**City of Bellevue**
**Development Services Department**
**Land Use Staff Report**

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| **Proposal Name:** | Nadlan Group Residence |
| **Proposal Address:** | 439 West Lake Sammamish Parkway SE |
| **Proposal Description:** | Critical Areas Land Use Permit to construct a single-family residence on an undeveloped property. Site contains a type-N stream, 50-foot stream buffer, category IV wetlands, 40-foot wetland buffers, steep slope critical areas, 50-foot top-of-slope buffer, and associated structure setbacks. Development proposed on this site is allowed per a Reasonable Use Exception (RUE). The site is more than 99% encumbered with critical areas. |
| **File Number:** | 20-115301-LO |
| **Applicant:** | James Peterson |
| **Decisions Included** | Critical Areas Land Use Permit<br>(Process II. 20.30P) |
| **Planner:** | Drew Folsom, Land Use Planner |
| **State Environmental Policy Act Threshold Determination:** | Exempt |
| **Director's Decision:** | **Approval with Conditions**<br>Michael A. Brennan, Director<br>Development Services Department<br><br>By: *Heidi Bedwell, Planning Manager*<br>Elizabeth Stead, Land Use Director |

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| **Application Date:** | October 6, 2020 |
| **Notice of Application Date:** | December 3, 2020 |
| **Decision Publication Date:** | April 29, 2020 |
| **Project Appeal Deadline:** | May 13, 2020 |

For information on how to appeal a proposal, visit Development Services Center at City Hall or call (425) 452-6800. Appeal of the Critical Areas Land Use Permit decision and Variance must be received in the City's Clerk's Office by 5 PM on the date noted for appeal of the decision.

## CONTENTS



**Documents Referenced in Report in File**

1. Project Plans
2. Critical Areas Report, Cedarock Consultants, Inc.
3. Geotech Report, PanGEO, Inc. – In File
4. Recorded Variance – In File

## I. Proposal Description

The applicant is proposing to construct a single-family residence on an undeveloped property. The site contains a type-N stream, 50-foot stream buffer, category IV wetland, 40-foot wetland buffer, steep slope critical areas, 50-foot top-of-slope buffer, and associated structure setbacks. The proposed development will permanently impact 3,000 square feet including up to 4- 6 significant trees. To mitigate impacts the applicant is proposing a riparian enhancement plan. Mitigation efforts are anticipated to improve the site's conditions and will provide for an equal or net increase in ecological function over existing conditions. The project proposes the removal of invasive species and mitigation planting of native vegetation including up to 18 native trees. The remainder of the site will be placed into a Native Growth Protection Area Easement (NGPE).

A Critical Areas Land Use Permit is required per LUC 20.225H.195 to approve the proposed reasonable use exception. Per LUC 20.25H.200, the site does not have at least 3,000 square feet of buildable area outside of critical areas and buffers, and therefore any development proposed on this site is allowed per a Reasonable Use Exception (RUE). The RUE allows disturbance in a critical area and critical area buffer to the extent required to create a consolidated area for development equal to a maximum of 3,000 square feet.

Critical Areas Land Use Permits were issued for RUE's in 2007, and 2014. A building permit was issued in 2016. All of these permits have expired due to the inactivity of the building permit.

The property received a Variance from the Land Use Code to establish a 2,492 square foot building footprint as part of the approval of permit 14-141875-LS. The Variance was recorded and vested to the property on March 27, 2015 (Attachment 4). The building footprint for this proposal is 1656 square feet and is within the maximum vested lot coverage. No Variance from any dimensional standard of the Land Use Code is required or proposed. See Figures 1a and 1b below for site plans showing the proposal.

