NOTICE OF MITIGATED DETERMINATION OF NON-SIGNIFICANCE (MDNS)

PROJECT:
Phase 5A Project: Columbia River Outfall and Effluent Pipeline
#92-2015-0023

Please find enclosed an environmental Mitigated Determination of Non-Significance (MDNS) issued pursuant to State Environmental Policy Act (SEPA) Rules (Chapter 197-11, Washington Administrative Code), and Discovery Clean Water Alliance Resolution No. 2013–10. The enclosed review comments reflect evaluation of the environmental checklist by the lead agency, Discovery Clean Water Alliance, as required by WAC 197-11-330(1)(a)(i).

Written comments may be submitted on this determination within fourteen (14) days of its issuance, after which the MDNS will be reconsidered in light of the comments received. Comments must be submitted by June 22, 2018.

Please address all correspondence to: Discovery Clean Water Alliance
c/o Clark Regional Wastewater District
Administrative Lead
PO Box 8979
Vancouver, WA 98668-8979
Attn: John M. Peterson, PE

DISTRIBUTION LIST

FEDERAL AGENCIES

1. National Marine Fisheries Service
2. US Environmental Protection Agency
3. US Fish and Wildlife Service – Ridgefield Refuge
4. US Fish and Wildlife Service – Lacey WA Office

NATIVE AMERICAN INTERESTS

5. Chinook Indian Nation
6. Confederated Tribes and Bands of the Yakama Nation
8. Confederated Tribes of the Siletz Reservation
9. Cowlitz Indian Tribe
### STATE AGENCIES

10. Department of Archaeology and Historic Preservation  
11. Department of Commerce  
12. Department of Community Development  
14. Department of Fish and Wildlife  
15. Department of Health  
16. Department of Natural Resources – SEPA Center  
17. Department of Transportation  

### REGIONAL AGENCIES

18. Camas Public Library  
19. Fort Vancouver Regional Library  
20. Fort Vancouver Regional Library – Battle Ground Branch  
21. Fort Vancouver Regional Library – Three Creeks Branch  
22. Fort Vancouver Regional Library – Woodland Branch  
23. Southwest Clean Air Agency  
24. Southwest Washington Health District  
25. Southwest Washington Regional Transportation Council  

### LOCAL AGENCIES

#### Cities

26. City of Battle Ground  
27. City of Camas  
28. City of La Center  
29. City of Ridgefield  
30. City of Vancouver – Administration  
31. City of Vancouver – Community & Economic Development  
32. City of Vancouver – Public Works  
33. City of Washougal  
34. City of Woodland  

#### Counties

35. Clark County – Board of County Councilors  
36. Clark County – Central Files  
37. Clark County – Community Planning (Economic Development)  
38. Clark County – Public Health  
39. Clark County Community Development – Building Division  
40. Clark County Prosecuting Attorney’s Office  
41. Clark County Public Works – Administration  
42. Clark County Public Works – Clean Water  
43. Clark County Sheriff’s Office  
44. Cowlitz County Health & Human Services
Non-Governmental Agencies
45. Building Industry Association
46. Clark County Association of Realtors
47. Clark County Natural Resources Council
48. Columbia River Economic Council
49. Columbia Riverkeeper
50. Friends of Clark County
51. Futurewise
52. Greater Vancouver Chamber of Commerce
53. Lower Columbia Fish Recovery Board
54. Partners in Careers
55. Salmon Creek Watershed Council
56. Sierra Club – Loo Wit
57. Trout Unlimited
58. Vancouver Audubon Society
59. Vancouver Housing Authority

SPECIAL PURPOSE AGENCIES/DISTRICTS
60. Battle Ground School District
61. Camas School District
62. Evergreen School District
63. Hockinson School District
64. C-Tran
65. Clark Conservation District
66. Clark County Fire District No. 5
67. Clark County Fire District No. 6
68. Clark County Fire District No. 9
69. Clark Public Utilities – Electrical
70. Clark Public Utilities – Water
71. Clark Regional Wastewater District
72. CREDC
73. CRESA
74. Port of Camas-Washougal
75. Port of Ridgefield
76. Port of Vancouver
77. Port of Woodland
78. Vancouver School District
79. Vancouver-Clark Parks & Recreation

INTEREST GROUPS
Neighborhood Associations
80. Neighborhood Associations Council of Clark County
81. Andresen/St Johns Neighborhood Assoc.
82. East Fork Frontier Neighborhood Assoc.
83. East Fork Hills Rural Assoc.
84. East Minnehaha Neighborhood Assoc.
85.  Enterprise/Paradise Point Neighborhood Assoc.
86.  Fairground Neighborhood Assoc.
87.  Felida Neighborhood Assoc.
88.  Greater Brush Prairie Neighborhood Assoc.
89.  Green Meadows Neighborhood Assoc.
90.  Heritage Neighborhood Assoc.
91.  Meadow Glade Neighborhood Assoc.
92.  NE Hazel Dell Neighborhood Assoc.
93.  North Salmon Creek Neighborhood Assoc.
94.  Pleasant Highlands Neighborhood Assoc.
95.  Ridgefield Junction Neighborhood Assoc.
96.  Roads End Neighborhood Assoc.
97.  Sherwood Hills Neighborhood Assoc.
98.  Sifton Neighborhood Assoc.
99.  Sunnyside Neighborhood Assoc.
100. Truman Neighborhood Assoc.
101. Washougal River Neighborhood Assoc.
102. West Hazel Dell Neighborhood Assoc.

**Media**

103. Camas Washougal Post-Record
104. The Columbian
105. The Reflector
NOTICE IS HEREBY GIVEN that the following proposal had been determined to have no probable significant adverse impacts on the environment, and that an environmental impact statement is not required under RCW 43.21C.030(2)(c). This decision was made after review of a completed environmental checklist and other information on file with the lead agency. The MDNS is available online at: https://www.discoverycwa.org/Columbia_River_Outfall_Project.html. Written comments on the following MDNS may be submitted to the Responsible Official by June 22, 2018.

PROPOSED PROJECT: Phase 5A Project—Columbia River Outfall and Effluent Pipeline #92-2015-0023.

LOCATION OF PROPOSAL: Salmon Creek Treatment Plant, 15100 Northwest McCann Road, Vancouver, Washington 98685 (Clark County).

DESCRIPTION: The Discovery Clean Water Alliance (Alliance) proposes to construct a new treated effluent pipeline from the Salmon Creek Treatment Plant (SCTP) to the Columbia River. The pipeline will be beneath agricultural properties, the BNSF rail line, Salmon Creek, Lake River, undeveloped SR 501 right-of-way, and former NW Lower River Road. The proposed project also will upgrade effluent pumps at the SCTP and replace the existing outfall diffuser in the Columbia River. The Alliance has provided the engineering report for the proposed project, including engineering plans for these improvements, to the Washington Department of Ecology for concurrent review and approval.1

The benefits of the proposed project include upgrading the existing effluent transmission system by prolonging the system longevity, facilitating pipeline maintenance, and improving water quality in the Columbia River. A new, improved multi-port diffuser is needed to meet future water quality standards and to ensure adequate mixing and dilution of treated wastewater delivered to the river. The proposed project has been planned since 1995 when Clark County prepared a State Environmental Policy Act (SEPA) Final Environmental Impact Statement (FEIS) for the Salmon Creek Wastewater Treatment Plant Expansion Program and determined the proposed project to be a phase of the expansion program and preferred action.

The proposed project’s major elements include the following:

- Replacing the existing outfall diffuser with an improved diffuser that will comply with future water quality standards by ensuring adequate mixing and dilution of treated wastewater discharged into the Columbia River.
- Constructing a 48-inch-diameter effluent pipeline. The new pipeline will be below ground immediately south of and parallel to the existing 30-inch-diameter effluent pipeline, which will remain in service.
- Replacing the four existing effluent pumps at the SCTP’s effluent pump station. The new vertical line shaft pumps will fit into the four existing pump slots. They will be sized for the 48-inch-diameter pipeline to accommodate current and future effluent discharges through the Alliance’s Wastewater Facilities Plan Phases 5 through 9.
- Removing an 870-foot-long segment of the existing effluent pipeline and outfall from the Columbia River to former NW Lower River Road. The existing 30-inch-diameter pipeline from the SCTP to former NW Lower River Road will remain in service as a back-up pipeline if maintenance is required on the new effluent pipeline.

The proposed project will not increase the SCTP’s overall influent flow capacity, which is rated at 14.95 million gallons per day (MGD) (average-day maximum month flow) because other limiting wastewater treatment unit processes will persist, unless increased through a separate action. The proposed project will size the new effluent pipeline and outfall diffuser with capacity to process 2066 influent flows (i.e., up to 72 MGD peak-hour flow) and will size the effluent pump station capacity to process 2028 influent flows, up to 43.8 MGD peak-hour flow. As Clark County grows and the treatment plant is further upgraded per the Wastewater Facilities Plan, the larger effluent pipeline, improved outfall diffuser, and bigger effluent pumps will accommodate planned growth in the Clark County 20-year Comprehensive Growth Management Plan and associated flow increases.

The proposed project will require temporary work over, in, and within 200 feet of the Columbia River, Lake River, and Salmon Creek; and will require temporary work within 200 feet of Green Lake, Round Lake, and Curtis Lake. The project will temporarily impact about 3.57 acres of palustrine emergent and palustrine forested/scrub-shrub wetlands, which will be restored at project completion. About 0.02 acre of earthen fill will be placed permanently in emergent wetland, which will be compensated by credit purchase from an approved wetland mitigation bank. Pipe installation will temporarily disturb about 5.85 acres of wetland buffer, which will be restored at project completion. No permanent wetland buffer impacts will occur, and no permanent buffer impact mitigation will be provided.

PROONENT: Discovery Clean Water Alliance, 8000 NE 52nd Court, PO Box 8979, Vancouver, WA 98668-8979.

☐ There is no comment period for this MDNS.
☐ This MDNS is issued after using the optional MDNS process in WAC 197-11-355. There is no further comment period on the MDNS.
☐ This MDNS is issued under WAC 197-11-340(2); the lead agency will not act on this proposal for 14 days from the date below. Comments must be submitted by June 22, 2018.

Lead agency: Discovery Clean Water Alliance

Responsible official: John M. Peterson, PE, General Manager Clark Regional Wastewater District, Administrative Lead for the Discovery Clean Water Alliance

Address: 8000 NE 52nd Court, P.O. Box 8979, Vancouver, WA 98668-8979

Phone: 360-993-8819

Date Issued: June 8, 2018 Signature: [Signature]

☐ You may appeal this determination to Ron Oslow, Chair of the Alliance Board of Directors at 8000 NE 52nd Court, P.O. Box 8979, Vancouver, WA 98668 no later than July 6, 2018 by U.S. mail.

You should be prepared to make specific factual objections based on how you or your property is adversely affected by the proposal, any new facts that would be important to and affect the determination, and the reasons why the determination was incorrect. The notice of appeal shall be accompanied by a filing fee of $50.00. Consult Discovery Clean Water Alliance Resolution No. 2013–10 for the procedures for SEPA appeals.

☐ There is no agency appeal.

REQUIRED PERMITS, APPROVALS, AND APPLICABLE REGULATIONS

The applicant will obtain and comply with the terms and conditions of applicable local, state, and federal permits and approvals and comply with regulations, as follows:

- National Marine Fisheries Service (NMFS)/U.S. Fish and Wildlife Service (USFWS): Endangered Species Act (ESA), Section 7 Incidental Take Permit/Biological Opinion including the Magnuson-Stevens Fishery Conservation and Management Act
- USFWS: Bald and Golden Eagle Protection Act and Migratory Bird Treaty Act consultation
- National Oceanic and Atmospheric Administration (NOAA): National Ocean Service charting of the underwater utility and outfall within a navigable water
- US Army Corps of Engineers (USACE):
  - Rivers and Harbors Act of 1899 Section 10 Permit
  - Clean Water Act Section 404 Permit
- USACE/Washington State Department of Archaeology and Historic Preservation (DAHP): National Historic Preservation Act Section 106 concurrence
- US Coast Guard (USCG):
  - Bridge Permit
  - Private Aids to Navigation (PATON) notification
- Washington Department of Fish and Wildlife (WDFW): Hydraulic Project Approval
• Washington State Department of Ecology (Ecology):
  o Review and approval of engineering report per WAC 173-240-060
  o Modification of NPDES Waste Discharge Permit No. WA0023639
  o Clean Water Act Section 401 Water Quality Certification
  o Clean Water Act Section 402 NPDES Construction Stormwater General Permit
• Washington State Department of Natural Resources (DNR):
  o Aquatic Lands Right-of Entry Agreement
  o Aquatic Lands Easement
• Clark County:
  o Shoreline Management Act Shoreline Substantial Development Permit
  o Shoreline Conditional Use Permit
  o Special Flood Hazard Area Permit
  o Building Permit
  o Grading and Drainage Permit
• Washington State Department of Transportation (WSDOT): Temporary and permanent easements for crossing WSDOT right of way
• BNSF: Railroad Crossing Permit and permanent easement

MITIGATION MEASURES

The applicant and all contractors will comply with the following mitigation measures:

Earth Resources

1. Bore the pipeline under the BNSF line and the adjacent ridge, and place it in the reasonably stable interbedded geologic layer.
2. Avoid the existing scour-prone areas by setting the pipe profile below the general scour prisms of the streams.
3. Use bioengineering techniques for riverbank stabilization at the Columbia River, Lake River, and Salmon Creek.
4. Place a concrete revetment mat in existing sandy dredged spoils at the Columbia River to protect the substrate if river currents continue to erode the riverbank.
5. Elevate the outfall diffuser’s riser ports above predicted sand waves moving on the riverbed to reduce risk of burial, and strengthen risers and ports to withstand forces and minimize future outfall maintenance needs.
6. Salvage, stockpile on site, and reuse native wetland soils and soils of long-term agricultural significance, to the maximum practicable extent.

Water Resources

7. Restore temporarily impacted wetlands and buffers to their pre-construction contours and seed with appropriate seed mixture(s), and replace permanently impacted wetlands and wetland buffers through credit purchase at a resource agency-approved mitigation bank.
8. Restore or replace regulated environmentally critical areas consistently with applicable federal, state and local regulations to address potential adverse environmental impacts.
9. Rehabilitate temporary impacts to Salmon Creek, Lake River, and the Columbia River by restoring streambed substrates and stabilizing riverbanks through bioengineering techniques.
10. Control turbidity levels during in-water work to satisfy state water quality standards.
11. Prepare and implement a spill prevention, containment, and countermeasures plan.
12. Install trench plugs at intervals in the pipe zone to maintain the pre-construction wetland hydrology and prevent groundwater from flowing through the pervious trench backfill materials.
13. Manage drainage during pipeline construction, and restore drainage patterns after pipeline construction.

Plants

14. Restore pasture areas to productive pasture by replacing salvaged topsoil to match the original contours in trenched areas and seed with appropriate seed mixtures to ensure re-establishment of vegetation.
15. Control invasive plant species, including Himalayan Blackberry and reed canarygrass within the construction limits.
16. Control Class B and C noxious plant species in accordance with Washington State Weed Control Board and Clark County Weed Board requirements
Animals

17. Apply construction BMPs, impact minimization measures, and restoration efforts before, during, and after construction, as directed by NMFS, USFWS, WDFW, and Clark County as terms and conditions of permits, to avoid and minimize impacts to fish and wildlife, and aquatic and wildlife habitats.
18. Attenuate hydroacoustic noise from pile driving by impact hammer in water to minimize potential injuries to aquatic life.

Land and Shoreline Use

19. Restore the proposed project corridor to pre-construction conditions after pipeline construction is complete, and allow property owners to resume agricultural activities under terms of applicable temporary and permanent pipeline construction and operation easements.
20. If the Round Lake Conservation Bank proposed on parcel 191177-000 precedes the proposed project construction, establish vegetation in the temporary easement according to the agency-approved Round Lake Conservation Bank planting plan, and establish grasses and forbs in the permanent easement.

Light and Glare

21. Aim temporary nighttime lighting during construction at the ground and toward work activities.
22. Coordinate with the owner and manager of Robert L. Delanoy Airport in advance of proposed construction to ensure that temporary nighttime construction lighting will not conflict with safe runway approach or FAA restrictions.

Recreation Resources

23. At Salmon Creek, maintain a navigable channel, or provide temporary portage support, or provide passage under the temporary trestle/bridge over Salmon Creek as needed, for non-motorized watercraft.
24. At Lake River, maintain a navigable channel for passage of vessels.
25. At the Columbia River, cordon off the in-water work area and direct boaters and water-oriented recreationists around the area, and notify mariners of work activity through the USCG’s PATON web-based system.
26. If Salmon Creek Greenway Trail construction occurs before the proposed project, place signage warning trail users of delays, temporary closures or detours, and restore the trail to pre-project conditions upon completion of pipeline construction.
27. Place warning notices up- and downstream on Lake River and Salmon Creek and at vessel launches, warning recreationists of use limitations during construction.
28. Coordinate with the Ashley Ridge Homeowners’ Association to advise residents of access restrictions or construction delays affecting the Ashley Ridge open space and trail.

Historic and Cultural Preservation

29. Avoid impacts to Site 45CL1337, which is potentially eligible for listing in the National Register of Historic Places, by restricting travel to existing farm roads and avoiding impacts to native soil within the site.
30. Avoid impacts to the portion of Site 45CL1290 recommended as contributing to its potential eligibility for listing in the National Register of Historic Places by protecting the native soil. Consult with the USACE, DAHP, and affected Tribes for concurrence with the site protection plan.
31. Avoid impacts to the BNSF Railway, Northwest Division, Seattle Subdivision, Line Segment 52 by auger-boring the proposed effluent pipeline under the railroad.
32. Prepare a site protection plan for measures to avoid impacts to archaeological sites, and prepare an inadvertent discovery plan outlining procedures in the event of an archaeological discovery during construction.

Transportation

33. Coordinate with the owner and manager of Robert L. Delanoy Airport in advance of proposed construction to ensure that construction activities will not conflict with safe runway approach or FAA restrictions.
34. Secure rights of entry to use private access roads.
35. Coordinate with the New Columbia Garden Company, LLC to ensure that gated access to the former NW Lower River Road is secured and the private road remains passable for residents.
36. Employ a flagger at the at-grade BNSF crossing to direct vehicle traffic during construction and to ensure rail traffic is unimpeded.
SEPA ENVIRONMENTAL CHECKLIST

Purpose of checklist:

Governmental agencies use this checklist to help determine whether the environmental impacts of your proposal are significant. This information is also helpful to determine if available avoidance, minimization or compensatory mitigation measures will address the probable significant impacts or if an environmental impact statement will be prepared to further analyze the proposal.

A. Background

1. Name of proposed project, if applicable:
   Phase 5A Project – Columbia River Outfall and Effluent Pipeline #92-2016-0023

2. Name of applicant:
   Discovery Clean Water Alliance

3. Address and phone number of applicant and contact person:
   8000 NE 52nd Court
   P.O. Box 8979
   Vancouver, Washington 98668
   (360-993-8856)
   Attn: Dale Lough, P.E., Project Lead for Discovery Clean Water Alliance

4. Date checklist prepared:
   April 30, 2018

5. Agency requesting checklist:
   Discovery Clean Water Alliance (Alliance)

6. Proposed timing or schedule (including phasing, if applicable):
   The Alliance anticipates project construction will last 2 years beginning in 2021 and ending in 2022.

7. Do you have any plans for future additions, expansion, or further activity related to or connected with this proposal? If yes, explain.
   The Phase 5A Project–Columbia River Outfall and Effluent Pipeline (proposed project) is part of the overall Salmon Creek Treatment Plant (SCTP) Expansion Program. The proposed project is itemized in the applicant’s Capital Plan. It is being planned and designed, and will be permitted and contracted for construction, as a separate, complete project. The Alliance does not propose further additions, expansions, or activity related to the proposed project.

8. List any environmental information you know about that has been prepared, or will be prepared, directly related to this proposal.
   The checklist is also supported by the following environmental documentation, which is available online at https://www.discoverycwa.org/Columbia_River_Outfall_Project.html:
In addition, nearly 20 archaeological or cultural resource studies covered portions of the project area between 1971 and 2018. These reports and studies are listed in section 13.b below.

9. Do you know whether applications are pending for governmental approvals of other proposals directly affecting the property covered by your proposal? If yes, explain.

The Washington State Department of Ecology (Ecology) is reviewing the Phase 5B Project – Salmon Creek Treatment Plant Improvements, which proposes treatment process improvements at the SCTP, and will modify NPDES Permit No. WA0023639, accordingly. Pending endorsement of the Phase 5B Project engineering report by Ecology, modifications to existing permits or new permits will be requested (e.g., Southwest Clean Air Agency’s Minor Source Air Discharge Permit, and Clark County shoreline, building, grading, and drainage permits). Although both the proposed project and the Phase 5B Project will occur at the SCTP, they will not spatially overlap.

The proposed project will be constructed across the Round Lake Conservation Bank property (parcel no. 191177000). The owner for the Round Lake Conservation Bank property is working with the United States Army Corps of Engineers (USACE), the Washington Department of Fish and Wildlife (WDFW), and Clark County to obtain approval to convert the property from agricultural use to an Endangered Species Act fish habitat mitigation bank. The timing for establishment, use, operation, and maintenance of the Round Lake Conservation Bank is unknown.

10. List any government approvals or permits that will be needed for your proposal, if known.

- National Marine Fisheries Service (NMFS)/U.S. Fish and Wildlife Service (USFWS): Endangered Species Act (ESA) Section 7 Incidental Take Permit/Biological Opinion
- NMFS: Magnuson-Stevens Fishery Conservation and Management Act consultation
- USFWS: Bald and Golden Eagle Protection Act and Migratory Bird Treaty Act
- National Oceanic and Atmospheric Administration (NOAA): National Ocean Service charting of the underwater utility and outfall within a navigable water
• USACE:
  o Rivers and Harbors Act of 1899 Section 10 Permit
  o Clean Water Act Section 404 Permit
• USACE/Washington State Department of Archaeology and Historic Preservation (DAHP): National Historic Preservation Act Section 106 concurrence
• US Coast Guard (USCG):
  o Bridge Permit
  o Private Aids to Navigation (PATON) notification
• WDFW: Hydraulic Project Approval
• Washington State Department of Ecology (Ecology):
  o Review and approval of engineering report per WAC 173-240-060
  o Modification of NPDES Waste Discharge Permit No. WA0023639
  o Clean Water Act Section 401 Water Quality Certification
  o Clean Water Act Section 402 NPDES Construction Stormwater General Permit
• Washington State Department of Natural Resources (DNR):
  o Aquatic Lands Right-of-Entry Agreement
  o Aquatic Lands Easement
• Clark County:
  o Shoreline Management Act Shoreline Substantial Development Permit
  o Shoreline Conditional Use Permit
  o Special Flood Hazard Area Permit
  o Building Permit
  o Grading and Drainage Permit
• Washington State Department of Transportation (WSDOT): Temporary and permanent easements for crossing WSDOT right of way
• BNSF Railway: Railroad Crossing Permit and permanent easement

11. Give brief, complete description of your proposal, including the proposed uses and the size of the project and site. There are several questions later in this checklist that ask you to describe certain aspects of your proposal. You do not need to repeat those answers on this page. (Lead agencies may modify this form to include additional specific information on project description.)

Introduction

The Discovery Clean Water Alliance (Alliance) is a partnership between Clark County, Clark Regional Wastewater District, and the cities of Battle Ground and Ridgefield. The Alliance’s Salmon Creek Treatment Plant (SCTP) provides preliminary treatment/screening, primary treatment, secondary treatment/aeration tanks and clarifiers/disinfection, discharge, solids processing, biosolids recycling, and process control for wastewater generated within the urban growth areas of Ridgefield and Battle Ground and portions of unincorporated Clark County immediately north of Vancouver. Originally constructed in 1976, the plant serves about 100,000 residents in 41,000 homes and businesses, producing 8-10 million gallons of wastewater daily.¹

¹ https://www.discoverycwa.org/SCWWTP.html.
Clark County Public Works oversees plant operations with a full-time staff of 14 managers, maintenance technicians, certified operators, and a laboratory analyst. SCTP expansion programs in 1995 and 2009 brought the SCTP treatment capacity to 14.95 MGD (average day maximum month). The existing facility includes a 30-inch, 7,012-foot long outfall and effluent pipeline that transports treated effluent from the SCTP to the Columbia River. Treated effluent is discharged to the Columbia River through a multiport diffuser located near River Mile (RM) 96. In 2016, the Alliance constructed Phase I of the Discovery Corridor Wastewater Transmission System, which conveys wastewater from Ridgefield to the SCTP and allows the eventual decommissioning of the Ridgefield Treatment Plant and its outfall to Lake River.

The Alliance proposes to construct the proposed project, a phase of the SCTP’s Expansion Program, as authorized in the Alliance’s Capital Plan and referred to as “Phase 5A – Columbia River Outfall and Effluent Pipeline.” The proposed project is a new outfall diffuser and effluent pipeline from the SCTP to the Columbia River, an upgrade of effluent pumps at the SCTP’s effluent pump station, and removal of the existing outfall diffuser in the Columbia River. The existing outfall and effluent pipeline extending from the SCTP to the Columbia River were built during 1974-76 and are over 40 years old. Flows in the existing pipeline and outfall are approaching 85 percent of the SCTP’s rated capacity. The shoreline near the existing outfall continues to shift, threatening the long-term stability of the existing outfall.

The benefits of the proposed project include upgrading the existing effluent transmission system by prolonging the longevity of the system, facilitating pipeline maintenance, and replacing the existing outfall diffuser with an improved multi-port diffuser. The improved diffuser will comply with future water quality standards by ensuring adequate mixing and dilution of treated wastewater discharged into the Columbia River. The proposed project has been planned since 1995 when Clark County prepared a State Environmental Policy Act (SEPA) Final Environmental Impact Statement (FEIS) for the Salmon Creek Wastewater Treatment Plant Expansion Program and determined the proposed project to be an incremental step in the expansion program and preferred action.

The Alliance is providing the engineering report for the proposed project, including engineering plans for these improvements, to Ecology for concurrent review and approval.2

The responses in this SEPA Checklist use a variety of terms related to the proposed project and the area proposed for development, and they are defined as follows:

- Proposed project: The primary project components, including the new outfall diffuser and effluent pipeline, the removal of the old outfall diffuser, and effluent pump replacements at the SCTP.
- Proposed project corridor: The approximately 7,272-foot linear extent of the proposed outfall and effluent pipeline from the SCTP to the Columbia River, inclusive of permanent and temporary work.
- Proposed project site: The entire area affected by construction, including the outfall diffuser and pipeline, staging areas, and construction access roads.
- Proposed project vicinity: The area within a half-mile of the proposed project site.

