areas with high relative population density or species richness. These also include locally important habitats and species.

FWHCAs that must be considered for classification and designation include:

- A. Areas where endangered, threatened, and sensitive species have a primary association;
- B. Habitats and species of local importance, as determined locally;
- C. Commercial and recreational shellfish areas;
- D. Kelp and eelgrass beds; herring, smelt, and other forage fish spawning areas;
- E. Naturally occurring ponds under twenty acres and their submerged aquatic beds that provide fish or wildlife habitat;
- F. Waters of the state;
- G. Lakes, ponds, streams, and rivers planted with game fish by a governmental or tribal entity;
- H. State natural area preserves, natural resource conservation areas, and state wildlife areas; and
- I. Any other habitat areas as defined by Washington Administrative Code (WAC) 365-190-130, as amended.

3.3.3 Streams

Addressed in TCC 24.03.010, "streams" means those areas of Thurston County where surface waters flow sufficiently to produce a defined channel or bed. A "defined channel or bed" is an area which demonstrates clear evidence of the passage of water and includes but is not limited to bedrock channels, gravel beds, sand and silt beds and defined-channel swales. The channel or bed need not contain water year-round. This definition is not meant to include irrigation ditches, canals, storm or surface water runoff devices or other entirely artificial watercourses unless they are used by salmon or used to convey streams naturally occurring prior to construction.

3.4 City of Aberdeen Regulations

The City of Aberdeen's critical area regulations are presented in Aberdeen Municipal Code (AMC) Chapter 14.100. AMC 14.50.810 defines critical areas as: wetlands, areas with a critical recharging effect on aquifers used for potable waters (i.e., CARAs), FWHCAs, frequently flooded areas, and geologically hazardous areas. Relevant to this report, the definitions for wetlands, FWHCAs, and streams are explored further below. SMZ regulations are detailed under AMC Chapter 18.16 and in the City of Aberdeen Shoreline Master Program (Aberdeen 2017). Critical area report requirements are described in AMC 14.100.060. Additional critical area regulations are detailed in **Appendix B**.

3.4.1 Wetlands

Addressed in AMC 14.50.810, "wetland" or "wetland areas" means 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. Wetlands generally include swamps, marshes, bogs, and similar areas. Wetlands do not include those artificial wetlands intentionally created from nonwetland sites, including, but not limited to, irrigation and drainage ditches, grass-lined swales, canals, detention facilities, wastewater treatment facilities, farm ponds, and landscape amenities or those wetlands created after July 1, 1990, that were unintentionally created as a result of the construction of a road, street, or highway. However, wetlands may include those artificial wetlands intentionally created from nonwetland areas to mitigate the conversion of wetlands, if permitted by Grays Harbor County or the City of Aberdeen.

3.4.2 FWHCAs

Addressed in AMC 14.50.810, “FWHCAs” means areas that serve a critical role in sustaining needed habitats and species for the functional integrity of the ecosystem, and which, if altered, may reduce the likelihood that the species will persist over the long term. These areas may include, but are not limited to, rare or vulnerable ecological systems, communities, and habitat or habit elements including seasonal ranges, breeding habitat, winter range, and movement corridors; and areas with high relative population density or species richness. The City of Aberdeen has designated locally important habitats and species. “Habitats of local importance” designated as FWHCAs include those areas found to be locally important to the City of Aberdeen. “FWHCAs” does not include such artificial features or constructs as irrigation delivery systems, irrigation infrastructure, irrigation canals, or drainage ditches that lie within the boundaries of, and are maintained by, a port district or an irrigation district or company.

3.4.3 Streams

Addressed in AMC 14.50.810, “stream” means a naturally occurring body of periodic or continuously flowing water. Shoreline water bodies are those streams where: (1) the mean annual flow is greater than twenty (20) cubic feet per second and (2) the water is contained within a channel. A channel is an open conduit either naturally or artificially created. This definition does not include artificially created irrigation, return flow or stock watering channels (WAC 173-22-030(8)).

3.5 City of Centralia Regulations

Centralia Municipal Code (CMC) details critical area regulations under CMC Title 16, categorized as: wetlands, flood hazard areas, FWHCAs, landslide hazard areas, and CARAs. Relevant to this report, the definitions for wetlands and FWHCAs are explored further below. SMZ regulations are detailed in the Centralia Shoreline Master Program (Centralia 2020). Critical area report requirements are addressed in CMC 16.17.060. Additional critical area regulations are detailed in **Appendix B**.

3.5.1 Wetlands

Addressed in CMC 16.16.160, “wetlands” means those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal

circumstances do support, a prevalence of vegetation adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas. Wetlands do not include those artificial wetlands intentionally created from nonwetland sites, including, but not limited to, irrigation and drainage ditches, grass-lined swales, canals, detention facilities, wastewater treatment facilities, farm ponds, and landscape amenities, or those wetlands created after July 1, 1990, that were unintentionally created as a result of the construction of a road, street, or highway. Wetlands may include those artificial wetlands intentionally created from nonwetland areas to mitigate the conversion of wetlands.

3.5.2 FWHCAs

Addressed in CMC 16.20.030, FWHCAs are those areas identified as being of critical importance to the maintenance of fish, wildlife, or plant species, including:

- A. Areas with which federally or state listed species of fish or wildlife have a primary association;
- B. State priority habitats and species of local importance as designated by the city;
- C. Naturally occurring ponds under twenty acres and their submerged aquatic beds that provide fish and wildlife habitat;
- D. Waters of the state, including all water bodies classified by the Washington State Department of Natural Resources water typing classification system as detailed in WAC 222-16-030; to include the Chehalis River, Skookumchuck River, any creeks and their associated wetlands and tributaries;
- E. Lakes, ponds, streams, and rivers planted with game fish by a federal, state, or tribal government;
- F. State natural area preserves and natural resource conservation areas;
- G. Areas of rare plant species and high quality ecosystems as identified by the Washington State Department of Natural Resources through the Natural Heritage Program; and
- H. Habitats and species as identified by the Washington State Department of Fish and Wildlife's Priority Habitats and Species List and Management Recommendations, as written or hereafter amended for the Centralia area.

3.5.3 Streams

As defined in the City of Centralia Shoreline Master Program, a “stream” is a naturally occurring body of periodic or continuously flowing water where: a) the mean annual flow is greater than 20 cubic feet per second and b) the water is contained within a channel (WAC 173-22-030(8); Centralia 2020).

3.6 City of Elma Regulations

Elma Municipal Code (EMC) details critical area regulations under EMC Title 14, categorized as: wetlands, CARAs, geologically hazardous areas, and FWHCAs. Relevant to this report, the definitions for wetlands and FWHCAs, and streams are explored further below. SMZ regulations

are detailed in the Elma Shoreline Master Program (Elma 2016). Critical area report requirements are addressed in EMC 14.35.150. Additional critical area regulations are detailed in **Appendix B**.

3.6.1 Wetlands

Addressed in EMC 14.34.080, "wetlands" mean areas that are inundated or saturated by surface water or groundwater 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. Wetlands generally include swamps, marshes, bogs, and similar areas. Wetlands do not include those artificial wetlands intentionally created from nonwetland sites, including, but not limited to, irrigation and drainage ditches, grass-lined swales, canals, detention facilities, wastewater treatment facilities, farm ponds, and landscape amenities, or those wetlands created after July 1, 1990, that were unintentionally created as a result of the construction of a road, street, or highway. Wetlands may include those artificial wetlands intentionally created from nonwetland areas to mitigate the conversion of wetlands.

3.6.2 FWHCAs

Addressed in EMC 14.34.080, "FWHCAs" are areas that serve a critical role in sustaining needed habitats and species for the functional integrity of the ecosystem, and which, if altered, may reduce the likelihood that the species will persist over the long term. These areas may include, but are not limited to, rare or vulnerable ecological systems, communities, and habitat or habitat elements including seasonal ranges, breeding habitat, winter range, and movement corridors; and areas with high relative population density or species richness. The city may also designate locally important habitats and species. FWHCAs do not include such artificial features or constructs as irrigation delivery systems, irrigation infrastructure, irrigation canals, or drainage ditches that lie within the boundaries of, and are maintained by, a port district or an irrigation district or company.

3.6.3 Streams

Streams are not defined by EMC.

Addressed in EMC 14.34.080, "OHWM " on all waters is that mark that will be found by examining the bed and banks and ascertaining where the presence and action of waters are so common and usual, and so long continued in all ordinary years, as to mark upon the soil a character distinct from that of the abutting upland, in respect to vegetation as that condition exists on June 1, 1971, as it may naturally change thereafter, or as it may change thereafter in accordance with permits issued by the city or Ecology; provided, that in any area where the OHWM cannot be found, the OHWM adjoining fresh water shall be the line of mean high water.

3.7 City of Hoquiam Regulations

The City of Hoquiam's critical area regulations are presented in Hoquiam Municipal Code (HMC) Chapter 11.06. HMC 11.06.010 defines critical areas as: wetlands, areas with a critical recharging effect on aquifers used for potable waters (i.e., CARAs), FWHCAs, frequently flooded areas, and geologically hazardous areas. Relevant to this report, the definitions for wetlands, FWHCAs, and

streams are explored further below. SMZ regulations are detailed under the Hoquiam Shoreline Master Program in HMC Chapter 11.05. Critical area report requirements are described in HMC 11.06.190. Additional critical area regulations are detailed in **Appendix B**.

3.7.1 Wetlands

Addressed in HMC 11.06.010, “wetland” or “wetlands” means areas that are inundated or saturated by surface water 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. Wetlands generally include swamps, marshes, bogs, and similar areas. Wetlands do not include those artificial wetlands intentionally created from nonwetland sites, including, but not limited to, irrigation and drainage ditches, grass-lined swales, canals, detention facilities, wastewater treatment facilities, farm ponds, and landscape amenities, or those wetlands created after July 1, 1990, that were unintentionally created as a result of the construction of a road, street, or highway. Wetlands may include those artificial wetlands intentionally created from nonwetland areas created to mitigate conversion of wetlands.

3.7.2 FWHCAs

Addressed in HMC 11.06.010, “FWHCAs” means land management for maintaining populations of species in suitable habitats within their natural geographic distribution so that the habitat available is sufficient to support viable populations over the long term and isolated subpopulations are not created. This does not mean maintaining all individuals of all species at all times, but it does mean not degrading or reducing populations or habitats so that they are no longer viable over the long term.

FWHCAs contribute to the state’s biodiversity and occur on both publicly and privately owned lands. Designating these areas is an important part of land use planning for appropriate development densities, urban growth area boundaries, open space corridors, and incentive-based land conservation and stewardship programs.

(a) FWHCAs that must be considered for classification and designation include:

- (i) Areas where endangered, threatened, and sensitive species have a primary association;
- (ii) Habitats and species of local importance, as determined locally;
- (iii) Commercial and recreational shellfish areas;
- (iv) Kelp and eelgrass beds; herring, smelt, and other forage fish spawning areas;
- (v) Naturally occurring ponds under twenty acres and their submerged aquatic beds that provide fish or wildlife habitat;
- (vi) Waters of the state;
- (vii) Lakes, ponds, streams, and rivers planted with game fish by a governmental or tribal entity; and
- (viii) State natural area preserves, natural resource conservation areas, and state wildlife areas.

3.7.3 Streams

Streams are not defined by HMC.

“OHWM” means that mark which is found by examining the bed and banks of water bodies and ascertaining where the presence and action of waters are so common and usual, and so long continued in all ordinary years, that the soil has a character distinct from that of the abutting upland in respect to vegetation.

3.8 City of Montesano Regulations

Montesano Municipal Code (MMC) details critical area regulations under MMC 14.30.030, categorized as: wetlands, CARAs, frequently flooded areas, geologically hazardous areas, and FWHCAs. Relevant to this report, the definitions for wetlands, FWHCAs, and streams are explored further below. SMZ regulations are detailed in the Montesano Shoreline Master Program (Montesano 2023). Critical area study requirements are addressed in MMC 14.30.070. Additional critical area regulations are detailed in **Appendix B**.

3.8.1 Wetlands

Addressed in MMC 14.30.020, "wetlands, regulated" is defined in the ordinances of the city, or in the absence of such a definition, as defined with the provisions of the regulations issued by the Washington State Department of Ecology.

3.8.2 FWHCAs

Addressed in MMC 14.30.020, "FWHCAs" is defined as follows:

- (1) Areas with which federally (50 Code of Federal Regulations (CFR) 17.11 and 50 CFR 17.12) or state (WAC 232-12-011 and 232-12-014) listed endangered and threatened species of fish and wildlife have a primary association;
- (2) Lakes, ponds, streams and rivers planted with game fish, including fish planted under the auspices of a federal, state, local, or tribal program which supports priority fish species as identified by the Department of Wildlife.

3.8.3 Streams

Defined in the City of Montesano Shoreline Master Program (Montesano 2023), a “stream” is a naturally occurring body of periodic or continuously flowing water. Shoreline waterbodies are those streams where: a) the mean annual flow is greater than 20 cubic feet per second and b) the water is contained within a channel. A channel is an open conduit either naturally or artificially created. This definition does not include artificially created irrigation, return flow, or stock watering channels (WAC 173-22-030(8)).

3.9 City of Oakville Regulations

Oakville Municipal Code (OMC) details critical area regulations under OMC Chapter 14.16, categorized as: wetlands, areas with a critical recharging effect on aquifers used for potable water (i.e., CARAs), FWHCAs, frequently flooded areas, and geologically hazardous areas. Relevant to this report, the definitions for wetlands, FWHCAs, and streams are explored further below. Critical area study requirements are addressed in OMC 16.08.070. Additional critical area regulations are detailed in **Appendix B**.

3.9.1 Wetlands

Addressed in OMC 17.08.020, "wetland" means areas that are inundated or saturated by surface water 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. Wetlands generally include swamps, marshes, bogs, and similar areas. Wetlands do not include those artificial wetlands intentionally created from nonwetland sites, including, but not limited to, irrigation and drainage ditches, grass-lined swales, canals, detention facilities, wastewater treatment facilities, farm ponds, and landscape amenities, or those wetlands created after July 1, 1990, that were unintentionally created as a result of the construction of a road, street, or highway. Wetlands may include those artificial wetlands intentionally created from nonwetland areas created to mitigate conversion of wetlands.

