



US Army Corps
of Engineers ®
Seattle District

**BIOLOGICAL EVALUATION
FOR INFORMAL ESA CONSULTATION**
For: NWS-2020-126 (Corps Reference Number)
Version: May 2012



**** This form is for projects that have insignificant or discountable impacts on listed species. It contains all the information required for a biological evaluation, but in abbreviated form and with minimal instructions on how to fill it out. For more detailed instructions, a format for development of a biological assessment or biological evaluation can be found on the Seattle District Corps website (www.nws.usace.army.mil – click on regulatory and then on endangered species, BA Template). You may also contact the Corps at 206-764-3495 for further information.**

Drawings and Photographs - Drawings and photographs must be submitted. Photographs must be submitted showing local area, shoreline conditions, existing overwater structures, and location of the proposed project. Drawings must include a vicinity map; plan, profile, and cross-section drawings of the proposed structures; and over- and in-water structures on adjacent properties. (For assistance with the preparation of the drawings, please refer to our *Drawing Checklist* located on our website at www.nws.usace.army.mil Select Regulatory – Regulatory/Permits – Forms.) Submit the information to: U.S. Army Corps of Engineers, Regulatory Branch, P.O. Box 3755, Seattle, Washington 98124-3755.

Date: May 18, 2020

SECTION A - General Information			
1. Applicant name: Emily Flanagan, Senior Surface <u>Water Engineer</u> , City of Redmond			
Mailing address: MS: 2NPW, PO Box 97010, Redmond Washington 98073-9710			
Work phone: 425-556-2707	Home phone:	Email: eflanagan@redmond.gov	Fax:
2. Joint-use applicant name (if applicable):			
Mailing address:			
Work phone:	Home phone:	Email:	Fax:
3. Authorized agent name:			
Mailing address:			
Work phone:	Home phone:	Email:	Fax:
4. Location where proposed work will occur			
Address (street address, city, county): Smith Woods, 177th Ct NE &, NE 122nd St, Redmond, WA 98052			
Location of joint-use property (street address, city, county):			
Waterbody: Monticello Creek			
¼ Section: SE	Section: 25	Township: 26N	Range: 5E
Latitude: 47°42'34.10" N		Longitude: 122°06'15.21" W	

5. **Description of Work:**

Include project drawings and site photographs.

Describe the proposed project in detail. Please describe any mitigation that is being proposed for impacts from your project. Attach a mitigation plan as an appendix, if appropriate.

- Refer to Attachment A for Project Plan Sheets, Smith Woods Stream and Pond Rehabilitation Project

Background and Purpose

Smith Woods is a City-owned, 10-acre parcel located in a rapidly developing neighborhood in the northeast corner of City of Redmond bordering unincorporated King County. Restoration in this reach is being pursued by the City of Redmond to support recovery of aquatic species in the greater Monticello Creek Watershed. The property is mostly undeveloped and provides a natural area oasis for the surrounding residential community, as well as valuable habitat at the headwaters of Monticello Creek. Monticello Creek, tributary to Bear Creek, flows from north to south in Smith Woods, through a small pond, and continues south as a small stream through the culvert at NE 122nd St. The pond was built by the former owner of the property many years ago. No salmon are known to access the site, but cutthroat have been observed. The pond holds water all summer, but the stream is seasonal, with surface flows observed to be absent within (and downstream of) the work area during most summers, with resident fish holding in remnant pools.

A 2015 stream reconnaissance discovered that the pond outlet pipe was failing and that potential safety issues existed related to the outlet and associated upland berm along the southern side of the pond. Geotechnical engineers recommended immediately cutting a temporary channel through the berm forming the pond to protect public safety and downstream infrastructure (i.e. NE 122nd Street and related utilities). A temporary channel was excavated through the berm (under an emergency HPA) in December 2015 to reduce pond volume, protecting both the public and downstream habitat from potential sudden failure of the berm. The City then stabilized the interim channel downstream of the pond under its 2016 Interim Stream Channel HPA in anticipation of a permanent solution to fish passage which was required as part of the HPA. This project is intended to be that permanent solution. The purpose of the City's project is to 1) achieve fish passage and 2) maintain summer base flows to the extent possible, consistent with the City's 2013 Watershed Management Plan.

Project Goals

- Provide fish passage to the existing pond and stream habitat upstream of pond.
- Preserve / enhance the ecological functions and aesthetics of the existing pond area for park visitors.
- Ensure the berm is sound.

Erosion Control and Stream Bypass

Best Management Practices (BMPs) for erosion and sediment control will be in place to protect the stream during the entire construction process. These BMPs may include but are not limited to, stabilized construction entrance, filter bags, gravel bags, sediment mats, and silt fencing.

A temporary access route to the work area will be established along NE 124th St./trail and/or from NE 122nd St. The exact access route will be determined by the contractor but consistent with the TESC plan. Impacts to Smith Woods will be minimized, and impacted vegetation will be restored to the existing condition or better.

The pond will be dewatered following removal of all resident fish, if any, under the supervision of a fisheries biologist and will be drained downstream along the stream. In-water work will be isolated to avoid impacts downstream. Fish screens and gravel bag berms will be installed at both the upstream end of the pond and at the downstream end of the proposed channel improvements near the NE 122nd culvert. A temporary stream bypass pipeline will be used to divert creek flows around the active work area. Water from the work zone will be released back into the stream, just upstream of NE 122nd culvert.

Berm Repair

The existing pond outlet will be lowered by 0.5 ft. and the cross-sectional area expanded per the proposed channel section. The berm west of the outlet will be removed and rebuilt to 6 ft. wide and 3 ft. height (above ground) to prevent future seeps and sink holes. The existing stand-pipe and damaged CMP culvert that used to function as the pond outlet will be removed.

