Appendix C

Wetlands, Wildlife, and Fisheries Assessment
Raedeke Associates, Inc.

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WETLANDS, WILDLIFE, AND FISHERIES ASSESSMENT

Snoqualmie Mill Planned Commercial-Industrial Plan
Snoqualmie, Washington

Preliminary Draft EIS

March 4, 2020

RAEDEKE ASSOCIATES, INC.

Raedeke Associates, Inc.

Wetland & Aquatic Sciences
Wildlife Ecology
Landscape Architecture

Report To:	Snoqualmie Mill Ventures LLC c/o Mr. Tom Sroufe Brookwater Advisors, LLC 18306 428th Avenue S.E. Snoqualmie, WA 98065
Title:	Wetlands & Wildlife Assessment for Snoqualmie Mill Planned Commercial-Industrial Plan, Snoqualmie, Washington
Project Number:	2012-013-103
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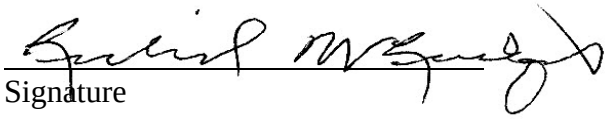

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1.0 INTRODUCTION

1.1 PURPOSE

Raedeke Associates, Inc. was retained by Snoqualmie Mill Ventures LLC to investigate the proposed Snoqualmie Mill Planned Commercial Industrial Plan (PCI Plan) development project area with respect to wetlands, plants and animals, and fisheries, as part of an Environmental Impact Statement (EIS) for the project. Raedeke Associates, Inc. previously investigated the 261-acre Snoqualmie Mill property, of which the Snoqualmie Mill PCI Plan area is a part, to delineate wetlands and review wildlife use as part an annexation of that property by the City of Snoqualmie from King County in 2012. A 15-acre area in the northeastern portion of the PCI Plan area (Planning Area 2) remains within unincorporated King County. Annexation of this area would occur before any specific development is proposed on this portion of the Mill site. This area is included in the PCI Plan, however, and most of it is proposed to remain undeveloped.

This report provides project-specific evaluation of development alternatives for Planning Area 1 within the northwestern portion of the site and provides programmatic-level evaluation of development alternatives for Planning Areas 2 and 3 within the central and eastern portions of the site. This report also provides the results of our current investigation of new area not within the Snoqualmie Mill property that will be needed for construction of a stormwater outfall and a roundabout adjacent to the right bank of the Snoqualmie River at the intersection of SE Mill Pond Road and the Snoqualmie Sand and Gravel Company haul road.

1.2 PROJECT LOCATION

The Snoqualmie Mill PCI Plan property in located in Snoqualmie, Washington (Figure 1). The approximately 261-acre property consists of King County tax parcels 2924089006, 2924089009, 2924089022, 2924089023, 292408UNKN, 3024089004, 3024089069, 3024089070. The PCI Plan project area includes all of the original 261-acre Snoqualmie Mill property with the exception of the eastern hillside (42 acres) which was purchased by King County Parks in 2015. The Snoqualmie Mill property is within Sections 20, 29, and 30, Township 24 North, Range 8 East, W.M.

The property consists of the former Weyerhaeuser Snoqualmie Mill and lumber yard and is located just north of Borst Lake (the Weyerhaeuser Mill Pond). The eastern and western property boundaries are formed by 396th Avenue SE and Southeast Mill Pond Road, respectively. The eastern half of the northern property boundary is generally formed by 402nd Avenue SE which serves as a private haul road for a sand and gravel quarry north of the project site. The west half of the northern boundary is not defined by a road.

1.3 SITE DESCRIPTION

The site is located within the Snoqualmie River valley, just east of the river. Most of the area containing the historic mill's lumber processing facilities, in the eastern portion of the site, is paved and very little is vegetated with the exception being the numerous ditches that extend through this portion of the site to collect and manage stormwater (Figure 2). An extensive drainage ditch system is present throughout the site. Most of the ditches are less than 18 inches deep and are on top of a minimum of several feet of old fill. Several of the ditches are more than 5 feet deep and a few are more than 8 feet deep (Goldsmith 2012b). The deeper ditches are inundated to depths of more than 2 feet and are in locations, based on soil pit excavations (Associated Earth Sciences, Inc. 2018; Raedeke Associates, Inc. 2012, 2016), where it is likely that they extend down through the old fill to the native soils below. Most of the ditches are regularly maintained to prevent establishment of tall shrubs and trees. Stormwater management for the old mill facilities was provided by an elaborate system of surface ditches and underground pipes and catch basins. Much of the underground drainage system remains throughout the site as do several of the old buildings and most of paved or gravel surface roads and yards.

Deciduous forest encompasses a perennial stream that flows along the northern perimeter of the central portion of the site and along the northern perimeter of the eastern portion of the PCI Plan area. A narrow band of deciduous forest is also found along the southern perimeter of the eastern portion of the PCI Plan area between the lumber processing facilities and the off-site Borst Lake. Vegetation within the central and western portions of the PCI Plan area is a mosaic of forest and sparsely vegetated areas dominated by scattered shrubs and grasses that have developed on highly compacted fill.

Vegetation along the right bank of the Snoqualmie River adjacent to the project site consists of a mix of 30- to 50-year-old deciduous forest and areas shrubs dominated predominantly by Himalayan blackberry (*Rubus armeniacus*, FAC). A relatively small area at the north end of the site near the outlet of Stream 1, just north of the intersection of SE Mill Pond Road and the main haul road for the Snoqualmie Sand and Gravel Company, includes several older big-leaf maple (*Acer macrophyllum*, FACU) and a very large Sitka spruce (*Picea sitchensis*, FAC).

Drainage leaves the site at three locations: directly to the river via overland flow, through Borst Lake via on-site ditches (Borst Lake drains through a culvert under Mill Pond Road to the Snoqualmie River), and via the Northeast portion of the site that drains to the river via a large off-site wetland complex lying north of the property. The entire site (with the exception of some small areas of the site above the base flood elevation [BFE]) as well as all downstream areas lie within the 100-year floodplain of the river.

1.4 Site History

The mill and lumber storage facilities were constructed from approximately 1916 to 1920 and are located in the relatively flat western three-quarters of the site (Wilma 2012b). Within this area, the log storage areas were predominantly located in the western portion

and the mill facilities in the eastern portion. The mill town, located off-site, just east of the PCI Plan area on a moderately steep slope, overlooked the mill facilities. This area was owned by Snoqualmie Mill Ventures LLC until its sale to King County Parks in 2015. The mill town was vacated during the 1960's and all homes and buildings had either been removed or demolished by the mid-1970's with only a few concrete foundations of major buildings and asphalt remaining (Wilma 2012b). Stormwater management for the mill facilities was provided by an elaborate system of surface ditches and underground pipes and catch basins. Many of the ditches and underground system remain throughout the site. Mill operations were gradually curtailed during the 1990's and had ceased by 2003 (Wilma 2012a).

Old aerial photos show that the lowland area, where the mill buildings and processing yards were located west of the mill town, was filled prior to 1920. Lumber storage areas were expanded to include the western portion of the PCI Plan area after 1944. Most of the western portion of the site had been filled by 1983, and the entire area, with the exception of the westernmost perimeter of the property, had been filled by 1990. Soil excavation pits examined by Associated Earth Sciences, Inc. (AESI 2012, 2018) show that the majority of the eastern portion of the PCI Plan area in the vicinity of the lumber processing areas and other mill buildings was filled to depths ranging from 3 to 4 feet. The western portion of the site was filled to depth of more than 10 feet in most areas.

1.5 Current Site Use

A portion of the area encompassing the old mill operational facilities in the eastern and central portion of the PCI Plan area is currently used as a rally car driver training school operated by Dirtfish Rally School (DirtFish), a specialized driving instruction school. Gravel roads used by the school extend throughout eastern and central portion of the PCI Plan area (Figure 2).

The northeastern portion of the site is used for storage of heavy equipment and construction materials and for landscape materials processing and storage. A number of the old Weyerhaeuser lumber processing and storage buildings, as well as paved and gravel surface lumber yards and roads remain, primarily in the eastern and central portion of the PCI Plan area. Many of the old lumber yard areas and roads are actively used by the driving school and by the construction and landscaping businesses.

An extensive drainage ditch system is present throughout the PCI Plan area. Most of the ditches are less than 18 inches deep and are on top of a minimum of several feet of old fill. Several of the ditches are more than 5 feet deep and a few are more than 8 feet deep (Goldsmith 2012c). The deeper ditches are inundated to depths of more than 2 feet and extend down through the old fill to the native soils below.

2.0 METHODS

2.1 DEFINITIONS AND METHODOLOGIES

2.1.1 Wetlands

Wetlands and streams are protected by federal law as well as by state and local regulations. Federal law (Section 404 of the Clean Water Act) prohibits the discharge of dredged or fill material into "Waters of the United States", including certain wetlands, without a permit from the U.S. Army Corps of Engineers (COE 2017b). The COE makes the final determination as to whether an area meets the definition of a wetland and whether the wetland is under their jurisdiction.

The COE wetland definition was used to determine if any portions of the project area could be classified as wetland. A wetland is defined as an area "inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances does support, a prevalence of vegetation typically adapted for life in saturated soil conditions" (Federal Register 1986:41251).

We based our investigation upon the guidelines of the U. S. Army Corps of Engineers (COE) Wetlands Delineation Manual (Environmental Laboratory 1987) and subsequent amendments and clarifications provided by the COE (1991a, 1991b, 1992, 1994), as updated for this area by the regional supplement to the COE wetland delineation manual for the Western Mountains, Valleys, and Coast Region (COE 2010). State law (WAC 173-22-035, as revised) requires that all local jurisdictions use the COE manual to identify wetlands.

Hydrophytic vegetation is defined as "macrophytic plant life growing in water, soil or substrate that is at least periodically deficient in oxygen as a result of excessive water content" (Environmental Laboratory 1987). The U.S. Army Corps of Engineers National Wetland Plant List wetland indicator status (WIS) ratings were used to make this determination (Lichvar and Kartesz 2009). The WIS ratings "reflect the range of estimated probabilities (expressed as a frequency of occurrence) of a species occurring in wetland versus non-wetland across the entire distribution of the species" (Reed 1988:8). Plants are rated, from highest to lowest probability of occurrence in wetlands, as obligate (OBL), facultative wetland (FACW), facultative (FAC), facultative upland (FACU), and upland (UPL), respectively. In general, hydrophytic vegetation is present when the majority of the dominant species are rated OBL, FACW, and FAC.

A hydric soil is defined as "a soil that is formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part" (Federal Register 1995: 35681). The morphological characteristics of the soils in the study area were examined to determine whether any could be classified as hydric.

According to the 1987 methodology, wetland hydrology could be present if the soils were saturated (sufficient to produce anaerobic conditions) within the majority of the rooting zone (usually the upper 12 inches) for at least 5% of the growing season, which in this area is usually at least 2 weeks (COE 1991a). It should be noted, however, that areas having saturation to the surface between 5% and 12% of the growing season may or may not be wetland (COE 1991b). Depending on soil type and drainage characteristics, saturation to the surface would occur if water tables were shallower than about 12 inches below the soil surface during this time period. Positive indicators of wetland hydrology include direct observation of inundation or soil saturation, as well as indirect evidence such as drift lines, watermarks, surface encrustations, and drainage patterns (Environmental Laboratory 1987). Hydrology was further investigated by noting drainage patterns and surface water connections between wetlands and streams within and adjacent to the project area.

2.1.2 Streams

We based our delineation of the ordinary high water mark (OHWM) for the Snoqualmie River on definitions provided under the Washington State Shorelines Management Act of 1971. The Washington State definition for the OHWM is as follows:

> *Ordinary high water line" or "OHWL" means the mark on the shores of all waters that will be found by examining the bed and banks and ascertaining where the presence and action of waters are so common and usual and so long continued in ordinary years, as to mark upon the soil or vegetation a character distinct from that of the abutting upland, provided that in any area where the ordinary high water line cannot be found, the ordinary high water line adjoining saltwater shall be the line of mean higher high water, and the ordinary high water line adjoining freshwater shall be the elevation of the mean annual flood."*…(RCW 90.58.030(2)(b) and WAC173-22-030(5); WDOE 1994).

The OHWM was delineated using procedures outlined in the 1994 Washington Department of Ecology Shoreline Administrators Manual.

2.2 U.S. Army Corps of Engineers Wetland Determination Guidance

During initial sensitive areas studies of the Snoqualmie Mill property conducted in 2012, which at that time included the off-site eastern slopes encompassing the old mill town area, Raedeke Associates, Inc. delineated 18 wetlands that met criteria to be regulated as jurisdictional wetland per guidelines of the U.S. Army Corps of Engineers (COE) wetland delineation manual (Environmental Laboratory 1987) and the Regional Supplement (COE 2010). Seven of these are located entirely on the eastern slope encompassing the old mill town and are not within the PCI Plan area. As part of the initial sensitive areas studies for the property, Cedarock Consultants, Inc. (2012) also

identified six streams within the project site, of which, Streams 1 and 2 are within the PCI Plan area.

As described above, historic use of the Snoqualmie Mill site for lumber mill operations required placement of highly compacted fill within nearly the entirety of the lowland area west of the old mill town from approximately 1920 until 1990. Due to restriction of infiltration through the fill, many areas of shallow inundation or saturation of surface soils now persist through the spring and early summer, particularly in the central and western portions of the PCI Plan area. These wet areas have become dominated by common hydrophytic plant species such as broadleaf Sitka willow, red alder, balsam poplar, broadleaf cattail, reed canarygrass, and common rush. Notably, excavation pits examined by AESI (2012) indicate that, due to the thickness of the fill which in most areas was more than 10 feet, saturation does not extend from the surface to the native soils below.

Following review of the site by the COE on March 19, 2013, the COE (2013) determined that all 18 of the wetlands identified during the 2012 site investigations were waters of the U.S. The COE also identified the numerous wet areas that had developed on old fill, roadways, and building foundations for additional investigation to determine whether these areas would be considered jurisdictional. The COE (2013) issued a Memorandum for the Record (MFR) dated August 30, 2013 specifically to cover these areas. The MFR also included criteria for determination of COE jurisdiction over a network of the numerous drainage ditches constructed on top of the old fill for drainage of the central and western portion of the PCI Plan area.

Based on information gathered during subsequent field investigations conducted from August 2013 through March 2015, Raedeke Associates, Inc. (2015) delineated 8 additional wetlands and 16 drainage ditches within the site that were likely to be considered COE jurisdictional. Of these wetlands, the COE (2017a) took jurisdiction over all but two, Wetlands 19 and 25, as "waters of the U.S." The COE determined that Wetlands 19 and 25 were isolated and therefore, not regulated under the federal Clean Water Act. We note, however, that the Washington Department of Ecology has made a preliminary determination that both of these wetlands are regulated by the State of Washington under RCW 90.48. Likewise, the City of Snoqualmie (2016) has confirmed that Wetlands 19 and 25 are regulated by the City of Snoqualmie under its municipal code.

Of note also is that the COE determined that two drainage ditches within the PCI Plan area which Raedeke Associates, Inc. had previously identified as Wetlands 16 and 17 during the initial site investigation (Raedeke Associates, Inc. 2012) were not wetland, but rather jurisdictional ditches because they did not have well established woody vegetation. Therefore, these areas were re-named Ditch 24 and 28, respectively, resulting in a total of 18 COE jurisdictional ditches within the PCI Plan development area.

2.3 BACKGROUND RESEARCH

2.3.1 Wetlands

In preparation for our previous site investigation of the PCI Plan study area, we collected maps and information from the U.S.D.A. Soil Conservation Service (SCS; Goldin 1992), the U.S.D.A Natural Resources Conservation Service (2012) Web Soil Survey, the U.S. Fish and Wildlife Service (USFWS 2012) National Wetland Inventory (NWI), and the City of Snoqualmie (2015a) Wetlands and Streams Map.

The area covered by that previous background review for the site includes the portion of the right bank of the Snoqualmie River for our current study to delineate the river OHWM in the vicinity of the proposed stormwater outfall. The results of our background review can be found in our wetland delineation and wildlife reconnaissance report for the property (Raedeke Associates, Inc. 2012).

2.3.2 Wildlife

In preparation for our wildlife reconnaissance site visits, we reviewed information from the Washington Department of Fish and Wildlife (WDFW 2012, 2018a) Priority Habitats and Species (PHS) database for documented information on the potential occurrence of federal- or state-listed wildlife species within the project site and vicinity. We also obtained information regarding the potential occurrence of listed and proposed listed species and critical habitat that may occur in the vicinity of the project from the U.S. Fish and Wildlife Service (USFWS 2018)

Reference lists maintained by the WDFW (2016) were consulted for information on the status of listed wildlife species that could use the site during at least some part of the year. Species accounts and management recommendations provided by WDFW (e.g., Rodrick and Milner 1991, Larsen 1997, Azerrad 2004, Larsen et al. 2004) were consulted to determine habitat associations of such species and to evaluate the likelihood of their occurrence on the project site. During the field investigation, we searched for the presence of these species, or signs thereof, which could be found on the property.

2.3.3 Fisheries

In preparation of our fisheries impacts analysis, we reviewed the initial study of aquatic resources and fisheries prepared for the project by Cedarock Consultants, Inc. (2012). We also researched additional background information obtained from online sources for the Snoqualmie River and vicinity. In addition, the Washington Department of Fish and Wildlife (WDFW 2018b) Salmonscape database and the Washington Department of Natural Resources (WDNR 2018) Forest Practices Application Mapping Tool were queried for documentation of streams and fish use in the vicinity of the project.

2.4 FIELD SAMPLING PROCEDURES

2.4.1 Limits of Study Area

We investigated the Snoqualmie Mill PCI Plan area to locate and describe all wetlands and observations of sign of federal- or state-listed wildlife species. In addition, for purposes of our wetland investigation, we identified and described any off-site wetlands within approximately 300 feet of the site boundaries or occurrence of federal- or state-listed wildlife species within approximately 660 feet of the site by visual observation from the property boundaries or from public access areas, where possible, in conjunction with information provided by and reviewed during our background research. Distance from the Snoqualmie Mill PCI Plan area boundary for the off-site wetland investigation was based on the maximum possible buffer plus the building setback that could be applied to an off-site wetland under Snoqualmie (2018c) Municipal Code. Distance from the Snoqualmie Mill PCI Plan area boundary for the off-site fish and wildlife conservation area investigation was based on the maximum buffer that may be applied under U.S. Fish and Wildlife Service guidance for bald eagle (*Haliaeetus leucocephalus*) nest tree protection.

2.4.2 Wetlands

Raedeke Associates, Inc. initially visited the site on numerous occasions in 2012 – April 24 and 26, May 7, 8, and 9, June 19 and 27, and July 17 and 24 –to delineate wetlands within the site and to investigate the off-site areas in the vicinity of the site for the presence of wetlands. Additional site visits and investigations were also performed between August 2013 and March 2015 to identify areas that were likely to be determined to be wetland or jurisdictional ditch by the COE (2013) per criteria established by the MFR.

On June 15, 2017 and January 25, 2018 Raedeke conducted a reconnaissance of the right-of-way (ROW) for a section of SE Mill Pond Road located along the west side of the project site in the vicinity of the portion of the road which is proposed to be re-routed through the Snoqualmie Mill PCI Plan area. We also investigated the proposed location of a new stormwater outfall to the Snoqualmie River from the Snoqualmie Mill PCI Plan. At that time, we did not identify wetlands within the SE Mill Pond Road ROW or in the location of the proposed stormwater outfall to the river. We delineated the OHWM of right bank of the Snoqualmie River in the vicinity of the proposed location for the stormwater outfall. During our June 2017 and January 2018 field investigations, we also examined the quality of buffers for on-site and off-site wetlands within Planning Area 1.

During our field investigations, we inventoried, classified, and described representative areas of plant communities, soil profiles, and hydrologic conditions in both uplands and wetlands. We searched specifically for areas with positive indicators of hydrophytic vegetation, hydric soil, and wetland hydrology. Topographic changes within the context of the landscape were used to aid in the placement of the wetland boundaries. We placed

pink with black stripe flagging or 1-inch-wide lath that was painted orange to mark the outer edge of the wetland or OHWM boundaries.

We estimated the percent coverage of canopy and vegetation communities. Plant identifications were made according to standard taxonomic procedures described in Hitchcock and Cronquist (1976), with nomenclature as updated by the U.S. Army Corps of Engineers National Wetland Plant List (Lichvar et al. 2016). Wetland classification follows the USFWS wetland classification system (Cowardin et al. 1992). We determined the presence of a hydrophytic vegetation community using the procedure described in the Regional Supplement (COE 2010), which requires the use of the dominance test, unless positive indicators of hydric soils and wetland hydrology are also present, in which case the prevalence index or the use of other indicators of a hydrophytic vegetation community as described in the Regional Supplement (COE 2010) may also be required.

We excavated pits to at least 20 inches below the soil surface, where possible, in order to describe the soil and hydrologic conditions throughout the study area. We sampled soil at locations that corresponded with vegetation sampling areas and potential wetland areas described in previous reports (Raedeke Associates, Inc. 2012, 2015, 2016). Soil colors were determined using the Munsell Soil Color Chart (Munsell Color 2009). We used the indicators described in the Regional Supplement (COE 2010) to determine the presence of hydric soils and wetland hydrology.

2.4.3 Streams

Raedeke Associates, Inc. staff reviewed all streams within the Snoqualmie Mill PCI Plan Area that had been previously delineated by Cedarock Consulting, Inc (2012) on December 1, 2017. We also delineated the OHWM of the right bank of the Snoqualmie River on June 15, 2017 and January 25, 2018. Guidelines provided in the Washington Department of Ecology (WDOE 1994) Shoreline Administrators Manual were used in determination of the OHWM. These include: (1) a clear vegetation mark; (2) wetland/upland edge; (3) elevation; (4) a combination of changes in vegetation, elevation, and landward limit of drift deposition; (5) soil surface changes from algae or sediment deposition to areas where soils show no sign of depositional processes; and/or (6) soil profile changes from wetter conditions (low chroma, high soil organic matter, and lack of mottling) to drier conditions (higher chroma, less organic matter, or brighter mottles). In October 2018, we investigated the river and riparian habitat conditions in the vicinity of the SR 202 bridge across the Snoqualmie River. Replacement of the bridge is part of a planned project by WSDOT at some time in the future, independent of the Snoqualmie Mill project.

2.4.4 Wildlife

In addition to field investigations to identify and delineate wetlands, we conducted wildlife field investigations of the project site and vicinity on April 13, 2012, and July 27 and August 18, 2017. During these field investigations, we searched for the presence or

habitat of wildlife species that have been listed endangered, threatened, or sensitive by the USFWS (2018) or WDFW (2016).

3.0 EXISTING CONDITIONS

Detailed results of our investigations are presented in our previous reports that have been reviewed and accepted by the U.S. Army Corps of Engineers, Washington Department of Ecology, and the City of Snoqualmie. We rated all wetlands using the 2014 Washington Department of Ecology Wetlands Rating System for Western Washington (Hruby 2014) and typed all streams per definitions and requirements of City of Snoqualmie code and these were approved by the City of Snoqualmie (2016) during its review of the updated Sensitive Area Study (Goldsmith 2016) for the Snoqualmie Mill Planning Area, as part of the Annexation Implementation Plan review and approval via Resolution 1370. A general summary of the site conditions with respect to wetlands, streams, and fish and wildlife habitat is presented below. Refer to our previous reports for more detailed descriptions of wetlands, streams, and regulated ditches (Raedeke Associates, Inc. 2012, 2015, 2016) and the Goldsmith (2012b) Sensitive Area Study for the Snoqualmie Mill, as updated for the Mill Planning Area (Goldsmith 2016).

3.1 RESULTS OF BACKGROUND INVESTIGATION

For the current study of the area encompassing the location of the proposed stormwater outfall to the Snoqualmie River and roundabout at the intersection of SE Mill Pond Road and the Snoqualmie Sand and Gravel Company haul road (hereafter current study area), we reviewed background information for those areas that we had previously investigated as part of the City-approved Sensitive Area Study (Goldsmith 2012b, 2016). We also reviewed current background information regarding fish and wildlife usage of the Snoqualmie Mill PCI Plan area, as appropriate.

3.1.1 Wetlands

Soil Conservation Service Maps

Soils for the on-site area of investigation are provided in the October 12, 2012 wetland delineation and wildlife reconnaissance report for the project (Raedeke Associates, Inc. 2012). These include Arents, 0% to 8% slopes (Map Unit 9); Barneston gravelly ashy coarse sandy loam, 0% to 8% slopes (Map Unit 10); Barneston gravelly ashy coarse sandy loam, 8% to 30% slopes (Map Unit 14); Belfast silt loam, 0% to 2% slopes (Map Unit 20); and Nooksack silt loam 0% to 2% slopes (Map Unit 157). Soils within the off-site stormwater outfall areas are mapped as Nooksack silt loam 0% to 2% slopes (Map Unit 157) (Figure 3). None of the soils mapped within the site by the NRCS (2012) are listed as hydric soils of the state of Washington (U.S.D.A. Soil Conservation Service 1991, Federal Register 1995); however, several of the mapped soil units may include area of hydric soils such as Orida silt loam (Belfast and Nooksack soil units), Norma loam (Arents and Barneston and soil units), and Puget silty clay loam (Nooksack silt loam).

National Wetland Inventory

The USFWS (2012) NWI on-line mapper depicts an approximately 20-acre palustrine, forested/scrub-shrub, seasonally flooded (PFOC/PSSC) wetland in the northwest portion of the PCI Plan area, north of the Snoqualmie Sand and Gravel Company haul road

(Figure 4). The NWI depicts riverine, upper perennial, unconsolidated bottom, permanently flooded, excavated (R3UBHx) and intermittent, streambed, seasonally flooded, excavated (R4SBCx) wetlands within ditches in the eastern and central portions of the PCI Plan area and a riverine, intermittent, streambed, seasonally flooded (R4SBC) wetland along the east perimeter of the PCI Plan area. The NWI also depicts a very small (0.10 acres), palustrine, unconsolidated bottom, semi-permanently flooded, excavated wetland (PUBFx) wetland in the westernmost portion of the PCI Plan area.

The NWI does not depict any other wetlands within the current study area (Figure 4). However, it does depict several wetlands within 300 feet of the site. These are the following: (1) a lacustrine limnetic, unconsolidated bottom, permanent (L1UBH) wetland within Borst Lake immediately south of the site; (2) a lacustrine limnetic, unconsolidated bottom, permanent, wetland impounded near the west corner of the site within the Snoqualmie River Channel just upstream of the Snoqualmie Falls; (3) a riverine, upper perennial, unconsolidated bottom, permanent (R3SBC) wetland within the Snoqualmie River channel; and (4) a palustrine, unconsolidated bottom, permanent, excavated (PUBHx) wetland approximately 300 feet north of the northeast portion of the site, upslope of the site and on the north side of the Snoqualmie Sand and Gravel Company haul road..

Wetlands shown on the NWI are general in terms of location and extent, as they are determined primarily from aerial photographs. Thus, the number and areal extent of existing wetlands located within the project area may differ from those marked on an NWI map.

City of Snoqualmie Wetland and Stream Inventory

The City of Snoqualmie (2015a) Wetlands and Streams Map does not depict wetlands within the current study area. The City of Snoqualmie (2015a) map depicts an off-site water body within the Snoqualmie River channel along the west boundary of the site on the west side of SE Mill Pond Road.

3.1.2 Streams

Existing public maps of the project area contain considerable stream routing and fish use errors as referenced in Cedarock Consultants, Inc. (2012). Most importantly Stream 1 presently flows in a westerly direction to the Snoqualmie River, rather than southward to Borst Lake (Figure 7). In addition, a number of channels identified on site by the public map sources have been classified as unregulated ditches in Cedarock Consultants, Inc. (2012).

Fish use and habitat conditions in the Snoqualmie River adjacent to the project site are described in Overman (2008). The project site lies adjacent to the Snoqualmie River on the right (east bank) near river mile 41 and above Snoqualmie Falls, an impassable barrier to anadromous fish. The Snoqualmie River at this point is the mainstem of the river, only two to three miles below the confluence of the South, Middle and North forks

of the Snoqualmie River. Mean monthly flow rates of record between 1958 and 2017 in the Snoqualmie River above Snoqualmie Falls range between 819 cfs in August to 3,750 cfs in November.

While the habitat reaches in the upper Snoqualmie River basin in the South, Middle and North forks of the river are higher gradient with a wide range of habitats ranging from braided channels to boulder cascades and small falls, "the four-mile reach between the confluence of the North and Middle Forks and Snoqualmie Falls is broad and flat with moderate to low gradient. Quality pool-riffle habitat through gravel and rubble substrate turns to long riffle-free glides with a few sandy point bars, and finally to long deep glides and pools over sandy to muddy substrate as the river nears Snoqualmie Falls (Pfeifer 1985 in Overman 2008)."

Conditions in the Snoqualmie River near the project site consist of the low gradient deep glides and pools as described above. In addition, riparian conditions along the east bank of the river adjacent to the site can be described as largely invasive and native shrubs and trees inhabiting the previously disturbed ground of the margin and shoulder areas between the existing SE Mill Pond Road and the shoreline of the Snoqualmie River.

As noted above, the project site lies only a few river miles downstream of the joint confluence of the North, Middle and South Forks of the Snoqualmie River. These rivers have been monitored by the King County Water and Land Resources Division for a wide range of conventional, nutrient, and bacteria parameters (King County 2019). These data show water quality conditions in each of the forks to be of high quality given they originate from relatively undeveloped watersheds upstream of this point. The Water Quality Index for Streams and Rivers provides an index combining several of these parameters for an overall rating. Each of these forks are rated as "Low Concern" for water quality degradation over time. As these three forks form the Main Stem Snoqualmie River a relatively short distance upstream of the site, it can be expected that water quality conditions are also good in the river adjacent to the project site.

3.1.3 Fish and Wildlife

WDFW PHS Database

The WDFW (2012, 2018a) PHS database does not map the presence of federal or state listed wildlife species within the site or within 2,000 feet of the site boundaries (Figure 6). Listed salmonid fish species, including chinook salmon, bull trout, and steelhead trout, all are known to occur in the Snoqualmie River and its tributaries downstream of Snoqualmie Falls.

The WDFW (2012, 2018a) PHS map (Figure 6) depicts a large area (shown in purple) of "regular concentration" of elk (*Cervus elaphus Canadensis)*, a WDFW [2016] species of recreational, commercial, and/or tribal importance) to the south, east, and north of the Snoqualmie Mill property, and extends into the eastern and southern portions of the site.

Information provided by the WDFW (2018a) PHS database indicates that the area is part of the "Green/Cedar River elk range." King County elk habitat includes resident and winter migratory elk. The elk that occur on the project site and vicinity are designated as a satellite herd of the North Mount Rainier population. The North Rainier Elk Herd Plan (Spencer 2002) had a goal of increasing this herd from 175 to 500 elk. With no hunting on the private lands within the area, such as the Snoqualmie Mill property and the Meadowbrook Farm property, the herd now has grown to least 400 to 450 elk. The elk are managed on the Snoqualmie Mill Property by WDFW as part of GMU 4601 (a special management unit within GMU 460) with very liberal seasons with the objective of stabilizing or decreasing the herd to reduce property damage complaints (Smith, WDFW, personal communication, Sept. 1, 2017 and Feb. 5, 2018). Hunting seasons include special antlerless elk hunts for youth hunters, disabled hunters, general hunters, and Master Hunters, in addition to antlered bull permit seasons. Current hunter harvests are thought to have now stabilized the elk herd.

No other species of concern are mapped (WDFW 2018a) as occurring on the property. A peregrine falcon nest site was previously mapped (WDFW 2012) approximately 2,000 feet northwest of the site in the vicinity of Snoqualmie Falls. The peregrine falcon is not a federally or state listed species but is a federal species of concern. At the time of our initial site investigations, the peregrine falcon was listed as a state sensitive species but has since been de-listed by WDFW (Vekasy and Hayes 2016) due to steady population recovery, so it no longer shows on the WDFW (2018a) PHS database. There are no other priority wildlife species or habitats mapped (WDFW 2018a) within approximately 2,000 feet of the Snoqualmie Mill property.

Federal Databases

Information regarding endangered and threatened species to address in this document was compiled from agency web sites (USFWS 2018; NOAA Fisheries 2012, 2018).

The USFWS (2018) list of threatened and endangered species for the project area includes the gray wolf, North American wolverine, marbled murrelet, northern spotted owl, yellow-billed cuckoo, and bull trout, as well as final designated critical habitat for bull trout. The NOAA Fisheries (2012, 2018) list includes the Puget Sound distinct population segment (DPS) of steelhead trout (hereafter "steelhead"), and the Puget Sound evolutionarily significant unit (ESU) of chinook salmon (hereafter "chinook"). The anadromous salmonid fish species are documented within the Snohomish River watershed. However, Snoqualmie Falls, located over 2,000 feet downstream of the project site, forms a natural barrier to upstream movements of fish. As such, listed anadromous fish do not occur within the portion of the Snoqualmie River that runs south of Borst Lake south of the project site.

In 1973, under provisions of the federal Endangered Species Act (ESA), gray wolves (*Canis lupus*) were classified as an endangered species in Washington. In 2011, wolves

in the eastern third of Washington were removed from federal protections under the ESA. Wolves in the western two-thirds of Washington continue to be protected under the ESA and are classified as an endangered species under federal law. At present, wolves are classified as an endangered species under state law (WAC 220-610-010) throughout Washington regardless of federal classification. The state has been divided into three recovery areas: Eastern Washington, the Northern Cascades, and the Southern Cascades and Northwest Coast. All of the known packs in Washington occur within the Eastern Washington and North Cascades recovery areas. Although individual wolves have occasionally been sighted in King County (WDFW 2018a), no packs are known to occur anywhere near the project site. The nearest known pack to the project site is the Teanaway, located east of the Cascade crest in central Washington WDFW et al. 2018). Consequently, wolves are not expected to occur on the site or in the vicinity on a regular basis.

In 2013, the USFWS proposed threatened status for the North American wolverine, but the proposed rule was withdrawn in 2014 (Federal Register 2013, 2014d). Although indicated as proposed threatened and as potentially occurring within the project area vicinity in King County by the USFWS (2018), the North American wolverine has not been regularly documented within King County, particularly within the urbanized Puget Sound lowlands. Apparently, a wolverine was sighted in the Tokul area in May 2018, and one (which may have been the same animal) was killed trying to cross I-90 near Preston in June 2018 (Jason Rogers, City of Snoqualmie, pers. comm., June 28, 2019; Conservation Northwest 2019). Recent sightings of wolverines in Washington include the southern Washington Cascades (WDFW 2019; Conservation Northwest 2019). However, established populations in Washington have been documented only in the North Cascades and northeastern Washington (Aubry et al. 2007, 2016), and the existence of a breeding population farther south in the Washington Cascades and foothills has not yet been determined (WDFW 2019). Consequently, we do not expect this species to occur regularly in the project vicinity.

Marbled murrelets and northern spotted owls are known to occur in King County throughout the year (Smith et al. 1997, WDFW 2018a). However, the lack of old, multi-layered forest on the site or in the vicinity and the urbanizing, lowland setting make it highly unlikely that these species would occur in the project area. Data from the PHS database maintained by WDFW (2018a) provide no records of known breeding sites or occurrences of either species within at least several miles of the project site or Action Area. The remaining stands of trees within the site or vicinity are generally too young and too fragmented by urban development to provide suitable breeding sites for this species, or to provide suitable or accessible foraging habitat for spotted owls. We observed neither species on the site during our field investigations. Based on all of these factors, we do not expect either species to be present within the Action Area.

Critical habitat was designated by the USFWS for northern spotted owls on January 15, 1992, and for marbled murrelets on May 24, 1996. However, no

critical habitat was located for either species within several miles of the project site. The nearest known nest site on Rattlesnake Mountain, approximately 2 miles southwest of the project site, has not been active since the 1990s. Further, no large stands of older, multi-layered, conifer-dominated forest, and/or forest containing trees with large platforms, exist within the project vicinity, so suitable habitat is not present for northern spotted owls or marbled murrelets. Therefore, we conclude that critical habitat for northern spotted owls and marbled murrelets does not exist within the project vicinity.

In October, 2014, the U.S. Fish and Wildlife Service listed the western distinct population segment (DPS) of the yellow-billed cuckoo as a threatened species (Federal Register 2014c). In western North America, the yellow-billed cuckoo typically occupies forested streamside habitat, particularly where dominated by willows and cottonwoods that form open woodlands with dense, low vegetation; they are generally absent from large, urban areas and dense forests (Seattle Audubon Society 2018). Yellow-billed Cuckoos apparently have been extirpated as a breeding population in Washington, with only occasional sightings over the last 20 years (Seattle Audubon Society 2018; Smith et al. 1997). Because yellow-billed cuckoos are not currently known to occur regularly in Washington, none of the proposed critical habitat is located in Washington (Federal Register 2014a, 2014b, 2014c), and based on the relative lack of suitable riparian habitat on the project site or vicinity, we do not expect this species to occur anywhere within the project vicinity.

Bull trout were listed as a threatened species by the USFWS on November 1, 1999. Bull trout are native char, typically found in high, glacially fed watersheds or near cold perennial springs, although individual fish can occur downstream throughout larger river systems (Fraley and Shepard 1989; Rieman and McIntyre 1993, 1995; Buchanan and Gregory 1997). Preferred spawning habitat consists of low-gradient streams with loose, clean gravel (Fraley and Shepard 1989) and water temperatures of 5°C to 9°C in late summer to early fall (Goetz 1989). Bull trout generally live in freshwater their entire lives, although a small component of the Puget Sound population is anadromous.

Bull trout critical habitat was designated by the USFWS on September 26, 2005. Under the ESA listing, the USFWS assumes that bull trout are present in suitable habitat in King County waters unless proven otherwise. However, extensive instream surveys for bull trout have failed to detect its presence anywhere in the three forks of the Snoqualmie River above the falls (Berge and Mavros 2001). Therefore, it is our assessment that critical habitat for bull trout is not found within the project vicinity.

As noted above, the listed salmonid fish species, including the Puget Sound DPS for steelhead and the Puget Sound ESU of chinook salmon, are documented within the Snohomish River watershed. However, given that the project site is located approximately 2,000 feet upstream of Snoqualmie Falls, chinook are not expected to occur in the project vicinity. Rainbow trout above Snoqualmie Falls are not considered a

protected population of the anadromous steelhead population below the falls (Hard et al. 2007).

3.2 RESULTS OF FIELD INVESTIGATIONS

A total of 17 wetlands occur within the Snoqualmie Mill PCI Plan area. These consist of those wetlands delineated during our initial studies in 2012 and those identified during our subsequent studies of areas per criteria of the COE (2013) MFR (Figures 7 and 8). City of Snoqualmie (2018c) regulatory ratings and standard buffer widths for wetlands identified within the Snoqualmie Mill PCI Plan area, as well as for those located off-site on slopes east of the site are provided in Table 1.

We also identified off-site wetlands within 300 feet of the site and project planning areas. These include wetlands within the eastern slopes containing the old mill town, as well as Borst Lake to the south of the Snoqualmie Mill PCI Plan and several wetlands within the Snoqualmie River channel as identified by the USFWS (2012) National Wetlands Inventory.

We did not identify wetlands or streams, other than the Snoqualmie River, within the ROW of SE Mill Pond Road. We delineated the portion of the OHWM for the right bank of the Snoqualmie River during our 2017 investigation of that area. Data forms for our investigation of the SE Mill Pond Road ROW are provided in Appendix A. All data forms or wetlands identified wetlands and uplands investigated during our previous investigations of those areas that have been verified by the COE, WDOE, and City of Snoqualmie are found in our previous reports for the Snoqualmie Mill site (Raedeke Associates, Inc. 2012, 2015, 2016).

3.2.1 Wetland Descriptions

Wetland 7

Wetland 7 is a Category II wetland located in the southeastern corner of the PCI Plan area and extends offsite to the east (Figures 7 and 8). The wetland consists of forest and scrub-shrub vegetation classes.

Wetland 7 hydrology is primarily fed by groundwater seepage and sheet flows off-site to the southwest down a moderate slope and across an old railroad bed and into Borst Lake.

Wetlands 8 and 9

Wetlands 8 and 9 are Category II wetlands that occur within shallow depressions in the northeast portion of the PCI Plan area in a portion of the site that was filled prior to 1920 according to historic aerial photographs (Figures 7 and 8). Wetland 8 consists of a forested vegetation class dominated by young (20-year-old) balsam poplar and Pacific willow. Wetland 9 consists of forested and emergent vegetation classes dominated by young balsam poplar, and lamp rush and reed canarygrass, respectively.