3.9.2 FWHCAs

Addressed in OMC 17.08.020, "FWHCA" means land managed for maintaining species in suitable habitats within their natural geographic distribution so that isolated subpopulations are not created. This does not mean maintaining all individuals of all species at all times, but it does mean cooperative and coordinated land use planning is critically important among counties and cities in a region. In some cases, intergovernmental cooperation and coordination may show that it is sufficient to assure that a species will usually be found in certain regions across the state. FWHCAs include areas with which endangered, threatened, and sensitive species have a primary association; waters of the state; state natural area preserves and natural conservation areas; and streams and rivers planted with game fish by a governmental agency.

3.9.3 Streams

Streams are not defined by OMC.

Addressed in OMC 17.08.020, "OHWM" means the mark on all lakes, streams, and tidal water found by examining the bed and banks and ascertaining where the presence and action of waters are so common and usual, and so long continued in all ordinary years, as to mark upon the soil a character distinct from that of the abutting upland, in respect to vegetation as that condition exists on June 1, 1971, as it may naturally change thereafter, or as it may change thereafter in accordance with permits issued by a local government or the department; provided that in any area where the OHWM cannot be found, the OHWM adjoining fresh water shall be the line of mean high water.

4.0 RESULTS

4.1 Project Soils

4.1.1 Geological Subsurface

The geological subsurface at the API consists of Quaternary age unconsolidated or semiconsolidated alluvial clay, silt, sand, gravel, and (or) cobble deposits. These soils locally include modified land and artificial fill, peat, muck, and diatomite, as well as beaches, dunes, lacustrine, estuarine, or marsh systems, landslides, lahar, glacial, or colluvial deposits. These soils could also locally include volcanoclastic or tephra deposits, modified land and artificial fill (DNR 2021).

4.1.2 Soil Groups

Hydrologic soil groups are based on estimates of runoff potential and the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

Group A soils have a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B soils have a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C soils have a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D soils have a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

For soils that are assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter corresponds with drained areas and the second is for undrained areas. Only the soils that, in their natural condition, are in Group D are assigned to dual classes.

4.1.3 Soil Types

Soil types are provided in **Table 1** below by jurisdiction. The soil mapbook can be viewed in **Appendix A** (Figure A-2). Additional information and formal soil descriptions can be found using the USDA online web soil survey (USDA 2026). The column for hydric soils indicates greater than 90-percent inclusion of hydric soils in the unit type and a higher likelihood of wetlands present.

Table 1. Soil Types Within the API

Jurisdiction	Soil Unit Type	Hydrologic Group	Hydric Soil (Yes/No)	Area Within API (Acres)
Grays Harbor County	Aabab silt loam	C/D	No	10.57
	Astoria silt loam, 3 to 8 percent slopes	B	No	16.39
	Astoria silt loam, 8 to 30 percent slopes	B	No	14.94
	Bear Prairie silt loam, 0 to 3 percent slopes	B	No	41.96
	Buckpeak silt loam, 30 to 65 percent slopes	B	No	8.58
	Buckpeak silt loam, 65 to 90 percent slopes	B	No	53.10
	Buckpeak silt loam, 8 to 30 percent slopes	B	No	12.51
	Calawah silt loam, 1 to 8 percent slopes	B	No	270.54
	Calawah silt loam, 8 to 30 percent slopes	B	No	60.42
	Calawah silt loam, cool, 1 to 8 percent slopes	B	No	67.58
	Carstairs very gravelly loam, 1 to 8 percent slopes	A	No	19.84
	Centralia loam, 1 to 8 percent slopes	B	No	7.89
	Centralia loam, 8 to 30 percent slopes	B	No	41.44
	Chehalis silt loam	B	No	38.96
	Chehalis-Maytown complex, 0 to 10 percent slopes	B	No	9.50
	Cloquato silt loam	B	No	39.56
	Daviscreek-Huttula complex, 0 to 10 percent slopes	A	No	50.47
	Delezene-Rony complex, 0 to 8 percent slopes	B	No	64.55
	Eld-Fordprairie complex, 0 to 12 percent slopes	B	No	5.35
	Eld-Fordprairie-Elma complex, 0 to 15 percent slopes	B	No	21.99
	Elma-Fordprairie complex, 0 to 12 percent slopes	B	No	0.59
	Elochoman silt loam, 8 to 30 percent slopes	B	No	14.38
	Fluvaquents, tidal	C/D	Yes	7.03
	Fordprairie-Eld-Rennie complex, 0 to 10 percent slopes	C	No	2.71
	Fordprairie-Roundtree complex, 0 to 10 percent slopes	C	No	4.67
	Fordprairie-Roundtree-Water complex, 0 to 10 percent slopes	C	No	13.00
	Gate silty clay loam, 0 to 5 percent slopes	C	No	71.80
	Gate silty clay loam, 5 to 20 percent slopes	C	No	44.89
	Grandmound gravelly sandy loam, 0 to 15 percent slopes	A	No	105.06
	Grehalem silt loam	B	No	35.78
	Hoquiam silt loam, 1 to 8 percent slopes	B	No	100.81
	Hoquiam silt loam, 30 to 65 percent slopes	B	No	18.20
	Hoquiam silt loam, 8 to 30 percent slopes	B	No	12.35

Jurisdiction	Soil Unit Type	Hydrologic Group	Hydric Soil (Yes/No)	Area Within API (Acres)
	Le Bar silt loam, 1 to 8 percent slopes	B	No	0.42
	Le Bar silt loam, 8 to 30 percent slopes	B	No	4.93
	Lyre variant very gravelly sandy loam	A	No	15.56
	Lyre very gravelly loamy sand, 0 to 8 percent slopes	A	No	26.72
	Lytell silt loam, 30 to 65 percent slopes	B	No	14.48
	Lytell silt loam, 65 to 90 percent slopes	B	No	9.60
	Lytell silt loam, 8 to 30 percent slopes	B	No	15.53
	Maytown-Chehalis-Rennie complex, 0 to 10 percent slopes	C	No	17.35
	Maytown-Rennie complex, 0 to 10 percent slopes	C	No	11.31
	Melbourne silt loam, 1 to 8 percent slopes	C	No	0.06
	Melbourne silt loam, 8 to 30 percent slopes	C	No	23.96
	Montesa silt loam, 1 to 8 percent slopes	C	No	24.58
	Mopang silt loam, 30 to 65 percent slopes	B	No	33.17
	Mopang silt loam, 5 to 30 percent slopes	B	No	2.83
	Nemah silty clay loam	D	Yes	5.28
	Newberg silt loam	B	No	15.64
	Nordby very gravelly loam, 1 to 8 percent slopes	A	No	15.50
	Ocosta silty clay loam	D	Yes	147.12
	Olympic clay loam, 8 to 30 percent slopes	C	No	11.00
	Orcas peat	A/D	Yes	3.71
	Pits, gravel		No	5.08
	Raught silt loam, 30 to 65 percent slopes	B	No	3.48
	Raught silt loam, 5 to 30 percent slopes	B	No	22.92
	Rennie silty clay loam	C/D	Yes	38.92
	Rennie silty clay loam, 0 to 5 percent slopes	D	Yes	76.26
	Riverwash		Yes	0.79
	Rony-Gate complex, 0 to 8 percent slopes	C/D	Yes	200.92
	Roundtree loam, 0 to 5 percent slopes	C/D	Yes	0.33
	Salzer silty clay	D	Yes	25.03
	Salzer silty clay loam, 0 to 3 percent slopes	D	Yes	20.30
	Satsop silt loam, 1 to 8 percent slopes	A	No	21.53
	Scatter-Fordprairie-Roundtree complex, 0 to 12 percent slopes	B	No	6.33
	Skamo medial silt loam, 0 to 8 percent slopes	C/D	No	18.75
	Udorthents, level	A	No	27.21
	Water		No	12.21
	Water-Fluvaquents complex, 0 to 3 percent slopes		No	22.55
	Water-Riverwash complex, 0 to 5 percent slopes		No	20.31

Jurisdiction	Soil Unit Type	Hydrologic Group	Hydric Soil (Yes/No)	Area Within API (Acres)
	Wishkah silty clay loam	D	No	23.02
	Zenker silt loam, 65 to 90 percent slopes	B	No	4.93
Lewis County	Buckpeak silt loam, 30 to 65 percent slopes	B	No	12.88
	Centralia loam, 15 to 30 percent slopes	B	No	2.96
	Centralia loam, 8 to 15 percent slopes	B	No	59.43
	Eld-Fordprairie complex, 0 to 12 percent slopes	B	No	0.84
	Fordprairie-Roundtree complex, 0 to 10 percent slopes	C	No	0.14
	Galvin silt loam, 0 to 8 percent slopes	C/D	No	13.65
	Lacamas silt loam, 3 to 8 percent slopes	C/D	No	2.06
	Maytown-Chehalis-Rennie complex, 0 to 10 percent slopes	C	No	8.93
	Melbourne loam, 15 to 30 percent slopes	C	No	28.41
	Melbourne loam, 8 to 15 percent slopes	C	No	11.19
	Nisqually loamy sand	A	No	31.11
	Pits		No	12.98
	Reed silty clay loam	D	No	124.84
	Scamman silty clay loam, 0 to 5 percent slopes	C/D	No	3.53
	Scamman silty clay loam, 15 to 30 percent slopes	C/D	No	18.38
	Scamman silty clay loam, 5 to 15 percent slopes	C/D	No	25.44
	Scatter-Fordprairie-Roundtree complex, 0 to 12 percent slopes	B	No	3.37
	Spanaway gravelly sandy loam	A	No	57.67
	Water		No	0.51
	Water-Riverwash complex, 0 to 5 percent slopes		No	0.99
	Xerorthents, spoils	B	No	0.98
Thurston County	Daviscreek-Huttula complex, 0 to 10 percent slopes	A	No	1.75
	Eld-Fordprairie-Elma complex, 0 to 15 percent slopes	B	No	1.45
	Everson clay loam	D	Yes	0.10
	Gate silty clay loam, 5 to 20 percent slopes	C	No	15.21
	Gate silty clay loam, 5 to 20 percent slopes	C	No	1.03
	Giles silt loam, 0 to 3 percent slopes	B	No	14.86
	Godfrey silty clay loam	C/D	Yes	2.54
	Grandmound gravelly sandy loam, 0 to 15 percent slopes	A	No	66.53
	Indianola loamy sand, 0 to 5 percent slopes	A	No	44.32
	Maytown-Rennie complex, 0 to 10 percent slopes	C	No	11.85
	McKenna gravelly silt loam, 0 to 5 percent slopes	D	Yes	5.71
	Nisqually loamy fine sand, 0 to 3 percent slopes	A	No	7.93

Jurisdiction	Soil Unit Type	Hydrologic Group	Hydric Soil (Yes/No)	Area Within API (Acres)
	Nisqually loamy fine sand, 3 to 15 percent slopes	A	No	61.11
	Nisqually loamy sand	A	No	1.00
	Pits, gravel		No	0.70
	Raught silt loam, 5 to 30 percent slopes	B	No	8.40
	Rennie silty clay loam, 0 to 5 percent slopes	D	Yes	7.67
	Rony-Gate complex, 0 to 8 percent slopes	C/D	No	2.60
	Salkum silty clay loam, 15 to 30 percent slopes	B	No	1.87
	Scatter-Elma complex, 0 to 15 percent slopes	B	No	1.10
	Scatter-Fordprairie-Roundtree complex, 0 to 12 percent slopes	B	No	19.76
	Spanaway gravelly sandy loam, 0 to 3 percent slopes	A	No	205.00
	Spanaway gravelly sandy loam, 3 to 15 percent slopes	A	No	6.61
	Spanaway gravelly sandy loam, 3 to 15 percent slopes	A	No	3.43
	Water		No	1.34
	Water-Fluvaquents complex, 0 to 3 percent slopes		No	1.53
City of Aberdeen	Udorthents, level	A	No	140.72
	Water		No	1.93
	Zenker silt loam, 65 to 90 percent slopes	B	No	45.48
City of Centralia	Chehalis silty clay	B	No	5.65
	Chehalis-Maytown complex, 0 to 10 percent slopes	B	No	13.08
	Eld-Fordprairie complex, 0 to 12 percent slopes	B	No	6.36
	Fordprairie-Roundtree complex, 0 to 10 percent slopes	C	No	0.43
	Indianola loamy sand, 0 to 5 percent slopes	A	Yes	25.42
	Pits		No	5.73
	Reed silty clay loam	D	No	7.19
	Roundtree loam, 0 to 5 percent slopes	C/D	Yes	0.37
	Scatter-Fordprairie-Roundtree complex, 0 to 12 percent slopes	B	No	0.04
	Spanaway gravelly sandy loam	A	No	40.62
	Water		No	1.60
	Xerorthents, spoils	B	No	0.36
City of Elma	Daviscreek-Huttula complex, 0 to 10 percent slopes	A	No	9.07
	Delezene-Rony complex, 0 to 8 percent slopes	B	Yes	16.61
	Eld-Fordprairie-Elma complex, 0 to 15 percent slopes	B	Yes	8.52
	Fordprairie-Roundtree-Water complex, 0 to 10 percent slopes	C	Yes	7.11

Jurisdiction	Soil Unit Type	Hydrologic Group	Hydric Soil (Yes/No)	Area Within API (Acres)
	Grandmound gravelly sandy loam, 0 to 15 percent slopes	A	No	49.63
	Rony-Gate complex, 0 to 8 percent slopes	C/D	Yes	5.92
	Scatter-Elma complex, 0 to 15 percent slopes	B	Yes	0.43
	Xerorthents, 0 to 15 percent slopes	A	Yes	5.41
City of Hoquiam	Calawah silt loam, 8 to 30 percent slopes	B	No	0.05
	Fluvaquents, tidal	C/D	Yes	48.66
	Hoquiam silt loam, 8 to 30 percent slopes	B	No	8.68
	Mopang silt loam, 30 to 65 percent slopes	B	No	5.50
	Udorthents, level	A	No	156.77
	Water		No	4.37
City of Montesano	Bear Prairie silt loam, 0 to 3 percent slopes	B	No	4.21
	Chehalis silt loam	B	Yes	0.13
	Copalis silt loam, 8 to 30 percent slopes	C	No	1.39
	Lyre variant very gravelly sandy loam	A	Yes	12.84
	Orcas peat	A/D	Yes	1.39
	Rennie silty clay loam	C/D	Yes	7.20
	Salzer silty clay	D	Yes	20.81
	Skamo medial silt loam, 0 to 8 percent slopes	C/D	Yes	0.83
	Udorthents, level	A	No	17.97
	Wishkah silty clay loam	D	Yes	5.55
City of Oakville	Centralia loam, 8 to 30 percent slopes	B	No	5.46
	Gate silty clay loam, 5 to 20 percent slopes	C	No	2.39
	Grandmound gravelly sandy loam, 0 to 15 percent slopes	A	No	17.54
	Rennie silty clay loam, 0 to 5 percent slopes	D	Yes	0.40
	Rony-Gate complex, 0 to 8 percent slopes	C/D	No	12.40

4.2 Project NWI Types

Table 2 displays the wide variety of wetland types mapped by the USFWS NWI within the API (USFWS 2026a). The NWI mapbook can be viewed in **Appendix A** (Figure A-3).