Description of Proposed Phase 5A Project

The Alliance’s proposed project will begin at the SCTP and proceed west across open space and agricultural areas (approximately 1.3 miles in length). Refer to selected Phase 5A Project—Columbia River Outfall and Effluent Pipeline 30 percent design drawings in Appendix A for design

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sheets referenced in this Checklist narrative. See Vicinity Map in Appendix B. The proposed project’s major elements include the following:

- Replacing the existing outfall diffuser with an improved diffuser that will comply with future water quality standards by ensuring adequate mixing and dilution of treated water discharged into the Columbia River. See Drawing PP-01 in Appendix A for the proposed outfall diffuser.

- Constructing a 48-inch effluent pipeline. The new pipeline will lie belowground immediately south of and parallel to the existing 30-inch effluent pipeline. See Drawings PP-02 to PP-08 (Appendix A) for the proposed 48-inch effluent pipeline.

- Replacing the four existing effluent pumps at the SCTP’s effluent pump station. The new vertical line shaft pumps will fit into the four existing pump slots. They will be sized to accommodate SCTP effluent discharges through Facilities Plan Phases 5 and 6. See Drawing PS-01 (Appendix A) for the proposed effluent pump station upgrades.

- Connecting the existing 30-inch effluent pipeline to the new outfall at Station. 21+00, just west of NW Lower River Road, with butterfly valves. The 30-inch pipeline from the SCTP nearly to the Columbia River shoreline will serve as a back-up pipeline if maintenance is required on the new effluent pipeline. See Drawings PP-02 and D-02 in Appendix A for the proposed connection to the existing outfall pipe.

- Removing an 870-foot portion of the existing outfall and effluent pipeline from the Columbia River nearly to NW Lower River Road, with the remaining existing 30-inch pipeline left in service. See Drawings PP-01 and D-02 in Appendix A for the proposed removal of the existing outfall diffuser.

The proposed project will not increase the SCTP’s Ecology-approved treatment capacity—the capacity of the SCTP to treat wastewater inflows—because it will not alter the unit treatment processes (other than effluent transmission and effluent pump station capacities). Hydraulic capacity is currently rated at 14.95 million gallons per day [MGD] (average-day maximum month flow). The Phase 5B Project is expected to increase treatment capacity to 17.5 MGD. The proposed project will size the new 48-inch transmission pipeline and outfall diffuser with capacity to process estimated 2066 influent flows up to 72 MGD peak-hour flow and will size the effluent pump station capacity to process estimated 2028 influent flows up to 43.8 MGD peak-hour flow (24.3 MGD average-day maximum month flow). As Clark County grows and the treatment plant is further upgraded per the Facilities Plan, the larger effluent pipeline, improved diffuser, and bigger effluent pumps will accommodate planned growth in the adopted Clark County 20-year Comprehensive Growth Management Plan and associated flow increases.

The proposed project site includes properties used for agricultural purposes, waterways used for recreation and navigation, and open space. (See Vicinity Map in Attachment B.) The installation of the new line will include construction in open fields that are used as pasture or farmed for hay production. The new pipeline will cross under the BNSF rail lines, Salmon Creek, Lake River, and the former NW Lower River Road right of way. Peripheral wetlands surrounding Curtis Lake and Round Lake will be temporarily disturbed.

**Proposed Project Construction**

Construction of the proposed project combines trenchless and open trench construction, with open trenching practicable for most of the proposed project corridor. The BNSF rail line undercrossing will require trenchless construction for work in the railroad right of way. The trenchless construction will include auger-boring for approximately 500 linear feet with a launch pit for the auger device on the Alliance’s property to the east of the BNSF line. The bore will be sufficient to
ram a 60-inch steel casing to contain the effluent pipe. The belowground bore will head west from the launch pit, cross the property of the Ashley Ridge Homeowners Association and BNSF right of way, and exit at the Felida 26 Acres property.

In-water construction within Salmon Creek and Lake River will include open trenching within cofferdam isolation areas. A temporary work trestle/platform will be installed at Salmon Creek to access the auger device exit pit. The contractor will install a sheet pile cofferdam by vibrating sheets on half of the stream or river to manage turbidity, and may implement a dewatering plan, if pipeline construction within the cofferdam must be “in the dry.” The cofferdam method provides access to aquatic lands while also allowing continuous flow around the cofferdam for fish and recreational purposes. The contractor will weld the pipeline on land, lower it into place with the open end in a concrete or steel tie-in box near the center of the stream, and backfill the trench up to pre-construction elevation. Upon completion of the first half of the effluent pipeline stream undercrossing, the contractor will dismantle the cofferdam and repeat the process for the remaining half. The above-pipeline portion of the tie-in box will be removed from the channel after the pipeline is installed.

The contractor may need to shore the trench walls for open trench construction. (See Drawing D-01 in Appendix A for the proposed trench shoring cross section detail.) Around wetland areas, the contractor will install trench plugs to prevent draining wetlands.

The construction of the Columbia River outfall diffuser will involve excavation by open trench proceeding from the shore into the river. The contractor will conduct nearshore construction from the land, possibly with the aid of a temporary work trestle/platform extending offshore over shallow water, if the excavator has insufficient reach. Construction in deeper water will be accessed by equipment mounted on barges. The contractor will excavate the nearshore and deep water trench using an excavator or clamshell dredge and an ecology bucket. A partial turbidity curtain will be placed in shallow water (up to 20 feet deep) if the current allows. Dredged sand will be sidesteamed to the downstream riverbed.

Table 1 summarizes the proposed construction method for each pipeline segment.

Table 1. Proposed Construction Methods by Effluent Pipeline Segment.

<table>
<thead>
<tr>
<th>Pipeline Segment</th>
<th>Construction Methods</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Alignment Reach 1:</strong> SCTP to Western Shoreline of Salmon Creek (Stations 81+94 to 68+50 in 30% design drawings)</td>
<td>Open trenching from the SCTP effluent pump station to auger-bore launch pit. Sheet piles or shoring near steep upland slope and existing roadway. Temporary erosion and sediment controls at work perimeter. Dewatering water discharged to a storage tank/sediment bag/vegetative strip, or equivalent. Backfill to pre-construction grade and revegetate with native species upon completion. Trenchless pipeline construction using auger-bore from launch pit on SCTP property. Simultaneously install 60-inch steel casing. Receiving pit located west of railroad right of way. Install carrier pipe after casing is complete. Restore launch and receiving pits to pre-project grades and revegetate with native species. Total bore distance approximately 513 feet. Open trench construction west of railroad right of way (approximate station 73+00) to Alignment Reach 2. Shoring and dewatering as necessary. Use of trench box for worker safety and to minimize excavation volume. Backfill with pipe zone material and native soil at trench surface. Reseed disturbed area with native species. Use of cofferdam for Salmon Creek crossing. Temporary work trestle installed across the creek supported by temporary piles spaced to allow debris passage and ongoing vessel traffic. Piles driven and proofed using impact hammer.</td>
</tr>
</tbody>
</table>
Pipeline Segment | Construction Methods
--- | ---
**Alignment Reach 2:** Western Shoreline of Salmon Creek to Eastern Shoreline of Lake River (Stations 68+50 to 46+50 in 30% design drawings) | Open trench construction. Shoring and dewatering as necessary. Use of trench box for worker safety and to minimize excavation volume. Backfill with pipe zone material and native soil at trench surface. Reseed disturbed area with native species.

**Alignment Reach 3:** Lake River Crossing (Stations 46+50 to 42+00 in 30% design drawings) | Open trenching within cofferdams. Either barge or work trestle may be used, based on equipment availability, river conditions, and regulatory constraints. Install floating turbidity curtain. Excavate from barge, trestle, or dewatered cofferdam. Install angular rock as pipe bedding material. Backfill with native sediment to pre-project grades.

**Alignment Reach 4:** Lake River to Columbia River Onshore Angle Point (Stations 42+00 to 13+00 in 30% design drawings) | Open trenching and shoring. Repair paving on private road after pipeline installation. Concrete revetment mat placed near Columbia River shoreline outside channel to protect against erosion.

**Alignment Reach 5:** Onshore Angle Point to Outfall Diffuser Terminus in Columbia River (Stations 13+00 to 9.70 in 30% design drawings) | Open trenching and underwater construction. Nearshore work completed from land with temporary work trestle/platform extending offshore in shallow water using excavator or clamshell ecology bucket. Deep water construction accomplished from barges. Side casting of dredge spoils.

Construction of the proposed project will require the maintenance, repair, or improvement of existing on-site access roads, the development of new temporary access roads, and temporary staging areas for equipment and construction employee parking. Existing access roads on the site are used by property owners for agricultural/cattle operations. The contractor will repair or modify existing access roads to a maximum width of 12 feet wide. (See Drawing D-05 in Appendix A for access road layout.) Work at existing and new temporary construction access roads may include placing geotextile fabric and crushed gravel over the road prism, and installing drainage features. Nine contractor staging areas will provide material and equipment storage during construction. Table 2 lists the locations proposed for use as staging areas and their sizes. The staging areas will be surfaced with geotextile fabric and crushed gravel. The contractor will remove non-native materials after construction is complete.

**Table 2. Locations and Sizes of Construction Staging Areas for the Proposed Project.**

<table>
<thead>
<tr>
<th>Staging Area</th>
<th>Location</th>
<th>Area (sq.ft.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>No.</td>
<td>Station</td>
<td>Location</td>
</tr>
<tr>
<td>1</td>
<td>78+00</td>
<td>SCTP (Alliance property)</td>
</tr>
<tr>
<td>2</td>
<td>68+50L</td>
<td>Adjacent to and west of Salmon Creek (north of pipeline easement)</td>
</tr>
<tr>
<td>3</td>
<td>68+50R</td>
<td>Adjacent to and west of Salmon Creek (south of pipeline easement)</td>
</tr>
<tr>
<td>4</td>
<td>64+00R</td>
<td>West of Salmon Creek by ~380 feet (south of pipeline easement)</td>
</tr>
<tr>
<td>5</td>
<td>48+00L</td>
<td>Adjacent to and east of Lake River (north of pipeline easement)</td>
</tr>
<tr>
<td>6</td>
<td>49+00R</td>
<td>Adjacent to and east of Lake River (south of pipeline easement)</td>
</tr>
<tr>
<td>7</td>
<td>41+00L</td>
<td>Adjacent to and west of Lake River (north of pipeline easement)</td>
</tr>
<tr>
<td>8</td>
<td>41+00R</td>
<td>Adjacent to and west of Lake River (south of pipeline easement)</td>
</tr>
<tr>
<td>9</td>
<td>20+50L</td>
<td>Adjacent to Columbia River (north of pipeline easement)</td>
</tr>
</tbody>
</table>

The Alliance anticipates project construction will occur from June 2021 to October 2022, spanning about 17 months and two in-water work periods. One possible construction sequence is:
• Year 1: Construct pipeline undercrossings of and approaches to BNSF rail lines, Lake River, and Columbia River (about 9 months)
• Year 2: Construct undercrossing of and approaches to Salmon Creek (about 3-4 months)

Actual construction timing will depend on weather, streamflow, contractor logistics, equipment, and regulatory constraints.

12. Location of the proposal. Give sufficient information for a person to understand the precise location of your proposed project, including a street address, if any, and section, township, and range, if known. If a proposal would occur over a range of area, provide the range or boundaries of the site(s). Provide a legal description, site plan, vicinity map, and topographic map, if reasonably available. While you should submit any plans required by the agency, you are not required to duplicate maps or detailed plans submitted with any permit applications related to this checklist.

The proposed effluent pipeline will run belowground from the effluent pump station at the SCTP, westerly across Salmon Creek and Lake River, to the outfall and terminate in the Columbia River.

The SCTP is at 15100 Northwest McCann Road, Vancouver, Washington in unincorporated Clark County. It lies in Township 3N, Range 1E, Section 19 NE ¼ and NW ¼, and within Clark County Property IDs 183515-000 and 183508-000.

The new treated effluent pipeline will run about 1.3 miles, roughly parallel to and offset about 22-25 feet south of the existing effluent pipeline. The pipeline will lie in Township 3 North, Range 1 East, Section 19, and Township 3 North, Range 1 West, Section 24; traverse Clark County Parcels 183508-000, 183493-000, 986029-218, 183058-000, 191067-000, 191176-000, and 191177-000; and cross property owned by BNSF Railway and the State of Washington (WSDOT and DNR). The pipeline is situated in three subwatersheds: U.S. Geological Survey (USGS) Hydrologic Unit codes 170800030103 (Lower Salmon Creek), 170800030104 (Lake River-Frontal Columbia), and 170800030200 (Hayden Island-Columbia River). The pipeline is within Ecology’s Water Resource Inventory Area 28. The outfall and the pipeline will terminate at latitude 46°43’58” N, longitude 122°45’23” W, which is near RM 96 of the Columbia River.

See selected 30 Percent Engineering Design Drawings, which contain site plans and topography, in Attachment A. The vicinity map is in Attachment B.

B. ENVIRONMENTAL ELEMENTS

1. Earth
   a. General description of the site:

   (circle one): Flat, rolling, hilly, steep slopes, mountainous, other _____________

   The proposed project corridor is approximately 7,264 feet (1.38 miles) in length, extending from the SCTP to the Columbia River. The proposed project corridor consists of Columbia River floodplain (approximately 5,000 linear feet), with little to no discernible slope (0-5 percent). Approximately 1,031 linear feet of the project corridor have slopes above 15 percent,\(^3\) including slopes near the

\(^3\) Based on 2005 Puget Sound Lidar Data – Bare Earth DEM (processed to slope).
SCTP (15-25 percent); along the banks of the Columbia River (25-40 percent), Lake River (15-25 percent), and Salmon Creek (15-25 percent); and the BNSF Railway engineered slopes under which the pipeline will be auger-bored (60-100 percent).

b. What is the steepest slope on the site (approximate percent slope)?

The steepest slope on the project site is the BNSF Railway embankment, a 60-100 percent engineered slope composed of compacted sands and gravels (Clark County GIS Maps Online). The slope along the bank of the Columbia River was created by the disposal of dredged material by the USACE and subsequent erosion. The eroded slope ranges from approximately 25 to 40 percent according to Clark County GIS Maps Online. According to CCC 40.430.010(C)(1), slopes that are 40 percent or greater are considered a hazard, unless they are less than 10 feet in vertical height and not part of a larger steep slope system, or if they were created through a previous legal grading activity. The slopes affiliated with the BNSF Railway embankment are engineered, and were constructed through legal grading activities. These slopes do not qualify as a steep slope hazard under Clark County’s critical areas ordinance (CCC 40.400).

c. What general types of soils are found on the site (for example, clay, sand, gravel, peat, muck)? If you know the classification of agricultural soils, specify them and note any agricultural land of long-term commercial significance and whether the proposal results in removing any of these soils.

According to the U.S. Department of Agriculture, Natural Resources Conservation Service (NRCS) Web Soil Survey, these soils exist on the proposed project site:

- Hillsboro Silt Loam, 3 to 8 percent slopes (HoB) – HoB soils are nonhydric and prime farmland.
- Hillsboro Silt Loam, 20 to 30 percent slopes (HoE) – HoE soils are nonhydric and are not prime farmland.
- Pilchuck Fine Sand, 0 to 8 percent slopes (PhB) – PhB soils are nonhydric and are prime farmland, if drained.
- Rough Broken Land (Ro) – Ro soils are nonhydric and are prime farmland, if drained.
- Sauvie Silt Loam, 0 to 3 percent slopes (SmA) – SmA soils are nonhydric and are prime farmland, if drained and either protected from flooding or not frequently flooded during the growing season.
- Sauvie Silt Loam, 3 to 8 percent slopes (SmB) – SmB soils are nonhydric and are prime farmland, if drained and either protected from flooding or not frequently flooded during the growing season.
- Sauvie Silty Clay Loam, 0 to 8 percent slopes (SpB) – SpB soils are nonhydric and are prime farmland, if drained and either protected from flooding or not frequently flooded during the growing season.

The proposed project’s geotechnical data report describes the regional and local geology. The report documents substrate on the proposed project site as follows:

- Near the SCTP: silty gravel with sand (GM); sandy silt (ML); silty clay (CL-ML); silty sand (SM); poorly graded sand (SP); well graded gravel (GW); clayey gravel with sand (GC); and poorly graded sand with silt (SP-SM).

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4 CH2M, Geotechnical Data Report – Phase 5A Project – Columbia River Outfall and Effluent Pipeline, 2018.
• Ridge area between the BNSF rail lines and the SCTP: gravel layer; silt (ML); silt with sand (ML); poorly graded gravel (GP); and poorly graded gravel with silt (GP-GM).

• East bank of Salmon Creek: elastic silt (MH); poorly graded gravel (GP); and poorly graded gravel with silt (GP-GM).

• West bank of Salmon Creek: silt (ML); silt with sand (ML); silty sand (SM); poorly graded sand (SP); poorly graded sand with silt (SP-SM); poorly graded gravel with sand (GP); and poorly graded gravel with clay (GP-GC).

• Low lying area between Salmon Creek and NW Lower River Road/SR 501: silt (ML); silt with sand (ML); sandy silt (ML); silty sand (SM); poorly graded sand (SP); poorly graded sand with silt (SP-SM); poorly graded gravel with sand (GP); poorly graded gravel with clay (GP-GC); silt (ML); sandy silt (ML); elastic silt (MH); silty clay (CL-ML); fat clay (CH); poorly graded sand (SP); poorly graded sand with silt (SP-SM); and silt sand (SM).

• Area between NW Lower River Road/SR 501 and Columbia River: poorly graded sand (SP)(dredge spoils); silt (ML); sandy silt (ML); lean clay (CL); silty sand (SM); and poorly graded sand (SP).

• Columbia River: poorly graded sand (SP); poorly graded sand with silt (SP-SM); and silty sand (SM).

Prime farmland is land that has the best combination of physical and chemical characteristics for producing food, feed, forage, oilseed, and other agricultural crops with minimum inputs of fuel, fertilizer, pesticides, and labor, without intolerable soil erosion.5 According to the NRCS Web Soil Survey, existing prime farmland on the proposed project site is limited to a narrow band of Hillsboro silt loam between the SCTP and Salmon Creek, most of which will be outside the construction footprint.6 Sauvie silt loam or Pilchuck fine sand is also prime farmland, if drained. Areas unsuitable as prime farmland include the BNSF Railway embankment and water areas.

Not all soil classified as “prime farmland” is agricultural land of long-term commercial significance. According to WAC 365-190-050, agricultural land of long-term commercial significance is designated based on the following criteria: (1) the land is not already characterized by urban growth, (2) the land is used or capable of being used for agricultural production, or (3) the land has long-term commercial significance for agriculture.

The proposed project site is within the Columbia River lowlands, and is partially designated Agriculture/Wildlife (AG/WL) by the Clark County comprehensive plan.7 The Columbia River lowlands, specifically those areas designated AG/WL, contain soils that have the characteristics to support long-term commercially-significant agriculture. Therefore, the proposed project corridor is in an area having agricultural land of long-term commercial significance and soils classified as prime farmland. Native soils that are excavated during construction will be used as backfill and topsoil within the proposed project corridor; therefore, these soils will remain on site, and will be available for future agricultural use.

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d. Are there surface indications or history of unstable soils in the immediate vicinity? If so, describe.

The proposed project is in the northwestern part of the Portland Basin where flood deposits blanket the basin floor; these deposits consist largely of unconsolidated gravel and sand, along with silty and clayey phases.\(^8\) The four surficial geologic units along the proposed pipeline alignment are silt and clay facies of Columbia River floodplain alluvium deposits (Qcf), sand facies of Columbia River floodplain alluvium deposits (Qcc), sand and silt facies of cataclysmic flood deposits (Qfs), and conglomerate member of Troutdale Formation (Ttfc).\(^9\)

According to the geologic hazard areas provisions of the Clark County Code (CCC 40.430), regulated geologic hazard areas include landslide, seismic, steep slope, and volcanic hazards. The following subsections describe geologic and erosion hazards on the proposed project site:

**Landslide Hazards**

Landslide hazards are defined by CCC 40.430.010(C)(2) as areas that, due to a combination of slope inclination, soil type, and presence of water, are susceptible to landsliding. According to Clark County GIS Maps Online, potential landslide hazard areas occur along the BNSF Railway embankment and the shores of Salmon Creek, Lake River, and the Columbia River. The proposed project’s geotechnical data report does not identify landslide hazards on the proposed project site.

**Seismic Hazards**

CCC 40.430.010(C)(3) defines seismic hazard areas as areas subject to severe risk of damage from earthquake-induced soil liquefaction, ground-shaking amplification, slope failure, settlement, or surface faulting. According to Clark County GIS Maps Online, soils on the proposed project site west of the BNSF rail lines contain a moderate to high risk of liquefaction, with soils east of the BNSF lines rated as having a low to moderate liquefaction potential. The proposed project site is also designated with a National Earthquake Hazard Reduction Program (NEHRP) rating for ground amplification of: (1) E for land between the Columbia River and Lake River, with isolated areas of E-rated land also occurring directly south of Round Lake; (2) D for a strip of land between Salmon Creek and Lake River; and (3) C for the rest of the proposed project site. Although Clark County does not specify which NEHRP site class ratings qualify as seismic hazards, a site class rating of D or higher triggers the requirements for a geotechnical report and these areas are considered critical areas regulated under Clark County’s geologic hazard areas ordinance.

The geotechnical data report does not identify seismic hazards at the proposed project site.

**Steep Slope Hazards**

According to CCC 40.430.010(C)(1), steep slope hazard areas are areas not mapped or designated landslide hazards, but where there are steep slopes equal to or greater than 40 percent slope. Steep slopes that are less than 10 feet in vertical height and not part of a larger steep slope system, and steep slopes created through previous legal grading activity, are not regulated steep slope hazard areas. As such, no areas within the proposed project site meet Clark County’s steep slope hazard area designation.

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Volcanic Hazards

No volcanic hazard areas occur within the proposed project site based on available information from Clark County GIS Maps Online.

The geotechnical data report does not identify volcanic hazards at the proposed project site.

Erosion

Clark County requires impact minimization measures for ground-disturbing activities that occur in areas prone to erosion. NRCS (2016) rates the SCTP site as having moderate potential for erosion; the BNSF Railway embankment as having a very high risk for erosion based on the steepness of the slopes adjacent to the rail line; and all the flat land on the proposed project site as having a slight potential for erosion.

About 400 feet of the SCTP pipeline alignment, beginning at the effluent pump station, will involve surface soil disturbance. This segment is nearly level along the pipeline, but has a 22 percent cross slope toward Salmon Creek.

The proposed project will avoid disturbing soil on steeper slopes between the SCTP and the BNSF Railway property, including the engineered railroad embankment, by constructing the pipeline belowground using auger-boring. This method is trenchless and avoids ground surface disturbance in erosion hazard areas.

Along the pipeline alignment west of the BNSF Railway property and in the Columbia River floodplain, the potential for erosion is slight, except along the streambanks of Salmon Creek and Lake River. Although both waterways are tidally influenced, which reduces hydraulic energy, ongoing bank scour is a natural process.

The USACE has been managing erosion along the Columbia River since the early 1900s, and has installed a pile dike system. At lower flows, the USACE pile dike system is managing bank erosion by encouraging sediment deposition along the channel bank, and focusing river velocity within the main channel.10 Four USACE-constructed pile dikes are on the right bank near the existing outfall, with one dike (Dike 95.85) approximately 120 feet downstream of the existing outfall, another 1,750 feet upstream of the existing outfall (Dike 96.21), and the third (Dike 95.51) and fourth (Dike 95.25) located 2,100 feet and 3,400 downstream of the existing outfall.

An analysis of historical aerial photos reveals that the Columbia River shoreline at RM 96 advanced westward during the 1960s through the 1970s when dredged material (sand) was placed above and below the ordinary high water elevation.11 Since the 1970s, the riverbank has been actively retreating. The vertical portions of the bank profile and the jagged top of the bank indicate local slump failures. The lower portion of the bank shows a near vertical slope over an estimated 3 to 5 feet in height. The sandy riverbank is eroding at 4 to 10 feet per year, with erosion rates decreasing in more recent periods. Historical shoreline erosion rates were 10 feet per year on average between 1990 and 2002, 5 feet per year on average between 2002 and 2010, and 3 feet per year on average between 2010 and 2016. This bank erosion was likely through multiple processes, including direct erosion by surface currents, wave and vessel wake attack, and loss of strength when the bank was submerged under high water.

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10 Carl Kassebaum, Structural and Hydraulic Analysis of Columbia River Pile Dikes, October 3, 2011.
11 CH2M HILL, Columbia River Shoreline Stability Assessment for Proposed Salmon Creek Outfall Replacement Project, 2017.
e. Describe the purpose, type, total area, and approximate quantities and total affected area of any filling, excavation, and grading proposed. Indicate source of fill.

The construction of the proposed project will require the following excavation/grading activities.

**Farmland/NW Lower River Road**

The contractor will complete excavation within portions of the proposed project corridor that contain farmland and where the corridor crosses NW Lower River Road/SR 501 and private dikes using open trenching. The contractor will salvage native excavated topsoil for reuse. Also, if suitable, the excavated material will be stored for later reuse as trench backfill. The contractor will dispose of excess excavated material on site at a previously graded non-floodplain site on tax lot 183058000 near NW 61st Avenue, or at an approved off-site disposal area.

The contractor will import fill material for trench bedding and pipe zone material. NW Lower River Road/SR 501 will be reconstructed and repaved where crossed by the pipeline trench. Existing ranch access roads will be used to access the pipeline corridor. These roads are in various states of repair — where the existing access roads are gravel-surfaced, the gravel will be repaired to carry heavy equipment. Where gravel is lacking, a temporary gravel surface will be laid. Ranch access roads are generally wide enough for construction traffic, but they will be widened strategically to provide adequate turning radiuses for tractor trailers. No new permanent roads will be constructed.

**Rivers/Streams**

The Alliance proposes to open trench for the effluent pipeline below the OHWM of Salmon Creek and Lake River. For the waterway crossings, the contractor will excavate within cofferdams. In-stream excavation within cofferdams will occur either in the dry or in the wet. If excavation occurs in the dry, the contractor will dewater the areas within the cofferdams prior to and during excavation.

After the pipe is laid under Salmon Creek and Lake River, proposed project plans call for the contractor to place imported bedding and pipe zone material around the pipe with 1 foot of cover. Above the pipe zone, angular stone will be placed with 2.5 feet of cover. The plans specify 6-inch stone at Salmon Creek and 4-inch stone at Lake River. Above the angular stone, the contractor will backfill with native excavated material to restore the pre-project grades. The contractor will store excavated native materials temporarily in the temporary construction easements for later reuse, or at an approved off-site disposal area.