Hydrology for both wetlands appears to be provided primarily from seasonal rainfall and connection. In addition, these wetlands occur in a portion of the site where the old fill is less than 18 inches deep. This allows saturation from the shallow groundwater table within native soils below the fill to provide support for wetland hydrology. Wetland 8 flows into a road-side ditch (Ditch 24) that flows southward to the main drainage ditch network that includes Wetland 12 in the central portion of the mill site. Wetland 9 flows into a roadside ditch (Ditch 34) that flows north through a series of culverts to Stream S-1 within Wetland 10.

Wetland 10

Wetland 10 is a Category II wetland located along the north perimeter of the PCI Plan area and is associated with Stream S-1 (Figures 7 and 8). The wetland consists of forest vegetation that is dominated by 30- to 40-year-old Pacific willow and red alder trees.

Wetland hydrology is provided by Stream S-1 which meanders through the center of the wetland. Stream S-1 flows out of Wetland 10 through a culvert beneath the main haul road and into Wetland 11 located on the west side of the road.

Wetland 11

Wetland 11 is a Category I wetland located in the north-central portion of the PCI Plan area (Figures 7 and 8). The wetland consists primarily of a scrub-shrub vegetation class, but review of aerial photos of the wetland indicate that the wetland also includes several areas within the interior that are dominated by forest vegetation and other areas that are off-site to the north that are dominated by emergent vegetation. The wetland continues off-site to the north and west of the property boundaries.

Wetland 11 is permanently inundated during years of normal precipitation. The primary source of hydrology is provided by Stream S-1 which flows into the east side of the wetland through a culvert from Wetland 10 under the main haul road. The wetland also receives water from surface sheet flow from off-site areas located to the north and may also receive some groundwater discharge from off-site areas to the north, given its proximity to slopes north of the site. Stream S-1 exits from an off-site portion of Wetland 11 at the southwest corner of the wetland via a ditch that flows along north and then west sides of the haul road that serves an off-site gravel quarry located north of the site prior to discharge to the Snoqualmie River located approximately 600 feet downstream from Wetland 11.

Wetland 12

Wetland 12 is a Category II wetland that consists of a system of deep drainage ditches within the central and west-central portion of the PCI Plan area (Figures 7 and 8). The ditch ranges in depth from approximately four feet in the northern segments up to approximately 8 feet or deeper in the southern segments. Wetland 12 consists of

emergent and aquatic bed vegetation classes and also includes a substantial area of open water within the center of each of the ditch segments. The emergent community occurred primarily along the edges of the ditches and was dominated by reed canarygrass, lamp rush, red-tinge bulrush, broadleaf cattail, swamp smartweed (*Polygonum hydropiperoides*, OBL), and narrowleaf bur-reed (*Sparganium angustifolium*, OBL). An aquatic bed vegetation community was present within several of the ditches and was dominated by common duckweed (*Lemna minor*, OBL) and floating pondweed (*Potamogeton natans*, OBL).

Wetland 12 hydrology is primarily from its connection to groundwater within the native soils below the fill (AESI 2020). Seasonal rainfall and sheet flow from surrounding uplands also contributes to wetland hydrology. Wetland 12 flows through a culvert at its south end to the Bost Lake.

Wetlands 13, 14, and 15

Wetlands 13, 14, and 15 are Category II wetlands in the east portion of the PCI Plan area within 4- to 7-foot-deep drainage ditches that drain westward to the deep ditch encompassing Wetland 12 (Figures 7 and 8). Wetlands 13, 14, and 15 consist of emergent vegetation classes. The emergent communities were dominated by reed narrowleaf bur-reed, reed canarygrass, lamp rush, and red-tinge bulrush.

Hydrology to Wetlands 13, 14, and 15 appears to be provided by a system of storm drains located in the central portion of the mill site east of Wetland 12 and by connection to groundwater within the native soils below the fill. The wetlands flow through culverts beneath a mill service road to Wetland 12.

Wetlands 19, 20/21/22 mosaic, 24, 25, 26, 27, 28, 29

These Category III and Category II wetlands occur on old fill within the central and western portion of the PCI Plan area (Figures 7 and 8). These wetlands contain forested and scrub-shrub communities dominated 20- to 30-year-old trees.

These wetlands are seasonally inundated and receive water exclusively from direct precipitation and sheet flow from surrounding uplands. Wetlands 24, 25, 28, and 29 are directly connected by ditches to Wetland 12. Wetlands 19, 20/21/22 mosaic, 26, and 27 do not have channelized surface connection to downstream wetlands or streams.

Off-site Wetlands

Off-site wetlands include Borst Lake (Mill Pond), a Category I/II wetland, as well as 7 other Category III and Category II wetlands on the slope east of the PCI Plan area where the old mill town was historically located. The majority of these off-site wetlands consist of forest and/or scrub-shrub vegetation classes (Wetlands 1, 3, 4, 5) dominated by cascara buckthorn (*Frangula purshiana*), red alder, western arborvitae (*Thuja plicata*, formerly western red cedar), Himalayan blackberry and salmon raspberry (*Rubus*

spectabilis). Wetlands 2 and 6 consisted of emergent vegetation classes that were dominated by skunk cabbage (*Lysichiton, americanus),* field horsetail (*Equisetum arvense*), and common ladyfern (*Athyrium filix-femina*).

Hydrology for each of these wetlands primarily is provided by groundwater discharge. Wetlands 1, 2, 4 and 18 also received hydrology from seasonal streams (Streams 3, 4, 5, and 6) that flowed from the area east of 396th Avenue SE. Wetlands 1, 2, 4, 5, and 6 flowed into seasonal stream channels or ditches that discharge to pipes that drained into the Snoqualmie Mill underground stormwater management facilities. Wetland 3 infiltrated into permeable soils down slope from the wetland and did not outlet to a stream or ditch.

We did not observe any other off-site wetlands within 225 feet of the Snoqualmie Mill site planning area boundaries.

3.2.2 Wetland Buffers

We analyzed buffer quality based on standard buffer widths required by current City of Snoqualmie (2018c) code. Buffers for wetlands within the Snoqualmie Mill PCI Plan area currently provide a low level of protection to wetland functions due to the historic and current industrial and commercial use of the site as well as the use of the site by the DirtFish driver training school. Existing gravel roads, and concrete or asphalt equipment storage and staging areas within the site and the paved haul road providing access for the off-site quarry encompass and extend to within 5 to 20 feet of the edges of the majority of Wetlands 9, 12, 13, and 24 and up to half of perimeters of Wetlands 8, 14, 15, and 25. Vegetated portions of wetland buffers that have been able to establish on the old compacted fill found throughout the site consist predominantly of an interspersion of grassland and non-native, invasive shrubs species such as Himalayan blackberry and Scotch broom. Areas that have been left undisturbed for more than 10 years consist of young trees such as red alder, Douglas fir, and balsam poplar with an understory of Himalayan blackberry. These vegetated buffers are located predominantly in the western and southern portion of the property.

3.2.3 Stream Descriptions

Cedarock Consultants, Inc. (2012) visually evaluated all three Planning Areas of the Snoqualmie Mill site for the presence of stream courses and their habitat conditions, and Raedeke Associates, Inc. staff reviewed these features during subsequent investigations. The Snoqualmie River was mapped during these subsequent investigations. In addition to the Snoqualmie River, six water courses were found to meet the City of Snoqualmie stream definition with Stream 1 the only stream occurring in Planning Area 1. Stream 2 lies within Planning Area 2, and the remaining four streams are entirely off-site within property previously owned by Snoqualmie Mill Ventures LLC, but now owned by King County. Planning Area 3. Following is a short summary of conditions found for each of the streams from Cedarock Consultants (2012).

Stream 1 is a perennial stream that flows east to west across the northern portion of Planning Area 1, flowing largely in a straight path along the northern edge of the existing haul road and discharging at its confluence with the Snoqualmie River (Figure 7). The on-site portion of Stream 1 flows through Wetland 11. The habitat conditions in Stream 1 are fair to good quality based on low water temperature, moderate flow, and moderate habitat diversity. Juvenile fish, potentially resident trout, have been observed in this stream. Stream 1 is classified as a Class 2 Stream without anadromous salmonids.

Stream 2 is within the southern portion of Wetland 12. The stream flows from approximately the mid-point in the overall site southward, discharging to Borst Lake (Figure 7). While Borst Lake supports fish, water quality in the stream is poor, and the stream may not support fish. This stream is classified as a Class 2 Stream without anadromous salmonids.

Streams 3 through 6 occur east of the PCI Plan area on property now owned by King County, originating on slopes east of 396th Drive SE and do not extend onto the project site. These streams flow into a piped stormwater collection system underlying the mill property before flowing to the Snoqualmie wastewater treatment plant (Cedarock Consultants 2012). Streams 3 through 6 are all classified as Class 3 Streams.

Riparian conditions in Streams 1 and 2 are poor with degraded habitat functions, and water quality is also poor due to transmission of fine sediments from the existing road surfaces through areal suspension or localized stormwater runoff. The poor riparian buffer conditions provide little interception of either sources of fine sediments. Riparian, and water quality conditions in Streams 3 – 6 are better than on the project site due to ground water sources and better riparian conditions off-site.

AESI (2020) sampled surface water quality at three locations onsite on December 18, 2017 from Streams 1 and 2. These include the inlet of Stream 1 at the northeast corner of the site, its discharge from the site along the western boundary, and in Stream 2 near where it discharges to Borst Lake. The samples were measured in the field by AESI for temperature, pH, turbidity, dissolved oxygen, and conductivity. Samples were submitted to Analytical Resources, Inc. (ARI) in Tukwila, Washington and tested for biochemical oxygen demand (BOD), total alkalinity, fecal coliforms, total suspended solids, total ammonia-nitrogen, nitrate plus nitrite-nitrogen, total phosphorus, ortho phosphate, total petroleum hydrocarbons, oil and grease, dissolved copper, dissolved lead, dissolved zinc, calcium, magnesium, and hardness (AESI 2020).

While these samples represent only a single point in time, the relative location of each of the sampling sites would indicate some degradation of water quality as these streams currently pass through the site. The intervening stream reaches on site are occupied by gravel roads with relatively heavy truck traffic or regular use by DirtFish rally cars. The road surfaces and resulting stormwater runoff and in-channel conditions will tend to show increases in sediment and turbidity, with associated increases in nutrients. Lower

dissolved oxygen in the Stream 1 and 2 discharge points may be reflective of the wetland conditions adjacent to Stream 1, or possibly groundwater inflows affecting both streams, as both wetlands and groundwater may tend to contain lower dissolved oxygen. Stream 1 inlet bacteria and nitrate plus nitrite concentrations were the only parameter somewhat elevated from the discharge samples. Why these may be elevated is unclear. Bacteria may represent the presence of wildlife or hobby farms in the Stream 1 drainage east of the site.

3.2.4 Fish and Wildlife

Fish

Fish present in the vicinity of the site are limited to salmonid trout and mountain whitefish (*Prosopium williamsoni*) populations isolated upstream of the Snoqualmie Falls, along with various native non-salmonids. Trout salmonids in the Snoqualmie River Basin upstream of Snoqualmie Falls include resident cutthroat trout (*Oncorhynchus clarki*), rainbow trout (*Oncorhynchus mykiss*), and eastern brook trout (*Salvelinus fontinalis*). Rainbow trout above Snoqualmie Falls are not considered a protected population of the anadromous steelhead population below the falls (Hard et al. 2007). After considerable sampling effort, bull trout (*Salvalinus confluentus*) have not been located in the Snoqualmie River above the falls (Berge and Mavros 2001).

Native non-salmonids common in the Snoqualmie River above the falls include largescale sucker (*Catostomus macrocheilus*), longnose dace (*Rhinichthys cataractae*), shorthead sculpin (*Cottus confuses*) mottled sculpin (*Cottus bairdi)*, and western brook lamprey (*Lampetra richardsoni*) (Overman 2008). Overman (2008) also notes that in the Snoqualmie River above the falls:

> Cutthroat trout have always been known to be abundant and, along with mountain whitefish, are likely native to these reaches. Rainbow trout may be native above Snoqualmie Falls, but, as with eastern brook trout, have also been established through planting of hatchery fish (Pfeifer 1985). Hybrid characteristics between cutthroat trout and rainbow trout have been observed although genetic methods are required to determine the extent to which hybridization has occurred (Pfeifer 1985). There is a long history of stocking all three trout species, and detailed records beginning in 1933 are available in Pfeifer (1985) and in the WDFW hatchery release database.

In addition, "Hatchery propagated Chinook salmon (*Oncorhynchus tshawytscha*) and coho salmon juveniles (*Oncorhynchus kisutch*) were planted occasionally (above the falls) in the past to make use of rearing potential in the South Fork (Williams et al. 1975), but this no longer occurs (USFS 1995)." (Overman 2008).

Terrestrial Habitat Conditions

As described above, vegetation within the western portion of the site (Planning Area 1) is a mosaic of young forest, shrub-lands, and sparsely vegetated areas dominated by grasses. Most of the central and eastern portions of the site in the area of the old mill lumber processing facilities (encompassing most of Planning Areas 2 and 3) is paved, and very little is vegetated with the exception of the numerous ditches that extend through this portion of the site to collect and manage stormwater. Most of the ditches are regularly maintained to prevent establishment of tall shrubs and trees. Deciduous forest encompasses a perennial stream that flows along the northern perimeter of the central portion of the site. A narrow band of deciduous forest is also found along the southern perimeter of the central area between the lumber processing facilities and the off-site Borst Lake.

Vegetation within the western portion of the site is dominated by Himalayan blackberry and Scotch broom and scattered clusters of Douglas fir, balsam poplar, and red alder saplings. The clearings were dominated by various grasses and sedges. Several clearings were dominated by broadleaf cattail, slough sedge, and red-tinge bulrush.

Ditches within the central portion of the site in the vicinity of the old mill buildings and lumber processing yards are dominated by Himalayan blackberry (*Rubus laciniatus*), reed canarygrass (*Phalaris arundinacea*), common rush (*Juncus effusus*), red-tinge bulrush (*Scirpus microcarpus*), narrowleaf bur-reed (*Sparganium angustifolium*), and broadleaf cattail (*Typha latifolia*). Where shrubs or sapling trees were present within the ditches, these generally consisted of Sitka willow (*Salix sitchensis*) and red alder. Areas of old fill that have not been paved or surfaced with gravel in the northern portions of the mill site are dominated by shrubs, sapling trees, or grasses and other herbaceous species such as balsam poplar, red alder, Sitka willow, Himalayan blackberry, common rush, common velvetgrass (*Holcus lanatus*), reed canarygrass, and various sedges (*Carex spp.*).

Special Habitat Features

Special habitat features include biologic elements such as edges between plant communities or successional stages, snags, and coarse woody debris, which are often important to wildlife (Brown 1985, Johnson and O'Neil 2001, Thomas and Verner 1986). The most distinct edges on the Snoqualmie Mill site were those between the bands of young forest and shrub cover along the ditches and early successional grass and herb-dominated areas, as well as areas of pavement and gravel. Although these edges have developed over time following abandonment of mill processing activities, they are probably used by forest species, as well as species that are more adapted to shrub thickets and unmowed, early successional areas.

Snags (dead or partly dead trees at least 4 inches dbh and 6 feet tall) are important to many wildlife species (Cross 1986, Neitro et al. 1985, Scott et al. 1977 in Ohmart and Anderson 1986), for nesting, feeding, and roosting. Given the land use history and

management on site and the relatively young forest development since areas were abandoned, snags were generally absent from the site.

Coarse woody debris includes downed logs and major limbs of trees lying on the ground. Downed logs provide many habitat features, including perch sites, food, nest cavities, and cover for many species, such as some amphibians (Jones 1986). A few small downed logs were observed in the young forested stands, and consisted mainly of small to medium-sized red alder, with some slash piles of young trees (including Douglas fir) from areas that had been recently cleared as part of ongoing site uses.

Invasive Species

Given the history of land use on the site, and the subsequent development of vegetation communities on and adjacent to old fill, these communities include a variety of plant species adapted to disturbed areas, which include several non-native species that are considered to be invasive. The most widespread and abundant of these species is Himalayan blackberry, which is found in dense thickets adjacent to the ditches, along the south boundary of the project that borders Borst Lake, in the shrub-dominated areas, and within the understory of the young developing forest stands. Scotch broom was also common in the shrub- and herb-dominated areas, particularly in the western and central portions of the site. Reed canarygrass was also observed in the herb-dominated fields on old fill that had not been paved. Patches of Japanese knotweed (*Polygonum cuspidatum*) and orange-eye butterfly bush (*Buddleja davidii*) were also found along the south boundary of the site near Borst Lake.

Wildlife

The project site and the surrounding lands provide habitat for a wide variety of native animal species common to young forests, successional shrublands, and grassy meadows, and palustrine wetlands of the Puget Sound lowlands. Ongoing human activities on and around the site, both past and present, including past mill operations and extensive areas of fill, the current rally car training activities, on-site warehouses and equipment storage, and soil management, as well as sand and gravel mining hauling and associated traffic to the north, have determined the configuration and condition of vegetation cover types currently found on the site and vicinity. Among the habitat types found on-site, the fewest species are expected to occur on areas of pavement, bare ground, existing storage facilities, and areas used by the rally car training school.

Not all of the species regularly found in lowland habitats of the Puget Sound area would necessarily inhabit the project site and vicinity, but a variety of species is expected to occur in the habitats found on site. Some species expected to occur on site possibly do so in low numbers or only during certain times of the year. Species likely to be present on this site would also be expected in similar habitats in the Puget Sound lowlands. The habitats on the site were relatively common in the region.

During our field investigations from 2012 to 2017, we recorded the presence of 37 species of wildlife on the site and immediate vicinity, mostly birds (Table 3). These included Canada geese, mallards, and several species of swallows associated with Borst Lake just south of the project site. The species we recorded on site are relatively common and typical of field, shrubland, and young forest habitats found in the urbanizing areas of the Puget Sound Lowlands. Many are year-round residents, whereas others are Neotropical migrants that occur in the area during the spring and summer months. Bald eagles were observed flying over the site on various occasions. No nests were observed on the site or vicinity, nor are any nests known to occur near the project site.

Several species of mammals or their sign were observed on site (Table 3). These included black-tailed deer, elk, European cottontails, black bear, raccoon, bobcat, mountain lion, and coyote. Elk were observed in several locations on site, typically in the western and southwestern portions of the site in the wetlands and forest and field habitats that have developed over old fill material. These areas provide both security cover and elk forage. However, elk sign (pellet groups) were observed throughout the site, including signs of bedding in a grassy field north of the old mill powerhouse in the southeastern part of the site. It appears that the elk may use any portion of the site during the overnight hours when human activity subsides (i.e., when the rally cars are not active on site), and during periods of high activity, they move to the western portions of the site (beyond the rally car routes) dominated by young forest and shrub cover.

Several species of amphibians were observed on site, primarily in the sedge meadows and areas of seasonal ponding on the filled areas in the western part of the site. These included Pacific chorus frogs, rough-skinned newts, and Northwestern salamanders.

3.2.5 Endangered, Threatened, Sensitive, and Other Priority Wildlife Species

As noted above, several species of salmonid fish, including Chinook salmon, steelhead, and bull trout, all listed as federal threatened species, are known to occur within the Snoqualmie River downstream of the falls. See Section 3.2.4 above for further discussion of listed fish species.

No terrestrial species listed as endangered or threatened by state or federal agencies are known to occur in the project area or immediate vicinity, and none were observed during our field investigations. The WDFW (2018) PHS map (Figure 6) shows a regular concentration of elk in the project vicinity as a priority species occurrence, and elk and their sign were observed throughout the property. As discussed above, WDFW manages the local elk herd on the Snoqualmie Mill Property as part of a special management unit within GMU 460 with the goal of stabilizing herd size in the area to reduce property damage complaints.

We heard calls of pileated woodpeckers, a state Candidate species, in the vicinity of the project during our field investigations. However, no birds were seen on site, and no sign

of foraging or nesting were found on site. No snags capable of housing nest or roost cavities were observed during our site investigations. Given the history of land use and relatively young vegetation communities on site, pileated woodpeckers are not expected to use the site to a significant degree. Recently, bald eagles, formerly listed as a threatened species, have been de-listed at the federal and state levels. However, eagles in Washington are still protected by the Bald Eagle Protection Act (RCW 77.12.655), as well as federal law (16 USC 668-668c). Bald eagles have been observed flying over the site, but no nests or roost sites are known to occur on the property or in the vicinity.

4.0 REGULATORY CONSIDERATIONS

4.1 WETLANDS AND STREAMS

Wetlands and streams are protected by Section 404 of the Federal Clean Water Act and other state and local policies and ordinances including Snoqualmie (2018c) Municipal Code. Regulatory considerations pertinent to wetlands identified within the study area are discussed below; however, this discussion should not be considered comprehensive. Additional information may be obtained from agencies with jurisdictional responsibility for, or interest in, the site. A brief review of the U.S. Army Corps of Engineers regulations and City of Snoqualmie policy, relative to wetlands, is presented below. A summary of wetlands, streams, and ditches that are under the jurisdictional authority federal, state, and City of Snoqualmie is provided in Table 2.

4.1.1 Federal Clean Water Act (U.S. Army Corps of Engineers)

Federal law (Section 404 of the Clean Water Act) discourages the discharge of dredged or fill material into the nation's waters, including most wetlands and streams, as well as certain ditches, without a permit from the U.S. Army Corps of Engineers (COE). The COE makes the final determination as to whether an area meets the definition of "Waters of the U.S." as defined by the federal government (Federal Register 1986:41251), and thus, if it is under their jurisdiction. We caution that the placement of fill within wetlands or other "waters of the U.S." without authorization from the COE is not advised, as the COE makes the final determination regarding whether any permits would be required for any proposed alteration (COE 2017b).

Because the COE makes the final determination regarding permitting under their jurisdiction, Snoqualmie Mill Ventures LLC requested a jurisdictional determination from the COE in March 2013. Following extensive coordination with the COE and subsequent hydrologic studies of the site from February 2014 through March 2015, the COE (2017a) issued an approved jurisdictional determination (AJD) for the Snoqualmie Mill property covering wetlands, streams and ditches within the PCI Plan area as well as wetlands and streams located on the east slope encompassing the old mill town on May 3, 2017. The AJD is valid for a period of 5 years from the date of issuance. A copy of the final approved jurisdictional determination is provided in Appendix B.

Per the AJD, the COE determined that jurisdictional "waters of the U.S." within the Snoqualmie Mill PCI Plan area consist of Wetlands 7, 8, 9, 10, 11, 12, 13, 14, 15, 20/21/22 mosaic, 24, 26, 27, 28, 29, Streams 1 and 2, and Ditches 2N, 3S, 7, 9N, 10, 17, 18, 22, 24, 26, 28, 29, 30, 33, 34, 35, 40, 41. The COE also determined that Wetlands 19 and 25 are not "waters of the U.S." because these were isolated from other "waters of the U.S." (Figure 8, Table 2).

4.1.2 Washington State

Section 401 Water Quality Certification and Coastal Zone Consistency

Under Section 401 of the Clean Water Act, an activity involving a discharge in waters of the U.S. authorized by a federal permit must receive certification by the affected certifying agency. In Washington State, the certifying agency is usually WDOE, which has regulatory authority over waters of the state, including streams and isolated wetlands, under the state Water Pollution Control Act (90.48 RCW) and the Shoreline Management Act (90.58 RCW). In addition, if the COE-authorized permit is for actions within the 15 coastal counties, including Pierce County, then the WDOE must confirm or deny that the proposed action complies with the Washington Coastal Zone Management Program.

Under Section 401 of the Clean Water Act, an activity involving a discharge in waters of the U.S. and authorized by the COE must also receive certification that the federally permitted activity complies with the federal Clean Water Act, state water quality laws, and any other appropriate state laws (such as the Water Resources Act and Hydraulic Code). In Washington State, the certifying agency is usually the Washington Department of Ecology (WDOE).

WDOE Regulation of Isolated Wetlands

The WDOE also regulates activities within isolated wetlands that are determined to be non-jurisdictional by the COE under the state Water Pollution Control Act (90.48 RCW). The standards of review for issuance of a permit by the WDOE for activities within non-COE-jurisdictional wetlands are the same as those for Section 401 certifications.

On December 1, 2017 Raedeke Associates Inc. staff met with Mr. Doug Gresham, Wetland Specialist with the Washington Department of Ecology (WDOE), to review Wetlands 19 and 25, over which the COE had chosen to not assert jurisdiction due to their isolation. At that meeting, Mr. Gresham stated that WDOE would regulate all activities within Wetland 19 and 25 (Figures 7 and 8, Table 2). Mr. Gresham (2017) indicated in December 5, 2017, via email, that WDOE determination with regard to Wetlands 19 and 25 should be considered informal and that WDOE would not issue a letter of verification for its determination prior to submittal of a permit application. Mr. Gresham (2017) also stated that the informal determination by WDOE would be valid for 5 years, after which time WDOE would need to inspect the site again to verify the previous WDOE jurisdictional determination.

4.1.3 Washington State Hydraulic Code

Prior to construction or other work that will use, divert, obstruct, or change the natural flow or bed of any state waters, approval by the Washington Department of Fish and Wildlife (WDFW) is required, through provisions of the State Hydraulic Code (RCW 75.20.100-140). The WDFW-administered Hydraulic Project Approval is intended to

protect fish from damage by construction and other activities in all marine and fresh waters of the state. A maximum of 45 calendar days is specified in the agency rules for decision by WDFW to grant or deny approval of a complete application (WDOE 1994, WSFW 2014).

4.1.4 City of Snoqualmie

The City of Snoqualmie (2018c) Municipal Code regulates wetlands and streams under Chapter 19.12 "Critical Areas." Figure 7 shows those areas that are regulated as wetlands or stream per City of Snoqualmie (2018c) code. All wetlands within the Snoqualmie PCI Plan area that were determined to be regulated by either the COE or WDOE are also regulated under City of Snoqualmie (2018c) code. Notably, several ditches that are regulated by the COE as Waters of the United States are not regulated under City of Snoqualmie (2018c) code. With the exception of Stream 2, which is within the southern portion of the system of deep drainage ditches that contain Wetland 12, none of the drainage ditches identified as being "waters of the U.S." or other ditches within the PCI Plan area meet criteria to be regulated as streams by the City of Snoqualmie (2018c). Section 19.12.020(X) of the City of Snoqualmie (2018c) code excludes irrigation ditches, canals, engineered storm or surface water runoff devices or other entirely artificial watercourses unless they are used by salmonids, or unless the created conveyances contain the waters from a stream which was naturally occurring prior to construction/alteration of the conveyance system. None of the drainage ditches, with the exception of Stream 2, meet the City's definition of stream because they are stormwater conveyances that do not contain water from a stream which was naturally occurring prior to construction, nor are they used by salmonids.

Alterations of wetlands and their buffers are generally prohibited, except as allowed under certain conditions specified in Chapter 19.12. The City of Snoqualmie has the final authority to determine wetland ratings, buffers, and allowed uses of wetlands and other sensitive or critical areas that are under their jurisdiction.

The Snoqualmie (2018c) code determines wetland buffer widths based on a wetland's overall rating (Category I, II, III, or IV) and habitat scores using the Washington Department of Ecology (WDOE) wetland rating system (Hruby 2014). SMC 19.12.170 lists prescribed buffer widths for various activities adjacent to Category I, II, III, and IV wetlands. In general, the Snoqualmie (2018c) Municipal Code provides the widest buffers to high quality wetlands (Category I, II, and III) that provide high wildlife habitat function.

Table 1 provides a summary of the WDOE wetland rating scores for all on-site wetlands, their regulatory ratings, and standard buffers, as prescribed by City of Snoqualmie (2018c) code, for wetlands within and adjacent to the Snoqualmie Mill PCI Plan area. All ratings for wetlands within the Snoqualmie Mill PCI Plan area were reviewed and confirmed by City of Snoqualmie staff as part of their review and approval of the Annexation Implementation Plan via Resolution 1370 (City of Snoqualmie 2016).

Detailed information with regard to WDOE wetland ratings and associated data sheets previous reports can be found in previous our previous reports (Raedeke Associates, Inc. 2012, 2015, 2016).

City of Snoqualmie Planned Commercial Industrial Zoning District Regulations

PCI zoning district regulations applicable to the site encourage "imaginative well-designed master planned commercial -industrial development" proposals (SMC 17.20.050 A; City of Snoqualmie 2018a), and provides flexibility from fixed, quantitative standards. The district authorizes the City Council to approve deviations from general standards where they determine that the deviation will not threaten health, safety or the environment. (SMC 17.20.050 I). City of Snoqualmie Planned Unit Development (PUD) regulations, which determine the application and procedural requirements for PCI projects, permit flexibility and variation in design, and modifications in requirement and standards (except within shoreline districts) to accomplish planned developments that are as good or better than traditional lot-by-lot projects (SMC 17.50.060 A). This is supported by SMC 19.12.170 H.6 of the City's Critical Areas regulations which permits "other uses" in wetlands and buffers if the city determines they can be developed in a manner that does not degrade the functioning of the wetland. If a habitat enhancement plan is to be incorporated into a development proposal in order to meet requirements of SMC 17.50.060 A and SMC 17.20.050 I, then it must be based on standards provided under SMC 19.12.170 H.2.

4.2 SHORELINE MANAGEMENT MASTER PROGRAM

Originally adopted in 1986, the City of Snoqualmie Shoreline Management Master Program (SMP) regulates new development and use of shorelines along larger rivers and streams, lakes over 20 acres, and marine waterfronts including the Snoqualmie River, the Snoqualmie River floodway, and Borst Lake (see SMC 19.08; City of Snoqualmie 2018b). Lands within 200 feet of the river, its floodway, and Borst Lake and their associated wetlands, are designated as the shoreline environment and are subject to the policies and regulations of the SMP. –The Shoreline Master Program is currently being updated by the City of Snoqualmie (2015b), but the city's schedule for adoption is uncertain. The analysis in this report is based on the draft SMP Update reviewed by the City Planning Commission (City of Snoqualmie 2015b). The SMP permits public access and transportation facilities to be located within the shoreline environment. Removal of shoreline vegetation and modifications to topography adjacent to public road rights-of-way is subject to approval by the SMP Administrator. It is likely that mitigation for impacts to vegetated buffer areas within the shoreline environment will be required.

4.3 FISH AND WILDLIFE

4.3.1 Federal Law

Federal law provides protection for fish and wildlife species listed as threatened or endangered under the Endangered Species Act (16 U.S.C. 35, § 1531 et seq.). The

purpose of the ESA is to protect and recover imperiled species and the ecosystems upon which they depend. It is administered by the U.S. Fish and Wildlife Service (Service) and the Commerce Department's National Marine Fisheries Service (NMFS). The Service has primary responsibility for terrestrial and freshwater organisms, while the responsibilities of NMFS are mainly marine wildlife such as whales and anadromous fish such as salmon.

Bald eagles were removed from the federal threatened and endangered species list in 2007 and are now protected by the Bald and Golden Eagle Act (16 USC 668-668c) and the Migratory Bird Treaty Act. The eagle act applies to any work that may take or disturb eagles or their nests regardless if the project has a federal nexus.

4.3.2 State of Washington

State law provides protections for wildlife species listed as endangered (WAC 220-610-010), as well as threatened, sensitive, or "other protected" species (WAC 220-610-110, 220-200-100). Recently, bald eagles have been de-listed at the State level, as well as at the federal level. However, as noted above, eagles in Washington are still protected by the Bald and Golden Eagle Protection Act (see also RCW 77.12.655).

WDFW has also established guidelines for protection of other Priority Species and Habitats and maintains a database (WDFW 2018a) of documented occurrences of these species and habitats. Many local jurisdictions defer to WDFW management guidelines for protection of priority habitats and species within their critical areas regulations.

4.3.3 City of Snoqualmie

The City of Snoqualmie (2018c) regulates wildlife under Chapter 19.12, "Sensitive Areas." Specifically, the City regulates wildlife species listed as endangered, threatened, and sensitive, and habitat that supports these species. We did not find the presence, sign or habitat of any endangered, threatened, or sensitive species during our investigation of the Snoqualmie Mill property or its vicinity.

5.0 IMPACTS

This discussion of probable impacts of the PCI Plan Proposal and Redevelopment Alternative is based on our field surveys, review of available literature, as well as information provided by the applicant and project consultants.

The applicant is seeking approval of a Planned Commercial Industrial (PCI) plan and a development agreement for the Snoqualmie Mill site. The proposed development agreement will help guide subsequent planning and development of the overall site.

The Draft EIS addresses development of the Snoqualmie Mill site in several phases over an approximate 10- to 20-year period. Build-out would include a total of approximately 1.83 million gross square feet of light industrial/manufacturing, warehouse, office, retail and residential uses. A majority of the overall site (166 acres, 64%) would remain undeveloped and be maintained for open space, landscaping, wetlands and streams, wildlife habitat and flood storage.

The Snoqualmie Mill PCI Plan property has been divided into three distinct areas for purposes of planning and permitting. The limits of each planning area are depicted on existing conditions Figures 7and 8, as well as the overall PCI plan (Figure 9). The PCI Plan application provides detailed information for Planning Area 1, an approximate 102-acre area in the northwestern portion of the site proposed as the first phase of development (Figure 13). More conceptual information is provided for Planning Areas 2 and 3, which would be developed subsequently (Figure 9). Applications for building permits and other required development approvals will be submitted during or following the approval process for the PCI Plan.

5.1 SUMMARY OF EIS ALTERNATIVES

5.1.1 Proposed Action – Overall PCI Master Plan

The PCI Plan application contains varying degrees of detail for different areas of the site, which reflects a phased approach to planning and developing the site. Greater detail is provided for Planning Area 1, the first phase of development, while more general information is available for Planning Areas 2 and 3 (Figure 9). Additional site planning, analysis and environmental review will occur for Planning Areas 2 and 3 when more specific development proposals are created. Refer to Chapter 2 of the Draft EIS for more detailed descriptions of the Proposed Action, as well as the other alternatives.

Development of the site would occur in three general phases, with timing dependent on market and economic conditions, and infrastructure requirements. For purposes of analysis, Planning Area 1 is assumed to be approved and under construction immediately following approvals and permits, while the timing of later stages is less certain. Development of each planning area could include two or more sub-phases. Buildout is assumed to occur by 2032.

The DirtFish driving school is an existing use that is permitted to continue operating consistent with the terms of the adopted Pre-Annexation Agreement. The PCI Plan will displace portions of the DirtFish track in increments, as each planning area develops. DirtFish operations will be entirely displaced when Planning Area 3 develops. In the interim, the track will be reconfigured and portions relocated in increments, to permit operations to continue. The timing and location(s) of any reconfigured segments of the driving track have not been identified by DirtFish and are not known at this time. Any proposal by DirtFish to reconfigure its driving track would be a separate project and independent of the Snoqualmie Mill PCI Plan.

The intensity of proposed development of the overall site, as measured by planned amounts of developed area/impermeable surfaces, is relatively low compared to many planned industrial sites and the development standards of the PCI district. Approximately 36% (95 acres) of the 261-acre site would be developed with buildings, roads and other impervious surfaces, whereas 64% of the site (166 acres) would remain undeveloped and dedicated to passive open space, landscaped area, habitat, constructed wetlands, wetlands/streams and buffers, and compensatory flood storage.

Planning Area 1, totaling approximately 102 acres and located in the northwestern portion of the Snoqualmie Mill site, is most proximate to currently developed areas of the City and to existing infrastructure. This portion of the site encompasses a large wetland (Wetland 11, approximately 35 acres) located north of the existing haul road. Other wetlands occur mainly along the perimeter of Planning Area 1, so the central part of this area is relatively free of wetlands and other sensitive areas. The proposed PCI Plan would develop 604,000 square feet of warehouse/manufacturing, light industrial, retail/restaurant, and mixed residential uses. Development would occur on approximately one-third of the planning area (33 acres), and two-thirds would be retained as open space (69 acres). Large natural open spaces would be located north and south of the developed area, with additional landscaped open spaces integrated into the planning area. Buffers for wetlands within or abutting Planning Area 1 would be enhanced to a native forest condition to provide substantially greater protection of wetland functions that is currently provided by the existing, degraded buffers.

Development of Planning Area 1 would include rerouting a portion of SE Mill Pond Road to the northeast to provide a roundabout for access into the project (Figure 13). This rerouting would include a bottomless culvert southeast of the roundabout to provide an avenue for floodwaters to flow back to the river and also for movement of small mammals and amphibians at other times. The culvert is expected to be up to several feet tall and at least 15 feet wide.

Planning Areas 2 and 3 contain greater amounts of identified sensitive areas, including regulated wetlands, streams, and areas that require remediation of contaminated soils. Under the Proposed Action, Planning Area 2 is assumed to consist of

warehouse/manufacturing, whereas Planning Area 3 would consist of office/campus, with some retail/restaurant uses. Infrastructure will also need to be extended relatively longer distances and/or expanded to serve these Planning Areas. A large, undeveloped portion of Planning Area 3 (approximately 63 acres), located in the central area of the site, is planned to function as a conservation corridor devoted to passive open space, wildlife habitat, wetland mitigation and compensatory flood storage. More than one-half of the overall site (146 acres) would be used for compensatory flood storage. Areas that would be graded to provide compensatory flood storage would be re-vegetated with native forest plantings to provide wildlife habitat.

Elements of the Master Drainage Plan

The Master Drainage Plan (MDP) for Snoqualmie Mill (Goldsmith 2020) was prepared to support the PCI Plan. The MDP provides project level planning and engineering for the development of Planning Area 1 area, while the remainder of the site is addressed more conceptually.

The MDP meets standards of the *2016 King County Surface Water Design Manual (KCSWDM)* which is deemed equivalent to the *2012/2014 Stormwater Manual for Western Washington.* The site lies within the Snoqualmie River floodplain and is designated as a Direct Discharge site. The strategy for stormwater management for Snoqualmie Mill is primarily flood control and compliance with Flood Hazard Regulations. But during normal rainfall, it is a combination of collection, treatment and direct discharge to the Snoqualmie River and collection, treatment and discharge to on-site and off-site wetlands to maintain wetland hydrology (Goldsmith 2020). Compliance with the qualifications for direct discharge and with Table 1.2.3.A of the KCSWDM (Type 4 downstream conditions potential impact to wetland hydrology), requires assessment of and sufficient maintenance of wetland hydrology so as not to cause a significant adverse impact (Goldsmith 2020).

Planning Area 1 Detail. Planning Area 1 entails the implementation of both basic and enhanced treatment. Figure 10 - Planning Area 1 Stormwater Plan by Goldsmith (2020) shows the conceptual plan for storm drainage collection, treatment facility areas and discharge locations. Large basic treatment areas, areas draining to the Snoqualmie River direct discharge outfall, would primarily utilize a proprietary media filter. Planning Area 1 may also utilize some parking lot landscaping to provide basic biofiltrations swales. Basic filter strips may be used for road runoff from the new Mill Pond Road.

The outfall for the basic treatment areas is proposed as a broad surface swale along portions of the new Mill Pond Road site entry and breaching the existing Mill Pond Road for surface flow to the OHWM of the river. Clean and/or treated runoff from the western portion of the site would be conveyed (through storm pipes) to the broad swale. The swale will be constructed of stable material on a stable base to control erosion.

Vegetation could be provided within the swale provided it would not over time cause destabilization.

For the enhanced treatment areas, Planning Area 1 would utilize stormwater wetlands located near the eastern edge of the planning area boundary. Runoff from the eastern portion of the site would be conveyed from the stormwater wetlands to the Wetland 12 system and ultimately discharge to the Snoqualmie River via Borst Lake. The stormwater wetlands would be designed with overland surface flow outlets (surface weirs) at the outer edge of the wetland buffer.

Planning Areas 2 and 3 Concept. Discharge to the Snoqualmie River from Planning Areas 2 and 3 uses the same concept as for the eastern portion of Planning Area 1 described above. All proposed impervious surfaces for Planning Areas 2 and 3 will be designed to drain to the existing wetland conveyance systems to the river in order to maintain current levels of hydrology to those wetlands.

5.1.2 Redevelopment Alternative 1

The Redevelopment Alternative 1 also includes 1.83 million square feet of mixed uses, generally comparable to the proposal, but with a different land use mix and emphasis. Open space and building/impervious site coverage would be comparable to the proposed PCI Plan – 64% and 36% respectively. Building layout, open space, master drainage plan, and wetland buffer restoration/enhancement in Planning Area 1 would also be comparable to the proposed PCI Plan.

Land use would be predominantly warehouse; combined with manufacturing and light industrial use, these land use categories would comprise 80% of total development, compared to 45% for the PCI Plan. Compared to the proposed action, retail and office uses would be reduced, and a smaller indoor event space would be developed. Residential uses would be less than the PCI Plan. Compared to the proposed PCI Plan, Alternative 1 includes less total development in Planning Area 1 and somewhat greater total development in Planning Area 3.