Stream Channel Restoration for Fish Passage

The stream channel restoration will be accomplished by re-grading approximately 120 feet of the channel downstream of the pond. Re-grading will include over-excavation to a depth of 2-feet (Typ.) to be back-filled with approximately 71 CY of below-grade borrow material. 18-24-inch diameter x 15-foot long logs will be embedded into the streambed at intervals ranging from 6-ft to 7-ft to create fish passable step pools (Fox and Boulton 2007). The logs will be exposed to the surface in such a way that it creates a jump height of 6 inches. The depth of the pools will be 0.8 ft. Towards the downstream end, the channel will have slightly longer steps (7 ft. spacing) as it transitions to meet grade. Approximately 18 steps will be fitted into the channel, providing 28 ft. offset from the existing downstream culvert inlet to act as the transition zone. Approximately 100 CY of streambed sediment (50 CY) and cobbles (50 CY) will be installed in the re-graded channel. The proposed streambed gradation design is based on paleohydraulic methods from WDFW's stream-simulation guidelines. The proposed sediment sizing considers both the existing sediment gradation at the site and the transport capacity of the proposed improvements. The proposed velocity and depth for the 100-year flows at the step section is considered and the D50 size is calculated as 2.2 inches, which is greater than the measured average of 1.2 inches. In addition to the weir logs noted above, woody material harvested onsite during the berm removal and channel grading will be installed in the streambed and habitat pools. Seven 12-18-inch (dbh) root wads will be embedded into the

stream banks for additional fish habitat and bank stabilization. Approximately 60 stream boulders (50% 1-man, 50% 2-man) will be incorporated, as needed, to ballast the wood.

According to WWHM model developed by Golder in 2016, the 2-year and 100-year flows were calculated as 5.43 cfs and 16.45 cfs respectively and is used as the design flows. It is observed that the stream goes subsurface during the summer months and is relatively dry.

The structures have elements of both Grade Control Engineered Log Jams (ELJ's) and Roughened Channels. Because of the need to tie-in elevations above and below the project site, and the constricted nature of the site, the resulting gradient (7.5%) and need for functioning fish passage necessitates a stepped, grade-controlling structure. The project area is located in a wood-dominated system, thus the addition of large stable wood is central to the approach. The addition of wood was discussed at a pre-application meeting held at USACE Seattle District (February 24, 2020) with the USACE Regulatory Branch project manager Colleen Anderson and WDFW area habitat biologist Miles Penk. Log placements are designed to be broad-crested structures that arrest channel incision; lower stream energy; retain sediment between major elements; and support the formation of pool habitat (see attached plan sheets).

Fox, M. and S. Bolton. 2007. A Regional and Geomorphic Reference for Quantities and Volumes of Instream Wood in Unmanaged Forested Basins of Washington State. North American Journal of Fisheries Management. 27: 342-359.

Wetland and Riparian Restoration

The areas disturbed along the stream channel and the banks of the restored channel will be restored by manual planting of native tree, shrub, and groundcover species to provide bank stabilization and improve wetland and riparian habitat function at the conclusion of the project. In addition, 5,285 SF of existing wetland adjacent to and upstream of the pond will be enhanced with native emergent species along the pond's edge, native conifers infilled into the forested wetland, and native trees, shrubs, and ferns in a currently degraded area dominated by reed canarygrass. All areas of wetlands affected by minor excavations in order to stabilize the berm and establish fish passage upstream will also be replanted with native wetland species.

For projects that include pile driving

If steel or concrete piles are being installed with an impact hammer pile driver, marbled murrelets may be adversely impacted. For installation of any type of pile with a vibratory pile driver, marine mammals may be adversely impacted. A monitoring plan may be required to ensure protection of these species.

Not Applicable

Please fill out the following: (obtain information from contractor)	
5.1 Number of piles being replaced:	

Please fill out the following: (obtain information from contractor)	
5.2 Replacement pile type: (e.g.: ACZA-treated wood, steel, coating used on steel piles)	
5.3 Replacement pile size: (e.g. 12-inch)	
5.4 Installation method: (e.g.: vibratory, impact hammer)	Note: Vibratory or impact installation of wood, concrete, plastic, or other non-metal piles of any size is allowed. Impact installation of steel piles in marine waters is not covered under the programmatic and, in freshwater, is only covered programmatic for steel piles up to 10 inches.
5.5 Anticipated dates, number of minutes and number of days vibratory pile driving	_____ minutes per day _____ number of days Anticipated dates:
5.6 For vibratory installation, will proofing be required? If so, how many pile strikes per pile?	Yes _____ Number of pile strikes per pile _____ No _____
5.7 For impact hammer installation, estimate the number of pile strikes required per pile:	
5.8 For impact hammer installation or proofing, estimated number of pile strikes per day:	Minutes per day _____ Number of days _____ Anticipated dates:
5.9 For impact hammer pile driving or proofing, sound attenuation measures:	
5.10 Anticipated dates, number of minutes and number of days of impact hammer pile driving or proofing:	
5.11 Describe substrate into which piling will be driven:	

6. Construction Techniques:

Describe methods and timing of construction to be employed in building the project and any associated features. Identify actions that could affect listed / proposed species or designated / proposed critical habitat and describe in sufficient detail to allow an assessment of potential impacts. Consider actions such as vegetation removal, temporary or permanent elevations in noise level, channel modifications, hydrological or hydraulic alterations, access roads, power lines etc. Also discuss construction techniques associated with any interdependent or interrelated projects.

Address the following:

A. Construction sequencing and timing of each stage (duration and dates):

The contractor will develop and submit a schedule of construction activities, to be reviewed and approved by project engineer, for the entire project duration, including stakeout, clearing &

grubbing, installation of erosion control materials, fish barrier installation and fish removal, construction of access path(s), installation of stream bypass, material staging, stream construction, planting and final site closure.

Construction mobilization will begin up to several weeks prior to establishment of the below-OHWL work window. Tasks may include transport of equipment, woody material, and aggregate to the project site; and staking and establishment of staging areas and construction access, as permissible. All construction activities that are performed prior to the in-channel work period will be in upland areas, outside of the OHWL of Monticello Creek, the associated pond, and other aquatic features. In-water work will occur during the approved in-water work window (July 1st to September 30th are the dates provided by WDFW). In-channel work will consist of the following elements:

1. Install erosion control measures.
2. Install temporary access routes within the project area.
3. Remove vegetation within the grading limits. Stockpile trees and vegetation for use in the project elements.
4. Begin stream bypass and aquatic species removal operation. Ensure no surface water connection exists between flowing water and the active work area during construction in accordance with permit requirements.
5. Perform fish exclusion and removal within isolated work areas.
6. Begin and complete berm repair as indicated on plan sheets
7. Begin staging stream materials: logs, streambed aggregate
8. Stake log locations and grading extents.
9. Working from the upstream extents to the downstream extents, begin excavation and install aggregate and logs.
10. Complete installation of streambed aggregate to finished grade elevations.
11. Stabilize and restore disturbed areas.
12. Remove Temporary Stream Bypass elements
13. Remove any temporary access paths; restore access route and staging areas.
14. Remove temporary erosion control measures.
15. Repair any damage to roadway surfaces caused by construction activities.
16. Revegetate.