Table 2. NWI Types Within API

Jurisdiction	NWI Unit Code	NWI Unit Type	Area Within API (Acres)
Grays Harbor County	E1UBL	Estuarine Subtidal Unconsolidated Bottom Subtidal	4.72
	E2AB/USN	Estuarine Intertidal Aquatic Bed/Unconsolidated Shore Regularly Flooded	2.72
	E2EM1N	Estuarine Intertidal Emergent Persistent Regularly Flooded	4.20
	L1UBH	Lacustrine Limnetic Unconsolidated Bottom Permanently Flooded	5.15
	PEM1/UBF	Palustrine Emergent Persistent/Unconsolidated Bottom Semipermanently Flooded	0.69
	PEM1A	Palustrine Emergent Persistent Temporarily Flooded	4.56
	PEM1Ah	Palustrine Emergent Persistent Temporarily Flooded Diked/Impounded	12.30
	PEM1C	Palustrine Emergent Persistent Continuously Saturated	15.44
	PFO/EM1C	Palustrine Forested/Emergent Persistent Seasonally Flooded	3.71
	PFO1/4C	Palustrine Forested Broad-Leaved Deciduous/Needle-Leaved Evergreen Seasonally Flooded	3.29
	PFO1A	Palustrine Forested Broad-Leaved Deciduous Temporarily Flooded	4.94
	PFO1C	Palustrine Forested Broad-Leaved Deciduous Seasonally Flooded	4.77
	PFO1R	Palustrine Forested Broad-Leaved Deciduous Seasonally Flooded-Fresh Tidal	1.44
	PFO4/1R	Palustrine Forested Needle-Leaved Evergreen/Broad-Leaved Deciduous Seasonally Flooded-Fresh Tidal	0.19
	PFO4/EM1C	Palustrine Forested Broad-Leaved Deciduous/Emergent Persistent Seasonally Flooded	0.87
	PFO4/SS1R	Palustrine Forested Broad-Leaved Deciduous/Scrub-Shrub Broad-Leaved Deciduous Seasonally Flooded	3.72
	PSS/EM1A	Palustrine Scrub-Shrub/Emergent Persistent Temporarily Flooded	1.52
	PSS/EM1C	Palustrine Scrub-Shrub/Emergent Persistent Seasonally Flooded	0.94
	PSS/EM1R	Palustrine Scrub-Shrub/Emergent Persistent Seasonally Flooded-Fresh Tidal	10.44

Jurisdiction	NWI Unit Code	NWI Unit Type	Area Within API (Acres)
	PSS1A	Palustrine Scrub-Shrub BroadLeaved Deciduous Temporarily Flooded	0.59
	PSS1C	Palustrine Scrub-Shrub BroadLeaved Deciduous Seasonally Flooded	9.70
	PUBH	Palustrine Unconsolidated Bottom Permanently Flooded	0.05
	PUBK	Palustrine Unconsolidated Bottom Artificially Flooded	1.54
	R1UBV	Riverine Tidal Unconsolidated Bottom Permanently Flooded-Fresh Tidal	1.13
	R2UBH	Riverine Lower Perennial Unconsolidated Bottom Permanently Flooded	23.37
	R3UBH	Riverine Upper Perennial Unconsolidated Bottom Permanently Flooded	38.80
	R3USC	Riverine Upper Perennial Unconsolidated Shore Seasonally Flooded	0.49
	R4SBC	Riverine Intermittent Streambed Seasonally Flooded	17.07
	R5UBH	Riverine Unknown Perennial Unconsolidated Bottom Permanently Flooded	12.31
Lewis County	L2UBHx	Lacustrine Littoral Unconsolidated Bottom Permanently Flooded Excavated	0.30
	PEM1C	Palustrine Emergent Persistent Continuously Saturated	47.79
	PEM1F	Palustrine Emergent Persistent Semipermanently Flooded	0.28
	PFOA	Palustrine Forested Temporarily Flooded	0.87
	PFOC	Palustrine Forested Seasonally Flooded	29.54
	PSSC	Palustrine Scrub-Shrub Seasonally Flooded	7.86
	PUBFx	Palustrine Unconsolidated Bottom Semipermanently Flooded Excavated	1.48
	R3UBH	Riverine Upper Perennial Unconsolidated Bottom Permanently Flooded	0.19
	R4SBC	Riverine Intermittent Streambed Seasonally Flooded	4.24
	R5UBH	Riverine Unknown Perennial Unconsolidated Bottom Permanently Flooded	2.77
Thurston County	PEM1A	Palustrine Emergent Persistent Temporarily Flooded	2.96
	PFO1A	Palustrine Forested Broad-Leaved Deciduous Temporarily Flooded	0.40
	PFO1C	Palustrine Forested Broad-Leaved Deciduous Seasonally Flooded	0.56

Jurisdiction	NWI Unit Code	NWI Unit Type	Area Within API (Acres)
	PUBK	Palustrine Unconsolidated Bottom Artificially Flooded	0.92
	R2UBH	Riverine Lower Perennial Unconsolidated Bottom Permanently Flooded	2.48
	R4SBC	Riverine Intermittent Streambed Seasonally Flooded	0.46
	R5UBH	Riverine Unknown Perennial Unconsolidated Bottom Permanently Flooded	2.60
City of Aberdeen	E1UBL	Estuarine Subtidal Unconsolidated Bottom Subtidal	5.16
	R3UBH	Riverine Upper Perennial Unconsolidated Bottom Permanently Flooded	0.25
	R4SBC	Riverine Intermittent Streambed Seasonally Flooded	0.48
	R5UBH	Riverine Unknown Perennial Unconsolidated Bottom Permanently Flooded	0.03
City of Centralia	L2UBHx	Lacustrine Littoral Unconsolidated Bottom Permanently Flooded Excavated	0.22
	PEM1C	Palustrine Emergent Persistent Continuously Saturated	1.16
	PFOC	Palustrine Forested Seasonally Flooded	3.79
	PSSC	Palustrine Scrub-Shrub Seasonally Flooded	4.84
	PUBHx	Palustrine Unconsolidated Bottom Permanently Flooded Excavated	0.01
	R3UBH	Riverine Upper Perennial Unconsolidated Bottom Permanently Flooded	0.06
	R5UBH	Riverine Unknown Perennial Unconsolidated Bottom Permanently Flooded	0.96
City of Elma	PEM1A	Palustrine Emergent Persistent Temporarily Flooded	2.12
	PFO1C	Palustrine Forested Broad-Leaved Deciduous Seasonally Flooded	0.20
	PUBK	Palustrine Unconsolidated Bottom Artificially Flooded	0.39
	R3UBH	Riverine Upper Perennial Unconsolidated Bottom Permanently Flooded	0.70
	R3USC	Riverine Upper Perennial Unconsolidated Shore Seasonally Flooded	0.04
	R4SBC	Riverine Intermittent Streambed Seasonally Flooded	0.61
	R4SBC	Riverine Intermittent Streambed Seasonally Flooded	0.45

Jurisdiction	NWI Unit Code	NWI Unit Type	Area Within API (Acres)
	R4SBC	Riverine Intermittent Streambed Seasonally Flooded	0.18
	R5UBH	Riverine Unknown Perennial Unconsolidated Bottom Permanently Flooded	0.12
	R5UBH	Riverine Unknown Perennial Unconsolidated Bottom Permanently Flooded	0.04
City of Hoquiam	E1UBL	Estuarine Subtidal Unconsolidated Bottom Subtidal	4.63
	E2AB/USN	Estuarine Intertidal Aquatic Bed/Unconsolidated Shore Regularly Flooded	0.49
	E2EM1P	Estuarine Intertidal Emergent Persistent Irregularly Flooded	14.83
	PEM1C	Palustrine Emergent Persistent Continuously Saturated	2.08
	PEM1R	Palustrine Emergent Persistent Seasonally Flooded-Fresh Tidal	3.57
	PSS/EM1A	Palustrine Scrub-Shrub/Emergent Persistent Temporarily Flooded	4.81
	PSS1C	Palustrine Scrub-Shrub BroadLeaved Deciduous Seasonally Flooded	1.22
	PUBK	Palustrine Unconsolidated Bottom Artificially Flooded	0.64
	R4SBC	Riverine Intermittent Streambed Seasonally Flooded	1.16
	R5UBH	Riverine Unknown Perennial Unconsolidated Bottom Permanently Flooded	0.05
City of Montesano	PEM1C	Palustrine Emergent Persistent Continuously Saturated	2.87
	PSS/EM1C	Palustrine Scrub-Shrub/Emergent Persistent Seasonally Flooded	1.29
	PUBH	Palustrine Unconsolidated Bottom Permanently Flooded	0.15
	R4SBC	Riverine Intermittent Streambed Seasonally Flooded	0.09
	R5UBH	Riverine Unknown Perennial Unconsolidated Bottom Permanently Flooded	0.80
City of Oakville	R5UBH	Riverine Unknown Perennial Unconsolidated Bottom Permanently Flooded	0.03

4.3 Delineated Wetlands

The wetlands delineated by DEA within the API in Grays Harbor County are shown in **Table 3** and summarized in **Table 4**. Delineated wetlands can be viewed in **Appendix A** (Figure A-4). USACE delineation data sheets and Ecology rating forms, as completed by DEA biologists, can be reviewed in **Appendix C** and **Appendix D**, respectively. Photos depicting conditions of the API are shown in **Appendix E**. As shown, Grays Harbor County contained the most acreage of wetlands within the API at 133.39, followed by Lewis County at 50.12 acres. Total wetland acreage across all jurisdictions was 239.82. In general, scrub-shrub (PSS) and emergent (PEM) wetlands were most common throughout the API, with the least amount of wetland vegetation being forested (PFO).

Table 3. Delineated Wetlands within the API

City/County	Segment	Wetland ID	Cowardin	HGM	Size (square feet)	Buffer (feet)
Grays Harbor County	Segment 2	210-W1	PFO	DEP	11,625	225
		212-W1	PSS	SLOPE	13,459	225
		212-W2	PFO	SLOPE	59,164	225
		214-W1	PFO	SLOPE	4,525	225
		214-W2	PSS	SLOPE	1,938	225
		220-W1	PSS	SLOPE	2,329	225
		221-W1	PSS	SLOPE	3,745	225
		221-W2	PSS	SLOPE	12,029	225
		222-W1	PEM	SLOPE	6,342	225
		224-W1	PSS	DEP	11,431	110
		224-W2	PFO	SLOPE	14,691	110
		225-W1	PSS	SLOPE	8,995	110
		225-W2	PSS	DEP	13,535	110
		225-W3	PSS	SLOPE	2,238	110
		226-W1	PSS	SLOPE	51,887	110
		228-W1	PFO	SLOPE	10,255	110
		230-W1	PFO	DEP	40,285	110
		230-W2	PSS	SLOPE	41,964	110
		230-W3	PFO	SLOPE	182,075	110
		230-W4	PSS	SLOPE	273,132	225
		232-W2	PSS	SLOPE	113,877	225
		237-W1	PSS	SLOPE	94,625	225
		238-W1	PSS	SLOPE	142,402	225
		240-W1	PSS	SLOPE	10,469	225
		240-W2	PSS	SLOPE	4,891	225
		243-W1	PEM	DEP	3,573	110
		252-W1	PSS	SLOPE	203,221	110
		253-W1	PSS	SLOPE	109,765	110
		259-W1	PSS	SLOPE	50,815	110
		260-W1	PFO	SLOPE	51,529	110
		262-W1	PEM	SLOPE	5,361	110
		266-W1	PSS	SLOPE	341,934	110

City/County	Segment	Wetland ID	Cowardin	HGM	Size (square feet)	Buffer (feet)
		266-W2	PEM	DEP	8,260	110
		272-W1	PEM	RIV	8,857	110
		292-W1	PEM	SLOPE	5,191	110
		301-W1	PFO	SLOPE	93,113	110
		301-W2	PEM	SLOPE	6,456	110
		301-W3	PSS	SLOPE	55,164	60
		301-W4	PFO	SLOPE	254,971	60
		301-W5	PFO	RIV	781	60
		307-W1	PSS	SLOPE	10,886	60
		310-W1	PSS	DEP	57,640	60
		312-W1	PSS	DEP	27,090	60
		317-W1	PSS	DEP	229	60
		327-W1	PEM	RIV	8,433	60
		330-W1	PSS	RIV	7,647	60
		335-W1	PSS	DEP	298,440	60
		341-W1	PSS	RIV	18,566	60
		346-W1	PFO	SLOPE	233,683	60
		383-W1	PFO	RIV	5,280	110
		403-W1	PSS	DEP	9,697	110
		422-W1	PSS	DEP	4,796	110
		422-W2	PSS	DEP	8,436	110
		425-W1	PSS	DEP	37,954	110
		427-W1	PSS	DEP	21,066	110
		428-W1	PEM	DEP	25,849	110
		435-W1	PSS	DEP	6,723	110
		439-W1	PEM	DEP	4,663	110
		440-W1	PEM	DEP	8,172	110
		453-W1	PSS	DEP	1,827	110
		454-W1	PSS	DEP	2,459	110
		455-W1	PSS	DEP	9,015	110
		455-W2	PSS	DEP	8,447	110
		462-W1	PSS	DEP	10,402	110
		462-W2	PSS	DEP	27,090	110
		462-W3	PEM	DEP	102,186	110
		463-W1	PSS	DEP	3,961	110
		464-W1	PSS	DEP	5,345	110
		465-W1	PSS	DEP	4,380	110
		466-W1	PSS	DEP	5,444	110
		467-W1	PSS	DEP	1,640	110
		468-W1	PSS	RIV	2,234	60
		468-W2	PSS	RIV	15,305	60
		469-W1	PSS	DEP	5,305	110
		470-W1	PSS	RIV	11,818	110*
		474-W1	PSS	DEP	9,335	110*
		475-W1	PSS	DEP	1,411	110*
		477-W1	PEM	DEP	1,727	110*