The Redevelopment Alternative includes an outdoor performance space in Planning Area 3. It assumes approximately 3.7 acres of landscaped open space with a constructed stage, with capacity for approximately 5,000 people. Planning Area 3 is not expected to develop until the latter stages of site development.

The Redevelopment Alternative could generate approximately 42% fewer jobs (approximately 1,950) compared to the proposed PCI Plan (approximately 3,400) largely due to lower employment associated with warehouse and industrial uses compared to office uses. Fewer jobs may also result in reduced impacts to many elements of the environment, including traffic, water consumption, public services and facilities, and utilities.

As with the Proposed Action, the DirtFish track will be displaced in increments, as each planning area develops and displaced entirely when Planning Area 3 develops. In the interim, the track will be reconfigured and portions relocated, to permit operations to continue and any proposal by DirtFish to reconfigure its driving track would be independent of the Snoqualmie Mill PCI plan.

5.1.3 No Action Alternative

For purposes of this EIS, "no action" means that the Proposed Action, the PCI Plan, would not go forward and the city would not act on the proposal. Since City policies and regulations require approval of a PCI plan as a pre-requisite for redevelopment, no redevelopment would occur. Existing on-site uses, including DirtFish Rally and other current uses on the site, would continue indefinitely, as permitted by the Pre-Annexation Agreement. While redevelopment is likely at some point in the future, it is not assumed in the near term or in the context of the current proposal. The No Action Alternative in the EIS primarily serves as a baseline against which the proposal and other alternatives can be measured.

5.2 PROPOSED ACTION – OVERALL PCI MASTER PLAN SUMMARY OF IMPACTS

5.2.1 Impacts to Wetlands and Streams

Direct Impacts

Development of Planning Area 1 under the Proposed Action would avoid direct physical alteration to all identified wetlands and streams. Direct impacts to the City of Snoqualmie (2018c) standard buffers for Wetlands 12 and 28 will occur within Planning Area 1 under the Proposed Action and will be mitigated. Modification of wetland buffer widths for Planning Area 1 pursuant to a buffer restoration and enhancement plan is an element of the Proposed Action and is discussed further below. This flexibility is permitted by the PCI zoning district regulations. Buffer impacts are not regulated by the U.S. Army Corps of Engineers or Washington Department of Ecology.

Future development plans for Planning Areas 2 and 3 may pursue altering existing wetlands to become part of the drainage control system (Goldsmith 2020). Additional site analysis and planning will be required to determine whether direct alteration to City-jurisdictional wetlands or streams is necessary. A specific analysis of impacts that would result from development of Planning Areas 2 and 3 and required mitigation measures would be undertaken as part of the design review process by the City, in order to avoid, minimize, or compensate for the impacts per the vested City of Snoqualmie standards.

In the future, as noted previously, wetland areas could be impacted by a planned replacement of the SR 202 bridge over the river. The bridge replacement is a planned WSDOT project and is independent of the Snoqualmie Mill project. The nature and extent of impacts, if any, would depend on future siting and design decisions by WSDOT, which cannot be determined at this time. The bridge replacement project would undergo a separate environmental review in the future.

Indirect Impacts – Wetland Buffers

Indirect impacts to wetlands are caused by an action but occur later in time or are farther removed in distance but are still reasonably foreseeable. The following discussion identifies the functions of wetland buffers that could be impacted indirectly by development of the PCI Plan.

Wetland buffers help to protect wetlands from indirect effects from developed areas and other types of human-caused disturbance. Research during the past three decades and summarized by the Washington Department of Ecology (Sheldon et al. 2005) shows that a variety of wetland functions are protected by vegetated buffers in the following ways: (1) removing excess sediment, toxics, and nutrients; (2) influencing microclimate; (3) maintaining adjacent habitat critical for life needs of many species dependent on wetlands; (4) screening adjacent disturbances; and (5) maintaining habitat connectivity. Notably, wetland buffers are far less effective in maintaining wetland hydroperiod and related wetland functions such as stormwater storage than controlling regional changes in land cover type within the contributory basin and utilizing effective stormwater management practices (Herson-Jones et al. 1995, Booth 1991, Azous and Horner 2001). These five buffer functions can be grouped into two main categories: Water Quality and Wildlife Habitat.

The physical characteristics of buffers – slope, soils, vegetation, and width – determine how well buffers reduce adverse impacts of human development and provide habitat needed by wildlife species that use wetlands (Sheldon et al. 2005). These buffer characteristics are described below with regard their influence on wetland functions protection.

Water Quality Protection. Protection of water quality is best accomplished by ensuring sheet flow across a well-vegetated buffer with slopes that are less than 5 percent (Sheldon et al. 2005). Other factors that influence buffer effectiveness in protecting water quality include degree of soil infiltration, surface roughness (partially caused by vegetation), and slope length (Hruby 2013). Significant reductions in some pollutants, especially coarse sediments and nutrients and toxicants that are adhered to them can be accomplished in a relatively narrow buffer of 16 to 66 feet, but removal of fine sediments requires substantially wider buffers of 66 to 328 feet (Sheldon et al. 2005). Removal of dissolved nutrients requires dense vegetation and/or very low slope and, more importantly, contact with fine roots in the upper portion of soils that are permeable and not compacted (Sheldon et al. 2005). Subsurface water regime (e.g. soil saturation, groundwater flow paths) and subsurface biogeochemistry (the supply of organic carbon and inputs of nitrate) are also important factors (Hruby 2013). Distances needed for nutrient removal range from 16 feet to 131 feet, depending on the nutrient to be removed and the characteristics of the buffer (Sheldon et al. 2005). The literature is consistent in finding that it takes proportionally larger buffer widths to remove significantly more pollutants

because coarse sediments and the pollutants associated with them drop out in the outer portions of the buffer (Sheldon et al. 2005).

Wildlife Habitat. Wetland buffers are essential to maintaining viable wildlife habitat because they perform three overlapping functions: (1) maintenance of terrestrial habitat adjacent to wetlands, (2) screening wetland habitat from disturbance by adjacent human activity in the form of noise or light or from human or domestic animal (dogs or cats) presence and movement, and (3) maintaining habitat connections between otherwise isolated habitat areas (Sheldon et al. 2005).

Buffers provide sites for wildlife foraging, breeding, and nesting, as well as cover for escape from predators or adverse weather, especially when associated with adjacent upland habitat, which together constitute a core habitat that can be essential for a suite of species that that would be absent from either habitat alone (Sheldon et al. 2005; Hruby 2013). Buffers also provide a source of woody debris and organic matter that provides habitat structure and food, as well as moderation of temperatures within and adjacent to the wetland for species that are sensitive to temperature such as fish and amphibians (Sheldon et al. 2005). Buffers provide areas for dispersal and migration, especially if they are connected or part of vegetated corridors (Sheldon et al. 2005).

There is no simple answer for what constitutes an effective buffer width for wildlife considerations. The majority of species in Washington use wetland habitats for some portion of their life-history needs and the width of the buffer is dependent upon the species in question and whether the goal is to maintain connectivity of habitats across a landscape or whether the goal is to screen wildlife from human interactions (Sheldon et al. 2005). Compared with buffer widths needed for water quality protection, the literature documents the need for significantly wider buffers to protect and maintain wildlife habitat functions for species that are closely associated with wetlands. Synthesis of documents that evaluated many studies discussing the habitat provided by wetland buffers generally recommend buffer widths ranging from 50 to 300 feet, depending on the quality of the wetland habitat, the species needing protection, the quality of the buffer, and the surrounding land uses (Sheldon et al. 2005). Studies of buffer width effectiveness for protection of habitat function suggest buffers should generally range from: 25 to 75 feet for wetlands with minimal habitat functions and low-intensity adjacent land uses; 50 to 150 feet for wetlands with moderate habitat functions and moderate or high-intensity adjacent land use; and 150 to 300+ feet for wetlands with high habitat functions depending on the intensity of the adjacent land use (Sheldon et al. 2005).

Existing Buffer Functions. Goldsmith (2012a) analyzed current, low-level aerial photography by DeGross Aerial Mapping, Inc. to identify areas within the Snoqualmie Mill site (including the PCI Plan area) that consisted of existing roadways or other lawful pre-existing development within the site. In addition to buildings and roads, the areas identified by Goldsmith (2012a) included concrete, asphalt and gravel surface storage

yards, and other hardscape surfaces that had been developed as part of the mill operations and were continuing to be used by the current property owners.

Raedeke Associates, Inc. examined the highly degraded portions of the on-site wetland buffers within Planning Area 1 that consisted of road, building foundations, hardscape surfaces, and sparsely vegetated compact fill identified by Goldsmith (2012a). We also examined less degraded portions of the buffers that consisted of relatively young 20-to 30-year -old forest that had established on areas of less compact fill for each on-site and off-site wetland within the PCI Plan area. We estimated the age of the trees in these areas based on our review of historic aerial photos of the site (Google Earth 2018). We found that portions of the buffers that consisted of stunted forest were likely to provide some protection to on-site wetlands. These areas were dominated by red alder and balsam poplar and had a sparsely vegetated understory or an understory that was dominated by Himalayan blackberry, a non-native, invasive species. Average tree height was approximately 25 feet and the trees ranged in diameter at breast height (dbh) from 4 to 8 inches. We determined that the trees were stunted based on their relatively short height and small dbh given their age. Our observation of numerous roots that spread across the soil surface indicated that poor tree growth is due to their inability to penetrate the underlying compact to very compact fill. It is likely that the trees will be subject to windthrow as they become larger due to their shallow root systems.

Our investigation of the buffers confirmed that existing buffers for all wetlands within Planning Area 1 are degraded at varying levels, either due to the existence of roads, other impervious surfaces such as bare gravel fill, or due to the presence of sparse and/or stunted vegetation that has developed on the old, compacted fill. In addition, off-site portions of the buffers for the right (east) bank of the Snoqualmie River in the vicinity of the proposed re-alignment of SE Mill Pond Road are largely non-functional due to the presence of the existing roadway adjacent to the river. Because of this, it is unlikely that the onsite wetland buffers within Planning Area 1 or the off-site portion of the buffer for the right bank of the Snoqualmie River in the vicinity of the proposed road re-alignment provide more than a range of de minimis to low levels of protection of water quality or habitat functions to onsite wetlands or the Snoqualmie River. Figure 11 depicts the extent of the degraded, low functioning and non-functional buffers as well as the areas of stunted forest buffer that provide somewhat better protection of wetlands within Planning Area 1 and along the right bank of the Snoqualmie River.

Planning Area 1 - Proposed Buffers & Mitigation Plan. A buffer mitigation plan is included as an integral part of the proposed PCI Plan. Development of Planning Area 1 cannot strictly comply with the quantitative buffer width requirements of SMC 19.12 on a wetland-by-wetland basis. A wetland-by-wetland approach to buffers would not address the current degraded quality of existing buffer functions, and would threaten the economic feasibility of the proposed project. Instead, the PCI Plan proposes to utilize provisions of Chapter 17 of the City of Snoqualmie (2018a) Municipal Code that encourage “imaginative well-designed master planned commercial -industrial

development" proposals (SMC 17.20.050 A). This provision of the PCI zoning district provides flexibility from fixed, quantitative standards regulations regarding avoidance and minimization of impacts, and allows deviations from buffer requirements and protection of fish and wildlife habitat conservation areas provided that that the deviation will not threaten health, safety or the environment, subject to approval by the City Council (SMC 17.20.050 I). The proposed PCI plan provides a comprehensive buffer mitigation plan that is designed to protect wetlands and enhance buffer functions across Planning Area 1 as allowed by the PCI district regulations.

The proposed PCI plan (Figures 12 and 13) for the on-site wetlands within Planning Area 1 and the Snoqualmie River has been developed in accordance with SMC 17.20.050 A and SMC 17.20.050 I and would result in a substantial improvement of buffer functions and protection of wetland resources. The plan would provide buffers that average approximately 175 feet in width to wetlands within Planning Area 1 overall. Buffers would be wider for some wetlands than for others (Figure 12). The proposed buffer for Wetland 28 would be narrowest on the north site (up to a 48% reduction), but buffer widths would be considerably wider than standard buffers specified by the code around most of Wetlands 28 and 29 within the planning area. The narrowest buffers occur adjacent to Wetland 12 where the average buffer for most of that wetland would be approximately 105 feet (a reduction of approximately 36%), and where a stormwater wetland would be constructed to treat and discharge runoff from developed areas.

The proposed buffer widths, including those areas where the proposed buffer is less than the standard width specified under SMC Table 19.12.170-1, are within the range of buffers recommended by WDOE (Sheldon et al. 2005) for protection of water quality and wildlife habitat functions. The standard 100-foot buffer for the Snoqualmie River specified by the City of Snoqualmie Shoreline Master Program largely is proposed to be provided by realigning SE Mill Pond Road away from the River and restoring that portion of the river buffer through removal of the retired portion of the road and replanting that area to establish forest vegetation (Figure 13).

A total of approximately 17.8 acres of upland buffer is provided to the on-site wetlands. This represents approximately 0.83 acres of additional buffer area that would be provided to the wetlands within Planning Area 1 compared to what would be provided if the standard wetland buffers specified under SMC Table 19.12.170-1 were applied. The buffer plan is designed to retain a large block of young forest within the south portion of the site and to provide a habitat corridor linking the on-site wetlands with each other and to large habitat areas associated with Borst Lake (Mill Pond) and the Snoqualmie River. In addition, the proposed habitat corridor abuts approximately 63 acres located in the central portion of the site that will be devoted to passive open space, wildlife habitat, wetland mitigation and compensatory flood storage as part of the future development of Planning Area 3. This future open space area will increase the benefits to wildlife using the habitat corridor created within Planning Area 1.

All on-site wetland buffers and the buffer for the right bank of the Snoqualmie River in the vicinity of the re-alignment of SE Mill Pond Road would be either restored or enhanced. Buffer restoration would occur within areas identified as non-functional buffer or where grading is necessary for flood storage compensation to remove a berm along the southern edge of Wetland 12 (western portion). All existing roads, building foundations, hardscape surface, and areas of compact gravel fill would be removed from the buffer restoration areas with the exception of an approximately 950 square foot portion of an existing concrete pad at the south end of the western lobe of Wetland 12 that is currently used to store materials for the DirtFish Rally School. Following removal of these structures and impervious surfaces, a minimum of 12 inches of topsoil amended with compost would be installed in order to provide fertile soil conditions for buffer plantings. The concrete pad at the south end of the western lobe of Wetland 12 would be removed and the buffer in that area restored as part of future development of Planning Areas 2 and/or 3.

The restored buffers would be planted with native trees, shrubs, and herbaceous species at densities sufficient to establish a well-vegetated, forested community.

Buffer enhancement would occur in areas where native forest vegetation is already established and would be retained. Non-native, invasive species such as Himalayan blackberry and Scotch broom would be removed. Native coniferous trees such as western arborvitae (*Thuja plicata*, formerly western red cedar) and Sitka spruce would be planted in the understory along with native, shade-tolerant shrubs to increase the vegetation density species diversity of these areas.

With implementation of the proposed buffer restoration and enhancement plan, on-site wetland buffer functions will be provided at a higher level than if the standard wetlands buffers were applied and the wetlands will be well protected. Therefore, assuming this plan is implemented, we do not anticipate that the proposed PCI Plan would result in significant adverse impacts to the on-site wetlands or the Snoqualmie River from development of Planning Area 1.

Planning Areas 2 and 3 Buffer Impacts. As with Planning Area 1, the existing wetland buffers within Planning Areas 2 and 3, particularly within the eastern portion of the PCI Plan area, are degraded and either non-functional or poorly functioning (Goldsmith 2012a). Future development of Planning Area 3 will set aside almost 70 acres in the central area of the site to function as a conservation corridor devoted to passive open space, wildlife habitat, wetland mitigation and compensatory flood storage and will provide wide buffers for Wetlands 12, 19, 20/21/22, 24, 25, 26, and 27 within that portion of the PCI Plan area.

Additional site analysis and planning will be required in the future to determine whether alteration to City-jurisdictional wetland or stream buffers is necessary. A specific analysis of impacts that would result from development of Planning Areas 2 and 3 and

required mitigation measures would be undertaken as part of the design review process by the City when these areas are planned in greater detail and proposed for development.

Hydrologic Impacts

The clearing of vegetation, grading, and construction of impervious surfaces, underground utilities, and stormwater collection and detention facilities associated with Alternative 1 would modify the surface hydrologic conditions of the site. Unless mitigated through appropriate planning and design of stormwater facilities, these changes could potentially cause changes in the hydrologic conditions within the project area wetlands, including greater annual variation in water levels of the wetlands, as well as greater and more frequent water level fluctuations in response to individual storm events (Azous and Horner 1997, 2000). Changes in the hydrologic conditions resulting from development can adversely affect plant species (Cooke and Azous 1993, Taylor 1993) and animal species richness, and diversity within wetlands (Richter and Azous 1995).

Planning Area 1. Goldsmith (2020) completed hydrologic modeling for wetlands within Planning Area 1 using the 2012 Western Washington Hydrologic Model (**WWHM**), released with the 2012/2014 WDOE Stormwater Manual for Western Washington to determine whether the MDP meets wetland protection standards of the KCSWDM Reference 5 Wetland Hydrology Protection Guidelines. The WDOE manual and KCSWDM Guide Sheet 3B provides "risk based" evaluation criteria setting approximate limits on the amount that wetland inflow volumes may change before potential significant impact to Category I or II wetlands may occur. The criteria are:

> ***Criteria 1:*** *Total volume of water into a wetland during a single precipitation event should not be more than 20% higher or lower than the pre-project volumes. Daily volumes are calculated over 50 years for pre-and post-project conditions.*
>
> ***Criteria 2:*** *Total volume of water into a wetland on a monthly basis should not be more than 15% higher or lower than the pre-project volumes. This is calculated based on the average precipitation for each month of the year. This criterion is especially important for the summer months when a development may reduce monthly flows rather than increase them because of reduced infiltration and recharging of groundwater.*

For purposes of this analysis, Goldsmith (2020) modeled the following sub-basins:

- Wetland 12W (the western lobe of Wetland 12 within the PCI Plan area, including tributary flow from Wetland 28);
- Wetland 12C, which encompasses most of the central portion of the site just east of Planning Area 1 and includes runoff from sub-basin Wetland 12NW (the portion of the Wetland 12 on the south side of the Snoqualmie Sand and Gravel haul road and on the west side of the north access into Planning Area 1 from the haul road), runoff from sub-basin Wetland 12E (encompassing the southeastern

portion of Planning Area 3 and the southern end of Planning Area 2), and tributary flow from sub-basin Wetland 12W;

- Wetland 12, encompassing the south end of the Wetland 12 complex, including Stream 2 and runoff from sub-basin Wetland 12C;
- and Wetland 28.

Goldsmith (2020) did not model Wetland 29 because it is located within the flow path from Wetland 28 to Wetland 12W. Goldsmith (2020) determined that modeling for Wetland 29 was not necessary because virtually all of its hydrologic input is from Wetland 28. By demonstrating that hydrology between Wetland 28 and Wetland 12 is balanced, Goldsmith (2020) assumed that the hydrologic regime for Wetland 29 would be very similar to the modeled results for Wetland 28.

Wetland 12W. Wetland 12W hydrology is primarily from its connection to groundwater within the native soils below the fill (AESI 2020). Seasonal rainfall and sheet flow from surrounding uplands also contributes to wetland hydrology.

Based on Goldsmith's (2020) analysis, the proposed development of Planning Area 1 is expected to reduce hydrologic support from surface runoff to Wetland 12W for both daily and monthly volumes only slightly (Appendix C). Daily surface runoff volumes would be reduced to approximately 90% to 95% of the pre-development volume over most of the year, with a slight increase in flows in September. A similar pattern shows for monthly volumes. Thus, both of the criteria from the KCWSDM Guide sheet 3b would be met for Wetland 12W.

This wetland is in the form of a ditch and is supported primarily by groundwater discharge from the Snoqualmie River Shallow Aquifer on site (AESI 2020). Under the proposed drainage plan, stormwater runoff from the constructed stormwater wetland would discharge directly to the upstream end of this wetland. Therefore, we do not anticipate a significant adverse impact to occur to the hydrologic functioning of Wetland 12W from the proposed MDP.

Wetland 12C. **Hydrology of the portions of** Wetland 12 within this sub-basin come primarily from its connection to groundwater within the native soils below the fill (AESI 2020). Seasonal rainfall and sheet flow from surrounding uplands also contributes to wetland hydrology.

Based on Goldsmith's (2020) analysis, the proposed development of Planning Area 1 is expected to nearly match hydrologic support from surface runoff to the portions of Wetland 12 within this sub-basin for both daily and monthly volumes (Appendix C). Daily volumes of surface runoff would be reduced to 85% to 90% of the pre-development volumes for most of the year, with the greatest percent reduction (with post-development

volumes of 80% of pre-development volumes) occurring during late July to early August, and the smallest percent reduction occurring in mid-August to early October. Thus, Criteria 1 (daily volumes within 20% of pre-development volumes) would be met for these portions of Wetland 12.

Similarly, monthly volumes of surface runoff to the wetland are expected to be reduced to approximately 87% to 90% of the pre-development volumes. The greatest reduction in monthly volume is expected to occur during the winter and spring months, whereas the smallest reduction is expected to occur during the late summer (September). Based on this analysis, the inflow volumes from surface runoff are expected to remain within 15% of the current estimated volumes, and thus Criteria 2 above would be met. Moreover, the proposed stormwater wetland to be constructed as part of the development would be located at the upstream end of Wetland 12NW (Figure 10) to provide continued support of the majority of this wetland area. Therefore, we do not expect development of Planning Area 1 to result in substantial adverse impacts to these portions of Wetland 12, especially since most of the hydrologic support comes from the shallow groundwater aquifer (AESI 2020).

Wetland 12. Analysis of the downstream segments of Wetland 12, including Stream 2, just prior to discharge to Borst Lake, show essentially the same results as for sub-basin Wetland 12C. Post-development daily flows are expected to be at least 85% to 90% of pre-development volumes for most of the year, with greater than 90% during late summer, as would monthly flow volumes. Both of the criteria from KCSWDM Guide Sheet 3b would be met. As with the other portions of Wetland 12 in the other sub-basins, we would not expect development of Planning Area 1 to result in substantial adverse hydrologic impacts to these segments of Wetland 12.

Wetland 28. Wetland 28 is largely the result of run-off from adjacent uplands and direct precipitation. Groundwater analysis by AESI (2020) demonstrates that groundwater is not a contributor to Wetland 28 hydrology.

Based on the hydrologic analysis by Goldsmith (2020), daily and monthly inflow volumes for Wetland 28 are expected to increase to nearly 110% of pre-development volumes for most of the year (Appendix C). The greatest increase would occur in the late summer (early September), where the post development volume is expected to increase to approximately 115% of the pre-development volume on a daily basis and just below 115% on a monthly basis. During September, the wetland is typically dry under existing conditions, so we do not expect the greater increase to adversely affect the wetland. Thus, both of the Guidesheet 3B criteria are met. Therefore, we do not expect a significant change in the hydrologic regime of Wetland 28 to result from development of Planning Area 1.

Wetland 29. Wetland 29 is directly downstream from Wetland 28 which is the primary source of hydrologic support for Wetland 29. Other minor sources of hydrologic support are run-off from limited area of adjacent uplands and direct precipitation.

As discussed above, hydrologic modelling for Wetland 29 was not completed by Goldsmith (2020) because it was assumed that adverse hydrologic impacts would not occur to that wetland as long as the developed conditions hydrologic regime for Wetland 28 is not significantly impacted. As noted above, the conditions within Wetland 28 are not expected to change substantially. Therefore, we do not anticipate significant adverse impact that would occur to the hydrologic regime of Wetland 29 from development of Planning Area 1.

Planning Areas 2 and 3. The PCI Plan does not define a master plan configuration for Planning Areas 2 and 3 as it does for Planning Area 1. However, as part of the EIS and PCI approval it does define a maximum level of buildout within these later phases that are proposed as part of the overall PCI approval. The **PCIP development program** presented in the PCI Plan indicates future Planning Areas 2 and 3 anticipate total impervious surfaces between buildings and other effective impervious area of approximately 62.0 acres, slightly more than the existing level of effective impervious area (approximately 60 acres).

Planning Areas 2 and 3 are not yet planned at a level of detail sufficient to determine what areas would drain to which wetland. They would be planned and analyzed, similar to Planning Area 1, at the time of development application and further environmental review for Planning Areas 2 and 3. However, the analysis of Planning Area 1 has shown that hydrologic impacts to the wetlands can be minimized to acceptable levels. Therefore, we do not anticipate significant adverse impact to occur to the hydrologic regimes of wetlands within Planning Areas 2 and 3 from the proposed future development of these areas.

Water Quality and Erosion/Sedimentation Impacts

Planning Area 1. Potential impacts to wetlands and streams from the Proposed Action would result from construction and operation of developed areas and infrastructure within the PCI Plan. The MDP is designed to meet the 2016 King County SWDM to mitigate any potential impacts to water quality as a result of the proposed development. If implemented and maintained properly, the site stormwater facilities and temporary TESC measures are designed to protect water quality as required by stormwater and National Pollution Discharge Elimination System (NPDES) regulations.

For areas discharging to the Snoqualmie River, the MDP design incorporates a proprietary media filter for water quality treatment (Goldsmith 2020). Planning Area 1 may also utilize some parking lot landscaping to provide basic biofiltration swales (Goldsmith 2020). Basic filter strips may be used for road runoff from the new Mill

Pond Road (Goldsmith 2020). Some discharge from Planning Area 1 will be directed to on-site wetlands in order to maintain their hydrologic regimes according to guidelines of the KCSWDM. Discharge from these areas will receive enhanced treatment utilizing two stormwater wetlands located near the eastern edge of the planning area boundary. The stormwater wetlands would be designed with overland surface flow outlets (surface weirs) at the outer edge of the wetland buffer.

Avoidance and minimization measure for erosion/sedimentation impacts will be incorporated in the temporary erosion and sedimentation control plan (TESC plan), and in the design of stormwater facilities to best reduce volumes and distribute runoff for treatment and discharge to receiving waters. Some increases in sediment deposition would be expected in the on-site wetlands, particularly during construction; however, these would be limited through implementation of mitigation measures listed in the MDP (Goldsmith 2020) and specified below:

- An NPDES Permit for Stormwater Discharges Associated with Construction Activities would be obtained from WDOE.

- A Stormwater Pollution Prevention Plan (SWPPP) would be prepared as required by the NPDES permit and would be used and updated on-site as warranted, including monitoring requirements determined by Ecology for the permit.

- The major TESC measures (King County 2016) likely to be implemented under the NPDES permit would include (but are not limited to) the following:
    - Marking the clearing limits (i.e., marking limits, sensitive areas and buffers on plans and in the field using plastic, metal, or stake wire fence);
    - Installation of temporary construction access (stabilized entrances) and staging areas (i.e., limiting construction vehicles to points stabilized with quarry spall or rock with wheel wash;
    - Flow control as needed to prevent downstream erosion (i.e., provide detention and/or infiltration as needed to protect downstream waterways from erosion due to increases in flow rate, velocity, or volume.);
    - Road cleaning (i.e., shoveling or sweeping sediment on a daily basis, followed by street sweeping);
    - Perimeter protection such as silt fencing when necessary (i.e., all perimeter areas no upslope of construction clearing) to intercept fine sediments and fencing or flagging of clearing limits;
    - Soil stabilization: temporary or permanent cover such as seeding, mulching, sodding, plastic covering, erosion control fabrics and matting, application of polyacrylamide (PAM) to the soil, or gravel base, over disturbed areas or stockpiles to prevent erosion (after 7 days unused/unworked from May 1 through September 30; after 2 days

unused/unworked from October 1 through April 30 or as needed to respond to weather forecasts]);

- Establish and implement an erosion and sedimentation control plan utilizing applicable BMP's from Section D.5.2 in King County Surface Water Drainage Manual (1998) pertaining to wet season requirements, subject to approval by the City of Snoqualmie, for any earthwork construction during the wet season, defined as October 1 to April 30;
- Utilize an on-site TESC inspector;
- Slope protection and drainage control (i.e., design, construct and phase cut and fill slopes to minimize erosion by reducing slope lengths with terraces or diversion, reducing steepness, and/or roughening the slope surface; diversion of upslope drainage and run-on, use of check dams and collection pipes);
- Treat runoff to remove sediment (e.g. sediment trap ponds);
- Stabilize channels and outlets (i.e. armoring as necessary to prevent erosion or scour);
- Control of all pollutants on-site, including removal and legal disposal of construction waste or soils contaminated by construction activity or accidental spills;
- Accidental spill response plans, on-site clean-up materials storage, and worker training;
- Use of BMPs to prevent adverse pH affect from concrete work on the site or cause violation of water quality standards for pH in the receiving water;
- Control of dewatering (flow rate and sediment control) into a controlled conveyance system to receiving waters (if clean and non-turbid), infiltration, or retention for other purposes (i.e., dust control); and
- Maintenance and inspection of BMPs and TESC measures.

- Limiting work within wetland or stream buffer boundaries to the dry season to the maximum extent feasible (avoiding at minimum November through February for this work);
- Close cooperation with contractors during building construction to require cover measures (for example, hydroseed, straw cover, polyacrylamide [PAM], and/or plastic) on individual sites, and to require routine street cleaning; use of specialized products such as PAM, Chitosan and other soil amendments will require site specific King County and DOE NPDES approvals;

- Additional measures proposed (Goldsmith 2020) for concrete work in all basins are the following:
  - Cement trucks wash water would not be disposed on-site, but would be returned to the off-site batch plant for recycling as process water;

- New concrete work would be covered and protected from rainfall until cured; and
- Monitoring of pH would occur in areas with active concrete work.
- Delivery and distribution/mixing of the concrete amendment will be done in a manner to protect against airborne dust;
- Concrete soil amendment percentages would not exceed 10 percent by weight, and would be established by a soils specialist;
- Temporary or permanent cover will be installed over soil amended areas as soon as practical after mixing and lifts are completed;
- On-site storage of the concrete amendment will be limited to that volume left at the end of the working day, which would not exceed one tanker truckload; and
- Soil amendment would only be made while the weather is dry; and

With implementation of the proposed water quality treatment facilities and TESC BMP's, the wetlands will be well protected from water quality and erosion/sedimentation impacts. Therefore, we do not anticipate significant adverse water quality and erosion/sedimentation impacts that are likely to occur to the on-site wetlands, the Snoqualmie River, or their buffers from development of Planning Area 1.

Planning Area 2 and 3. It is assumed that all development within Planning Areas 2 and 3 would require enhanced stormwater water quality treatment. Using the same concept as for Planning Area 1, stormwater wetlands constructed in or near wetland buffers and discharging to the main wetland system in targeted locations would provide sufficient hydrology to the system broadly (Goldsmith 2020). The PCI Plan for Planning Areas 2 and 3 is conceptual and does not define a detailed site plan configuration or building footprints at this time. Therefore, locations of stormwater wetlands cannot be identified with specificity, but would be planned and analyzed at the time of application and further environmental review. However, the analysis of Planning Area 1 has shown that protection of the wetlands from water quality and erosion/sedimentation impacts is achievable. Therefore, we do not anticipate that significant adverse water quality and erosion/sedimentation impacts are likely to occur to wetlands or streams within Planning Areas 2 and 3 or the Snoqualmie River from future development of these areas.

5.2.2 Vegetation, Fish, and Wildlife

Both the PCI Plan and the Redevelopment Alternative would redevelop the site with commercial and industrial uses. Redevelopment and accompanying urbanization will affect the existing plant and animal communities in three ways: (1) direct changes in and loss of the habitats available; (2) increase in human use and disturbance associated with roads; and (3) potential for changes in the hydrologic characteristics of the site, with potential for impacts to wetland and riparian communities (both plants and animals).

Urbanization is a process of habitat alteration that changes the characteristics of the plant communities and the habitat available for wildlife. The major features of urbanization include loss of vegetation, isolation or fragmentation of remaining vegetation patches, replacement of native vegetation with ornamental species, removal of snags and downed logs, potential for increase in the use of pesticides, insecticides, and herbicides, the presence of "super" predators (domestic dogs and cats), and increased noise and other disturbance factors (Thomas et al. 1974, Penland 1984, Adams et al. 1985).

Impacts on Vegetation

Development of the site under the proposed PCI Master plan (Figure 9) would remove existing vegetation on approximately 35% of Planning Area 1 and convert it to buildings and other impervious surfaces. All of the area to be developed would be located on young forest, shrub, and herbaceous upland vegetation that has developed on old fill material that was deposited when the lumber mill was active. However, some of these areas occur as sedge and grass meadows that incur seasonal ponding, but which otherwise were determined not to meet criteria as regulated wetlands. No wetlands would be directly impacted within Planning Area 1.

Approximately 68% of Planning Area 1 would be retained as open space, most of which would remain as 'natural' open space. Over half of the native open space retained within Planning Area 1 occurs as Wetland 11 north of the existing haul road. The remainder encompasses wetland and retained buffer areas around the perimeter of Planning Area 1. The proposed plan includes temporary impacts to wetland buffers to re-grade portions and revegetate those areas with native forest plantings, as well as some permanent buffer impacts (see the Wetland section for further discussion of buffer impacts and mitigation.

Development of Planning Area 1 would increase the degree of fragmentation of existing developing habitats in this portion of the site by removing existing native and non-native vegetation, with the retained wetlands and associated buffers becoming more edge habitat adjacent to areas of formal landscaping and other constructed features. Small portions (5.8%) of Planning Area 1 within the proposed development would be vegetated as with more formal landscaping (lawns and planting strips). The increased habitat fragmentation and formal landscaping within Planning Area 1 could increase the risk of spread of invasive plant species within the 'natural' open space areas. However, the existing habitats within Planning Area 1, including wetlands and buffer areas, already harbor significant amounts of invasive species, including Himalayan blackberry, Scotch broom, reed canarygrass, and others. The proposed grading and revegetation of buffer areas is intended, in part, to remove existing areas of invasive species and replace them with a mixture of native tree and shrub species.

It should be noted that existing uses within Planning Areas 2 and 3 would continue until such time as they are developed. This includes the equipment and landscape materials storage, and particularly operation of the DirtFish Rally School. In addition, the Rally

School tracks and route would be reconfigured and could be expanded into portions of the southwestern part of the site to compensate for track loops displaced from Planning Area 1. As noted in Chapter 2 of the EIS, any reconfigurations of the track would be independent actions proposed by DirtFish and subject to separate permitting and review by the City.

Development of Planning Areas 2 and 3 over time would result in conversion of nearly 40% of Planning Area 2 and 39% of Planning Area 3 to a mixture of commercial and industrial uses. Within both Planning Areas, most of the area that would be developed to a mixture of uses currently consists of buildings, pavement, gravel and other features that either remain from past uses or are currently used as noted above.

Just over 60% of Planning Area 2 and approximately 61% of Planning Area 3 would be retained as open space, most of which would be natural open space. Within Planning Area 2, the open space centers on the existing wetlands and their buffers. Within Planning Area 3, the open space to be retained includes wetlands/ditches and their buffers, as well as the area within the regulatory floodway in the southwestern part of the site. The latter is contiguous with retained open space within Planning Area 1 and would form a large corridor of native open space.

Upon development of Planning Area 2 or 3, portions of the open space area within the floodway of the Snoqualmie River would be cleared of vegetation (resulting in temporary loss of both native vegetation and invasive species), graded down to provide required flood storage compensation, and revegetated with native plantings to provide enhanced native wetland and upland habitat over time. This would establish a substantial area of contiguous open space among wetlands in this part of the site adjacent to off-site habitats that, with proposed enhancements, would provide a variety of habitat and avenues of movement for wildlife.

Impacts on Aquatic and Fish Habitat

Direct impacts to streams and aquatic environments result where construction activities occur within the stream channels below ordinary high water. No direct impacts to streams and aquatic environments are expected on-site, either within Planning Area 1 or within Planning Areas 2 and 3. Direct impacts within the ordinary high water mark (OHWM) of the Snoqualmie River would be avoided.

Direct impacts to the buffer of the Snoqualmie River will occur where a new stormwater outfall is planned to carry stormwater from the new stormwater collection system in the north and west portions of Planning Area 1. These impacts will occur where the outfall of the stormwater system passes through a constructed rock and soft shoreline channel in the riparian and stream environments immediately above the ordinary high water line of the Snoqualmie River (Figures 12 and 13). Some loss of existing vegetation along SE Mill Pond Road in the vicinity of the outfall will occur; however, most of the portion of

the buffer that will be impacted is within existing paved area and shoulder for SE Mill Pond Road.

Potential water quality impacts from the treated stormwater within Planning Area 1 that will be discharged into the Snoqualmie River at this location would be predominately related to warmer temperatures of stormwater runoff from developed surfaces compared with river temperatures. However, given the relatively small volume of runoff compared with flow volumes in the river, we would not expect changes in water temperatures within the river of any consequence to aquatic life. With respect to other water quality impacts, proposed on-site treatment will reduce stormwater pollutants to levels that are not expected to impact local conditions in the Snoqualmie River or fish habitat conditions therein.

Stormwater runoff from the Wetland 12 sub-basin on site (within Planning Area 1) would be routed through constructed wetland facilities prior to discharge to the Wetland 12 ditch, which flows into Borst Lake, which in turn overflows into the Snoqualmie River. With the water quality treatment provided in the constructed wetland areas prior to discharge, we do not expect adverse impacts to water quality within Wetland 12 ditch, Borst Lake, or the Snoqualmie River.

Indirect impacts to Streams 1 or 2 also could result from construction activities that suspend dust or cause loose soil surfaces that may runoff during storm events. Proper implementation of site BMPs and TESC measures during construction would be expected to minimize the potential for adverse impacts to receiving waters.

Impacts to Wildlife

Habitat Impacts. Direct alteration (reduction) to the distribution, composition, and amount of native vegetation resulting from site development under the Proposed Action would affect the distribution and composition of wildlife populations on the property. In addition, indirect impacts to unaltered habitat retained on-site would make it less suitable for some species of wildlife currently inhabiting the site.

Within Planning Area 1, the proposed PCI Master Plan development would generally impact relatively young vegetation communities that are developing on old fill material, including forest, shrub, and field habitats. This would eliminate habitats for a variety of birds, mammals, reptiles, and amphibians adapted to these communities. In particular, this would remove some habitats in the western part of the site used by elk for foraging and resting cover. It would also remove some of the non-wetland sedge meadows that are used by amphibians such as chorus frogs in the early spring. Elimination of these habitat areas would likely reduce the local populations of a variety of wildlife species that inhabit these areas under current conditions. However, all of the wetland areas within Planning Area 1, including the large Wetland 11 north of the existing haul road, would be retained as open space.

Wildlife movements among available habitats would be incrementally affected by the construction of each phase of the development, compared with the pre-development conditions. Under current conditions within undeveloped areas, animals can move among habitat patches relatively freely, even across open fields, except as influenced by disturbance from existing human activities (e.g., rally car activities, truck traffic on haul roads, and pickup and delivery of materials on site) or limitations on species that may be averse to moving or dispersing across non-forest patches. In contrast, after development movements of many wildlife species would be funneled through remaining natural open spaces of variable width and function. The provision of a bottomless culvert under the re-aligned portion of SE Mill Pond Road could provide an avenue of movement for small mammals, carnivores, and amphibians between the project site and habitats along the Snoqualmie River.

Until development of Planning Areas 2 and 3, ongoing uses within those areas would continue. As noted above, the DirtFish Rally School tracks may be re-routed and expanded further into the southwestern part of the site within Planning Area 3. Development of Planning Area 1, together with this continued activity and use would partially restrict on-site avenues of movement for wildlife between Borst Lake to the south and wetland and upland habitats to the north of the existing haul road. In addition, the increased human activity on site during this period, with the new development on Planning Area 1 and continued uses of Planning Areas 2 and 3, may further reduce the suitability of the retained habitats for some species, especially during periods of heavy activity (construction or operation of Planning Area 1, together with ongoing uses, especially rally car activity, on Planning Areas 2 and 3). In particular, elk use of the site during daytime hours of activity would be restricted to relatively small areas of retained open space within Planning Area 1 and adjacent to Borst Lake, and they may no longer find adequate refuge habitat on site during daytime hours of heavy activity. Elk would continue to use the forested habitat adjacent to the site, between the Snoqualmie River and Mill Pond Road. We expect elk to continue to use portions of the site occupied by existing uses during periods of lower human activity (e.g., overnight).

Development of Planning Areas 2 and 3 over time would gradually eliminate the current human uses on the site, including the DirtFish Rally School activities. Development of these areas would largely impact relatively unvegetated areas (mostly buildings and hard surfaces), retaining the wetlands and buffers with more developed vegetation. Thus, development of Planning Areas 2 and 3 would have relatively little adverse impact on wildlife habitat within these portions of the property. Upon development of Planning Areas 2 and/or 3, the rally school activities would cease, as grading in the southern portions of the site would be required to provide flood storage compensation, and the open space to be retained therein would form a wide habitat corridor to provide improved avenues of movement between off-site habitats to the south (e.g., Borst Lake) and to the north.