In total, the project will require the excavation of approximately 450 cubic yards of material. Of this, 200 cubic yards will be excavated as part of the fish passage/channel work. The remaining 250 cubic yards are to be excavated from the berm as part of the berm repair. It is anticipated that material excavated will be hauled off site.

Temporary disturbance areas will be replanted with native shrubs and trees, with the exception of the berm which will be seeded with native grasses to prevent root intrusion into the berm. The

project related in-water work will be completed by September 30th, or as stipulated in the project permits.

B. Site preparation: Access and staging location and details

Site prep will include temporarily establishing construction ingress-egress. Construction access will use NE 122nd, NE 124th, and existing trails (consistent with the TESC plan sheet), reducing the extent of clearing required. Points and routes for construction ingress-egress will be delineated in the field with orange barrier fencing to avoid and minimize impacts to vegetation and other sensitive habitats. Temporary access will occur consistent with the TESC plan sheet; equipment staging will occur in the northeast corner of the site at the previously disturbed location of a former house. When not in use, equipment would be stored and refueled a minimum of 150 feet from Monticello Creek, associated wetlands, and the pond. Storage will occur at existing compacted areas. Contractor will submit a spill-containment plan and deploy a spill-containment system prior to the beginning of machine work. The spill-containment system will be inspected daily. Clean-up kits will be on site at all times. Any impacted vegetation will be restored to the existing condition or better.

The pond will be dewatered following removal of all resident fish, if any, under the supervision of a fisheries biologist and will be drained downstream along the stream. Aquatic animals will be captured and removed from the pond and relocated into suitable habitat within the stream and adjacent (upstream or downstream) to the site. Aquatic animals will be captured using a variety of methods. These methods include (in order of preference) seining, trapping, dewatering and dip netting, and electrofishing done in accordance with Appendix A, Protocol II for 'dewatering outside of high likelihood listed fish areas' of the USFWS Programmatic. If, after following this order of methods, electrofishing is unavoidable, NMFS Backpack Electrofishing Guidelines will be employed (i.e. electrofishing will not be performed in the vicinity of redds from which fry may not have emerged, or in areas where adult salmonids may be holding prior to spawning). Fish capture and removal shall be performed according to WSDOT Fish Exclusion Protocols and Standards. The contractor shall plan to complete two complete passes of defishing prior to dewatering the pond. Once defishing is completed, dewatering shall occur to allow fish to move out of gravels as water recedes. Any stranded fish observed during dewatering shall be captured and removed from the isolation area. An exception to these guidelines is that the directing biologist does not have to be under contract with WSDOT, but shall be commensurate in experience and approved by the site engineer.

In-water work will be isolated to avoid impacts downstream. Fish screens and gravel bag berms will be installed at both the upstream end of the pond and at the downstream end of the proposed improvements near the NE 122nd culvert. A temporary stream bypass pipeline will be used to divert creek flows around the active work area. Water from the work zone will be released back

into the stream, likely just upstream of the NE 122nd culvert. It is assumed that the pumped bypass will be in operation 24hrs/day for the duration of the below-OHWL activities.

C. Equipment to be used:

Equipment used will likely include: pick-up trucks, dump truck, log delivery truck, excavators, back-hoes, graders, front-end loaders, hand-held power tools, bypass pump and generator.

D. Construction materials to be used:

Wood:

- 35 logs (15' long x 18-24" diameter)
- 7 root-wads (12-18" dbh)
- Additional wood excavated during the berm repair will be placed in the restored pools as habitat.

Streambed aggregate

- 45 CY Streambed cobble
- 45 CY Streambed sediment
- 10 CY of fines will be mixed into the streambed mix.
- 71 CY of borrow will be used as the base of the restored streambed.
- 60, 1- and 2-man stream boulders will be used as ballast for the key log pieces. Boulders will be placed within the stream banks and buried within the cobble matrix to functionally anchor key logs.

Earth anchors

- Manufactured earth anchors (i.e. Manta Ray or other) may be used to anchor in-channel wood if needed to counter act buoyancy. Earth anchors will only be needed if burying logs in the channel banks (covered with native soil and boulders) does not provide adequate ballast or would require additional wetland and stream disturbance to install sufficiently deep.

E. Work corridor:

Work will occur along a 120-foot reach of Monticello Creek within Smith Woods. Berm removal occurs adjacent to the stream channel work, extending west approximately 90 feet.

F. Staging areas and equipment wash outs:

Staging areas are shown on the TESC plan sheet. Equipment staging will occur in the northeast corner of the site at the previously disturbed location of a former house. Refueling area for equipment will be located in an upland area away from sensitive areas. Stabilized construction entrances are shown on the TESC plan sheet; no washout is proposed.

G. Stockpiling areas:

Staging areas, as described above and as shown on the TESC sheets, will be used as stockpiling areas for materials and equipment entering the site.

H. Running of equipment during construction:

Construction equipment will run approximately 10 hours per day (7 am to 5pm) during the in-water work window. It is anticipated that stream bypass pumps will run 24 hours a day.

I. Soil stabilization needs / techniques:

Temporary Erosion and Sediment Control (TESC) measures will comply with the requirements of the 2017 Redmond Stormwater Technical Notebook and all permit terms and conditions at a minimum. It will be the responsibility of the contractor to develop the TESC Plan and implement and maintain the appropriate measures during construction.

J. Clean-up and re-vegetation:

Post-project, all construction related material will be removed from the project area and disposed of at an approved facility. Temporary construction ingress-egress will be re-graded to original contours and site restoration will be implemented, including; native species plantings, installation of erosion control fabric as needed, and seeding and mulching where necessary to return temporarily disturbed areas to pre-project conditions.

The areas disturbed along the stream channel and the banks of the restored channel will be restored by planting of native tree, shrub, and groundcover species to provide bank stabilization and improve wetland and riparian habitat function at the conclusion of the project.

In addition, 5,285 SF of existing wetland adjacent to and upstream of the pond will be enhanced with native emergent species along the pond's edge, native conifers infilled into the forested wetland, and native trees, shrubs, and ferns in a currently degraded area dominated by reed canarygrass. Reed canarygrass control work will include excavation of root mat, restoration of grade and planting fast-growing tree and shrubs. All areas of wetlands affected by minor excavations in order to stabilize the berm and establish fish passage upstream will also be replanted with native wetland species.