**Figure 1a (Overall Site Plan)**

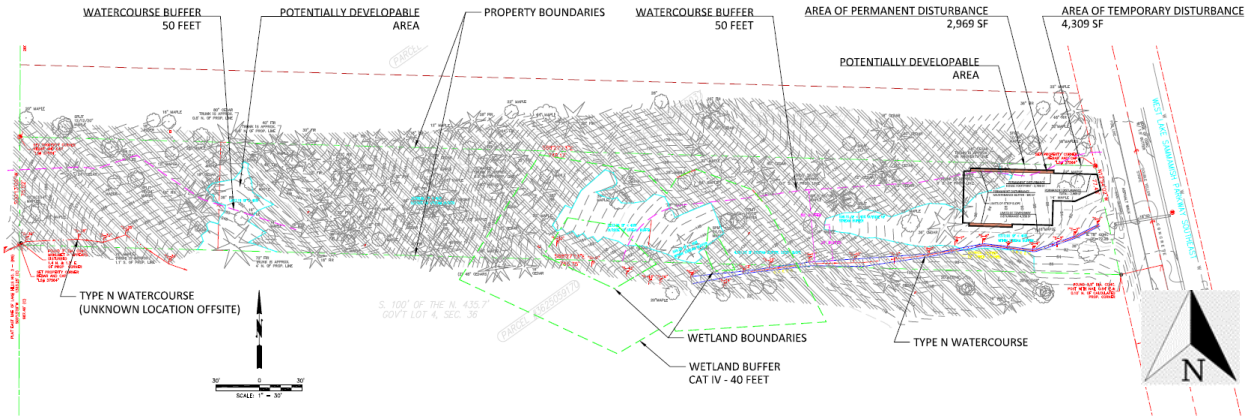
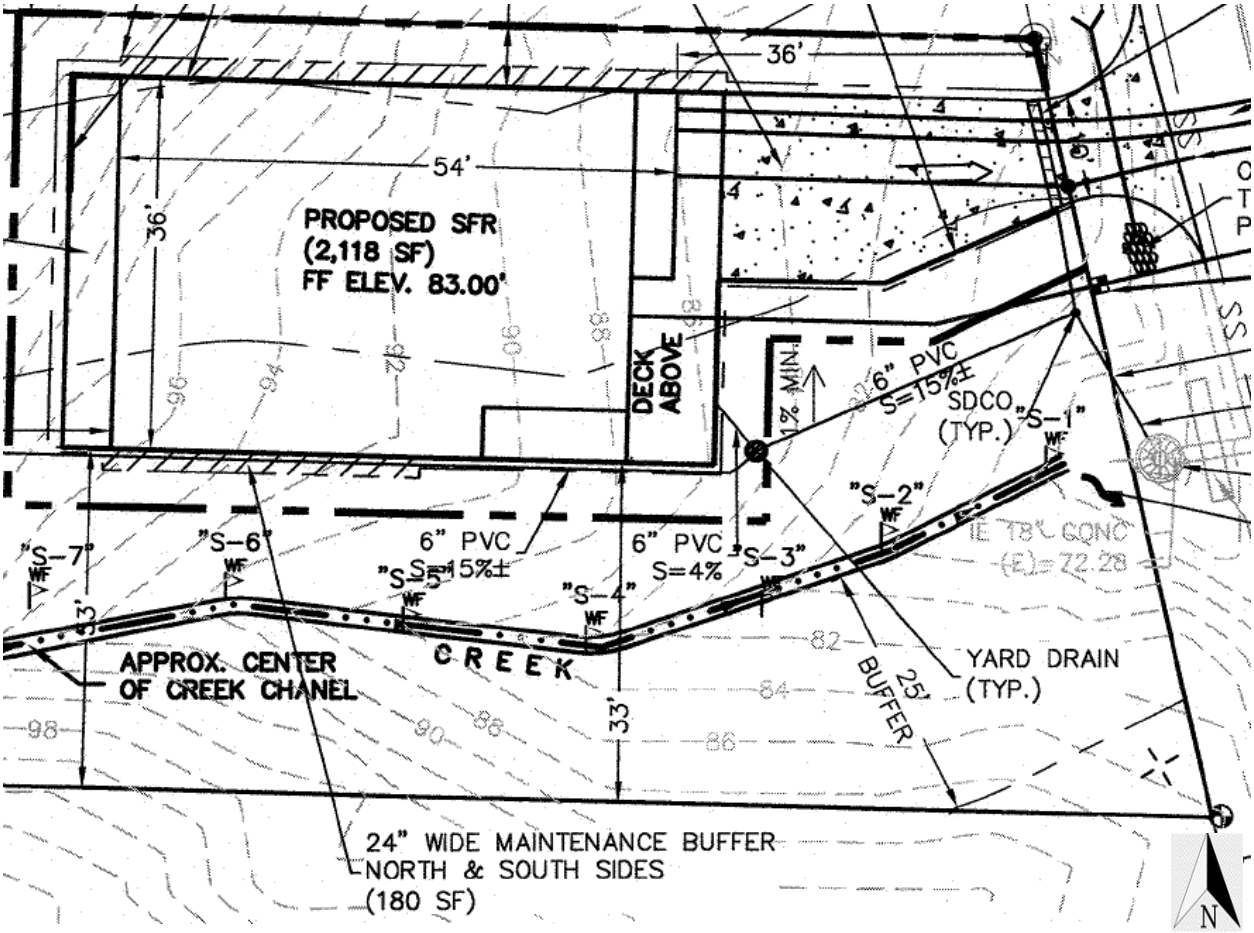


**Figure 1b (Enlarged House and Driveway Site Plan)**




## II. Site Description, Zoning, Land Use and Critical Areas

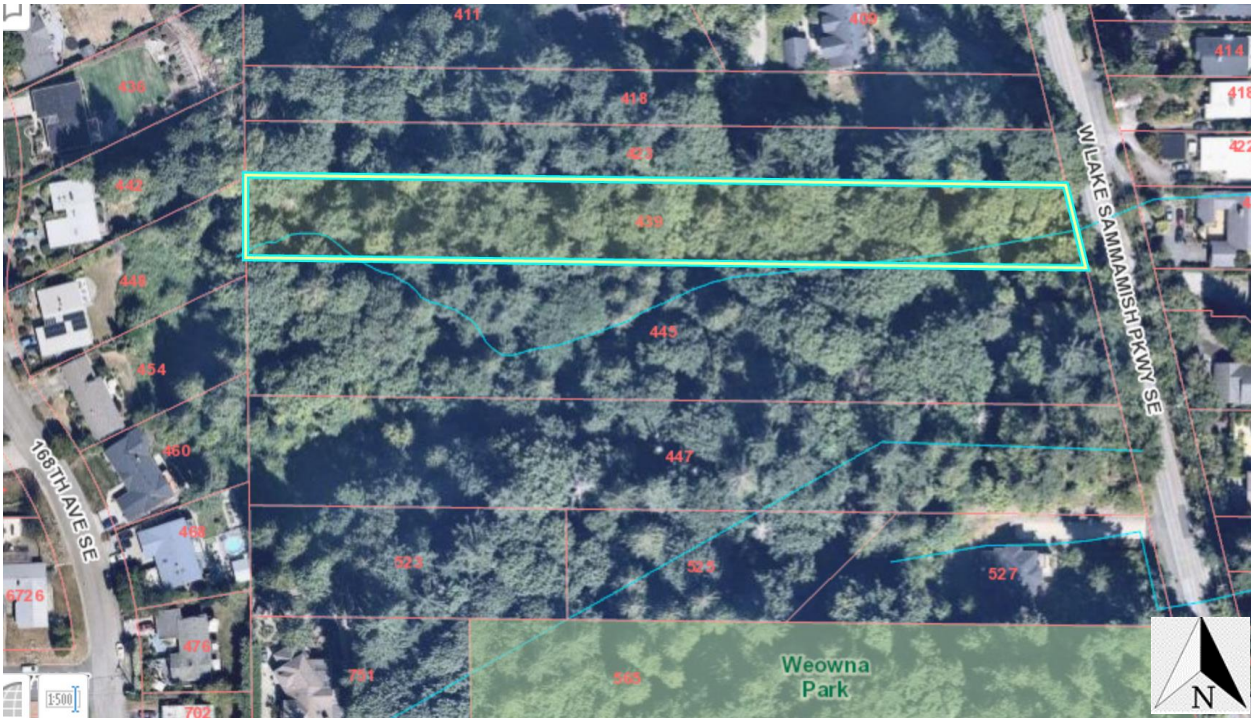
### A. Site Description

The site is located at 439 West Lake Sammamish Parkway SE and is a 56,772 square-foot undeveloped parcel with access gained directly from West Lake Sammamish Parkway along the eastern property line. Adjacent properties are developed residential lots to the west, and undeveloped residential lots to the north and south. West Lake Sammamish Parkway SE borders the property to the east with developed residential properties east of the roadway.