Noise Impacts. In general, the primary reasons for potential concern regarding noise impacts to wildlife include the potential for: (1) hearing damage; (2) distraction or a flush response leading to increased susceptibility to depredation or abandonment of young; and (3) the potential for increased stress levels, leading to increased likelihood of starvation or disease.

Much of the available literature regarding the effect of noise to wildlife specifically studies the impact of loud noise, and particularly that of aircraft and other military operations (see reviews in Larkin et al. 1996, Pepper et al. 2003, and Krausman et al. 2004). Wildlife responses to noise appear to vary by the type and source of noise, and vary not only among species, but also by individuals within species (e.g., Shannon et al. 2016, Stankovich 2008). In terms of behavioral responses, some species such as caribou (*Rangifer tarandus*) appear to be somewhat sensitive to aircraft overflights, whereas species such as mule deer (*Odocoileus hemionus*) and Sonoran pronghorn (*Antilocapra americana sonoriensis*) appear to habituate or are otherwise found to be unaffected by loud noise (Weisenberger et al. 1996; Pepper et al. 2003; Krausman et al. 2004). However, animals may also exhibit changes in behavioral patterns or habitat use in relation to anthropogenic noise sources (Kuck et al. 1985). In addition, it has been documented that heart rates in wildlife may increase in response to loud noise, but that these rates returned to normal in 60 to 180 seconds (Weisenberger et al. 1996).

Given the existing on-going human activities on the site and immediate vicinity, most notably activities and noise associated with the DirtFish Rally School and heavy sand and gravel truck traffic on the existing haul road off site, development of the site under the proposed PCI Plan is not expected to increase ambient noise levels significantly; refer to Section 3.12, Noise, of the Draft EIS. In the short term, for development of Planning Area 1, construction activity would increase noise and disturbance to retained habitats at locations near construction areas and along access routes, and current activities would continue on Planning Areas 2 and 3. In addition to habitat removal, the increased noise and activity, particularly during construction, would likely displace some wildlife, and may render some areas less suitable for breeding, feeding or movement among habitats. Thus, overall noise and disturbance activity on the site would increase, compared with existing conditions, particularly during construction. Once construction is complete, operational noise levels of the developed site are not expected to be significantly greater than under existing conditions, as perceived from off-site locations around the project site (see Section 3.12 of the Draft EIS). Large mammals such as elk would be expected to continue to avoid some areas during periods of heavy activity, such as the rally car tracks and haul roads, as they do under current conditions. During this period (development of Planning Area I, prior to development of Planning Areas 2 and 3), the areas on site to which the animals can retreat during daylight hours would be reduced substantially, compared with current conditions.

This pattern would continue until development of Planning Areas 2 or 3. Planning Area 2 is expected to be developed within five years of completion of Planning Area 1,

followed by Planning Area 3 by 2032. Upon development of Planning Area 2, the DirtFish Rally School activities would be reduced or cease because of the requirement for additional flood storage compensation in the central and southwestern portions of the site, and overall levels of noise and disturbance would likely be reduced compared with current conditions, as well as those during the Phased development, particularly upon completion of construction. Completion of the overall development of the site would establish the large habitat corridor in the west-central part of the site.

Impacts to Endangered, Threatened, Sensitive, or other Priority Species. No endangered, threatened, or sensitive plant species are known or likely to occur in the project area. Consequently, development of the Proposed PCI Master Plan would not adversely impact such species. Similarly, development of the site is not expected to affect endangered, threatened, or sensitive animal species, as none are expected to occur there.

Development of Planning Area 1 would eliminate existing vegetation and elk habitat in an area highly used by elk in the far western corner of the property south of the existing haul road. Development of Planning Area 1 would, however, retain much of the vegetated areas that are most used by elk in the southwestern part of the site. This would include the wetlands and their buffers, and the area along the western and southern edges of the property. Prior to development of the later phases, particularly Planning Area 3, the proposed development would result in similar levels of disturbance to the elk, including rally car activities, to which the elk are now habituated, but with less refuge habitat on site. Upon development of Planning Area 3, the large habitat corridor established in the west-central portion of the site would extend through the site between Borst Lake and the existing haul road.

Floodplain Habitat Impacts

Development within the floodplain has the potential to result in loss of floodplain functions. This can occur as a result of direct impacts within the floodplain through loss of storage, or through indirect impacts to downstream waters and therefore to potential fish habitat. These indirect impacts include impacts to stormwater quantity and quality, riparian vegetation, bank stability, channel migration, hyporheic zones, wetlands, and large woody debris.

Under the National Marine Fisheries Service (NMFS 2008) biological opinion on implementation of the National Flood Insurance Program (NFIP), development within the regulatory floodplain must protect fish habitat function and flood storage within the 100-year floodplain and mitigate for indirect effects of development in the floodplain. A FEMA Habitat Assessment providing detailed analysis of direct and indirect impacts to floodplain habitat will be prepared as part of subsequent development permitting when specific engineering designs are available.

The PCI Plan site lies entirely within the 100-year floodplain. Preliminary engineering estimates indicate that between 300,000-350,000 cubic yards (cy) of displacement (fill) could occur, and an equal volume of compensating storage will be created to ensure no increase in flooding. Development would be conducted consistent with development guidelines for construction within the floodplain. The site will be graded to result in no net rise in the base flood elevation, with new distributions of sub-basins draining stormwater to the Snoqualmie River and to Mill Pond, and new distributions of impervious areas.

No listed salmonid species exist in the Snoqualmie River adjacent to the site (above the Snoqualmie Falls). Therefore, any potential impacts to the floodplain from the project on listed salmonids would only occur indirectly as a result of transmission of those affects downstream to below the falls; however, as discussed in previous sections and further below, these will be minimized or otherwise mitigated by design measures and compensatory habitat enhancement. With stormwater runoff routed through constructed wetlands prior to discharge to on-site wetlands and streams that flow into Borst Lake, pre-treatment of stormwater runoff prior to discharge to the river, and proper implementation of TESC and BMP measures, no substantial impacts are to water quality or fish habitat are expected in the stream drainages or the portion of the river adjacent to the site (as outlined in earlier sections). Thus, no substantial adverse impacts to aquatic habitat below the falls are expected.

Stormwater. The projected net increase in impervious area and related stormwater runoff over the entire site is approximately 18 acres (Goldsmith 2020). Within Planning Area 1, the net increase in impervious area would be greater than this amount, whereas within Planning Areas 2 and 3 the effective impervious area may decrease, compared with existing conditions.

Changes in stormwater runoff within Planning Area 1 compared to existing conditions are related to creation of new treated stormwater runoff from new impervious areas and related to creation of new sub-basin boundaries different from existing conditions. These differing sub-basin conditions will result in a new stormwater outfall into the shoreline of the Snoqualmie River, rather than most of the existing stormwater runoff flowing south to Borst Lake under the existing conditions.

Stormwater from the proposed new development in Planning Area 1 will be collected and treated prior to discharge to the Snoqualmie River or to the Stream 2 drainage system discharging to Borst Lake. The Snoqualmie River is an exempt water for water quantity control. Treatment of stormwater will follow Basic Treatment for direct discharge to the Snoqualmie River and Enhanced Treatment for discharge to other surface waters per the King County (2016) Surface Water Design Manual (KCSWDM). This treatment proposes to include a proprietary media filter and vegetated biofiltration facilities prior to discharge to the river, and treatment stormwater wetlands followed by overland flow though vegetated buffers to natural wetlands. The result of these new treatment systems

is expected to improve water quality discharged to the Snoqualmie River and Borst Lake respectively compared to existing conditions.

Riparian Vegetation. As discussed above, development of the site under the proposed PCI Master plan (Figure 9) would remove existing vegetation on approximately 33% of Planning Area 1 and convert it to buildings and other impervious surfaces. All of the area to be developed would be located on young forest, shrub, and herbaceous upland vegetation that has developed on old fill material. The remainder would be retained as native open space, primarily as wetland (the largest of which is Wetland 11) or as wetland buffer. The proposed plan also includes temporary impacts to wetland buffers to re-grade portions and revegetate those areas with native forest plantings, as well as some permanent buffer impacts.

Upon development of the subsequent planning areas, just over 60% of Planning Area 2 and approximately 61% of Planning Area 3 would be retained as open space, most of which would be natural open space. Within Planning Area 2, the open space centers on the existing wetlands and their buffers. Within Planning Area 3, the open space to be retained includes wetlands/ditches and their buffers, as well as the area within the regulatory floodway in the southwestern part of the site. The latter is contiguous with retained open space within Planning Area 1 and would form a large corridor of native open space. After re-grading to provide flood storage compensation, this habitat corridor in the central part of the site would be re-vegetated with native forest plantings that would improve habitat conditions within the floodplain over the long term, with improved potential LWD recruitment.

Bank Stability. As the site will be graded to result in no net rise of the 100-year floodplain, no new flood or flow conditions along the Snoqualmie River are expected to occur that could affect bank stability. The entire shoreline reach along the project is a heavily riprapped revetment.

The existing SE Mill Pond Road lies adjacent to the Snoqualmie River shoreline. The portion of the road adjacent to Planning Area 1 is proposed to be reconstructed further from the shoreline, with the existing road bed decommissioned and restored to riparian vegetation. Shoreline rip-rap will not be removed or re-constructed for road decommissioning and vegetation restoration and is not expected to affect the local shoreline stability.

The only project element that could potentially affect localized bank stability is the proposed new stormwater outfall located on the river right bank draining the new stormwater sub-basin from Planning Area 1. The outfall has not been designed at this time and, therefore, cannot be evaluated in detail. Future review of this outfall during subsequent development permitting when a specific engineering design is proposed, will need to include analysis of bank stability to ensure that any potential effect on local bed or bank erosion has been addressed.

Channel Migration. The channel migration zone identified by King County (2018; Figure 5) iMap indicates the migration zone lies partially within Planning Area 1. However, the heavily reinforced shoreline here prevents migration. The propose project will not affect the stability of the river channel to migrate (AESI 2020).

Hyporheic Zones. Shallow and near-surface groundwater in the vicinity is primarily influenced by upstream sources of groundwater passing through permeable soils from the plateaus to the east (AESI 2020). Construction of the project will not impede existing groundwater flow conditions. Some changes in localized infiltration may occur but these are not expected to contribute significant levels of new groundwater (AESI 2020). Any hyporheic contributions to the Snoqualmie River and the ecological benefits they provide are not expected to be changed from construction of the project.

Wetlands. The Proposed Action would avoid direct impacts to wetlands within the project site, including within Planning Area 1. As discussed above, the proposal includes enhancements to degraded wetland buffers to improve buffer functioning with respect to water quality and habitat conditions.

Large Woody Debris. Only limited areas of vegetation dominated by tree cover occur within the project site. These forested areas contain only limited amounts of woody debris, and most is rather small, as most of the areas include only very young, developing forest. Moreover, the areas of greatest potential for recruitment of LWD to the river are located closest to the river channel southwest of SE Mill Pond Road (i.e., off site); these areas include the largest trees and more well-developed forest patches. To the extent that wetland buffers include developing forest that will be retained, potential recruitment of LWD from existing standing trees will be maintained. In addition, the proposed wetland buffer enhancements with native forest plantings will provide additional potential future recruitment over the long term.

5.3 REDEVELOPMENT ALTERNATIVE 1 SUMMARY OF IMPACTS

As noted above, the Redevelopment Alternative 1 would involve development of the site in three phases, Planning Areas 1, 2, and 3, as under the Proposed Action. Upon development of Planning Area 1, existing uses within Planning Areas 2 and 3 would continue until they are redeveloped, as under the Proposed Action. Open space and building/impervious site coverage would be comparable to the proposed PCI Plan – 64% and 36% respectively. Likewise, the Master Drainage and buffer restoration plan would be comparable to the proposed PCI Plan.

Building layout in Planning Area 1 would also be comparable to the proposed PCI Plan. Land use would be predominantly warehouse, encompassing more of the site than under the PCI Plan. Compared to the proposed action, retail and office uses would be reduced, and a smaller indoor event space would be developed. Residential uses would be less than the PCI Plan. Compared to the proposed PCI Plan, Alternative 1 includes less total

development in Planning Area 1 and somewhat greater total development in Planning Area 3. The Redevelopment Alternative includes an outdoor performance space in Planning Area 3. It assumes approximately 3.7 acres of landscaped open space with a constructed stage, with capacity for approximately 5,000 people.

5.3.1 Wetlands and Streams

As under the Proposed Action, Alternative 1 would avoid direct physical alteration to all identified City-jurisdictional wetlands and streams by retaining them within native open space tracts that include their buffers. Likewise, should future development plans for Planning Areas 2 and 3 include altering existing jurisdictional wetlands or their buffers, additional environmental review would be required to evaluate impacts and develop appropriate mitigation measures.

Alternative 1 would be developed under essentially the same Master Drainage Plan system and requirements as under the Proposed Action. Thus, we would similarly expect no significant hydrologic impacts to on-site wetlands as under the Proposed Action.

With a similar level of development and footprint as under the Proposed Action, we expect comparable implementation of best management practices and TESC measures to limit potential for sedimentation and water quality impacts to wetlands and streams. With a similar level of development as under the Proposed Action, this alternative has the same potential for water quality impacts to on-site and downstream wetlands and the Snoqualmie River. Therefore, as under the Proposed Action, no significant adverse wetlands or streams area anticipated under Alternative 1.

5.3.2 Vegetation, Fish, and Wildlife

Impacts on Vegetation

Overall, Alternative 1 would have generally comparable impacts on vegetation communities as the proposed PCI Plan. Essentially the same areas of the site and the same vegetation communities would be impacted under this alternative. This alternative would retain a comparable area of open space within Planning Area 1, compared to the proposed PCI plan. With a comparable area of development, we would assume no direct wetland impacts and comparable impacts to wetland buffers within Planning Area 1 under Alternative 1 as under the Proposed PCI Plan. This alternative is expected to result in similar levels of habitat fragmentation as the Proposed Action, along with potential for spread of invasive species, with similar removal of existing areas of invasive species and revegetation with plantings of native trees, shrubs, and ground covers to enhance buffer areas.

With generally comparable areas of development within Planning Areas 2 and 3, we would expect essentially the same impacts to vegetation communities under Alternative 1, compared to the Proposed PCI Plan. As with the PCI Plan, retained open space within these planning areas would center on wetlands and their buffers. We would assume

similar clearing and grading within the floodway portion of Planning Area 3 to provide flood storage compensation and habitat enhancement as under the Proposed Action.

Impacts on Aquatic and Fish Habitat

With a comparable overall footprint of impacts and proposed stormwater management plan, Alternative 1 would result in similar impacts to aquatic and fish habitats as under the Proposed Action.

Impacts on Wildlife

With comparable removal and retention of existing habitats as under the Proposed Action, Alternative 1 would result in essentially the same impacts to wildlife habitat. This would result in similar reduction of local populations of wildlife species currently using the site, particularly within Planning Area 1. This alternative would reduce a comparable area of refuge habitat for elk and other animals within Planning Area 1 as under the Proposed Action, and similarly restrict movements during periods of heavy activity to retained habitats, such as wetland buffers. Prior to development of Planning Areas 2 and 3, existing uses on the site would continue, as under the Proposed PCI Plan, with comparable impacts on wildlife habitat and use patterns.

As with the Proposed PCI Plan, development of Planning Areas 2 and/or 3 would similarly primarily impact previously developed areas (mostly existing buildings and hard surfaces) retaining existing wetlands and buffers. Existing uses such as the DirtFish Rally School would cease, and a large open space corridor through the central part of the site would be established after grading to provide compensatory flood storage and enhancement via revegetation with native plantings.

Development of Planning Areas 1 and 2 under this alternative, prior to development of Planning Area 3, would have similar impacts to wildlife habitats and wildlife use of the site with respect to noise disturbance and human activity as under the Proposed PCI Plan. With fewer employees on site, disturbance impacts from these uses could be slightly less than under the Proposed PCI Plan. However, under this alternative, Planning Area 3 includes an outdoor performance space encompassing approximately 3.7 acres, with capacity for 5,000 people. On nights when this space is being used (assumed to occur at least two times per week during summer months), this would substantially increase noise and lighting impacts on adjoining on-site wildlife habitats during evening hours, compared with the Proposed PCI Plan. Animals may be forced to avoid portions of the site during and around these activities. This would likely diminish the suitability of retained refuge habitat and avenues of movement on site more than under the Proposed PCI Plan, particularly near the facilities and along access roads, during and before and after these activities.

As with the PCI Master Plan, development of the site under this alternative is not expected to adversely affect endangered, threatened, or sensitive plant or animal species,

as none are known or expected to occur there. With respect to elk habitat use, Alternative 1 is expected to have comparable impacts through development of Planning Areas 1 and 2, with loss of some existing refuge habitat and continued disturbance from the rally car activities until development of Planning Area 2. Upon development of Planning Area 3, this alternative would result in additional noise and light disturbance during use of the outdoor performance space, compared with the Proposed Action.

5.4 NO ACTION ALTERNATIVE

Under the No Action alternative, no redevelopment would occur, and existing uses would continue on the site. These would likely include equipment storage, soil management, special event parking, and the DirtFish Rally School activities. Improvements to stormwater management as would be implemented under the proposed Action and Alternative 1 under the Master Drainage Plan would not be implemented, nor would buffer restoration and enhancement of existing degraded buffers that are present throughout the site.

5.4.1 Wetlands and Streams

We assume that no direct impacts to regulated wetlands and watercourses or their functional buffers would occur under this alternative without further environmental review by the City of Snoqualmie and other regulatory agencies that have jurisdiction over wetlands and streams within the site. Existing low functioning of wetland and stream buffer areas would continue, as no enhancement or restoration would occur. Under the No Action Alternative, we anticipate existing wetland hydrologic regimes to be maintained. Current levels of sedimentation and other water quality impacts to onsite wetlands and streams from existing equipment and landscape materials storage and operation of the DirtFish Rally School of the site will continue.

5.4.2 Vegetation, Fish, and Wildlife

No designated open space tracts, such as that envisioned in the Proposed Action or Alternative 1, are expected to be established. Vegetation communities in unused portions of the site, such as those forest, shrub, and herbaceous within the shoreline management zone, would continue to develop over time, likely resulting in additional forest cover. However, no vegetation enhancements, such as those proposed under the PCI Plan, would occur, and some areas of existing hardscapes or heavily used areas on site would remain and would not likely develop significant vegetative cover over time.

Under this alternative, we would expect no substantial changes to aquatic and fish habitats, as existing uses are expected to continue. Wildlife would be expected to continue to use the site as they do under current conditions, in the context of ongoing uses on site and in the vicinity, including DirtFish rally car activities, other activities in the northeastern part of the site, as well as the truck traffic on the existing haul road. Species such as elk would be expected to continue to utilize portions of the site in ways that avoid areas and periods of heavy activity, as they do currently. Under the No Action

Alternative, we would expect the elk population to remain stable or even increase over the immediate future with existing uses, depending on hunter elk harvests off-site.

6.0 MITIGATION

Snoqualmie Municipal (2018c) Code requires that development of the site avoid or minimize impacts to regulated critical/sensitive areas. Where impacts to these areas cannot be avoided, they must be compensated through replacement, enhancement, or providing substitute areas to replace ecological functions of the resource.

Wetlands and streams are protected by Section 404 of the Federal Clean Water Act and other state and local policies and ordinances including City of Snoqualmie (2018c) code. Similarly, listed fish and wildlife species and their habitats are protected under federal and state law, and other priority wildlife species are protected by state and local laws.

Under the Proposed Action, the project would avoid direct impacts to wetlands and jurisdictional watercourses within Planning Area 1. Road access points have been located to avoid direct impacts to regulatory wetlands. All wetlands and streams would be provided with buffers which provide substantially greater protection than under current conditions through replacement of non-functional and degraded buffers with native forest buffers through buffer restoration and enhancement. Areas targeted for development within Planning Areas 2 and 3 are located in portions of the site that have been previously developed or disturbed and currently consist of buildings, fill material, pavement, or gravel surface. Existing wetlands and buffers are expected to be retained as open space areas to provide habitat. Future development of Planning Areas 2 and 3would include grading down portions of Planning Area 3 within the Shoreline Management jurisdiction, including existing wetlands, to provide compensatory flood storage. These areas would be revegetated to provide enhanced wetland and other native habitats.

6.1 PROPOSED ACTION MITIGATION SEQUENCING

Mitigation has been defined by the State Environmental Policy Act (SEPA) (WAC 197-11-768; cf. Cooper 1987), and subsequently in a Memorandum of Agreement between the Environmental Protection Agency and the COE (Anonymous 1989). In order of desirability, mitigation may include:

- Avoidance - avoiding impacts by not taking action or parts of an action;
- Minimization - minimizing impacts by limiting the degree or magnitude of the action and its implementation;
- Compensatory Mitigation - may involve:
  a) repairing, rehabilitating, or restoring the affected environment;
  b) replacing or creating substitute resources or environments;
  c) mitigation banking.

The Proposed Action incorporates a number of measures to avoid or minimize potential impacts on plants and fish and wildlife habitat.

6.1.1 Avoidance of Impacts

Under the Proposed Action, the project would avoid direct impacts to wetlands and jurisdictional watercourses within Planning Area 1. In order to avoid direct wetland impacts to Wetland 12, access to Planning Area 1 via the Snoqualmie Sand and Gravel quarry haul road has been designed to expand an existing northern entrance into the Planning Area 1 rather than construct a new north entrance.

6.1.2 Minimization of Impacts

The development plan under the Proposed Action incorporates a number of design features and measures that would minimize or limit impacts to wetlands and jurisdictional watercourses and fish and wildlife habitat both during and after construction. These include:

- The limits of wetland and stream buffer areas would be clearly marked on construction plans and in the field to prevent unauthorized damage to critical areas during construction;
- Construction limits, including staging areas, would be clearly marked in the field prior to beginning construction activities;
- To the extent feasible, construction staging areas would be located outside of wetland and stream buffer to minimize impacts to vegetation;
- A permanent stormwater management system would be designed and installed according to the Master Drainage Plan for the site prepared by Goldsmith Land Development Services (2020), which is based on the standards of the 2016 KCSWDM which is equivalent to the 2012/2014 *Department of Ecology Stormwater Manual for Western Washington* (Ecology Manual);
- During construction, stormwater run-off would be treated according to a City of Snoqualmie-approved Stormwater Pollution Prevention Plan SWPPP for the project, which meets standards of the 2016 KCSWDM, prior to discharge into on-site streams or wetlands;
- Appropriate BMPs and TESC measures described above in Section 5.2.1 and including placement of straw bales and silt fencing between work activities and adjacent wetlands or stream channels in order to prevent sediment from entering these surface waters during and after construction would be implemented in accordance with the approved SWPPP, including specific measures to prevent and control spills of pollutants, and to handle, control, and store potential contaminants;

- Wetland and stream buffer areas temporarily disturbed for construction access and staging would be revegetated with a mixture of native plant species following completion of construction activities;
- Use of containment tarps or netting when working over water to retain fallen materials;
- Establishment of covenants, guidelines, and educational materials to prohibit the introduction of noxious weeds or invasive species into landscape areas, both common areas and individual lots.

6.2 Required and Proposed Mitigation

Wetlands and streams are protected by Section 404 of the Federal Clean Water Act and other state and local policies and ordinances including City of Snoqualmie (2018c) code. Similarly, listed fish and wildlife species and their habitats are protected under federal and state law, and other priority wildlife species are protected by state and local laws. As such, the Snoqualmie Mill PCI Plan Proposed Action will utilize provisions of Chapter 17 of the City of Snoqualmie (2018a) which encourage "imaginative well-designed master planned commercial -industrial development" proposals (SMC 17.20.050 A), and provides flexibility from fixed, quantitative standards regulations regarding avoidance and minimization of impacts, as well as buffer requirements and protection of fish and wildlife habitat conservation areas provided that that the deviation will not threaten health, safety or the environment. (SMC 17.20.050 I).

Under the Proposed Action, all the wetlands and streams within Planning Area 1 would be retained and provided with buffers which provide substantially greater protection than under current conditions. Therefore, wetland mitigation through creation, re-establishment, rehabilitation, or enhancement is not proposed. Non-functional and degraded buffers would be replaced with native forest buffers through buffer restoration and enhancement in exchange for focused buffer intrusions consistent with requirements of SMC 19.12.170 H.2 and SMC 19.12.170 H.6.

6.3 Buffer Restoration and Enhancement Plan

The City of Snoqualmie critical area regulations (2018c) requires compensatory mitigation for any proposed wetland loss or alteration of buffers. Direct wetland impacts would be avoided under the Proposed Action. On-site wetland buffers and the buffer for the Snoqualmie River would be directly impacted under the Snoqualmie Mill PCI Plan Proposed Action. The City of Snoqualmie (2018c; SMC 19.12.090.F) requires that the applicant prepare and submit a mitigation plan for impacts to Critical Areas to the City for review and approval. The general approach to buffer mitigation is described further below and is focused on Planning Area 1 at this time; a specific plan would be submitted at the time of building permit application. The plan would be updated to address Planning Areas 2 and 3 in the future, as those areas are planned in greater detail.

The existing buffers for wetlands and for the Snoqualmie River within Planning Area 1 provide a low level of protection of wetland and stream functions due to poorly-developed or absent vegetative cover, the presence of non-native invasive species, and gravel and paved roads or other impervious surfaces consisting of compact, gravel fill. Areas where young forest occurs have an understory that is sparsely vegetated or dominated by non-native, invasive Himalayan blackberry.

All existing impervious surface areas, including paved and gravel roadways and areas of compact gravel fill within the wetland buffers, with the existing concrete pad at the south end of the western lobe of Wetland 12 that is currently used to store materials for the DirtFish Rally School, will be removed and replaced with a minimum of 12 inches of topsoil amended with compost prior to re-planting. These areas include portions of the buffer for Wetlands 12, 28, and 29 and in the location where a portion of Mill Pond Road will be retired along the Snoqualmie River (Figure 13).

Site grading to provide compensatory flood storage will necessitate removal of a steeply-sided berm on which forested buffer for Wetland 12 is present along the north perimeter of Planning Area 1. Grading of this area will result in shallower slopes more uniform and more conducive to dispersion of runoff within the proposed 105-foot average buffer width provided to Wetland 12. Grading to remove old fill within other portions of the buffers for Wetlands 12, 28, and 29 may be necessary in order to provide additional compensatory flood storage or for site development. Any of these areas considered as mitigation for buffer impacts also will receive a minimum of 12 inches of topsoil amended with compost following removal of the old fill.

Following site grading and installation of topsoil/compost mix, the entirety of the wetland buffers within Planning Area 1 would will be restored or enhanced with mix of native trees, shrubs, and herbaceous vegetation common to the Snoqualmie Valley. In total, approximately 19.5 acres of wetland and Snoqualmie River buffers will be restored or enhanced. Areas that have been graded and are bare of vegetation will be planted at densities that are typical for buffer restoration (9 feet on-center for trees and 6 feet on-center for shrubs and herbaceous species). Areas that retain some cover by young trees will be planted with supplemental coniferous trees, as needed, to create a closed forest canopy. Non-native, invasive species within the existing, treed portions of the wetland buffers will be removed and supplemental shrub and herbaceous understory species will be planted.

The overall goal of the buffer restoration and enhancement plan is to increase the existing level of protection provided by the buffer for wetland functions. Through conversion of the existing degraded buffers to forested condition with high density and diversity of species and structure, substantial improvement over the current level of water quality and habitat protection is anticipated. The enhanced and restored wetland buffers will be designed to be a low maintenance, self-sustaining community resembling native forest habitat typical of the Puget Sound lowlands.

6.4 FISH AND WILDLIFE MITIGATION

The Proposed Action includes measures to avoid and minimize impacts to vegetation, fish and wildlife, including wetlands and streams. As noted above, under the Proposed Action (Proposed PCI Plan), the project would avoid direct impacts to wetlands and jurisdictional watercourses on site within Planning Area 1, and road access points have been located to avoid direct impacts to regulatory wetlands. Areas targeted for development within Planning Areas 2 and 3 focus on portions of the site that have been previously developed or disturbed and currently consist of buildings, fill material, pavement, or gravel surface, and wetlands and buffers are expected to be retained as open space areas.

Impact minimization measures described above in Section 6.1.2 to be implemented to protect wetland and stream resources will also serve to protect fish and wildlife resources. Compensatory mitigation of proposed wetland buffer impacts would be provided in accordance with City of Snoqualmie requirements. Buffer areas within Planning Area 1 to be cleared graded to provide compensatory flood storage would be revegetated with native forest plantings.

In addition to the wetland and stream buffer mitigation outlined in Section 6.3 above, compensation for anticipated loss of forest vegetation within the regulatory floodplain would be provided by installation of plantings of native trees within appropriate areas of the floodway upon completion of grading to provide compensatory flood storage along with development of each Planning Area. In the future, together with the retained wetlands and buffers, the enhanced and restored areas would form a large open space corridor within the central part of the project site. Compensatory plantings would be provided on at least a 1:1 basis. Detailed mitigation plans, as required by the City of Snoqualmie (2018c), would be developed for review and approval prior to issuance of building permits for each Planning Area.

In addition, the provision of a bottomless culvert under the realigned portion of SE Mill Pond Road to allow for passage of flood waters may also provide an avenue of movement for small mammals, carnivores, and amphibians between the project site and habitats associated with the Snoqualmie River.

6.5 OTHER POTENTIAL MITIGATION

Additional compensatory mitigation measures for impacts to wildlife habitat may include enhancement of existing wetland buffer vegetation within Planning Areas 2 and 3 by removing invasive species such as Himalayan blackberry and replanting these areas with native trees, shrubs, and groundcovers.

In addition, landscaping of developed open space areas could focus on a variety of native plant species of value to wildlife, where feasible, given considerations of maintaining adequate sight distance for public safety and other applicable landscape standards.

Landscape strips within developed areas or along roadways may also include native plants that have some value for wildlife cover and food.

7.0 SIGNIFICANT UNAVOIDABLE ADVERSE IMPACTS

7.1 WETLANDS AND STREAMS

The project is not expected to result in significant unavoidable adverse impacts to wetlands. Direct alteration of wetlands would be avoided under the Proposed Action. Development of the site, including clearing of native vegetation and construction of impervious surfaces, will create greater surface runoff, which without mitigation, would result in some unavoidable changes to the hydrologic conditions in the wetlands. With mitigation measures employed through the Master Drainage Plan, the primary hydrologic impacts to the wetlands can generally be limited to insignificant levels, as long as hydrologic changes are kept within acceptable limits as determined through hydrologic modeling. Some additional sediment deposition and associated water quality impacts from the proposed development areas are unavoidable but can be kept to minimal levels through the use of stormwater wetland facilities and other erosion/sediment control measures. Implementation of the proposed buffer enhancement and restoration plan would substantially increase the ability of the buffer to protect wetland and stream water quality and habitat functions over the level currently provided by existing degraded buffers present throughout the site.

7.2 WILDLIFE AND FISHERIES RESOURCES

Indirect impacts to wetland vegetation and wildlife resulting from increased human activity and associated disturbance on site are unavoidable. These effects would likely be most pronounced for the smaller, narrow wetland areas surrounded by proposed development, particularly those located away from other retained native open space, and their value as wildlife habitat, which is currently fairly limited because of existing uses, would likely become further compromised over time. With respect to the affected wetlands, these impacts may be viewed as significant. However, given the existing human uses and activity on site, these unavoidable impacts are not considered significant.

With respect to plants and animals, development of the Snoqualmie Mill site under the Proposed PCI Plan would result in the following unavoidable adverse impacts:

1. Removal of a substantial portion of the existing native vegetation within Planning Area 1 and replacement by non-native communities or impervious surfaces; retained native vegetation communities around the developed areas on-site would remain or become highly fragmented;

2. A reduction in the local populations of most native wildlife species on the site upon development of Planning Area 1, at least until the central on-site habitat corridor can be established. An additional shift in species composition to favor species more adapted to urban development, particularly within Planning Area 1 would occur. Some wildlife species may be eliminated from the site; those animals displaced from the site may perish; and

3. An increase in disturbance of the patches of native forest habitat retained on-site and on immediately adjacent lands as a result of increased human activity.

Given the historically intensive use and development of the site, particularly within the eastern portions of the site (Planning Areas 2 and 3), site redevelopment is not considered a significant impact to plants and animals. Proposed development of Planning Area 1, prior to redevelopment of Planning Areas 2 and 3, could be considered a significant loss of existing vegetation area on site, at least until flood storage compensation areas can be enhanced and the central habitat corridor can be established.

8.0 LIMITATIONS

We have prepared this report for the exclusive use of Snoqualmie Mill Ventures LLC. And their consultants. No other person or agency may rely upon the information, analysis, or conclusions contained herein without permission from Snoqualmie Mill Ventures LLC.

The determination of ecological system classifications, functions, values, and boundaries is an inexact science, and different individuals and agencies may reach different conclusions. With regard to wetlands, the final determination of their boundaries for regulatory purposes is the responsibility of the various agencies that regulate development activities in wetlands. We cannot guarantee the outcome of such determinations. Therefore, the conclusions of this report should be reviewed by the appropriate regulatory agencies.

We warrant that the work performed conforms to standards generally accepted in our field, and prepared substantially in accordance with then-current technical guidelines and criteria. The conclusions of this report represent the results of our analysis of the information provided by the project proponent and their consultants, together with information gathered in the course of the study. No other warranty, expressed or implied, is made.

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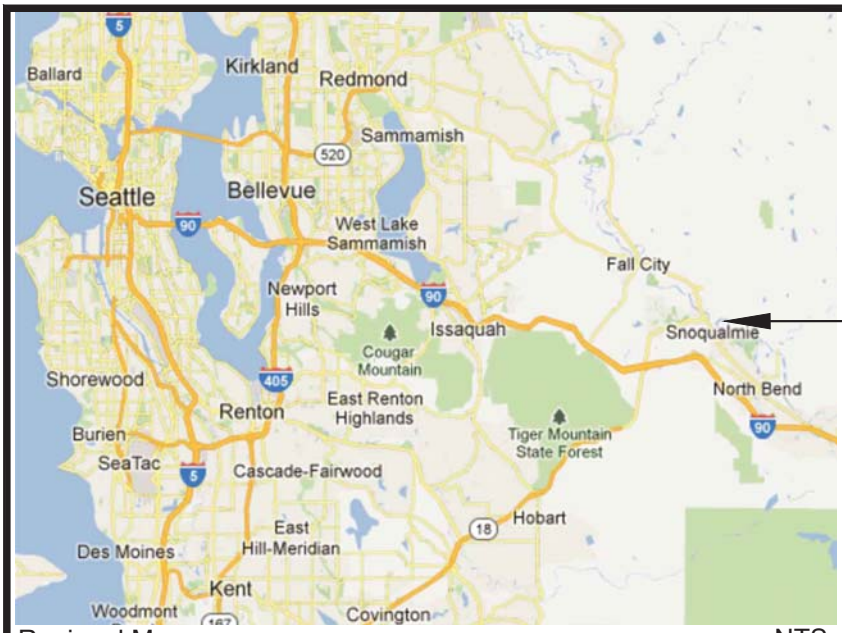
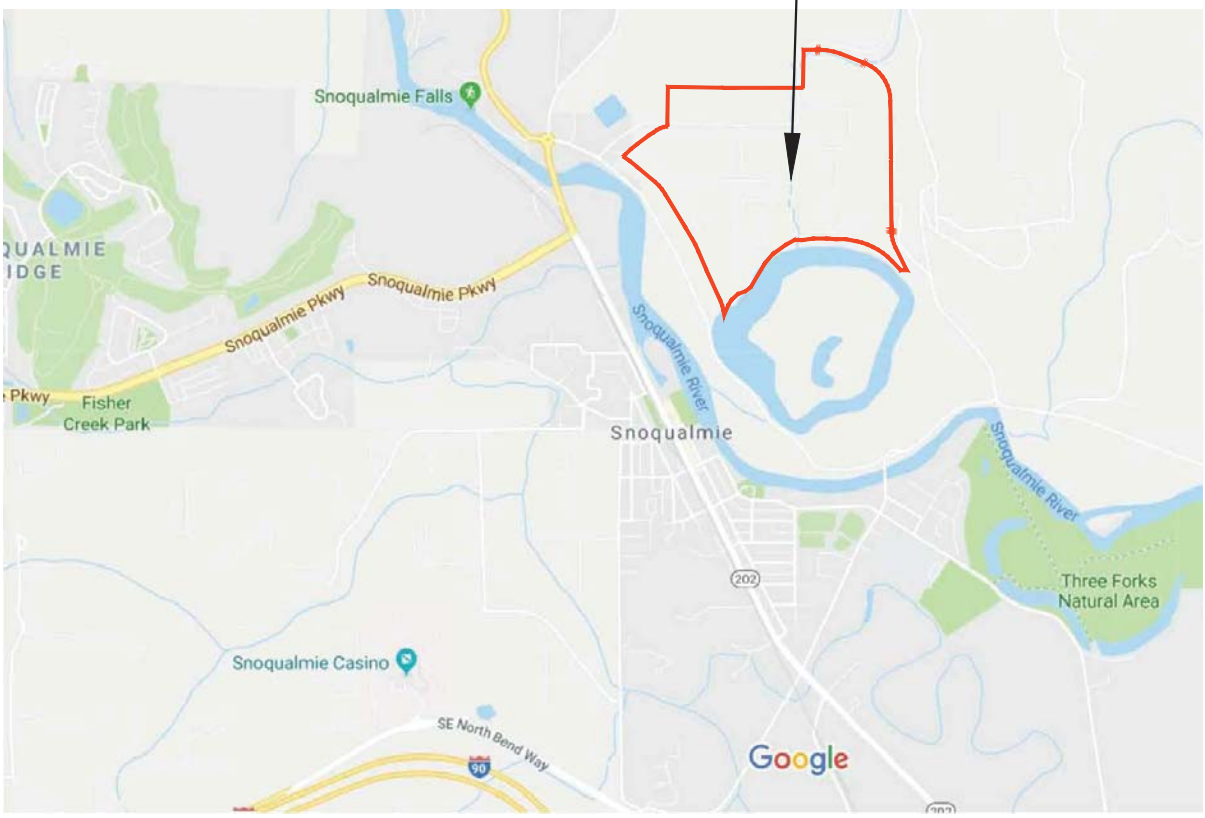
Wilma, David W. 2012b. Snoqualmie Falls Lumber Co. and Weyerhaeuser Timber Co. Mill Site, Snoqualmie, Washington – Site History 1945 to 2003. October 15, 2012 report prepared for BrookWater Advisers, LLC regarding.

FIGURES AND TABLES



Regional Map NTS

PROJECT SITE



Vicinity Map NTS

T:\2012\2012-013 Snoqualmie Mill\8.5 x11 Figs.dwg

Source for Regional & Vicinity map: Google Maps,Mountain View, CA: Google Inc. (2009). Available from https://maps.google.com (Accessed 2018/3/21).