At the Columbia River, the Alliance proposes to excavate to the required depth below riverbed for the outfall diffuser using an excavator or clamshell dredge with an ecology bucket. Excavated materials from the Columbia River will be sidecast, placed directly onshore, or placed on a barge and removed to an approved off-site location for disposal. After the contractor places the new outfall pipe and diffuser in the trench, the contractor will backfill the trench in the Columbia River with imported bedding and pipe zone material, and Class 50 riprap instead of angular stone. Native riverbed material will fill the remaining void up to riverbed grade.

Outside the ordinary high water elevation of the Columbia River, an articulated concrete revetment mat will be placed in the trench prior to backfilling to prevent pipeline exposure in the event of severe shoreline erosion. After the revetment mat is in place, it will be buried with native materials as the trench backfill is completed. Permanent markers will be placed on the surface to indicate the mat’s location.
**Wetlands**

The contractor will install the pipeline in wetlands by open trenching. Trench shoring will be used, as practicable, to limit the volume of material excavated for the trench. The contractor will salvage excavated wetland topsoil for reapplication over the surface of the backfill. The excavated wetland topsoil will be stockpiled temporarily in the pipeline easements.

The contractor will install trench plugs, consisting of low permeability trench backfill, at intervals along the proposed project corridor. The trench plugs will prevent water from flowing along the pipeline and eroding the backfill materials and will minimize the potential for groundwater flow through the backfill. Where the pipeline trench crosses a wetland, the contractor will install trench plugs on both sides of the wetland to avoid a French drain effect.

Providing sufficient cover for the effluent pipeline will require an unavoidable permanent wetland fill. See Drawing PP-06 in Appendix A for the proposed wetland fill at approximately pipeline Station 66+00.

**Railroad Undercrossing**

Auger-boring will place the effluent pipeline underneath the BNSF rail lines. The contractor will collect all spoils generated during the boring process at the launch pit on Alliance property, remove them using a crane and cleanout bucket, and transport them off site to an approved location. The exit pit just west of the BNSF right of way will be shored. The contractor will restore the launch and exit pits to pre-construction grades using native soils at the surface.

**Total Area and Quantities of Excavation and Grading**

The total area of the proposed project site is 66.5 acres. Trench excavation and backfilling will affect about 5 of those acres, or less acreage if trench shoring is used to steepen trench sides. In total, the proposed project will require excavate about 40,600 cubic yards of soil and sediment. About half of the excavated volume will be salvaged and reused as trench backfill; the remainder will be transported to the on-site soil storage area on tax lot 183058000 (near NW 61st Avenue) or to an approved off-site location. The other half of the excavated trench volume will be filled with the 48-inch pipe, bedding, pipe zone material, and angular stone imported from commercial source(s).

**f. Could erosion occur as a result of clearing, construction, or use? If so, generally describe.**

During ground-disturbing activities, soil erosion may occur. To minimize potential erosion, the contractor will implement erosion and sediment control best management practices (BMPs). Section B.1.h includes project-specific BMPs.

Pipeline construction along the riverbanks could exacerbate shoreline erosion if the soil is unstable. Soils that have strengthened over time may become loosened and unstable due to ground disturbance. After open trenching along the riverbanks, the contractor will restore bank stability using bioengineering techniques to reduce the post-construction risk of erosion.

Also, the contractor will install a concrete revetment mat along the bank of the Columbia River, above the ordinary high water elevation, to protect the effluent pipeline from potential exposure caused by erosion. The existing riprap armoring at the Columbia River shoreline at the existing effluent outfall will be removed, along with the outfall. Section B.1.h includes more details.

**g. About what percent of the site will be covered with impervious surfaces after project construction (for example, asphalt or buildings)?**

Existing impervious surfaces on the proposed project site include portions of the asphalt/concrete access drive at the SCTP; existing circulation roads that contain packed gravel; and the BNSF line...
and NW Lower River Road/SR 501 that run perpendicularly across the proposed alignment. The Alliance will locate the proposed pipeline entirely underground, and therefore will not substantively add to the existing impervious surface area of the proposed project site. The pipeline’s maintenance access and air valve vault covers, which will be exposed at the ground surface, will slightly increase impervious surface area. Also, existing access road repairs and modifications will not increase the permanent impervious surface area within the proposed project site.

h. Proposed measures to reduce or control erosion, or other impacts to the earth, if any:

To reduce the potential for pipeline or diffuser damage from seismic or landslide events, the design of the proposed pipeline specifies resilient pipe material and fittings, ball-joints to allow settlement, pile-support for the diffuser section, depths of burial below potential slope failure zones, and pipe bedding and pipe zone material to provide structural stability for the 50-year design life of the system. Ball joints will allow up to 15 degrees of rotation if the dynamic banks exhibit movement and the pipeline bedding is impacted.

The auger-bored pipeline under the ridge between the BNSF line and the SCTP, and under the BNSF line, primarily will be through an interbedded geologic layer 5 to 25 feet belowground surface, composed of sandy silt to silty sand, grading to poorly graded sand with varying amounts of silt. Although not as stable as the Troutdale Formation below, the substrate is reasonably stable and an acceptable tradeoff for being above the seasonally high groundwater table: some soil samples classified as low plasticity, the silt material varies from very soft to firm, and the interbedded sandy silt/silty sand soils grading to sand have stiff to hard consistency, and medium dense relative density.

To reduce the potential for erosion during proposed project construction, the Alliance proposes to use the following BMPs, modified and adapted as necessary to satisfy water quality standards:

- Prepare an erosion and sediment control plan
- Retain existing vegetation, as possible
- Place temporary perimeter fencing around sensitive sites
- Add gravel or crushed rock to unpaved roads and staging areas
- Install a construction entrance
- Use sediment fencing, plastic sheeting, straw wattles, sediment barriers, and vegetated filter strips
- Employ surface roughening
- Sweep streets
- Make use of rolled erosion control products (blankets/mats)
- Use mulches, seeding, and planting
- Store hazardous/dangerous materials away from waterways
- Store hazardous/dangerous materials in secondary containment when not in use

To reduce the risk of streams scouring the streambeds or channel margins and exposing the pipeline, the selected alignment avoids the existing scour-prone areas, and sets the pipe profile below the general scour prisms of the streams.

The proposed project will apply bioengineering techniques for post-construction riverbank stabilization at the Columbia River, Lake River, and Salmon Creek. After trench backfilling, the riverbanks will be reconstructed using encapsulated soil wraps, which involve wrapping a slowly biodegradable erosion blanket around stacked layers (lifts) of native soil. The soil layers will be
seeded with native plant species, and native trees and shrubs will be established, either as cuttings in hydric soil, rooted cuttings, or seedlings.

The plans call for a concrete revetment mat within the upland dredged material deposited by the USACE between NW Lower River Road/SR 501 and the Columbia River. The revetment mat will be placed over the ball joint of the effluent pipeline, and buried. The revetment mat will protect the effluent pipeline if river currents continue to erode the riverbank.

Riverbed elevations (sand wave crests and troughs) at the outfall diffuser ports pose risks of burial by sand and riverbed erosion that increases the exposure length of diffuser risers. Risk mitigation for changes in riverbed elevation includes coastal engineering analysis to predict bedform heights at the diffuser site, elevating riser ports above predicted sand waves, and strengthening risers and ports to withstand exposure to river currents and large woody debris.

The proposed effluent pipeline will require excavation in soils classified as having long-term agricultural commercial significance, and wetland soils. Native soils that are excavated during construction will be temporarily stockpiled on site and used as backfill or topsoil within the proposed project corridor; therefore, these soils will remain on site, and will be available for future agricultural use and as rehabilitation for temporary wetland impacts.

2. Air
   a. What types of emissions to the air would result from the proposal during construction, operation, and maintenance when the project is completed? If any, generally describe and give approximate quantities if known.

   The Clark County airshed, as all of Washington, does not have any areas designated nonattainment for exceeding pollution limits of National Ambient Air Quality Standards (NAAQS). There are NAAQS for six common air pollutants: particulate matter (also sometimes called PM2.5 and PM10, or particle pollution), ground-level ozone (O3), carbon monoxide (CO), sulfur dioxide (SO2), nitrogen oxides (NOx), and lead (Pb). The primary NAAQS were established by the U.S. Environmental Protection Agency (EPA) to provide an adequate margin of safety for protecting the health of susceptible populations, including infants, the aged, and those suffering from chronic pulmonary or cardiovascular disease. Persons with impaired health may suffer an aggravation of their illness if exposed to pollutant levels above the NAAQS. The secondary NAAQS were established to protect the public welfare, which includes soil, water, forests, agricultural crops, wildlife, visibility, and climate. In 2015, Clark County experienced a median Air Quality Index of 33.0, which falls in the "good" range. The air quality index was "good" 79.1 percent of days.

   The Washington Clean Air Act (Chapter 70.94 RCW) and General Regulations for Air Pollution Sources (Chapter 173-400 WAC) require owners and operators of fugitive dust sources to prevent fugitive dust from becoming airborne and to maintain and operate sources to minimize emissions. During construction of the pipeline, earthmoving equipment and vehicle traffic may generate particle pollution from dust and emissions that includes nitrogen oxides (NOx), carbon monoxide (CO), and PM10 (dust), but this pollution will be temporary in nature.

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The SCTP is a typical secondary treatment plant composed of common unit processes. Emissions during the operation of the SCTP include volatile organic compounds, PM_{10}, NO_x, and CO. Also, the plant generates odors as a byproduct of the various physical and biological treatment processes. These odors are primarily hydrogen sulfide (H_2S) and smaller amounts of other organic reduced sulfur compounds (methyl mercaptans, dimethyl disulfide, etc.), all traditionally associated with secondary treatment plants. The odors can drift across plant property lines and affect nearby residents. However, the proposed project will not increase air emissions because it will not increase the SCTP treatment capacity, and none of the plant’s unit processes will be altered except for the proposed emission-free effluent pump station upgrade.

The SCTP operates under Air Discharge Permit 07-2726 issued by SWCAA. Once additional design is completed, SWCAA will be contacted to verify that a minor modification of the Alliance’s SCTP air discharge permit will not be required for the proposed effluent pipeline or effluent pump station modifications.

Although the proposed effluent pipeline will be fitted with four air valves for venting, the treated effluent is not a source of odors.

b. Are there any off-site sources of emissions or odor that may affect your proposal? If so, generally describe.

The proposed project will construct a belowground effluent pipeline and outfall and will not be affected by off-site emissions or odor. The pipeline will discharge effluent from the SCTP, which operates under SWCAA Air Discharge Permit 07-2726. SCTP manages odor and emissions from wastewater processes within requirements for toxic air pollution control and odor and hydrogen sulfide target thresholds, and implements improved controls as needed to achieve compliance.

c. Proposed measures to reduce or control emissions or other impacts to air, if any:

Air emissions during construction will be within regulatory limits, in part through adherence to the proposed project’s NPDES erosion and sediment control plan. Dust and air emissions during construction could be managed, as needed, by carpooling, reducing engine idling, rocking access roads, reducing speeds, applying water, seeding and mulching, or other methods. (See BMPs listed in section B.1.h.)

During SCTP operation and maintenance, the proposed project will not increase air emissions because it will not increase the SCTP treatment capacity. Other than the proposed effluent pump station upgrade which will not generate emissions, none of the plant’s unit processes will be altered. Therefore, no additional measures to reduce or control emissions will be implemented above and beyond those already required by the SCTP’s air discharge permit issued by SWCAA.

3. Water

a. Surface Water:

1) Is there any surface water body on or in the immediate vicinity of the site (including year-round and seasonal streams, saltwater, lakes, ponds, wetlands)? If yes, describe type and provide names. If appropriate, state what stream or river it flows into.

The proposed project site includes six surface water bodies (the Columbia River, Lake River, Salmon Creek, Green Lake, Round Lake, and Curtis Lake), and 15 palustrine emergent and palustrine forested/scrub-shrub wetlands. Salmon Creek flows into Lake River, which flows into the Columbia River. Green Lake is connected to Lake River by a tidal distributary channel.
Round Lake is connected to Lake River by a constructed ditch. Curtis Lake is connected to Salmon Creek by a constructed ditch.

According to WAC 222-16-030, the Columbia River, Lake River, and Salmon Creek are Type S (shorelines of the state) streams. In addition, Green Lake is over 20 acres and is also a shoreline water body. Round Lake is less than 20 acres and is classified as a Type F water body.

BergerABAM environmental scientists conducted a wetland delineation of the proposed project site in August 2015 and September 2017. The delineation identified 15 areas that display wetland characteristics. The wetlands are throughout the proposed project site. The scientists identified the wetlands as wetlands A through L, Q, R, and W. Wetland identification is based, in part, on wetland boundaries delineated by the Round Lake Conservation Bank in 2012 and amended in 2014, which received preliminary concurrence from the USACE. The findings of the delineation are included in the wetland delineation and assessment report (BergerABAM, 2017).

2) Will the project require any work over, in, or adjacent to (within 200 feet) the described waters? If yes, please describe and attach available plans.

Yes, the proposed project will require work over, in, and within 200 feet of the Columbia River, Lake River, Salmon Creek, and palustrine emergent and palustrine forested/scrub-shrub wetlands as described below. The proposed project will also require work within 200 feet of Green Lake, Round Lake, and Curtis Lake.

Lake River and Salmon Creek

The new effluent pipeline will run underneath Salmon Creek and Lake River, roughly parallel to the existing effluent pipeline. As the first step, before any activity takes place below the OHWM, the contractor will be required to install a floating silt curtain or other turbidity control measure(s) around individual work areas or disturbance points. It should be possible to install the silt curtains without fish entrapment and fish salvage operations. The contractor will install silt curtains while maintaining fish passage and acceptable vessel navigation, and minimizing floodway obstructions.

All excavated work below the OHWM of Lake River and Salmon Creek will be isolated by a temporary sheet pile cofferdam. This will minimize potential temporary increases in turbidity. The contractor will construct these segments of pipeline by installing a temporary cofferdam approximately halfway across the river/stream channel to isolate the streambed and divert flow around the in-channel work area, without the need for bypass pumping or fluming of stream flows around the work area. Excavation of streambed sediments by excavator or crane will be accomplished either “in the dry” (by dewatering) or “in the wet” within the cofferdam. Regardless of the working conditions, the proposed project will comply with all water quality standards for turbidity levels of discharged water. The contractor will direct any turbid water removed by dewatering activities to an upland location for settling and infiltration or for passive filtration prior to returning the water to the river. Excavated sediment removed from the riverbed will be saturated, and the contractor may temporarily stockpile the spoils at an upland location for dewatering prior to backfilling or hauling.

After excavating the trench, the contractor will place pipe bedding material, install the pipe, surround the pipe with pipe zone material and angular stone, and backfill to the pre-construction surface with native streambed material. Bedding, pipe zone material, and angular stone will be, clean crushed rock material. Once the pipe has been installed across half of each channel, the contractor will use the same procedure to complete installation in the remaining channel.
A temporary work trestle/platform will support construction activities at Salmon Creek. The trestle will have reinforced concrete slabs supported by steel pipe pile bents placed 40 to 50 feet apart to allow for debris passage and ongoing vessel navigation during construction. The work trestle/platform will be constructed from west to east across the creek by driving temporary steel piles into the ground or stream bottom. Steel piles will be up to 18 inches in diameter, and driven and proofed by impact hammer with sound attenuation.

Construction activities on Lake River may employ a barge(s) to support construction equipment, if the water depth is sufficient for the draft. Alternatively, a temporary work trestle may be used during construction in Lake River for trench access by excavators.

Lake River and Salmon Creek are designated navigable waters, and navigation for boat traffic will be maintained, consistent with USCG approvals. The installation of the effluent pipeline within Salmon Creek and Lake River will take place during the recommended WDFW- and USACE-authorized in-stream work period(s) to minimize impacts to aquatic species. The contractor will restore disturbed streambanks with bio-engineering techniques.

_Columbia River_

The construction of the outfall diffuser in the Columbia River will involve marine construction, with nearshore work being completed from land or a temporary work trestle/platform extending offshore in shallow water. The contractor may install a partial (open-ended) floating silt curtain around the shallow water excavation area, up to a 20-foot depth, to manage turbidity, or possibly install a sheet pile wall on the upstream side of the excavation. In deeper water, the contractor will excavate from barges without isolation.

The contractor will remove sediment from the trench near the shore and in shallow water to the required depth using either an excavator or clamshell dredge with an ecology bucket. Some sidecasting of trench spoils downstream of the trench excavation may be possible to limit the need to raise the dredged material through the water column. However, sidecasting of all spoils may not be possible because the existing effluent outfall, which is downstream of the proposed outfall, must remain operational (unburied by sand) while the new outfall is being constructed. Therefore, the contractor may need to place the spoils directly onshore, or on a barge for off-site disposal. Excavation of the outfall trench and placement of the new outfall pipeline will proceed from the shore into the river. Steel pipe piles below the riverbed will support and stabilize the outfall diffuser. The contractor will use vibratory-driven pipe piles in pairs spaced at about 15 feet on-center, and will place a precast concrete pile cap with a saddle over each pipe pile pair to support the outfall pipe. Once the outfall pipe is in place, a pipe strap bolted or embedded into the pile cap will connect it to the pile cap. The outfall pipe will consist of steel pipe with mechanical couplings and Carnegie-style bell-and-spigot gasketed joints. Using mechanical couplings will allow the pipeline to be constructed in segments that can be picked up and lowered into place using a trestle- or barge-mounted crane. Divers and remotely operated underwater equipment will help position each stick of pipe, fit it up with the previously installed pipe, and tighten the mechanical couplings to seal the joint. Where diffuser risers (ports) extend from the outfall pipe above the riverbed’s surface, the divers will weld the diffuser riser to the pipe, test the weld, and apply coatings before bringing the segments to the site. The contractor will position the pipe segments with the attached diffuser riser using cranes and divers in much the same way that conveyance pipe segments are positioned and joined. Backfill for the outfall pipeline trench will consist of granular bedding and pipe zone material and will cover the top of the pipeline. Angular stone (Class 50 riprap) placed above the granular backfill, below the riverbed surface, will protect the pipe from anchors and other potential disturbances that otherwise could expose or damage the outfall pipe. Spoil material from the pipe trench excavation will backfill the upper portion of the
pipeline trench. The native sand will restore the bottom of the river and cover the granular imported backfill materials. The contractor will apply bioengineering techniques for riverbank rehabilitation.

Although the new diffuser will be outside the designated navigation channel or anchorage, the USCG requires a navigation marker to warn and divert any river traffic away from the area of the new diffuser, which might otherwise be at risk of damage from vessel chains and anchors. The Alliance will determine the final configuration of the required PATON (i.e., three-pile dolphin navigation marker at the end of diffuser) in consultation with the USCG. The dolphin location may be the existing three-pile dolphin at the end of the existing diffuser or a new three-pile dolphin or buoy at the end of the new diffuser. USCG approval is required to relocate the marker. If the Alliance relocates the marker, the contractor will construct the dolphin using steel pipe piles. The contractor will construct a template to maintain the position of each individual pile during installation, and will position and install the pile with a vibratory hammer to reduce hydroacoustic impacts to fish. An impact hammer will only be used if the required embedment depth cannot be achieved using a vibratory hammer. A bubble curtain or other attenuation device will mitigate hydroacoustic impacts to fish associated with the use of an impact hammer. After completing individual pipe pile installation, the contractor will install cross bracing, a maintenance ladder, and warning markers.

The existing outfall diffuser will be removed after the new outfall diffuser is operational. The removal of the outfall will involve marine construction. Nearshore work will be from land. The contractor will install a partial (open-ended) floating silt curtain around the excavation area in shallow water, up to a 20-foot depth. The contractor will use barges to complete deep-water demolition without isolation. Removal will consist of excavating the sandy riverbed to expose the existing pipeline and diffuser, and side casting downstream of the excavation. The contractor will lift riprap and quarry stone used for scour protection and trench backfill to the surface and place them onshore, on a barge for later use on site, or off site for reuse or permanent disposal. If necessary for the removal of the effluent pipe, divers will cut the straps that secure the pipe to existing pile caps. If possible, the divers will remove the pile caps with the pipe. If pile cap removal is not possible without disturbing the supporting timber piles, the caps will remain in place and the contractor will bury them to a depth of at least 4 feet upon backfilling the trench. Existing treated and untreated timber piles supporting the existing outfall diffuser pipeline will remain in place because they will be buried at least 5 feet deep once the trench is backfilled. The contractor will use native sand material obtained from the excavation of the trench for the effluent pipeline and outfall to backfill the trench after removal of the existing outfall pipeline.

**Wetlands**

The proposed project will require approximately 3.19 acres of temporary impacts to wetlands A, B, C, E, F, R, and W from the open-trench installation of the effluent pipe, ground disturbance for equipment traffic, material laydown, and staging. Temporarily impacted wetlands will be restored to their pre-construction contours. Non-native materials will be removed. Salvaged wetland topsoil will be replaced at the backfilled trench surface and seeded with an appropriate native seed mixture once grading is complete. Additionally, about 0.38 acre of temporary impacts to wetland G will occur for temporary access road modifications.

About 0.02 acre of permanent wetland fill will occur within Wetland B (approximately Station 66+00) to provide sufficient cover over the pipe. The Alliance will provide compensatory mitigation for this permanent impact through credit purchase at the USACE/Ecology/EPA-approved Columbia River Wetland Mitigation Bank or equivalent mitigation bank.
**Wetland Buffers**

Pipe installation will cause 5.85 acres of temporary wetland buffer impacts for open-trench installation of the effluent pipe, ground disturbance for equipment traffic, material laydown, and staging. Most temporary wetland buffer impacts for access road improvements will be avoided by using the existing road system, but about 0.06 acre of Wetland G buffer will be temporarily impacted for a temporary access road improvement. Temporary impacts will be restored to pre-construction contours, construction materials removed, and ground surfaces seeded. The proposed project will not cause any permanent wetland buffer impacts, and no permanent buffer impact mitigation will be needed.

3) Estimate the amount of fill and dredge material that would be placed in or removed from surface water or wetlands and indicate the area of the site that would be affected. Indicate the source of fill material.

**Salmon Creek**

The contractor will excavate approximately 2,053 cubic yards of stream bottom from a trench averaging 12 feet deep for pipe installation. About 1,455 cubic yards of the trench backfill will be imported: pipe, pipe bedding (379 cubic yards), pipe zone material (379 cubic yards), and angular stone (428 cubic yards) to stabilize and protect the effluent pipe. The remainder of the backfill will be native sediment.

**Lake River**

The contractor will excavate approximately 2,397 cubic yards of stream bottom from a trench averaging 14 feet deep for pipe installation. About 1,456 cubic yards of the trench backfill will be imported: pipe, pipe bedding (380 cubic yards), pipe zone material (380 cubic yards), and angular stone (428 cubic yards) to stabilize and protect the effluent pipe. The remainder of the backfill will be native sediment.

**Columbia River**

The contractor will excavate approximately 588 cubic yards of Columbia River stream bottom from a 13-foot-deep, on average, trench for pipe installation. About 385 cubic yards of the trench backfill will be imported: pipe/diffuser, granular bedding (101 cubic yards), pipe zone material (101 cubic yards), and angular stone (Class 50 riprap) (113 cubic yards) for pipe stability and protection. The remainder of the backfill will be native sediment. Additionally, the existing outfall diffuser will be removed and the riverbed backfilled with native sediment. Approximately 385 cubic yards of excess sediment from trench excavation, roughly equivalent to the imported backfill volume, will be placed at the void where the existing outfall diffuser will be removed, placed onshore for streambank restoration, or barged off site for permanent disposal at an approved facility.

**Wetlands**

The contractor will excavate approximately 2,326 cubic yards of soil from wetlands A, B, C, and F for trench construction. In addition to the pipe, the trench in wetlands will be backfilled with approximately 506 cubic yards of pipe bedding and 506 cubic yards of pipe zone material, imported from commercial sources, around the pipe. Once the imported material has been placed, the contractor will backfill the remaining trench void with native soil and salvaged wetland topsoil. The wetland surface will be seeded with a native seed mixture, restoring the wetlands to their pre-construction conditions and contours. During trench backfilling, the contractor will install trench plugs so wetlands will not drain into the trench backfill. About 1,371 cubic yards of excess soil material will result from pipeline construction in wetlands,
roughly equivalent to the pipe and import material volumes. The contractor will place excess material in approved on-site uplands or haul to an approved off-site upland area.

The proposed project will require approximately 235 cubic yards of permanent fill material to provide sufficient cover over the pipeline within wetland B. The contractor will use a commercial source of crushed rock or select topsoil material for these activities.

4) Will the proposal require surface water withdrawals or diversions? Give general description, purpose, and approximate quantities if known.

The proposed project will not require surface water withdrawals or diversions. A bypass pipeline or flume will not be used to divert flows from the channels, and surface water will not be withdrawn from actively flowing streams.

The proposed project includes temporary in-water work isolation areas (i.e., turbidity curtains, cofferdams) to install the effluent pipe. These temporary structures in Lake River and Salmon Creek will isolate half of the stream/river channel width at any one time, shifting flows to the open channel.

The total width of Lake River is approximately 370 feet and each temporary work isolation area is approximately 185 feet in length, by 75 feet wide. If the contractor chooses to dewater the work isolation areas, 2 million gallons or more of water may be withdrawn. Most of this volume will be from groundwater, not the actively flowing stream; and clean or filtered water will return to the river or infiltrate to ground, meeting all water quality standards. Dewatering pumps may need to operate during pipeline construction to keep the work area dry.

The total width of Salmon Creek is approximately 150 feet and each temporary work isolation area is approximately 75 feet in length, by 100 feet wide. About 600,000 gallons or more of water may be withdrawn from the work isolation areas. Most of this volume will be from groundwater, not the actively flowing stream; and clean or filtered water will return to the river or infiltrate to ground, meeting all water quality standards. Dewatering pumps may need to operate during pipeline construction to keep the work area dry.

5) Does the proposal lie within a 100-year floodplain? If so, note location on the site plan.

According to the Federal Emergency Management Agency, the regulated 100-year floodplain of the Columbia River, Lake River, and Salmon Creek extends westward from the western side of the BNSF Railway embankment (FIRM Map Nos. 53011C0351D and 53011C0335D). Therefore, the portion of the proposed project west of the rail line lies within the 100-year floodplain. Furthermore, the portion of the proposed project site within the Columbia River is within the regulated floodway.