The vegetation on the site is typical of native mixed conifer/deciduous forest in the Puget Sound. There are a number of mature native conifers and deciduous trees and a diversity of native understory species present. There is evidence of prior grading activity near the proposed location of the house, the vegetation in this area is currently trending to invasive species. The site contains a Type N stream along the south property line that flows from west to east through two Type IV wetlands. The slopes on-site generally face southeast and are

mostly characterized by a grade steeper than 40% with more than 10 feet of rise. See figure 2 for the existing site condition.

**Figure 2 (Aerial Photo)**




**B. Zoning**

The property is zoned R-1.8, single family residential.

**C. Land Use Context**

The property has a Comprehensive Plan Land Use Designation of SF-L (Single Family Low Density).

**D. Critical Areas On-Site and Regulations**

**i. Geologic Hazard Areas**

Geologic hazards pose a threat to the health and safety of citizens when commercial, residential, or industrial development is inappropriately sited in areas of significant hazard. Some geologic hazards can be reduced or mitigated by engineering, design, or modified construction practices. When technology cannot reduce risks to acceptable levels, building in geologically hazardous areas is best avoided (WAC 365-190).

Steep slopes may serve several other functions and possess other values for the City and its residents. Several of Bellevue's remaining large blocks of forest are located in steep slope areas, providing habitat for a variety of wildlife species and important linkages between habitat areas in the City. These steep slope areas also act as conduits for

groundwater, which drains from hillsides to provide a water source for the City's wetlands and stream systems. Vegetated steep slopes also provide a visual amenity in the City, providing a "green" backdrop for urbanized areas enhancing property values and buffering urban development.

**ii. Streams and Riparian Areas**

Most of the elements necessary for a healthy aquatic environment rely on processes sustained by dynamic interaction between the stream and the adjacent riparian area (Naiman et al., 1992). Riparian vegetation in floodplains and along stream banks provides a buffer to help mitigate the impacts of urbanization (Finkenbine et al., 2000 in Bolton and Shellberg, 2001). Riparian areas support healthy stream conditions.

Riparian vegetation, particularly forested riparian areas, affect water temperature by providing shade to reduce solar exposure and regulate high ambient air temperatures, slowing or preventing increases in water temperature (Brazier and Brown, 1973; Corbett and Lynch, 1985).

Upland and wetland riparian areas retain sediments, nutrients, pesticides, pathogens, and other pollutants that may be present in runoff, protecting water quality in streams (Ecology, 2001; City of Portland 2001). The roots of riparian plants also hold soil and prevent erosion and sedimentation that may affect spawning success or other behaviors, such as feeding.

Both upland and wetland riparian areas reduce the effects of flood flows. Riparian areas and wetlands reduce and desynchronize peak crests and flow rates of floods (Novitzki, 1979; Verry and Boelter, 1979 in Mitsch and Gosselink, 1993). Upland and wetland areas can infiltrate floodflows, which in turn, are released to the stream as baseflow

Stream riparian areas, or buffers, can be a significant factor in determining the quality of wildlife habitat. For example, buffers comprised of native vegetation with multi- canopy structure, snags, and down logs provide habitat for the greatest range of wildlife species (McMillan, 2000). Vegetated riparian areas also provide a source of large woody debris that helps create and maintain diverse in-stream habitat, as well as create woody debris jams that store sediments and moderate flood velocities.

Sparsely vegetated or vegetated buffers with non-native species may not perform the needed functions of stream buffers. In cases where the buffer is not well vegetated, it is necessary to either increase the buffer width or require that the standard buffer width be restored or revegetated (May 2003). Until the newly planted buffer is established the near term goals for buffer functions may not be attained.

Riparian areas often have shallow groundwater tables, as well as areas where groundwater and surface waters interact. Groundwater flows out of riparian wetlands, seeps, and springs to support stream baseflows. Surface water that flows into riparian areas during floods or as direct precipitation infiltrates into groundwater in riparian areas and is stored for later discharge to the stream (Ecology, 2001; City of Portland, 2001).

**iii. Wetlands**

Wetlands provide important functions and values for both the human and biological environment—these functions include flood control, water quality improvement, and nutrient production. These "functions and values" to both the environment and the citizens of Bellevue depend on their size and location within a basin, as well as their diversity and quality. While Bellevue's wetlands provides various beneficial functions, not all wetlands perform all functions, nor do they perform all functions equally well (Novitski et al., 1995). However, the combined effect of functional processes of wetlands within basins provides benefits to both natural and human environments. For example, wetlands provide significant stormwater control, even if they are degraded and comprise only a small percentage of area within a basin.

**iv. Habitat Associated with Species of Local Importance**

Urbanization, the increase in human settlement density and associated intensification of land use, has a profound and lasting effect on the natural environment and wildlife habitat (McKinney 2002, Blair 2004, Marzluff 2005 Munns 2006), is a major cause of native species local extinctions (Czech et al 2000), and is likely to become the primary cause of extinctions in the coming century (Marzluff et al. 2001a). Cities are typically located along rivers, on coastlines, or near large bodies of water. The associated floodplains and riparian systems make up a relatively small percentage of land cover in the western United States, yet they provide habitat for rich wildlife communities (Knopf et al. 1988), which in turn provide a source for urban habitat patches or reserves. Consequently, urban areas can support rich wildlife communities. In fact, species richness peaks for some groups, including songbirds, at an intermediate level of development (Blair 1999, Marzluff 2005).Protected wild areas alone cannot be depended on to conserve wildlife species. Impacts from catastrophic events, environmental changes, and evolutionary processes (genetic drift, inbreeding, colonization) can be magnified when a taxonomic group or unit is confined to a specific area, and no one area or group of areas is likely to support the biological processes necessary to maintain biodiversity over a range of geographic scales (Shaughnessy and O'Neil 2001). As well, typological approaches to taxonomy or the use of indicators present the risk that evolutionary potential will be lost when depending on reserves for preservation (Rojas 2007). Urban habitat is a vital link in the process of wildlife conservation in the U.S.