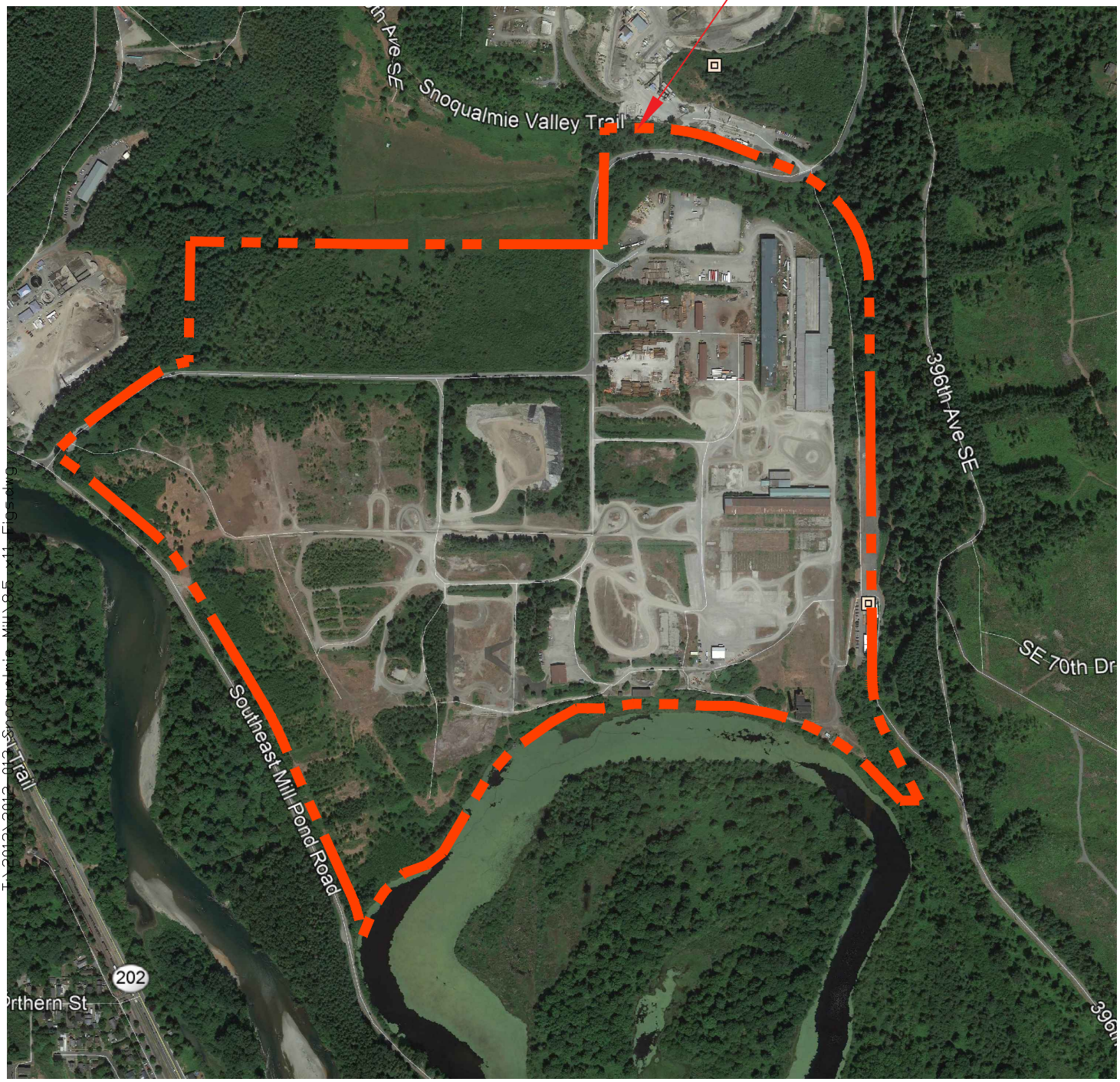
Sections 20, 29, and 30, Township 24 North, Range 8 East, W.M.

N

FIGURE 1
SNOQUALMIE MILL PROPERTY
REGIONAL & VICINITY MAP
SNOQUALMIE , WA

Raedeke Associates, Inc.
2111 N. Northgate Way Ste. 219
Seattle, WA 98113

2012-013-103



Source: Google Earth,Mountain View, CA: Google Inc. (2009). Available from https://maps.google.com (Accessed 2018/3/21).

0 400′ 800′ 1600′
SCALE 1"=800'

N

FIGURE 2
SNOQUALMIE MILL PROPERTY
GOOGLE EARTH AERIAL PHOTO
KING COUNTY, WA

Raedeke Associates, Inc.
2111 N. Northgate Way Ste. 219
Seattle, WA 98133

2012-013-103

Soil Map—Snoqualmie Pass Area, Washington (Parts of King and Pierce Counties)

Map Scale: 1:10,100 if printed on A landscape (11" x 8.5") sheet.

N

Meters: 0 100 200 400 600

Feet: 0 450 900 1800 2700

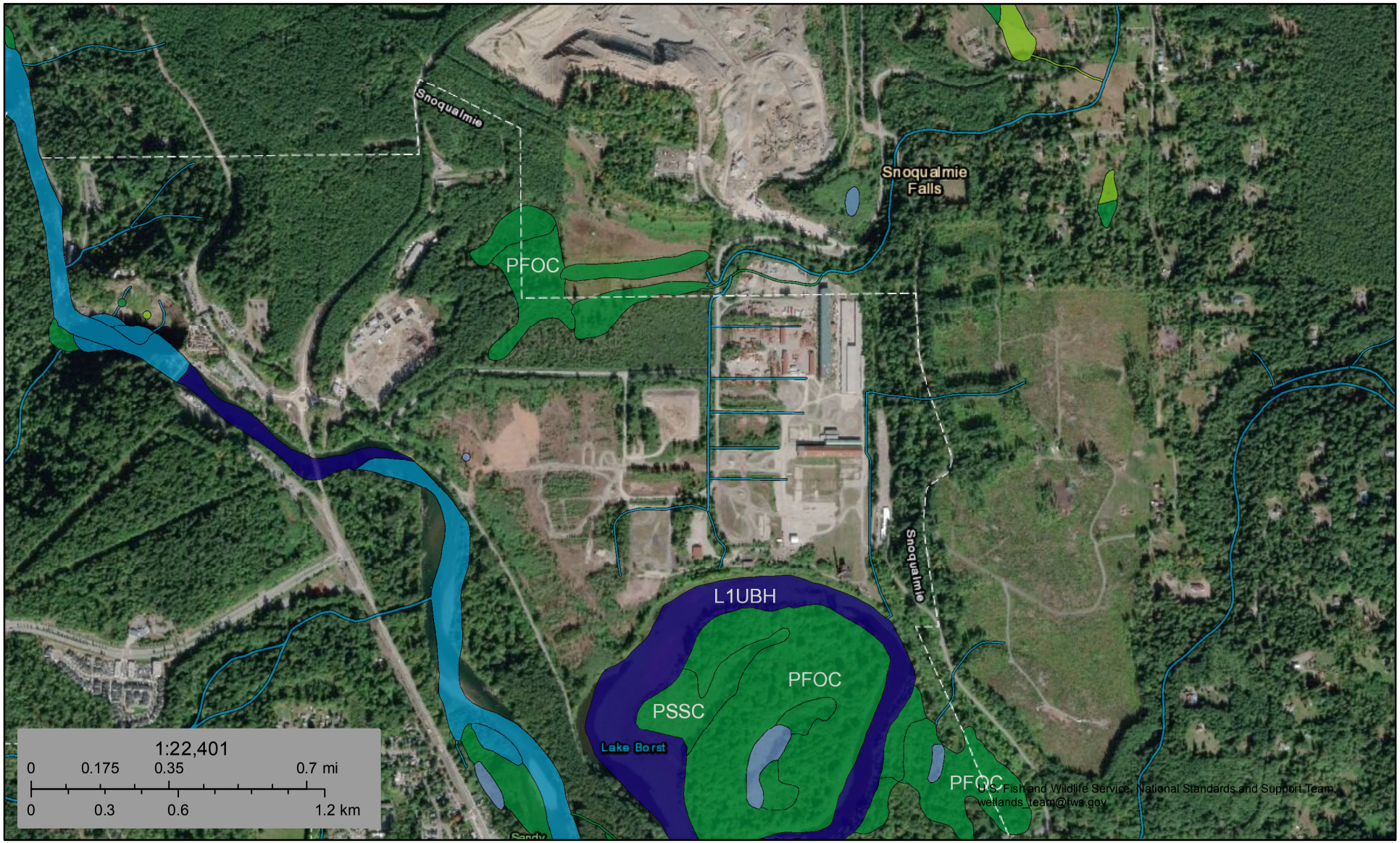
Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 10N WGS84

Map Unit Legend

Snoqualmie Pass Area, Washington (Parts of King and Pierce Counties) (WA634)			
Map Unit Symbol	**Map Unit Name**	**Acres in AOI**	**Percent of AOI**
9	Arents, 0 to 8 percent slopes	151.9	29.0%
10	Barneston gravelly ashy coarse sandy loam, 0 to 8 percent slopes	54.6	10.4%
12	Barneston gravelly ashy coarse sandy loam, 30 to 65 percent slopes	0.0	0.0%
14	Barneston gravelly ashy coarse sandy loam, 8 to 30 percent slopes	13.6	2.6%
20	Belfast silt loam, 0 to 2 percent slopes	6.1	1.2%
53	Edgewick silt loam, 0 to 3 percent slopes	16.2	3.1%
157	Nooksack silt loam, 0 to 2 percent slopes	163.6	31.2%
231	Seattle muck, 0 to 1 percent slopes	8.3	1.6%
236	Si silt loam, 0 to 2 percent slopes	33.9	6.5%
255	Tokul gravelly medial loam, 8 to 15 percent slopes	0.2	0.0%
256	Tokul gravelly medial loam, 15 to 30 percent slopes	29.2	5.6%
258	Tokul-Pastik complex, 45 to 90 percent slopes	3.1	0.6%
285	Water	42.8	8.2%
Totals for Area of Interest		**523.5**	**100.0%**

U.S. Fish and Wildlife Service
National Wetlands Inventory

Wetlands



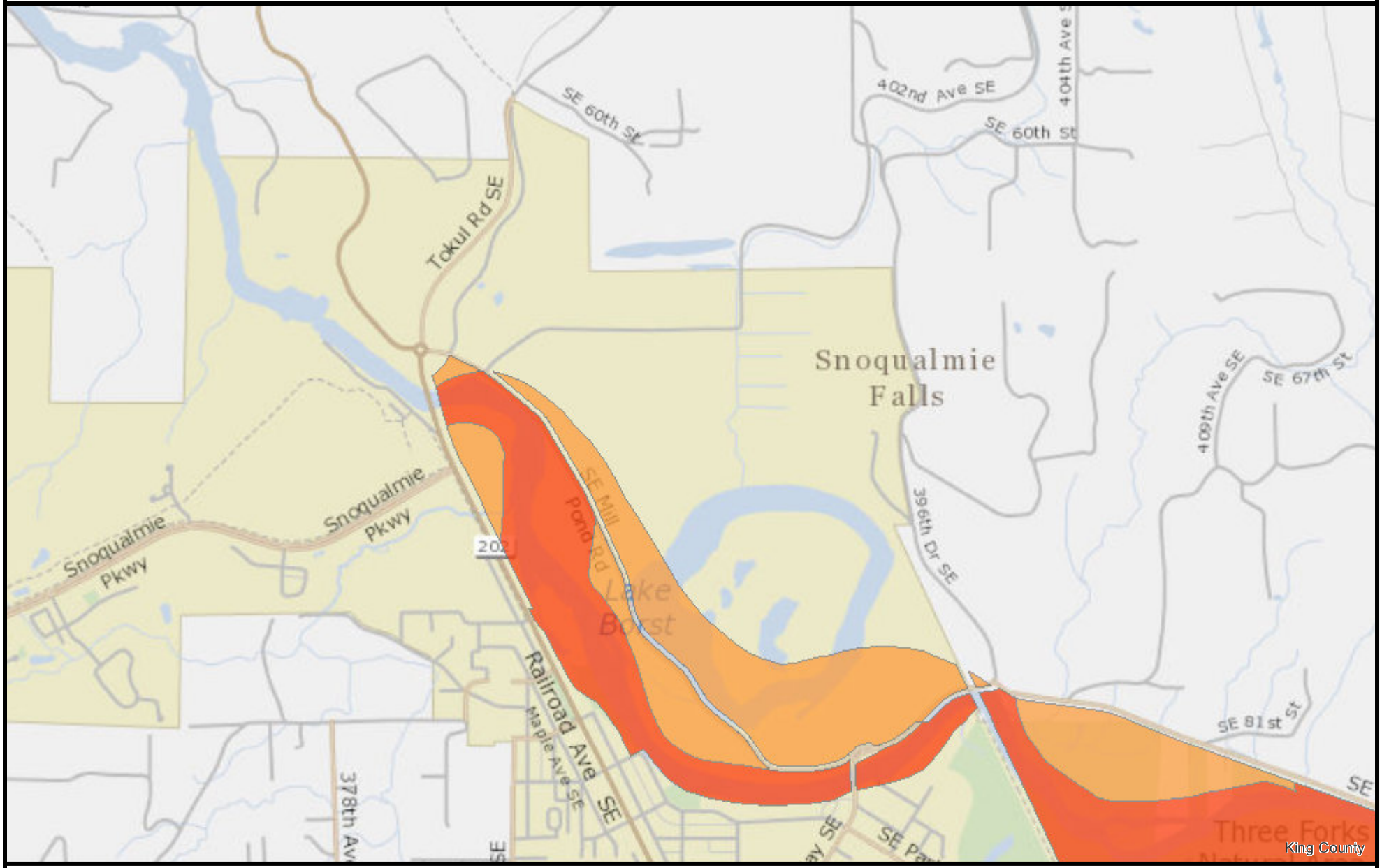
October 26, 2018

Wetlands

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

This map is for general reference only. The US Fish and Wildlife Service is not responsible for the accuracy or currentness of the base data shown on this map. All wetlands related data should be used in accordance with the layer metadata found on the Wetlands Mapper web site.

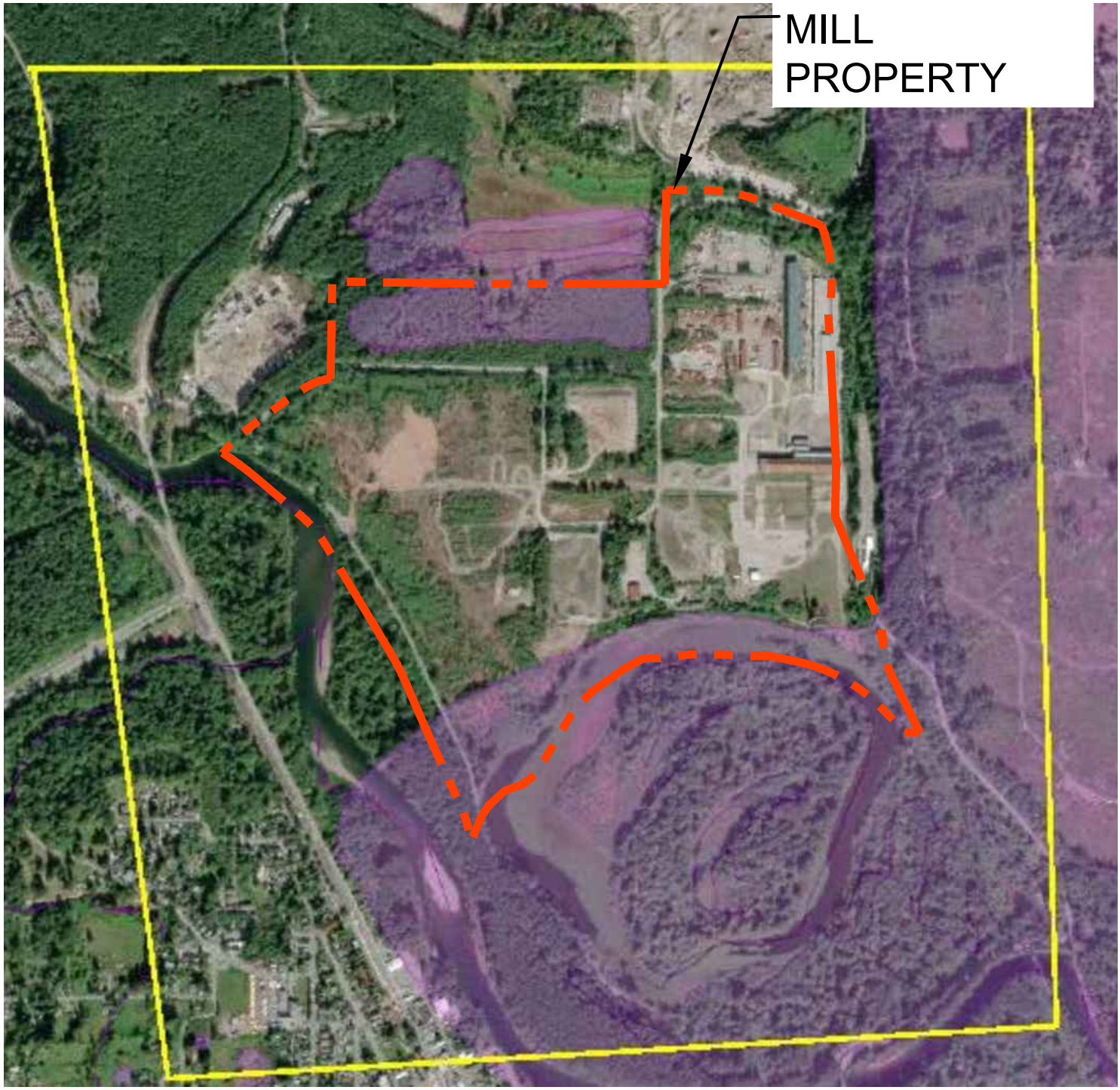
King County iMap



Date: 10/26/2018 Notes:

N

King County GIS Center



T:\2012\2012-013 Snoqualmie Mill\8.5 x11 Figs.dwg

Source: Washington Department of Fish and Wildlife Priority Habitat and SpeciesAvailable at https://wdfw.wa.gov/mapping/phs/ (Accessed 2018-8-20

August 20, 2018

PHS Report Clip Area
PT
LN
POLY
AS MAPPED
SECTION
QTR-TWP
TOWNSHIP

N

FIGURE 6

WDFW PRIORITY HABITAT SPECIES MAP

SNOQUALMIE MILL PROPERTY

SNOQUALMIE, WA

Raedeke Associates, Inc.
2111 N. Northgate Way Ste. 219
Seattle, WA 98113

NTS

RAI # 2012-013

FIGURE 7
MILL VENTURES, LLC
SNOQUALMIE MILL
WETLANDS & WILDLIFE ASSESSMENT
CITY OF SNOQUALMIE JURISDICTIONAL WETLANDS & STREAM EXISTING CONDITIONS

WETLAND 10
1.07 AC.
WETLAND 10 IS LOCATED IN UNINCORPORATED KING COUNTY

WETLAND 11 CONTINUES OFF-SITE

19 20
30 29

INCLUDES UNDIFFERENTIATED WETLANDS

WETLAND 11
35.52 AC.
ON-SITE

WETLAND 11
35.52 AC.
ON-SITE

STREAM 1

STREAM 1

Paved roads

WETLAND 12
2.77 AC.(TOTAL SYSTEM)

WETLAND 12
(CONT.)

WETLAND 12

Culvert

SHEET FLOW

WETLAND 19
0.04 AC.

PLANNING AREA 1

SHORELINE JURISDICTION

FLOODWAY LINE

Gravel roads

STREAM 2

WETLAND 28
0.25 AC.

SNOQUALMIE RIVER

SE MILL POND RD

WETLAND 12
(CONT.)

WETLAND 29
0.01 AC.

STREAM 2
(WITHIN WL 12)

WETLAND 24
0.12 AC.

Ex. Pavement & Buildings

SHEET FLOW

WETLAND 25
0.03 AC.

30 29

WETLAND 27
0.05 AC.

SHEET FLOW

WETLAND 26
0.02 AC.

SHEET FLOW

WETLAND 21
0.03 AC

WETLAND 20
0.01 AC

SHEET FLOW

WETLAND 22
0.01 AC

MATCHLINE

MATCHLINE

Paved roads

STREAM 1

Culvert

Gravel roads

WETLAND 9
0.61 AC.

Paved roads

Ex. Pavement & Buildings

WETLAND 8
0.09 AC.

PLANNING AREA 2

Gravel roads

Culvert

WETLAND 15
0.09 AC.

WETLAND 14
0.05 AC.

WETLAND 13
0.08 AC.

Culverts

Culverts

WETLAND 12
(CONT.)

PLANNING AREA 3

Culvert

Gravel roads

Paved road

Ex. concrete

Ex. Pavement & Buildings

WETLAND 12
(CONT.)

Paved roads

Culverts

BORST LAKE
NOT ON SITE

20 29

WETLANDS & STREAMS OFF-SITE

STREAM 3

OFF-SITE

CATCHBASIN

WETLAND 1
0.57 AC. ON-SITE

STREAM 4

Culvert

WETLAND 2
0.11 AC.

STREAM 5

WETLAND 3
0.03 AC.

SHEET FLOW

INFILTRATE

STREAM 6
(OHWM)

WETLAND 4
0.01 AC.

WETLAND 18
0.07 AC.

396TH AVE SE

CATCHBASIN

Culverts

Paved roads

WETLAND 5
0.10 AC.

Culvert

WETLAND 6
0.20 AC.

Gravel rd

WETLAND 7
0.42 AC. ON-SITE

WETLAND 7
CONTINUES
OFF-SITE

29

WETLANDS & STREAMS OFF-SITE

LEGEND

- PROJECT BOUNDARY & PLANNING AREAS
- PLSS BOUNDARY
- EXISTING 10' CONTOURS
- FLOODWAY LINE
- SHORELINE JURISDICTION LINE
- EXISTING WETLANDS
- FLOW DIRECTION
- STREAMS

NORTH

0 100' 200' 400'
SCALE: 1" = 200'

Raedeke Associates, Inc.
2111 N. Northgate Way, Ste. 219
Seattle, WA 98133

RAI PROJECT: 2012-013	
DATE: 10/25/18	
DRAWN BY:AC	PM:EP

BASE INFORMATION: GOLDSMITH ENGINEERING,
Ph: 425.462.1080 x 242 Fax: 425.462.7719PO
Box 3565 Bellevue, WA 98009

T:\2012\2012-013 Snoqualmie Mill\22x34 Snoqualmie Mill Figs.dwg

FIGURE 8
MILL VENTURES, LLC
SNOQUALMIE MILL
WETLANDS & WILDLIFE ASSESSMENT
US ARMY CORPS OF ENGINEERS & WA DEPARTMENT OF ECOLOGY JURISDICTIONAL AREAS EXISTING CONDITIONS

WETLAND 10
1.07 AC.
WETLAND 10 IS LOCATED IN UNINCORPORATED KING COUNTY

WETLAND 11 CONTINUES OFF-SITE

19 20
30 29

INCLUDES UNDIFFERENTIATED WETLANDS

WETLAND 11
35.52 AC.
ON-SITE

WETLAND 11
35.52 AC.
ON-SITE

STREAM 1

Paved roads

DITCH 2N

WETLAND 12
2.77 AC.(TOTAL SYSTEM)

Culvert

WETLAND 12
(CONT.)

SHORELINE JURISDICTION

FLOODWAY LINE

PLANNING AREA 1

WETLAND 12

SHEET FLOW

WETLAND 19*
0.04 AC.
(SEE NOTE THIS SHEET)

DITCH 18

Culverts

Gravel roads

DITCH 30

DITCH 30

WETLAND 28
0.25 AC.

DITCH 3S

DITCH 7

DITCH 9N

SNOQUALMIE RIVER

SE MILL POND RD

Culvert
DITCH 28

Culvert

Gravel roads

DITCH 33

DITCH 34

DITCH 35

STREAM 1

WETLAND 9
0.61 AC.

CATCHBASIN

Paved roads

Paved roads

Ex. Pavement & Buildings

WETLAND 8
0.09 AC.

PLANNING AREA 2

DITCH 24

Gravel roads

Culvert

WETLAND 15
0.09 AC.

DITCH 26

WETLAND 14
0.05 AC.

WETLAND 13
0.08 AC.

DITCH 40

STREAM 2

DITCH 17

WETLAND 12
(CONT.)

PLANNING AREA 3

Ex. concrete

Ex. Pavement & Buildings

Paved road

WETLAND 12 (CONT.)

STREAM 2
(WITHIN WL 12)

WETLAND 29
0.01 AC.

DITCH 22

WETLAND 24
0.12 AC

Ex. Pavement & Buildings

SHEET FLOW

WETLAND 25*
0.03 AC.
(SEE NOTE THIS SHEET)

DITCH 10

30 29

WETLAND 27
0.05 AC.

SHEET FLOW

WETLAND 26
0.02 AC.

SHEET FLOW

WETLAND 21
0.03 AC

WETLAND 20
0.01 AC

SHEET FLOW

WETLAND 22
0.01 AC

MATCHLINE

MATCHLINE

BORST LAKE
NOT ON SITE

STREAM 1

STREAM 3

WETLANDS & STREAMS OFF-SITE

20 29

OFF-SITE CATCHBASIN

WETLAND 1
0.57 AC. ON-SITE

STREAM 4

Culvert

WETLAND 2
0.11 AC.

STREAM 5

WETLAND 3
0.03 AC.

INFILTRATE

SHEET FLOW

STREAM 6
(OHWM)

WETLAND 4
0.01 AC.

WETLAND 18
0.07 AC.

396TH AVE SE

CATCHBASIN

Culverts

Paved roads

WETLAND 5
0.10 AC.

DITCH 41

WETLAND 6
0.20 AC.

Culvert

DITCH 29
CATCHBASIN

WETLAND 7
0.42 AC. ON-SITE

WETLAND 7
CONTINUES OFF-SITE

29

WETLANDS & STREAMS OFF-SITE

LEGEND

- PROJECT BOUNDARY & PLANNING AREAS
- PLSS BOUNDARY
- EXISTING 10' CONTOURS
- FLOODWAY LINE
- SHORELINE JURISDICTION LINE
- USACE & WDOE JURISDICTIONAL WETLANDS
- USACE & WDOE JURISDICTIONAL DITCHES
- FLOW DIRECTION
- STREAMS

NOTE

*WETLANDS 19 & 25 ARE WDOE JURSIDICTION (NOT USACE JURISDICTION). ALL OTHER WETLANDS & DITCHES SHOWN HERE ARE USACE & WDOE JURISDICTION. . WDOE JURISDICTIONAL AREAS DETERMINED DURING FIELD SITE MEETINGS WITH WDOE, MR. DOUG GRESHAM (WETLAND SPECIALIST) ON DECEMBER 1, 2017. USACE JURISDICTIONAL AREA DETERMINED PER AN APPROVED JURISDICTIONAL DETERMINATION, NWS-2012-1198 DATED MAY 3, 2017.

NORTH

0 100' 200' 400'

SCALE: 1" = 200'
at 22 x 34

T:\2012\2012-013 Snoqualmie Mill\22x34 Snoqualmie Mill Figs.dwg

Raedeke Associates, Inc.
2111 N. Northgate Way, Ste. 219
Seattle, WA 98133

RAI PROJECT: 2012-013-103	
DATE: 10/25/2018	
DRAWN BY:AC	PM:EP
BASE INFORMATION: GOLDSMITH ENGINEERING, Ph: 425.462.1080 x 242 Fax: 425.462.7719PO Box 3565 Bellevue, WA 98009	

SE 1/4, SW 1/4 SECTION 20
NW 1/4 AND NW 1/4, SE 1/4 AND W 1/2, NE 1/4 AND NW 1/4, SW 1/4 SECTION 29
NE 1/4 AND NE 1/4, SE 1/4 SECTION 30
ALL IN TOWNSHIP 24 N, RANGE 8 E, W.M.
KING COUNTY, WASHINGTON

LEGEND:

- RETAIL
- WAREHOUSE/MANUFACTURING
- LIGHT INDUSTRIAL
- UPPER STORY RESIDENTIAL COMMON SPACE
- ROADS/ PARKING
- PEDESTRIAN HARDSCAPE/ SIDEWALK
- ACTIVE LANDSCAPE OPEN SPACE (GREENS, COMMONS, PUBLIC ASSEMBLY AREAS, TRAILS, GENERAL LANDSCAPE AREAS)
- PASSIVE OPEN SPACE
- OPEN SPACE: NATURAL OPEN SPACE (CRITICAL AREAS AND BUFFERS BOTH NATURAL AND MITIGATED)
- WETLAND/ STREAM
- PROPERTY BOUNDARY
- PLANNING AREA BOUNDARY
- EXISTING BUILDINGS

SMV PROPERTY OUTSIDE ANNEXATION

N

SCALE: 0 100 200 400 600, 1" = 200'

19 20
30 29

ANNEXATION/CITY BOUNDARY

20
29

WETLAND CONSERVATION EASEMENT

EXIST. HAUL ROAD

POSSIBLE / POTENTIAL DEVELOPMENT AREAS FOR PLANNING AREAS 2 AND 3 OF PLANNING PROGRAM.

PLANNING AREA 2
WAREHOUSE/MANUFACTURING DISTRICT

396TH DRIVE S.E.

EXIST. WASTE WATER TREATMENT FACILITY

EXIST. S.E. MILL POND ROAD

ROUNDABOUT ENTRY

PLANNING AREA 3
OFFICE CAMPUS DISTRICT

S.E. 70TH DRIVE

PLANNING AREA 1

30 29

30

29

SHORELINE JURISDICTION

FLOODWAY LIMIT

POSSIBLE / POTENTIAL DEVELOPMENT AREAS FOR PLANNING AREAS 2 AND 3 OF PLANNING PROGRAM.

POTENTIAL ACCESS TO PLANNING AREA 3

BORST LAKE

SNOQUALMIE RIVER

Snoqualmie Mill PCI Plan Program

Development Area District	Planning Area 1 Mill Street			Planning Area 2 Warehouse District		Planning Area 3 Campus District		PCI PLAN TOTALS		
PCI Plan Program	Building Area (sf)	Leasable Area (sf)	Parking Demand	Program Area (sf)	Parking Demand	Program Area (sf)	Parking Demand	Parking Total	Project Total	Percentage of Total
Office/Campus (3 story)						800,000	1,600	1,600	800,000	43.74%
Retail	80,000	70,000	280			25,000	120	400	95,000	5.19%
Residential (160 Units)[1]		134,000	134					134	134,000	7.33%
Light Industrial	110,000	120,000	160					160	120,000	6.56%
Warehouse/Manufacturing	282,000	280,000	280	400,000	400	-	-	680	680,000	37.18%
Program Total	472,000	604,000	854	400,000	400	825,000	1,720	2,974	1,829,000	100.0%

1. Upper Story - Included in Leasable Area - Not Included in Building Area
2. 1,181 Parking Spaces shown in PA-1

GOLDSMITH
LAND DEVELOPMENT SERVICES
1215 114th Ave SE, Bellevue, WA 98004 | PO Box 3565, Bellevue, WA 98009
T 425.462.1080 F 425.462.7719 www.goldsmithengineering.com

PLOTTED: 2018/10/10 15:13 HWERLINGER
DRAWN: LCA
DESIGNED:
APPROVED: KJG
FIELD BOOK:
PAGE #:

L:\2017\17500\3 DEVELOPMENT\CAD\HOST DRAWINGS\MASTER DRAINAGE PLAN EXHIBITS\17500E11.DWG

SNOQUALMIE MILL VENTURES, LLC

JOB NO. 17500

OVERALL PCI SITE PLAN
FOR
SNOQUALMIE MILL

CITY OF SNOQUALMIE KING COUNTY WASHINGTON

SHEET

FIG. 2-2

LEGEND:

PROPERTY BOUNDARY

PLANNING AREA BOUNDARY

WETLAND CONSERVATION EASEMENT

EXIST. HAUL ROAD

REVEGETATED BUFFER DISPERSION

FF ELEV. 426.0

INFLOW I.E. 412 - 415 (TYP.)

STORMWATER/ CONSTRUCTED WETLAND
- ENHANCED TREATMENT OVERLAND WEIR OUTLET (418.0 TYP.)

EXIST. S.E. MILL POND ROAD

MILL POND ROAD REALIGNMENT

ROUNDABOUT ENTRY

BASIC TREATMENT CARTRIDGE FILTER

SYSTEM OUTFALL ± 408.50 I.E.

BASIC TREATMENT BIOFILTRATION (TYP.)

BASIC TREATMENT ROADSIDE DISPERSION

SNOQUALMIE RIVER

RIVER OHWM (BELOW 408.0)

DIRECT DISCHARGE OUTFALL (ROCKLINED CHANNEL TO ELEV. 408.0)

FLOODWATER AND WILDLIFE CROSSING UNDERPASS

STORMWATER/ CONSTRUCTED WETLANDS
- ENHANCED TREATMENT
- OVERLAND WEIR OUTLET (418.0 TYP.)

SNOQUALMIE MILL PA 1

SNOQUALMIE RIVER FLOODWAY

30 29

BORST LAKE

N

SCALE: 1" = 100'

FIG 6-1

GOLDSMITH
LAND DEVELOPMENT SERVICES
1215 114th Ave SE, Bellevue, WA 98004 | PO Box 3565, Bellevue, WA 98009
T 425.462.1620 F 425.462.7719 www.goldsmithengr.com

			PLOTTED:	2018/10/12 14:05 HWERLINGER
			DRAWN:	####
			DESIGNED:	####
			APPROVED:	####
			FIELD BOOK:	####
			PAGE #:	####

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SNOQUALMIE MILL VENTURES, LLC

JOB NO. 17500

PLANNING AREA 1 STORMWATER PLAN
FOR
SNOQUALMIE MILL

CITY OF SNOQUALMIE WASHINGTON

SHEET EX-03

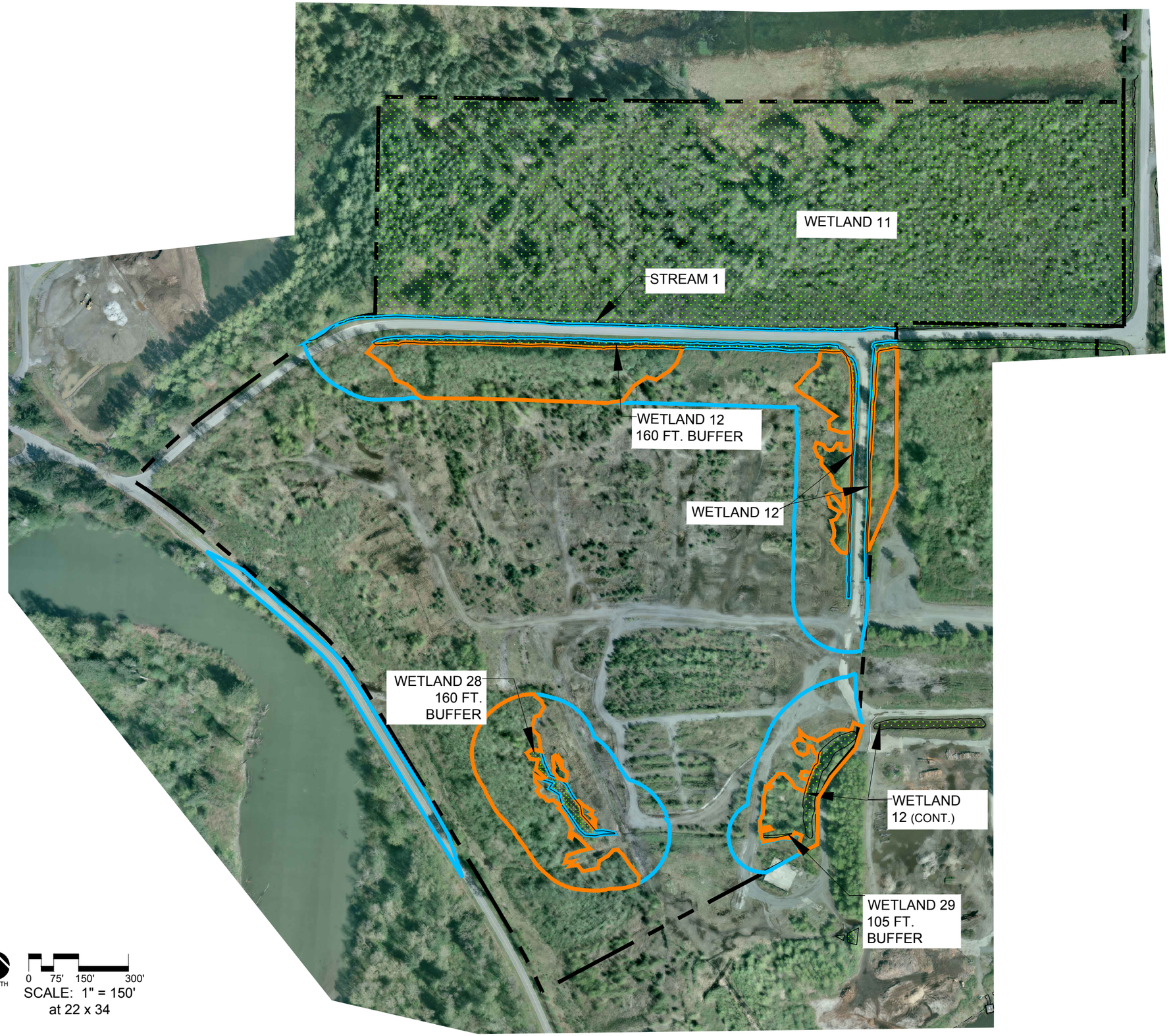
FIGURE 11

MILL VENTURES, LLC

SNOQUALMIE MILL

WETLANDS & WILDLIFE ASSESSMENT

SITE PLANNING AREA 1
BUFFER QUALITY ANALYSIS



LEGEND

- PROJECT BOUNDARY & PLANNING AREAS
- EXISTING WETLANDS
- AREA OF TREE COVER WITHIN BUFFER (APPROX. 8.2 AC.)
- AREA OF LOW- FUNCTIONING OR NON-FUNCTIONAL BUFFER (APPROX. 12.2 AC.)

NORTH

0 75' 150' 300'

SCALE: 1" = 150'
at 22 x 34

T:\2012\2012-013 Snoqualmie Mill\22x34 Snoqualmie Mill Figs.dwg

Raedeke Associates, Inc.
2111 N. Northgate Way, Ste. 219
Seattle, WA 98133

RAI PROJECT: 2012-013-103	
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BASE INFORMATION: GOLDSMITH ENGINEERING,
Ph: 425.462.1080 x 242 Fax: 425.462.7719PO
Box 3565 Bellevue, WA 98009

FIGURE 12

MILL VENTURES, LLC

SNOQUALMIE MILL

WETLANDS & WILDLIFE ASSESSMENT

PLANNING AREA 1
PROPOSED BUFFER IMPACTS & COMPENSATION

WETLAND 11

LOT 5

WETLAND 12

WETLAND 12

LOT 1

1A

1B

1C

LOT 2

2A

2B

4A

LOT 4

3A

3B

4B

LOT 3

SNOQUALMIE RIVER

OHWM

100.0'

ROCK STORMWATER OUTFALL

WILDLIFE CROSSING UNDERPASS

WETLAND 28

WETLAND 12

WETLAND 29

LEGEND FOR ON-SITE WETLAND BUFFERS

- PROJECT BOUNDARY & PLANNING AREAS
- EXISTING WETLANDS
- STANDARD CITY OF SNOQUALMIE BUFFER WIDTH
- PERMANENT BUFFER IMPACTS (APPROX. 4.16 AC.)
- COMPENSATORY BUFFER (APPROX. 5.0 AC.)

LEGEND FOR SNOQUALMIE RIVER BUFFER

- PERMANENT BUFFER IMPACTS (APPROX. 8,100 SF)
- COMPENSATORY BUFFER (APPROX. 8,700 SF)

NORTH

0 60' 120' 240'

SCALE: 1" = 120'
at 22 x 34

Raedeke Associates, Inc.
2111 N. Northgate Way, Ste. 219
Seattle, WA 98133

RAI PROJECT: 2012-013-103	
DATE: 10/25/18	
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Box 3565 Bellevue, WA 98009

T:\2012\2012-013 Snoqualmie Mill\22x34 Snoqualmie Mill Figs.dwg

FIGURE 13

MILL VENTURES, LLC

SNOQUALMIE MILL

WETLANDS & WILDLIFE ASSESSMENT

PLANNING AREA 1
PROPOSED MITIGATION

WETLAND 11

LOT 5

WETLAND 12

WETLAND 12

LOT 1

1A

1B

1C

LOT 2

2A

2B

4A

LOT 4

3A

3B

4B

LOT 3

SNOQUALMIE RIVER

OHWM

100.0'

ROCK
STORMWATER
OUTFALL

WILDLIFE CROSSING
UNDERPASS

WETLAND 28

WETLAND 12

WETLAND 29

NORTH

0 60' 120' 240'

SCALE: 1" = 120'
at 22 x 34

LEGEND FOR ON-SITE WETLAND BUFFERS

PROPOSED BUFFER WIDTH

BUFFER ENHANCEMENT
(APPROX. 2.7 AC.)

BUFFER RESTORATION (APPROX.
15.1 AC.)

LEGEND FOR SNOQUALMIE RIVER BUFFER

BUFFER RESTORATION
(APPROX. 1.7 AC.)

Raedeke
Associates, Inc.
2111 N. Northgate Way, Ste. 219
Seattle, WA 98133

RAI PROJECT: 2012-013-103	
DATE: 10/25/18	
DRAWN BY:AC	PM:EP

BASE INFORMATION: GOLDSMITH ENGINEERING,
Ph: 425.462.1080 x 242 Fax: 425.462.7719PO
Box 3565 Bellevue, WA 98009

T:\2012\2012-013 Snoqualmie Mill\22x34 Snoqualmie Mill Figs.dwg

Table 1. Snoqualmie Mill: summary of wetland and stream ratings and buffers.