6) Does the proposal involve any discharges of waste materials to surface waters? If so, describe the type of waste and anticipated volume of discharge.

The SCTP discharges treated wastewater to the Columbia River. This treated effluent is a permitted discharge under NPDES Permit No. WA0023639, and meets all Washington regulatory requirements for water quality. The proposed project will size the new effluent pipeline and outfall diffuser with capacity to process projected 2066 influent flows (i.e., up to 72 MGD peak-hour flow) and will size effluent pump station capacity to process 2028 influent flows up to 43.8 MGD (peak-hour flow) or 24.3 MGD (average-day maximum month flow). However, the proposed project will not increase the SCTP’s overall flow capacity because none of the other unit processes that constrain overall flow capacity will be modified.
The treated wastewater discharges from the proposed pipeline and outfall diffuser have been designed to comply with water quality standards (WAC 173-201A-200 to 260) and with the state’s antidegradation policy (WAC 173-201A-300 to 410). Key elements of Washington’s water quality standards (WAC 173-201A) impact the design of outfall improvements. They include existing water quality impairment (that is, 303(d) listing and total maximum daily loads [TMDLs]), compliance with water quality chemical criteria and temperature standards, effluent toxicity to aquatic organisms, and antidegradation review. Dilution requirements were defined to meet Washington’s water quality standards; they were developed to identify the effluent constituents that require the greatest dilution to meet the water quality standards, and these represent the target design dilutions or minimum design dilutions for the outfall improvements and diffuser. The new outfall diffuser will provide dilutions substantially greater than those required for effluent compliance with water quality criteria. The chemical bis(2-ethylhexyl)phthalate (plasticizer used in cosmetics and soft and hard plastics) is present in low concentrations, but it cannot be addressed solely by dilution and it will require continued monitoring, source control, and treatment technology assessment for all dischargers in Washington.

The water quality standards for Washington’s surface waters (WAC 173-201A) include narrative and numerical receiving water quality standards as well as antidegradation rules in WAC 173-201A-300. These standards address many water quality parameters: dissolved oxygen, temperature, toxicity, turbidity, pH, coliform bacteria, dissolved gases, aesthetic water conditions, radioisotope concentrations, and toxic substances. The proposed project’s effects on each of these water quality parameters have been evaluated using projected buildout effluent flows, existing wastewater data, updated dilution factors for the new outfall diffuser, and background Columbia River receiving water data. Ecology has designated the lower Columbia River for spawning and rearing (as well as migration) of aquatic life in WAC 173-201A-602, and this designation is protective of rearing and migration year-round as well as salmon and trout spawning and emergence during the non-summer period (defined as September 17 to June 13). This designation is relevant to the application of water quality numeric standards for dissolved oxygen, temperature, pH, and turbidity. Ecology has listed the lower Columbia River as impaired for temperature and dissolved oxygen upstream (approximately 5 miles) and downstream (approximately 8 miles) of the outfall site, under the Ecology 303(d) list approved by EPA in July 2016. Both are Class 5 listings, meaning that a TMDL study is expected to be developed unless additional data collections disqualify the listing. Reaches of the lower Columbia River have been listed for temperature for decades, and EPA has taken the lead in developing temperature TMDLs for the Columbia River. This reach of the Columbia River is also listed as impaired for bacteria.

The effluent discharge will be rapidly diluted, without adverse effects on the listed salmonid species, eulachon, or their aquatic habitat. The SCTP discharge does not and will not cause or contribute to violations of temperature or other instream water quality standards. These standards have been developed to protect sensitive cold-water aquatic organisms, including ESA-listed species, and there are no uniquely sensitive species using the lower Columbia River that will not be adequately protected by these standards.

For the outfall and effluent pipeline project, no discharges of solid waste materials to surface water are proposed or anticipated.

b. Ground Water:

1) Will groundwater be withdrawn from a well for drinking water or other purposes? If so, give a general description of the well, proposed uses and approximate quantities
withdrawn from the well. Will water be discharged to groundwater? Give general description, purpose, and approximate quantities if known.

The Alliance holds a water right (Certificate Number 02-21848) to withdraw up to 150 gallons per minute from two wells at the SCTP. The proposed project will withdraw groundwater from these wells for drinking water and pipeline construction purposes.

The proposed project will not actively discharge water to groundwater. However, portions of the proposed project corridor have a perched groundwater table and it is likely that some trench sections will require dewatering. Some of the return water from dewatering will infiltrate to ground after detention and passive filtering; the remainder will be discharged to surface water.

Once constructed and in operation, the proposed project will not require withdrawing or discharging any groundwater.

2) Describe waste material that will be discharged into the ground from septic tanks or other sources, if any (for example: Domestic sewage; industrial, containing the following chemicals. . . ; agricultural; etc.). Describe the general size of the system, the number of such systems, the number of houses to be served (if applicable), or the number of animals or humans the system(s) are expected to serve.

The proposed project will not result in or require any discharge of waste materials to groundwater. The contractor will use on-site portable toilets during construction activities and will not install septic systems.

c. Water runoff (including stormwater):

1) Describe the source of runoff (including storm water) and method of collection and disposal, if any (include quantities, if known). Where will this water flow? Will this water flow into other waters? If so, describe.

The water runoff condition of the proposed project site will be virtually unchanged by the proposed project. Most existing land at the proposed project site is used as pasture or is otherwise undeveloped, and most ground surfaces are pervious. Consequently, most stormwater is infiltrated to ground or falls directly onto surface water. Exceptions are the existing SCTP, the BNSF Railway embankment, and NW Lower River Road. Buildings and pavement at the SCTP will be unaffected by the proposed project, as will the BNSF Railway embankment. NW Lower River Road will be demolished where the pipeline trench will cross it, and then will be reconstructed to its pre-construction configuration. Pipeline construction will temporarily disrupt an existing stormwater detention pond near the effluent pump station that receives stormwater runoff from the plant; however, the detention pond will be reconstructed after the pipeline has been installed. Access road maintenance will primarily utilize open-grade ¾-inch gravel surfacing that will allow infiltration, and temporary staging areas will be surfaced with pervious rock. Minimal water runoff is anticipated along the alignment during construction.

The proposed project does not propose new aboveground impervious structures, except concrete vaults for air valves and access manholes, and marker posts. The proposed effluent pipeline will be fitted with four 8-foot x 6.5-foot vaults for air valves and three 8-foot x 6.5-foot vaults for access manholes that will intersect the ground surface. The tops of the vaults will be only inches above the ground. Also, 4- to 6-inch marker posts, one at each vault, will extend about 3 to 4 feet aboveground. These minor, mostly belowground structures, will increase the impervious surface area and water runoff only insignificantly. Elsewhere, the contractor will restore the ground surfaces disturbed for trenching, access, and staging to their pre-construction
surface soil and vegetation conditions. Therefore, anticipated runoff from the proposed project site will be minimal, and no stormwater quantity management is proposed.

2) Could waste materials enter ground or surface waters? If so, generally describe.

No waste material is expected to enter groundwater or surface water during construction or operation of the effluent pipeline and outfall.

3) Does the proposal alter or otherwise affect drainage patterns in the vicinity of the site? If so, describe.

The proposed project will temporarily affect drainage patterns for trench excavation during construction.

The proposed project will not affect drainage patterns during operation because most pipeline features will be belowground and pre-construction drainage patterns will be restored.

d. Proposed measures to reduce or control surface, ground, and runoff water, and drainage pattern impacts, if any:

**Surface Water**

The proposed project will require federal, state, and local permits that intend to protect, conserve, or restore existing surface waters and ensure clean water standards. The permits needed prior to construction include:

- USACE, Clean Water Act, Section 404
- USACE, Rivers and Harbors Act of 1899, Section 10
- Ecology, Clean Water Act, Section 401
- Ecology, Clean Water Act Section 402
- WDFW, Hydraulic Project Approval
- Clark County, Shoreline Management Act authorization

The Alliance will obtain these permits, with associated terms and conditions, to ensure that impacts are adequately assessed and appropriate mitigation measures are identified prior to construction. As part of the permitting process, the proposed project must avoid, minimize, and mitigate for substantive unavoidable impacts to wetlands and water bodies. The Alliance will minimize temporary impacts to wetlands by aligning the pipeline in the existing pipeline corridor, selecting the shortest route, specifying trench shoring to reduce excavation in wetlands, and designating narrower access routes through wetlands. Wetland topsoil will be salvaged for reapplication over the backfill surface.

The Alliance will perform compensatory mitigation to offset impacts, including temporary impacts to wetlands and wetland buffers, Salmon Creek, Lake River, and the Columbia River that occur during construction. Once construction is complete, temporarily impacted wetlands will be restored to their pre-construction contours and seeded with a native seed mixture. Temporarily impacted wetland buffers will be restored to their pre-construction contours and reseeded. The Alliance will mitigate permanently impacted wetlands and wetland buffers through credit purchase at the agency-approved mitigation bank. Temporary impacts to Salmon Creek, Lake River, and the Columbia River will be rehabilitated by restoring streambed substrates and riverbanks stabilized through bioengineering techniques.
In addition, the Alliance will apply erosion and sediment control BMPs and turbidity controls during work in, over, and near surface waters to protect surface water quality. Erosion and sediment control BMPs will be adequate for conformance with the NPDES Construction Stormwater Discharge Permit, WAC Chapter 463-76, and the erosion prevention and sediment control plan requirements of Clark County. Turbidity controls include all practicable techniques such as silt curtains and cofferdams, employing experienced operators, not dumping partial or full buckets into streams, adjusting the speed or volume of the loads, and using a closed-lipped environmental bucket. A spill prevention, containment, and countermeasures plan will be implemented. Furthermore, the construction BMPs, impact minimization measures, and restoration efforts identified in Section 5.d of this SEPA Checklist are incorporated here by reference.

Based on the proposed construction BMPs, minimization measures, compensatory mitigation, and restoration efforts, there will not be significant adverse impacts to surface waters from the proposed project.

**Groundwater**

Trench plugs, consisting of low permeability trench backfill, will be installed at periodic intervals in the pipe zone along the pipeline alignment to prevent water from flowing along the pipeline and eroding trench backfill materials, and to minimize the potential for groundwater flow through the trench backfill. Where the pipeline trench crosses a wetland, trench plugs will be installed as necessary to maintain the pre-construction wetland hydrology. Trench plugs will be installed on both sides of the wetland boundary, between the wetland and adjacent upland area, and keyed into the trench sidewalls and trench bottom.

**Runoff Water**

During construction, runoff water will be controlled by implementing a prudent erosion and sediment control plan. During operation, concern for runoff water impacts will be discountable because the pipeline will be buried belowground and riverbeds, pervious ground surfaces will be restored and revegetated, and the few permanent features that will project above the ground surface (air valve and access manhole vaults and marker posts) will have a negligible effect on the amount of impervious surface area.

**Drainage Pattern**

During construction, temporary impacts on drainage patterns will be minimized by limiting the amount of open trench, maintaining fish passage and vessel navigation, maintaining cross drainage at temporary access roads, and stabilizing roads and staging areas with pervious crushed rock. During operation, drainage patterns will resemble the pre-construction conditions because the pipeline will be buried belowground and riverbeds, pre-construction contours will be restored, and finish grades will be stabilized to prevent erosion.

4. **Plants**

   a. Check the types of vegetation found on the site:

   - X deciduous tree: alder, maple, aspen, other: cottonwood, Oregon ash, Oregon white oak
   - evergreen tree: fir, cedar, pine, other
   - X shrubs: willow species, red-osier dogwood, snowberry
   - X grass
   - X pasture
b. What kind and amount of vegetation will be removed or altered?
Installation of the effluent pipeline will temporarily disturb approximately 29.8 acres of vegetation within permanent and temporary easements, including staging areas. The pipeline trench surface will be strip-excavated, prior to trench excavation. The remaining portions of the permanent and temporary easements will be temporarily crushed or compressed by equipment traffic, temporary ground protection (e.g., fabric and crushed rock), or material stockpiles.

The disturbed vegetation includes both native and non-native plants commonly found in wetlands, wet pastures, and upland pastures. Common facultative grasses such as tall fescue (*Festuca arundinacea*), Kentucky bluegrass (*Poa pratensis*), and colonial bentgrass (*Agrostis capillaris*) grow in the upland pasture areas. Reed canarygrass (*Phalaris arundinacea*), Himalayan blackberry (*Rubus armeniacus*), spotted lady’s thumb (*Persicaria maculosa*), pennyroyal (*Mentha pulegium*), and common hydrophytic grasses are in the wetland and wet pasture areas.

Also, effluent pipeline installation will remove about 39 trees (>10 inches in diameter), including about 16 trees from the Salmon Creek riparian area, about 10 trees from the Lake River riparian area, and about 10 trees from the Columbia River riparian area. The trees to be cleared are cottonwood (*Populus trichocarpa*), Oregon ash (*Fraxinus latifolia*), alder (*Alnus rubra*), and willow species.

c. List threatened and endangered species known to be on or near the site.
According to the USFWS IPaC system, golden paintbrush (*Castilleja levisecta*) and water howellia (*Howellia aquatilis*), both ESA-listed threatened species, may occur within the terrestrial portion of the proposed project site. According to DNR’s Natural Heritage Program, no records for rare plants or rare/high quality ecological communities are identified within the proposed project vicinity. Therefore, the presence of these species is not likely because the site has been highly disturbed by its use for agricultural purposes.

These species have not been observed at the proposed project site. When the natural resources scientists visited the proposed project site in September 2017, they traversed the proposed project corridor on foot, and did not identify any threatened or endangered plant species. Therefore, the proposed project will not impact these species.

d. Proposed landscaping, use of native plants, or other measures to preserve or enhance vegetation on the site, if any:
The proposed project landscape plan is to restore pasture areas to productive pasture and restore wetland areas to functioning wetland communities. After the installation of the effluent pipe, the contractor will replace the salvaged topsoil at disturbed areas. Ground surfaces will be graded to match the original contours. Disturbed areas will be seeded with appropriate seed mixtures to ensure re-establishment of vegetation. The wetland seed mixtures will consist of native fescue, meadow barley, western managrass, American sloughgrass, tufted hairgrass, blue wildrye, or similar locally endemic species. Himalayan blackberry and reed canarygrass will be controlled within the construction limits; however, invasive species may re-establish where they exist.
currently due to seedbank stimulation, vegetative propagation, or dispersal by streamflows and flood flows.

The contractor will use bioengineering techniques to stabilize disturbed streambanks. Fabric encapsulated soil lifts will be seeded with native seed mixtures, and propagated with native woody plants where soil moisture and fertility are suitable.

The contractor will avoid clearing native Oregon white oak trees, a state priority habitat and species.

The contractor will control Class B and C noxious plant species in accordance with Washington State Weed Control Board and the Clark County Weed Board requirements.

e. List all noxious weeds and invasive species known to be on or near the site. Table 3 lists noxious weeds and invasive species known to occur on the proposed project site and documented during the September 2017 field visit.

<table>
<thead>
<tr>
<th>Common Name</th>
<th>Scientific Name</th>
<th>Invasive Species</th>
<th>Noxious Weed Class</th>
</tr>
</thead>
<tbody>
<tr>
<td>Canada thistle</td>
<td>Cirsium arvense</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Common catsear</td>
<td>Hypochaeris radicata</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Common St. Johnswort</td>
<td>Hypericum perforatum</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Common teasel</td>
<td>Dipsacus fullonum</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>English hawthorn</td>
<td>Crataegus monogyna</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>English ivy</td>
<td>Hedera helix</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Field bindweed</td>
<td>Convolvulus arvensis</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Himalayan blackberry</td>
<td>Rubus armeniacus</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Indigobush</td>
<td>Amorpha fruticosa</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Oxeye daisy</td>
<td>Leucanthemum vulgare</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Reed canarygrass</td>
<td>Phalaris arundinacea</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Tansy ragwort</td>
<td>Tanacetum vulgare</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wild carrot</td>
<td>Daucus carota</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*a Invasive Species: Washington law, RCW 79A.25.310, include non-native organisms that cause economic or environmental harm and can spread to new areas of the state. Invasive species do not include domestic livestock, intentionally planted agronomic crops, or non-harmful exotic organisms.

*b Noxious Weeds: Washington law, RCW 17.10.140, requires landowners to control and prevent the spread of Class B and Class C noxious weeds. Class B noxious weeds are nonnative species whose distribution is limited to portions of Washington, but may be widespread in other parts. Class C noxious weeds are either already widespread in Washington or are of special interest to the agricultural industry.

5. Animals
   a. List any birds and other animals which have been observed on or near the site or are known to be on or near the site.
      See Table 4 for animals on or near the Proposed Project Site (excludes threatened and endangered (T&E) species).
### Table 4. Animals on or near the Proposed Project Site.

<table>
<thead>
<tr>
<th>Common Name</th>
<th>Scientific Name</th>
<th>Common Name</th>
<th>Scientific Name</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Birds</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>American coot</td>
<td><em>Fulica americana</em></td>
<td>Golden-crowned kinglet</td>
<td><em>Regulus satrapa</em></td>
</tr>
<tr>
<td>American crow</td>
<td><em>Corvus brachyrhynchos</em></td>
<td>Great blue heron</td>
<td><em>Ardea herodias</em></td>
</tr>
<tr>
<td>American robin</td>
<td><em>Turdus migratorius</em></td>
<td>Green-winged teal</td>
<td><em>Anas crecca</em></td>
</tr>
<tr>
<td>American wigeon</td>
<td><em>Anas americana</em></td>
<td>Gull</td>
<td><em>Larus sp.</em></td>
</tr>
<tr>
<td>Belted kingfisher</td>
<td><em>Ceryle alcyon</em></td>
<td>MacGillavray’s warbler</td>
<td><em>Oporornis tolmiei</em></td>
</tr>
<tr>
<td>Black-capped chickadee</td>
<td><em>Parus atricapillus</em></td>
<td>Mallards</td>
<td><em>Anas platyrhynchos</em></td>
</tr>
<tr>
<td>Brown creeper</td>
<td><em>Certhia americana</em></td>
<td>Mourning dove</td>
<td><em>Zenaida macroura</em></td>
</tr>
<tr>
<td>Canada goose</td>
<td><em>Branta canadensis</em></td>
<td>Northern flicker</td>
<td><em>Colaptes auratus</em></td>
</tr>
<tr>
<td>Chestnut-backed chickadee</td>
<td><em>Parus rufescens</em></td>
<td>Rock dove</td>
<td><em>Columba livia</em></td>
</tr>
<tr>
<td>Common raven</td>
<td><em>Corvus corax</em></td>
<td>Sandhill crane</td>
<td><em>Grus canadensis</em></td>
</tr>
<tr>
<td>Dark-eyed junco</td>
<td><em>Junco hyemalis</em></td>
<td>Scrub jay</td>
<td><em>Aphelocoma coerulescens</em></td>
</tr>
<tr>
<td>Double crested cormorant</td>
<td><em>Phalacrocorax aurtus</em></td>
<td>Tundra swan</td>
<td><em>Cygnus columbianus</em></td>
</tr>
<tr>
<td>Dusky Canada goose</td>
<td><em>Branta canadensis</em></td>
<td>White-fronted goose</td>
<td><em>Anser albifrons</em></td>
</tr>
<tr>
<td>European starling</td>
<td><em>Sturnus vulgaris</em></td>
<td>Wood duck</td>
<td><em>Aix sponsa</em></td>
</tr>
<tr>
<td>Gadwall</td>
<td><em>Anas strepera</em></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Mammals</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bat</td>
<td><em>Myotis sp.</em></td>
<td>Rabbit</td>
<td><em>Multiple</em></td>
</tr>
<tr>
<td>Coyote</td>
<td><em>Canis latrans</em></td>
<td>Raccoon</td>
<td><em>Procyon lotor</em></td>
</tr>
<tr>
<td>Fox</td>
<td><em>Vulpes</em></td>
<td>Shrew</td>
<td><em>Sorex sp.</em></td>
</tr>
<tr>
<td>Mole</td>
<td><em>Multiple</em></td>
<td>Squirrel</td>
<td><em>Sciurus sp.</em></td>
</tr>
<tr>
<td>Mouse</td>
<td><em>Mus sp.</em></td>
<td>Vole</td>
<td><em>Microtus sp.</em></td>
</tr>
<tr>
<td>Opossum</td>
<td><em>Didelphis virginiana</em></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Fish</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>American shad</td>
<td><em>Alosa sapidissima</em></td>
<td>Peamouth</td>
<td><em>Mylocheilus caurinus</em></td>
</tr>
<tr>
<td>Black crappie</td>
<td><em>Pomoxis nigromaculatus</em></td>
<td>Pumpkinseed</td>
<td><em>Lepomis gibbosus</em></td>
</tr>
<tr>
<td>Bluegill</td>
<td><em>Leopomis macrochirus</em></td>
<td>Sculpin</td>
<td><em>Cottoidea sp.</em></td>
</tr>
<tr>
<td>Brown bullhead</td>
<td><em>Ameiurus nebulosus</em></td>
<td>Sucker</td>
<td><em>Multiple</em></td>
</tr>
<tr>
<td>Channel catfish</td>
<td><em>Ictalurus punctatus</em></td>
<td>Warmouth</td>
<td><em>Lepomis gulosus</em></td>
</tr>
<tr>
<td>Chiselmouth</td>
<td><em>Acrocheilus alutaceus</em></td>
<td>Walleye</td>
<td><em>Stizostedion vitreum</em></td>
</tr>
<tr>
<td>Carp</td>
<td><em>Cyprinus carpio</em></td>
<td>White crappie</td>
<td><em>Pomoxis annularis</em></td>
</tr>
<tr>
<td>Lamprey</td>
<td><em>Petromyzon sp.</em></td>
<td>White sturgeon</td>
<td><em>Acipenser transmontanus</em></td>
</tr>
<tr>
<td>Mountain whitefish</td>
<td><em>Prosopium williamsoni</em></td>
<td>Yellow perch</td>
<td><em>Perca flavescens</em></td>
</tr>
<tr>
<td>Northern pikeminnow</td>
<td><em>Ptychocheilus oregonensis</em></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**b. List any threatened and endangered species known to be on or near the site.**

Two natural resources scientists visited the proposed project site in September 2017 and traversed it on foot to look for federally- and state-listed threatened and endangered species and their suitable habitats. The aquatic portion of the proposed project site is known to support federally-listed fish species, but was not surveyed. During the site investigation, no federally- or state-listed threatened or endangered terrestrial species were observed. However, suitable habitats for western pond turtle and northern leopard frog exist in the proposed project vicinity as lakes and wetlands.

According to USFWS and NMFS, species listed under the ESA within the aquatic portion of the proposed project site (i.e., Columbia River, Lake River, and Salmon Creek) include the following threatened or endangered evolutionarily significant units (ESU) and distinct population segments (DPS):
• Lower Columbia River ESU Chinook salmon (*Oncorhynchus tshawytscha*)
• Lower Columbia River ESU coho (*Oncorhynchus kisutch*)
• Lower Columbia River DPS steelhead (*Oncorhynchus mykiss*)

The Columbia River is also known to support the following ESA-listed species:

• Columbia River ESU chum salmon (*Oncorhynchus keta*)
• Snake River sockeye salmon (*Oncorhynchus nerka*)
• Upper Columbia River ESU Chinook salmon
• Upper Willamette River ESU Chinook salmon
• Snake River ESU Chinook salmon
• Upper Columbia River DPS steelhead
• Middle Columbia River DPS steelhead
• Upper Willamette River DPS steelhead
• Snake River Basin DPS steelhead
• Southern DPS eulachon (smelt) (*Thaleichthys pacificus*)
• Southern DPS green sturgeon (*Acipenser medirostris*)
• Columbia River DPS bull trout (*Salvelinus confluentus*)

Under the ESA, critical habitat has been designated in Lake River and Salmon Creek for Lower Columbia River ESU coho and Columbia River ESU chum salmon. Critical habitat has been designated in the Columbia River for all the salmonid species listed above, and for eulachon and bull trout. Green sturgeon lacks designated critical habitat in the project area.

At Lake River and Salmon Creek, the excavation of streambed sediments will be accomplished either “in the dry” (by dewatering within cofferdams) or “in the wet.” The contractor will conduct excavation work in wet conditions if dewatering the work area is not feasible.

At the Columbia River, riverbed excavation will involve marine construction and will occur without dewatering. The nearshore outfall construction will be performed from shore or possibly from a temporary work trestle/platform extending offshore in shallow water. A partial (open-ended) floating silt curtain will be installed around the excavation area in shallow water, up to a 20-foot depth. Construction within deeper water will involve unconfined dredging from barge(s).

The proposed project will result in a more than negligible probability of “take” for ESA-listed fish. Although ESA-listed fish may occur in the project area, the proposed project will not “hinder the attainment of relevant functioning indicators.” Therefore, a determination of “may affect, likely to adversely affect” will be made concerning ESA-listed species. Also, the proposed project “may affect, but is not likely to adversely modify,” designated critical habitat for ESA-listed fish because construction effects will be temporary; the aquatic and riparian habitat footprints will be small; effluent will be within water quality parameters established by Ecology; and stormwater runoff from impervious surfaces will be discountable and infiltrated to the ground.

ESA-listed terrestrial species that may occur within the terrestrial portion of the proposed project site are listed below. However, the species have not been observed on or near the proposed project site, and no effect is anticipated.
• Columbia white-tailed deer (*Odocoileus virginianus leucurus*)
• Streaked horned lark (*Eremophila alpestris strigata*)
• Yellow-billed cuckoo (*Coccyzus americanus*)

Species listed by WDFW as threatened or endangered and that may occur within the proposed project vicinity, but for which no effect is anticipated, include the following:

• Columbia white-tailed deer
• Northern leopard frog (*Lithobates pipiens*)
• Sandhill crane (*Grus canadensis*)
• Streaked horned lark
• Western gray squirrel (*Sciurus griseus*)
• Western pond turtle (*Actinemys marmorata*)

c. **Is the site part of a migration route? If so, explain.**

The proposed project is within the Pacific Flyway, a broad migratory corridor that extends from Alaska to Central America and is used by waterfowl, eagles, hawks, falcons, songbirds, sandhill cranes, and shorebirds.\(^1\) The proposed project site contains areas for foraging by birds and may provide stopover habitat within the Pacific Flyway. During the site visit, natural resources scientists did not observe any nests or nest boxes in the red alder or cottonwood trees that are proposed for removal in the proposed project corridor.

