



Received by Email

2022-02-25

February 3, 2021

Mukilteo Ridge HOA
Attn: Tarvinder Hara
10305 50th Place W
Mukilteo, WA 98275

RE: Mukilteo Ridge HOA, Mitigation Plan

Project description

The City of Mukilteo has requested additional information to address the slope failure at tax ID: 28040300203200, adjacent to Majestic View Ct, Mukilteo Washington. A drainage conveyance structure was not installed correctly and/or failed, which lead to the erosion and eventual failure of hillslope entirely within the western buffer area of Edgewater Creek, a type 5 stream. Due to the critical failure of the hillslope, Mukilteo Ridge HOA, hereafter referred to as the applicant, has proposed a slope stabilization and repair project, including the installation of a new drainage dispersion infrastructure and erosion containment via a gabion dissipater wall. Wetland Resources Inc. (WRI) performed multiple site visits in November and December 2020, and May 2021 in order to assess the slope failure area, confirm the delineated boundaries of wetlands and streams within the project area, and design compensatory mitigation appropriate for site remediation.

Approximately 1,782 square feet of buffer disturbance is required for the proposed slope stabilization project. As a conservation measure, woody and herbaceous vegetation will be planted over the buffer disturbance area to minimize further erosion and to reduce run-off. However, because of the disruption of buffer continuity due to the new gabion wall, the applicant proposes participating in off-site mitigation utilizing the City of Mukilteo Critical Area Mitigation Program (CAMP) allowed by Mukilteo Municipal Code (MMC) 17B.52B.100(C)(1-5).

Existing Site Information

AECOM biologists visited the property on January 16, 2019 to identify and map streams and wetlands present on the site. In their findings, one category III wetland was found 50ft off site to the north whose buffer does not affect the project area. Edgewater Creek, a type 5 stream (Ns), and its 2 tributaries flow south to north. These water features receive 50ft buffers in accordance with MMC 17.52C.090, which encumber the entirety of the project area. Refer to the attached critical area study (*Wetland and Stream Report* dated February 2019, by AECOM) for a complete description of the site. For clarity, a summary of the wetland and stream delineation is provided below.

Wetland Delineation

AECOM delineated one 0.12-acre wetland (Wetland A) in the project area during the January 16, 2019 site visit, in approximately the same area as the wetland delineated by Curran Environmental Services in 2008 (Figure 2). The Wetland Determination Data forms are provided in Appendix A. The wetland boundaries were delineated based on wetland indicators for vegetation, soil, hydrology, and local topography.

Wetland A is classified as a Palustrine Scrub-Shrub wetland with Saturated and Permanently Flooded water regimes (PSSBH) according to the NWI/Cowardin classification system (Cowardin et al. 1979). The understory shrub layer is dominated by salmonberry, but also contains vine maple (*Acer circinatum*), Himalayan blackberry, and red elderberry (*Sambucus racemosa*). The herbaceous layer is dominated by piggyback plant and also contains lady fern (*Athyrium filix-femina*) and sword fern. The surrounding uplands are characterized by Douglas fir, western redcedar, and western hemlock in the forest layer. The upland understory layer is dominated by sword fern (*Polystichum munitum*) and vine maple with scattered salal (*Gaultheria shallon*) and whitebark raspberry.

The soils observed in the wetland appear to resemble the Alderwood series. Within the wetland (sample plot SP-2), the surface mineral layer is a very dark grayish brown (10YR 2/1) silty sandy loam, with no redox concentrations. The subsurface layer is dark a yellowish brown matrix (10YR 2/2) with 20 percent concentrated redox features (10YR 5/6). The surface mineral layer in the upland soils (sample plot SP-1) is also a very dark grayish brown (10YR 2/1) silty sandy loam, with no redox concentrations. The subsurface is a dark yellowish brown matrix (10YR 4/2) with 5 percent concentrated redox features (10YR 5/6).

Wetland A is classified as riverine (Brinson 1993; Hruby 2014), as it contains Edgewater Creek within its boundaries. The wetland's primary hydrologic inputs are from the drainage ravine near the project site, Edgewater Creek, and overbank flooding. The wetland's primary outlet is Edgewater Creek. Wetland A contains a water table within 12 inches of the surface, and soils within the wetland were saturated or flooded within the stream channel during the site visit.

Table 3 provides a summary of characteristics of Wetland A.

Table 3. Wetland Characteristics

Wetland Name	Cowardin Classes	HGM Classes	Wetland Size (acres)	Wetland Category	Rating Scores ¹	Buffer (feet)
A	scrub-shrub	Riverine	0.12	III	6-6-7	165

AECOM biologists rated Wetland A as a Category III wetland using the 2014 version of Ecology's wetland rating system. Rating forms are provided in Appendix B. The City of Mukilteo Municipal Code (MMC) determines wetland buffer widths based on wetland category and wildlife habitat score using the "Wetland Buffer Widths" table (MMC17.52B.100-D-3). According to Ecology's rating system, Wetland A has a moderate level of function for wildlife habitat (scored 7 out of 9 points). Category III wetlands with this level of habitat function would have a 165-foot standard buffer (MMC 17.52B.100-D3).