Wetland	WDOE Rating[1]	Total Scores	Habitat Score[2]	City of Snoqualmie Buffer (ft)[3]	Project Planning Area (location from project site)
Borst Lake (Mill Pond)	I/II[5]	22	9	225	off-site (south)
1	III	18	7	165	off-site (east)
2	III	17	6	165	off-site (east)
3	III	17	6	165	off-site (east)
4	II	20	6	165	off-site (east)
5	III	18	7	165	off-site (east)
6	III	18	7	165	off-site (east)
7	II	21	7	165	3
8	II	20	6	165	2
9	II	21	7	165	2
10[6]	II	22	8	225	2
11	I	24	8	225	1
12	II	21	6	165	1, 2
13	II	20	5	105	3
14	II	20	5	105	3
15	II	20	5	105	2
18	II	21	7	165	off-site (east)
19	II	22	7	165	3
20/21/22 mosaic	III	17	5	105	3
24	II	20	5	105	3
25	III	19	6	165	3
26	III	17	5	105	3
27	III	19	5	105	3
28	II	20	6	165	1
29	III	18	5	105	1

Stream	Classification[7]	City of Snoqualmie Buffer (ft)	Project Planning Area
Borst Lake (Mill Pond)	Class 1	100	Off-site (south)

Stream	Classification[7]	City of Snoqualmie Buffer (ft)	Project Planning Area
Stream 1	Class 2 w/out anadromous salmonids	75	1, 2, 3
Stream 2	Class 2 w/out anadromous salmonids	75	3
Stream 3	Class 3	50	off-site (east)
Stream 4	Class 3	50	off-site (east)
Stream 5	Class 3	50	N/A (east)
Stream 6	Class 3	50	off-site (east)
Snoqualmie River	Class 1	100 feet, Shoreline jurisdiction	off-site (west)

Notes:

[1] Wetland rating is based on the Washington State Wetland Rating System for Western Washington: 2014 Update (ECY Pub. #14-06-029).

[2] Wetland buffer widths can be modified by the habitat function score: High Function = 8-9 points; Moderate-High Function = 6-7 points; Moderate Function = 5 points; Low Function = 3-4 points.

[3] Wetland buffers correspond to width in feet based on habitat score unless otherwise noted and Snoqualmie Municipal (2018a) Code current through Ordinance 1205, passed August 27, 2018.

[4] Mill Pond (Borst Lake) is classified as a Shoreline of the State under the current and proposed City of Snoqualmie Shoreline Master Program.

[5] Mill Pond qualifies for a dual rating: Category I based presence of mature forested wetland along the southeast shore and Category II based on a total score of 22 points for all functions. The Category I buffer would apply only to the portion of the wetland that consists of mature forest.

[6] Wetland 10 is located within unincorporated King County.

[7] Stream classifications are based on information provided by Cedarock Consultants (2012) and field notes collected by Raedeke Associates, Inc. during aquatic resources investigations.

Table 2. Snoqualmie Mill: summary of wetland, streams, and ditch jurisdictional authority.

Feature	Jurisdiction[1]	Project Planning Area
Borst Lake (Mill Pond)	COE, WDOE, City	off-site (south)
1	COE, WDOE, City	off-site (east)
2	COE, WDOE, City	off-site (east)
3	COE, WDOE, City	off-site (east)
4	COE, WDOE, City	off-site (east)
5	COE, WDOE, City	off-site (east)
6	COE, WDOE, City	off-site (east)
7	COE, WDOE, City	3
8	COE, WDOE, City	2
9	COE, WDOE, City	2
10	COE, WDOE, City	2
11	COE, WDOE, City	1
12	COE, WDOE, City	1, 2
13	COE, WDOE, City	3
14	COE, WDOE, City	3
15	COE, WDOE, City	2
18	COE, WDOE, City	off-site (east)
19	WDOE, City	3
20/21/22 mosaic	COE, WDOE, City	3
24	COE, WDOE, City	3
25	WDOE, City	3
26	COE, WDOE, City	3
27	COE, WDOE, City	3
28	COE, WDOE, City	1
29	COE, WDOE, City	1
Borst Lake (Mill Pond)	COE, WDOE, City	off-site (south)
Stream 1	COE, WDOE, City	1, 2, 3
Stream 2	COE, WDOE, City	3
Stream 3	COE, WDOE, City	off-site (east))
Stream 4	COE, WDOE, City	off-site (east)
Stream 5	COE, WDOE, City	off-site (east)
Stream 6	COE, WDOE, City	off-site (east)

Feature	Jurisdiction[1]	Project Planning Area
Snoqualmie River	COE, WDOE, City	off-site (west)
Ditch 2N	COE, WDOE	1
Ditch 3S	COE, WDOE	1
Ditch 7	COE, WDOE	1
Ditch 9N	COE, WDOE	1
Ditch 10	COE, WDOE	3
Ditch 17	COE, WDOE	3
Ditch 18	COE, WDOE	3
Ditch 22	COE, WDOE	3
Ditch 24	COE, WDOE	3
Ditch 26	COE, WDOE	2, 3
Ditch 28	COE, WDOE	2
Ditch 29	COE, WDOE	3
Ditch 30	COE, WDOE	1
Ditch 33	COE, WDOE	2
Ditch 34	COE, WDOE	2
Ditch 35	COE, WDOE	2
Ditch 40	COE, WDOE	3
Ditch 41	COE, WDOE	off-site (east)

Notes:

[1] United States Army Corps of Engineers (COE), Washington Department of Ecology (WDOE), City of Snoqualmie Jurisdictional determination based on COE approved jurisdictional determination NWS-2012-1198 dated May 3, 2017, personal communication with Mr. Doug Gresham, WDOE Wetland Specialist, during site meeting on December 1, 2017, and previously approved ratings and buffer estimates on June 24, 2016.

Table 3. Wildlife species observed at the Snoqualmie Mill site during field investigations.

Common Name	Scientific Name
BIRDS	
Canada Goose	*Branta canadensis*
Mallard	*Anas platyrhynchos*
Killdeer	*Charadrius vociferus*
Bald Eagle	*Haliaeetus leucocephalus*
Downy Woodpecker	*Picoides pubescens*
Pileated Woodpecker	*Dryocopus pileatus*
Willow Flycatcher	*Empidonax traillii*
Steller's Jay	*Cyanocitta stelleri*
American Crow	*Corvus brachyrhynchos*
Tree Swallow	*Tachycineta bicolor*
Violet-green Swallow	*Tachycineta thalassina*
Barn Swallow	*Hirundo rustica*
Black-capped Chickadee	*Poecile atricapillus*
Bewick's Wren	*Thryomanes bewickii*
Swainson's thrush	*Catharus ustulatus*
American Robin	*Turdus migratorius*
Cedar Waxwing	*Bombycilla cedrorum*
European Starling	*Sturnus vulgaris*
Black-headed Grosbeak	*Pheucticus melanocephalus*
House Finch	*Haemorhous mexicanus*
American Goldfinch	*Spinus tristis*
Spotted Towhee	*Pipilo maculatus*
White-crowned Sparrow	*Zonotrichia leucophrys*
Dark-eyed Junco	*Junco hyemalis*
Western Tanager	*Piranga ludoviciana*
Black-headed Grosbeak	*Pheucticus melanocephalus*

Table 3. Continued.

Common Name	Scientific Name
MAMMALS	
Black-tailed deer	*Odocoileus hemionus*
Elk	*Cervus elaphus*
European cottontail	*Sylvilagus floridanus*
Black bear	*Ursus americanus*
Raccoon	*Procyon lotor*
Bobcat	*Lynx rufus*
Mountain lion	*Felis concolor*
Coyote	*Canis latrans*
AMPHIBIANS	
Pacific chorus frog	*Pseudacris regilla*
Rough-skinned newt	*Taricha granulosa*
Northwest salamander	*Ambystoma gracile*

APPENDIX A

SE Mill Pond Road ROW Reconnaissance Field Survey Data

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Snoqualmie Mill City/County: Snoqualmie/King Sampling Date: 6/15/2017

Applicant/Owner: Brook Water LLC State: WA Sampling Point: SP Road-1

Investigator(s): W. Hohman & A. Clark Section, Township, Range: S30, T24N, R8E, W.M.

Landform (hillslope, terrace, etc.): Slope Local relief (concave, convex, none): Concave Slope (%): 1-3

Subregion (LRR): Northwest Forests & Coasts (LRR A) Lat: 47.540088 Long: -121.830470 Datum: Unknown

Soil Map Unit Name: Nooksack silt loam NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes ☒ No ☐ Hydric Soil Present? Yes ☐ No ☒ Wetland Hydrology Present? Yes ☐ No ☒	**Is the Sampled Area within a Wetland?** Yes ☐ No ☒

Remarks: Sample Point Road-1 is located north of the culvert and west of the road, in a low spot approximately 4 inches below the height of the road.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 5 m)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 3 m)			
1. Rubus spectabilis (Salmon Raspberry)	30	Y	FAC
2. Hedera helix (English Ivy)	20	Y	FACU
3. Oemleria cerasiformis (Oso-Berry)	20	Y	FACU
4. Rubus parviflorus (Western Thimble-Berry)	10	N	FACU
5. Rubus armeniacus (Himalayan Blackberry)	10	N	FAC
	90	= Total Cover	
Herb Stratum (Plot size: 1 m)			
1. Phalaris arundinacea (Reed Canary Grass)	25	Y	FACW
2. Rubus spectabilis (Salmon Raspberry)	25	Y	FAC
3. Pteridium aquilinum (Northern Bracken Fern)	20	N	FACU
4. Geranium robertianum (Lesser Herbrobert)	10	N	FACU
5. Ranunculus repens (Creeping Buttercup)	10	N	FAC
6. Polystichum munitum (Pineland Sword Fern)	10	N	FACU
7. Telmeia menziesii (Piggyback-Plant)	5	N	FAC
8.			
9.			
10.			
11.			
	105	= Total Cover	
Woody Vine Stratum (Plot size: 3 m)			
1.			
2.			
	0	= Total Cover	

% Bare Ground in Herb Stratum 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 60 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ☐ 1 - Rapid Test for Hydrophytic Vegetation
- ☒ 2 - Dominance Test is >50%
- ☐ 3 - Prevalence Index is ≤3.0[1]
- ☐ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ 5 - Wetland Non-Vascular Plants[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes ☒ No ☐**

Remarks:

SOIL

Sampling Point: Road-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 15	10YR 3/1	100					Si. Cl. Loam	
15 - 20+	2.5Y 5/3	100					Si. Cl. Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) (**except MLRA 1**)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ☐ 2 cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ☐ No ☒

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) (**except MLRA 1, 2, 4A, and 4B**)
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stressed Plants (D1) (**LRR A**)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water-Stained Leaves (B9) (**MLRA 1, 2, 4A, and 4B**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Raised Ant Mounds (D6) (**LRR A**)
- ☐ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches): _____

Water Table Present? Yes ☐ No ☒ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (inches): _____

Wetland Hydrology Present? Yes ☐ No ☒

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: No indicators of wetland hydrology were observed.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Snoqualmie Mill City/County: Snoqualmie/King Sampling Date: 6/15/2017

Applicant/Owner: Brook Water LLC State: WA Sampling Point: SP Road-2

Investigator(s): W. Hohman & A. Clark Section, Township, Range: S30, T24N, R8E, W.M.

Landform (hillslope, terrace, etc.): Slope Local relief (concave, convex, none): Concave Slope (%): 1-3

Subregion (LRR): Northwest Forests & Coasts (LRR A) Lat: 47.539853 Long: -121.830149 Datum: Unknown

Soil Map Unit Name: Nooksack silt loam NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes ☒ No ☐ Hydric Soil Present? Yes ☐ No ☒ Wetland Hydrology Present? Yes ☐ No ☒	**Is the Sampled Area within a Wetland?** Yes ☐ No ☒

Remarks: Sample Point Road-2 is located in a low spot south of the culvert and west of the road.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 5 m)	Absolute % Cover	Dominant Species?	Indicator Status
1. Picea sitchensis (Sitka Spruce)	70	Y	FAC
2.			
3.			
4.			
	70	= Total Cover	
Sapling/Shrub Stratum (Plot size: 3 m)			
1. Rubus spectabilis (Salmon Raspberry)	60	Y	FAC
2. Rubus armeniacus (Himalayan Blackberry)	40	Y	FAC
3. Symphoricarpos albus (Common Snowberry)	15	N	FACU
4. Cornus alba (Red Osier)	5	N	FACW
5. Hedera helix (English Ivy)	1	N	FACU
	121	= Total Cover	
Herb Stratum (Plot size: 1 m)			
1. Equisetum telmateia (Giant Horsetail)	15	Y	FACW
2. Athyrium cyclosorum (Western Lady Fern)	1	N	FAC
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	16	= Total Cover	
Woody Vine Stratum (Plot size: 3 m)			
1.			
2.			
	0	= Total Cover	

% Bare Ground in Herb Stratum 84

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ☐ 1 - Rapid Test for Hydrophytic Vegetation
- ☒ 2 - Dominance Test is >50%
- ☐ 3 - Prevalence Index is ≤3.0[1]
- ☐ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ 5 - Wetland Non-Vascular Plants[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes ☒ No ☐**

Remarks:

SOIL

Sampling Point: Road-2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 11	10YR 4/1	100					Sandy Loam	
11 - 20+	10YR 4/3	100					Sandy Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) (**except MLRA 1**)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ☐ 2 cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ☐ No ☒

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) (**except MLRA 1, 2, 4A, and 4B**)
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stressed Plants (D1) (**LRR A**)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water-Stained Leaves (B9) (**MLRA 1, 2, 4A, and 4B**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Raised Ant Mounds (D6) (**LRR A**)
- ☐ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches): _____

Water Table Present? Yes ☐ No ☒ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (inches): _____

Wetland Hydrology Present? Yes ☐ No ☒

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: No indicators of wetland hydrology were observed.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Snoqualmie Mill City/County: Snoqualmie/King Sampling Date: 6/15/2017

Applicant/Owner: Brook Water LLC State: WA Sampling Point: SP Road-3

Investigator(s): W. Hohman & A. Clark Section, Township, Range: S30, T24N, R8E, W.M.

Landform (hillslope, terrace, etc.): Slope Local relief (concave, convex, none): Concave Slope (%): 1-3

Subregion (LRR): Northwest Forests & Coasts (LRR A) Lat: 47.538637 Long: -121.827313 Datum: Unknown

Soil Map Unit Name: Nooksack silt loam NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes ☒ No ☐ Hydric Soil Present? Yes ☐ No ☒ Wetland Hydrology Present? Yes ☐ No ☒	**Is the Sampled Area within a Wetland?** Yes ☐ No ☒

Remarks: Sample Point Road-3 is located east of the road in a patch of reed canary grass (Phalaris arundinacea).

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 5 m)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 3 m)			
1.			
2.			
3.			
4.			
5.			
	0	= Total Cover	
Herb Stratum (Plot size: 1 m)			
1. Phalaris arundinacea (Reed Canary Grass)	100	Y	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	100	= Total Cover	
Woody Vine Stratum (Plot size: 3 m)			
1.			
2.			
	0	= Total Cover	

% Bare Ground in Herb Stratum 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ☐ 1 - Rapid Test for Hydrophytic Vegetation
- ☒ 2 - Dominance Test is >50%
- ☐ 3 - Prevalence Index is ≤3.0[1]
- ☐ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ 5 - Wetland Non-Vascular Plants[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes ☒ No ☐**

Remarks:

SOIL

Sampling Point: Road-3

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 14	10YR 4/2	100					Si. Loam	
14 - 18	10YR 5/1	98	10YR 4/4	2	C	M	Si. Cl. Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) (**except MLRA 1**)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ☐ 2 cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ☐ No ☒

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) (**except MLRA 1, 2, 4A, and 4B**)
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stressed Plants (D1) (**LRR A**)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water-Stained Leaves (B9) (**MLRA 1, 2, 4A, and 4B**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Raised Ant Mounds (D6) (**LRR A**)
- ☐ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches): _____

Water Table Present? Yes ☐ No ☒ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (inches): _____

Wetland Hydrology Present? Yes ☐ No ☒

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: No indicators of wetland hydrology were observed.

APPENDIX B

Department of Army Approved Jurisdictional Determination

DEPARTMENT OF THE ARMY
SEATTLE DISTRICT, CORPS OF ENGINEERS
P.O. BOX 3755
SEATTLE, WASHINGTON 98124-3755

REPLY TO
ATTENTION OF

Regulatory Branch

MAY - 3 2017

Mr. Mac McInnis
Brookwater Advisors, LLC
8306 428th Avenue SE
Snoqualmie, Washington 98065

Reference: NWS-2012-1198
Brookwater Advisors, LLC

Dear Mr. McInnis:

Based on discussions with your consultant, we found errors in our jurisdictional determination dated August 27, 2015. This letter and the attached forms correct these errors. In addition, we have changed the date of this determination due to the revisions. Please note that this letter and the attached jurisdictional determination forms dated March 23, 2017 are the official record and any summary sheets should not be referenced in the future. The U.S. Army Corps of Engineers has determined that Wetlands 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 18, 20, 21, 22, 24, 26, 27, 28, 29 Ditches 2N, 3S, 7, 9N, 10, 17, 18, 22, 24, 26, 28, 29, 30, 33, 34, 35, 40, 41 and Streams 1, 2, 3, 4, 5, 6 are waters of the U.S. This determination applies only to the review area. Other waters and wetlands that may occur on this property outside the review area are not the subject of this determination.

However, we have also determined that Wetlands 19 and 25 are not waters of the U.S. As such, work that would occur within these areas does not require Department of the Army authorization under Section 404 of the Clean Water Act. Other state and local regulations may still apply to these wetlands. For example, the Washington State Department of Ecology (Ecology) may regulate these wetlands. The enclosed Ecology *Focus* sheet explains how Ecology regulates this type of wetlands. You should contact Ecology's Federal Permit Coordinator at (360) 407-6068 or ecyrefedpermits@ecy.wa.gov for more information on how to obtain State approval for your project. We are sending a copy of this letter to Ecology and to the Environmental Protection Agency's Aquatic Resources Unit.

This approved jurisdictional determination is valid for a period of five years from the date of this letter unless new information warrants revisions of the determination. A copy of these jurisdictional determination forms, dated March 23, 2017, can be found on our website at www.nws.usace.army.mil select "Regulatory Branch, Permit Information" and then "Jurisdictional Determinations". If you object to this determination, you may request an

administrative appeal under our regulations (33 Code of Federal Regulations, Part 331) as described in the enclosed *Appeal Process Fact Sheet* and the *Notification of Administrative Appeal Options and Process and Request for Appeal* form.

A copy of this letter with drawings will be furnished to Mr. Emmett Pritchard at Raedeke Associates, Inc., 2111 N. Northgate Way, Suite 219 Seattle, WA 98113. If you propose to do any work in the areas identified to be waters of the U.S., you should contact our office prior to commencing work to determine permit requirements. If you have any questions, please contact me at jerald.j.gregory@usace.army.mil or at (206) 764-6665.

Sincerely,

Jerald J. Gregory, Project Manager
Regulatory Branch

Enclosures

APPROVED JURISDICTIONAL DETERMINATION FORM
U.S. Army Corps of Engineers

JD Form 1 – Wetlands 3, 5, 6, 20-21-22, 26, 27 (WOUS - Significant Nexus)

SECTION I: BACKGROUND INFORMATION

A. REPORT COMPLETION DATE FOR APPROVED JURISDICTIONAL DETERMINATION (JD): 23 March 2017

B. DISTRICT OFFICE, FILE NAME, NUMBER: Seattle District – Brookwater Advisors, LLC (Snoqualmie Mill), NWS-2012-1198
Name of water being evaluated on this form: Wetlands 3, 5, 6, 20-21-22, 26, 27

C. PROJECT LOCATION AND BACKGROUND INFORMATION:
State: WA County/parish/borough: King City: Snoqualmie
Center coordinates of site (lat/long in degree decimal format Lat: 47.539978° Long. -121.817131°
Universal Transverse Mercator: 10
Name of nearest waterbody: Mill Pond (off-site)
Name of nearest Traditional Navigable Water (TNW) into which the aquatic resource flows: Snoqualmie River
Name of watershed or Hydrologic Unit Code (HUC): 17110010 (Snoqualmie Watershed)
☒ Check if map/diagram of review area and/or potential jurisdictional areas is/are available upon request.
☒ Check if other sites (e.g., offsite mitigation sites, disposal sites, etc) are associated with this action and are recorded on a different JD form. List other JD's: Waters of the U.S. are discussed on Forms 1, 3, and 4. Non-waters are discussed on Form 2.

D. REVIEW PERFORMED FOR SITE EVALUATION (CHECK ALL THAT APPLY):
☒ Office (Desk) Determination. Date: 23 March 2017
☒ Field Determination. Date: 19 March 2013

SECTION II: SUMMARY OF FINDINGS

A. RHA SECTION 10 DETERMINATION OF JURISDICTION.
There Are no "*navigable waters of the U.S.*" within Rivers and Harbors Act (RHA) jurisdiction (as defined by 33 CFR part 329) in the review area. [*Required*]
☐ Waters subject to the ebb and flow of the tide.
☐ Waters are presently used, or have been used in the past, or may be susceptible for use to transport interstate or foreign commerce.
Explain: .

B. CWA SECTION 404 DETERMINATION OF JURISDICTION.
There Are "*waters of the U.S.*" within Clean Water Act (CWA) jurisdiction (as defined by 33 CFR part 328) in the review area. [*Required*]

1. **Waters of the U.S.**
   a. **Indicate presence of waters of U.S. in review area (check all that apply):** [1]
      ☐ TNWs, including territorial seas
      ☐ Wetlands adjacent to TNWs
      ☐ Relatively permanent waters[2] (RPWs) that flow directly or indirectly into TNWs
      ☒ Non-RPWs that flow directly or indirectly into TNWs
      ☐ Wetlands directly abutting RPWs that flow directly or indirectly into TNWs
      ☐ Wetlands adjacent to but not directly abutting RPWs that flow directly or indirectly into TNWs
      ☐ Wetlands adjacent to non-RPWs that flow directly or indirectly into TNWs
      ☐ Impoundments of jurisdictional waters
      ☐ Isolated (interstate or intrastate) waters, including isolated wetlands

   b. **Identify (estimate) size of waters of the U.S. in the review area:**
      Non-wetland waters:
      Wetlands: 0.45 acre

   c. **Limits (boundaries) of jurisdiction** based on:
      Elevation of established OHWM (if known):

2. **Non-regulated waters/wetlands (check if applicable):**[3]
   ☐ Potentially jurisdictional waters and/or wetlands were assessed within the review area and determined to be not jurisdictional.
   Explain:

[1] Boxes checked below shall be supported by completing the appropriate sections in Section III below.
[2] For purposes of this form, an RPW is defined as a tributary that is not a TNW and that typically flows year-round or has continuous flow at least "seasonally" (e.g., typically 3 months).
[3] Supporting documentation is presented in Section III.F.

SECTION III: CWA ANALYSIS

A. TNWs AND WETLANDS ADJACENT TO TNWs: NOT APPLICABLE

B. CHARACTERISTICS OF TRIBUTARY (THAT IS NOT A TNW) AND ITS ADJACENT WETLANDS (IF ANY): NOT APPLIABLE

C. SIGNIFICANT NEXUS DETERMINATION

1. **Significant nexus findings for non-RPW that has no adjacent wetlands and flows directly or indirectly into TNWs.** Explain findings of presence or absence of significant nexus below, based on the tributary itself, then go to Section III.D: N/A.

2. **Significant nexus findings for non-RPW and its adjacent wetlands, where the non-RPW flows directly or indirectly into TNWs.** Explain findings of presence or absence of significant nexus below, based on the tributary in combination with all of its adjacent wetlands, then go to Section III.D: N/A.

   Significant nexus findings for wetlands adjacent to an RPW but that do not directly abut the RPW. Explain findings of presence or absence of significant nexus below, based on the tributary in combination with all of its adjacent wetlands, then go to Section III.D:

   The subject wetlands have a significant nexus to a downstream TNW. All non-isolated waters on the site drain to Mill Pond which discharges at high water levels to the Snoqualmie River via a short unnamed stream. The Snoqualmie River is a designated Section 10 navigable waterway from its mouth at Puget Sound to the town of Carnation, about 15 miles north of the project area. The wetlands discussed in this form are all adjacent to relatively permanent waters; see individual summary sheets for the specific flow paths of each wetland.

   The property consists of the old Weyerhaeuser Snoqualmie Mill, lumber yards, and mill town which now sits idle, and is just north of the Weyerhaeuser mill pond. Today parts of the site are used for the DirtFish race track and for storing gravel and rock but most of it is considered abandoned and over the majority of the site only the foundations of previous structures remain. Over a hundred years of processing and storing lumber, various leakages from equipment, pollution from the former mill town and a fire in 1989 have all contributed to the degraded condition of the property. The site underwent a preliminary assessment in the Superfund data system (CERCLIS) in 1991, however it resulted in a "No Further Remedial Action Planned" designation. As such, cleanup activities came under the purview of the Department of the Department of Ecology.

   Each wetland discussed in this form has a significant nexus to downstream waters by improving water quality via toxin interception. According to the 2011 Staff Summary City of Snoqualmie Planning Department, the identified contaminants of concern at the site vary but include BTEX or the gasoline components Benzene, Toluene, Ethylbenzene and Xylene; TPH/T(E)PH & DRO or Total (Extractable) Petroleum Hydrocarbons and Diesel Range Organics; PCP or Pentachlorophenol; T/TCBs or tetra/tri-chlorinated benzenes; and PCBs, or polychlorinated biphenyls. There is also evidence of heavy metals, including arsenic and lead and, to a lesser extent, copper, zinc and cadmium and some asbestos. The Department of Ecology website indicates that the Snoqualmie River generally has high water quality but exceeds water quality standards for pH, fecal coliform and temperature.

   In addition to containing and filtering contaminants, the on-site wetlands have the ability to attenuate downstream flooding by reducing peak flow in the watershed during major storm events by detaining high flows except during storm events, thus decreasing downstream erosion in streams, however, the amount of historic fill hinders this area from acting as a natural floodplain.

D. DETERMINATIONS OF JURISDICTIONAL FINDINGS. THE SUBJECT WATERS/WETLANDS ARE (CHECK ALL THAT APPLY):

1. **TNWs and Adjacent Wetlands.** Check all that apply and provide size estimates in review area:
   - ☐ TNWs: linear feet width (ft), Or, acres.
   - ☐ Wetlands adjacent to TNWs: acres.

2. **RPWs that flow directly or indirectly into TNWs.**
   - ☐ Tributaries of TNWs where tributaries typically flow year-round are jurisdictional. Provide rationale indicating that tributary flows seasonally:
   - ☐ Tributaries of TNW where tributaries have continuous flow "seasonally" (e.g., typically three months each year) are jurisdictional. Data supporting this conclusion is provided at Section III.B. Provide rationale indicating that tributary flows seasonally: Tributaries identified as having continuous flow for 3-6 months. See additional information for details.

   Provide estimates for jurisdictional waters in the review area (check all that apply):
   - ☐ Tributary waters: linear feet width (ft).
   - ☐ Other non-wetland waters: acres.
     Identify type(s) of waters: .

3. **Non-RPWs[4] that flow directly or indirectly into TNWs.**
   ☐ Waterbody that is not a TNW or an RPW, but flows directly or indirectly into a TNW, and it has a significant nexus with a TNW is jurisdictional. Data supporting this conclusion is provided at Section III.C.

   Provide estimates for jurisdictional waters within the review area (check all that apply):
   ☐ Tributary waters:
   ☐ Other non-wetland waters:
   Identify type(s) of waters:

4. **Wetlands directly abutting an RPW that flow directly or indirectly into TNWs.**
   ☐ Wetlands directly abut RPW and thus are jurisdictional as adjacent wetlands.
   ☐ Wetlands directly abutting an RPW where tributaries typically flow year-round. Provide data and rationale indicating that tributary is perennial in Section III.D.2, above.

   ☐ Wetlands directly abutting an RPW where tributaries typically flow "seasonally." Provide data indicating that tributary is seasonal in Section III.B and rationale in Section III.D.2, above. Provide rationale indicating that wetland is directly abutting an RPW:

   Provide acreage estimates for jurisdictional wetlands in the review area:

5. **Wetlands adjacent to but not directly abutting an RPW that flow directly or indirectly into TNWs.**
   ☒ Wetlands that do not directly abut an RPW, but when considered in combination with the tributary to which they are adjacent and with similarly situated adjacent wetlands, have a significant nexus with a TNW are jurisidictional. Data supporting this conclusion is provided at Section III.C.

   Provide acreage estimates for jurisdictional wetlands in the review area: 0.45 acre.

6. **Wetlands adjacent to non-RPWs that flow directly or indirectly into TNWs.**
   ☐ Wetlands adjacent to such waters, and have when considered in combination with the tributary to which they are adjacent and with similarly situated adjacent wetlands, have a significant nexus with a TNW are jurisdictional. Data supporting this conclusion is provided at Section III.C.

   Provide estimates for jurisdictional wetlands in the review area: **0.12** acres.

7. **Impoundments of jurisdictional waters.[5]**
   As a general rule, the impoundment of a jurisdictional tributary remains jurisdictional.
   ☐ Demonstrate that impoundment was created from "waters of the U.S.," or
   ☐ Demonstrate that water meets the criteria for one of the categories presented above (1-6), or
   ☐ Demonstrate that water is isolated with a nexus to commerce (see E below).

E. ISOLATED [INTERSTATE OR INTRA-STATE] WATERS, INCLUDING ISOLATED WETLANDS, THE USE, DEGRADATION OR DESTRUCTION OF WHICH COULD AFFECT INTERSTATE COMMERCE, INCLUDING ANY SUCH WATERS (CHECK ALL THAT APPLY):[6]
☐ which are or could be used by interstate or foreign travelers for recreational or other purposes.
☐ from which fish or shellfish are or could be taken and sold in interstate or foreign commerce.
☐ which are or could be used for industrial purposes by industries in interstate commerce.
☐ Interstate isolated waters. Explain:
☐ Other factors. Explain:

Identify water body and summarize rationale supporting determination:

Provide estimates for jurisdictional waters in the review area (check all that apply):
☐ Tributary waters: linear feet width (ft).
☐ Other non-wetland waters: acres.
Identify type(s) of waters:
☐ Wetlands: acres.

F. NON-JURISDICTIONAL WATERS, INCLUDING WETLANDS (CHECK ALL THAT APPLY):
☐ If potential wetlands were assessed within the review area, these areas did not meet the criteria in the 1987 Corps of Engineers Wetland Delineation Manual and/or appropriate Regional Supplements.

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[4]See Footnote # 3.
[5] To complete the analysis refer to the key in Section III.D.6 of the Instructional Guidebook.
[6] **Prior to asserting or declining CWA jurisdiction based solely on this category, Corps Districts will elevate the action to Corps and EPA HQ for review consistent with the process described in the Corps/EPA *Memorandum Regarding CWA Act Jurisdiction Following Rapanos.***

☒ Review area included isolated waters with no substantial nexus to interstate (or foreign) commerce.
☐ Prior to the Jan 2001 Supreme Court decision in "*SWANCC*," the review area would have been regulated based solely on the "Migratory Bird Rule" (MBR).
☐ Waters do not meet the "Significant Nexus" standard, where such a finding is required for jurisdiction. Explain: .
☐ Other: (explain, if not covered above).

Provide acreage estimates for non-jurisdictional waters in the review area, where the sole potential basis of jurisdiction is the MBR factors (i.e., presence of migratory birds, presence of endangered species, use of water for irrigated agriculture), using best professional judgment (check all that apply):
☐ Non-wetland waters (i.e., rivers, streams): linear feet width (ft).
☐ Lakes/ponds: acres.
☐ Other non-wetland waters: acres. List type of aquatic resource:
☐ Wetlands: 0.71 acres.

Provide acreage estimates for non-jurisdictional waters in the review area that do not meet the "Significant Nexus" standard, where such a finding is required for jurisdiction (check all that apply):
☐ Non-wetland waters (i.e., rivers, streams): linear feet, width (ft).
☐ Lakes/ponds: acres.
☐ Other non-wetland waters: acres. List type of aquatic resource:
☐ Wetlands: acres.

SECTION IV: DATA SOURCES.

A. SUPPORTING DATA. Data reviewed for JD (check all that apply - checked items shall be included in case file and, where checked and requested, appropriately reference sources below):
☒ Maps, plans, plots or plat submitted by or on behalf of the applicant/consultant: Raedeke Associates, Inc (consultant)
☒ Data sheets prepared/submitted by or on behalf of the applicant/consultant.
☒ Office concurs with data sheets/delineation report.
☐ Office does not concur with data sheets/delineation report.
☐ Data sheets prepared by the Corps:
☒ Corps navigable waters' study:
ww.nws.usace.army.mil/Portals/27/docs/regulatory/permit%20guidebook/Navigable_Waters_of_the_US_in_WA_State.pdf
☒ U.S. Geological Survey Hydrologic Atlas:
☐ USGS NHD data.
☒ USGS 8 and 12 digit HUC maps.
☐ U.S. Geological Survey map(s). Cite scale & quad name:
☒ USDA Natural Resources Conservation Service Soil Survey, Citation: Web Soil Survey (2011)
☐ National wetlands inventory map(s). Cite name: The waterbody is on the Section 10 Navigable Waterway List of Seattle District
☒ State/Local wetland inventory map(s): King County, WA (2012)
☐ FEMA/FIRM maps:
☐ 100-year Floodplain Elevation is:
☒ Photographs: ☒ Aerial (Name & Date): Google Earth 2012
or ☐ Other (Name & Date):
☐ Previous determination(s). File no. and date of response letter:
☐ Applicable/supporting case law:
☐ Applicable/supporting scientific literature:
☒ Other information (please specify): City of Snoqualmie Wetlands and Streams Map; Each wetland, stream and ditch is fully documented on individual Rapanos Tributary and Wetland Information Summaries located in the Jurisdictional Documents submitted by Raedeke Associates, Inc. on 16 April 2015. These sheets include the general area conditions, physical characteristics (including flow path and size), chemical characteristics (including known pollutants filtered on the site such as hydrocarbons), and the biological characteristics of the water (including vegetation types).

B. ADDITIONAL COMMENTS TO SUPPORT JD:

Site Description: The approximately 293-acre property consists of King County tax parcels 2924089002, 2924089003, 2924089006, 2924089009, 2924089022, 2924089023, 2924089028, 292408UNKN, 3024089001, 3024089004, 3024089069, and 3024089070. As of September 28, 2012, all of the property, with the exception of 15.7 acres of tax parcel 2924089009, was annexed to the City of Snoqualmie from King County. The Snoqualmie Mill property is within Sections 20, 29, and 30, Township 24 North, Range 8 East, W.M. The property consists of the old Weyerhaeuser Snoqualmie Mill, lumber yards, and mill town which are now idle, and is just north of the Weyerhaeuser mill pond. The eastern and western property boundaries are formed by 396th Avenue SE and Southeast Mill Pond Road, respectively. The east half of the northern property boundary is formed by 402nd Avenue SE. The west half of the northern boundary is not defined by a road.

Site History and Delineation Methodology: The consultants originally delineated the site in 2012, and located 18 wetlands that were either contiguous with, adjacent to, or within the boundaries of a ditch or tributary which flows into the Snoqualmie River. During the site visit on 19 March 2013, the Corps confirmed that these waters are "waters of the U.S." but also determined that there were additional wet areas on the site and requested that the consultants conduct additional field work and provide updated documentation.

Many of the areas that needed additional investigation had developed on old fill in the western two-thirds of the site, but also included wet areas that had developed on top of old paved roads and concrete building foundations in the eastern portion of the site. In many cases, these areas were also dominated by hydrophytic vegetation. In the western portion of the site, these included areas up to several acres in size that were dominated by emergent species including broad-leaf cattail (*Typha latifolia*, OBL), blackgirdle bulrush (*Scirpus cyperinus*, OBL), small-fruited bulrush (*Scirpus microcarpus*, OBL), and various sedges (*Carex spp.*, FACW – OBL). Soils within the western portion of the site consist of old, deep fill that was placed within the site during a period from the early 1900's through the early 1990's (Raedeke Associates, Inc. 2012). Land disturbing activities necessary for mill operation continued through 2003 and, following mill closure, the site was used for construction materials storage and the DirtFish rally-car driver training school. Construction or other land disturbing activities within several areas of the western portion of the site appear to have been abandoned based on the presence of well established trees. The site is also drained by a network of numerous ditches constructed on top of the old fill for drainage of the western portion of the site. These vary in depth from 6 inches to more than 8 feet and duration of flow from less than two weeks at a time during the rainy season to year-round. The consultants re-visited the site in September, February, March, April and May of 2013, to collect information regarding vegetation, soil and hydrologic conditions. They re-delineated the site over three days in May of 2014.

The consultants found that all of the areas that were situated on old fill had no discernible indicators of hydric soils such as would be expected for hydric soil field indicator TF12, but had positive indicators for hydrophytic vegetation and wetland hydrology. Therefore, at the request of the Corps, they monitored these areas to determine if they were ponded for greater than 30 days continuously due to the presence of an aquic moisture regime which would meet criteria to be considered a hydric soil per guidelines of the 1987 Wetlands Delineation Manual (Environmental Laboratory) and the current Western Mountains and Valleys Regional Supplement. That monitoring occurred from February 28 through May 1, 2014. They monitored 18 areas, all of which were within the western half of the site, west of the old lumber milling facilities, power generation plant, and asphalt- or concrete-paved storage areas. A total of 8 additional wetlands were delineated using this methodology. The most recent delineation report dated April 16, 2015, provides an overview of the delineation methods and summary sheets for each waterbody.

Jurisdictional Determination: Wetlands 3, 5, 6, 20-21-22, 26, 27 are considered adjacent, per the definition found at 33 CFR 328.2(c), to relatively permanent waters that flow into the Snoqualmie River, a Section 10 navigable waterbody used for interstate and foreign commerce. Each of these wetland has a significant nexus to downstream traditional navigable waters and is a jurisdictional water of the U.S. On 11 August 2015, we sent our findings to EPA and Corps HQ for their approval. On 18 August 2015, EPA Region 10 concurred with our determination. No response was received from Corps HQ.

APPROVED JURISDICTIONAL DETERMINATION FORM
U.S. Army Corps of Engineers

JD FORM 2 – Ditch 19 and Wetlands 19 and 25 (Non-WOUS – Isolated)

SECTION I: BACKGROUND INFORMATION

A. REPORT COMPLETION DATE FOR APPROVED JURISDICTIONAL DETERMINATION (JD): 23 March 2017

B. DISTRICT OFFICE, FILE NAME, NUMBER: Seattle District – Brookwater Advisors, LLC (Snoqualmie Mill), NWS-2012-1198
Name of water being evaluated on this form: Ditch 19 and Wetlands 19 and 25

C. PROJECT LOCATION AND BACKGROUND INFORMATION:
State: WA County/parish/borough: King City: Snoqualmie
Center coordinates of site (lat/long in degree decimal format Lat: 47.539978° Long. -121.817131°
Universal Transverse Mercator: 10
Name of nearest waterbody: Mill Pond (off-site)
Name of nearest Traditional Navigable Water (TNW) into which the aquatic resource flows: Snoqualmie River
Name of watershed or Hydrologic Unit Code (HUC): 17110010 (Snoqualmie Watershed)
☒ Check if map/diagram of review area and/or potential jurisdictional areas is/are available upon request.
☒ Check if other sites (e.g., offsite mitigation sites, disposal sites, etc) are associated with this action and are recorded on a different JD form. List other JD's: Waters of the U.S. are discussed on Forms 1, 3, and 4. Non-waters are discussed on Form 2.

D. REVIEW PERFORMED FOR SITE EVALUATION (CHECK ALL THAT APPLY):
☒ Office (Desk) Determination. Date: 23 March 2017
☒ Field Determination. Date: 19 March 2013

SECTION II: SUMMARY OF FINDINGS

A. RHA SECTION 10 DETERMINATION OF JURISDICTION.

There **are no** "*navigable waters of the U.S.*" within Rivers and Harbors Act (RHA) jurisdiction (as defined by 33 CFR part 329) in the review area. [*Required*]
☐ Waters subject to the ebb and flow of the tide.
☐ Waters are presently used, or have been used in the past, or may be susceptible for use to transport interstate or foreign commerce.
Explain: _____.

B. CWA SECTION 404 DETERMINATION OF JURISDICTION.

There **are no** "*waters of the U.S.*" within Clean Water Act (CWA) jurisdiction (as defined by 33 CFR part 328) in the review area. [*Required*]

1. **Waters of the U.S.**
   a. **Indicate presence of waters of U.S. in review area (check all that apply):** [1]
      ☐ TNWs, including territorial seas
      ☐ Wetlands adjacent to TNWs
      ☐ Relatively permanent waters[2] (RPWs) that flow directly or indirectly into TNWs
      ☐ Non-RPWs that flow directly or indirectly into TNWs
      ☐ Wetlands directly abutting RPWs that flow directly or indirectly into TNWs
      ☐ Wetlands adjacent to but not directly abutting RPWs that flow directly or indirectly into TNWs
      ☐ Wetlands adjacent to non-RPWs that flow directly or indirectly into TNWs
      ☐ Impoundments of jurisdictional waters
      ☐ Isolated (interstate or intrastate) waters, including isolated wetlands

   b. **Identify (estimate) size of waters of the U.S. in the review area:**
      Non-wetland waters: _____ linear feet _____ width (ft) and/or _____ acres.
      Wetlands: _____ acres.

   c. **Limits (boundaries) of jurisdiction** based on: **Pick List** and **Pick List**
      Elevation of established OHWM (if known): _____.