The Columbia River, Lake River, and Salmon Creek are migratory routes for several fish species, including salmon, steelhead, eulachon, green sturgeon, bull trout, and lamprey.

d. **Proposed measures to preserve or enhance wildlife, if any:**

The proposed project will require federal, state, and local permits intended to protect, conserve, and restore existing natural conditions and ensure clean water standards. The permits/approvals needed prior to construction include:

• USACE, Clean Water Act, Section 404  
• USACE, Rivers and Harbors Act of 1899, Section 10  
• NMFS/USFWS, ESA, Section 7  
• Ecology, Clean Water Act, Section 401  
• WDFW, Hydraulic Project Approval  
• Clark County, Shoreline Management Act authorization

The Alliance will obtain these permits and authorizations, with associated terms and conditions, to ensure that potential impacts during construction and operation are adequately assessed and appropriate measures are identified to avoid, minimize, and mitigate adverse impacts to animals and the habitats on which they depend.

The Alliance and their contractor will apply construction BMPs, impact minimization measures, and restoration efforts when working in and near water, riparian areas, and pastureland to avoid and

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minimize impacts to wildlife and wildlife habitats, including ESA-listed fish and critical habitat. Collectively, these measures to preserve or enhance wildlife will ensure there will not be significant adverse impacts to fish and wildlife from the proposed project, and will reduce adverse impacts to ESA-listed fish and critical habitat to the level of being incidental to the proposed project. The following measures will be deployed before, during, and after construction, as appropriate, to reduce adverse impacts to animals, and fish and wildlife habitats:

**Pre-Construction Measures**

- Preparing resource-sensitive project designs.
- Installing high visibility fencing around environmentally sensitive areas before construction to avoid unintended impacts to vegetation, wetlands, riparian zones, or other natural areas.
- Planning and repairing temporary access roads and paths to minimize habitat disturbances.
- Planning and constructing the temporary stream crossing over Salmon Creek to avoid or minimize impacts to ESA-listed fish.
- Carefully locating and managing staging, storage, and stockpile areas to prevent unintentional spills or discharges.
- Scheduling all in-water work during resource agency-approved in-water work periods, as may be specified for the proposed project:
  - Columbia River: August 1–March 31
  - Lake River: June 1–October 31
  - Salmon Creek: July 15–August 15
- Installing work area isolation below the OHWM to minimize fish salvage efforts and contain turbid water. Conducting all excavation work below the OHWM of Lake River and Salmon Creek within temporary turbidity controls to minimize potential temporary sediment transport. Installing floating silt curtains or other turbidity control measure(s) before earthwork below the OHWM, and without causing fish entrapment or fish salvage operations. Ensuring silt curtains will maintain fish passage, acceptable vessel navigation, and avoid flood hazards.
- Conducting fish handling by a trained and qualified fish biologist. Capturing and releasing fish from isolated work areas (e.g., cofferdams) with seines and dip nets according to NMFS protocol. Electrofishing only if all other methods of fish capture and removal prove ineffective. Commencing work within the cofferdams only after fish removal. Avoiding bypass pumping and fluming of stream flows around the work area.

**Construction Measures**

- Selecting equipment, vehicles, and power tools that minimize animal and habitat impacts.
- Keeping portions of Lake River and Salmon Creek open for fish passage during all phases of construction.
- Using screened pumps if fish are present. Discharging water pumped from work areas to upland infiltration, or passive detention/filtration areas prior to a receiving water, while minimizing erosion and controlling sediment. Monitoring discharges and complying with water quality standards, including turbidity levels of discharged water and at compliance points.
- Removing and disposing sediments in accordance with Ecology requirements. Temporarily stockpiling saturated sediment at an upland location prior to disposal. Abating fugitive dust.
- Preventing work barges from grounding on the river bottom.
• Installing new temporary piles using methods to minimize underwater noise. Mitigating hydroacoustic impacts to fish associated with an impact hammer by using a bubble curtain or other sound attenuation measures.

• Removing existing treated wooden piles.

• Controlling invasive and non-native plants

• Checking equipment for leaks and/or other problems that could result in the discharge of petroleum-based products or other material into the Columbia River, Lake River, or Salmon Creek.

• Taking corrective actions, including those listed below, in the event of any discharge of oil, fuel, or chemicals into the water:
  o Ensuring oil-absorbent materials are present on the site to be used in the event of a spill or if any oil product is observed in the water.
  o In the event of a spill, beginning containment and cleanup efforts immediately and completing them expeditiously in accordance with all federal, state, and local regulations, and ensuring they take precedence over normal work. Cleanup will include proper disposal of any spilled material and used cleanup material.
  o Assessing the cause of the spill and taking appropriate action to prevent further incidents or environmental damage.
  o Reporting spills to Ecology’s Southwest Regional Spill Response Office at 360-407-6300.

• Diapering equipment or providing another type of containment approved by Ecology, such as for generators within 50 feet of the OHWM.

• Fueling and maintaining equipment to the extent practicable at least 150 feet from the OHWM.

• Storing demolition and construction materials where wave action and upland runoff cannot cause materials to enter surface waters.

• Using vegetable oil or other biodegradable, acceptable hydraulic fluid substitute for all equipment entering waters that may be used by listed fish species and/or if the waters are critical habitat, unless the proposed project is an emergency action.

• Disposing of excess or waste materials only in an appropriate landfill, not waterward of the OHWM, and not allowing them to enter surface waters.

**Post-Construction Measures**

• Carrying out cofferdam removal in a manner to minimize the mobilization of sediments.

• Restoring the open-trench excavations to their pre-construction contours, substrate/soil conditions, and habitat support functions.

• Revegetating disturbed pasture areas with appropriate herbaceous seed mixtures.

• Restoring streambanks and channels to their pre-construction contours. Stabilizing streambanks with bioengineering techniques. Incorporating native shrub and tree species, as possible.

**Pipeline Operation**

Operationally, the proposed project will not change the volume or timing of present effluent discharges to the Columbia River, but the improved outfall diffuser will improve water quality of the river by enhancing effluent mixing and dispersion.
e. List any invasive animal species known to be on or near the site.

The Ridgefield Wildlife Refuge lists two invasive animal species within the nearby management area. Given the proximity of the proposed project to the refuge and similarity of habitat types, it is possible these species also occur within the proposed project site:

- Bull frog (*Lithobates catesbeianus*)
- Nutria (*Myocastor coypus*)

In addition, the Columbia River, Lake River, and Salmon Creek provide suitable habitat for Asian carp (*Cyprinus carpio*), invasive crayfish, northern pike, northern snakehead, invasive mussels, and invasive zooplankton.

6. Energy and Natural Resources

a. What kinds of energy (electric, natural gas, oil, wood stove, solar) will be used to meet the completed project’s energy needs? Describe whether it will be used for heating, manufacturing, etc.

The new 48-inch effluent pipeline and outfall from the SCTP will operate without energy inputs, as the existing 30-inch, 5,900-foot-long effluent discharge line does. Gravity flow requires no energy to carry the treated effluent to the river outfall.

Depending on the Columbia River stage and the volume of effluent flow, pumping may be required in which case four electrical pumps at the SCTP’s existing effluent pump station activate to overcome head loss in the pipeline system. For example, the maximum gravity flow is limited to 3 MGD during the 100-year flood stage condition, when effluent pumping will be required above this flow rate. The gravity flow rate can be increased by raising the elevation of the water surface of the effluent wet well.

The minimum total dynamic head is 10.3 feet. This corresponds to a difference between the elevation of the centerline of the pump discharge piping (34.5 feet) and the elevation of the water surface of the effluent wet well (24.2 feet). At this point, the effluent pumps lift the water up out of the wet well to discharge piping elevation where an air/vacuum valve will vent the pipe to atmosphere to avoid a vacuum siphon condition with effluent flowing by gravity into and through the effluent pipeline when the pumps shut off. To ensure redundancy and reliability, the EPA requires the SCTP to have proper hydraulics to operate and treat the design flow with the largest effluent pump out of service during events up to the 100-year flood stage. Consequently, the four existing pumps will be replaced with four 24-inch Model 8312 30-inch pumps, each capable of achieving a flow/pump rate of 14.6 MGD at a total dynamic head of 20.7 feet. Although the larger replacement pumps will draw more electricity than the existing pumps, the difference will be realized only during infrequent episodes when gravity flow is insufficient and effluent pumping is required. The existing power supply and delivery systems at the SCTP will be able to accommodate the additional electrical demand.

A goal of the 2016 Clark County comprehensive plan is to minimize environmental (including energy) impacts by practicing and encouraging water conservation, through implementing water conservation techniques at existing county facilities, and designing new facilities to optimize water conservation.  

demand, the energy required for wastewater treatment, and the investment required in wastewater treatment infrastructure.

b. **Would your project affect the potential use of solar energy by adjacent properties?**
If so, generally describe.

No, there are no known solar energy uses on adjacent properties. Properties crossed by the pipeline route are not used for generating renewable energy. The existing pipeline is and proposed new pipeline will be belowground, except for minor appurtenances (i.e., air release valves and combination valve manholes, inspection tee, crossing markers), so access to solar energy by adjacent uses will not be affected.

c. **What kinds of energy conservation features are included in the plans of this proposal?**
List other proposed measures to reduce or control energy impacts, if any:

The replacement effluent pump design of the proposed project provides optimal operational and energy efficiency through Phases 5 and 6 of the SCTP Expansion Program. A phasing plan has been devised to replace two of the pumps in Phase 7 when the SCTP’s rated capacity further increases, and again in Phases 8 and 9. By matching pump capacity to effluent flow, the SCTP will maintain operational and energy efficiency.

The alignment selected for the new effluent pipeline is the shortest practical route, and this minimizes pipe materials, earthwork, and construction equipment operation.

During pipeline construction, efforts will be made to minimize earthwork by using trench shoring. Excavated soil and sediment material will be reused as trench backfill as much as possible to minimize the volume of imported material. The existing topsoil will be salvaged and reused. Excess material from trench excavation will be reused within the proposed project tax lots, outside the floodplain, to minimize the energy required for off-hauling and disposal.

7. **Environmental Health**

a. **Are there any environmental health hazards, including exposure to toxic chemicals, risk of fire and explosion, spill, or hazardous waste, that could occur as a result of this proposal?**
If so, describe.

The proposed project consists of the construction of a new effluent pipeline and outfall diffuser that will transport treated wastewater from the SCTP to the Columbia River. Environmental health hazards are not anticipated to occur because of the proposed project. On the contrary, Columbia River water quality at the discharge point is expected to improve. See section 3.a.6 for additional information on effluent water quality.

There is a small risk that the pipeline or diffuser might be damaged, for example by a seismic event, which would allow treated effluent to discharge to the ground or to be non-conforming with the Columbia River diffusion and mixing requirements of NPDES Waste Discharge Permit No. WA0023639. However, the new pipeline design specifies resilient pipe material and fittings, ball-joints to allow settlement, pile-support for the diffuser section, depths of burial below potential slope failure zones, and support to provide structural stability for the 50-year design life of the system. The pipeline will be inspected for integrity and maintained. Furthermore, spilled effluent is not toxic or considered a hazardous waste, and would be unlikely to cause an environmental health hazard.
During construction, the mechanized construction equipment may use minor amounts of fuels, lubricants, adhesives, coatings, and other substances used in construction, but are not anticipated to pose a significant risk of health hazard (see additional details in section 7.a.3 below).

1) Describe any known or possible contamination at the site from present or past uses.

   The Phase I environmental site assessment (ESA) and update (BergerABAM, 2015, 2018) do not identify any recognized environmental conditions within the proposed project site with respect to hazardous materials.

2) Describe existing hazardous chemicals/conditions that might affect project development and design. This includes underground hazardous liquid and gas transmission pipelines located within the project area and in the vicinity.

   The Olympic Pipeline, an underground 14-inch-diameter pipeline operated by BP Pipelines (North America), crosses under the existing 30-inch effluent pipeline and the proposed project corridor north to south. The pipeline traverses a 299-mile corridor from Blaine, Washington to Portland, Oregon, and transports gasoline, diesel, and jet fuel. Precautions will be taken to avoid damaging the Olympic Pipeline, such as advance notification to the utility, allowing adequate clearance, and providing temporary support.

3) Describe any toxic or hazardous chemicals that might be stored, used, or produced during the project’s development or construction, or at any time during the operating life of the project.

   Construction equipment will use petroleum-based fuels and petroleum- or vegetable-based lubricants. The contractor will prepare and implement a spill prevention, control, and countermeasures (SPCC) plan to avoid, minimize, and, if necessary, respond to fuel and lubricant releases during construction. Toxic or hazardous chemicals will be stored within containment. Fuel storage for construction equipment will not be allowed at the proposed project site.

   No toxic or hazardous chemicals will be required during operation, except materials used for occasional cleaning and lubricants for the effluent pumps.

4) Describe special emergency services that might be required.

   The need for special emergency services is not anticipated for the proposed project.

   Fire, medical, or spill cleanup services might be required during construction. Otherwise, no special emergency services are required for the proposed project.

5) Proposed measures to reduce or control environmental health hazards, if any:

   To minimize the effects of an unintentional release of fuel, lubricants, or other hazardous materials during construction, the contractor will use the SPCC plan for the duration of the construction project, and will submit the plan to the project engineer before beginning any construction activities. The contractor will keep a copy of the plan with any updates at the work site. The plan will include emergency notification telephone numbers and contacts. Spill control and cleanup kits will be kept at water and land construction sites. The contractor will have access to a 24-hour emergency cleanup response service.

   NPDES Waste Discharge Permit No. WA0023639 requires that the Alliance institute an adequate operation and maintenance program for the entire sewage system, to the extent that they are responsible for the components. The existing Ecology-approved Operations and
Maintenance Manual will be updated to include the new effluent pipeline, diffuser, and effluent pump upgrades; and satisfy Chapter 173-240 WAC. Maintenance records will specify the frequency and type of maintenance recommended by the manufacturers of the effluent pumps and mechanical components of the effluent system, and will show the frequency and type of maintenance performed. These maintenance records will be available for inspection by Ecology.

b. Noise

1) What types of noise exist in the area which may affect your project (for example: traffic, equipment, operation, other)?

There are no noise sources in the area that may affect the proposed project. The SCTP produces wastewater treatment process noises and occasional noise from truck trips for delivering supplies and hauling biosolids; the BNSF rail line conveys frequent freight and Amtrak train traffic; agricultural operators generate occasional truck and equipment traffic; and area roads support very low average daily traffic. However, these noise types operate within allowable noise limits and will not affect the construction or operation of the proposed project.

2) What types and levels of noise would be created by or associated with the project on a short-term or a long-term basis (for example: traffic, construction, operation, other)? Indicate what hours noise would come from the site.

In the short term, noise will be generated by construction equipment and trucks delivering materials to and hauling materials from the proposed project site. Noise-generating construction equipment will include: trackhoe, loader, bulldozer, water truck, concrete truck, auger-bore equipment, crane, vibratory and impact hammers for pile driving, dump trucks, truck and trailers, pickups, flat bed, paver, roller, jackhammer, soil compactor, impact wrenches, acetylene torch, compressors, pumps, and construction barges. The equipment will produce noise along the pipeline alignment to cut and fill the pipeline trench, lay the pipe, and maintain and improve access roads. Noise levels from construction will vary by equipment type and by day, and will be temporary during the construction period. Hydroacoustic noise from pile driving in water with an impact hammer potentially could injure aquatic life.

During the 17-month construction period spanning two in-water work periods, the entire proposed project site will receive about 3,500 dump trucks, concrete trucks, and semi-truck/trailers. Of this truck volume, about 1,750 total vehicles will arrive via NW McCann Road/NW 36th Avenue, which is an average of 30 trucks per work-day for 60 work-days, but up to 80-90 trucks per work-day on the busiest days. About 1,750 vehicles will arrive via NW 61st Avenue/NW 179th Street or NW Lower River Road/SR 501, which is an average of 30 trucks per work-day, 30 work-days per each of two routes. Residences along NW McCann Road/NW 36th Avenue and NW 61st Avenue/NW 179th Street will experience a temporary increase in daytime noise from the truck traffic. Few residences exist along NW Lower River Road/SR 501.

On an average daily basis, truck trips will operate on a uniform schedule during daytime hours from approximately 7:00 a.m. to 4:00 p.m. on weekdays, and infrequently outside of these hours. Construction is not expected to occur during weekends or at night, but there may be occasional activities during non-standard hours.

In the long term, the types and levels of noise generated by the proposed project, including four electrical effluent pump replacements in the effluent pump station, will be about the same because the new effluent pipeline and diffuser will not make noise and the replacement effluent
pumps will be enclosed in the effluent pump station. Therefore, operation of the proposed project will have negligible noise impacts due to the similarities of noise generation and the distances to potentially sensitive noise receivers.

3) Proposed measures to reduce or control noise impacts, if any:

There are no noise receptors within about one-third mile of the proposed pipeline construction, so the short-term construction noise impacts should be insignificant. The closest existing residences to the SCTP’s effluent pump station are about 875 feet to the south and about 2,000 feet to the north, and may be marginally affected by temporary construction noise.

The Alliance will implement the following noise abatement methods during the construction period to minimize noise impacts on residents. These specifications will be incorporated into construction contract documents:

- Operation of construction equipment will meet Clark County noise requirements.
- Operation of construction equipment will be prohibited within 1,000 feet of any occupied dwelling unit at night (8:00 p.m. to 6:30 a.m.), on Sundays, or legal holidays, when it would have the most severe effect.
- Pile driving will be prohibited within 2,000 feet of any occupied dwelling between 8:00 p.m. and 8:00 a.m., on Sundays, or on legal holidays.
- All engine-powered equipment will have mufflers installed according to the manufacturer’s specifications and all equipment shall be required to comply with pertinent equipment noise standards of the U.S. Environmental Protection Agency.
- Blasting will be prohibited.
- Limiting heavy-vehicle trips on residential streets between 7:00 a.m. and 4:00 p.m. on weekdays only, to the extent possible.
- Limiting construction traffic to a maximum speed of 25 mph, or as posted, along agricultural and residential land uses.
- Preparing and delivering notices to affected residents indicating when construction is likely to occur. If unusually heavy construction traffic is expected during a defined period, separate notices will be sent to local residents indicating the schedule.

If specific noise complaints are received during construction, the contractor will be required to implement one or more of the following noise mitigation measures:

- Locate stationary construction equipment as far from nearby noise-sensitive properties as possible.
- Shut off idling equipment.
- Reschedule construction operations to avoid periods of noise annoyance identified in the complaint.
- Notify nearby residents whenever extremely noisy work will be occurring.
- Install temporary or portable acoustic barriers around stationary construction noise sources.

Implementation of construction noise abatement measures should minimize construction-related noise impacts to insignificant levels.
Hydroacoustic noise from pile driving by impact hammer in water will be attenuated to minimize potential injuries to aquatic life.\textsuperscript{16} Specific measures will be determined in consultation with the NMFS/USFWS.

8. **Land and Shoreline Use**

a. What is the current use of the site and adjacent properties? Will the proposal affect current land uses on nearby or adjacent properties? If so, describe.

The proposed project site includes the effluent pump station, pipeline, and outfall diffuser, adjacent staging areas, and temporary construction access roads on surrounding parcels. The parcels affected by the proposed project, their existing land uses, and proposed project improvements are shown in Table 5. Affected parcels include a combination of public and private ownerships. The pipeline corridor, adjacent staging areas, and access roads are characterized by properties used for agriculture, open space, and water bodies.

<table>
<thead>
<tr>
<th>Parcel Number</th>
<th>existing Land Use(s)</th>
<th>proposed Project Improvement</th>
</tr>
</thead>
<tbody>
<tr>
<td>183088000</td>
<td>Single-family residence</td>
<td>Construction access</td>
</tr>
<tr>
<td>183494000</td>
<td>Agriculture</td>
<td>Construction access</td>
</tr>
<tr>
<td>986030042</td>
<td>Open space</td>
<td>Construction access</td>
</tr>
<tr>
<td>183085000</td>
<td>Single-family residence</td>
<td>Construction access</td>
</tr>
<tr>
<td>183084000</td>
<td>Open space</td>
<td>Construction access</td>
</tr>
<tr>
<td>986037004</td>
<td>Open space</td>
<td>Construction access</td>
</tr>
<tr>
<td>183508000</td>
<td>Salmon Creek Treatment Plant</td>
<td>Effluent pipeline, staging area, construction access, effluent pump station upgrade</td>
</tr>
<tr>
<td>986038501</td>
<td>Ashley Ridge Subdivision open space</td>
<td>Effluent pipeline, construction access</td>
</tr>
<tr>
<td>BNSF Right of way</td>
<td>BNSF line</td>
<td>Effluent pipeline, construction access</td>
</tr>
<tr>
<td>986029218</td>
<td>Vacant/natural area</td>
<td>Effluent pipeline</td>
</tr>
<tr>
<td>183058000</td>
<td>Agriculture/open space</td>
<td>Effluent pipeline, staging areas, construction access, soil stockpile</td>
</tr>
<tr>
<td>191176000</td>
<td>Agriculture</td>
<td>Effluent pipeline, staging area, construction access</td>
</tr>
<tr>
<td>191067000</td>
<td>Agriculture</td>
<td>Staging area, construction access</td>
</tr>
<tr>
<td>WSDOT Right of way</td>
<td>Agriculture</td>
<td>Effluent pipeline, construction access</td>
</tr>
<tr>
<td>191177000</td>
<td>Agriculture/open space</td>
<td>Effluent pipeline, staging area, construction access</td>
</tr>
<tr>
<td>NW Lower River Road/SR501</td>
<td>Road, utility corridor</td>
<td>Effluent pipeline, construction access</td>
</tr>
<tr>
<td>N/A – Aquatic Lands (Salmon Creek, Lake R., Columbia R.)</td>
<td>Recreation and navigation</td>
<td>Effluent pipeline, outfall diffuser</td>
</tr>
</tbody>
</table>

The proposal will have temporary construction-related effects on existing land uses on nearby or adjacent properties. Permanent impacts will be limited to new structures on new permanent easements to be acquired adjacent to existing permanent easements held by the Alliance. Most new structures will lie below the ground surface, and in many cases, existing land uses will be unchanged. Aboveground structures will be limited to the exposed surfaces of primarily belowground vaults for air valves and access manholes for ongoing pipeline maintenance, and posts

marking the vault locations. The following discussion explains, by pipeline alignment reach, uses on nearby and adjacent properties and temporary and permanent land use effects from pipeline construction.

**Alignment Reach 1: SCTP to Salmon Creek (Station 81+94 to 68+50)**

Construction-period land use impacts in this proposed project segment will include excavation and pipeline placement along the alignment. Two staging areas, one north and one south, will be adjacent to the proposed pipeline alignment on the Alliance property at the SCTP site. During construction, the SCTP will require continual road and turn-around access for biosolids hauling trucks, as frequently as 12 to 18 trucks per day from August 1 to September 30. The contractor will limit staging and construction activities so as not to impact traffic in the roadway areas for ongoing plant solids handling operations. Temporary land use impacts include use of existing grassy areas on the west side of the SCTP property for staging. Proposed project construction is not expected to affect SCTP operations. Land uses will not change. The existing SCTP will continue to operate on the Alliance property. Four electrical effluent pumps will be replaced inside the existing effluent pump station. The new belowground 48-inch effluent pipeline with a vault for an air valve will roughly parallel the existing 30-inch effluent pipeline.

The Alliance holds an existing permanent easement for pipeline construction, operation, and maintenance on the Ashley Ridge Homeowners Association property. All pipeline construction, operation, and maintenance will occur within the existing easement. Salmon Creek and the Salmon Creek Greenway, located north and west of the proposed project near the SCTP, are used by water-oriented recreationists. See Section 12: Recreation for a discussion of the effects from the proposed project on Salmon Creek.

New pipeline construction under the BNSF line will require acquiring a long-term utility easement across the railroad right of way; however, land use in the right of way will be unchanged both during and after construction.

The Alliance holds an existing permanent easement for pipeline construction, operation, and maintenance on the Felida 26 Acres property (parcel number 986029218). All pipeline construction, operation, and maintenance will occur within the existing easement on this property. Temporary land use impacts during construction on the Felida 26 Acres property will include pipeline construction in wetland and riparian buffer areas including vegetation clearing and trenching. The pipeline trench will be backfilled and restored to pre-project grades and seeded with an appropriate grass mixture once grading is complete. There will be no permanent land use impacts on this parcel.

The Alliance currently holds a 20-foot-wide long-term easement from DNR for the existing 30-inch-diameter effluent pipeline under Salmon Creek. The Alliance will obtain a new long-term easement from DNR to construct and operate the new effluent pipeline under Salmon Creek and temporary rights of entry to construct it, from the BNSF right of way to the western shoreline of Salmon Creek. The new long-term easement will be 40 feet wide, roughly centered on the pipeline. The new long-term easement will be flanked by a temporary 40-foot-wide right of entry north of the long-term easement and a temporary 60-foot-wide right of entry south of the permanent easement. An additional right of entry from DNR will be needed if the pipeline contractor elects to construct a temporary bridge (trestle) across Salmon Creek for equipment access.

The Alliance will conduct pipeline operation and maintenance activities within the Alliance property and the permanent and long-term easements of this alignment reach. Existing vehicle
access will remain unchanged. No land will be permanently removed from agricultural use in Alignment Reach 1.

No land will be temporarily or permanently removed from agricultural use in this alignment reach.

**Alignment Reach 2: Western Shoreline of Salmon Creek to Eastern Shoreline of Lake River (Station 68+50 to 46+50)**

Upland areas between Salmon Creek to Lake River are privately owned by Curtis Lake Ranch and are used for agricultural purposes including livestock grazing and open pasture. The Alliance holds a 20-foot permanent easement for the operation and maintenance of the existing 30-inch effluent pipeline. The entire length of the new pipeline in this alignment reach will require a new 40-foot-wide permanent pipeline easement adjacent to the existing permanent pipeline easement, and a 60-foot-wide temporary easement south of the new permanent pipeline easement. In addition, permanent easements will be acquired for access across the ownership from NW 61st Avenue. Temporary construction uses and activities within this reach will include open trenching, installation of the effluent pipeline, site restoration, contractor staging, and construction access from NW 61st Avenue. Five staging areas are required for contractor work and vehicle circulation in this alignment reach: two near Salmon Creek, one west of an unnamed disconnected slough (Stations 65+50 to 63+00), and two at Lake River. The construction impacts on land uses in this proposed project segment will include the temporary use of the pipeline easements, staging areas, and access roads for construction activities during the anticipated 12-week construction period. During this time, normal agricultural activities will not occur within the pipeline, staging area, or access easements.