## III. Consistency with Land Use Code Requirements:

### A. Zoning District Dimensional Requirements:

Excluding lot coverage, as discussed in Section VII, the R-1.8 zoning dimensional requirements found in LUC 20.20.010 are generally met by the proposed house, but conformance will be verified during building permit review. All setbacks, height, lot coverage by structure, and impervious surface may be required to be verified by survey through the building permit inspection process. **See Conditions of Approval for building permit in Section X of this report.**

**B. Critical Areas Requirements LUC 20.25H:**

The City of Bellevue Land Use Code Critical Areas Overlay District (LUC 20.25H) establishes the reasonable use exception as a mechanism by which the City may approve limited use and disturbance of a critical area and critical area buffer when no other use of the property constitutes a reasonable alternative. A reasonable use exception may be granted when no other reasonable use of the property exists as a result of the application of the regulations in LUC 20.25H.

The property is subject to reasonable use requirements as it does not have an area available for development, outside of critical areas and buffers that exceeds 3,000 square feet. This property is a small lot as defined in LUC 20.25H.200 as it does not qualify for more than one unit of density. The property is zoned R-1.8 and as a result, is limited to a total maximum permanent disturbance footprint area of 3,000 square feet. This proposal can be approved provided the following performance standards in LUC 20.25H.205 are met as well as standards LUC 20.25H.125, and LUC 20.25H.100 which were addressed by the project biologist in their Critical Areas Report and subsequent revisions (Attachment 2).

**i. Consistency with LUC 20.25H.205**

Where disturbance of a critical area or critical area buffer is allowed under this section, development is subject to the following performance standards.

1. **The structure shall be located on the site in order to minimize the impact on the critical area or critical area buffer, including modifying the non-critical area setbacks to the maximum extent allowed under LUC 20.25H.040;**

   **Finding:** The proposed house was located as close to West Lake Sammamish Parkway, and as far from the Type N stream and wetlands as possible. Reduction of setbacks was not deemed possible because of the proposed future use of the area adjacent to the road as a bicycle and utility corridor for the City, and because of additional steep slopes to the north and the difficulty in constructing the required retaining walls adjacent to the neighbor's property. Impacts will be minimized by designing the house and driveway to allow preservation of all but between four to six existing large trees on the site. The existing stream buffer to be disturbed consists predominantly of shrubs. Most of the mature trees on the site are located upslope and will be preserved.

2. **Ground floor access points on portions of the structure adjacent to undisturbed critical area or critical area buffer shall be limited to the minimum necessary to comply with the requirements of the International Building Code and International Fire Code, as adopted and amended by the City of Bellevue;**

   **Finding:** Ground floor access points from the home are limited to those required by the IBC and IFC. A maintenance access corridor has been provided around the structure. A fence will separate the corridor from the critical areas and buffers. **See fencing condition of approval in Section X of this report**.

3. **Associated development, including access driveways and utility infrastructure shall be located outside of the critical area or critical area buffer to the maximum extent technically feasible;**

   **Finding:** Due to the extent of steep slope critical areas, slope buffer, stream buffers, and wetland buffers on site, avoidance of these features is not possible. The proposed development is located to limit tree removal and also avoid steep slopes as much as possible. Impacts will be minimized by designing the house and driveway to allow preservation of all but between four to six existing large trees on the site. The existing stream buffer to be disturbed consists predominantly of shrubs. Most of the mature trees on the site are located upslope and will be preserved.

5. **Areas of disturbance for associated development, including access and utility infrastructure shall be consolidated to the maximum extent technically feasible;**

   **Finding:** All access and utility infrastructure is consolidated to the maximum extent in the development footprint. A storm water swale that will be planted with low-lying vegetation will be located outside the area of permanent disturbance due to stormwater water requirements. Total permanent disturbance is 3,000 square feet.

6. **All areas of temporary disturbance associated with utility installation, construction staging and other development shall he determined by the Director and delineated in the field prior to construction and temporary disturbance shall be restored pursuant to a restoration plan meeting the requirements of LUC 20.25H.210;**

   **Finding:** The mitigation plan is designed to enhance areas of the site nearest the stream and wetlands that are currently degraded by non-native and invasive species. A conceptual mitigation plan has been prepared with a final to be submitted as allowed under 20.25H.220.A. All temporary disturbance is required to be restored and areas of temporary disturbance are required to be depicted on the plans submitted under the building permit with restoration of the areas provided. **See temporary disturbance restoration conditions of approval in Section X of this report.**

7. **Areas of permanent disturbance shall be mitigated to the maximum extent feasible on-site pursuant to a mitigation plan meeting the requirements of LUC 20.25H.210; and**

   **Finding:** The mitigation plan is designed to enhance areas of the site nearest the stream and wetlands that are currently degraded by non-native and invasive species. A conceptual mitigation plan has been prepared with a final to be submitted as allowed under 20.25H.220.A. The mitigation planting is proposed in the areas adjacent to the stream and wetlands. An inspection by City of Bellevue Land Use staff after installation is required. All planting will be monitored pursuant to the submitted

maintenance and monitoring plan for a period of five years.

The proposal is limited to 3,000 square feet of permanent disturbance. All plans submitted as part of a future building permit shall ensure that the permanent disturbance, include access around the house is limited to 3,000 square feet. **See, mitigation, inspection, and monitoring related conditions of approval in Section X of this report**.

8. **Fencing, signage and/or additional buffer plantings should be incorporated into the site development in order to prevent long-term disturbance within the critical area or critical area buffer.**

**Finding:** The remainder of the site outside of the permanent disturbance footprint is required to remain undeveloped and have a native growth protection easement (NGPE) recorded over the area. The boundary of the unmodified critical areas and buffers is required to be fenced with either split rail or solid board fencing. One sign that indicates the area is a protected easement is required to be posted and is provided by the City. **See NGPE recording, fencing, and signage conditions of approval in Section X of this report**.