K. Storm water controls / management:

Temporary Erosion and Sediment Control (TESC) measures will comply with the requirements of the 2017 Redmond Stormwater Technical Notebook and all permit terms and conditions at a minimum. It will be the responsibility of the contractor to develop the TESC Plan and implement and maintain the appropriate measures during construction.

L. Source location of any fill used:

Materials (streambed sediment, streambed cobble, large wood etc.) will be obtained from lawful vendors and delivered to the site by dump truck. Trees removed during construction will be reused on-site to the extent practical.

M. Location of any spoil disposal:

Spoils will be hauled off-site and disposed of legally in an approved upland location. Spoils will consist of material excavated from the existing channel and adjacent floodplain.

7. Action Area

Please describe the action area. The action area means all areas to be affected directly (e.g., earth moving, vegetation removal, construction noise, placement of fill, release of environmental contaminants) and indirectly by the proposed action. (Example: as a direct effect, the action area for pile driving would include the area out to where the noise from the pile driving falls below the level of harm or disturbance for listed species. For vibratory hammer pile driving impacts to killer whales, this level is 120 dB. Action area will include any area where the underwater noise level may exceed 120 dB).

The project site is located within Smith Woods, a city-owned property. (See attached plan sheets). Smith Woods (Parcels 2526059109 and 2526059110) is located northeast of the intersection of 176th Avenue NE and NE 122nd Street. The property (formerly the Northeast Redmond Neighborhood Park) is located in the City of Redmond and in King County, Washington (NW1/4 of NE1/4 of SE ¼ Section 25, Township 26N, Range 5E). The project site is located in the Sammamish River Watershed sub-basin, and located in Water Resource Inventory Area (WRIA) 8 (Cedar-Sammamish Watershed). The property and surrounding areas are zoned Single Family Urban (R-4).

Monticello Creek flows south through approximately the center of the project site. Monticello Creek flows into and out of an excavated pond before exiting the project site via a culvert beneath NE 122nd Street.

Topography of the project site is relatively flat, with a slight gradient down to the south, as well as towards the creek from both east and west. The adjacent vegetation is characterized by a mixed deciduous-conifer wetland forest with aging deciduous tree species dominating, as well as areas of

managed lawn interspersed with isolated coniferous specimen trees to the east of the creek. This portion of the site receives the majority of human use. A trail extends through the forest to the west of the stream.

Recently constructed residential developments are located south, west, and east of the project site. An emergent wetland protected in a native growth protection easement is located immediately north (upstream) of the property.

The Action Area includes neighboring residential areas in which noise from construction machinery would be heard (during normal work hours). The Action Area would extend upstream for as far as this noise could be heard, and downstream as far as turbid water conditions might be observed during the re-wetting of the work area, post construction.

Temporary degradation to water quality associated with project construction is not anticipated to occur beyond 200 feet downstream of any project-related work (per WAC173-201A-200) with the incorporation of appropriate BMPs to avoid or minimize temporary increases in turbidity associated with work as well as the incorporation of BMP's during re-watering. Work will occur in a de-watered streambed and a short-duration temporary increase in turbidity may occur during re-watering.

The indirect effects of the project include the potential increase in habitat area and production for salmonids within Monticello Creek. The anticipated increase in production will have both temporal and spatial beneficial impacts to fish and other aquatic organisms, but will not affect the delineation of the project action area because conditions within the project reach will improve for fish locally over time, as well as over an unknown, but likely to occur space. Spatial benefits are likely to occur within the construction area (fish passage), within the pond and the reach upstream of the pond (upstream to the NE 124th culvert) (rearing, foraging). Depending on the project's ability to improve summer base flow conditions downstream of the work area, indirect spatial benefits may occur in areas downstream of the project site. Analysis of the spatial extents of fish habitat benefits has not specifically been performed.

8. Species Information:

Identify each listed or proposed species, including terrestrial species, as well as designated or proposed critical habitat in the action area. Please include information on which listed species use are expected to be found in the action area and the potential for them to be there during project activities.

To determine what listed or proposed species may occur in the action area, contact NOAA Fisheries at the address listed below and obtain a county list of federally listed/ designated and proposed species and critical habitat from the:

U.S Fish and Wildlife Service at: http://westernwashington.fws.gov/se/SE_List/Endangered_Species.asp

National Marine Fisheries Service at:
510 Desmond Dr., SE # 103
Lacey, WA 98503
(360) 753-9530
<http://www.nwr.noaa.gov>

The following species are listed as of August 11, 2011:

Species covered, based on:

1. USFWS species list received from the iPac web site March 31, 2020
2. NMFS species list obtained from SPIF document

USFWS SPECIES**BIRDS**

Marbled murrelet
 Northern spotted owl
 Short-tailed albatross
 Western snowy plover
 Streaked Horned Lark
 Yellow-billed Cuckoo

MAMMALS

Canada lynx
 Columbia white-tailed deer
 Gray wolf (western WA)
 Gray wolf (eastern WA)
 Grizzly bear
 Woodland caribou
 Pygmy rabbit (Columbia Basin DPS)
 North American Wolverine

INSECTS

Oregon silverspot butterfly

PLANTS

Bradshaw's desert parsley
 Marsh sandwort
 Showy stickseed
 Wenatchee Mtns. Checker-mallow
 Golden paintbrush
 Kincaid's lupine
 Nelson's checker-mallow
 Water howellia
 Spalding's catchfly
 Ute ladies'-tresses

FISH

Bull trout, Columbia River
 Bull trout, coastal-Puget Sound
 Dolly varden, coastal-Puget Sound

NMFS SPECIES**FISH**

Chum, Columbia River
 Chum, Hood Canal summer
 Chinook, lower Columbia River
 Chinook, upper Columbia River spring
 Chinook, Puget Sound
 Chinook, Snake River fall
 Chinook, Snake River spring-summer
 Chinook, upper Willamette River
 Coho, lower Columbia River
 Sockeye, Ozette Lake
 Sockeye, Snake River
 Steelhead, upper Columbia River
 Steelhead, middle Columbia River
 Steelhead, lower Columbia River
 Steelhead, Snake River
 Steelhead, upper Willamette River
 Steelhead, Puget Sound
 Sturgeon, Green (southern DPS)
 Eulachon, Pacific (southern DPS)
 Bocaccio (Georgia Basin DPS)
 Rockfish, canary (Georgia Basin DPS)
 Rockfish, yelloweye (Georgia Basin DPS)