City/County	Segment	Wetland ID	Cowardin	HGM	Size (square feet)	Buffer (feet)
		478-W1	PEM	DEP	12,648	110*
		479-W1	PEM	DEP	22,179	110*
		480-W1	PSS	DEP	25,727	110*
		480-W2	PEM	DEP	3,101	110*
		484-W1	PFO	DEP	21,931	110*
		495-W2	PFO	RIV	53,030	110
		496-W2	PFO	RIV	21,864	110
		497-W1	PFO	DEP	9,874	110*
	Segment 1	664-W1	PFO	SLOPE	264	110
		665-W1	PSS	DEP	1,299	110
		667-W1	PFO	DEP	334	110
		668-W1	PFO	DEP	10,582	110
		673-W1	PFO	DEP	11,161	110
		673-W2	PFO	DEP	48,793	110
		673-W3	PEM	DEP	7,524	110
		673-W4	PFO	DEP	21,272	110
		677-W1	PFO	DEP	876	110
		682-W1	PSS	SLOPE	2,263	110
		683-W1	PFO	RIV	2,242	110
		683-W2	PSS	SLOPE	337	110
		683-W3	PSS	RIV	1,463	110
		684-W1	PFO	DEP	7,422	110
		699-W1	PSS	DEP	17,941	110
		699-W2	PSS	SLOPE	1,266	110
		699-W3	PSS	DEP	37,939	110
		700-W1	PEM	DEP	505	110
		700-W2	PEM	DEP	368	110
		700-W3	PSS	DEP	3,302	110
		702-W1	PSS	DEP	2,856	110
		702-W2	PSS	DEP	5,283	110
		703-W1	PEM	RIV	35,864	110
		703-W2	PEM	RIV	408,523	110
		704-W1	PEM	DEP	22,166	110
		705-W1	PEM	DEP	2,353	110
		705-W2	PEM	DEP	40,977	110
		707-W1	PEM	RIV	6,462	110
		708-W1	PEM	RIV	17,420	110
		709-W1	PEM	RIV	17,702	110
		710-W1	PEM	RIV	30,103	110
		713-W1	PSS	DEP	10,926	110
		715-W1	PFO	DEP	23,014	110
		716-W1	PSS	DEP	19,640	110
		717-W1	PFO	DEP	53,896	110
		719-W1	PSS	DEP	86,194	110
		720-W1	PEM	DEP	13,284	110
		720-W2	PFO	DEP	1,281	110

City/County	Segment	Wetland ID	Cowardin	HGM	Size (square feet)	Buffer (feet)
		722-W1	PEM	DEP	6,055	110
		722-W2	PFO	DEP	1,079	110
		724-W1	PEM	DEP	1,366	110
		724-W2	PFO	DEP	591	110
		724-W3	PFO	RIV	10,947	110
		725-W1	PSS	RIV	2,468	110
		727-W1	PSS/PEM	DEP	44,345	110
		727-W3	PFO	DEP	116	110
		729-W1	PEM	DEP	8,954	110
		729-W2	PEM	DEP	11,197	110
		730-W1	PSS	DEP	9,721	110
		730-W2	PSS	DEP	53,563	110
		732-W1	PEM	DEP	53,417	110
		733-W1	PSS	DEP	383	110
		736-W1	PSS	DEP	31,639	110
		736-W2	PFO	RIV	15,557	225
		737-W1	PSS	DEP	31,385	110
		737-W2	PFO	RIV	42,182	225
		737-W3	PSS	DEP	3,436	110
		738-W2	PFO	RIV	15,884	225
		740-W1	PFO	RIV	64,166	225
		740-W2	PFO	RIV	111,223	225
		740-W3	PFO	RIV	25,558	225
		741-W1	PFO	RIV	115,865	225
		745-W1	PSS	DEP	95,212	110
		746-W1	PSS	RIV	21,623	225
		749-W1	PSS	DEP	3,969	110
		750-W1	PSS	DEP	114,326	110
		755-W1	PSS	RIV	28,012	225
		755-W2	PSS	RIV	9,751	225
		758-W1	PSS	DEP	7,718	110
		766-W1	PSS	RIV	28,364	225
		773-W1	PSS	DEP	21,358	110
		773-W2	PEM	DEP	1,134	110
		780-W1	PSS	RIV	1,536	225
		783-W1	PSS	DEP	2,445	110
		792-W1	PFO	DEP	5,325	110
	Segment 2	A2-W1	PFO	DEP	10,552	110
		A3-W1	PFO	DEP	1,962	110
		A4-W1	PFO	DEP	3,015	110
		A4-W2	PFO	DEP	1,761	110
		A7-W1	PFO	DEP	15,052	110
		A8-W1	PFO	SLOPE	5,614	110
		A16-W1	PFO	RIV	693	110
		A53-W1	PSS	DEP	6,846	110
		A55-W1	PSS	DEP	4,674	110

City/County	Segment	Wetland ID	Cowardin	HGM	Size (square feet)	Buffer (feet)
		A56-W1	PFO/PSS	DEP	13,141	110
		A57-W1	PSS	RIV	16,732	225
		A58-W1	PSS	DEP	2,240	110
		A59-W1	PSS	DEP	194,252	110
		A63-W1	PEM	DEP	27,568	110
		A68-W1	PEM	DEP	2,059	110
		A68-W2	PEM	DEP	1,444	110
Lewis County	Segment 3	0-W1	PEM	SLOPE	5,680	150
		0-W2	PEM	SLOPE	64,648	150
		1-W1	PFO	SLOPE	27,034	150
		3-W1	PEM	SLOPE	2,642	150
		4-W1	PEM	SLOPE	939	75
		4-W2	PEM	SLOPE	7,567	75
		5-W1	PFO	SLOPE	10,771	75
		5-W2	PFO	SLOPE	9,250	75
		7-W1	PEM	SLOPE	41,290	75
		10-W1	PSS	SLOPE	34,889	75
		10-W2	PEM	SLOPE	6,705	75
		10-W3	PFO	SLOPE	18,511	75
		13-W1	PFO	SLOPE	12,021	75
		15-W1	PEM	SLOPE	364,762	75
		15-W2	PEM	SLOPE	9,176	75
		16-W1	PEM	SLOPE	2,667	75
		16-W2	PEM	SLOPE	1,592	75
		16-W3	PEM	SLOPE	399	75
		17-W1	PEM	SLOPE	732,788	75
		17-W2	PEM	SLOPE	1,425	75
		17-W3	PEM	SLOPE	135	75
		17-W4	PEM	SLOPE	494	75
		18-W1	PEM	SLOPE	3,459	75
		19-W1	PEM	SLOPE	10,860	75
		24-W1	PEM	SLOPE	44,897	75
		35-W1	PFO	SLOPE	2,024	75
		35-W2	PFO	SLOPE	1,859	75
		35-W3	PSS	SLOPE	5,615	75
		35-W4	PEM	SLOPE	2,707	75
		36-W1	PFO	SLOPE	9,512	75
		39-W1	PFO	SLOPE	3,927	75
		39-W2	PSS	SLOPE	11,053	75
		42-W1	PFO	SLOPE	4,492	75
		42-W2	PEM	SLOPE	839	75
		42-W3	PEM	DEP	49	75
		42-W4	PEM	SLOPE	269	75
		42-W5	PEM	DEP	1,018	75
		43-W1	PSS	SLOPE	3,674	75
		43-W2	PFO	SLOPE	2,584	75

City/County	Segment	Wetland ID	Cowardin	HGM	Size (square feet)	Buffer (feet)
		44-W1	PEM	SLOPE	3,542	75
		45-W1	PEM	SLOPE	48,467	75
		46-W1	PSS	SLOPE	366,288	75
		49-W1	PEM	SLOPE	13,135	75
		52-W1	PEM	SLOPE	31,194	40
		55-W1	PFO	RIV	10,425	75
		55-W2	PFO	DEP	1,984	75
		59-W1	PEM	SLOPE	11,605	75
		59-W2	PEM	SLOPE	4,476	75
		59-W3	PEM	SLOPE	50,557	75
		59-W4	PEM	SLOPE	34,599	75
		62-W1	PEM	SLOPE	38,143	75
		63-W1	PEM	SLOPE	12,167	75
	Segment 2	81-W1	PSS	DEP	12,781	50
		82-W1	PFO	DEP	5,019	50
		83-W1	PSS	DEP	2,429	50
		87-W1	PSS	DEP	41,359	75
		92-W1	PFO	DEP	1,578	40
		96-W1	PSS	DEP	29,251	40
Thurston County	Segment 2	117-W1	PEM	DEP	4,440	200
		120-W1	PFO	DEP	21,516	200
		121-W1	PFO	DEP	4,827	200
		124-W1	PFO	DEP	13,989	200
		139-W1	PFO	DEP	13,190	200
		182-W1	PFO	DEP	72,807	260
		185-W1	PFO	SLOPE	37,626	260
		185-W2	PFO	DEP	2,144	260
		189-W1	PEM	RIV	2,185	260
		207-W1	PEM	SLOPE	28,403	280
		208-W1	PEM	SLOPE	166,018	280
		210-W1	PFO	SLOPE	65,064	280
City of Aberdeen	Segment 2	586-W1	PEM	SLOPE	249	110
		593-W1	PEM	RIV	2,493	110
		597-W1	PEM	DEP	17,576	110
		597-W2	PEM	RIV	5,613	110
		605-W1	PEM	SLOPE	3,654	40
		605-W2	PSS	DEP	1,191	40
		606-W1	PSS	DEP	1,407	40
		608-W1	PEM	DEP	5,472	40
		608-W2	PEM	DEP	2,981	40
		612-W1	PEM	RIV	526	110
		612-W2	PFO	DEP	7,006	40
		612-W3	PFO	DEP	6,657	40
		612-W4	PFO	DEP	4,127	40
		612-W5	PEM	DEP	562	40
		613-W1	PFO	DEP	45,245	40

City/County	Segment	Wetland ID	Cowardin	HGM	Size (square feet)	Buffer (feet)
		613-W2	PEM	DEP	882	40
		616-W1	PEM	DEP	50,634	75
		616-W2	PFO	DEP	83,605	40
		616-W3	PFO	DEP	77,356	40
		618-W2	PSS	DEP	6,366	40
		618-W4	PSS/PEM	SLOPE	3,683	40
		618-W5	PFO	RIV	50,363	75
		619-W1	PSS	DEP	297	40
		619-W2	PSS	RIV	4,172	75
		620-W1	PSS	DEP	1,215	75
		620-W2	PSS	RIV	2,343	75
		620-W3	PSS	RIV	3,082	75
		A75-W1	PEM	SLOPE	1,382	75
City of Centralia	Segment 3	62-W1	PEM	SLOPE	21	75
		63-W1	PEM	SLOPE	27	75
	Segment 2	79-W1	PFO	DEP	6,510	75
		87-W1	PSS	DEP	73,263	75
City of Elma	Segment 2	383-W1	PFO	RIV	4,699	100
		402-W1	PSS	RIV	3,193	110
City of Hoquiam	Segment 2	621-W1	PSS	DEP	24,747	40
		624-W1	PEM	DEP	16,822	40
		625-W1	PEM	DEP	26,019	40
		625-W2	PEM	DEP	285	40
		625-W3	PEM	DEP	17,695	75
		627-W1	PFO	DEP	29,820	40
		627-W2	PEM	DEP	21,033	40
		627-W3	PFO	DEP	467	40
		629-W1	PFO	DEP	15,511	40
		632-W1	PEM	RIV	40,324	75
		634-W1	PFO	RIV	39,888	75
		635-W1	PFO	DEP	47,834	40
		636-W1	PFO	DEP	40,349	40
		638-W1	PFO	RIV	106,534	75
		639-W1	PFO	DEP	13,079	40
		639-W2	PFO	DEP	19,042	40
		641-W1	PFO	DEP	169	40
		642-W1	PFO	DEP	20,065	40
		642-W2	PFO	DEP	295	40
		647-W1	PFO	DEP	52,373	40
		649-W1	PFO	DEP	11,070	40
		650-W1	PFO/PSS	DEP	42,947	40
		653-W1	PFO	DEP	81,280	40
	Segment 1	650-W1	PFO/PSS	DEP	14,949	40
		653-W1	PFO	DEP	4,988	40
		653-W3	PEM	DEP	5,714	75
		655-W1	PEM	DEP	1,984	75

City/County	Segment	Wetland ID	Cowardin	HGM	Size (square feet)	Buffer (feet)
	Segment 2	655-W2	PEM	DEP	5,813	75
	Segment 1	655-W2	PEM	DEP	28,194	75
		656-W1	PEM	DEP	351,661	75
		656-W2	PFO	DEP	6,552	75
		660-W1	PEM	DEP	149	75
		664-W1	PFO	SLOPE	895	75
		667-W1	PFO	DEP	56,188	75
		668-W1	PFO	DEP	3,126	75
		669-W1	PSS	SLOPE	3,619	75
City of Montesano	Segment 2	470-W2	PFO	RIV	10,248	110*
		484-W1	PFO	DEP	40,576	110*
		486-W1	PFO	RIV	4,648	110*
		487-W1	PFO	RIV	43,291	110*
		491-W1	PFO	DEP	57,933	110*
		495-W1	PSS	RIV	11,769	110*
		495-W2	PFO	RIV	5,981	110*
		496-W1	PFO	RIV	143,437	110*
		496-W2	PFO	RIV	7,344	110*
City of Oakville	Segment 2	246-W1	PSS	SLOPE	55,998	200
		252-W1	PSS	SLOPE	10,046	50

*used Grays Harbor County Code to determine buffer

HMG: hydrogeomorphic
 PEM: palustrine emergent
 PFO: palustrine forested
 PSS: palustrine scrub-shrub
 DEP: Depressional
 RIV: Riverine

Table 4. Summary of Delineated Wetlands within the API

Jurisdiction	Wetland Size Within API (acres)	Wetland Size Within API (square feet)
Grays Harbor County	133.39	5,810,406
Lewis County	50.12	2,183,222
Thurston County	9.92	432,209
City of Aberdeen	8.96	390,139
City of Centralia	1.83	79,821
City of Elma	0.18	7,892
City of Hoquiam	26.43	1,151,480
City of Montesano	7.47	325,227
City of Oakville	1.52	66,044
TOTAL all Jurisdictions	239.82	10,446,440

4.4 Delineated Streams

Field investigations determined there are a total of 134 streams throughout the API. Streams within the API are listed by jurisdiction and segment in **Table 5** below. Delineated wetlands can be viewed in **Appendix A** (Figure A-4). Photos depicting conditions of the API are shown in **Appendix E**. Water typing is a DNR classification system of streams and other water bodies that identifies whether or not streams/water bodies are used by fish, and whether or not streams experience perennial or seasonal flow.