**ii. Consistency with LUC 20.25H.125**

1. **Structures and improvements shall minimize alterations to the natural contour of the slope and foundations shall be tiered where possible to conform to existing topography;**

**Finding:** Shoring is proposed in order to limit disturbance. The foundation will be tiered and conform to the existing topography.

2. **Structures and improvements shall be located to preserve the most critical portion of the site and its natural landforms and vegetation;**

**Finding:** The proposed house was located close to West Lake Sammamish Parkway, and as far from the Type N stream and wetlands as possible. The proposed area of development has been partially cleared in the past and is currently trending to invasive species. Impacts are unavoidable, but the small area of permanent disturbance and use of shoring walls will limit temporary and permanent impacts.

3. **The proposed development shall not result in greater risk or a need for increased buffers on neighboring properties;**

**Finding:** The geotechnical report prepared by PanGeo, Inc., dated August 13, 2020, 2019 (Attachment 2) found that based on their study the proposal will not result in greater risk or necessitate increased buffers on neighboring properties. The project geotechnical engineer must review the final plans, including all foundation, retaining

wall, shoring, and vault designs. A letter from the geotechnical engineer stating that the plans conform to the recommendations in the geotechnical report and any addendums and supplements must be submitted for review as part of the building permit. The project geotechnical engineer must provide geotechnical inspection during project construction. The property owner will be required to execute a Hold Harmless Agreement releasing the City from liability for any improvements within the critical area or critical area buffer.
**See Geotechnical and Hold Harmless Agreement Conditions of Approval in Section X of this report.**

4. **The use of retaining walls that allow the maintenance of existing natural slope area is preferred over graded artificial slopes where graded slopes would result in increased disturbance as compared to use of retaining wall;**

   **Finding:** The proposed house will be constructed using shoring where necessary, and the design of the home will limit grading of the slope outside the building footprint. No retaining walls or rockeries outside the building footprint are proposed except those necessary to provide driveway access and required exits from the house.

5. **Development shall be designed to minimize impervious surfaces within the critical area and critical area buffer;**

   **Finding:** Impervious surfaces have been minimized by consolidating the proposed improvements in the footprint allowed.

6. **Where change in grade outside the building footprint is necessary, the site retention system should be stepped and re-grading should be designed to minimize topographic modification. On slopes in excess of 40 percent, grading for yard area may be disallowed where inconsistent with this criteria;**

   **Finding:** The design of the home minimizes grading outside the building footprint. No grading for yard area is proposed.

7. **Building foundation walls shall be utilized as retaining walls rather than rockeries or retaining structures built separately and away from the building wherever feasible. Freestanding retaining devices are only permitted when they cannot be designed as structural elements of the building foundation;**

   **Finding:** The foundation walls will be used to retain the slope. No free standing retaining devices outside the building footprint are proposed except those necessary to provide driveway access and required exits from the house.

8. **On slopes in excess of 40 percent, use of pole-type construction which conforms to the existing topography is required where feasible. If pole-type construction is not technically feasible, the structure must be tiered to conform**

**to the existing topography and to minimize topographic modification;**

**Finding:** The structure is using a combination of tiered foundations and pole-type construction to minimize topographic modifications.

9. **On slopes in excess of 40 percent, piled deck support structures are required where technically feasible for parking or garages over fill-based construction types; and**

   **Finding:** Fill is not proposed for the garage and the garage and driveway are located on native soil retained by walls.

10. **Areas of new permanent disturbance and all areas of temporary disturbance shall be mitigated and/or restored pursuant to a mitigation and restoration plan meeting the requirements of LUC 20.2SH.210.**

    **Finding:** As described previously all temporary and permanent disturbance is restored and mitigated per the submitted planting plans. The planting on the site is to be monitored for five years per the submitted plans. **See restoration, mitigation, and monitoring conditions of approval in Section X of this report.**

**iii. Consistency with 20.25H.100**

Development on sites with a wetland or wetland critical area buffer shall incorporate the following performance standards in design of the development, as applicable:

1. **Lights shall be directed away from the wetland.**
   Lights will be directed away from the wetland. Almost all planned exterior lighting will be directed towards the driveway and street, which is not towards any critical area. Any exterior lighting that may be placed elsewhere will either be downcast or at ground level.

2. **Activity that generates noise such as parking lots, generators, and residential uses, shall be located away from the wetland, or any noise shall be minimized through use of design and insulation techniques.**
   Construction noise will be temporary, and no long-term noise will be generated. The project will be required to meet construction noise requirements in BCC 9.18.

3. **Toxic runoff from new impervious area shall be routed away from the wetlands.**
   Runoff from driveway surfaces will be captured and directed into stormwater systems and not sent to the wetland.

4. **Treated water may be allowed to enter the wetland critical area buffer.**
   Clean runoff from the site will infiltrate into the soils and meet drainage requirements for water quality.

5. **The outer edge of the wetland critical area buffer shall be planted with dense vegetation to limit pet or human use.**
   The proposed mitigation plan is designed to enhance areas of the site nearest the stream and wetlands that are currently degraded by non-native and invasive species. A conceptual mitigation plan has been prepared with a final to be submitted as allowed under 20.25H.220.A. Also, fencing, the topography of the site, and the design of the project will limit pet or human use. **See restoration, mitigation, and monitoring conditions of approval in Section X of this report.**

6. **Use of pesticides, insecticides and fertilizers within 150 feet of the edge of the wetland critical area buffer shall be in accordance with the City of Bellevue's "Environmental Best Management Practices", now or as hereafter amended. S60-Wilburton Sewer Capacity Upgrade Project 29 City of Bellevue - Critical Areas Report**
   The project will comply with the City's BMPs. **See BMP conditions of approval in Section X of this report.**

## IV. Public Notice and Comment

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| Application Date: | October 6, 2020 |
| Public Notice (500 feet): | December 3, 2020 |
| Minimum Comment Period: | December 17, 2020 |

**Notice of Application Date:**
The project was publicly noticed in the City's Weekly Permit Bulletin and Seattle Times on December 3, 2020 with notice mailed to property owners within 500 feet of the project site. The City received public comment requesting the project be denied to preserve the property as an unimproved area due to the presence of critical areas and wildlife habitat.