2. **Non-regulated waters/wetlands (check if applicable):**[3]

[1] Boxes checked below shall be supported by completing the appropriate sections in Section III below.
[2] For purposes of this form, an RPW is defined as a tributary that is not a TNW and that typically flows year-round or has continuous flow at least "seasonally" (e.g., typically 3 months).
[3] Supporting documentation is presented in Section III.F.

☒ Potentially jurisdictional waters and/or wetlands were assessed within the review area and determined to be not jurisdictional. Explain: Ditch 19 has no OHWM or wetland characteristics and is therefore not a water of the U.S. Wetlands 19 and 25 are both adjacent to other wetlands and while they do provide important wetland functions on this site including water attenuation and toxin interception, they do not have surface water or shallow subsurface connection or ecological connectivity to other navigable or interstate waters of the U. S. or tributaries of waters of the U. S. A biological connection by way of amphibian use is extremely limited due to the current level of pollution at the site. They are not used by interstate or foreign travelers for recreational purposes, have no habitat or resources of special significance which would attract interstate or foreign travelers, they lack bird and wildlife species of special significance which would attract interstate or foreign travelers, support no fish or shellfish which could be taken or sold in interstate or foreign commerce, and are not used for industrial, agricultural, or silvicultural activities involving interstate or foreign commerce.

SECTION III: CWA ANALYSIS

A. TNWs AND WETLANDS ADJACENT TO TNWs: NOT APPLICABLE

B. CHARACTERISTICS OF TRIBUTARY (THAT IS NOT A TNW) AND ITS ADJACENT WETLANDS: NOT APPLICABLE

C. SIGNIFICANT NEXUS DETERMINATION: NOT APPLICABLE

D. DETERMINATIONS OF JURISDICTIONAL FINDINGS. THE SUBJECT WATERS/WETLANDS ARE: NOT APPLICABLE

E. ISOLATED [INTERSTATE OR INTRA-STATE] WATERS, INCLUDING ISOLATED WETLANDS, THE USE, DEGRADATION OR DESTRUCTION OF WHICH COULD AFFECT INTERSTATE COMMERCE, INCLUDING ANY SUCH WATERS (CHECK ALL THAT APPLY):[4]

☐ which are or could be used by interstate or foreign travelers for recreational or other purposes.
☐ from which fish or shellfish are or could be taken and sold in interstate or foreign commerce.
☐ which are or could be used for industrial purposes by industries in interstate commerce.
☐ Interstate isolated waters. Explain: _____.
☐ Other factors. Explain: _____.

Identify water body and summarize rationale supporting determination: _____

Provide estimates for jurisdictional waters in the review area (check all that apply):
☐ Tributary waters: _____ linear feet _____ width (ft).
☐ Other non-wetland waters: ____ acres.
Identify type(s) of waters: _____.
☐ Wetlands: ____ acres.

F. NON-JURISDICTIONAL WATERS, INCLUDING WETLANDS:

☐ If potential wetlands were assessed within the review area, these areas did not meet the criteria in the 1987 Corps of Engineers Wetland Delineation Manual and/or appropriate Regional Supplements.
☒ Review area included isolated waters with no substantial nexus to interstate (or foreign) commerce.
☒ Prior to the Jan 2001 Supreme Court decision in "*SWANCC*," the review area would have been regulated based solely on the "Migratory Bird Rule" (MBR).
☐ Waters do not meet the "Significant Nexus" standard, where such a finding is required for jurisdiction. Explain: _____.
☐ Other: (explain, if not covered above): _____.

Provide acreage estimates for non-jurisdictional waters in the review area, where the sole potential basis of jurisdiction is the MBR factors (i.e., presence of migratory birds, presence of endangered species, use of water for irrigated agriculture), using best professional judgment (check all that apply):
☐ Non-wetland waters (i.e., rivers, streams): _____ linear feet _____ width (ft).
☐ Lakes/ponds: _____ acres.
☐ Other non-wetland waters: _____ acres. List type of aquatic resource: _____.
☒ Wetlands: 0.07 acres.

SECTION IV: DATA SOURCES.

A. SUPPORTING DATA. Data reviewed for JD (check all that apply - checked items shall be included in case file and, where checked and requested, appropriately reference sources below):

☒ Maps, plans, plots or plat submitted by or on behalf of the applicant/consultant: Raedeke Associates, Inc (consultant)

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[4] **Prior to asserting or declining CWA jurisdiction based solely on this category, Corps Districts will elevate the action to Corps and EPA HQ for review consistent with the process described in the Corps/EPA *Memorandum Regarding CWA Act Jurisdiction Following Rapanos.***

☒ Data sheets prepared/submitted by or on behalf of the applicant/consultant.
☒ Office concurs with data sheets/delineation report.
☐ Office does not concur with data sheets/delineation report.
☐ Data sheets prepared by the Corps:
☒ Corps navigable waters' study:
ww.nws.usace.army.mil/Portals/27/docs/regulatory/permit%20guidebook/Navigable_Waters_of_the_US_in_WA_State.pdf
☒ U.S. Geological Survey Hydrologic Atlas:
☐ USGS NHD data.
☒ USGS 8 and 12 digit HUC maps.
☐ U.S. Geological Survey map(s). Cite scale & quad name:
☒ USDA Natural Resources Conservation Service Soil Survey, Citation: Web Soil Survey (2011)
☐ National wetlands inventory map(s). Cite name:
☒ State/Local wetland inventory map(s): King County, WA (2012)
☐ FEMA/FIRM maps:
☐ 100-year Floodplain Elevation is:
☒ Photographs: ☒ Aerial (Name & Date): Google Earth 2012
or ☐ Other (Name & Date):
☐ Previous determination(s). File no. and date of response letter:
☐ Applicable/supporting case law:
☐ Applicable/supporting scientific literature:
☒ Other information (please specify): City of Snoqualmie Wetlands and Streams Map; Each wetland, stream and ditch is fully documented on individual Rapanos Tributary and Wetland Information Summaries located in the Jurisdictional Documents submitted by Raedeke Associates, Inc. on 16 April 2015. These sheets include the general area conditions, physical characteristics (including flow path and size), chemical characteristics (including known pollutants filtered on the site such as hydrocarbons), and the biological characteristics of the water (including vegetation types).

B. ADDITIONAL COMMENTS TO SUPPORT JD:

Site Description: The approximately 293-acre property consists of King County tax parcels 2924089002, 2924089003, 2924089006, 2924089009, 2924089022, 2924089023, 2924089028, 292408UNKN, 3024089001, 3024089004, 3024089069, and 3024089070. As of September 28, 2012, all of the property, with the exception of 15.7 acres of tax parcel 2924089009, was annexed to the City of Snoqualmie from King County. The Snoqualmie Mill property is within Sections 20, 29, and 30, Township 24 North, Range 8 East, W.M. The property consists of the old Weyerhaeuser Snoqualmie Mill, lumber yards, and mill town which are now idle, and is just north of the Weyerhaeuser mill pond. The eastern and western property boundaries are formed by 396th Avenue SE and Southeast Mill Pond Road, respectively. The east half of the northern property boundary is formed by 402nd Avenue SE. The west half of the northern boundary is not defined by a road.

Site History and Delineation Methodology: The consultants originally delineated the site in 2012, and located 18 wetlands that were either contiguous with, adjacent to, or within the boundaries of a ditch or tributary which flows into the Snoqualmie River. During the site visit on 19 March 2013, the Corps confirmed that these waters are "waters of the U.S." but also determined that there were additional wet areas on the site and requested that the consultants conduct additional field work and provide updated documentation.

Many of the areas that needed additional investigation had developed on old fill in the western two-thirds of the site, but also included wet areas that had developed on top of old paved roads and concrete building foundations in the eastern portion of the site. In many cases, these areas were also dominated by hydrophytic vegetation. In the western portion of the site, these included areas up to several acres in size that were dominated by emergent species including broad-leaf cattail (*Typha latifolia*, OBL), blackgirdle bulrush (*Scirpus cyperinus*, OBL), small-fruited bulrush (*Scirpus microcarpus*, OBL), and various sedges (*Carex spp.*, FACW – OBL). Soils within the western portion of the site consist of old, deep fill that was placed within the site during a period from the early 1900's through the early 1990's (Raedeke Associates, Inc. 2012). Land disturbing activities necessary for mill operation continued through 2003 and, following mill closure, the site was used for construction materials storage and the DirtFish rally-car driver training school. Construction or other land disturbing activities within several areas of the western portion of the site appear to have been abandoned based on the presence of well established trees. The site is also drained by a network of numerous ditches constructed on top of the old fill for drainage of the western portion of the site. These vary in depth from 6 inches to more than 8 feet and duration of flow from less than two weeks at a time during the rainy season to year-round. The consultants re-visited the site in September, February, March, April and May of 2013, to collect information regarding vegetation, soil and hydrologic conditions. They re-delineated the site over three days in May of 2014.

The consultants found that all of the areas that were situated on old fill had no discernible indicators of hydric soils such as would be expected for hydric soil field indicator TF12, but had positive indicators for hydrophytic vegetation and wetland hydrology. Therefore, at the request of the Corps, they monitored these areas to determine if they were ponded for greater than 30 days continuously due to the presence of an aquic moisture regime which would meet criteria to be considered a hydric soil per guidelines of the 1987 Wetlands Delineation Manual (Environmental Laboratory) and the current Western Mountains and Valleys Regional Supplement. That monitoring occurred from February 28 through May 1, 2014. They monitored 18 areas, all of which were within the western half of the site, west of the old lumber milling facilities, power generation plant, and asphalt- or concrete-paved storage areas. A total of 8 additional wetlands were delineated using this methodology. The most recent delineation report dated April 16, 2015, provides an overview of the delineation methods and summary sheets for each waterbody. Wetlands 19 and 25 are adjacent to other wetlands but are not waters of the U.S. under Section 404 jurisdiction. On 11 August 2015, we sent our findings to EPA and Corps HQ for their approval. On 18 August 2015, EPA Region 10 concurred with our determination. No response was received from Corps HQ.

APPROVED JURISDICTIONAL DETERMINATION FORM
U.S. Army Corps of Engineers

JD FORM 3
Perennial Relatively Permanent Waters (RPW)

SECTION I: BACKGROUND INFORMATION

A. REPORT COMPLETION DATE FOR APPROVED JURISDICTIONAL DETERMINATION (JD): 23 March 2017.

B. DISTRICT OFFICE, FILE NAME, AND NUMBER: Seattle District, Brookwater Advisors, LLC (Snoqualmie Mill), NWS-2012-1198.

Name of water being evaluated on this JD form: Wetland 12 ditch complex; Streams 1, 2

C. PROJECT LOCATION AND BACKGROUND INFORMATION:

State: Washington County: King City: Snoqualmie
Center coordinates of site (lat/long in degree decimal format): Lat: 47.539978° N, Long: -121.817131° W
Universal Transverse Mercator: 10.
Name of nearest waterbody: Mill Pond (off-site).
Name of nearest Traditional Navigable Water (TNW) into which the aquatic resource flows: Snoqualmie River.
Name of watershed or Hydrologic Unit Code (HUC): 17110010 (Snoqualmie Watershed).

☒ Check if map/diagram of review area and/or potential jurisdictional areas is/are available upon request.
☒ Check if other sites (e.g., offsite mitigation sites, disposal sites, etc.) are associated with this action and are recorded on a different JD form. List other JDs: Waters of the U.S. are discussed on Forms 1, 3, and 4. Non-waters are discussed on Form 2.

D. REVIEW PERFORMED FOR SITE EVALUATION (CHECK ALL THAT APPLY):

☒ Office (Desk) Determination. Date: 23 March 2017.
☒ Field Determination. Date(s): 19 March 2013.

SECTION II: SUMMARY OF FINDINGS

A. RHA SECTION 10 DETERMINATION OF JURISDICTION.

There **Are no** "*navigable waters of the U.S.*" within Rivers and Harbors Act (RHA) jurisdiction (as defined by 33 CFR part 329) in the review area. [*Required*]

☐ Waters subject to the ebb and flow of the tide.
☐ Waters are presently used, or have been used in the past, or may be susceptible for use to transport interstate or foreign commerce.
Explain: _____.

B. CWA SECTION 404 DETERMINATION OF JURISDICTION.

There **Are** "*waters of the U.S.*" within Clean Water Act (CWA) jurisdiction (as defined by 33 CFR part 328) in the review area. [*Required*]

1. **Waters of the U.S.**
   a. **Indicate presence of waters of U.S. in review area (check all that apply):** [1]
      ☐ TNWs, including territorial seas
      ☐ Wetlands adjacent to TNWs
      ☒ Relatively permanent waters[2] (RPWs) that flow directly or indirectly into TNWs
      ☐ Non-RPWs that flow directly or indirectly into TNWs
      ☐ Wetlands directly abutting RPWs that flow directly or indirectly into TNWs
      ☐ Wetlands adjacent to but not directly abutting RPWs that flow directly or indirectly into TNWs
      ☐ Wetlands adjacent to non-RPWs that flow directly or indirectly into TNWs
      ☐ Impoundments of jurisdictional waters
      ☐ Isolated (interstate or intrastate) waters, including isolated wetlands

   b. **Identify (estimate) size of waters of the U.S. in the review area:**
      Non-wetland waters: 13,560 linear feet _____ width (ft) and/or _____ acres.
      Wetlands: 2.77 acres.

   c. **Limits (boundaries) of jurisdiction** based on: **Established by OHWM.** and **1987 Delineation Manual.**
      Elevation of established OHWM (if known): unknown.

[1] Boxes checked below shall be supported by completing the appropriate sections in Section III below.
[2] For purposes of this form, an RPW is defined as a tributary that is not a TNW and that typically flows year-round or has continuous flow at least "seasonally" (e.g., typically 3 months).

2. **Non-regulated waters/wetlands (check if applicable):**[3]
   ☐ Potentially jurisdictional waters and/or wetlands were assessed within the review area and determined to be not jurisdictional. Explain: _____.

SECTION III: CWA ANALYSIS

A. TNWs AND WETLANDS ADJACENT TO TNWs – NOT APPLICABLE

B. CHARACTERISTICS OF TRIBUTARY (THAT IS NOT A TNW) AND ITS ADJACENT WETLANDS – NOT APPLICABLE

C. SIGNIFICANT NEXUS DETERMINATION – NOT APPLICABLE

D. DETERMINATIONS OF JURISDICTIONAL FINDINGS. THE SUBJECT WATERS/WETLANDS ARE:

2. RPWs that flow directly or indirectly into TNWs.

☒ Tributaries of TNWs where tributaries typically flow year-round are jurisdictional. Provide rationale indicating that tributary flows perennial: Established bed and bank and OHWM; flow for 7-12 months of year. Describe flow path to a TNW: Stream 2 encompasses the Wetland 12 in an extensive ditch system which conveys flow to Mill Pond which outlets directly to the Snoqualmie River; Stream 1 flows to the Snoqualmie River above the falls; the Snoqualmie River becomes a traditional navigable water about 15 miles downstream.

Provide estimates for jurisdictional waters in the review area (check all that apply):

☒ Tributary waters: **Stream 1 (2 miles), Stream 2 and Complex 12 (3,000 ft)** linear feet **Stream 1 (8 feet wide); Stream 2 and Complex 12 (20 feet)** width (ft).

☐ Other non-wetland waters: _____ acres.
Identify type(s) of waters: _____.

4. Wetlands directly abutting an RPW that flow directly or indirectly into TNWs.

☐ Wetlands directly abut RPW and thus are jurisdictional as adjacent wetlands.

☐ Wetlands directly abutting an RPW where tributaries typically flow year-round. Provide data and rationale indicating that tributary is perennial in Section III.D.2, above. Provide rationale indicating that wetland is directly abutting an RPW: _____

Provide acreage estimates for jurisdictional wetlands in the review area: _____ acres.

E. ISOLATED [INTERSTATE OR INTRA-STATE] WATERS, INCLUDING ISOLATED WETLANDS, THE USE, DEGRADATION OR DESTRUCTION OF WHICH COULD AFFECT INTERSTATE COMMERCE, INCLUDING ANY SUCH WATERS (CHECK ALL THAT APPLY): NOT APPLICABLE

F. NON-JURISDICTIONAL WATERS, INCLUDING WETLANDS: NOT APPLICABLE

SECTION IV: DATA SOURCES.

A. SUPPORTING DATA. Data reviewed for JD (check all that apply):

☒ Maps, plans, plots or plat submitted by or on behalf of the applicant/consultant: Raedeke Associates, Inc (consultant).
☒ Data sheets prepared/submitted by or on behalf of the applicant/consultant.
  ☒ Office concurs with data sheets/delineation report.
  ☐ Office does not concur with data sheets/delineation report.
☐ Data sheets prepared by the Corps: _____.
☒ Corps navigable waters' study:
ww.nws.usace.army.mil/Portals/27/docs/regulatory/permit%20guidebook/Navigable_Waters_of_the_US_in_WA_State.pdf.
☒ U.S. Geological Survey Hydrologic Atlas: _____.
  ☐ USGS NHD data.
  ☒ USGS 8 and 12 digit HUC maps.
☐ U.S. Geological Survey map(s). Cite scale & quad name: _____
☒ USDA Natural Resources Conservation Service Soil Survey. Citation: Web Soil Survey (2011).
☒ National wetlands inventory map(s). Cite name: _____.
☒ State/Local wetland inventory map(s): King County, WA (2012)
☐ FEMA/FIRM maps: _____.
☐ 100-year Floodplain Elevation is: _____ (National Geodectic Vertical Datum of 1929)
☒ Photographs: ☒ Aerial (Name & Date): Google Earth 2012
  or ☐ Other (Name & Date): _____.

[3] Supporting documentation is presented in Section III.F.

- ☐ Previous determination(s). File no. and date of response letter: _____.
- ☐ Applicable/supporting case law: _____.
- ☐ Applicable/supporting scientific literature: _____.
- ☒ Other information (please specify): City of Snoqualmie Wetlands and Streams Map. .

B. ADDITIONAL COMMENTS TO SUPPORT JD: Each wetland, stream and ditch is fully documented on individual Rapanos Tributary and Wetland Information Summaries located in the Jurisdictional Documents submitted by Raedeke Associates, Inc. on 16 April 2015. These sheets include the general area conditions, physical characteristics (including flow path and size), chemical characteristics (including known pollutants filtered on the site such as hydrocarbons), and the biological characteristics of the water (including vegetation types).

APPROVED JURISDICTIONAL DETERMINATION FORM
U.S. Army Corps of Engineers

JD FORM 4
Wetlands Directly Abutting Seasonal and Perennial RPW's

SECTION I: BACKGROUND INFORMATION

A. REPORT COMPLETION DATE FOR APPROVED JURISDICTIONAL DETERMINATION (JD): 23 March 2017.

B. DISTRICT OFFICE, FILE NAME, AND NUMBER: **Seattle District,** Brookwater Advisors, LLC (Snoqualmie Mill), NWS-2012-1198.

Name of water being evaluated on this JD form: Wetlands 1, 2, 4, 7, 8, 9, 10, 11, 13, 14, 15, 18, 24, 28, 29, Ditches 2N, 3S, 7, 9N, 10, 17, 18, 22, 24, 26, 28, 29, 30, 33, 34, 35, 40, 41, Streams 3, 4, 5, 6

C. PROJECT LOCATION AND BACKGROUND INFORMATION:

State: Washington County: King City: Snoqualmie
Center coordinates of site (lat/long in degree decimal format): Lat: 47.539978° N, Long: -121.817131° W
Universal Transverse Mercator: 10.
Name of nearest waterbody: Mill Pond (off-site).
Name of nearest Traditional Navigable Water (TNW) into which the aquatic resource flows: Snoqualmie River.
Name of watershed or Hydrologic Unit Code (HUC): 17110010 (Snoqualmie Watershed).

☐ Check if map/diagram of review area and/or potential jurisdictional areas is/are available upon request.
☒ Check if other sites (e.g., offsite mitigation sites, disposal sites, etc.) are associated with this action and are recorded on a different JD form. List other JDs: Waters of the U.S. are discussed on Forms 1, 3, and 4. Non-waters are discussed on Form 2.

D. REVIEW PERFORMED FOR SITE EVALUATION (CHECK ALL THAT APPLY):

☒ Office (Desk) Determination. Date: 23 March 2017.
☒ Field Determination. Date(s): 19 March 2013.

SECTION II: SUMMARY OF FINDINGS

A. RHA SECTION 10 DETERMINATION OF JURISDICTION.

There **Are no** "*navigable waters of the U.S.*" within Rivers and Harbors Act (RHA) jurisdiction (as defined by 33 CFR part 329) in the review area. [*Required*]

☐ Waters subject to the ebb and flow of the tide.
☐ Waters are presently used, or have been used in the past, or may be susceptible for use to transport interstate or foreign commerce.
Explain: _____.

B. CWA SECTION 404 DETERMINATION OF JURISDICTION.

There **Are** "*waters of the U.S.*" within Clean Water Act (CWA) jurisdiction (as defined by 33 CFR part 328) in the review area. [*Required*]

1. **Waters of the U.S.**
   a. **Indicate presence of waters of U.S. in review area (check all that apply):** [1]
      ☐ TNWs, including territorial seas
      ☐ Wetlands adjacent to TNWs
      ☒ Relatively permanent waters[2] (RPWs) that flow directly or indirectly into TNWs
      ☐ Non-RPWs that flow directly or indirectly into TNWs
      ☒ Wetlands directly abutting RPWs that flow directly or indirectly into TNWs
      ☐ Wetlands adjacent to but not directly abutting RPWs that flow directly or indirectly into TNWs
      ☐ Wetlands adjacent to non-RPWs that flow directly or indirectly into TNWs
      ☐ Impoundments of jurisdictional waters
      ☐ Isolated (interstate or intrastate) waters, including isolated wetlands

   b. **Identify (estimate) size of waters of the U.S. in the review area:**
      Non-wetland waters: 6,050 linear feet _____ width (ft) and/or _____ acres.
      Wetlands: 39.07 acres.

   c. **Limits (boundaries) of jurisdiction** based on: **Established by OHWM.** and **1987 Delineation Manual.**
      Elevation of established OHWM (if known): _____.

[1] Boxes checked below shall be supported by completing the appropriate sections in Section III below.
[2] For purposes of this form, an RPW is defined as a tributary that is not a TNW and that typically flows year-round or has continuous flow at least "seasonally" (e.g., typically 3 months).

2. **Non-regulated waters/wetlands (check if applicable):**[3]
   ☐ Potentially jurisdictional waters and/or wetlands were assessed within the review area and determined to be not jurisdictional. Explain: _____.

SECTION III: CWA ANALYSIS

A. TNWs AND WETLANDS ADJACENT TO TNWs – NOT APPLICABLE

B. CHARACTERISTICS OF TRIBUTARY (THAT IS NOT A TNW) AND ITS ADJACENT WETLANDS (IF ANY):

1. **Characteristics of non-TNWs that flow directly or indirectly into TNW**

(i) **General Area Conditions:**
Watershed size: 700 **square miles**
Drainage area: 700 **square miles**
Average annual rainfall: 35 inches
Average annual snowfall: 371 inches

(ii) **Physical Characteristics:**
(a) Relationship with TNW:
☒ Tributary flows directly into TNW.
☒ Tributary flows through **2** tributaries before entering TNW.

Project waters are **10-15** river miles from TNW.
Project waters are **1-2** river miles from RPW.
Project waters are **10-15** aerial (straight) miles from TNW.
Project waters are **1 (or less)** aerial (straight) miles from RPW.
Project waters cross or serve as state boundaries. Explain: N/A.

Identify flow route to TNW[4]: Through site then directly into the Snoqualmie River or into Mill Pond, through unnamed tributary and then the Snoqualmie River.
Tributary stream order, if known: _____.

(b) General Tributary Characteristics (check all that apply):
Tributary is: ☒ Natural
☒ Artificial (man-made). Explain: Some ditches created on top of old fill.
☒ Manipulated (man-altered). Explain: Maintenance is on-going in some ditches.

Tributary properties with respect to top of bank (estimate):
Average width: 5 - 20 feet
Average depth: 1.5 - 5 feet
Average side slopes: **Vertical (1:1 or less).**

Primary tributary substrate composition (check all that apply):

☒ Silts	☒ Sands	☒ Concrete
☐ Cobbles	☒ Gravel	☐ Muck
☐ Bedrock	☐ Vegetation. Type/% cover: _____	
☒ Other. Explain: old fill.		

Tributary condition/stability [e.g., highly eroding, sloughing banks]. Explain: _____.
Presence of run/riffle/pool complexes. Explain: _____.
Tributary geometry: **Relatively straight**
Tributary gradient (approximate average slope): 1 %

(c) Flow:
Tributary provides for: **Seasonal flow**
Estimate average number of flow events in review area/year: **6-10**
Describe flow regime: varied.
Other information on duration and volume: 3.0 cfs/varied.

Surface flow is: **Overland sheetflow.** Characteristics: _____.

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[3] Supporting documentation is presented in Section III.F.
[4] Flow route can be described by identifying, e.g., tributary a, which flows through the review area, to flow into tributary b, which then flows into TNW.

Subsurface flow: **Unknown**. Explain findings: _____.
☐ Dye (or other) test performed: No.

Tributary has (check all that apply):
☒ Bed and banks
☒ OHWM[5] (check all indicators that apply):
- ☒ clear, natural line impressed on the bank
- ☐ changes in the character of soil
- ☐ shelving
- ☐ vegetation matted down, bent, or absent
- ☒ leaf litter disturbed or washed away
- ☒ sediment deposition
- ☒ water staining
- ☐ other (list): _____
- ☒ the presence of litter and debris
- ☒ destruction of terrestrial vegetation
- ☐ the presence of wrack line
- ☒ sediment sorting
- ☒ scour
- ☒ multiple observed or predicted flow events
- ☐ abrupt change in plant community

☒ Discontinuous OHWM.[6] Explain:varied.

If factors other than the OHWM were used to determine lateral extent of CWA jurisdiction (check all that apply):
☒ High Tide Line indicated by:
- ☐ oil or scum line along shore objects
- ☐ fine shell or debris deposits (foreshore)
- ☐ physical markings/characteristics
- ☐ tidal gauges
- ☐ other (list):

☒ Mean High Water Mark indicated by:
- ☐ survey to available datum;
- ☐ physical markings;
- ☐ vegetation lines/changes in vegetation types.

(iii) Chemical Characteristics:
Characterize tributary (e.g., water color is clear, discolored, oily film; water quality; general watershed characteristics, etc.).
Explain: Most of the observed water is clear but water quality is poor. The property consists of the old Weyerhaeuser Snoqualmie Mill, lumber yards, and mill town which now sits idle, and is just north of the Weyerhaeuser mill pond. Today parts of the site are used for the DirtFish race track and for storing gravel and rock but most of it is considered abandoned and over the majority of the site only the foundations of previous structures remain. Over a hundred years of processing and storing lumber, various leakages from equipment, pollution from the former mill town and a fire in 1989 have all contributed to the degraded condition of the property. The site underwent a preliminary assessment in the Superfund data system (CERCLIS) in 1991, however it resulted in a "No Further Remedial Action Planned" designation. As such, cleanup activities came under the purview of the Department of the Department of Ecology. .
Identify specific pollutants, if known: hydrocarbons.

(iv) Biological Characteristics. Channel supports (check all that apply):
☒ Riparian corridor. Characteristics (type, average width): There is a narrow band of decidious forest along the southern perimeter of the site and deciduous forest encompasses a perennial stream that flows along northern perimeter. The west side contains a mosaic of shrub-lands and sparsely vegetated areas. A high percentage of bare ground is also present throughout the review area.
☐ Wetland fringe. Characteristics: _____.
☐ Habitat for:
☒ Federally Listed species. Explain findings: None mapped within site boundaries but present in the TNW .
☒ Fish/spawn areas. Explain findings: Present in pernnial waters, Mill Pond and the TNW. Limited distribution due in part to high temperature and fish blockages .
☒ Other environmentally-sensitive species. Explain findings: The polluted nature of the site may deter "environmentally-sensitive" species such as amphibians. The watershed supports wild runs of coho, chinook, pink, chum and steelhead.
☒ Aquatic/wildlife diversity. Explain findings: A regular concentration of elk (a State species of concern) use areas south, east and north of the property and extend into the eastern and southern portions of the site. Osprey and peregrine falcon nests are mapped near the site.

2. Characteristics of wetlands adjacent to non-TNW that flow directly or indirectly into TNW – NOT APPLICABLE

3. Characteristics of all wetlands adjacent to the tributary (if any) – NOT APPLICABLE

C. SIGNIFICANT NEXUS DETERMINATION – NOT APPLICABLE

D. DETERMINATIONS OF JURISDICTIONAL FINDINGS. THE SUBJECT WATERS/WETLANDS ARE (CHECK ALL THAT APPLY):

2. RPWs that flow directly or indirectly into TNWs.

---

[5]A natural or man-made discontinuity in the OHWM does not necessarily sever jurisdiction (e.g., where the stream temporarily flows underground, or where the OHWM has been removed by development or agricultural practices). Where there is a break in the OHWM that is unrelated to the waterbody's flow regime (e.g., flow over a rock outcrop or through a culvert), the agencies will look for indicators of flow above and below the break.
[6]Ibid.

☒ Tributaries of TNWs where tributaries typically flow year-round are jurisdictional. Provide rationale indicating that tributary flows perennial: _____.

☒ Tributaries of TNW where tributaries have continuous flow "seasonally" (e.g., typically three months each year) are jurisdictional. Data supporting this conclusion is provided at Section III.B. Provide rationale indicating that tributary flows seasonally: _____.

Provide estimates for jurisdictional waters in the review area (check all that apply):
☐ Tributary waters: _____ linear feet _____width (ft).
☐ Other non-wetland waters: _____ acres.
Identify type(s) of waters: _____.

4. **Wetlands directly abutting an RPW that flow directly or indirectly into TNWs.**
☒ Wetlands directly abut RPW and thus are jurisdictional as adjacent wetlands.
☒ Wetlands directly abutting an RPW where tributaries typically flow year-round. Provide data and rationale indicating that tributary is perennial in Section III.D.2, above. Provide rationale indicating that wetland is directly abutting an RPW: Hydrology data collected during multiple site visits, monitoring and review of hydric soil indicators.

☒ Wetlands directly abutting an RPW where tributaries typically flow "seasonally." Provide data indicating that tributary is seasonal in Section III.B and rationale in Section III.D.2, above. Provide rationale indicating that wetland is directly abutting an RPW: Hydrology data collected during multiple site visits, monitoring and review of hydric soil indicators.

Provide acreage estimates for jurisdictional wetlands in the review area: **39.07 wetland** acres.

E. ISOLATED [INTERSTATE OR INTRA-STATE] WATERS, INCLUDING ISOLATED WETLANDS, THE USE, DEGRADATION OR DESTRUCTION OF WHICH COULD AFFECT INTERSTATE COMMERCE, INCLUDING ANY SUCH WATERS - NOT APPLICABLE

F. NON-JURISDICTIONAL WATERS, INCLUDING WETLANDS - NOT APPLICABLE

SECTION IV: DATA SOURCES.

A. SUPPORTING DATA. Data reviewed for JD (check all that apply - checked items shall be included in case file and, where checked and requested, appropriately reference sources below):
☒ Maps, plans, plots or plat submitted by or on behalf of the applicant/consultant: Raedeke Associates, Inc (consultant).
☒ Data sheets prepared/submitted by or on behalf of the applicant/consultant.
☒ Office concurs with data sheets/delineation report.
☐ Office does not concur with data sheets/delineation report.
☐ Data sheets prepared by the Corps: _____.
☒ Corps navigable waters' study: The waterbody is on the Section 10 Navigable Waterway List for Seattle District.
☒ U.S. Geological Survey Hydrologic Atlas: _____.
☐ USGS NHD data.
☒ USGS 8 and 12 digit HUC maps.
☐ U.S. Geological Survey map(s). Cite scale & quad name: _____
☒ USDA Natural Resources Conservation Service Soil Survey. Citation: Web Soil Survey (2011).
☐ National wetlands inventory map(s). Cite name: _____.
☒ State/Local wetland inventory map(s): King County, WA (2012)
☐ FEMA/FIRM maps: _____.
☐ 100-year Floodplain Elevation is: _____ (National Geodectic Vertical Datum of 1929)
☒ Photographs: ☒ Aerial (Name & Date): Google 2012
or ☐ Other (Name & Date): _____.
☐ Previous determination(s). File no. and date of response letter: _____.
☐ Applicable/supporting case law: _____.
☐ Applicable/supporting scientific literature: _____.
☒ Other information (please specify): City of Snoqualmie Wetlands and Streams Map.

B. ADDITIONAL COMMENTS TO SUPPORT JD: Wetland 24 drains into ditch 22, which flows into wetland 12, which is a RPW and is addressed on Form 3. Each wetland, stream and ditch is fully documented on individual Rapanos Tributary and Wetland Information Summaries located in the Jurisdictional Documents submitted by Raedeke Associates, Inc. on 16 April 2015. These sheets include the general area conditions, physical characteristics (including flow path and size), chemical characteristics (including known pollutants filtered on the site such as hydrocarbons), and the biological characteristics (including vegetation types) of each water/wetland evaluated so the responses provided in Section D of this document should be considered averages.

Focus on Regulating Isolated Wetlands

DEPARTMENT OF ECOLOGY
State of Washington

Shorelands and Environmental Assistance Program **Revised July 2011**

Importance of Isolated Wetlands

Some of Washington's wetlands are isolated, unlike the majority which are commonly associated with or are part of larger water bodies such as streams, rivers, and lakes. Isolated wetlands form in low-lying areas supplied by precipitation, runoff from the surrounding watershed, or groundwater. They can be seasonally or permanently wet. These isolated wetlands perform many of the same important functions as do other wetlands, including:

- Recharging streams and aquifers.
- Storing flood waters.
- Filtering pollutants from water.
- Providing habitat for a host of plants and animals.

Many wildlife species, including amphibians and waterfowl, rely particularly on isolated wetlands for breeding and foraging. As described below, the state of Washington regulates activities that affect waters of the state, which include these isolated wetlands.

U.S. Supreme Court decisions affected isolated wetlands protection under the Clean Water Act

Under the federal Clean Water Act (CWA), a permit is required to dispose of dredged or fill material in the nation's waters, including wetlands. Authorized by Section 404 of the CWA, this permit program is administered by the U.S. Army Corps of Engineers (Corps). Under the Corps' Migratory Bird Rule, the nation's waters included intrastate waters that are or would be used as habitat by migratory birds that cross state lines.

A 2001 U.S. Supreme Court decision (*Solid Waste Agency of Northern Cook County v. U.S. Army Corps of Engineers*, the "SWANCC decision"), however, invalidated the Migratory Bird Rule and held that CWA jurisdiction does not include isolated, intrastate, non-navigable waters that may serve as habitat for migratory birds.

While the court did not specifically define the term "isolated," the Corps generally considers isolated wetlands as those without sufficient hydrologic connection with, or location next to, a navigable water (such as a river, lake, or marine water).

MORE INFORMATION

Guidance and updates

Ecology's Isolated Wetlands Information: www.ecy.wa.gov/programs/sea/wetlands/isolated.html

EPA's Updates and Background Information on the Scope of "Waters of the United States" protected under the CWA: www.epa.gov/owow/wetlands/guidance/CWAwaters.html.

U.S. Supreme Court citations

2001 *SWANCC* decision: 531 U.S. 159.

2006 *Rapanos* decision: 547 U.S. 715.

Links to these decisions can be found on the Ecology and EPA web pages listed above.

Contact information

Office of Regulatory Assistance
(360) 407-7037 or
1-800-917-0043

Special accommodations

To ask about the availability of this document in a version for the visually impaired, call the Shorelands and Environmental Assistance Program at 360-407-6600.

Persons with hearing loss, call 711 for Washington Relay Service. Persons with a speech disability, call 877-833-6341.

After the SWANCC decision, there was confusion about which wetlands were covered under the CWA. The U.S. Supreme Court provided little clarity in their 2006 "Rapanos decision" (*Rapanos* v. *United States*). Therefore, in 2008, the Corps and the U.S. Environmental Protection Agency (EPA) issued joint guidance describing how they determine which wetlands are covered under the CWA based on the two decisions. (See the side bar on page one for citations and links.)

Changes in federal regulation resulting from the court decisions

In the joint guidance the agencies clarified that the Corps still requires a permit for activities affecting wetlands connected to navigable water bodies, including isolated wetlands that have an interstate commerce connection, such as recreational or industrial use.

However, landowners do not need a Corps permit to place fill in, or otherwise affect, those wetlands whose only interstate commerce connection is providing migratory bird habitat. Landowners may, however, need state or local government permits to affect these "isolated" wetlands. In addition, the Corps and EPA policies regarding isolated wetlands are evolving, so future court or administrative decisions may alter the current federal guidance.

State regulatory authority unaffected by Supreme Court decisions

The U.S. Supreme Court rulings did not change Washington State's laws or regulatory authority to protect wetlands, including isolated ones. The state Clean Water Act, Chapter 90.48 RCW, prohibits pollution (including fill material) from getting into "waters of the state," which include all marine waters, streams, rivers, lakes, ponds, springs, wetlands, storm drains, ditches, groundwater, and even snow banks. Any project involving filling or otherwise altering a wetland–even if the wetland is deemed isolated–needs to follow state regulations.

Federal and state regulatory process

It can be difficult to determine whether a wetland is "isolated" (i.e., a wetland lacking the necessary connection to interstate commerce AND to a federal navigable water body). To ensure compliance with state and federal regulations, landowners wanting to undertake an activity that would impact a wetland should:

- Contact the Corps to request a formal jurisdictional determination to see whether the wetland falls under the Corps' regulatory authority (http://www.nws.usace.army.mil/).
- Contact Ecology about the request to the Corps for the jurisdictional determination or when proposing activities in wetlands in general (http://www.ecy.wa.gov/programs/sea/wetlands/contacts.htm).

If the Corps determines that a wetland (isolated or not) is within its jurisdiction, the landowner needs to submit a Joint Aquatic Resource Permit Application (JARPA, epermitting.wa.gov) to the Corps and Ecology before starting any work that may affect wetlands. If the Corps determines that a wetland is isolated and not within its jurisdiction, landowners need to obtain authorization from Ecology for proposed wetland impacts. If approved, Ecology will issue an Administrative Order (AO).

To seek an AO from Ecology, an applicant should complete an Isolated Wetlands Information Sheet (available at www.ecy.wa.gov/programs/sea/wetlands/isolated.html). This information can augment the information provided in a JARPA and will expedite review of your project. Submit the information to:

Ecology's Federal Permit Coordinator
WA Department of Ecology
SEA Program HQ
P.O. Box 47600
Olympia, WA 98504-7600
360-407-6068
ecyrefedpermits@ecy.wa.gov

Local regulatory process

Additionally, applicants should be aware that work affecting isolated wetlands may also be regulated by local jurisdictions (usually under a local government's Critical Areas Ordinance). Therefore, projects that impact isolated wetlands also will typically require approval from the applicable city or county (see the Municipal Research and Services Center web page for a list of city and county profiles with contact information: http://www.mrsc.org/research.aspx).

More Information

The following two interagency documents provide more information on the wetland regulatory process and guidance on mitigation:

- Wetland Mitigation in Washington State – Part 1: Agency Policies and Guidance (http://www.ecy.wa.gov/biblio/0606011a.html).
- Wetland Mitigation in Washington State – Part 2: Developing Mitigation Plans (http://www.ecy.wa.gov/biblio/0606011b.html).

US Army Corps of Engineers ®
Seattle District

Appeal Process Fact Sheet

12 March 2015

Our letter cites a Department of the Army administrative appeal rule for permit decisions and approved jurisdictional determinations that went into effect March 9, 1999. In accordance with this rule, we have included a *Notification of Administrative Appeal Options and Process and Request for Appeal* form of which Section I is the Notification of Appeal Process (NAP) fact sheet and Section II is the Request for Appeal (RFA) form.

If a permit decision was made, you may decline to accept a permit if you object to any of the terms or conditions, ***and*** you believe that these terms or conditions are based on procedural errors; incorrect data; omission of fact; incorrect application of current Federal manual or guidance associated with wetlands; or incorrect application of a law, regulation, or policy that governs our permit program. Once you accept the permit, you waive the right to further appeal unless we later modify the permit.