Stream types (S, F, Np, Ns) constitute a water classification system (WAC 222-16-031) used primarily in Washington State to determine regulatory protections. Stream types include: Type S (Shorelines), F (Fish-bearing), Np (Non-fish bearing perennial), and Ns (Non-fish bearing seasonal), based on fish habitat presence, stream size, and flow permanence. These classifications determine the buffer sizes needed for forest practices and other proposed development activities to protect water quality and aquatic habitats. Stream types often change from one type to another (e.g., F to Np) moving upstream, and landowners are responsible for verifying these types on their property, often requiring a professional, as the maps may not reflect actual on-the-ground conditions.

Table 5. Delineated Streams within the API

Jurisdiction	Segment (1, 2, or 3)	Feature ID	Stream Type (S, F, Np, Ns)	Buffer (feet)
Grays Harbor County	Segment 1	683-S1	F	150
		683-S2	Ns	50
		683-S3	Ns	50
		703-GC	F	150
		708-S1	F	150
		711-S1	F*	150
		725-CC	F	150
		738-GS	F	150
		741-HR	S	150
		746-JS	F	150
		747-S1	F	150
		748-S1	F	150
		766-S1	F	150
		774-S1	F	150
		780-S1	F	150
		Grays Harbor	S	150
	Segment 2	210-S1	F	150
		211-BR	S	150
		213-S1	F	150
		215-BR	S	150
		216-S1	Np	60

Jurisdiction	Segment (1, 2, or 3)	Feature ID	Stream Type (S, F, Np, Ns)	Buffer (feet)
		216-S2	F	150
		218-S1	Ns**	50
		221-S1	Ns*	50
		223-S1	F	150
		232-S1	F	150
		233-S1	F	150
		236-RC	F	150
		240-HC	F	150
		257-S1	F	150
		263-S1	F	150
		265-S1	Ns*	50
		266-S1	Ns*	50
		269-S1	Ns**	50
		272-S1	Ns*	50
		281-CC	S	150
		282-CC	S	150
		282-S1	F*	150
		287-S1	Ns	50
		290-S1	Ns	50
		291-S1	Ns*	50
		291-S2	Ns	50
		300-S1	F	150
		305-S1	F	150
		309-S1	F	150
		310-S1	F	150
		311-S1	F	150
		312-CR	S	150
		313-S1	F	150
		317-S1	F	150
		320-S1	F	150
		322-S1	S	150
		324-CR	S	150
		325-PC	S	150
		327-PC	S	150
		329-S1	F*	150
		330-CR	S	150
		330-S1	F	150
		341-MCC	S	150
		346-S1	F	150
		352-S1	Ns*	50

Jurisdiction	Segment (1, 2, or 3)	Feature ID	Stream Type (S, F, Np, Ns)	Buffer (feet)
		365-S1	Np*	60
		405-VC	F	150
		424-NC	S	150
		435-S1	F	150
		436-SR	S	150
		438-S1	Np**	60
		440-S1	F	150
		453-S1	Ns	50
		455-S1	F	150
		461-S1	F	150
		468-CC	F	150
		470-CC	F	150
		473-S1	Ns*	50
		477-S1	F	150
		479-S1	Ns*	50
		502-WR	S	150
		A16-S1	Ns	50
		A1-S1	F	150
		A21-S1	F	150
		A24-S1	Ns	50
		A25-S1	F	150
		A27-S1	Ns	50
		A28-S1	Ns	50
		A29-S1	Ns	50
		A37-S1	F	150
		A38-S1	F	150
		A45-S1	F	150
		A58-S1	F	150
		A69-ES	F	150
		A71-S1	Ns	50
		A7-S1	Ns	50
Lewis County	Segment 2	80-SR	S	150
		92-L1	S	150
	Segment 3	2-SHC	F	150
		4-S1	F	150
		8-S1	F	150
		11-S1	F	150
		17-SHC	F	150
		26-S1	Ns	75
		27-S1	Ns	75

Jurisdiction	Segment (1, 2, or 3)	Feature ID	Stream Type (S, F, Np, Ns)	Buffer (feet)
		29-S1	Ns	75
		51-S1	F**	150
		53-CC	F	150
		55-CC	F	150
		58-CC	F	150
Thurston County	Segment 2	110-S1	F*	200
		117-L1	F	250
		122-S1	F	150
		131-PC	F	200
		158-SC	S	250
		160-S1	F	200
		189-BR	S	250
		202-S1	Ns	150
		210-S1	F	200
City of Aberdeen	Segment 2	590-CR	S	150
		593-S1	F	150
		598-WR	S	150
		612-S1	Np	75
		620-FC	F	150
		620-S1	F	150
		620-S2	Ns	50
		A75-S1	Ns	50
City of Centralia	Segment 2	80-SR	S	175
	Segment 3	69-L1	F	150
City of Elma	Segment 2	383-CC	S	110
		388-MC	F	100
		402-S1	Np*	50
City of Hoquiam	Segment 1	656-S1	Ns	50
		669-S1	F	100
		Grays Harbor	S	150
	Segment 2	630-S1	S	150
		631-S2	F	100
		632-HR	S	150
		633-S1	F	150
City of Montesano	Segment 2	470-CC	F	100
		486-S1	F	100
		495-SC	S	100

* The stream was not mapped by DNR, and therefore the stream type was inferred by DEA biologists.

** The stream was mapped as an Unknown stream type by DNR, and therefore the stream type was inferred by DEA biologists.

4.5 FWHCAs, All Jurisdictions

At the request of the Cannon Companies, David Evans and Associates, Inc. DEA prepared a draft biological assessment (BA) for the Fiber Optic Cable Line Project in Grays Harbor, Lewis, and Thurston Counties, Washington in February 2026 (DEA 2026a). The draft BA indicated the following: “The [fiber optic] line will be installed primarily within existing road and railroad rights of way. Due to most of the work occurring within established rights-of-way, the project is not expected to have effects on listed species or critical habitat”. Although designated critical habitat is present for marbled murrelet, Oregon spotted frog, and bull trout, it would not be affected according to the BA. This conclusion applies to all jurisdictions and ESA species are not discussed further in this section, but are summarized in **Table 6**.

Table 6. USFWS Listed Species Potentially Present in the Action Area

Common Name	Scientific Name	Federal Status	Potential Presence in Action Area	Effect Determination*
Yelm pocket gopher (Critical Habitat)	Thomomys mazama yelmensis	Threatened (Designated)	No (No)	No Effect (No Effect)
Marbled Murrelet (Critical Habitat)	Brachyramphus marmoratus	Threatened (Designated)	No (Yes)	No Effect (No Effect)
Northern spotted owl (Critical Habitat)	Strix occidentalis	Threatened (Designated)	No (No)	No Effect (No Effect)
Streaked horned lark (Critical Habitat)	Eremophila alpestris strigata	Threatened (Designated)	No (No)	No Effect (No Effect)
Western Snowy Plover (Critical Habitat)	Charadrius nivosus nivosus	Threatened (Designated)	No (No)	No Effect (No Effect)
Yellow-billed cuckoo (Critical Habitat)	Coccyzus americanus	Threatened (Designated)	No (No)	No Effect (N/A)
Northwestern pond turtle (Critical Habitat)	Actinemys marmorata	Proposed Threatened (Not Designated)	No (N/A)	No Effect (N/A)
Oregon spotted frog (Critical Habitat)	Rana pretiosa	Threatened (Designated)	No (Yes)	No Effect (No Effect)
Monarch Butterfly (Critical Habitat)	Danaus plexippus	Proposed Threatened (Not designated)	No (N/A)	No Effect (No Effect)
Suckley's Cuckoo Bumble Bee (Critical Habitat)	Bombus suckleyi	Proposed Endangered (Not designated)	No (N/A)	No Effect (N/A)
Kincaid's lupine (Critical Habitat)	Lupinus sulphureus kincaidii	Threatened (Designated)	No (N/A)	No Effect (No Effect)
Bull Trout (Critical Habitat)	Salvelinus confluentus	Threatened (Designated)	Yes (Yes)	No Effect (No Effect)

* As assessed by DEA biologists (DEA 2026a).

In addition to the BA, an ESA and EFH review was conducted for species under the jurisdiction of the NMFS for the Fiber Optic Cable Line Project (DEA 2026b). The results of the review are provided in **Table 7** and **Table 8** below. Additional FWHCA considerations are provided by jurisdiction in the following sections.

Table 7. NMFS ESA-Listed Species Potentially Affected Project

Species	Listing Status	Critical Habitat?	Potential Presence/ Effects Determination*
Salmon and steelhead (<i>Oncorhynchus</i> sp.)	Threatened or Endangered	No	Potentially present/No effect. No listed salmon or steelhead are present in the Chehalis basin. Some listed salmon and steelhead are seasonally present in Grays Harbor, but no effects from the proposed action would reach Grays Harbor.
Green Sturgeon (<i>Acipenser medirostris</i>)	Threatened	Yes	Potentially present /No effect. Green sturgeon are common in Grays Harbor but are not known to use the Chehalis River or other tributaries of Grays Harbor. Critical habitat for green sturgeon is designated in Grays Harbor and includes tidally influenced areas of Grays Harbor up to the elevation of mean higher high water. Effects from the proposed action would not reach Grays Harbor.
Eulachon (<i>Thaleichthys pacificus</i>)	Threatened	No	Potentially present /No effect. There is no critical habitat for eulachon in Grays Harbor or the Chehalis Basin. Eulachon could be seasonally present in the Chehalis River or other tributaries of Grays Harbor, but there are no effect pathways by which eulachon could be impacted by the proposed action.
Sunflower Sea Star (<i>Pycnopodia helianthoides</i>)	Proposed as Threatened	No	Unlikely/No effect. Sunflower sea stars were once abundant in Washington coastal areas, but abundance has declined dramatically due to sea star wasting disease. No critical habitat is designated or proposed for Sunflower Sea Star.

* As assessed by DEA biologists (DEA 2026b).

Table 8. Essential Fish Habitat Potentially Affected by the Project

EFH	Present Near the API	Effects Determination*
Chinook Salmon	Yes	Would not adversely affect
Coho Salmon	Yes	Would not adversely affect
Groundfish	Yes	Would not adversely affect
Coastal Pelagic	Yes	Would not adversely affect

* As assessed by DEA biologists (DEA 2026b).

4.6 Grays Harbor County Background Data, Field Study, and FWHCAs

4.6.1 Background Data

The NWI findings shown in **Table 2** were somewhat accurate, but in general overestimated actual wetland acreage, as outlined in **Table 4**. The NWI may overestimate actual wetland acreage primarily because it relies on remote sensing and historical data rather than on site verification. While NWI maps are more frequently cited for underestimating acreage due to small feature omission, certain factors can lead to errors of commission where non-wetlands are mapped as wetlands.

Primary Causes of Overestimation

- **Reliance on Remote Imagery:** NWI maps are primarily prepared using high-altitude aerial imagery and infrared photography. This method can misidentify areas with high soil moisture or specific vegetation patterns as permanent wetlands, even if they lack the three required regulatory criteria: hydric soils, hydrophytic vegetation, and wetland hydrology.
- **Outdated Data:** Many NWI maps are over 20 years old. In the time since the imagery was captured, wetlands may have been lost to development, drainage for agriculture, or natural changes in drainage patterns, meaning the map still shows a "wetland" that no longer exists.
- **Inclusion of Human-Made Features:** The inventory often includes ponds, reservoirs, and industrial stormwater basins that are technically "deepwater habitats" or "open water" but may not function as natural wetlands. If these features are counted toward total wetland acreage without distinction, the resulting figure is inflated.
- **Vegetation Ambiguity:** Areas with specific "forested" signatures in imagery are sometimes more likely to be misclassified as wetlands when they are actually upland forests that happen to share some visual characteristics

In any case, NWI maps provide an indication of potential wetland extent to be verified on site. riverine upper perennial unconsolidated bottom permanently flooded (R3UBH) wetlands were the most common NWI type mapped within the API in Grays Harbor County, at over 38 acres, followed by riverine lower perennial unconsolidated bottom permanently flooded (R2UBH) wetlands at over 23 acres.

Soil survey findings shown in **Table 1** were as accurate as expected, and represented field findings well. Calawah silt loam, 1 to 8 percent slopes soils were the most common soil type within the Grays Harbor County, at over 270 acres, followed by Ocosta silty clay loam at over 147 acres.

4.6.2 Field Study

Grays Harbor County wetlands are shown in **Table 3**, and a summary of Grays Harbor County wetland acreages is shown in **Table 4**. DEA delineated 133.39 acres of wetlands within the API in the Grays Harbor County. Delineated streams within Grays Harbor County are shown in **Table 5**. Fish-bearing streams were the most common type delineated within the API in Grays Harbor County.

4.6.3 Grays Harbor County FWHCAs

As mentioned above, the draft BA (DEA 2026a) indicated the following: “The [fiber optic] line will be installed primarily within existing road and railroad rights of way. Due to most of the work occurring within established rights-of-way, the project is not expected to have effects on listed species or critical habitat”. In addition to the BA, an ESA and EFH review (DEA 2026b) indicated “No Effect” for all species assessed.