**City response:** The Reasonable Use Exception is an allowed use per LUC 20.25H.055 and 20.25H.190 when no other use of the property constitutes a reasonable alternative. As discussed in Section III, the applicant has demonstrated compliance with the performance standards related to critical areas and buffers. A Critical Areas Report (Attachment 2) was prepared for the proposal by Carl Hadley, a professional biologist with over 30 years of experience in western Washington. As part of this report, the biologist identified all habitat affected by the proposed development and prepared a mitigation plan designed to enhance areas of the site nearest the stream and wetlands that are currently degraded by non-native and invasive species. As stated in the Critical Areas report the proposal includes: *"A conceptual restoration plan designed to ultimately provide a net gain in buffer functions and overall habitat value."*

## V. Summary of Technical Reviews

### A. Clearing and Grading

The Clearing and Grading Division of the Development Services Department has reviewed

the proposed site development for compliance with Clearing and Grading codes and standards. Due to the steepness of the site, rainy season construction limitations will apply. The Clearing and Grading staff approved the application. **See rainy season conditions of approval in Section X of this report.**

**B. Utilities**

The Utilities Department has reviewed the proposed site development and approved the application.

## VI. State Environmental Policy Act (SEPA)

Per BCC 22.02.032 and WAC 197-11-800(1) construction and associated grading of one single-family residence and improvements located in critical areas is exempt from SEPA review.

## VII. Changes to Proposal Due to Staff Review

Staff required the house design to be modified to limit on-site disturbance, reduce retaining walls to the minimum necessary, and provide a maintenance area around the house,

## VIII. Decision Criteria

**A. 20.30P.140 Critical Area Land Use Permit Decision Criteria – Decision Criteria**

The Director may approve, or approve with modifications an application for a Critical Area Land Use Permit if:

1. **The proposal obtains all other permits required by the Land Use Code;**
   The applicant must obtain a building permit and any other permits required. **See building permit Conditions of Approval in Section X of this report.**

2. **The proposal utilizes to the maximum extent possible the best available construction, design and development techniques which result in the least impact on the critical area and critical area buffer;**
   The proposal locates the house close to the road and in a location on the site to avoid additional critical area impacts to the stream bank, wetland, slope, and associated buffers. The house is designed using tiered and pole-type foundations to minimize impacts on critical areas and buffers.

3. **The proposal incorporates the performance standards of Part 20.25H to the maximum extent applicable, and ;**
   As discussed in Section III of this report, the applicable performance standards of LUC Section 20.25H are being met.

4. **The proposal will be served by adequate public facilities including street, fire protection, and utilities; and;**
   The property is served by adequate public facilities.

5. **The proposal includes a mitigation or restoration plan consistent with the requirements of LUC Section 20.25H.210; and**
   The proposed mitigation plan is designed to enhance areas of the site nearest the stream and wetlands that are currently degraded by non-native and invasive species. A conceptual mitigation plan has been prepared with a final to be submitted as allowed under 20.25H.220.A. The planting will be maintained and monitored for a period of five years. Annual reports will be submitted to the City once a year. The reports shall include a copy of the approved plan and photographs and written narrative regarding the success the planning has had in regard to the goals and performance standards found in the submitted mitigation plan. Monitoring will be guaranteed by a surety that will be held for the five-year monitoring period. Based on the submitted mitigation plans, the required installation surety required is 150 percent of the cost of plants, maintenance and monitoring for five years. A maintenance surety of 20 percent will be required after the mitigation plantings have been installed and inspected by the land use division The surety will be in a form provided to the applicant that will be completed with a financial institution and submitted to the City prior to building permit issuance. **See Mitigation, Monitoring, and Surety Conditions of Approval in Section X of this report.**

6. **The proposal complies with other applicable requirements of this code.**
   As discussed in this report, the proposal complies with all other applicable requirements of the Land Use Code.

## IX. Conclusion and Decision

After conducting the various administrative reviews associated with this proposal, including Land Use Code consistency, City Code and Standard compliance reviews, the Director of the Development Services Department does hereby **approve with conditions** the construction of the proposed house and improvements under a reasonable use exception. **Approval of this Critical Areas Land Use Permit does not constitute a permit for construction. A building permit, clear and grade permit, and/or utility permit is required and all plans are subject to review for compliance with applicable City of Bellevue codes and standards.**

**Note- Expiration of Approval:**

- In accordance with LUC 20.30P.150 a Critical Areas Land Use Permit automatically expires and is void if the applicant fails to file for a clearing and grading permit or other necessary development permits within one year of the effective date of the approval.

## X. Conditions of Approval

**The applicant shall comply with all applicable Bellevue City Codes and Ordinances including but not limited to:**

| Applicable Ordinances | Contact Person |
|---|---|
| Clearing and Grading Code- BCC 23.76 | Savina Uzunow, 425-452-7860 |
| Utility Code- BCC Title 24 | Jeremy Rosenlund, 425-452-7683 |
| Land Use Code- BCC Title 20 | Drew Folsom, 425-452-4441 |
| Noise Control- BCC 9.18 | Drew Folsom, 425-452-4441 |

**The following conditions are imposed under the Bellevue City Code referenced:**

1. **Building Permit:** Approval of this Critical Areas Land Use Permit does not constitute an approval of a development permit. Application for a building permit or other required permits must be submitted and approved. Plans submitted as part of either permit application shall be consistent with the activity permitted under this approval. These conditions of approval shall be submitted with the building permit application along with responses describing how they have been or will be met as part of the building permit.

   Authority: Land Use Code 20.30P.140 and Clearing & Grading Code 23.76.035
   Reviewer: Drew Folsom, Development Services Department, Tom McFarlane, Development Services Department, Clearing & Grading Section

2. **Restoration of Temporary Disturbance:** All areas of temporary disturbance shall be determined and depicted on the plans submitted with the building permit. These areas shall be restored with the planting depicted on the mitigation planting plan proposed for the site**.**

   Authority: Land Use Code 20.30P.205
   Reviewer: Drew Folsom, Development Services Department

3. **Geotechnical Review:** The project geotechnical engineer must review the final construction plans, including all foundation designs. A letter from the geotechnical engineer stating that the plans conform to the recommendations in the geotechnical report and any addendums and supplements must be submitted to the clearing and grading section prior to issuance of the construction permit.