Upon completion of the pipeline, the contractor will restore the 40-foot-wide permanent easement, the 60-foot-wide temporary easement, and the staging areas to their pre-project conditions and return them to use as grazing and open pasture areas. During pipeline operation and maintenance, the Alliance may temporarily constrain agricultural activities within the permanent easement, according to the terms of the easement. Permanent land use impacts in this alignment reach on the Curtis Lake Ranch property include the placement of a new 40-foot-wide permanent easement adjacent to the existing permanent pipeline easement. No changes will be made to the existing vehicle access system. Three belowground vaults with exposed covers will be installed for air valves or maintenance access. The access manhole and air valve vaults are each 52 square feet resulting in 156 square feet of land permanently removed from agricultural use in Alignment Reach 2.

**Alignment Reach 3: Lake River Crossing (Station 46+50 to 42+00)**

The Alliance will obtain long-term and temporary easements from DNR for the pipeline undercrossing and operation in Lake River, below the OHWM, in addition to the existing, 20-foot-wide long-term easement held by the Alliance for the 30-inch effluent pipeline under Lake River. The new long-term easement will be 40 feet wide, flanked by a 27-foot-wide right of entry north of the long-term easement and an 80-foot-wide right of entry south of the long-term easement.

Lake River supports recreational uses, and section 12.b discusses the impacts of the proposed project to recreational uses in Lake River. No land will be permanently removed from agricultural use in Alignment Reach 3.

**Alignment Reach 4: Western Shoreline of Lake River to the Columbia River Nearshore Vertical Angle Point (Station 42+00 to 13+00)**

The upland segment from the western shoreline of Lake River to the Columbia River shoreline is under private ownership by the New Columbia Garden Company Inc. and is used for agricultural
activities (livestock grazing and diked pasture). For this alignment reach, Clark County granted a shoreline substantial development and conditional use permit for the establishment of a habitat credit bank, known as the Round Lake Conservation Bank, in October 2016. However, other required permits are pending, and no construction has been initiated. The Round Lake Conservation Bank project would restore, enhance, and create wetlands landward of the Clark County Diking District No. 14 dike by breaching the dike to inundate the site. The Round Lake Conservation Bank project proposes to install native plants across the 293-acre site for wetland and buffer restoration and enhancement. During Clark County’s review of the Round Lake Conservation Bank shoreline permit, the Alliance, the Round Lake Conservation Bank, and the County reached an understanding regarding the integration of the two projects. The proposed project will require a 40-foot-wide permanent pipeline operations and maintenance easement and a 60-foot-wide temporary construction easement south of and immediately adjacent to the existing 20-foot-wide permanent pipeline easement that crosses the property of the proposed Round Lake Conservation Bank. Within the existing and proposed temporary and permanent pipeline easements, the Round Lake Conservation Bank will plant only grasses and forbs to minimize the disruption to both projects and so that the Alliance would not be required to mitigate for installed wetland and buffer area vegetation if the Round Lake Conservation Bank is constructed prior to the proposed project. After completion of the pipeline, the Alliance will plant native species in the 60-foot-wide temporary easement in accordance with the Round Lake Conservation Bank planting plan. The permanent easement will remain as grasses and forbs to allow ongoing maintenance activities in this area. If pipeline construction precedes the construction of the Round Lake Conservation Bank, the Alliance would restore the site to pre-project conditions. Permanent impacts in Alignment Reach 4 include the conversion of pastured agricultural land to two access manhole vault covers of approximately 52 square feet each, totaling 104 square feet of pasture land converted to pipeline accessories. Outside the diked pasture in non-pasture open space, west of NW Lower River Road along the Columbia River shoreline historically used for dredged material disposal, permanent impacts in this alignment reach include two air valve vaults of 45 square feet each, one butterfly vault of 120 square feet, and one butterfly vault of 80 square feet, totaling 304 square feet of open space converted to pipeline accessories within Alignment Reach 4. These new surface structures will be offset by the demolition of one existing 72-inch-diameter access manhole set in a 25-foot-diameter earthen fill, totaling 491 square feet. About 104 square feet will be permanently removed from agricultural use in Alignment Reach 4.

Alignment Reach 5: Nearshore vertical angle point to outfall diffuser terminus in the Columbia River (Station 13+00 to 9+70)

In this reach, the Alliance will install a new outfall diffuser below the riverbed (except for riser ports) in a new long-term DNR aquatic lands easement, and will remove the existing outfall diffuser from the existing permanent DNR aquatic lands easement. The Alliance will remove riprap armoring placed over the existing outfall at the shoreline. The Columbia River supports recreational uses. Recreational uses and impacts are discussed in Section 12 of this SEPA Checklist.

No land will be temporarily or permanently removed from agricultural use in this alignment reach

b. Has the project site been used as working farmlands or working forest lands? If so, describe. How much agricultural or forest land of long-term commercial significance will be converted to other uses as a result of the proposal, if any? If resource lands have not been designated, how many acres in farmland or forest land tax status will be converted to nonfarm or nonforest use?

Portions of the proposed project site are currently used for agricultural purposes (cattle grazing and raising livestock) as described in Section 8.a above. As shown in Table 5, six of the 13 parcels
directly affected by the proposed project are in agricultural use. The New Columbia Garden Company and the State of Washington own the westernmost land within the proposed project corridor (parcel #191177000 and SR 501 right of way) between Lake River and the Columbia River. Land owned by the New Columbia Garden Company and State of Washington east of the dike and land within Curtis Lake Ranch (parcel nos. 183058000, 183494000, 191067000, and 191176000) between Salmon Creek and Lake River, are used for raising livestock and cattle grazing. Historical aerial photos indicate that the Curtis Lake Ranch properties have been used for hay production.

The Columbia River lowlands, designated AG/WL in the County’s 20-year comprehensive plan, are agricultural lands of long-term commercial significance. The Alliance proposes to permanently convert 225 square feet of land now used for agricultural purposes to pipeline maintenance accessories (three access manhole vaults and two air release valve vaults). The new 40-foot-wide permanent pipeline easement will be available for agricultural uses after construction, but the Alliance will suspend agricultural activities during brief maintenance periods under the terms of the easements. There are no forestlands of long-term commercial significance within the proposed project site.

1) Will the proposal affect or be affected by surrounding working farm or forest land normal business operations, such as oversize equipment access, the application of pesticides, tilling, and harvesting? If so, how:

During construction, the proposed project will displace existing agricultural operations on the Curtis Lake Ranch and proposed Round Lake Conservation Bank properties because agricultural activities will be incompatible with staging areas, access roads, and pipeline construction in temporary and permanent pipeline easements. The construction area will be fenced to exclude cattle for their safety. The construction activity will not preclude access by farm vehicles or equipment across the agricultural properties because the pasture and farm roads will be restored as the pipeline construction progresses, so that portions of the property will be passable while others are obstructed by construction activity. The Alliance will coordinate with property owners to avoid or minimize intrusion on agricultural operations through scheduling and pasture rotation.

Other than areas converted to pipeline maintenance accessories (manhole and air release valve vaults) totaling 225 square feet on the Round Lake and Curtis Lake Ranch properties, the proposed project will not permanently affect working farm business operations. The Alliance may need to suspend agricultural operations within the permanent easement areas, if pipeline maintenance is required.

The proposal will not be affected by the surrounding working farms because pipeline operation and maintenance access will be assured through permanent and long-term easements.

c. Describe any structures on the site.

Structures within the proposed project site boundaries include: the SCTP effluent pump station, effluent pipeline, stormwater management facility, and wastewater process facilities such as the process control building, preliminary treatment facility, and primary clarifiers; the BNSF tracks, embankment, and undercrossing; a gazebo, three shed structures, and buried utilities (gas, fiber optic) on the Curtis Lake Ranch property; the Clark County Diking District No. 14 dike on the proposed Round Lake Conservation Bank property; and NW Lower River Road with associated utilities (telephone, electric lines). Minor structures such as culverts, fences, and ditches are present. NW Lower River Road is a private two-lane, 22-foot-wide asphalt road on top of the dike. Below
the OHWM of the Columbia River are the existing outfall diffuser, riprap armoring, and a navigation marker on a three-pile dolphin.

d. Will any structures be demolished? If so, what?

No demolition is required at the SCTP. An existing stormwater facility will be disturbed and rehabilitated.

The BNSF tracks, an NRHP-eligible historic resource, will not be affected by the proposed project’s pipeline undercrossing because the contractor will install the proposed effluent pipeline by auger-boring.

The proposed project will require that the pipeline be trenched across two Clark County Diking District No. 14 dikes and NW Lower River Road, requiring removals and replacements of road sections to pre-project conditions.

The Alliance proposes the permanent removal of the existing outfall diffuser, riprap armoring, and, potentially, a navigation marker on a three-pile dolphin below the OHWM of the Columbia River.

e. What is the current zoning classification of the site?

Current zoning within the proposed project site includes the SCTP property, zoned Public Facilities (PF); the Ashley Ridge subdivision and BNSF right of way, zoned single-family residential (R1-20); and the proposed pipeline corridor west of the railroad tracks, zoned Agriculture/Wildlife (AG/WL). The existing access roads and planned temporary staging areas on the proposed project site are zoned AG/WL. Access roads proposed in the northeast of the proposed project site are in residential areas zoned Rural-5 (R-5) and Agriculture-20 (AG-20). The remaining proposed project site area is within water areas that are not zoned. Table 6 shows the number of acres of the site within each zoning designation.

<table>
<thead>
<tr>
<th>Zoning Category</th>
<th>Area by Zoning Category Within the Proposed Project Site (acre)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Public Facility</td>
<td>3.8</td>
</tr>
<tr>
<td>Single-family Residential (R1-20)</td>
<td>2.8</td>
</tr>
<tr>
<td>Agriculture/Wildlife (AG/WL)</td>
<td>49.4</td>
</tr>
<tr>
<td>Agriculture 20-Acre (AG-20)</td>
<td>0.1</td>
</tr>
<tr>
<td>Rural 5-Acre (R-5)</td>
<td>1.2</td>
</tr>
<tr>
<td>Water</td>
<td>9.1</td>
</tr>
<tr>
<td><strong>Total Area</strong></td>
<td><strong>66.5</strong></td>
</tr>
</tbody>
</table>

Note: Individual acreages may not add to the total due to rounding.

f. What is the current comprehensive plan designation of the site?

The SCTP property is designated Public Facility (PF). The Ashley Ridge subdivision property and BNSF right of way are designated Urban Low Density Residential (UL). Immediately west of the railroad tracks and east of Salmon Creek, the pipeline corridor is designated Parks/Open Space (P/OS). The remainder of the proposed corridor is designated Agriculture/Wildlife (AG-WL).

Proposed access roads in the northeastern part of the proposed project site are designated Rural-5 (R-5) and Agriculture (AG). The remaining proposed project site area is located within undesignated water areas. Table 7 shows the number of acres of the proposed project site within each comprehensive plan designation.
### Table 7. Proposed Project Site Area by Comprehensive Plan Designation.

<table>
<thead>
<tr>
<th>Comprehensive Plan Designation</th>
<th>Area by Comprehensive Plan Designation Category Within the Proposed Project Site (acre)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Public Facility</td>
<td>3.8</td>
</tr>
<tr>
<td>Urban Low Density Residential (UL)</td>
<td>2.8</td>
</tr>
<tr>
<td>Parks/Open Space (P/OS)</td>
<td>0.1</td>
</tr>
<tr>
<td>Agriculture/Wildlife (AG/WL)</td>
<td>49.4</td>
</tr>
<tr>
<td>Agriculture (AG)</td>
<td>0.1</td>
</tr>
<tr>
<td>Rural-5 (R-5)</td>
<td>1.2</td>
</tr>
<tr>
<td>Water</td>
<td>9.1</td>
</tr>
<tr>
<td><strong>Total Area</strong></td>
<td><strong>66.5</strong></td>
</tr>
</tbody>
</table>

Note: Individual acreages may not add to the total due to rounding.

### g. If applicable, what is the current shoreline master program designation of the site?

Per CCC Section 40.460.210, shoreline designation extends 200 feet from the OHWM of shoreline water bodies and includes the full extent of contiguous floodplains. Based on the County’s definition of shorelines, 62.2 acres of the entire 66.5-acre proposed project site are within designated shoreline areas from the Columbia River shoreline east to the BNSF Railway embankment.

The Columbia River, Round Lake, Salmon Creek, Lake River, and Green Lake are shoreline water bodies that have an Aquatic shoreline designation. Although Curtis Lake is larger than 20 acres (the minimum size for a lake to be considered a shoreline water body), it is a seasonal water body which does not meet the definition of a lake and is, therefore, not a shoreline water body. The eastern extent of the pipeline corridor at the SCTP property, the Ashley Ridge Homeowners Association property, and the BNSF Railway are designated Urban Conservancy. The Felida 26 Acres property is a sliver of land immediately west of the railroad tracks designated Rural Conservancy Resource Land. The remainder of shoreline between the railroad tracks and Salmon Creek is a wetland area designated Aquatic. The swath of land between Salmon Creek and Lake River and between Lake River and the western extent of the 150-foot-wide WSDOT right of way is designated Natural. Land between the WSDOT right of way, and the Columbia River is designated Rural Conservancy Resource Lands. Table 8 shows the area of the site within each shoreline environment designation.

### Table 8. Proposed Project Site Area by Shoreline Environment Designation.

<table>
<thead>
<tr>
<th>Shoreline Environment Designation</th>
<th>Area by Environment Designation Category Within the Proposed Project Site (acre)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aquatic</td>
<td>6.9</td>
</tr>
<tr>
<td>Urban Conservancy</td>
<td>4.1</td>
</tr>
<tr>
<td>Rural Conservancy Resource Land</td>
<td>27.3</td>
</tr>
<tr>
<td>Rural Conservancy Residential</td>
<td>0.1</td>
</tr>
<tr>
<td>Natural</td>
<td>23.7</td>
</tr>
<tr>
<td><strong>Total Area</strong></td>
<td><strong>62.2</strong></td>
</tr>
</tbody>
</table>

Note: Individual acreages may not add to the total due to rounding.

### h. Has any part of the site been classified as a critical area by the city or county? If so, specify.

The proposed project site contains critical areas as mapped by public information sources and confirmed through site-specific delineations. Critical areas within the proposed project site include critical aquifer recharge areas (CARAs), flood hazard areas, geologic hazard areas, habitat conservation areas, and wetlands. Descriptions of them follow.
Critical aquifer recharge areas: Clark County has mapped the entire proposed project site as a Category 2 CARA which CCC Section 40.410.010.C defines as the primary CARA, represented by the 10-year time-of-travel for Group A water wells and consisting of the unconsolidated sedimentary aquifer and the Troutdale gravel aquifer. Large portions of western and central Clark County are within the area of the Troutdale aquifer.

Flood hazards: As defined by CCC Section 40.420.010.C, flood hazard areas are “any land area subject to a one percent (1%) or greater chance of flooding in any given year.” Based on Federal Emergency Management Agency Flood Insurance Rate Maps (FIRM) panels 53011C0351D and 53011C0335D, the proposed project site west of the BNSF tracks is within the 100-year floodplain and is considered a flood hazard critical area.

Geologic hazards: County-regulated geologic hazards are steep slopes (40 percent or greater), landslide hazards, seismic hazards, and volcanic hazards. According to Clark County Maps Online, there are landslide hazards within the proposed project site generally paralleling the BNSF tracks. Nearly the entire proposed project site is mapped as located within seismic hazards in the form of moderate to high liquefaction susceptibility and the site’s western two-thirds is mapped as Site Class D and E for ground-shaking amplification. Steep slopes exceeding 40 percent are mapped along the BNSF Railway embankment and the Columbia River shoreline. However, slopes associated with the railroad embankment are engineered and do not qualify as critical areas. There are no volcanic hazards mapped for the proposed project site.

Habitat conservation areas: Habitat conservation areas include priority riparian habitat, priority habitat and species areas mapped by WDFW, and locally important habitat and species areas.

Priority riparian habitat: Clark County identifies priority riparian habitat widths as “areas extending outward on each side of the stream from the OHWM to the edge of the 100-year floodplain” or 250 feet from Type S waters and 200 feet from Type F waters, whichever is greater. Nearly the entire site is located within the 100-year floodplain from the Columbia River eastward to the edge of the BNSF Railway embankment. The SCTP is located outside the 100-year floodplain, but is adjacent to Salmon Creek, which is a Type S water. Therefore, the entire site is within priority riparian habitat, except for existing and maintained access roads in the northeast part of the proposed project site near NW 61st Avenue and the improvements at the SCTP.

Priority habitat and species areas: Priority habitat and species areas mapped by WDFW are also defined as habitat conservation areas by Clark County. Priority habitats on the proposed project site include aquatic habitat (palustrine wetland habitat and riverine tidal habitat) and Oregon white oak woodland habitat and a biodiversity corridor. In addition, waterfowl concentrations are mapped for the proposed project site as a priority habitat area that is known to support priority species. Priority species mapped on the proposed project site are listed in Table 9.

Wetlands: According to Clark County Maps Online, wetlands are mapped intersecting or near much of the proposed project site, including around the mainstem of Salmon Creek, Curtis Lake, Round Lake, Green Lake, Lake River, and the Columbia River. The National Wetland Inventory identifies wetlands on the proposed project site, including the following: Riverine (Salmon Creek, Lake River, and the Columbia River); Freshwater emergent wetlands (Curtis Lake, Round Lake, Green Lake, and several unnamed wetlands throughout the proposed project site); Freshwater forested/shrub wetland (Located in the central and western portion of the site and along the Columbia River); and Freshwater pond (Located west of the BNSF tracks and north of Salmon Creek).
Table 9. Priority Species List for the Proposed Project Site.

<table>
<thead>
<tr>
<th>Priority Species</th>
<th>Scientific Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coho</td>
<td>Oncorhynchus kisutch</td>
</tr>
<tr>
<td>Cutthroat</td>
<td>Oncorhynchus clarki</td>
</tr>
<tr>
<td>Dusky Canada goose</td>
<td>Branta canadensis</td>
</tr>
<tr>
<td>Fall Chinook</td>
<td>Oncorhynchus tsawytscha</td>
</tr>
<tr>
<td>Fall chum</td>
<td>Oncorhynchus keta</td>
</tr>
<tr>
<td>Rainbow trout</td>
<td>Oncorhynchus mykiss</td>
</tr>
<tr>
<td>Resident coastal cutthroat</td>
<td>Oncorhynchus clarki</td>
</tr>
<tr>
<td>Steelhead</td>
<td>Oncorhynchus mykiss</td>
</tr>
<tr>
<td>Summer steelhead</td>
<td>Oncorhynchus mykiss</td>
</tr>
<tr>
<td>Winter steelhead</td>
<td>Oncorhynchus mykiss</td>
</tr>
<tr>
<td>Wood duck</td>
<td>Aix sponsa</td>
</tr>
</tbody>
</table>

The Alliance completed a wetland delineation for the proposed project site in October 2017. The delineation identified, documented, and described 15 wetlands labeled as wetlands A-L and Q, R, and W.\(^{17}\) Four of the wetlands (F, Q, R, and W) located in the western portion of the proposed project site were delineated and described in the Round Lake Conservation Bank wetland delineation report by AECOM in 2013, and updated by Cascadia Ecological Services in 2014.

i. **Approximately how many people would reside or work in the completed project?**

   None.

j. **Approximately how many people would the completed project displace?**

   None.

k. **Proposed measures to avoid or reduce displacement impacts, if any:**

   The proposed project will not displace residences or businesses; therefore, no measures are proposed to avoid or reduce displacement impacts.

l. **Proposed measures to ensure the proposal is compatible with existing and projected land uses and plans, if any:**

   The proposed project is subject to multiple permitting processes at the federal, state, and local levels as specified in the response to question A.10 above, and those processes will ensure compliance with various plans and regulations. Applicable land use plans and regulations include the Clark County 20-Year Comprehensive Growth Management Plan, the Clark County Shoreline Master Program, and the Clark County Unified Development Code (Title 40). Permit processes and general compliance with applicable plans and regulations are discussed below.

   **Clark County 20-Year Comprehensive Growth Management Plan (2015-2035)/Clark County Code**

   The County’s 20-year comprehensive plan recognizes the SCTP Expansion Program and relies upon facilities identified in the Discovery Clean Water Alliance Capital Facilities Plan (2014) to serve projected growth. Utilities are permitted uses in all zoning districts per CCC 40.260.240. As an allowed use that does not require site plan review, the proposed project is compliant with the Clark County Code and, by extension, the comprehensive plan.

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\(^{17}\) BergerABAM, Wetland and Stream Delineation and Assessment, 2017.
Shoreline Substantial Development Permit, Shoreline Conditional Use Permit, and Critical Areas Review

Approximately 5,656 feet of the proposed project corridor is in shoreline jurisdiction and will require review under the County’s Shoreline Master Program (CCC Section 40.460). Shoreline jurisdiction extends eastward from the Columbia River shoreline to the edge of the 100-year floodplain near the BNSF Railway embankment, which excludes areas near the SCTP. As development exceeding the shoreline exemption threshold, a shoreline substantial development permit is required. Furthermore, underground utilities require the submittal of a shoreline conditional use permit in the Aquatic, Natural, and Urban Conservancy shoreline environment designations. The shoreline conditional use criteria require that the proposed project not interfere with normal public use of shorelines, be compatible with other authorized uses within the area, and that cumulative impacts are addressed. Given that the outfall and effluent pipeline will be located underground, compatibility and interference with normal public shoreline uses will not be a concern. Similarly, the new outfall will be located below the Columbia River bed except for the diffuser ports, will not be visible from the OHWM of the river, and will not obstruct navigation. Construction impacts in shoreline areas include removal of vegetation within the pipeline corridor and open cut trenching. Open cut areas will be restored to their pre-construction condition by backfilling the trench using imported and native materials, and the area within the temporary and permanent pipeline easements will be seeded with appropriate plant species.

The proposed project is subject to the utilities provisions of the Shoreline Master Program, which generally require the location of utility facilities outside shoreline jurisdiction, if feasible; that utilities be located underground; that utilities be located on the shortest route across shoreline; and that utility projects minimize conflicts with the natural environment. The outfall and effluent pipeline will transport treated effluent to the Columbia River, and therefore placement in the shoreline is unavoidable. However, the Alliance will locate the effluent pipeline and outfall diffuser mostly underground, roughly perpendicular to the shoreline, and roughly parallel to the existing 30-inch effluent pipeline to minimize impacts with the natural environment.

As discussed in the response to B.8.h, the proposed project will occur within mapped critical areas including CARAs, flood hazard areas, geologic hazard areas, habitat conservation areas, and wetlands, and will require critical areas review under CCC Section 40.400. Critical areas review occurs in conjunction with shoreline substantial development permit and shoreline conditional use permit review, and includes review of the following:

- **Critical aquifer recharge areas:** Treated wastewater effluent outfalls are not listed as a regulated activity in CCC 40.410.010, and are therefore exempt from review under the County’s critical aquifer recharge regulations.

- **Flood hazard areas:** The proposed project will cross the Columbia River floodway and the 100-year floodplain of the Columbia River, Lake River, and Salmon Creek, requiring floodplain permit approval prior to construction and in conjunction with review under the Shoreline Master Program.

- **Geologic hazard areas:** According to Clark County Maps Online, the proposed project will be within landslide, seismic, and steep slope hazards and is subject to the County’s regulations for geologic hazards. However, the steep slopes along the BNSF Railway embankment were created through permitted grading activity and are exempt from critical areas review.

- **Wetlands:** Portions of the proposed project will occur within regulated wetlands. The wetlands regulations require avoidance and impact minimization, or if not possible, mitigation for wetland and wetland buffer impacts. The Alliance will submit a wetland mitigation plan as part of the critical areas review conducted concurrent with County shoreline review. As identified in the
response to section B.3.a(2), the proposed project’s installation of the effluent pipeline through the wetland areas will cause about 3.57 acre of temporary wetland impacts (wetlands A, B, C, E, F, R, and W) and 5.91 acres of temporary wetland buffer impact. The Alliance will restore temporarily disturbed wetland areas to their pre-construction contours and seed them with native mixture(s). Wetland buffer soil will be rehabilitated and seeded with appropriate grass species. Permanent impacts to wetlands and wetland buffers will also occur related to maintenance or repair of existing agricultural access roads. About 0.02 acre of permanent impacts to wetlands, but no permanent impacts to buffers, are expected. The Alliance will mitigate permanent impacts through the purchase of credits at the agency-approved mitigation bank.

- **Habitat conservation areas:** Nearly the entire proposed project is located within priority riparian habitat extending from the Columbia River to the edge of the 100-year floodplain, and includes land within 250 feet of Type S and 200 feet from Type F waters. Habitat conservation areas include priority habitat and species areas. However, impacts to habitat conservation areas are expected to be temporary because the pipeline will be placed underground. Construction BMPs that will avoid, minimize, or mitigate for temporary impacts are listed in the response to section B.5.d. Critical areas review for impacts to and mitigation for habitat conservation areas will be conducted in conjunction with County shoreline permit review.

m. **Proposed measures to reduce or control impacts to agricultural and forest lands of long-term commercial significance, if any:**

The Columbia River lowlands are designated agricultural lands of long-term commercial significance by Clark County’s 20-year Growth Management Plan. The proposed project will temporarily impact agricultural lands of long-term commercial significance during effluent pipeline construction. Land within the permanent and temporary easement areas (approximately 100 feet wide) will not be used for agricultural purposes during construction. If the Round Lake Conservation Bank project on parcel 191177000 is constructed prior to the proposed project, this land will have already been permanently removed from agricultural use and the only agricultural land impacted by the proposed project will be between Lake River and Salmon Creek on the Curtis Lake Ranch property. If the proposed project proceeds ahead of the Round Lake Conservation Bank project, then land within the temporary and permanent easements on the Round Lake property could not be used for agricultural purposes during construction.

Once pipeline construction is complete, the Alliance will restore the proposed project corridor to its pre-construction conditions, and agricultural activities will resume in the temporary and permanent pipeline easements. If the Round Lake Conservation Bank proposed on parcel 191177-000 precedes the proposed project’s construction, the Alliance will plant the temporary easement area according to the approved Round Lake Conservation Bank planting plan and will leave the permanent easement as grasses and forbs.

Furthermore, no measures are proposed to reduce or control impacts to forestlands of long-term commercial significance because the proposed project site does not contain such resources.

9. **Housing**

a. Approximately how many units would be provided, if any? Indicate whether high-, middle-, or low-income housing.

The proposed project does not include construction of housing units. This question does not apply to the proposed project.
b. Approximately how many units, if any, would be eliminated? Indicate whether high, middle, or low-income housing.

The proposed project will not eliminate housing units. This question does not apply to the proposed project.

c. Proposed measures to reduce or control housing impacts, if any:

The proposed project will not provide or eliminate housing, and will not result in housing impacts. Therefore, no measures to reduce or control housing impacts are necessary or proposed.