Other potential types of FWHCAs that are not wetland or stream related include mapped locations of sensitive plants provided by DNR, although for all of these plants, the construction of the line at the base of heavily impacted and frequently disturbed habitat at or near the base of railroad ballast greatly limits the likelihood that sensitive plants would exist in these locations. No sensitive plants are mapped by DNR within the API in Grays Harbor County (DNR 2026b). The only resource mapped near the API is a rare wetland or riparian ecological community, the tufted hairgrass – (Lyngby's sedge – saltgrass) salt marsh. This is considered a state-sensitive species, and is mapped in the estuary west of the API along Grass Creek northeast of Aberdeen.

4.7 Lewis County Background Data, Field Study, and FWHCAs

4.7.1 Background Data

The NWI mapped 95.31 acres within the API in Lewis County, as shown **Table 2**. Palustrine Emergent Persistent Continuously Saturated wetlands were the most common NWI type mapped within the API in Lewis County, at over 47 acres, followed by palustrine forested seasonally flooded (PFOC) wetlands at over 29 acres.

Soil survey findings shown in **Table 1** were as accurate as expected, and represented field findings well. Reed silty clay loam was the most common soil type within the Lewis County, at over 124 acres, followed by Centralia loam, 8 to 15 percent slopes, at over 59 acres.

4.7.2 Field Study

As with other jurisdictions, the NWI findings shown in **Table 2** overestimated actual wetland acreage, as outlined in **Table 4**. DEA delineated a total of 50.12 acres of wetlands within the API in Lewis County. Delineated streams within Lewis County are shown in **Table 5**. Fish-bearing streams were the most common type delineated within the API in Lewis County.

4.7.3 Lewis County FWHCAs

As mentioned above, the draft ESA effect determination documentation conducted by DEA indicated “No Effect” for all species assessed (DEA 2026a; DEA 2026b; **Appendix F**). Other potential types of FWHCAs that are not wetland or stream related include mapped locations of sensitive plants provided by DNR, although for all of these plants, the construction of the line at the base of heavily impacted and frequently disturbed habitat at or near the base of railroad ballast greatly limits the likelihood that sensitive plants would exist in these locations (DNR 2026b).

Small-flowered trillium (*Trillium albidum* ssp. *Parviflorum*), a state-sensitive species (no federal status), is mapped at Blakeslee Junction, where Interstate 5 crosses the API. As with other mapped locations, it is unlikely that sensitive plants would exist at the base of railroad ballast due to historic and current disturbances, including frequent herbicide applications.

4.8 Thurston County Background Data, Field Study, and FWHCAs

4.8.1 Background Data

The NWI mapped 15.23 acres within the API in Thurston County, as shown **Table 2**. Palustrine emergent persistent temporarily flooded (PEM1A) wetlands were the most common NWI type mapped within the API in Thurston County, at almost 3 acres, followed by riverine unknown perennial unconsolidated bottom permanently flooded (R5UBH) wetlands at over 2.6 acres.

Soil survey findings shown in **Table 1** were as accurate as expected, and represented field findings well. Spanaway gravelly sandy loam, 0 to 3 percent slopes was the most common soil type within the Thurston County, at 205 acres, followed by Grandmound gravelly sandy loam, 0 to 15 percent slopes, at over 66 acres.

4.8.2 Field Study

As with other jurisdictions, the NWI findings shown in **Table 2** overestimated actual wetland acreage slightly, as outlined in **Table 4**. DEA delineated a total of 9.92 acres of wetlands within the API in the City of Aberdeen. Delineated streams within Thurston County are shown in **Table 5**. Fish-bearing streams were the most common type delineated within the API in Thurston County.

4.8.3 Thurston County FWHCAs

As mentioned above, the draft ESA effect determination documentation conducted by DEA indicated “No Effect” for all species assessed (DEA 2026a; DEA 2026b; **Appendix F**). Other potential types of FWHCAs that are not wetland or stream related include mapped locations of sensitive plants provided by DNR, although for all of these plants, the construction of the line at the base of heavily impacted and frequently disturbed habitat at or near the base of railroad ballast eliminates or greatly limits the potential for impacts. A rare wetland or riparian ecological community, the willow spp. – Douglas' spirea / sedge spp. wet shrubland, is considered state-sensitive by DNR, and is mapped in wetlands adjacent to the API northwest of Rochester (DNR 2026b). A rare wetland or riparian ecological community, the Oregon white oak – (Oregon ash) / common snowberry riparian forest, is considered state-sensitive by DNR, and is mapped along Scatter creek east of Rochester. Finally, white-top aster (*Sericocarpus rigidus*), a state-sensitive species (no federal status), is mapped southeast of Rochester.

4.9 City of Aberdeen Background Data, Field Study, and FWHCAs

4.9.1 Background Data

The NWI mapped 5.92 acres within the API in the City of Aberdeen, as shown **Table 2**. Estuarine subtidal unconsolidated bottom subtidal (E1UBL) wetlands were the most common NWI type

mapped at over 5 acres, followed by riverine intermittent streambed seasonally flooded (R4SBC) wetlands at over a half acre.

Soil survey findings shown in **Table 1** were as accurate as expected, and represented field findings well. Udorthents, level, was the most common soil type at over 140 acres, followed by Zenker silt loam, 65 to 90 percent slopes at over 45 acres. The only other ‘soil type’ found in Aberdeen was ‘Water’.

4.9.2 Field Study

The NWI findings shown in **Table 2** underestimated actual wetland acreage, and actual delineated wetlands are detailed in **Table 4**. DEA delineated a total of 8.96 acres of wetlands within the API in City of Aberdeen. City of Aberdeen streams are shown in **Table 5**. Fish-bearing streams were the most common type delineated.

4.9.3 City of Aberdeen FWHCAs

As mentioned above, the draft ESA effect determination documentation conducted by DEA indicated “No Effect” for all species assessed (DEA 2026a; DEA 2026b; **Appendix F**). Other potential types of FWHCAs that are not wetland or stream related include mapped locations of sensitive plants provided by DNR (DNR 2026b). No sensitive plant species or other FWHCA locations were mapped within the API in the City of Aberdeen.

4.10 City of Centralia Background Data, Field Study, and FWHCAs

4.10.1 Background Data

The NWI mapped 11.04 acres within the API in the City of Centralia, as shown **Table 2**. Palustrine scrub-shrub seasonally flooded (PSSC) wetlands were the most common NWI type mapped at over 5 acres, followed by palustrine forested seasonally flooded (PFOC) wetlands at 3.79 acres

Soil survey findings shown in **Table 1** were as accurate as expected, and represented field findings well. Spanaway gravelly sandy loam was the most common soil type at over 40 acres, followed by Indianola loamy sand, 0 to 5 percent slopes at over 25 acres.

4.10.2 Field Study

The NWI findings shown in **Table 2** overestimated actual wetland acreage, as outlined in **Table 4**. DEA delineated a total of 1.83 acres of wetland within the API in the City of Centralia. Delineated streams are shown in **Table 5**. Only two streams were delineated in the City of Centralia.

4.10.3 City of Centralia FWHCAs

As mentioned above, the draft ESA effect determination documentation conducted by DEA indicated “No Effect” for all species assessed (DEA 2026a; DEA 2026b; **Appendix F**). Other potential types of FWHCAs that are not wetland or stream related include mapped locations of sensitive plants provided by DNR (DNR 2026b). The construction of the fiber optic line at the base

of heavily impacted, and frequently disturbed, habitat at, or near, the base of railroad ballast greatly limits the likelihood that sensitive plants would exist in these locations.

Small-flowered trillium (*Trillium albidum* ssp. *Parviflorum*), a state-sensitive species (no federal status), is mapped at Blakeslee Junction, where Interstate 5 crosses the API. As with other mapped locations, it is unlikely that sensitive plants would exist at the base of railroad ballast due to historic and current disturbances, including frequent herbicide applications.

4.11 City of Elma Background Data, Field Study, and FWHCAs

4.11.1 Background Data

The NWI mapped 4.85 acres within the API in the City of Elma, as shown **Table 2**. Palustrine emergent persistent temporarily flooded (PEM1A) wetlands were the most common NWI type mapped at over 2 acres, followed by riverine upper perennial unconsolidated bottom permanently flooded (R3UBH) wetlands at over a half acre.

Soil survey findings shown in **Table 1** were as accurate as expected, and represented field findings well. Grandmound gravelly sandy loam, 0 to 15 percent slopes was the most common soil type at almost 50 acres, followed by Delezene-Rony complex, 0 to 8 percent slopes at over 16 acres.

4.11.2 Field Study

The NWI findings shown in **Table 2** overestimated actual wetland acreage, as outlined in **Table 4**. DEA only delineated 0.18 acres of wetlands within the API in the City of Elma. Delineated streams are shown in **Table 5**. Only three streams were delineated in the City of Elma.

4.11.3 City of Elma FWHCAs

As mentioned above, the draft ESA effect determination documentation conducted by DEA indicated “No Effect” for all species assessed (DEA 2026a; DEA 2026b; **Appendix F**). Other potential types of FWHCAs that are not wetland or stream related include mapped locations of sensitive plants provided by DNR (DNR 2026b). No sensitive plant species or other FWHCA locations were mapped within the API in the City of Elma.

4.12 City of Hoquiam Background Data, Field Study, and FWHCAs

4.12.1 Background Data

The NWI mapped 33.47 acres within the API in the City of Hoquiam, as shown **Table 2**. Estuarine intertidal emergent persistent irregularly flooded (E2EM1P) wetlands were the most common NWI type mapped at almost 15 acres, followed by riverine intermittent streambed seasonally flooded (PSS/EM1A) wetlands at over a half acre.

Soil survey findings shown in **Table 1** were as accurate as expected, and represented field findings well. Udorthents, level, was the most common soil type at over 140 acres, followed by Palustrine Scrub-Shrub/Emergent Persistent Temporarily Flooded at almost 5 acres.

4.12.2 Field Study

The NWI findings shown in **Table 2** estimated actual wetland acreage fairly closely, as outlined in **Table 4**. DEA delineated 26.43 acres of wetlands within the API in the City of Hoquiam. Delineated streams are shown in **Table 5**. Fish-bearing streams were the most common type delineated.

4.12.3 City of Hoquiam FWHCAs

As mentioned above, the draft ESA effect determination documentation conducted by DEA indicated “No Effect” for all species assessed (DEA 2026a; DEA 2026b; **Appendix F**). Other potential types of FWHCAs that are not wetland or stream related include mapped locations of sensitive plants provided by DNR (DNR 2026b). No sensitive plant species or other FWHCA locations were mapped within the API in the City of Hoquiam.

4.13 City of Montesano Background Data, Field Study, and FWHCAs

4.13.1 Background Data

The NWI mapped 5.21 acres within the API in the City of Montesano, as shown **Table 2**. Palustrine emergent persistent continuously saturated (PEM1C) wetlands were the most common NWI type mapped at almost 3 acres, followed by palustrine scrub-shrub/emergent persistent seasonally flooded (PSS/EM1C) wetlands at over 1 acre.

Soil survey findings shown in **Table 1** were as accurate as expected, and represented field findings well. Salzer silty clay was the most common soil type at over 20 acres, followed by Delezene-Rony complex, 0 to 8 percent slopes at almost 18 acres.

4.13.2 Field Study

The NWI findings shown in **Table 2** underestimated actual wetland acreage somewhat, as outlined in **Table 4**. DEA delineated 7.47 acres of wetlands within the API in the City of Montesano. Delineated streams are shown in **Table 5**. Only three streams were delineated in the City of Montesano.

4.13.3 City of Montesano FWHCAs

As mentioned above, the draft ESA effect determination documentation conducted by DEA indicated “No Effect” for all species assessed (DEA 2026a; DEA 2026b; **Appendix F**). Other potential types of FWHCAs that are not wetland or stream related include mapped locations of sensitive plants provided by DNR (DNR 2026b). No sensitive plant species or other FWHCA locations were mapped within the API in the City of Montesano.

4.14 City of Oakville Background Data, Field Study, and FWHCAs

4.14.1 Background Data

The NWI mapped only 0.03 acres within the API in the City of Oakville, as shown **Table 2**, riverine unknown perennial unconsolidated bottom permanently flooded (R5UBH) wetlands.

Soil survey findings shown in **Table 1** were as accurate as expected, and represented field findings well. Grandmound gravelly sandy loam, 0 to 15 percent slopes was the most common soil type at over 17 acres, followed by Rony-Gate complex, 0 to 8 percent slopes at over 12 acres.

4.14.2 Field Study

The NWI findings shown in **Table 2** underestimated actual wetland acreage, as outlined in **Table 4**. DEA delineated 1.52 acres of wetlands within the API in the City of Oakville. No streams were delineated in the City of Oakville.

4.14.3 City of Oakville FWHCAs

As mentioned above, the draft ESA effect determination documentation conducted by DEA indicated “No Effect” for all species assessed (DEA 2026a; DEA 2026b; **Appendix F**). Other potential types of FWHCAs that are not wetland or stream related include mapped locations of sensitive plants provided by DNR (DNR 2026b). No sensitive plant species or other FWHCA locations were mapped within the API in the City of Oakville.

5.0 IMPACTS

5.1 Summary of Project Effects During Construction

5.1.1 Habitat Effects

This project will install a new fiber optic cable underground along an approximately 79-mile route. The cable line would be installed primarily within existing ROW, adjacent to and parallel with roadway and railroads. For installation adjacent to roads, the line will be installed either on the gravel shoulder or side slope of the roadway fill prism. For installation within the railroad ROW, the line will be typically be installed 25 feet from the tracks but in some locations it could be as close as 10 feet from the tracks. A typical working area 10 feet wide will be utilized, expanded, contracted, or utilizing lane closures as needed to accommodate local topography and avoid wetland impacts. The fiber optic line will be contained within a 2-inch conduit and buried underground using trenching or HDD. The location of the proposed conduit and its impact footprint (10 feet total) at the current stage of design was overlaid on the delineated wetland and stream boundaries to determine preliminary impacts. Wherever the conduit will be installed via HDD, it is assumed that there will be no impacts to critical areas in those locations. Thus, the impacts described are generally limited to where the conduit will be installed using trench and plow methods. In general, where the conduit is parallel to a road, it can moved as close to the pavement as necessary to avoid impacts. However, in the railroad segments, the conduit is not always able to be installed close to the rail because of spacing requirements, the presence of steep ballast side slopes, etc. In many of these areas, wetlands are present at the toe of slope and cannot be avoided. Also, given that the conduit is being installed completely underground, all impacts to wetlands and streams from trench/plow installation methods are assumed to be temporary. Project design plans, as prepared at the time of this report, can be reviewed in **Appendix G**.