MARINE MAMMALS

Humpback whale
 Blue whale
 Fin whale
 Sei whale
 Sperm whale
 Southern resident killer whale
 Steller sea lion

REPTILES-AMPHIBIANS

Leatherback sea turtle
 Loggerhead sea turtle
 Green sea turtle
 Olive Ridley sea turtle

9. Existing Environmental Conditions:

Describe existing environmental conditions for the following:

A. Shoreline riparian vegetation and habitat features

A native species-dominated, unmaintained woodland exists onsite primarily to the west of Monticello Creek upstream of the pond, but straddles both sides of the channel downstream of the pond. The dominant tree species in the woodland include red alder (*Alnus rubra*), bigleaf maple (*Acer macrophyllum*), black cottonwood (*Populus balsamifera* L. ssp. *trichocarpa*), and western red cedar (*Thuja plicata*), with Douglas fir (*Pseudotsuga menziesii*) trees present particularly to the east of the creek. Beneath the tree canopy, the understory is dominated by a shrub community of vine maple (*Acer circinatum*), osoberry (*Oemleria cerasiformis*), salmonberry (*Rubus spectabilis*), red

huckleberry (*Vaccinium parvifolium*), beaked hazelnut (*Corylus cornuta*), red elderberry (*Sambucus racemosa*) and tree saplings. An herbaceous ground layer is dominated by sword fern (*Polystichum munitum*), bracken fern (*Pteridium aquilinum*), fringed cup (*Tellima grandiflora*), western bleeding heart (*Dicentra formosa*), Pacific waterleaf (*Hydrophyllum tenuipes*), and stinging nettle (*Urtica dioica*), with Siberian miner's lettuce (*Claytonia sibirica*) also present.

The majority of trees are deciduous. They range in diameter from approximately 5 inches diameter at breast height (dbh) to 40 inches dbh. Consistent with previous assessments, bigleaf maples appear to be in better condition than red alders, which are early successional, shade intolerant species that die and form snags as the canopy closes and the trees mature. Snags and downed logs are common within the woodland area. Most snags are red alder. Conifers on site appear to be in good condition. Most conifers in the woodland are located along its perimeter with the exception of a stand present upstream of the pond.

Invasive species on site include yellow archangel (*Lamium galeobdolon*), Himalayan blackberry (*Rubus armeniacus*), and reed canarygrass (*Phalaris arundinacea*). These invasive species are present primarily in the woodland: patches of Himalayan blackberry were located primarily in the central section of the woodland west of Monticello Creek and on the south edge of Wetland A along NE 122nd Street. Patches of reed canary grass were observed along on the both banks of Monticello Creek upstream of the pond.

The pond is located along a boundary between the woodland and the open parkland. Woodland exists to its north, south and west. To its east is the maintained lawn and isolated conifer tree groupings of the open parkland.

B. Aquatic substrate and vegetation (include information on the amount and type of eelgrass or macroalgae present at the site)

The pond is fringed with emergent wetland vegetation, including taper-tip rush (*Juncus acuminatus*), clasping-leaved pondweed (*Potamogeton richardsonii*), small-fruited bulrush (*Scirpus microcarpus*), and creeping Jenny (*Lysimachia nummularia*). Micro algae is present in the pond but of undetermined species. No eelgrass is present.

No aquatic vegetation is present in the channel. Substrate consists of gravel and cobble within the active channel.

C. Surrounding land/water uses

The area immediately surrounding the project area is city-owned property covered primarily by native deciduous-dominated forest with a robust deciduous shrub community and native species groundcovers. About one-third of the park, to the north and east of the stream is open maintained park

(maintained lawn) interspersed with trails and widely spaced mature coniferous specimen trees. Immediately downstream of the project area is NE 122nd Street.

D. Level of development

The Monticello Creek Basin is a small urban drainage with predominantly residential land use. Recent rapid development has converted a notable portion of the basin from large lots to dense residential land use. The drainage network includes the main stem channel, a south fork, and a west fork.

E. Water quality

Ecology has classified the lower reaches of Monticello Creek as a Category 4A water for high temperature and increased bacterial levels. A TMDL Water Quality Implementation Plan is in place for both parameters. The TMDL plan for lower Monticello Creek is part of the Bear-Evans Watershed TMDL plan. While no part of Monticello Creek is on the 303d list of impaired waters, it contributes to the Bear Creek watershed, which is listed.

F. Describe use of the action area by listed salmonid fish species.

No listed salmonid species use the project area. Within the stream, WDFW's PHS maps show habitat for the migration or occurrence of resident coastal cutthroat exists approximately 700 feet downstream of the project site.

G. Is the project located within designated / proposed bull trout or Pacific salmon critical habitat? If so, please address the proposed projects' potential direct and indirect effect to primary constituent elements (Critical habitat templates can be found on the Corps website at: <http://www.nws.usace.army.mil/Missions/CivilWorks/Regulatory/PermitGuidebook/EndangeredSpecies.aspx>, select Forms, Tools and References; Forms and Templates; Critical Habitat Assessment Forms.

The project is not located in designated or proposed bull trout critical habitat. The action area is located outside of Coastal Recovery Unit Plan Core Areas, but within the Lake Washington Shared FMO (foraging, migration, overwintering) area. The FMO is connectivity impaired due to seasonally high temperatures in the ship canal inhibiting summertime upstream migration (see Coastal Recovery Unit Implementation Plan for Bull Trout, 9/2015). Headwater fish passage restoration could eventually directly benefit bull trout should they become established in Bear Creek or higher up in the watershed. It's been noted that any action that benefits salmonid habitat has the potential to benefit bull trout is that the restoration effort should lead to the production of eggs and juvenile salmonids as foraging items in areas used by bull trout as FMO habitat.

The action area is not located with Critical Habitat of Puget Sound Chinook Salmon but is within the Puget Sound Chinook Salmon's Evolutionarily Significant Unit. Monticello Creek is a tributary to Bear Creek, which flows into the Sammamish River and eventually to Lake Washington, which is Critical Habitat for Puget Sound Chinook. Monticello Creek is thus located within a sub-basin that has Critical Habitat. See: <https://www.ecfr.gov/graphics/pdfs/er02se05.078.pdf>

The action area is not located with Critical Habitat of Puget Sound Steelhead DPS. Monticello Creek is a tributary to Bear Creek, which flows into the Sammamish River and eventually to Lake Washington, which is Critical Habitat for Puget Sound Steelhead DPS. Monticello Creek is thus located within a sub-basin that has Critical Habitat. See: <https://www.ecfr.gov/graphics/pdfs/er24fe16.021.pdf>

- H. Describe use of the action area by other listed fish species (*green sturgeon, eulachon, bocaccio, canary rockfish and yelloweye rockfish*).