   Authority: Clearing & Grading Code 23.76.050
   Reviewer: Savina Uzunow, Development Services Department, Clearing & Grading Section

4. **Geotechnical Inspection:** The project geotechnical engineer must provide geotechnical inspection during project construction, including subgrades for foundations and footings, and any unusual seepage, slope, or subgrade conditions.

   Authority: Clearing & Grading Code 23.76.050
   Reviewer: Savina Uzunow, Development Services Department, Clearing & Grading Section

5. **Rainy Season Restrictions:** Due to steep slopes on the site, no clearing and grading activity may occur during the rainy season, which is defined as October 1 through April 30 without written authorization of the Development Services Department. Should approval be granted for work during the rainy season, increased erosion and sedimentation measures, representing the best available technology must be implemented prior to beginning or resuming site work.

   Authority: Bellevue City Code 23.76.093.A
   Reviewer: Savina Uzunow, Development Services Department, Clearing & Grading Section

6. **Installation Assurance Device:** An installation assurance device is required in an amount equal to 150% of the cost of mitigation planting. The amount is determined by a cost estimate submitted as part of the building permit. The installation assurance device is required to be submitted prior to building permit issuance.

   Authority: Land Use Code 20.25H.220
   Reviewer: Drew Folsom, Development Services Department

7. **Maintenance and Monitoring:** The planting area shall be maintained and monitored for 5 years as required by LUC 20.25H.220. An annual monitoring report is to be submitted to Development Services, Land Use Division in each of the five consecutive years following installation. The monitoring report shall include detailed information regarding the goals and standards outlined in the approved management plan. Photos from selected photo points shall be included in the monitoring reports to document the planting and ongoing success. As stated in the submitted maintenance and monitoring plan.

   Annual monitoring reports are to be submitted to Land Use each of the five years. The reports, along with a copy of the planting plan, can be sent to Drew Folsom at dfolsom@bellevuewa.gov or to the address below:

   Environmental Planning Manager
   Development Services Department
   City of Bellevue
   PO Box 90012
   Bellevue, WA 98009-9012

   Authority: Land Use Code 20.30P.140; 20.25H.220
   Reviewer: Drew Folsom, Development Services Department

8. **Maintenance and Monitoring Assurance Device:** A maintenance assurance device in an amount equal to 20% of the cost of plants and for five years of maintenance labor and materials is required to ensure the plants are maintained and monitored. Release of this assurance device is contingent upon receipt of documentation reporting successful

establishment in compliance with the approved management plan. Land Use inspection of the planting after 5-years is required to release the surety. The maintenance surety is required to be submitted prior to building permit issuance.

Authority: Land Use Code 20.25H.220
Reviewer: Drew Folsom, Development Services Department

9. **Land Use Inspection:** Following installation of the mitigation planting the applicant shall call the inspection line and request a Land Use inspection of the planting area prior to final building inspection. Staff will need to find that the plants are in a healthy and growing condition. Land Use inspection is also required to release the maintenance surety at the end of the 5-year monitoring period. Release of the maintenance surety is contingent upon successful monitoring and maintenance and submittal of the annual monitoring reports.

   Authority: Land Use Code 20.30P.140
   Reviewer: Drew Folsom, Development Services Department

10. **Hold Harmless Agreement:** The applicant shall submit a hold harmless agreement in a form approved by the City Attorney which releases the City from liability for any damage arising from the location of improvements within a critical area buffer in accordance with LUC 20.30P.170. The hold harmless agreement is required to be recorded with King County prior to clearing and grading permit issuance. Staff will provide the applicant with the hold harmless form.

    Authority: Land Use Code 20.30P.170
    Reviewer: Drew Folsom, Development Services Department

11. **Native Growth Protection Easement:** The perimeter of the modified stream and steep slope buffers and the Native Growth Protection Easement shall be surveyed and shall have fencing and signage noting its status as a Native Growth Protection Easement. The NGPE shall be recorded with King County and shall have language which contains at minimum:

    i. An assurance that the NGPE will be kept free from all development and disturbance except where allowed or required for habitat improvement projects and vegetation management, existing topography, and other natural features will be preserved for the purpose of preventing harm to property and the environment, including, but not limited to, controlling surface water runoff and erosion, maintaining slope stability, and buffering and protecting plants and animal habitat.
    ii. The right of the city of Bellevue to enter to the property to investigate the condition of the NGPE upon reasonable notice;
    iii. The right of the City of Bellevue to enforce the terms of the restriction; and,
    A management plan for the NGPE designating future management