10. Aesthetics

a. What is the tallest height of any proposed structure(s), not including antennas; what is the principal exterior building material(s) proposed?

The proposed project does not propose aboveground structures, except concrete vaults for air/butterfly valves and access manholes, and a navigation marker in the Columbia River. The proposed effluent pipeline will be fitted with four 8-foot x 6.5-foot vaults for air valves, two vaults for butterfly valves (one 8-foot x 10-foot and one 8-foot x 12-foot), and three 8-foot x 6.5-foot vaults for access manholes. The air valves bleed off any air that accumulates at high points in the pipeline, and which would otherwise cause an air lock. The access manholes are placed at strategic locations for pipeline inspection and maintenance. The tops of the vaults will be only inches above the ground surface and screened by herbaceous vegetation, so hardly visible. Only 4- to 6-inch marker posts, one at each vault, will project aboveground, about 3-4 feet. Figure 1 shows the typical belowground concrete vault and aboveground marker post.

![Figure 1. Typical belowground concrete vault and aboveground marker post.](image)

The navigation marker will consist of three 18-inch-diameter steel piles, braced together to form a dolphin. The platform on top of the dolphin will be about 10 feet above the ordinary high water elevation, and will be fitted with galvanized steel grating. The marker light will be placed on the platform. Sitting in the water outside the navigation channel, the dolphin and marker light will appear like the existing navigation marker at the end of the existing outfall diffuser, which will be relocated to the new outfall terminus about 200 feet farther out in the river. Figure 2 shows a side view and top view of the pile-supported navigation marker dolphin and platform.
b. What views in the immediate vicinity would be altered or obstructed?

The landscape setting is Agricultural Land. The character is primarily pasture, interlaced with riparian corridors, floodplain wetlands, and stream channels. Fences, farm roads, and cattle trails crisscross the pipeline alignment. No structures exist, except the SCTP at the eastern end, the BNSF Railway embankment, pasture fencing and farm roads, the flood control dike, NW Lower River Road/SR 501, a dredge spoil disposal area and riprap armoring at the Columbia River shoreline, and a three-pile wooden dolphin with marker light at the western terminus of the existing outfall.

No protected views will be altered or obstructed in the immediate proposed project vicinity. Most features of the proposed project will be installed belowground. Following temporary construction disturbance, the ground contours will be returned roughly to their pre-construction elevations and surfaces will be restored to a similar vegetative condition. No visible exterior changes will occur at the existing effluent pump station building.

c. Proposed measures to reduce or control aesthetic impacts, if any:

No measures to reduce or control aesthetic impacts are proposed because no impacts to protected views are expected. Most proposed project features will be installed belowground or within an existing structure.

11. Light and Glare

a. What type of light or glare will the proposal produce? What time of day would it mainly occur?

The new effluent pipeline and outfall diffuser do not require lighting for operation, except for a navigational marker mounted atop a three-pile dolphin in the Columbia River at the end of the new diffuser. The navigational marker will be lighted as specified by the USCG. The purpose of the marker light is to warn ships of the potential anchoring hazard posed by the diffuser’s ports, which extend above the riverbed into the water column. This safety measure will be taken despite the diffuser being located outside of designated navigation channel and anchorage. The new marker light will replace the existing marker light at the end of the existing outfall diffuser. Without operational lighting, the proposed project will not produce glare.

The new pipeline will originate at the existing effluent pump station at the SCTP, which is where four new effluent pumps will be installed. Low-level operational night lighting has already been installed at the SCTP, including the existing effluent pump station, to ensure safety. Security night lighting is internally focused using sodium vapor illumination, and operates without nuisance glare effects.
There are no residential receptors within one-third mile of the proposed pipeline alignment. No changes to lighting are proposed, and no new sources of glare will be created.

Low-level night lighting will be used during pipeline construction to ensure safety in work areas and to provide temporary outdoor lighting during possible nighttime work hours. Outdoor lighting will be directed at the ground and work activities, and is not expected to interfere with adjacent properties. No temporary sources of glare will be created.

The pipeline construction route crosses under the flight approach to the Robert L. Delanoy Airport, a one-airplane airport. The proposed project will coordinate with the airport owner and manager to ensure that temporary nighttime construction lighting will not conflict with airport safety or FAA restrictions.

b. Could light or glare from the finished project be a safety hazard or interfere with views?

No new sources of light or glare are proposed; the existing navigational marker will only be shifted to the end of the new diffuser. Without new sources of light or glare, the proposed project will not interfere with protected views.

c. What existing off-site sources of light or glare may affect your proposal?

The only off-site sources of light are from occasional trains traveling the BNSF tracks. The proposed project will not be affected by existing off-site sources of light or glare.

d. Proposed measures to reduce or control light and glare impacts, if any:

The Alliance does not propose measures to reduce or control operational light or glare impacts because new operational lighting is not included in the proposed project and no impacts are expected.

During construction when temporary lighting may be used to illuminate work areas, no impacts are anticipated because lighting will be aimed at the ground and toward work activities. The closest residential receptors are about one-quarter mile (Ashley Ridge) or one-third mile (Lower River Road, NW 61st Avenue) from the pipeline alignment. The proposed project will coordinate with the Robert L. Delanoy Airport owner and manager to ensure that temporary nighttime construction lighting will not conflict with airport safety or FAA restrictions.

12. Recreation

a. What designated and informal recreational opportunities are in the immediate vicinity?

The following discussion identifies recreational opportunities (both formally designated and informal) within the proposed project site and vicinity. For the purposes of this SEPA Checklist, the Alliance assumes recreational facilities and opportunities within walking distance (0.50 mile) of the proposed project site are within the proposed project’s vicinity.

**Designated Opportunities**

Recreational plans that designate facilities and opportunities on or in the vicinity of the proposed project site include: the 2015 Clark County Parks, Recreation and Open Space Plan; the 2006 Regional Trail and Bikeway Systems Plan; the 2010 Bi-State Regional Trail Systems Plan; the 2007 Vancouver-Clark Parks, Recreation and Open Space Comprehensive Plan; and the 2014 Conservation Areas Acquisition Plan. Recreational facilities and opportunities at the proposed project site or in the vicinity are further described below:
- **Salmon Creek**: Salmon Creek provides various recreational opportunities including kayaking, canoeing, and fishing. Although there are no designated water trails on the creek, it is accessible to small personal watercraft such as kayaks and canoes on the proposed project site and its vicinity. Motorcraft are not permitted. As a public water, fishing is also permitted on the creek. The creek is open to trout and other game fishing from the first Saturday in June until March 15 the following year with a limit of three hatchery steelhead. The creek is open for salmon fishing from August 1 to December 31 with a daily limit of six fish. Anglers can retain Chinook and coho during salmon fishing season.

- **Lake River**: Lake River provides a variety of water-oriented recreational activities including boating, kayaking, canoeing, and fishing. The river is part of the Lewis River-Vancouver Lake Water Trail designated by the Lower Columbia Estuary Partnership. Approximately 32 miles long, the trail winds its way from Vancouver Lake north along Lake River and Bachelor Slough until it reaches the Columbia River, and then follows along the North Fork and East Fork Lewis River where the trail ends in Woodland and La Center. This trail belongs to a larger water trail network and connects to the Lower Columbia River Water Trail at the mouth of Lake River. The trail bisects the proposed project site and provides water-related recreational opportunities for paddlers of all abilities.

- **The Columbia River**: The Columbia River offers multiple designated recreational opportunities including fishing, boating, and kayaking. WDFW regulates recreational fishing on the river. Recreational fishing on the river includes fishing for trout, salmon, steelhead, sturgeon, shad, and other game fish with seasons applying to each as specified in Table 10.

<table>
<thead>
<tr>
<th>Species</th>
<th>Season</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trout</td>
<td>May 16 – March 31</td>
</tr>
<tr>
<td>Other Game Fish</td>
<td>Year round</td>
</tr>
<tr>
<td>Salmon and Steelhead</td>
<td>May 16 – March 31</td>
</tr>
<tr>
<td>Shad and Sturgeon</td>
<td>May 16 – March 31 (year-round catch and release)</td>
</tr>
</tbody>
</table>

The Lower Columbia Estuary Partnership designates the Lower Columbia River as the Lower Columbia River Water Trail. The trail extends approximately 146 miles from Bonneville Dam in Skamania County to the Pacific Ocean. The Lower Columbia River Water Trail provides opportunities for aquatic recreation including sailing, canoeing, kayaking, and fishing, and is included in the 2006 Regional Trail and Bikeway Systems Plan and the 2010 Bi-State Regional Trail Systems Plan.

- **Lewis and Clark Discovery Greenway**: The Lewis and Clark Discovery Greenway is a 46.1-mile multi-modal facility in the 2006 Trail and Bikeway Systems Plan that eventually will extend from Washougal to Ridgefield. Regional trail planners envision the trail as accommodating walking, running, biking and, for some portions, equestrians and paddlers. According to the 2015 Clark County Parks, Recreation and Open Space Plan, approximately 9.5 miles of the trail have already been constructed with another half-mile of trail to be added with the completion of the Vancouver Waterfront Park development. Most of the constructed portions of the trail are in Washougal and Vancouver with a smaller portion located in Clark County. The Discovery Greenway is in the early planning stages and the alignment, design, and construction schedule for unfinished segments of the trail have not yet been determined. The 2010 Bi-State Regional Trail Systems Plan also includes the Greenway Trail.

- **Shillapoo Wildlife Area**: The Shillapoo Wildlife Area, managed by WDFW, is located approximately 0.3 mile to the south of the proposed project site. The west side is accessed via NW Lower River Road/SR 501. The portion closest to the proposed project site is the
approximately 882-acre Shillapoo North Unit. The 2,370-acre wildlife area provides a mixture of recreational opportunities including bird watching, dog walking, fishing, hiking, hunting, trapping, target shooting, archery, and wildlife viewing.

- **Salmon Creek Greenway Trail:** The 2015 Clark County Parks, Recreation and Open Space Plan includes an extension to the existing Salmon Creek Greenway Trail from SR 501 to NW 36th Avenue. The plan calls for the construction of the segment from Lake River to NW 36th Avenue in 2020 at a cost of $1.7 million. The existing greenway consists of 3.2 miles of paved trail from NW 36th Avenue east to Klineline Pond. The trail is a multimodal facility for bicyclists and pedestrians. The 2006 Trail and Bikeway Systems Plan shows the trail crossing the proposed project site near the BNSF tracks at the toe of the bluff near the SCTP. The planned trail expansion will continue to provide access for bicycles and pedestrians, but the 2015 Clark County Parks, Recreation and Open Space Plan also indicates the trail will accommodate equestrians outside the urban area.

- **Salmon Creek-Lake River Open Space/Natural Area:** The 2007 Vancouver-Clark Parks, Recreation and Open Space Comprehensive Plan designates an area surrounding the confluence of Salmon Creek and Lake River as Proposed Open Space/Natural Areas. The plan does not provide any additional information as to how this area will be used or what recreational opportunities the area will include. The area includes both aquatic and upland areas. The upland areas are primarily located on private property and there are no recreational uses or activities accessible to the public. Salmon Creek recreational activities are discussed above.

- **Ashley Ridge Subdivision Open Space and Trail:** The Ashley Ridge Subdivision Homeowners Association owns parcel number 986038501 immediately west and south of the SCTP. The Association plans to develop the parcel to provide recreational access to Salmon Creek; however, the watercraft launch area currently is unimproved.

**Informal Recreational Opportunities**

The vicinity of the proposed project includes informal recreational activities not identified in plans or otherwise designated by Clark County or the state. Informal activities include walking, jogging, biking, and bird watching along NW Lower River Road (SR 501) south of the Round Lake Conservation Bank property (parcel no. 191177000). Additionally, a Clark County Diking Improvement District No. 14 dike between the Round Lake Conservation Bank property and the Shillapoo Wildlife Area (parcels 19128000 and 191279000) supports a public access trail leading from SR 501 east toward Lake River, and it provides walking and bird watching opportunities.

b. Would the proposed project displace any existing recreational uses? If so, describe.

The following discusses impacts to the designated and informal recreational opportunities identified in section B.12.a above. Because the pipeline will be constructed belowground and under the affected water bodies, impacts will be temporary during the proposed project’s construction period, except for minor, permanent impacts in the Columbia River (i.e., relocating the navigation marker and diffuser ports that will extend above the riverbed into the water column).

- **Salmon Creek:** The proposed project also includes construction of the effluent pipeline in the aquatic bed of Salmon Creek. The contractor will place a temporary work trestle/platform across the entire width of the creek to move equipment across and to provide a platform to excavate the trench within the cofferdam. Temporary impacts to recreationists during construction include the partial obstruction of the creek by the cofferdam and work trestle during the 12-week in-creek construction period. The contractor will maintain partial passage along the creek during construction by providing a minimum 20 feet of open water, by providing passage as needed, or by providing portage support to allow personal watercraft to pass around the area. No permanent
recreational impacts will occur. Depending on USCG requirements, the contractor may construct
the trestle with a removable span that can be lifted, as needed, by a crane or other equipment to
allow boats and personal watercraft to pass, depending on required clearance. If a removable span
is required, the Alliance might use a crane at the Salmon Creek crossing to move the span, or use
pipe laying machinery (trackhoe, dredge, gradall) to lift it.

- **Lake River**: The proposed project will require open trenching in Lake River to construct the
effluent pipeline. Construction in Lake River may involve barge(s), a temporary work trestle,
and/or cofferdams. The contractor will install a cofferdam in approximately one-half of the river
and excavate the trench for the effluent pipe from the barge(s), the work trestle, exposed riverbed,
or riparian area. A concrete or sheet steel tie-in box will be set roughly mid-way in the channel to
facilitate the pipeline connection. After the installation of the effluent pipeline, the contractor will
backfill the trench using bedding, pipe zone material, angular stone, and native sediment. Grout or
controlled density fill will be placed in the pipe zone within the tie-in box. The contractor will
remove the first cofferdam and place it in the other half of the river, and repeat the process for
pipeline construction for the remainder of the river. All non-native materials will be removed,
except for the filled tie-in box in the pipe zone buried in the riverbed. During construction, a 70-
foot-wide channel will remain passable on the half of the river outside the cofferdam to allow the
passage of recreational watercraft. Within the DNR easements on Lake River (i.e., temporary
construction easement, new permanent pipeline easement, and the existing permanent easement: a
total of 167 feet wide), the contractor will prohibit recreational activities such as fishing and bird
watching, although watercraft access through the area will be provided consistent with USCG
approval. Given the limited length and width of the construction area, the limited 12-week
duration of work within Lake River, and the provision of passage for recreational watercraft
during construction, recreational impacts will be insignificant.

- **Columbia River**: The proposed outfall construction will require Columbia River in-water work.
The Alliance proposes to construct the outfall within a 320-foot-wide by 840-foot-long area
(approximately 5.0 acres). The new outfall diffuser construction area will include a temporary
DNR easement encompassing the existing 20-foot-wide permanent DNR easement and a new 40-
foot-wide permanent DNR easement to be acquired. The Alliance anticipates that work within the
Columbia River will take 12 weeks within the August 1–March 31 in-water work period. During
the in-water work period while the outfall diffuser is being constructed, the contractor will place a
cordon around the in-water construction area to prohibit water-oriented recreational activities,
including boating and fishing, in the area.

The Alliance also proposes the following work within the Columbia River:

  o Removal of the existing 30-inch outfall diffuser and pipeline generally west of NW
    Lower River Road (approximately 870 feet of outfall pipe), supporting piles, and the
    riprap armorning the outfall at the riverbank. The removal of the existing outfall diffuser
    also will occur within a temporary DNR aquatic lands easement flanking the Alliance’s
    20-foot-wide permanent DNR aquatic lands easement. The aquatic lands area required
to remove the existing outfall diffuser will cover about 1.4 acres. After excavation and
the removal of the outfall pipe, the Alliance will place native riverbed sediment in the
channel void to restore the aquatic bed to pre-project elevations.

  o The Alliance will leave the existing navigation marker at the existing outfall’s
    terminus, relocate it to the end of the new outfall, or place a new navigation marker at
    the terminus of the new outfall, as approved by the USCG. If the existing navigation
    marker is to be removed, the contractor will extract the wooden piles with a vibratory
    hammer or excavator, or cut the piles 3 feet below mudline.
The construction contractor will temporarily prohibit water-oriented recreational activities, such as boating, kayaking, and fishing, during the construction of the new outfall and the removal of the existing outfall.

The construction of the new outfall and the demolition of the existing outfall will require upland staging in areas north and south of the alignment of the existing outfall. These areas are located on privately owned property and are not accessible to the public for recreation. Under the Public Trust Doctrine in Washington, “waters of the state are a public resource owned by and available to all citizens equally for navigation, conducting commerce, fishing, recreation and similar uses and that this trust is not invalidated by private ownership of the underlying land.” The Public Trust Doctrine is not statutory law, but is created, developed, and enforced by the judiciary and is fully binding on state government. Generally, the extent of waters of the state has been defined as the OHWM. Thus, the Public Trust Doctrine makes state waters available for recreational purposes up to the high water line. In a riverine environment such as the Columbia River, water levels fluctuate annually. During low water events on the Columbia River, a narrow strip of exposed aquatic lands immediately adjacent to the proposed outfall construction area and the existing outfall demolition area may be available for public recreation. However, fluctuating water levels limit the amount of aquatic land available to times of the year when water levels are low (late summer and fall) and to the area below high water and above low water. The construction of a new outfall and the demolition of the existing outfall may restrict public access to this area temporarily during the construction period, but the area is narrow, the in-water work period is short, and miles of similarly exposed shoreline will still exist and be available to public use along the Columbia River. Therefore, the proposed project’s impacts to public recreation on the shoreline of the Columbia River will be insignificant.

- **Lewis and Clark Discovery Greenway:** The proposed outfall and effluent pipeline are unlikely to have an impact on the Discovery Greenway because regional trail planners have not yet determined the exact alignment, design, or construction schedule for unfinished portions of the Discovery Greenway.

- **Shillapoo Wildlife Area:** The Alliance does not propose construction activities within the Shillapoo Wildlife Area and does not anticipate direct impacts to it. Indirect, temporary impacts to the wildlife area may include noise made by the equipment used to construct the pipeline, such as augers, excavators, and dump trucks, but such noise is expected to be minor given the proposed project’s distance of 0.3 mile from the wildlife area. Construction traffic going to and leaving the proposed project site, including vehicles transporting workers and equipment and materials, will use NW Lower River Road. See discussion of construction traffic in section B.14 (Transportation). Traffic will be intermittent throughout the construction period and is not expected to affect access to the wildlife area. Construction traffic will be most noticeable at the beginning and end of work shifts when workers enter and leave the proposed project site, but sporadic when pipe materials are freighted. The impacts to recreational activities are expected to be insignificant.

- **Salmon Creek Greenway Trail:** According to the capital facilities plan contained in the 2015 Clark County Parks, Recreation, and Open Space Plan, the County’s Public Works Department, Parks Division will construct the trail in 2020, and the County will maintain it afterward. Construction of the trail may occur before or after pipeline construction. If the trail is constructed

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19 Johnson, Ralph W.; Craighton Goepple; David Jansen; and Rachel Pascal; Public Trust Doctrine and Coastal Zone Management in Washington State, 1991.
before the pipeline, impacts to the trail may include delays, temporary closures, or detours. If trail construction occurs after pipeline construction is complete, no impacts are anticipated.

- **Salmon Creek-Lake River Open Space/Natural Area:** The proposed project will intersect the proposed Salmon Creek-Lake River Open Space/Natural Area depicted in the 2007 Vancouver-Clark Comprehensive Parks, Recreation and Open Space Plan, generally located at the confluence of the river and creek, and south of Green Lake. Because upland portions of the area are on private property, no recreational activities are available to the public on this land, and no recreational impacts are anticipated from the proposed project. The recreational impacts to the aquatic portions of this area within Salmon Creek are discussed above.

- **Ashley Ridge Open Space and Trail:** The effluent pipeline will be auger-bored underground beginning on the SCTP property owned by the Alliance, underneath the Ashley Ridge Homeowners Association open space property (parcel number 986038501), and under the BNSF right of way. During construction, residents’ access to Salmon Creek for launching personal watercraft will be limited because of construction traffic accessing the BNSF Railway undercrossing.

c. Proposed measures to reduce or control impacts on recreation, including recreation opportunities to be provided by the project or applicant, if any:

- **Salmon Creek:** The contractor will place warning notices up- and downstream and at vessel launches, warning recreationists of use limitations during construction in this portion of Salmon Creek. As mitigation for the partial obstruction of the creek by the cofferdam and work trestle, construction plans specify that the contractor will maintain a minimum of 20 feet of open water area to allow personal watercraft to pass through the area, passage on an as-needed basis, or temporary portage support for watercraft. In addition and if required by the USCG, the contractor will construct the trestle with a removable span that can be lifted, as needed, by a crane or other equipment. All work in Salmon Creek will be conducted within the approved WDFW/USACE in-water work window.

- **Lake River:** The contractor will place warning notices up- and downstream and at vessel launches, warning recreationists of use limitations during construction in this portion of Lake River. Proposed mitigation for the construction-period recreational impacts to Lake River includes maintaining recreational watercraft passage by providing a minimum 20-foot-wide channel around the cofferdam. The Alliance expects limitations on fishing and bird watching within the easement areas (existing and proposed temporary and permanent DNR easements) on Lake River to be insignificant given the short length and narrow width (i.e., 167 feet) of these easements, in comparison to the overall length of the river and the short duration of in-river construction. The Alliance does not propose or require other mitigations given the insignificance of temporary impacts. The Alliance does not anticipate permanent impacts to recreational uses or activities within Lake River given that the pipeline will be placed under the aquatic lands of the river, which will be restored to their pre-project conditions. All work in Lake River will be conducted within the approved WDFW/USACE in-water work window.

- **Columbia River:** Mitigation for the temporary recreational impacts to the Columbia River associated with outfall diffuser installation and demolition include cordonning off the area during construction to direct boaters and water-oriented recreationists around the construction area. Mariners will be notified of the work activity. The USCG PATON web-based system provides a weekly notice to mariners for in-water construction or other activities that will affect boating and water recreation activities. When the Alliance applies for PATON approval, they will provide the USCG information on the in-water work and construction duration that will then be provided on the PATON notification website. The contractor will conduct work in the Columbia River within the agency-preferred in-water work window (August 1–March 31), limiting temporary
recreational impacts to this period. Given the limited area and time for in-water construction associated with proposed outfall construction and existing outfall demolition, temporary impacts to Columbia River recreationists will be insignificant.

After construction, the navigation marker with a warning signal will direct recreational vessel traffic to avoid anchoring near the outfall, but vessel passage will not be restricted. The existing 3-pile navigation marker with warning signal at the end of the existing outfall will either be left in place, moved to the end of the new outfall, or removed and replaced with a new marker at the end of the new outfall. The proposed navigation marker will require the same total water area as existing.

- **Lewis and Clark Discovery Greenway**: As noted in the response to section B.12.b, the alignment, design, and timing for the development of the unfinished portions of the Discovery Greenway are unknown. The Alliance does not expect impacts to the Greenway given that the timing of construction is unknown and the pipeline will be placed underground. Therefore, mitigation for impacts to the Discovery Greenway is unnecessary.

- **Shillapoo Wildlife Area**: Temporary recreational impacts to the Shillapoo Wildlife Area associated with noise and periodic construction traffic will be insignificant. Pipeline and outfall construction noise will be temporary and exempt from the noise provisions enumerated in WAC 173-60-040, per WAC 173-60-050(3)(a).

- **Salmon Creek Greenway Trail**: Clark County Public Works is responsible for the trail construction and should coordinate with the Alliance to ensure that pipeline construction occurs prior to trail construction, thereby avoiding impacts to the Greenway Trail. If pipeline construction occurs after trail construction, the Alliance proposes to place signage warning trail users of delays, temporary closures, or detours. After pipeline construction is complete, the Alliance will restore the trail to its pre-project conditions.

- **Salmon Creek-Lake River Open Space/Natural Area**: Private ownership of the mapped open space/natural area means there are no recreational uses within the uplands of this area. The Alliance does not anticipate disruption of recreational activities within this area and no mitigation measures are proposed.

- **Ashley Ridge Open Space and Trail**: Auger-boring below the Ashley Ridge open space and trail will prevent most construction impacts to this area, but residents accessing Salmon Creek to launch watercraft may experience delays or short closures when construction vehicles access the BNSF Railway undercrossing. The Alliance will coordinate with the Ashley Ridge Homeowners’ Association to warn residents of any access restrictions or delays.

13. **Historic and Cultural Preservation**

a. Are there any buildings, structures, or sites, located on or near the site that are over 45 years old listed in or eligible for listing in national, state, or local preservation registers? If so, specifically describe.

The BNSF Railway, Northwest Division, Seattle Subdivision, Line Segment 52, which is recommended to be eligible for the National Register of Historic Places (NRHP), crosses the proposed project’s Area of Potential Effect (APE), referred to as the proposed project site in this checklist. The proposed project is partly within the NRHP-listed Vancouver Lakes Archaeological District. One of the archaeological resources within the APE (site 45CL101) is listed in the nomination form for the District. Eight other archaeological resources within the APE have either not been evaluated or are recommended to be not eligible. Two historic resources within the APE are recommended to be not eligible.
b. Are there any landmarks, features, or other evidence of Indian or historic use or occupation? This may include human burials or old cemeteries. Are there any material evidence, artifacts, or areas of cultural importance on or near the site? Please list any professional studies conducted at the site to identify such resources.

Archaeological Investigations Northwest, Inc. (AINW) conducted a cultural resource survey of the APE for the Alliance. A preliminary survey report was submitted to the USACE in 2017, and the final report will be submitted to DAHP and the USACE in 2018, and subject to RCW 42.56.300. Most of the proposed project APE lies within the NRHP-eligible Vancouver Lakes Archaeological District. Nine archaeological resources (five pre-contact, two multicomponent, and two historic-period) are confirmed to be within the proposed project APE. One of these resources is listed in the nomination form for the Vancouver Lakes Archaeological District. Records place two additional pre-contact archaeological resources within the APE, but AINW’s survey confirms that they are not within the APE. Three historic resources are within the APE.

Nearly 20 archaeological or cultural resource studies have covered portions of the proposed project area between 1971 and 2018. These studies are subject to RCW 42.56.300, and listed here in reverse chronological order:


The archaeological studies incrementally build a more complete knowledge of prehistoric site use as new areas are investigated or known sites are examined more closely. In a couple cases, previously reported sites were not relocated, which probably reflects generalized recorded location information.
c. Describe the methods used to assess the potential impacts to cultural and historic resources on or near the project site. Examples include consultation with tribes and the department of archeology and historic preservation, archaeological surveys, historic maps, GIS data, etc.