Not applicable. No other listed fish species are anticipated to occur in the project action area.

- I. Is the project located within designated/proposed critical habitat for any of the species listed below? If so please address the proposed projects' potential direct and indirect effect to primary constituent elements. Please see the NOAA-Fisheries and US Fish and Wildlife websites (www.nwr.noaa.gov and www.fws.gov/pacific respectively) for further information.

<i>Southern resident killer whale</i>	<i>Marbled murrelet</i>
<i>Northern spotted owl</i>	<i>Western snowy plover</i>
<i>Green sturgeon</i>	<i>Eulachon</i>

Not applicable.

- J. Describe use of action area by marbled murrelets. How far to the nearest marbled murrelet nest site or critical habitat? Some information is available on the Fish and Wildlife Service website: <http://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?scode=B08C>.

The action area may be used as a migratory corridor for marbled murrelets traveling between the Pacific Ocean and nest sites located in the Cascade Mountains. The action area is approximately 19 miles from the nearest critical habitat for marbled murrelets (i.e. critical habitat east of Young's Creek/south of Goldbar). Suitable habitat (mature conifer-dominated forests over 80 years old) is not present within 200 feet of the project vicinity.

- K. Describe use of action area by the spotted owl. How far to the nearest spotted nest site or critical habitat? Some information is available on the Fish and Wildlife Service website: <http://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?sPCODE=B08B>.

Northern spotted owls are not expected to occur in the project action area due to lack of suitable habitat. The nearest Critical Habitat for the Northern spotted owl is just over 22 miles away (i.e. tributary streams that feed Philippa Creek northeast of North Bend).

- L. **For marine areas only:** Describe use of action area by Southern Resident killer whales. How often have they been seen in the area and during what months of the year? For information on noise impacts on killer whales and other marine mammals, please see the National Marine Fisheries website: <http://www.nwr.noaa.gov/Marine-Mammals/MM-consults.cfm>.

Not applicable.

- M. **For marine areas and Columbia River:** How far is the nearest Steller sea lion haulout site from the action area? Describe their use of the action area. See the National Marine Fisheries website: <http://www.nwr.noaa.gov/Marine-Mammals/MM-consults.cfm> for information on the Steller sea lion and location of their haul-out sites.

Not applicable

- N. **For marine areas only: Forage Fish Habitat** – only complete this section if the project is in tidal waters.

Check box if Washington Department of Fish and Wildlife (WDFW) documented habitat is present. Go to the WDFW website for this information: <http://wdfw.wa.gov/fish/forage/forage.htm>, then search for each species under the link to Biology, then the link to Documented Spawning Grounds (if available, please attach a copy of the Hydraulic Project Approval from WDFW):

Surf Smelt: **Pacific Herring:** **Sand Lance:**

Check box if the proposed action will occur in potentially suitable forage fish spawning habitat:

Surf Smelt: **Pacific Herring:** **Sand Lance:**

If no boxes are checked, please explain why site is not suitable as forage fish spawning habitat.

Please describe the type of substrate and elevation and presence of aquatic vegetation at the project area. For example:

At +10 to +5 feet above MLLW, there is no aquatic vegetation, the substrate consists of large cobbles.
At +5 to +1 foot above MLLW, there is eelgrass and the substrate consists of fine sand.

Not applicable.

10. Effects Analysis

Describe the direct and indirect effects of the action on the proposed and listed species as well as designated and proposed critical habitat within the action area. Consider the impact to both individuals and the population. Discuss the short-term, construction-related, impacts as well as the long-term and permanent effects.

Direct Impacts:

The proposed project is not anticipated to have any direct effects on proposed and listed species or designated and proposed critical habitats.

Indirect Impacts:

The proposed project is not anticipated to have any indirect effects on proposed and listed species or designated and proposed critical habitats, with the possible exception of:

- Bull trout. Bull trout presence has been documented in the Sammamish River by WDFW (Salmonscape’s online mapping tool, accessed March 31, 2020). Monticello Creek is a tributary to Bear Creek, which flows into the Sammamish River and eventually to Lake Washington. Sammamish River is approximately five miles downstream of the project area.
- Chinook salmon: According to WDFW (Salmonscape’s online mapping tool, accessed March 31, 2020), fall Chinook spawn in Bear Creek to which Monticello Creek empties (approximately 4,000 feet downstream of the project site and approximately 3,800 downstream of the action area).
- Steelhead: According to WDFW (Salmonscape’s online mapping tool, accessed March 31, 2020), winter steelhead are present in Bear Creek to which Monticello Creek empties (approximately 4,000 feet downstream of the project site and approximately 3,800 downstream of the action area).

Headwater fish passage restoration could eventually directly benefit bull trout should they become established in Bear Creek or higher up in the watershed. It has been noted that any action that benefits salmonid habitat has the potential to benefit bull trout is that the restoration effort should lead to the production of eggs and juvenile salmonids as foraging items in areas used by bull trout as FMO habitat. Currently, however, it is not believed that the project will have measurable indirect benefits.

11. Conservation measures:

Conservation measures are measures that would reduce or eliminate adverse impacts of the proposed activity (examples: work done during the recommended work window (to avoid times when species are most likely to be in the area), silt curtain, erosion control best management practices, percent grating on a pier to reduce shading impacts).

Proposed work window: In-water work is anticipated to occur July 1—September 30. Work outside of the active channel, and not in-water will occur as needed and allowed in permits obtained

for the project. It is anticipated that work in upland areas may begin in June with planting to be completed during the following late fall or early winter.

Other conservation measures:

The following conservation measures and Best Management Practices (BMPs) are incorporated as part of the project to avoid or minimize potential impacts to federally listed species within the project action area.