Field investigations determined there are a total of 239.82 acres of wetlands and 134 total streams throughout the API. Project design will favor HDD method of installation to the greatest extent practicable to avoid wetland and stream impacts. Project design is adapting as field conditions are discussed closely with the design team. At the time that this report was written, the project is likely to temporarily impact a total of 3.19 acres of wetlands, 0.03 acres of streams, and 964.68 acres of wetland and/or stream buffers. Quantities of wetland impacts can be reviewed by jurisdiction in **Table 9**. Quantities of stream impacts can be reviewed by jurisdiction in **Table 10**. Impacted areas can be viewed in **Appendix A** (Figure A-5).

Each delineated wetland and stream has an associated standard regulatory buffer, as shown in **Appendix A** (Figure A-4). Mapped buffers extend to the appropriate distance(s) beyond delineated feature boundaries as required by local code, and largely overlap with previously disturbed areas and areas that do not provide buffer functions. For a buffer to be functional, it must provide vegetation, hydrologic, and/or water quality function to the associated feature(s) (Sheldon et al. 2005). Potential buffer impact quantities are summarized in **Table 11**, although these quantities do not reflect interrupted buffers and exemplify a worst-case scenario. Actual impacted functional buffer quantities are much lower than what is shown in **Table 11**.

Table 9. Wetland Impact Quantities

Jurisdiction	Wetland ID	Cowardin	HGM	Impacted Area (Acres)	Impacted Area (Square Feet)
Grays Harbor County	212-W1	PSS	SLOPE	0.03130	1,363
	214-W1	PFO	SLOPE	0.01569	683
	220-W1	PSS	SLOPE	0.01935	843
	222-W1	PEM	SLOPE	0.00081	35
	230-W1	PFO	DEP	0.00512	223
	230-W3	PFO	SLOPE	0.00153	67
	230-W4	PSS	SLOPE	0.00081	35
	238-W1	PSS	SLOPE	0.16986	7,399
	240-W1	PSS	SLOPE	0.03299	1,437
	253-W1	PSS	SLOPE	0.00742	323
	259-W1	PSS	SLOPE	0.08325	3,627
	262-W1	PEM	SLOPE	0.06517	2,839
	266-W1	PSS	SLOPE	0.01712	746
	301-W2	PEM	SLOPE	0.05188	2,260
	335-W1	PSS	DEP	0.00007	3
	422-W1	PSS	DEP	0.00274	119
	422-W2	PSS	DEP	0.03315	1,444
	425-W1	PSS	DEP	0.06394	2,785
	453-W1	PSS	DEP	0.00002	1
	454-W1	PSS	DEP	0.00293	128
	462-W1	PSS	DEP	0.05016	2,185
	462-W2	PSS	DEP	0.13819	6,019
	463-W1	PSS	DEP	0.01813	790
	464-W1	PSS	DEP	0.03482	1,517
	465-W1	PSS	DEP	0.01962	854
	466-W1	PSS	DEP	0.02344	1,021
	467-W1	PSS	DEP	0.00201	87
	469-W1	PSS	DEP	0.00676	295
	470-W1	PSS	RIV	0.01018	444
	478-W1	PEM	DEP	0.00408	178
	480-W2	PEM	DEP	0.01537	670
	495-W2	PFO	RIV	0.06565	2,860
	667-W1	PFO	DEP	0.00114	49
	673-W2	PFO	DEP	0.00721	314
	677-W1	PFO	DEP	0.01699	740
	682-W1	PSS	SLOPE	0.05147	2,242
	699-W2	PSS	SLOPE	0.02044	890
	700-W1	PEM	DEP	0.00010	4
	700-W2	PEM	DEP	0.00014	6
	700-W3	PSS	DEP	0.00100	44
	702-W2	PSS	DEP	0.01130	492
	703-W2	PEM	RIV	0.00399	174
	705-W1	PEM	DEP	0.01857	809
	705-W2	PEM	DEP	0.04021	1,752

Jurisdiction	Wetland ID	Cowardin	HGM	Impacted Area (Acres)	Impacted Area (Square Feet)
	716-W1	PSS	DEP	0.00094	41
	719-W1	PSS	DEP	0.03751	1,634
	720-W1	PEM	DEP	0.00034	15
	722-W1	PEM	DEP	0.01027	447
	724-W1	PEM	DEP	0.00190	83
	727-W1	PSS	DEP	0.01517	661
	732-W1	PEM	DEP	0.00114	50
	773-W2	PEM	DEP	0.00037	16
Grays Harbor County Total Impacted Wetland Areas				1.23	53,743
Lewis County	0-W2	PEM	SLOPE	0.01719	749
	7-W1	E PEM M	SLOPE	0.07283	3,172
	10-W1	PSS	SLOPE	0.03730	1,625
	13-W1	PFO	SLOPE	0.06746	2,939
	15-W1	PEM	SLOPE	0.00939	409
	15-W2	PEM	SLOPE	0.00030	13
	18-W1	PEM	SLOPE	0.02935	1,278
	24-W1	PEM	SLOPE	0.08079	3,519
	35-W3	PSS	SLOPE	0.02005	873
	35-W4	PEM	SLOPE	0.01157	504
	42-W2	PEM	SLOPE	0.00197	86
	42-W3	PEM	DEP	0.00105	46
	42-W4	PEM	SLOPE	0.00577	252
	42-W5	PEM	DEP	0.01568	683
	44-W1	PEM	SLOPE	0.03347	1,458
	49-W1	PEM	SLOPE	0.03229	1,406
	52-W1	PEM	SLOPE	0.07445	3,243
	55-W1	PFO	RIV	0.03532	1,539
	59-W3	PEM	SLOPE	0.11644	5,072
	59-W4	PEM	SLOPE	0.09136	3,980
	62-W1	PEM	SLOPE	0.15069	6,564
	82-W1	PFO	DEP	0.04265	1,858
Lewis County Total Impacted Wetland Areas				0.95	41,268
Thurston County	117-W1	PEM	DEP	0.01143	498
	121-W1	PFO	DEP	0.01152	502
	182-W1	PFO	DEP	0.00002	1
	208-W1	PEM	SLOPE	0.20060	8,738
Thurston County Total Impacted Wetland Areas				0.22	9,739
City of Aberdeen	612-W4	PFO	DEP	0.01071	467
	616-W2	PFO	DEP	0.04897	2,133
	618-W4	PSS	SLOPE	0.00794	346
	620-W2	PSS	RIV	0.00003	1

Jurisdiction	Wetland ID	Cowardin	HGM	Impacted Area (Acres)	Impacted Area (Square Feet)
City of Aberdeen				0.07	2,947
Total Impacted Wetland Areas					
City of Hoquiam	621-W1	PSS	DEP	0.13220	5,759
	625-W1	PEM	DEP	0.05939	2,587
	627-W2	PEM	DEP	0.25930	11,295
	647-W1	PFO	DEP	0.00159	69
	650-W1	PFO/PSS	DEP	0.04334	1,888
	650-W1	PFO/PSS	DEP	0.00335	146
	653-W3	PEM	DEP	0.00001	0
	656-W1	PEM	DEP	0.01122	489
	667-W1	PFO	DEP	0.07912	3,447
City of Hoquiam				0.59	25,680
Total Impacted Wetland Areas					
City of Montesano	486-W1	PFO	RIV	0.01177	513
	491-W1	PFO	DEP	0.01776	774
	495-W1	PSS	RIV	0.07160	3,119
	495-W2	PFO	RIV	0.02019	880
City of Montesano				0.12	5,286
Total Impacted Wetland Areas					
City of Oakville	246-W1	PSS	SLOPE	0.00563	245
City of Oakville				.01	245
Total Impacted Wetland Areas					
Project Total Impacted Wetland Areas				3.19	138,908

*used Grays Harbor County Code to determine buffer

HGM: hydrogeomorphic

PEM: palustrine emergent

PFO: palustrine forested

PSS: palustrine scrub-shrub

DEP: Depressional

RIV: Riverine

Table 10. Potential Stream Impact Quantities

Jurisdiction	Stream ID	Stream Type*	Impacted Area** (Acres)	Impacted Area** (Square Feet)
Grays Harbor County	213-S1	F	0.00048	21
	216-S2	F	0.00200	87
	218-S1	Ns**	0.00023	10
	221-S1	Ns*	0.00072	31
	257-S1	F	0.00037	16
	265-S1	Ns*	0.00032	14
	287-S1	Ns	0.00672	293
	290-S1	Ns	0.00015	6
	329-S1	F*	0.00069	30
	461-S1	F	0.00268	117
	473-S1	Ns*	0.00011	5
	683-S1	F	0.00170	74

Jurisdiction	Stream ID	Stream Type*	Impacted Area** (Acres)	Impacted Area** (Square Feet)
Grays Harbor County Total Impacted Stream Areas			0.02	782
Lewis County	11-S1	F	0.00266	116
	55-CC	F	0.00045	20
Lewis County Total Impacted Stream Areas			0.00+	136
Thurston County	122-S1	F	0.00072	31
	131-PC	F	0.00198	86
	202-S1	Ns	0.00136	59
Thurston County Total Impacted Stream Areas			0.00+	176
City of Montesano	470-CC	F	0.00199	87
	486-S1	F	0.00148	65
City of Montesano Total Impacted Stream Areas			0.00+	152
Project Total Impacted Stream Areas			0.03	1,246

* Perennial streams would not be impacted as HDD would be the installation method in saturated/inundated conditions.

** Potential stream impact quantities exemplify a worst-case scenario. At the time of construction, contractor will avoid stream impacts to the maximum extent practicable.

+ The impact quantity is not 0, but the impacted area is so small that the quantity was rounded down to 0.

Table 11. Potential Wetland and Stream Buffer Impact Quantities

Jurisdiction	Impacted Area* (Acres)	Impacted Area* (Square Feet)
Grays Harbor County	605.61	26,380,372
Lewis County	82.23	4,924,894
Thurston County	113.06	3,581,939
City of Aberdeen	39.84	1,735,430
City of Centralia	9.11	396,832
City of Elma	9.19	400,316
City of Hoquiam	69.81	3,040,924
City of Montesano	28.34	1,238,411
City of Oakville	7.49	326,264
Project Total Impacted Buffer Areas*	964.68	42,025,382

* Potential buffer impact quantities do not reflect interrupted buffers and exemplify a worst-case scenario.

Temporary erosion and sediment control (TESC) measures and best management practices (BMPs) (silt fence, straw wattles, storm drain inlet protection, etc.) will be implemented as appropriate both in upland and in critical areas, as well as in associated buffers during construction activities.

5.1.2 Effects to Wildlife

Only the dominant Cowardin class(es) for each wetland unit were recorded by DEA biologists at the time of field survey. Where the fiber optic will be installed is typically fringe habitat dominated by weedy and invasive species. Invasive species, not limited to the following species, were recorded by DEA biologists along the API: bull thistle (*Cirsium vulgare*), Scotch broom (*Cytisus*

scoparius), herb-Robert (*Geranium robertianum*), English ivy (*Hedera helix*), English holly (*Ilex aquifolium*), tansy ragwort (*Jacobaea vulgaris*), yellow archangel (*Lamiastrum galeobdolon*), oxeye daisy (*Leucanthemum vulgare*), Japanese knotweed (*Reynoutria japonica*), Himalayan blackberry (*Rubus armeniacus*), evergreen blackberry (*Rubus laciniatus*).

For simplicity, impacted Cowardin class quantities were calculated using the recorded dominant Cowardin class of the impacted wetland units. Impact quantities show a worst-case scenario of impacted habitat types. The proposed project design would potentially impact a total of 22,092 square feet of existing PFO habitat, 51,437 square feet of PSS habitat, and 65,379 square feet of PEM habitat. Removing trees within wetlands and buffers would reduce shading in the wetland which could increase water temperatures and, as a result, would have a negative impact on species using the area. In addition, removal of these trees will negatively affect wildlife habitat by removing potential perching and nesting habitat for raptors and songbirds. Trees will be protected to the greatest extent practicable. Limbing and cutting will be preferred over full removal of trees. How to address obstructing trees will be a judgement call by contractors at the time of construction.

The cable line would be installed primarily within existing ROW, adjacent to already disturbed conditions. Wildlife species using this habitat are largely limited to generalist species that are accustomed to a high level of human activity. Wildlife using these areas would be expected to move away during active construction but would return soon after construction was complete. The proposed project would have no detectable effects to habitat fragmentation in areas already highly fragmented and disturbed. There are many inundated wetlands along the project API, which support a wide range of amphibians, waterfowl, etc. All of these inundated wetlands will be avoided by construction, unless they are seasonally dry. The conduit cannot be installed via trench/plow in inundated conditions.

5.1.2.1 Threatened and Endangered Species

Threatened and endangered state and federally listed species potentially occurring in the API are listed in **Table 12**.

The project is not anticipated to have impacts on any ESA-listed species. Work below the OHWM will be limited to the dry season when seasonal streams have no water and perennial stream water levels are at their lowest. HDD installation will be used to cross any stream that has water at time of construction. With these methods, the project will avoid all impacts to streams that may provide habitat for listed aquatic species. Similarly, no impacts to suitable and/or occupied habitat are anticipated for listed terrestrial species. ESA documentation for the project addressing USFWS and NMFS listed species is attached as **Appendix F**. **Table 6** and **Table 7** show the effect determination for each of these listed species.