AINW reviewed records held by DAHP, AINW’s library, the Clark County GIS, and the Clark County historic resource inventory. AINW archaeologists conducted a pedestrian survey and shovel testing within the proposed project area from 2015 through 2018, and AINW architectural historians conducted a historic resource survey in 2017. Eleven archaeological resources (nine of which are within the APE) and three historic resources were identified. A preliminary report was submitted to DAHP and the USACE in 2017. A final report is in preparation, and will be submitted to DAHP and the USACE.

The archaeological resources within the APE are three pre-contact sites (45CL1290, 45CL1335, and 45CL1339); one pre-contact isolate (45CL1338); three multicomponent sites with pre-contact and historic period artifacts (45CL99, 45CL101, and 45CL1337); one historic-period site (45CL1340); and one historic-period isolate (45CL1336).

d. Proposed measures to avoid, minimize, or compensate for loss, changes to, and disturbance to resources. Please include plans for the above and any permits that may be required.

The proposed project will need a Section 404 dredge/fill permit from the USACE, and the USACE will also have jurisdiction over the cultural resources (archaeological and historic) within the APE. Of the identified archaeological sites, sites 45CL1340, 45CL1339, 45CL1338, 45CL1335, and 45CL101 are recommended to be not eligible for listing in the NRHP, and sites 45CL98 and 45CL100 are not within the APE. No impact avoidance or minimization measures are planned. Portions of sites 45CL99 and 45CL101 overlap the APE, but the portions within the APE are recommended as not contributing to the eligibility of those sites for listing in the NRHP. No impact avoidance or minimization measures are planned for these sites.

Site 45CL1290 is in the APE; however, it is recommended that only a portion of the site contributes to the site’s eligibility for the NRHP. The contributing portion will receive ground protection (e.g., removable mats to prevent rutting) and impacts to native soil will be avoided. The apparent non-contributing portion will be disturbed for trench construction, with topsoil salvaged and reused as trench backfill. The Alliance will consult with the USACE, DAHP, and affected Tribes for concurrence with the proposed site protection plan.

Site 45CL1337 is in the APE, and a portion of the site is recommended to be eligible for listing in the NRHP. However, the area that contributes to NRHP eligibility will be avoided through site protection measures (restricting travel to existing farm roads and avoiding impacts to native soil within the site). Additional archaeological work is recommended if NRHP-eligible portion of the site cannot be avoided.

Impacts to the BNSF Railway, Northwest Division, Seattle Subdivision, Line Segment 52 will be entirely avoided by the proposed project by auger-boring the proposed effluent pipeline under the railroad.

The Alliance will prepare a site protection plan to address measures being taken to avoid impacts to archaeological sites, and an inadvertent discovery plan to outline procedures to be followed if there is an archaeological discovery during construction. These plans will be reviewed and approved by USACE.
14. Transportation

a. Identify public streets and highways serving the site or affected geographic area and describe proposed access to the existing street system. Show on site plans, if any.

Four transportation routes will be used to access the proposed project site. The pipeline segment from SCTP to Salmon Creek will be accessed via NW McCann Road, a two-lane road that intersects NW 36th Avenue, an Urban Minor Arterial carrying about 8,406 average daily traffic (weekdays).20 No new street access is proposed. Within the SCTP, site access will be via the internal SCTP vehicle circulation system. The SCTP is not open to the public. The pipeline segment between SCTP and the BNSF tracks is accessible through the SCTP, and via an unimproved road through tax lot #986038501 owned by the Ashley Ridge Homeowners Association (reached through the new Ashley Ridge Development). Temporary staging and construction parking can be accommodated within a permanent easement on the Ashley Ridge Homeowners Association property. The western part of this segment will be accessed via the pipeline segment from Salmon Creek to Lake River; that is, by a pile-supported, temporary bridge across Salmon Creek. Salmon Creek is not normally floatable by barge, but is a designated navigable waterway used by small recreational craft and the USCG must approve any obstructions to vessel navigation.

The pipeline segment from Salmon Creek to Lake River will be accessed via private unimproved roads across Curtis Lake Ranch. Access to Curtis Lake Ranch will be via NW 61st Avenue from NW 179th Street, a Rural Major Collector carrying about 1,872 average daily traffic (weekdays).21 Access via NW 61st Avenue requires crossing the BNSF tracks, either at an existing at-grade rail crossing or via an undercrossing. The at-grade crossing requires a railroad flagger for traffic control. Alternatively, construction vehicles and equipment will access the segment via the SCTP to Salmon Creek pipeline segment, over a pile-supported, temporary bridge. The USCG must approve any temporary bridge obstructions to vessel navigation. Also, equipment might arrive by barge via Lake River, a designated navigable waterway. Shallow draft vessels, including non-motorized craft, can access Lake River and Salmon Creek from the Columbia River, depending on water levels. Temporary staging and construction parking can be accommodated within permanent and temporary easements on the Curtis Lake Ranch property.

The pipeline segment from Lake River to the Columbia River will be accessed by NW Lower River Road (SR 501), then via acquired temporary and permanent easements along the pipeline alignment. SR 501, south of the Shillapoo Wildlife Recreation Area, carries average daily traffic of about 823.22 Traffic on NW Lower River Road is limited to private vehicles north of a lockable gate. The Alliance has a permanent access agreement on the private road north of the gate. The proposed project site crosses undeveloped right of way along Lake River that WSDOT acquired to realign SR 501, but for which no active transportation development plan exists.23

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staging and construction parking can be accommodated within permanent and temporary easements on the New Columbia Garden property.

The pipeline outfall in the Columbia River (western terminus) will be accessed by barge via the federal navigation channel and from temporary and permanent easements on land. The Columbia River is a navigable waterway, and deep draft barges and other vessels can navigate the river.

During the 17-month construction phase spanning two in-water work periods, the entire proposed project will receive about 3,500 dump trucks, concrete trucks, and semi-truck/trailers entering the site. Trucks will arrive carrying these approximate quantities: import material (700 loads), haul-off material (800 loads), concrete (20 loads), asphalt (100 loads), base course (1,300 loads), pipe (100 loads), and miscellaneous equipment (480 loads). Of this truck volume, about 1,750 total vehicles will service the proposed project site via NW McCann Road/NW 36th Avenue (i.e., about 30 trucks per work-day for 60 work-days). About 1,750 vehicles will service the proposed project site via NW 61st Avenue/NW 179th Street or NW Lower River Road/SR 501 (i.e., about 30 trucks per workday for 60 work-days). Also, about 100 workers will generate an additional 100 car/truck/utility vehicle trips per work-day − 50 trips via NW McCann Road/NW 36th Avenue and 50 trips via NW 61st Avenue/NW 179th Street or NW Lower River Road/SR 501.

b. Is the site or affected geographic area currently served by public transit? If so, generally describe. If not, what is the approximate distance to the nearest transit stop?

C-TRAN serves the Vancouver Urban Growth Area, but does not serve the proposed project site. The nearest transit stop is at NW 36th Avenue, about 1.5 miles from the site’s eastern terminus.

c. How many additional parking spaces would the completed project or non-project proposal have? How many would the project or proposal eliminate?

The proposed project will not require changes to the SCTP workforce; therefore, no parking spaces will be added or eliminated.

d. Will the proposal require any new or improvements to existing roads, streets, pedestrian, bicycle or state transportation facilities, not including driveways? If so, generally describe (indicate whether public or private).

The proposed project will not add or improve public roads, streets, pedestrian, bicycle, or state transportation facilities.

e. Will the project or proposal use (or occur in the immediate vicinity of) water, rail, or air transportation? If so, generally describe.

The closest airport is the private Robert L. Delanoy Airport, which is about two-thirds of a mile south/southeast from the pipeline crossing at Salmon Creek. This airfield has a turf runway along the BNSF Railway embankment, serves a single plane, and requires permission for landing. The field is owned and managed by Robert Delanoy, 14118 NW McCann Road, Vancouver, WA 98665, phone 503-573-5130.

The BNSF tracks cross the proposed project site. However, the pipeline will be constructed under the railroad using a trenchless method that will avoid rail service disruptions. Construction vehicles and equipment will cross the railroad right of way to access the pipeline site west of the railroad line. Two options for construction vehicles to cross without disrupting service include an existing undercrossing at Salmon Creek and another existing undercrossing near the southern terminus of NW 61st Avenue. Tall, wide, and long loads will need to use the existing at-grade railroad crossing,
also near the southern terminus of NW 61st Avenue. The latter crossing requires a Temporary Occupancy Permit from the BNSF Railway, and trained flaggers to control traffic during periods of railroad inactivity. Consequently, the proposed project will not impact rail traffic.

The proposed project site intersects with three navigable waters—Columbia River, Lake River, and Salmon Creek. Barges will use the Columbia River to access the new outfall construction and existing outfall removal sites, and to temporarily store equipment and pipe materials. Barges will be moored around the proposed project site.

The USACE has managed a commercial navigation channel on the Columbia River since 1877. The channel is dredged to 40 feet deep, allowing ocean-going freighters access to Vancouver and Portland. Each year, approximately 180 oil tankers, tugs towing oil barges, and articulated tug barges enter the Columbia River. They share the river with recreational boats, fishing vessels, passenger vessels, and around 1,300 cargo ships. The proposed project site is outside the designated navigation channel, but a navigation marker supported by a three-pile dolphin sits in the water at the terminus of the existing outfall and will be moved to the new terminus. The proposed project will not affect Columbia River water transportation adversely because passage for vessels will be maintained during construction, the outfall will be set below the riverbed surface, and the diffuser will not extend into the navigation channel.

Shallow draft vessels, including non-motorized craft, can access Lake River and Salmon Creek from the Columbia River or Vancouver Lake, depending on water levels. An existing designated 32-mile-long water trail follows Lake River between Lewis River and Vancouver Lake. The Lake River and Salmon Creek crossings will be constructed within cofferdams with roughly half the channel width obstructed at any time. Vessel passage will be maintained consistent with USCG approvals.

The Salmon Creek crossing will have a pile-supported temporary bridge/work platform (trestle) over the channel during the construction period. The trestle will be designed by the contractor, and probably will be constructed from west to east across the creek. Typical temporary crossings have reinforced 20-foot-wide concrete slabs supported by steel pipe pile bents placed 40 to 50 feet apart. Steel piles will be up to 18 inches in diameter, driven into the ground or stream bottom, and proofed by impact hammer with sound attenuation. The span lengths will allow passage for water-borne debris and traditional vessels. The deck will have containment to prevent discharges of contaminants. The deck height will allow traditional watercraft to pass freely, or will be fitted with a removable span to provide passage on demand. Traditional watercraft are thought to be kayaks and canoes.

f. How many vehicular trips per day would be generated by the completed project or proposal? If known, indicate when peak volumes would occur and what percentage of the volume would be trucks (such as commercial and nonpassenger vehicles). What data or transportation models were used to make these estimates?

The proposed project will not generate any additional vehicular trips by employees per day. The improvements to the facility will be operated by existing personnel. The capacity of the SCTP will be unchanged, so the truck traffic serving the plant will be unchanged.

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g. Will the proposal interfere with, affect or be affected by the movement of agricultural and forest products on roads or streets in the area? If so, generally describe.

The proposed project will not interfere with, affect, or be affected by the movement of agricultural and forest products on roads or streets in the area. All roads and streets will remain open during construction.

The Curtis Lake Ranch and New Columbia Garden properties have active agricultural operations. The Alliance holds permanent easements on these properties to access and maintain the existing belowground 30-inch effluent pipeline. When maintenance access to the existing pipeline is required, the Alliance will coordinate with the owners to perform work. If the pasture is not under cultivation or being used by cattle, maintenance work does not require any agricultural constraints. If the agricultural operation is active, the Alliance exercises easement provisions to temporarily shift pasture use away from active construction, in cooperation with the landowner. Construction and maintenance access to the new (parallel) 48-inch pipeline will be managed similarly, under the terms of to-be-acquired temporary construction and permanent pipeline operation easements.

h. Proposed measures to reduce or control transportation impacts, if any:

The Alliance will notify the owner/manager of the Robert L. Delanoy Airport of proposed construction, and will coordinate to ensure any activities or lights conform to the needs of safe runway approach.

Similarly, the Alliance will coordinate with the operators of agricultural land crossed by the pipeline to minimize potential conflicts with pasture use and shared use of private ranch roads. Temporary fencing will be installed as necessary to keep cattle out of the construction zone. Property owners will be paid fair market value for permanent and temporary easements to access and operate the pipeline.

In addition, the Alliance will coordinate with the owner of NW Lower River Road to ensure security concerns are met, as the existing road has a lockable gate and construction/maintenance access will be shared with residents.

A flagger will direct traffic at the at-grade BNSF track crossing during the construction period to ensure rail traffic is unimpeded.

No other measures to reduce or control transportation impacts are proposed because impacts from 60 work-days of construction over 17 months are expected to be minor.

15. Public Services

a. Would the project result in an increased need for public services (for example: fire protection, police protection, public transit, health care, schools, other)? If so, generally describe.

The following providers serve properties along the effluent pipeline alignment: Clark County, Fire District 6, Ridgefield School District, and Clark Public Utilities Water District. The proposed project will not increase the need for public services because no additional operational staff will be required, and no new types of wastewater treatment facilities will be introduced.

b. Proposed measures to reduce or control direct impacts on public services, if any.

No measures to reduce or control public services impacts are proposed because no impacts are expected.
16. **Utilities**

a. Circle utilities currently available at the site:

- electricity
- natural gas
- water
- refuse service
- telephone
- sanitary sewer
- septic system
- other ___________

b. Describe the utilities that are proposed for the project, the utility providing the service, and the general construction activities on the site or in the immediate vicinity which might be needed.

The new 48-inch-diameter effluent pipeline and outfall diffuser will be constructed by the Discovery Clean Water Alliance. The Alliance provides wastewater transmission and treatment services to four member agencies – the City of Battle Ground, Clark County, the Clark Regional Wastewater District, and the City of Ridgefield. The new pipeline will extend about 1.3 miles from the SCTP effluent pump station to the Columbia River on an alignment that will be roughly parallel to the Alliance’s existing 30-inch-diameter effluent pipeline. Therefore, the new wastewater pipeline and outfall will not be a new service. The new pipeline will be nearly entirely belowground. Only vent covers and manhole hatches will be exposed. Most of the pipeline will be installed by trenching into soil or sediment and backfilling with gravel and native soil up to original ground elevation. Access roads will need to be maintained to support truck traffic, and temporary staging areas will be installed at strategic locations. After construction, soil surfaces will be revegetated and stabilized.

During the construction phase, construction contractors will provide temporary services. They may tie into existing electrical lines at the SCTP, along NW Lower River Road, or the BNSF tracks. Also, they will provide portable generators to power lights, pumps, compressors, office equipment, and other electrical devices. A sanitary service will deliver and maintain portable toilets. The contractors will sort, remove, and dispose of construction debris and waste soil, and contract with a refuse service for non-construction waste.

The pipeline route will cross two belowground utilities on the Curtis Lake Ranch property between Curtis Lake and Salmon Creek: (1) a fiber optic line at Station 51+20 and (2) a 14-inch gas line at Station 51+23. Overhead electrical service and belowground telephone cable cross the pipeline route along the east side of NW Lower River Road. The BNSF tracks have electrical service. None of these existing utility services will be interrupted during pipeline construction.

No new utilities are needed for the proposed project. The proposed project will rely on existing utilities that service the SCTP without service upgrades. The existing electrical service to SCTP is adequate to run the four replacement pumps and their controls at the existing effluent pump station.

The navigation marker at the diffuser terminus in the Columbia River will require electricity if lighted. The USCG will determine the marker type. If lighted, the marker light will be solar powered.
C. Signature

The above answers are true and complete to the best of my knowledge. I understand that the lead agency is relying on them to make its decision.

Signature: __________________________
Name of signee: Steve Mader, PhD
Position and Agency/Organization: CH2M HILL, Inc.
Date Submitted: June 8, 2018
APPENDIX A

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<th>Drawing</th>
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<td>COVER, SITE MAP, LOCATION MAP</td>
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<td>Dwg PP-01</td>
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GENERAL NOTES

1. SEE DWG D-01 FOR TYPICAL TRENCH SECTIONS.
2. SILT FENCE AND OTHER TRENCH FEATURES NOT SHOWN.
3. PROVIDE NAVIGATION MARKER WITH WARNING TO AVOID SUBSURFACE OUTFALL.
4. PROVIDE SIGN ON NAVIGATION MARKER WITH WARNING TO AVOID SUBSURFACE OUTFALL.
5. PROVIDE CONCRETE REVETMENT MAT. SEE DETAIL ON DWG D-03.
6. PROVIDE TRENCH AROUND ALL CONSTRUCTION WITH COAT LINES AND WITH COAT LINES.
7. PROVIDE GRANULAR IMPORT SPECS.
8. EXPERIMENTAL PIPE 48" D. CEMENT MORTAR LINED.
9. CONCRETE REVETMENT MAT. SEE DETAIL ON DWG D-03.
10. PROVIDE TRENCH AROUND ALL CONSTRUCTION WITH COAT LINES AND WITH COAT LINES.

COLUMBIA RIVER

PLAN

PROFILE

KEYNOTES:

1. SEE DWG D-01 FOR TYPICAL TRENCH SECTIONS.
2. SEE DWG D-01 FOR TYPICAL TRENCH SECTIONS.
3. PROVIDE NAVIGATION MARKER WITH WARNING TO AVOID SUBSURFACE OUTFALL.
4. PROVIDE SIGN ON NAVIGATION MARKER WITH WARNING TO AVOID SUBSURFACE OUTFALL.
5. PROVIDE CONCRETE REVETMENT MAT. SEE DETAIL ON DWG D-03.
6. PROVIDE TRENCH AROUND ALL CONSTRUCTION WITH COAT LINES AND WITH COAT LINES.
7. PROVIDE GRANULAR IMPORT SPECS.
8. EXPERIMENTAL PIPE 48" D. CEMENT MORTAR LINED.
9. CONCRETE REVETMENT MAT. SEE DETAIL ON DWG D-03.
10. PROVIDE TRENCH AROUND ALL CONSTRUCTION WITH COAT LINES AND WITH COAT LINES.
GENERAL NOTES
1. See General Notes on PP-01.

KEYNOTES ( )
1. See General Notes on PP-01 for Contractor Staging and Access Details.
2. Land ownership, TIF, field verify location of tax lot, OAP property line or plan. Field verify property boundary from survey.
3. Provide air valve. See DET 1 on DWG D-02. Place at high point on pipe. See DET 1 on DWG D-03. Do not disturb or damage existing pipe.
4. Remove existing outfall pipe, supporting piles, and rip rap. Provide replacement spud piles. Provide drainage, invert, fill material to full voids and restore surface to elevation before backfill.

GENERAL NOTES
1. See General Notes on PP-01.

KEYNOTES ( )
1. See General Notes on PP-01 for Contractor Staging and Access Details.
2. Land ownership, TIF, field verify location of tax lot, OAP property line or plan. Field verify property boundary from survey.
3. Provide air valve. See DET 1 on DWG D-02. Place at high point on pipe. See DET 1 on DWG D-03. Do not disturb or damage existing pipe.
4. Remove existing outfall pipe, supporting piles, and rip rap. Provide replacement spud piles. Provide drainage, invert, fill material to full voids and restore surface to elevation before backfill.
GENERAL NOTES

1. SEE GENERAL NOTES ON PP-01.

2. LANDOWNERSHIP TOP. APPROPRIATE LOCATION CORRESPONDING TO LOCATION OF TAX LOT OR PROPERTY LINE TO IDENTIFY PROPERTY BOUNDARY FROM SATIETY.

3. PROVIDE A WSA VALV: MAN. DRT 1 ON RIVER SIDE.

4. PROVIDE ACCESS MANHOLE: MAN. DRT 2 ON RIVER SIDE.

5. MIN. COVER DEPTH: FIELD VERIFY ELEVATION OF EXIST RIVER BOTTOM BEFORE CONSTRUCTION AND FIELD ADJUST Pipe IF ELEV. TO MIN. COVER DEPTH = BWA MIN. ELEVATION.

6. CONSTRUCTION PERMITS: EXIST. DATA FOR PIPELINE INSTALLATION ACROSS HALF THE RIVER AT A TIME. SEE NOTE 3.

7. PROVIDE SEDIMENT CURTAIN. SEE SPECS.

8. CARDING, APPROXIMATELY 1:10.

9. REBUILD LITTLE currents EXIST. DATA ALLOWED BY CONSTRUCTION. SURVEY BERM BEFORE CONSTRUCTION AND RECONSTRUCT WITH SAME MATERIAL.

10. INSTALL HI-VIZ FENCING.

KEYNOTES (C)

1. SEE EMUL 0.8 FOR CONTRACTOR STAGING AND ACCESS DETAILS.

2. LANDOWNERSHIP TOP. APPROPRIATE LOCATION CORRESPONDING TO LOCATION OF TAX LOT OR PROPERTY LINE TO IDENTIFY PROPERTY BOUNDARY FROM SATIETY.

3. PROVIDE A WSA VALV: MAN. DRT 1 ON RIVER SIDE.

4. PROVIDE ACCESS MANHOLE: MAN. DRT 2 ON RIVER SIDE.

5. MIN. COVER DEPTH: FIELD VERIFY ELEVATION OF EXIST RIVER BOTTOM BEFORE CONSTRUCTION AND FIELD ADJUST Pipe IF ELEV. TO MIN. COVER DEPTH = BWA MIN. ELEVATION.

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7. PROVIDE SEDIMENT CURTAIN. SEE SPECS.

8. CARDING, APPROXIMATELY 1:10.

9. REBUILD LITTLE currents EXIST. DATA ALLOWED BY CONSTRUCTION. SURVEY BERM BEFORE CONSTRUCTION AND RECONSTRUCT WITH SAME MATERIAL.

10. INSTALL HI-VIZ FENCING.
GENERAL NOTES

1. See General Notes on PP-01.

KEYNOTES ( )

1. See General Notes on PP-01.
2. Landowner/Top. Approximate location corresponding to location of Tax Lot.
   Property line shown is field verified property boundary from survey.
3. Pass/Drain Access Manhole: (See Det 2 on Draw)
4. Install Hi-Viz Fencing,

PROPERTY LINE, TAX LOT OR LAND OWNERSHIP, TYP. APPROXIMATE LOCATION ACCESS DETAILS.

See Det 2 for Contractor Staging and Access Details.

INSTALL HI-VIZ FENCING.

VERIFY SCALE BAR IS ONE INCH ON ORIGINAL DRAWING.

REUSE OF DOCUMENT:
CH2M HILL 2018. ALL RIGHTS RESERVED.

DO NOT USE FOR CONTRACTOR STAGING AND ACCESS DETAILS.

REFERENCES:

1. Pass/Drain Access Manhole: (See Det 2 on Draw)
2. INSTALL HI-VIZ FENCING.
3. PROPERTY LINE, TAX LOT OR LAND OWNERSHIP, TYP. APPROXIMATE LOCATION ACCESS DETAILS.
4. PROPERTY LINE, TAX LOT OR LAND OWNERSHIP, TYP. APPROXIMATE LOCATION ACCESS DETAILS.

INSTALL HI-VIZ FENCING.

VERIFY SCALE BAR IS ONE INCH ON ORIGINAL DRAWING.

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REFERENCES:

1. Pass/Drain Access Manhole: (See Det 2 on Draw)
2. INSTALL HI-VIZ FENCING.
3. PROPERTY LINE, TAX LOT OR LAND OWNERSHIP, TYP. APPROXIMATE LOCATION ACCESS DETAILS.
4. PROPERTY LINE, TAX LOT OR LAND OWNERSHIP, TYP. APPROXIMATE LOCATION ACCESS DETAILS.

INSTALL HI-VIZ FENCING.

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REUSE OF DOCUMENT:
CH2M HILL 2018. ALL RIGHTS RESERVED.

DO NOT USE FOR CONTRACTOR STAGING AND ACCESS DETAILS.

REFERENCES:
GENERAL NOTES

1. SEE GENERAL NOTES ON PT 41.

KEYNOTES ( )

1. SEE DWG 016 FOR CONTRACTOR STAGING AND ACCESS IN TABLE.
2. LAND MARKER, 1% APPROXIMATE, Location Corresponding to Location of Tax Lot or Property Line Only, Check Property Boundary From Survey.
3. CONNECT TO EXISTING PUMP STATION PIPING. NOT SHOWN. SEE DET Z ON DWG D-02
4. PLACE AND COMPACT IMPORT FILL MATERIAL, PLACE 6" TOPPER, TO MATCH EXISTING
5. POSTING ROADWAY ACCESS TO REMAIN OPEN AND ACCESSIBLE FOR OWNER OPERATIONS AT ALL TIMES. COORDINATE ALL ACTIVITIES WITH OWNER.
6. SEE PS-01 FOR PUMP STATION MODIFICATIONS
7. INSTALL HI-VIZ FENCING.
### Pipe Locator Tape

**Notes:**

1. BACKFILL ABOVE ANGULAR ROCK WITH GRANULAR FILL TO EXISTING RIVER BED ELEVATION, UNLESS OTHERWISE SHOWN.

2. INDICATED SLOPES ARE APPROXIMATIONS OF ANTICIPATED NATURAL, UNSHORED, LAYBACK BASED ON LIMITED GEOTECHNICAL INVESTIGATION. CONTRACTOR SHALL BE PREPARED FOR NATURAL LAYBACK OTHER THAN WHAT IS SHOWN.

3. CONTRACTOR SHALL SLOPE OR SHORE TRENCH IN CONFORMANCE WITH ALL LOCAL, STATE, AND FEDERAL STANDARDS FOR SAFETY AND ENVIRONMENTAL PERMITS.
Connection to Existing Outfall Pipe

1.

- Use of disturbed area contours on each side.
- Blend into existing within disturbed area.
- Add compacted fill.

Notes:

1. Locations.

System. See DWG PS-01 for install line stops and bypass prior to removing existing piping, connection for new pipe.

Remove existing effluent pipe. Remove existing effluent pipe.

HDPE pipe transitioning to steel pipe.
APPENDIX B

VICINITY MAP
SEPA Figures
Discovery Clean Water Alliance
8000 NE 52nd Court
Vancouver, WA 98665

Phase 5A -
Columbia Outfall and Effluent Pipeline

Appendix B: Vicinity Map
In: Columbia River Watershed
Near: Vancouver
County: Clark
State: WA
Datum: NAD 1983
January 2018