- Work within the active channel will be completed during the approved in-water work window (July 1— September 30).
- All material used to construct in-stream structures shall be clean of mud, dirt, and other material that could temporarily degrade water quality within the project action area.
- Clearing limits will be marked with flagging wherever clearing is proposed in or adjacent to Monticello Creek and its associated Pond.
- Construction equipment will be limited to the minimum access and construction footprint required for the construction the project.
- The contractor shall be responsible for preparing a detailed Spill Prevention Control and Countermeasures (SPCC) Plan, which will identify all the contingencies in the event of an accidental spill of any hazardous material.
- Equipment will be refueled in a designated area, with absorbent pads in place and spill containment equipment present to reduce the potential for contaminants to reach the water should any sort of accidental spill or leakage occur.
- All heavy equipment will be inspected prior to operating each day during project construction. All heavy equipment shall be deemed clean and free of external oil, fuel, or other potential pollutants prior to operating and performing construction activities, particularly in-water work.
- Hydraulic fluid in all heavy machinery operating in water will be replaced with vegetable oil.
- Refueling of all heavy machinery will occur at least 150 feet from Monticello Creek or other sensitive areas (i.e., wetlands).
- A hazardous material spill kit will be on-site, and a hazardous material boom will be set up immediately downstream of the work site in case of a spill when vehicles are working near the active channel.
- The contractor will designate at least one employee as the Erosion and Spill Control Lead (ESCL). The ESCL will be responsible for installing and monitoring erosion control measures and maintaining spill containment and control equipment. The ESCL will also be responsible for ensuring compliance with all local, state, and federal erosion and sediment

control requirements. Moreover, the ESCL will be responsible for inspecting all temporary erosion and sediment control measures on a regular basis, as well as maintaining and repairing such measures and ensuring their continued performance.

12. Determination of Effect:

Provide a summary of impacts concluding with statement(s) of effect, by species. Even projects that are intended to benefit the species might have short-term adverse impacts and those must be addressed. Only the following determinations are valid for listed species or designated critical habitat:

No effect. Literally no effect. No probability of any effect. The action is determined to have ‘no effect’ if there are no proposed or listed salmon and no proposed or designated critical habitat in the action area or downstream from it. This effects determination is the responsibility of the action agency to make and does not require NMFS review.

May Affect, Not Likely to Adversely Affect (NLAA) – Insignificant, discountable, or beneficial effects. The effect level is determined to be ‘may affect, not likely to adversely affect’ if the proposed action does not have the potential to hinder attainment of relevant properly functioning indicators and has a negligible (extremely low) probability of taking proposed or listed salmon or resulting in the destruction or adverse modification of their habitat. An insignificant effect relates to the size of the impact and should never reach the scale where take occurs. A ‘discountable effect’ is defined as being so extremely unlikely to occur that a reasonable person cannot detect, measure, or evaluate it. This level of effect requires informal consultation, which consists of NMFS and/or USFWS concurrence with the action agency’s determination.

May Affect, Likely to Adversely Affect (LAA) This form is not appropriate for use with a project that is LAA listed species. Please see the Biological Assessment (BA) template on the Corps website: http://www.nws.usace.army.mil/PublicMenu/Menu.cfm?sitename=REG&pagename=mainpage_ESA

Bull Trout

The information and analysis presented in this Abbreviated BE is the basis of the finding that the project warrants an effect determination of **May Affect, Not Likely to Adversely Affect** for bull trout.

The proposed project is not anticipated to have any direct or indirect effects on bull trout whose presence has been documented in the Sammamish River by WDFW (Salmonscape’s online mapping tool, accessed March 31, 2020). Headwater fish passage restoration could eventually directly benefit bull trout should they become established in Bear Creek or higher up in the watershed. It has been noted that any action that benefits salmonid habitat has the potential to benefit bull trout is that the restoration effort should lead to the production of eggs and juvenile salmonids as foraging items in areas used by bull trout as FMO habitat. Currently, however, it is not believed that the project will have measurable indirect benefits/effect.

Chinook Salmon

The action area is not located with Critical Habitat of Puget Sound Chinook Salmon but is within the Puget Sound Chinook Salmon’s Evolutionarily Significant Unit. Monticello Creek is a tributary to Bear Creek, which flows into the Sammamish River and eventually to Lake Washington, which is Critical Habitat for Puget Sound Chinook. Monticello Creek is thus located within a sub-basin that has Critical Habitat.

According to WDFW (Salmonscape), fall Chinook spawn in Bear Creek. The City of Redmond reports a partial barrier approximately 0.2 mile downstream from the Action Area at 178th Avenue NE and a full barrier downstream approximately 1 mile downstream where Monticello Creek flows into Bear Creek at Avondale Road (City of Redmond Watershed Management Plan 2013).

Project BMP's and TESC specifications have been designed to minimize adverse impacts to critical areas and wildlife during construction. Project timing, summer low-flow conditions, channel bypass, working in the dry, and the absence of Chinook in Monticello Creek warrant an effect determination of **May Affect, Not Likely to Adversely Affect** for Chinook salmon.

Steelhead

The action area is not located with Critical Habitat of Puget Sound Steelhead DPS. Monticello Creek is a tributary to Bear Creek, which flows into the Sammamish River and eventually to Lake Washington, which is Critical Habitat for Puget Sound Steelhead DPS. Monticello Creek is thus located within a sub-basin that has Critical Habitat.

According to WDFW (Salmonscape), winter Steelhead are documented as present in Bear Creek, to which Monticello Creek drains. The City of Redmond reports a partial barrier approximately 0.2 mile downstream from the Action Area at 178th Avenue NE and a full barrier downstream approximately 1 mile downstream where Monticello Creek flows into Bear Creek at Avondale Road (City of Redmond Watershed Management Plan 2013).

Project BMP's and TESC specifications have been designed to minimize adverse impacts to critical areas and wildlife. Project timing, channel bypass, working in the dry and the absence of winter Steelhead in Monticello Creek warrant an effect determination of **May Affect, Not Likely to Adversely Affect** for Steelhead.

Gray Wolf

Gray Wolf are not present near the action area. The project thus warrants a determination of **No Effect** for Gray Wolf.

North American Wolverine

North American Wolverine are not present near the Action Area. They select areas that are cold and receive enough winter precipitation to reliably maintain deep persistent snow late into the warm season (Copeland et al. 2010, entire). The requirement of cold, snowy conditions means that, in the southern portion of the species range where ambient temperatures are warmest, wolverine distribution is restricted to high elevations, while at more northerly latitudes, wolverines are present at lower elevations and even at sea level in the far north (Copeland et al. 2010, Figure 1). Deep, persistent, and reliable spring snow cover (April 15 to May 14) is the best overall predictor of wolverine occurrence in the contiguous United States (Aubry et al. 2007, pp. 2152-2156; Copeland et al. 2010, entire). The project thus warrants a determination of **No Effect** for North American Wolverine.