Table 12. Listed Species and Critical Habitat Potentially Occurring in the API

Common Name	Scientific Name	Washington State Listing Status (WDFW 2008; WDFW 2026b; WDFW 2026c; DNR 2018)	Federal Listing Status (NMFS 2026c; NMFS 2026d; USFWS 2026b; USFWS 2026c)	Federal Jurisdiction	Critical Habitat in the API? (NMFS 2026a; NMFS 2026b)	Suitable Habitat Present in the API?*
Yelm pocket gopher	<i>Thomomys mazama yelmensis</i>	Threatened	Threatened	USFWS	No	No
Marbled murrelet	<i>Brachyramphus marmoratus</i>	Endangered	Threatened	USFWS	Yes	No
Streaked horned lark	<i>Eremophila alpestris strigata</i>	Endangered	Threatened	USFWS	No	No
Western snowy plover	<i>Charadrius nivosus nivosus</i>	Endangered	Threatened	USFWS	No	No
Yellow-billed cuckoo	<i>Coccyzus americanus</i>	Endangered	Threatened	USFWS	No	No
Northwestern pond turtle	<i>Actinemys marmorata</i>	Endangered	Proposed Threatened	USFWS	N/A	No
Oregon spotted frog	<i>Rana pretiosa</i>	Endangered	Threatened	USFWS	No	No
Bull trout	<i>Salvelinus confluentus</i>	Candidate	Threatened	USFWS	Yes	Yes
Monarch butterfly	<i>Danaus plexippus</i>	Candidate	Proposed Threatened	USFWS	N/A	No
Suckley's cuckoo bumble bee	<i>Bombus suckleyi</i>	N/A	Proposed Endangered	USFWS	N/A	No
Kincaid's lupine	<i>Lupinus sulphureus ssp. kincaidii</i>	Endangered	Threatened	USFWS	N/A	No
Green sturgeon	<i>Acipenser medirostris</i>	N/A	Threatened	NMFS	Yes	Yes
Salmon spp. and steelhead trout	<i>Oncorhynchus spp</i>	Salmon: N/A Steelhead: Candidate	Threatened or Endangered	NMFS	No	Yes
Eulachon	<i>Thaleichthys pacificus</i>	N/A	Threatened	NMFS	No	Yes
Sunflower sea star	<i>Pycnopodia helianthoides</i>	N/A	Proposed Threatened	NMFS	No	No

* As assessed by DEA biologists.

EFH is mapped within the API for Chinook salmon, coho salmon, groundfish, and coastal pelagic species. The project would not adversely affect these aquatic resources for reasons listed in the no effect letter (**Appendix F**). In-water work will occur within the appropriate fresh water work window and/or Tidal Reference Area or as determined through consultation with the regulatory agencies. Due to BMPs, temporary habitat impacts for these species are expected to be minimal.

5.1.3 Summary of Project Operation Impacts

This project does not propose any increase in impervious surfaces. The project may include the construction of a utility shed near the City of Elma, which is proposed within the footprint of existing impervious surfaces. Construction methods will involve HDD under existing impervious surfaces, so no replacement of impervious surfaces will be required at road crossings. The rest of the project design would not result in any additional impervious surfaces as the utilities would exist below the ground surface. Infiltration should occur in these areas at the same rate as existing conditions.

There is potential for construction equipment to have leaks and spills, although TESC measures and BMPs will be put in place to prevent any detrimental impacts to the waterbodies in the API. Local and state regulations will be followed to protect critical areas within the API (Ecology 2024).

5.2 Summary of Grays Harbor County Impacts

Grays Harbor County would incur a total of 1.23 acres (53,743 square feet) of wetland impacts, 0.02 acres (782 square feet) of stream impacts, and potentially 605.61 acres (26,380,372 square feet) of wetland and/or stream buffer impacts. See **Table 9**, **Table 10**, and **Table 11** for impact quantity details. Mitigation for these impacts is addressed in **Section 6.0**.

5.3 Summary of Lewis County Impacts

Lewis County would incur a total of 0.95 acres (41,268 square feet) of wetland impacts, 0.00 acres (136 square feet) of stream impacts, and potentially 113.06 acres (4,924,894 square feet) of wetland and/or stream buffer impacts. See **Table 9**, **Table 10**, and **Table 11** for impact quantity details. Mitigation for these impacts is addressed in **Section 6.0**.

5.4 Summary of Thurston County Impacts

Thurston County would incur a total of 0.22 acres (9,739 square feet) of wetland impacts, 0.00 acres (176 square feet) of stream impacts, and potentially 82.23 acres (3,581,939 square feet) of wetland and/or stream buffer impacts. See **Table 9**, **Table 10**, and **Table 11** for impact quantity details. Mitigation for these impacts is addressed in **Section 6.0**.

5.5 Summary of City of Aberdeen Impacts

City of Aberdeen would incur a total of 0.07 acres (2,947 square feet) of wetland impacts, no stream impacts, and potentially 39.84 acres (1,735,430 square feet) of wetland and/or stream buffer impacts. See **Table 9**, **Table 10**, and **Table 11** for impact quantity details. Mitigation for these impacts is addressed in **Section 6.0**.

5.6 Summary of City of Centralia Impacts

City of Centralia would incur no wetland impacts, no stream impacts, and potentially 9.11 acres (396,832 square feet) of wetland and/or stream buffer impacts. See **Table 9**, **Table 10**, and **Table 11** for impact quantity details. Mitigation for these impacts is addressed in **Section 6.0**.

5.7 Summary of City of Elma Impacts

City of Elma would incur a total of no wetland impacts, no stream impacts, and potentially 9.19 acres (400,316 square feet) of wetland and/or stream buffer impacts. See **Table 9**, **Table 10**, and **Table 11** for impact quantity details. Mitigation for these impacts is addressed in **Section 6.0**.

5.8 Summary of City of Hoquiam Impacts

City of Hoquiam would incur a total of 0.59 acres (25,680 square feet) of wetland impacts, no stream impacts, and potentially 69.81 acres (3,040,924 square feet) of wetland and/or stream buffer impacts. See **Table 9**, **Table 10**, and **Table 11** for impact quantity details. Mitigation for these impacts is addressed in **Section 6.0**.

5.9 Summary of City of Montesano Impacts

City of Montesano would incur a total of 0.12 acres (5,286 square feet) of wetland impacts, 0.00 acres (152 square feet) of stream impacts, and potentially 28.43 acres (1,238,411 square feet) of wetland and/or stream buffer impacts. See **Table 9**, **Table 10**, and **Table 11** for impact quantity details. Mitigation for these impacts is addressed in **Section 6.0**.

5.10 Summary of City of Oakville Impacts

City of Oakville would incur a total of 0.01 acres (245 square feet) of wetland impacts, no stream impacts, and potentially 7.49 acres (326,264 square feet) of wetland and/or stream buffer impacts. See **Table 9**, **Table 10**, and **Table 11** for impact quantity details. Mitigation for these impacts is addressed in **Section 6.0**.

6.0 MITIGATION

6.1 Project Mitigation

Mitigation sequencing typically follows the following methods: avoiding, minimizing, rectifying, reducing, and compensating for impacts, followed by monitoring the site once compensatory mitigation is completed (Sheldon et al. 2005). See **Appendix B** for jurisdiction specific mitigation requirements, as available. The project will utilize standard BMPs for construction of project actions.

Delineation and mapping of all streams and wetlands within the API was conducted so that project design could avoid streams and wetland impacts where possible. All permanent direct and indirect impacts will be avoided. Temporary direct and indirect impacts will be minimized to the greatest extent possible by using HDD construction methods where feasible rather than trenching construction methods.

Temporary impacts are typically minimized through the use of site-specific TESC measures and BMPs such as construction fencing, check dams, silt fence, minimizing removal of vegetation, and conducting work in wet areas during the driest time of year (late summer/early fall). In-water work will occur within the appropriate fresh water work window and/or Tidal Reference Area or as determined through consultation with the regulatory agencies, if necessary. In general, all permanent waterbodies are being avoided by use of HDD.

Unavoidable temporary impacts will be rectified by restoring habitat conditions to at least pre-construction conditions, if not better, to the greatest extent practicable. Temporary wetland, stream, wetland buffer, and stream buffer impacts will be restored to pre- project construction levels. Potential on site mitigation could include the following opportunities:

- Invasive species (i.e., bull thistle (*Cirsium vulgare*), Scotch broom (*Cytisus scoparius*), herb-Robert (*Geranium robertianum*), English ivy (*Hedera helix*), English holly (*Ilex aquifolium*), tansy ragwort (*Jacobaea vulgaris*), yellow archangel (*Lamium galeobdolon*), oxeye daisy (*Leucanthemum vulgare*), Japanese knotweed (*Reynoutria japonica*), Himalayan blackberry (*Rubus armeniacus*), evergreen blackberry (*Rubus laciniatus*), etc.), removal within wetlands, wetland buffers, and stream buffers. The proposed replacement of these species with native plantings and seed mix would benefit the habitat along the API.
- Riparian vegetation plantings
 - For impacted PFO and PSS communities, native tree and shrub plantings would be installed.
 - For impacted PEM communities, a native seed mix would be spread.

A typical native seed mix that could be used is shown in **Table 13** below. Restoration details will be further developed as design progresses.

Table 13. Potential Native Seed Mix for Emergent Wetland Restoration

Scientific Name	Common Name	Percent by Weight
<i>Beckmannia syzigachne</i>	American slough grass	10
<i>Carex obnupta</i>	Slough sedge	40
<i>Carex stipata</i>	Beaked sedge	5
<i>Eleocharis palustris</i>	Common spikerush	5
<i>Glyceria occidentalis</i>	Western mannagrass	20
<i>Juncus patens</i>	Spreading rush	15
<i>Scirpus microcarpus</i>	Small-fruited bulrush	5

6.2 Grays Harbor County Mitigation

Mitigation sequencing actions taken by an applicant or property owner are required by GHCC 18.06.200. Per GHCC and best available science (BAS), a 1:1 ratio of temporarily impacted area to restored area shall be mitigated for (Sheldon et al. 2005). The Grays Harbor County Shoreline Master Program will supersede the GHCC critical areas code when within a SMZ (Grays Harbor County 2023). This will apply to project impacted wetlands, streams, and their associated buffers within this jurisdiction.

6.3 Lewis County Mitigation

Mitigation sequencing actions taken by an applicant or property owner are required by LCC 17.38.080. Per LCC and BAS, a 1:1 ratio of temporarily impacted area to restored area shall be mitigated for (Sheldon et al. 2005). The Lewis County Shoreline Master Program will supersede LCC critical areas code when within a SMZ (Lewis County 2021). This will apply to project impacted wetlands, streams, and their associated buffers within this jurisdiction.

6.4 Thurston County Mitigation

Mitigation sequencing actions taken by an applicant or property owner are required by TCC 24.35.015. Per TCC and BAS, a 1:1 ratio of temporarily impacted area to restored area shall be mitigated for (Sheldon et al. 2005). The Thurston County Shoreline Master Program will supersede TCC critical areas code when within a SMZ (Thurston County 2023). This will apply to project impacted wetlands, streams, and their associated buffers within this jurisdiction.

6.5 City of Aberdeen Mitigation

Mitigation sequencing actions taken by an applicant or property owner are required by AMC 14.100.071. Per AMC and BAS, a 1:1 ratio of temporarily impacted area to restored area shall be mitigated for (Sheldon et al. 2005). The Aberdeen Shoreline Master Program will supersede AMC critical areas code when within a SMZ (Aberdeen 2017). This will apply to project impacted wetlands, streams, and their associated buffers within this jurisdiction.

6.6 City of Centralia Mitigation

Mitigation sequencing actions taken by an applicant or property owner are required by CMC 16.17.070. Monitoring is not listed as a requirement under CMC. GHCC shall apply to areas

outside of a SMZ where CMC lacks critical area protection guidance. Per GHCC and BAS, a 1:1 ratio of temporarily impacted area to restored area shall be mitigated for (Sheldon et al. 2005). The Centralia Shoreline Master Program will supersede the CMC and GHCC critical areas code when within a SMZ (Centralia 2020). This will apply to project impacted wetlands, streams, and their associated buffers within this jurisdiction.

6.7 City of Elma Mitigation

Mitigation sequencing actions taken by an applicant or property owner are required by EMC 14.34.460. Per EMC and BAS, a 1:1 ratio of temporarily impacted area to restored area shall be mitigated for (Sheldon et al. 2005). The Elma Shoreline Master Program will supersede AMC critical areas code when within a SMZ (Elma 2016). This will apply to project impacted wetlands, streams, and their associated buffers within this jurisdiction.

6.8 City of Hoquiam Mitigation

Mitigation sequencing actions taken by an applicant or property owner are required by HMC 11.05.250. GHCC shall apply to areas outside of a SMZ where HMC lacks critical area protection guidance. Per GHCC and BAS, a 1:1 ratio of temporarily impacted area to restored area shall be mitigated for (Sheldon et al. 2005). The Hoquiam Shoreline Master Program will supersede the HMC and GHCC critical areas code when within a SMZ (HMC Chapter 11.05). This will apply to project impacted wetlands, streams, and their associated buffers within this jurisdiction.

6.9 City of Montesano Mitigation

The City of Montesano does not outwardly address mitigation sequencing or ratios under MMC. GHCC shall apply to areas outside of a SMZ where MMC lacks critical area protection guidance. Per GHCC and BAS, a 1:1 ratio of temporarily impacted area to restored area shall be mitigated for (Sheldon et al. 2005). The Montesano Shoreline Master Program will supersede the MMC and GHCC critical areas code when within a SMZ (Montesano 2023). This will apply to project impacted wetlands, streams, and their associated buffers within this jurisdiction.

6.10 City of Oakville Mitigation

The City of Oakville does not outwardly address mitigation sequencing or ratios under OMC. GHCC shall apply where OMC lacks critical area protection guidance. Per GHCC and BAS, a 1:1 ratio of temporarily impacted area to restored area shall be mitigated for (Sheldon et al. 2005). There are no areas in the City of Oakville within the API that are within a SMZ.

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8.0 APPENDICES

APPENDIX A

Figures

A-1: Project Vicinity

A-2: Soils

A-3: NWI

A-4: Delineated Features

A-5: Impacts

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APPENDIX B

Jurisdictional Code Excerpts

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APPENDIX C

USACE Wetland Data Forms and Antecedent Precipitation Tool

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APPENDIX D

Ecology Rating Forms and Figures

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APPENDIX E

API Photographs

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APPENDIX F

USFWS and NMFS ESA Documentation

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APPENDIX G

Project Design Plans