Streams

AECOM mapped three streams within the project site. The project site is situated within a steep ravine containing an unnamed seasonal stream (Tributary 1), roughly 1 foot in width and less than 1 inch in depth, that drains into Edgewater Creek. A second, smaller unnamed stream (Tributary 2) joins Edgewater Creek approximately 250 feet north of the gabion and project area. This stream is also less than 1 inch deep and less than 1 foot wide and is likely a seasonal non-fish bearing stream. Edgewater Creek is a high gradient stream, roughly 3 feet in width and 1 to 3.5 inches in depth, that flows into Japanese Gulch Creek before draining into Possession Sound.

Streams are considered Fish and Wildlife Habitat Conservations Areas under the MMC 17.52C. Stream classification guidance is provided in MMC 17.52C.080. Per this guidance, seasonal non-fish streams are classified as Type 5. Both tributaries to Edgewater Creek are Type 5 streams. Some larger drainages are listed in the MMC (such as Japanese Gulch Creek). Edgewater Creek is not listed in the MMC for determining buffer widths, but is likely a Type 5 seasonal non-fish bearing stream (MMC 17B.52C.080-A). Edgewater Creek is classified as Type Ns (seasonal non-fish bearing) by Snohomish County PDS Mapper (2019) (Figure 5) and Snohomish County Code (SCC) (SCC 30.62A.230). A 50-foot buffer is required to protect values and functions for both MMC Type 5 streams and SCC Type Ns streams (MMC 17.52C.090-A-1; SCC 30.62A.320).

While Snohomish County lists Edgewater Creek as a Type Ns stream, fall chum salmon (*Oncorhynchus keta*), fall Chinook (*Oncorhynchus tshawytscha*), pink odd year (*Oncorhynchus gorbuscha*), coho (*Oncorhynchus kisutch*), and winter steelhead (*Oncorhynchus mykiss*) are listed as having presence in the lower reaches of Edgewater Creek downstream of the study area (Figure 6) (WDFW 2019b).

Table 4. Stream Characteristics

Stream	MMC Classification	SCC Classification ¹	Buffer (feet)
Tributary 1	Type 5	N/A	50
Tributary 2	Type 5	N/A	50
Edgewater Creek	Type 5	Type Ns	50

¹SCC classification is given for Edgewater Creek because the drainage is both City of Mukilteo and Snohomish County jurisdictions. The tributaries to Edgewater Creek are only within the City of Mukilteo, no SCC classification is listed.

Fish and Wildlife Use of the Study Area

The study area is located within a densely populated urban area that is dominated by residential development. The surrounding mixed urban environment area is vegetated mostly with a mix of ornamental plant species and mixed forest composed primarily of bigleaf maple western redcedar, Douglas fir, and western hemlock. Most wildlife species found in the study area are birds and small mammals. Bird species observed in the study area include black-capped chickadee (*Parus atricapillus*), red-breasted nuthatch (*Sitta canadensis*), hairy woodpecker (*Picoides villosus*), Bewick's wren (*Thryomanes bewickii*), American crow (*Corvus brachyrhynchos*), and gulls (*Lari* sp.). The presence of pileated woodpecker (*Dryocopus pileatus*) and red-breasted sapsucker (*Sphyrapicus ruber*) was documented via cavities and holes in trees. Mammals in this urban habitat

may include squirrel (*Sciurus* spp.), raccoon (*Procyon lotor*), and opossum (*Didelphis virginiana*), and evidence of mountain beaver (*Aplodontia rufa*) was documented via burrows in the soil.

The project site is adjacent to a small undeveloped area which provides natural cover for wildlife away from the urban environment described above. In general, urban natural areas are rapidly assuming a central role in the protection of wildlife from urban-related disturbances. WDFW's PHS online mapper indicated no documented special status wildlife species in the study area (WDFW 2019a). Aquatic habitats in the study area are limited to Edgewater Creek and smaller unnamed streams entering Edgewater Creek downstream of the slope failure, as discussed in Section 3.4. Edgewater Creek was not evaluated for fish presence as a part of the field study, but desktop research was completed. According to WDFW's SalmonScape online mapper, fall chum salmon (*Oncorhynchus keta*), fall Chinook (*Oncorhynchus tshawytscha*), pink odd year (*Oncorhynchus gorbuscha*), coho (*Oncorhynchus kisutch*), and winter steelhead (*Oncorhynchus mykiss*) are present in the lower reaches of Edgewater Creek. Two of these species, Chinook and steelhead, are listed as threatened under the Endangered Species Act (WDFW 2019b).



Figure 1 Hillslope failure/Project Area, covered with plastic sheeting as temporary erosion control.



Figure 2 Existing pump house. Project impact area pictured on the right side of the photo.



Figure 3 Main channel of Edgewater Creek, located approximately 85 feet off-site to the North.



Figure 4 Wetland A, located approximately 50 feet off-site to the North.



Figure 5 Tributary-1 of Edgewater Creek, located on-site to the North.