If you object to this permit decision or jurisdictional determination, you may request an administrative appeal under Corps regulations at 33 CFR Part 331. As stated previously, enclosed you will find a *Notification of Appeal Options and Process and Request for Appeal* form. If you request to appeal this determination, you must submit a completed RFA form to the Division Engineer at the following address:

Division Engineer
U.S. Army Corps of Engineers, Northwestern Division
Mary J. Hoffman, Appeals Review Officer
P.O. Box 2870
Portland, OR 97208-2870
Telephone: (503) 808-3888

In order for an RFA to be accepted by the Corps, the Corps must determine that it is complete, that it meets the criteria for appeal under 33 CFR part 331.5, and that it has been received by the Division Office within 60 days of the date of the NAP. Should you decide to submit an RFA form, it must be received at the above address by the 60th day. "Day 1" is designated as the date of the NAP form. "Day 60" is designated as the 60th calendar day after the date of the NAP form, with the official counting of calendar days beginning on "Day 1" as designated above. When "Day 60" is a traditional non-working day (e.g., a holiday or a weekend), the 60 day timeframe is extended to the next business day. Our Division Office has 90 days to resolve the appeal with you once your completed and acceptable NAO-RFA form has been received.

It is not necessary to submit an RFA form to the Division office if you do not object to the decision or determination in our letter.

If you have any questions about your options or the appeal process in general, please contact the project manager indicated on the form.

NOTIFICATION OF ADMINISTRATIVE APPEAL OPTIONS AND PROCESS AND REQUEST FOR APPEAL

Applicant: Brookwater Advisors, LLC	File Number: NWS-2012-1198	Date: May 3, 2017
Attached is:		See Section below
	INITIAL PROFFERED PERMIT (Standard Permit or Letter of permission)	A
	PROFFERED PERMIT (Standard Permit or Letter of permission)	B
	PERMIT DENIAL	C
X	APPROVED JURISDICTIONAL DETERMINATION	D
	PRELIMINARY JURISDICTIONAL DETERMINATION	E

SECTION I - The following identifies your rights and options regarding an administrative appeal of the above decision. Additional information may be found in Corps regulations at 33 CFR Part 331 or at http://www.usace.army.mil/Missions/CivilWorks/RegulatoryProgramandPermits/FederalRegulation.aspx

A: INITIAL PROFFERED PERMIT: You may accept or object to the permit.

- ACCEPT: If you received a Standard Permit, you may sign the permit document and return it to the district engineer for final authorization. If you received a Letter of Permission (LOP), you may accept the LOP and your work is authorized. Your signature on the Standard Permit or acceptance of the LOP means that you accept the permit in its entirety, and waive all rights to appeal the permit, including its terms and conditions, and approved jurisdictional determinations associated with the permit.
- OBJECT: If you object to the permit (Standard or LOP) because of certain terms and conditions therein, you may request that the permit be modified accordingly. You must complete Section II of this form and return the form to the district engineer. Your objections must be received by the district engineer within 60 days of the date of this notice, or you will forfeit your right to appeal the permit in the future. Upon receipt of your letter, the district engineer will evaluate your objections and may: (a) modify the permit to address all of your concerns, (b) modify the permit to address some of your objections, or (c) not modify the permit having determined that the permit should be issued as previously written. After evaluating your objections, the district engineer will send you a proffered permit for your reconsideration, as indicated in Section B below.

B: PROFFERED PERMIT: You may accept or appeal the permit

- ACCEPT: If you received a Standard Permit, you may sign the permit document and return it to the district engineer for final authorization. If you received a Letter of Permission (LOP), you may accept the LOP and your work is authorized. Your signature on the Standard Permit or acceptance of the LOP means that you accept the permit in its entirety, and waive all rights to appeal the permit, including its terms and conditions, and approved jurisdictional determinations associated with the permit.
- APPEAL: If you choose to decline the proffered permit (Standard or LOP) because of certain terms and conditions therein, you may appeal the declined permit under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer. This form must be received by the division engineer within 60 days of the date of this notice.

C: PERMIT DENIAL: You may appeal the denial of a permit under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer. This form must be received by the division engineer within 60 days of the date of this notice.

D: APPROVED JURISDICTIONAL DETERMINATION: You may accept or appeal the approved JD or provide new information.

- ACCEPT: You do not need to notify the Corps to accept an approved JD. Failure to notify the Corps within 60 days of the date of this notice, means that you accept the approved JD in its entirety, and waive all rights to appeal the approved JD.
- APPEAL: If you disagree with the approved JD, you may appeal the approved JD under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer. This form must be received by the division engineer within 60 days of the date of this notice.

E: PRELIMINARY JURISDICTIONAL DETERMINATION: You do not need to respond to the Corps regarding the preliminary JD. The Preliminary JD is not appealable. If you wish, you may request an approved JD (which may be appealed), by contacting the Corps district for further instruction. Also, you may provide new information for further consideration by the Corps to reevaluate the JD.

SECTION II - REQUEST FOR APPEAL or OBJECTIONS TO AN INITIAL PROFFERED PERMIT

REASONS FOR APPEAL OR OBJECTIONS: (Describe your reasons for appealing the decision or your objections to an initial proffered permit in clear concise statements. You may attach additional information to this form to clarify where your reasons or objections are addressed in the administrative record.)

ADDITIONAL INFORMATION: The appeal is limited to a review of the administrative record, the Corps memorandum for the record of the appeal conference or meeting, and any supplemental information that the review officer has determined is needed to clarify the administrative record. Neither the appellant nor the Corps may add new information or analyses to the record. However, you may provide additional information to clarify the location of information that is already in the administrative record.

POINT OF CONTACT FOR QUESTIONS OR INFORMATION:

If you have questions regarding this decision and/or the appeal process you may contact:	For questions about the appeal process, you may also contact:
[NAME], Project Manager U.S. Army Corps of Engineers, Seattle District Post Office Box 3755 Seattle, Washington 98124-3755 Telephone: (206) 764-XXXX	U.S. Army Corps of Engineers, Northwestern Division ATTN: Melinda Witgenstein, Regulatory Appeals Review Officer 1201 NE Lloyd Blvd. Suite 400 Portland, OR 97232 Telephone: (503) 808-3888 Email: Melinda.M.Witgenstein@usace.army.mil

RIGHT OF ENTRY: Your signature below grants the right of entry to Corps of Engineers personnel, and any government consultants, to conduct investigations of the project site during the course of the appeal process. You will be provided a 15-day notice of any site investigation, and will have the opportunity to participate in all site investigations.

	Date:	Telephone number:
_____ Signature of appellant or agent.		

APPENDIX C

Wetland Hydrologic Analysis (Goldsmith 2020)

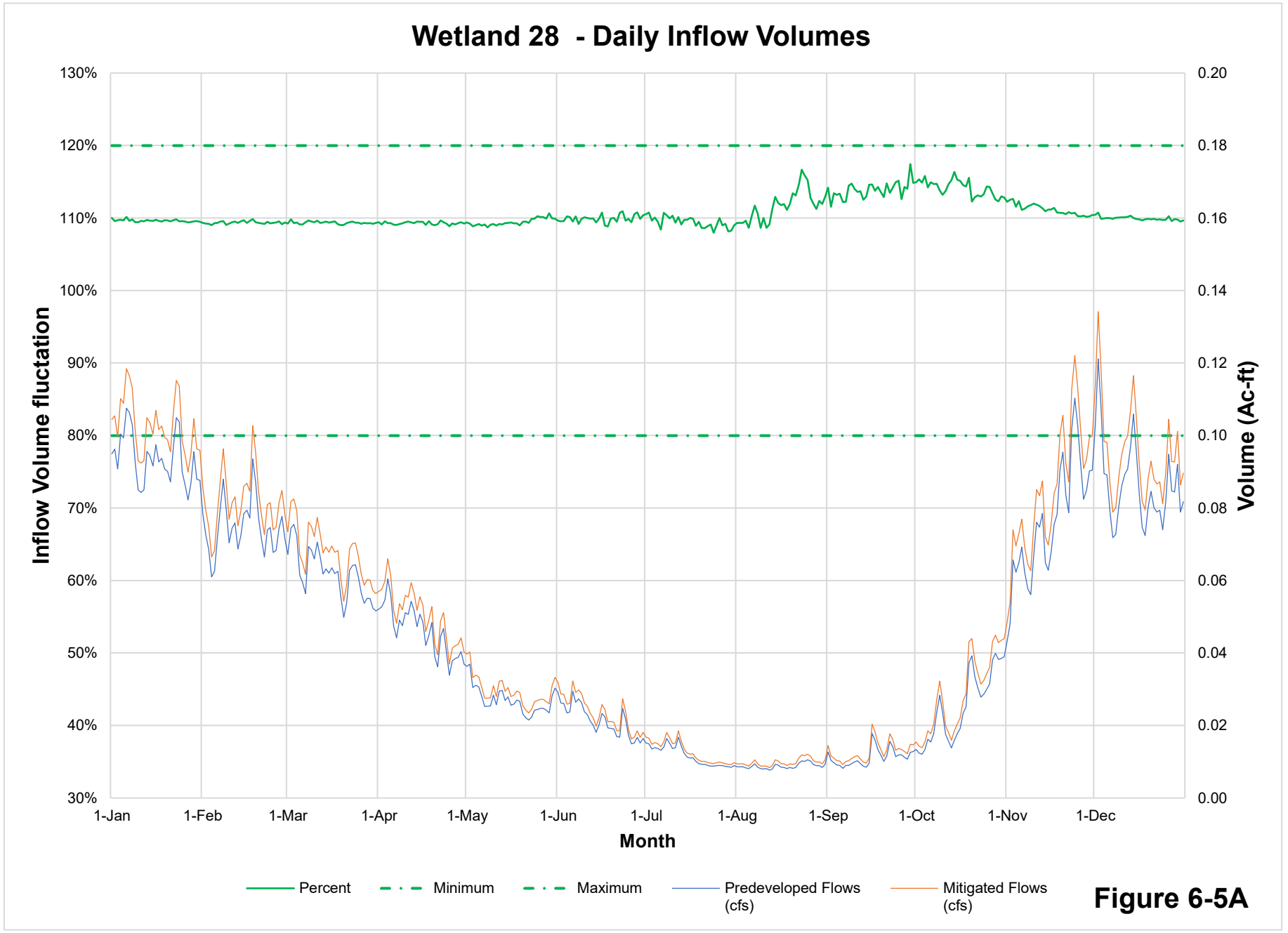
Wetland 28 - Daily Inflow Volumes
Inflow Volume fluctation
Volume (Ac-ft)
130%
120%
110%
100%
90%
80%
70%
60%
50%
40%
30%
0.20
0.18
0.16
0.14
0.12
0.10
0.08
0.06
0.04
0.02
0.00
1-Jan
1-Feb
1-Mar
1-Apr
1-May
1-Jun
1-Jul
1-Aug
1-Sep
1-Oct
1-Nov
1-Dec
Month
Percent
Minimum
Maximum
Predeveloped Flows (cfs)
Mitigated Flows (cfs)

Figure 6-5A

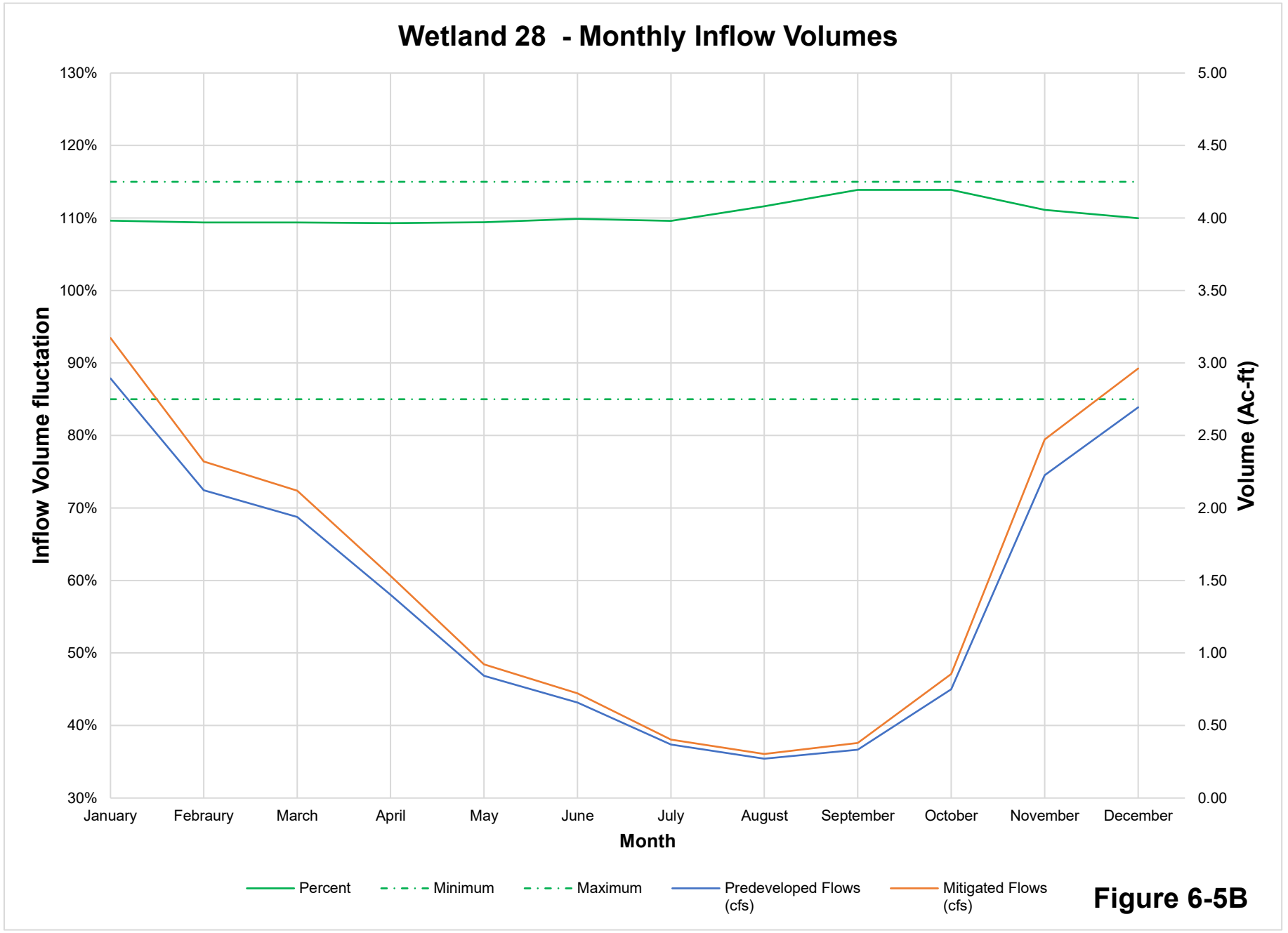
Wetland 28 - Monthly Inflow Volumes
Inflow Volume fluctation
130%
120%
110%
100%
90%
80%
70%
60%
50%
40%
30%
Volume (Ac-ft)
5.00
4.50
4.00
3.50
3.00
2.50
2.00
1.50
1.00
0.50
0.00
January
Febraury
March
April
May
June
July
August
September
October
November
December
Month
Percent
Minimum
Maximum
Predeveloped Flows (cfs)
Mitigated Flows (cfs)

Figure 6-5B

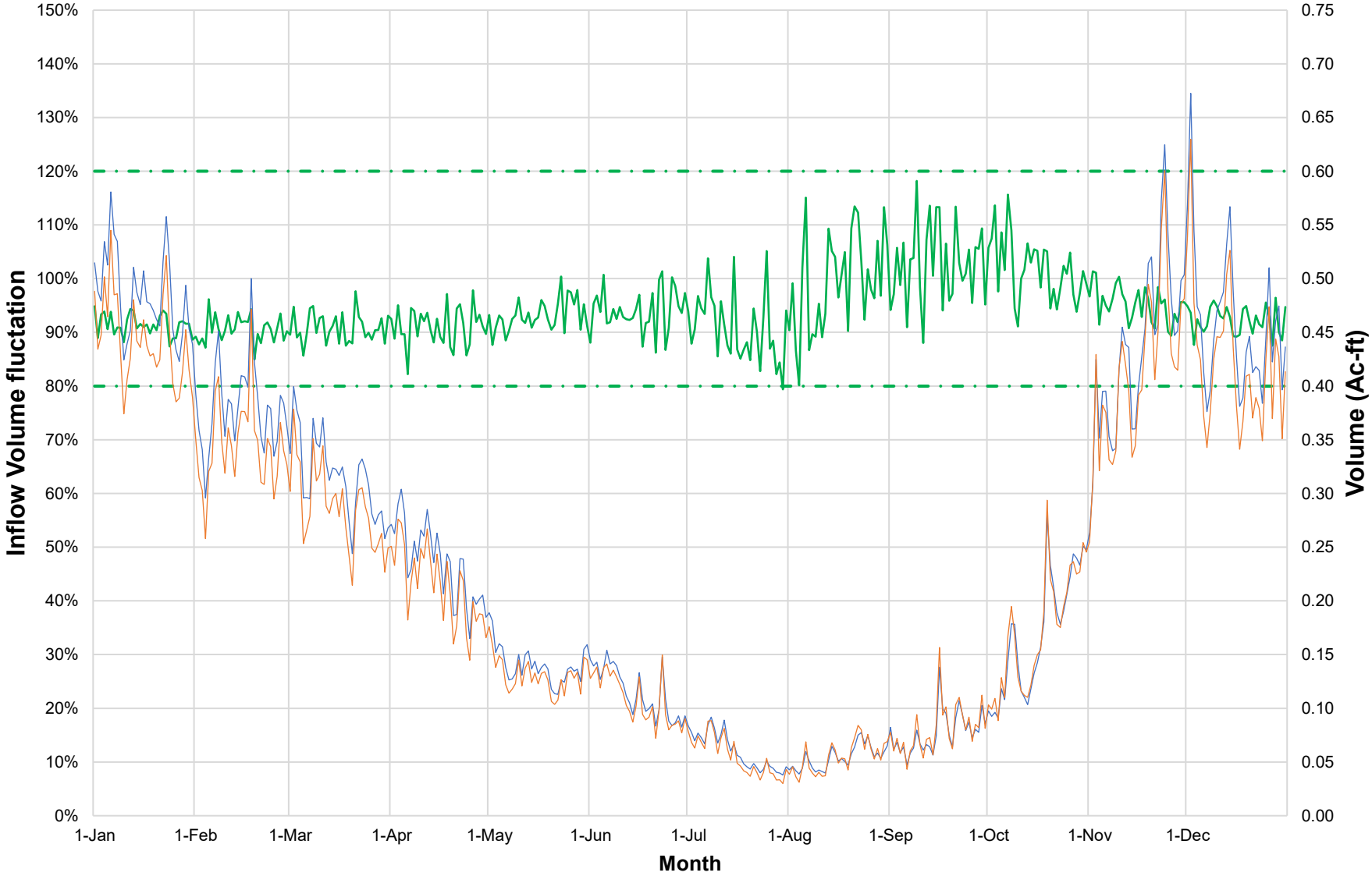
Wetland 12W - Daily Inflow Volumes
Inflow Volume fluctation
Volume (Ac-ft)
Month
150%
140%
130%
120%
110%
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
0.75
0.70
0.65
0.60
0.55
0.50
0.45
0.40
0.35
0.30
0.25
0.20
0.15
0.10
0.05
0.00
1-Jan
1-Feb
1-Mar
1-Apr
1-May
1-Jun
1-Jul
1-Aug
1-Sep
1-Oct
1-Nov
1-Dec
Percent
Minimum
Maximum
Predeveloped Flows (cfs)
Mitigated Flows (cfs)

Figure 6-6A

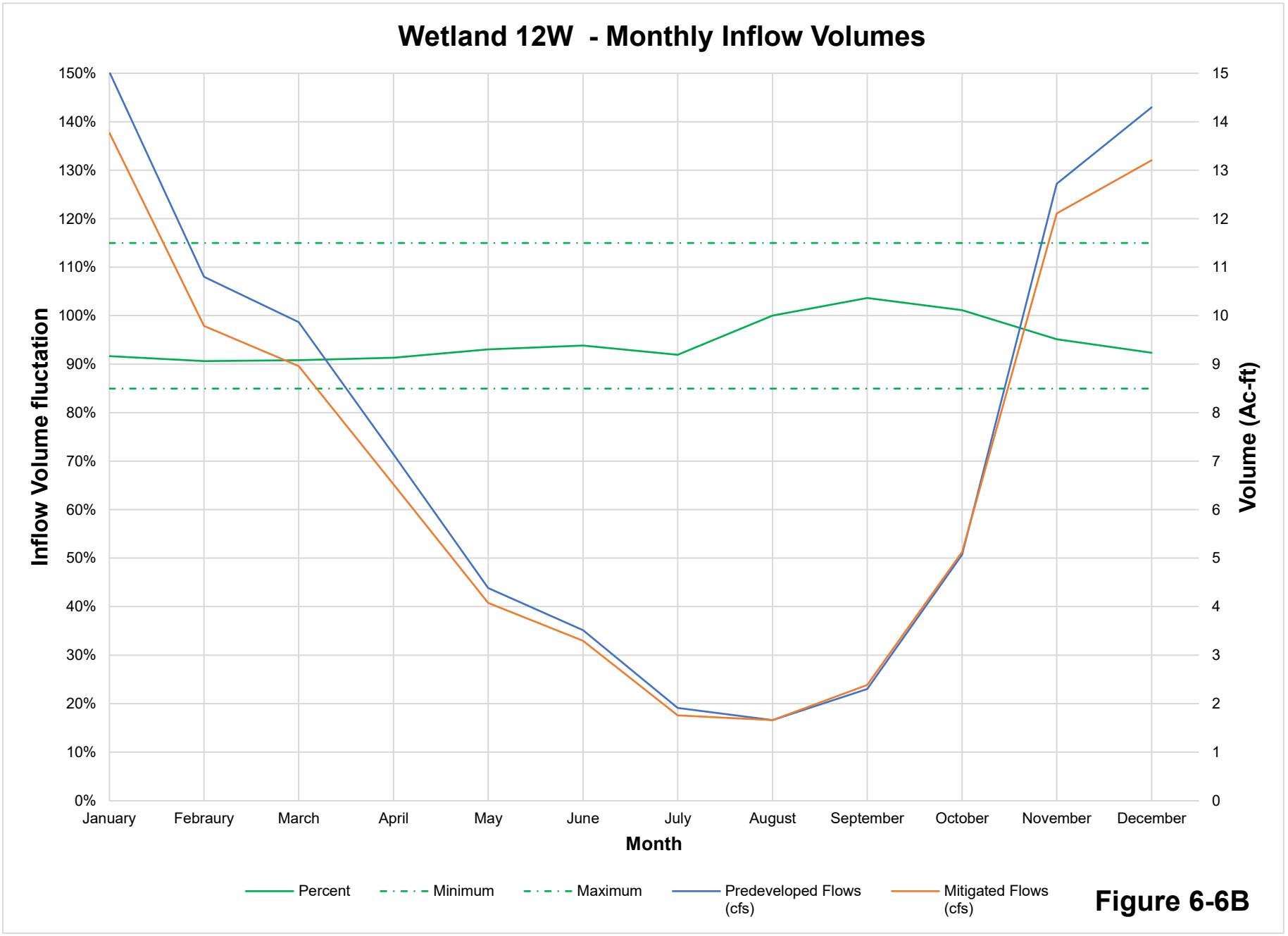
Wetland 12W - Monthly Inflow Volumes
Inflow Volume fluctation
Volume (Ac-ft)
150%
140%
130%
120%
110%
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
15
14
13
12
11
10
9
8
7
6
5
4
3
2
1
0
January
Febraury
March
April
May
June
July
August
September
October
November
December
Month
Percent
Minimum
Maximum
Predeveloped Flows (cfs)
Mitigated Flows (cfs)

Figure 6-6B

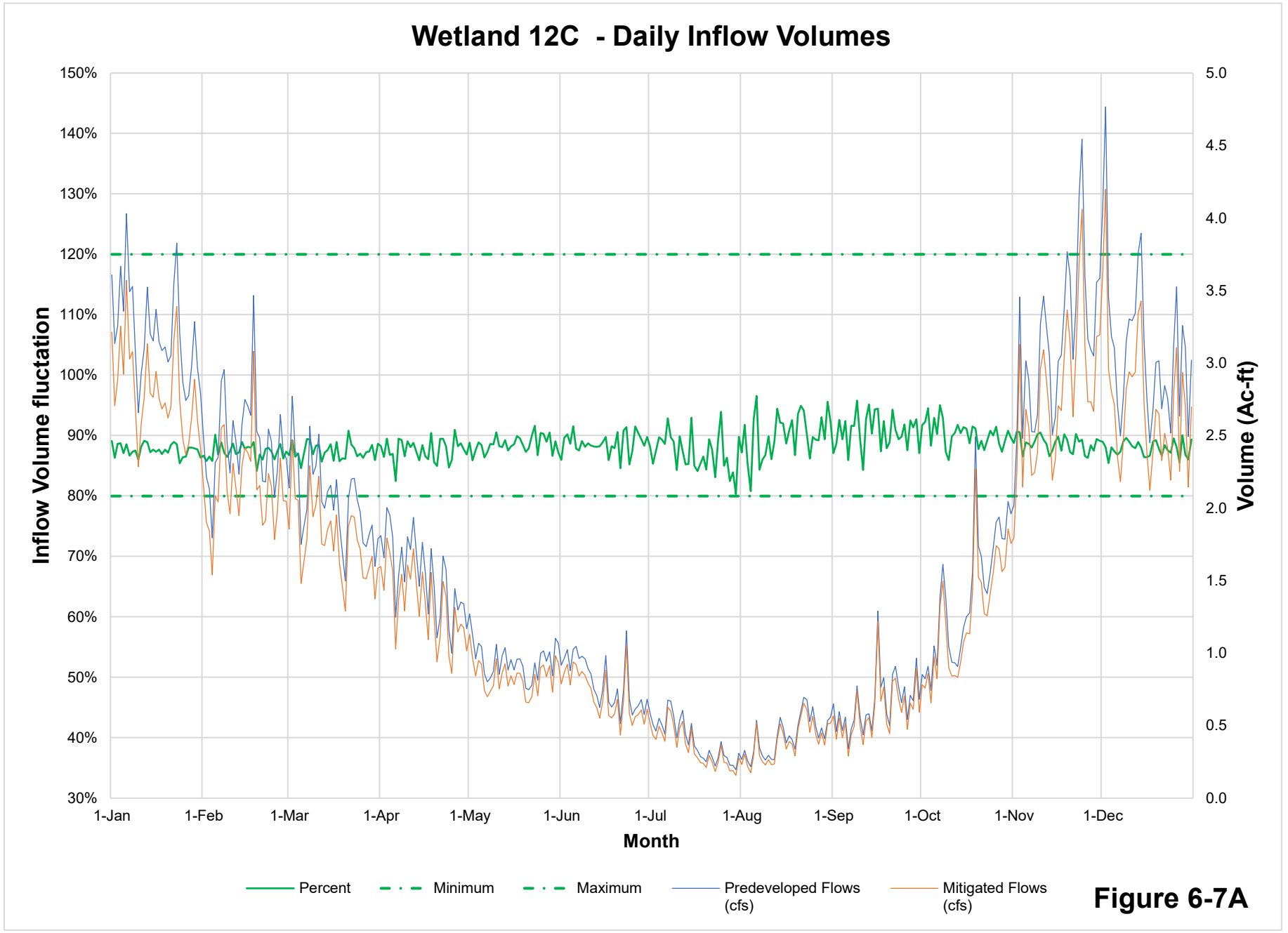
Wetland 12C - Daily Inflow Volumes
Inflow Volume fluctation
150%
140%
130%
120%
110%
100%
90%
80%
70%
60%
50%
40%
30%
Volume (Ac-ft)
5.0
4.5
4.0
3.5
3.0
2.5
2.0
1.5
1.0
0.5
0.0
1-Jan
1-Feb
1-Mar
1-Apr
1-May
1-Jun
1-Jul
1-Aug
1-Sep
1-Oct
1-Nov
1-Dec
Month
Percent
Minimum
Maximum
Predeveloped Flows (cfs)
Mitigated Flows (cfs)

Figure 6-7A

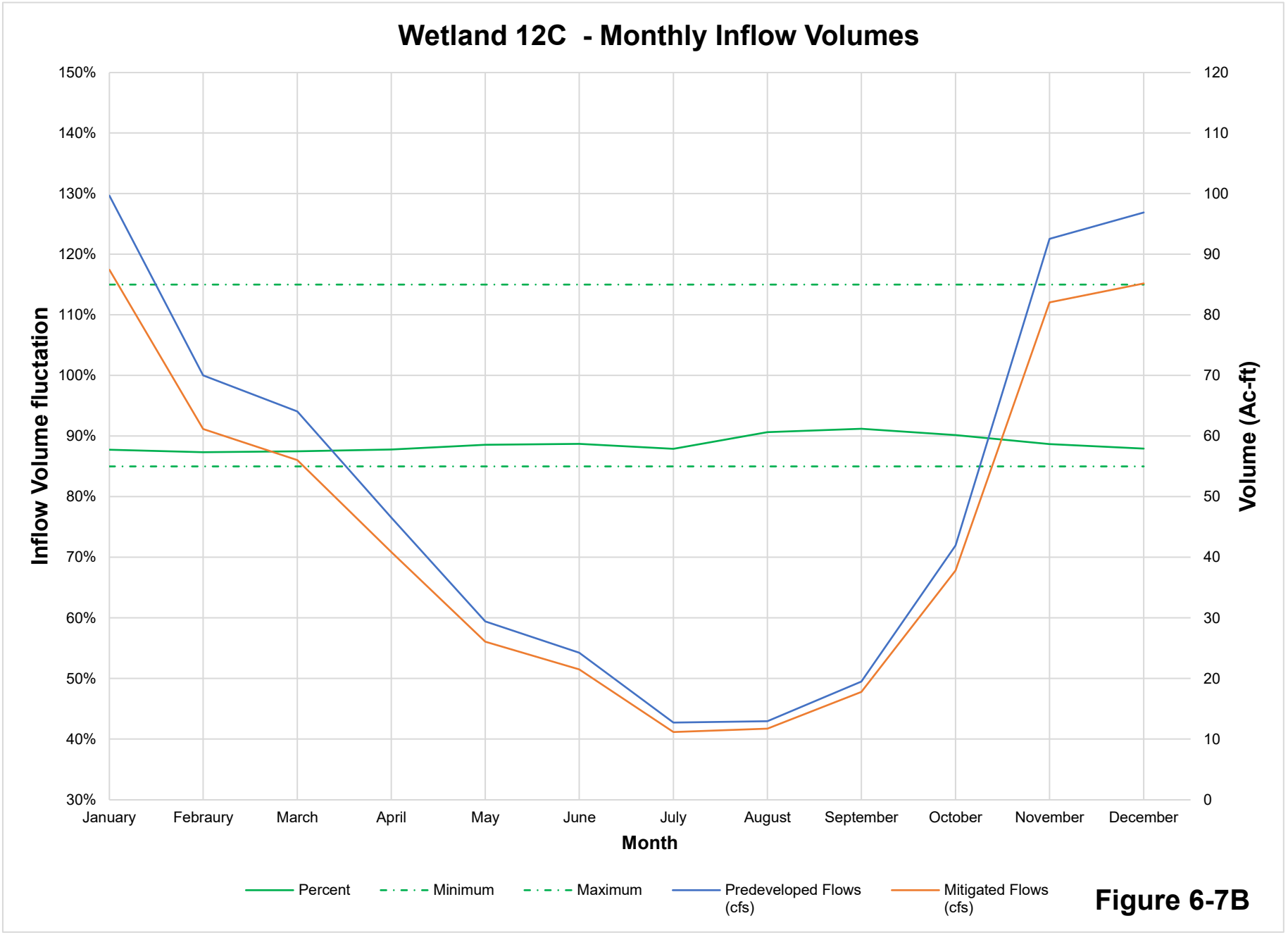
Wetland 12C - Monthly Inflow Volumes
Inflow Volume fluctation
Volume (Ac-ft)
150%
140%
130%
120%
110%
100%
90%
80%
70%
60%
50%
40%
30%
120
110
100
90
80
70
60
50
40
30
20
10
0
January
Febraury
March
April
May
June
July
August
September
October
November
December
Month
Percent
Minimum
Maximum
Predeveloped Flows (cfs)
Mitigated Flows (cfs)

Figure 6-7B

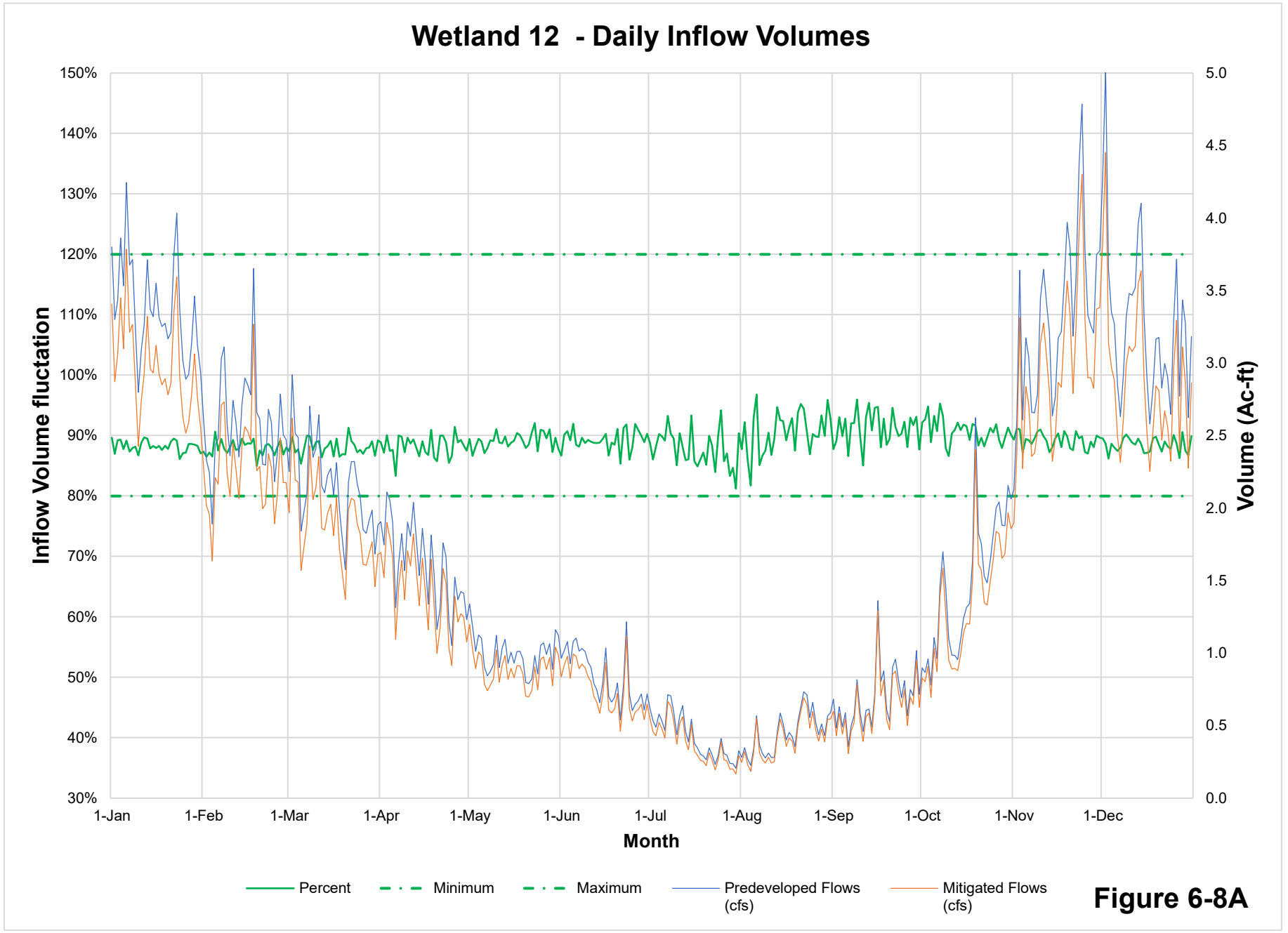
Wetland 12 - Daily Inflow Volumes
Inflow Volume fluctation
150%
140%
130%
120%
110%
100%
90%
80%
70%
60%
50%
40%
30%
Volume (Ac-ft)
5.0
4.5
4.0
3.5
3.0
2.5
2.0
1.5
1.0
0.5
0.0
1-Jan
1-Feb
1-Mar
1-Apr
1-May
1-Jun
1-Jul
1-Aug
1-Sep
1-Oct
1-Nov
1-Dec
Month
Percent
Minimum
Maximum
Predeveloped Flows (cfs)
Mitigated Flows (cfs)

Figure 6-8A

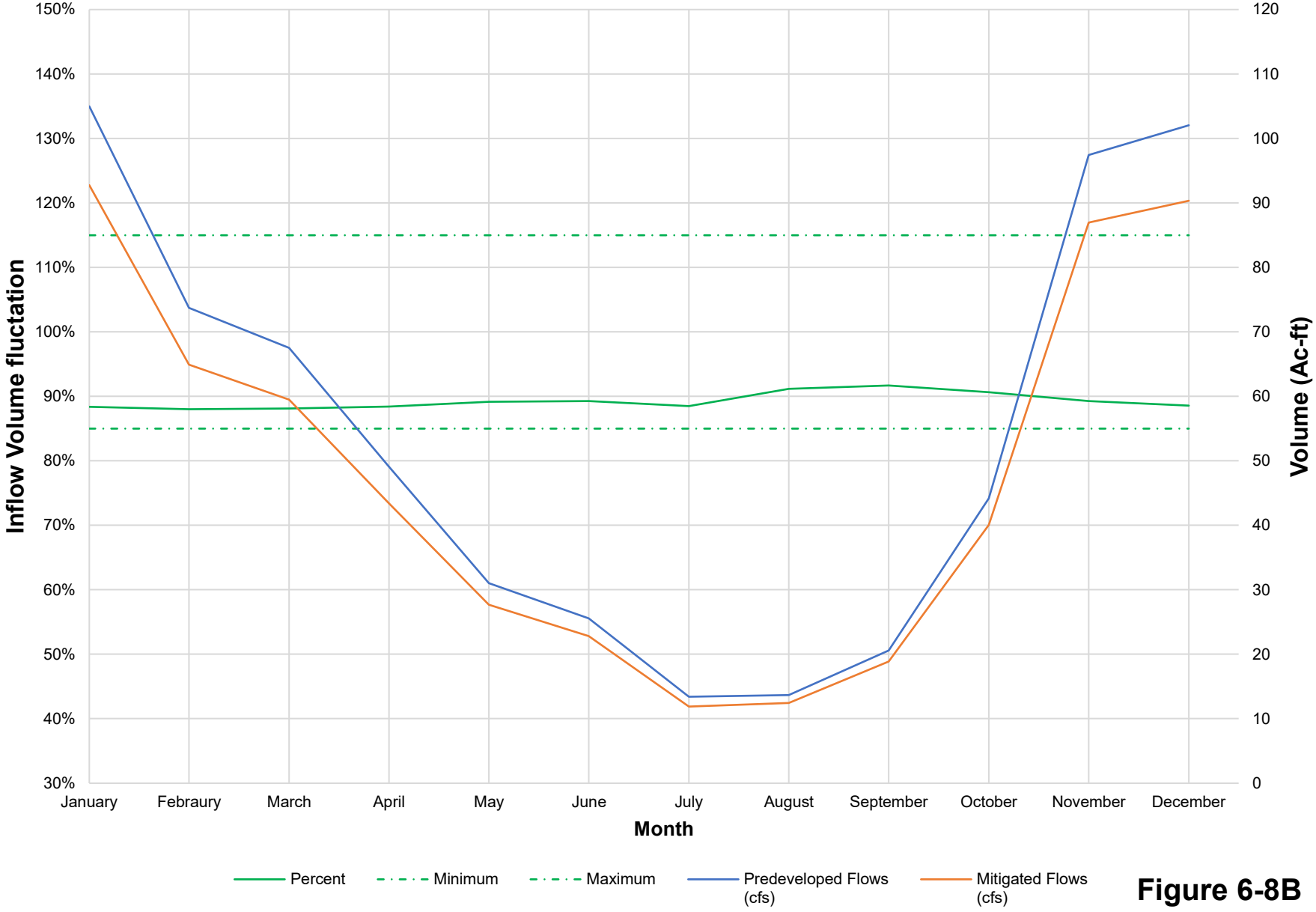
Wetland 12 - Monthly Inflow Volumes
Inflow Volume fluctation
Volume (Ac-ft)
150%
140%
130%
120%
110%
100%
90%
80%
70%
60%
50%
40%
30%
120
110
100
90
80
70
60
50
40
30
20
10
0
January
Febraury
March
April
May
June
July
August
September
October
November
December
Month
Percent
Minimum
Maximum
Predeveloped Flows (cfs)
Mitigated Flows (cfs)

Figure 6-8B