Marbled Murrelet

As mentioned above, the action area may be used as a migratory corridor for marbled murrelets traveling between the Pacific Ocean and nest sites located in the Cascade Mountains. The action area is approximately 19 miles from the nearest critical habitat for marbled murrelet (critical habitat east of Young's Creek/south of Goldbar). Suitable habitat (mature conifer-dominated forests over 80 years old) is not present within 200 feet of the project vicinity.

The project will not affect documented nest sites or designated critical habitat, and will not affect foraging activities or alter migratory patterns or corridors. Therefore, the project will have **No Effect** on marbled murrelets.

Streak Horned Lark

The action area is not located within critical habitat for this species. It's habitat is typically prairie and open coastal habitat. As documented in the Draft Recovery Plan for the Streaked Horned Lark (USFWS, 2019), as of 2018 the streaked horned lark was thought to be present only as far north as the South Puget Lowlands Region, an area defined as south of Brown's Point and Point Defiance, and within King County it is thought to only be present in the extreme SW portion of the county (areas south of Federal Way and in and around the agricultural areas surrounding Enumclaw). The project thus warrants a determination of **No Effect** for streaked horned lark.

Yellow-Billed Cuckoo

Yellow-billed cuckoo's nest in deciduous habitats with clearings and dense shrubby vegetation, especially those near rivers, streams and wetlands (Hughes 2015 in WDFW 2017). However, the last confirmed record of cuckoos nesting in Washington occurred in Seattle in 1923 and only one sighting of an individual has occurred in King County since then (dead bird, 1997). Of the twenty confirmed sightings in Washington State since 1950, none are considered to be probable sightings of breeding birds. While unlikely that cuckoos could occur in the project action area, the project warrants a determination of **May Affect, Not Likely to Adversely Affect** for yellow-billed Cuckoo based on the following rationale.

A determination of **May Affect** is warranted based on the following rationale:

- Suitable habitat may be present (although is unlikely to be present due to common human presence and relatively small size of forest) within the project action area.
- The project action area is within the historic range of yellow-billed cuckoos.

A determination of **Not Likely to Adversely Affect** is warranted based on the following rationale:

- Yellow-billed cuckoos have not been observed in Grays Harbor County in over 24 years.
- Were cuckoos to occur in the project action area, noise generated by construction could affect them, resulting in behavioral response or disturbance.

- The project will remove approximately 15 trees as part of re-grading for fish passage. The project area is located in an area of dense housing with regular human visitation and is unlikely to provide habitat for the yellow-billed cuckoo.

13. EFH Analysis

Essential Fish Habitat (EFH) is broadly defined by the Act (now called the Magnuson-Stevens Act or the Sustainable Fisheries Act) to include “those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity”. This language is interpreted or described in the 1997 Interim Final Rule [62 Fed. Reg. 66551, Section 600.10 Definitions] -- Waters include aquatic areas and their associated physical, chemical, and biological properties that are used by fish and may include historic areas if appropriate; substrate includes sediment, hard bottom, structures underlying the waters, and associated biological communities; necessary means the habitat required to support a sustainable fishery and the managed species’ contribution to a healthy ecosystem; and “spawning, breeding, feeding, or growth to maturity” covers a species’ full life cycle.

Additional guidance for EFH analyses can be found at the NOAA Fisheries web site under the Sustainable Fisheries Division.

A. Description of the Proposed Action (may refer to BA project description)

See Attachment A, Project Plan Sheets, and project description located in Section 5 of this document.

B. Addresses EFH for Appropriate Fisheries Management Plans (FMP)

The Pacific Salmon Fishery Management Plan covers EFH for Chinook salmon, coho salmon and Puget Sound Pink Salmon. Only EFH for Chinook salmon and coho salmon occurs in the project action area.

C. Effects of the Proposed Action

- i. Effects on EFH (groundfish, coastal pelagic, and salmon EFH should be discussed separately)

The impacts to Pacific salmon (Chinook salmon and coho salmon) EFH are similar to those impacts described above for bull trout designated critical habitat.

- ii. Effects on Managed Species (unless effects to an individual species are unique, it is not necessary to discuss adverse effects on a species-by species basis)

The effects on Chinook salmon and coho salmon would be similar to those described above for bull trout.

- iii. Effects on Associated Species, Including Prey Species

Major prey species for juvenile Chinook salmon and coho salmon includes aquatic micro- and macroinvertebrates. The project is not anticipated to have a measurable impact on micro- and macroinvertebrates. Short-term impacts could occur from construction activities (short-duration turbidity associated with re-watering), but long-term the project would likely improve conditions for micro- and macroinvertebrates by increasing instream habitat complexity (types of substrate available (i.e., specific areas of wood, sand, gravel and cobble)) and habitat area (possible improvements to summer low flow conditions through typically dry reaches and greater biological connectivity (i.e. fish passage year round) to the upper reaches of Monticello Creek).

iv. Cumulative Effects

No cumulative effects associated with this project have been identified.

D. Proposed Conservation Measures

Conservation measures are included for all activities associated with the construction of the project. Conservation measures will maintain existing habitat conditions, including EFH, in the action area. See Section 11 of the Abbreviated BE, above, for list of proposed conservation measures.

E. Conclusions by EFH (taking into account proposed conservation measures)

In accordance with the EFH requirements of the Magnuson-Stevens Fishery Conservation and Management Act, it has been determined that the project will have **no adverse impact to EFH** utilized by Pacific salmon species.

14. References:

Include any studies or papers that support statements made in this form (example: reference the source for the listed species that are covered).

Species covered, based on:

- a. USFWS species list received from the iPac web site March 31, 2020
- b. NMFS species list obtained from SPIF document

Information regarding site conditions and wetlands compiled from the Smith Woods Pond and Stream Rehabilitation Project, Stream and Wetlands Assessment Report, prepared by Natural Systems Design, October 30, 2019.

Information regarding project design compiled based on Osborn Consulting Incorporated, 30% design plans, Smith Woods Fish Passage Improvement project. April 2020.

15. Appendices:

As needed include mitigation, revegetation plans, monitoring plans, results of studies, water quality information, etc.

Attachment A – Project Plan Sheets