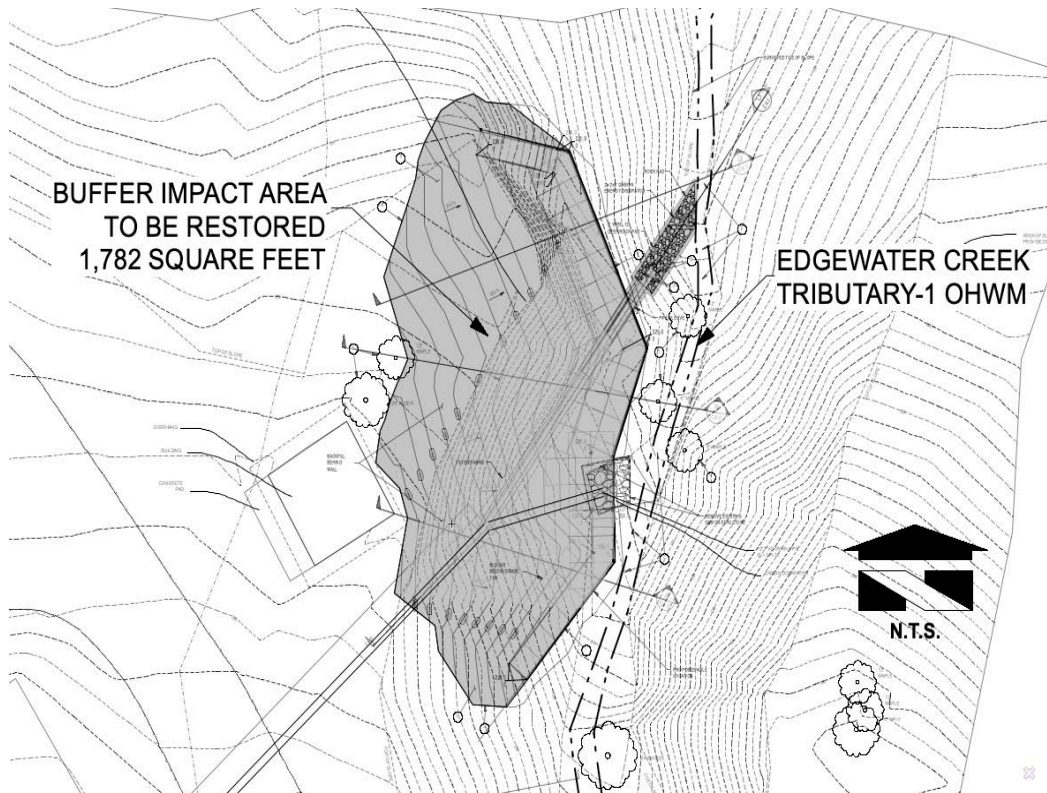


Figure 6 Buffer Impact/Restoration Area.

Mitigation approach

As the proposed buffer disturbance is a necessary response to addressing the slope failure, there are no alternative plans that would avoid buffer disturbance. MMC 17B.52B.100(C) allows the applicant to pay in-lieu fees associated with off-site mitigation sites due to the problematic nature of restoring buffer on site. As such, the applicant proposes to utilize the city of Mukilteo's habitat reserve (MHR) program within the City of Mukilteo's Critical Area Mitigation Program (CAMP). The MHR program can be utilized when only alteration to critical area buffers, and not critical areas area proposed.

Prior to the slide event, the 1,782 square foot disturbance area consisted of mostly scrub shrub vegetation (>30%) with a few scattered trees (<30%). Subsequently, the applicant will provide a 1.25:1 mitigation ratio (2,227.5 sq feet) in accordance with table 3 of CAMP. It is estimated based on table 6 of CAMP 8.1.3.2, that the applicant will pay at a rate of \$5.35 per square foot, meaning the 2,227.5 sq feet of mitigation will equate to an in-lieu fee of \$11,917.13 to the MHR program.

MHR-1 is the most appropriate mitigation site, as it is within the same drainage basin and is geographically the closest to the disturbance site. This site is a combination of 11 parcels located at the southwest of the city of Everett, adjacent to the City of Mukilteo (There are plans for the City of Mukilteo to annex this land). This site consists of a mature forest of mixed coniferous and deciduous canopy with a dense shrub understory. There are several category II wetlands scattered throughout the western portion with a stream to the north that flows into Japanese Gulch Creek. This site is considered high-quality habitat and provides hydrologic function as a head-water buffer for Japanese Gulch Creek.

It is in the opinion of WRI the above plan has successfully addressed the City of Mukilteo's request for additional information, as related to Critical Areas adjacent to the Mukilteo Ridge HOA slope stabilization project area.

Should you have any questions or concerns, please do not hesitate to call. 425-337-3174.

Wetland Resources, Inc.



Jeff Mallahan
Senior Wetland Ecologist



Alex Wachter
Associate Ecologist

Enclosures: *Wetland and Stream Report* dated February 2019, by AECOM
Geotechnical Evaluation Report dated April 18, 2018 by American Geo Services
Kari Short Plat Outfall Annual Monitoring - Daily Field Report dated November 3, 2021 by Zipper Geo Associates