responsibility

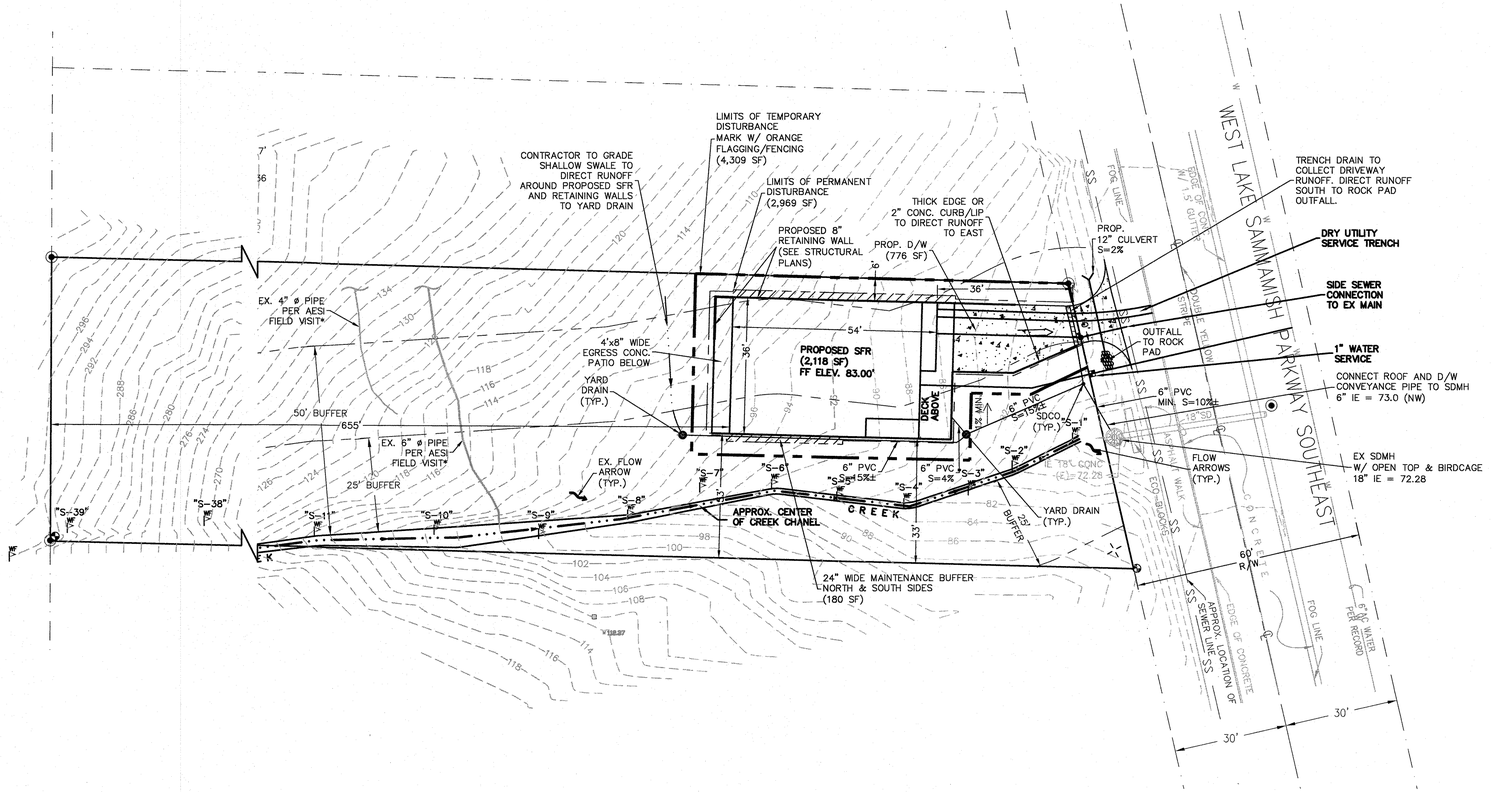
Authority: Land Use Code 20.25H.160
Reviewer Drew Folsom, Development Services Department

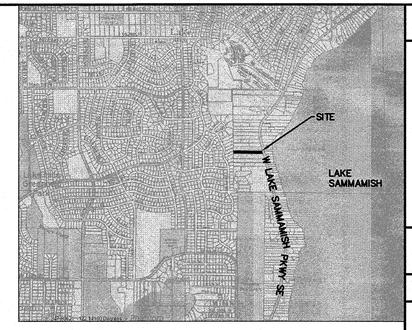
12. **Pesticides, Insecticides, and Fertilizers:** The applicant must submit as part of the required Clearing and Grading Permit information regarding the use of pesticides, insecticides, and fertilizers in accordance with the City of Bellevue's "Environmental Best Management Practices".

    Authority: Land Use Code 20.25H.220.H
    Reviewer: Drew Folsom Development Services Department

# NADLAN GROUP SFR

## SECTION 36, TOWNSHIP 25 N, RANGE 5 E, W.M.




VICINITY MAP
SCALE 1" = 1000'

EXISTING SOIL & VEGETATION NOTE:
THE SOIL ANALYSIS FOR THIS PROJECT FOUND THE EXISTING SOILS TO BE MEDIUM STIFF TO STIFF, SILT TO HARD, CLAYEY SILT OVER DENSE TO VERY DENSE SANDS, PER ASSOCIATED EARTH SCIENCES, INC. THE SITE IN THE AREA OF DISTURBANCE CURRENTLY CONSISTS OF BRUSH/GROUND COVER AND TREES.

NOTE:
A BOUNDARY AND TOPOGRAPHIC SURVEY HAS BEEN PERFORMED FOR THIS SITE BY CTS ENGINEERS. PROPERTY DIMENSIONS ARE BASED ON SAID SURVEY. NO ADDITIONAL SURVEY WORK HAS BEEN PERFORMED FOR THIS PROJECT.

EXISTING FEATURES NOTE:
ALL EXISTING INFORMATION SHOWN IS FROM OTHER CONSULTANTS OR BASED ON SITE OBSERVATIONS OR APPROXIMATED FROM INFORMATION AVAILABLE ON THE KING COUNTY WEBSITE.

EXISTING DRAINAGE FEATURES ARE BASED ON SURVEY PERFORMED BY CTS ENGINEERS.

TOTAL AREA - 56,772 SF = 1.30 Ac
IMPERVIOUS AREA SUMMARY TABLE

| | PGIS (sf) | NPGIS (sf) | Total (sf) |
|---|---|---|---|
| Existing | 0 | 0 | 0 |
| Removed | 0 | 0 | 0 |
| Replaced | 0 | 0 | 0 |
| New | 776 | 2,118 | 2,894 |
| New+Replaced | 776 | 2,118 | 2,894 |
| Total Impervious | 776 | 2,118 | 2,894 |

## LEGAL DESCRIPTION

POR OF FOLG DESC LY WLY OF CO D – S 75 FT OF N 335.7 FT OF GL 4 IN SEC 36–25–5

## SITE DATA

SITE ADDRESS: 439 WEST LAKE SAMMAMISH PKWY SE
BELLEVUE, WA 98008
TAX ACCOUNT NUMBER: 362505–9169
GROSS SITE AREA: 56,772 SF (1.30 ACRES)
EXISTING LOT COVERAGE: 0%
PROPOSED LOT COVERAGE: 3.44%

## OWNER/APPLICANT

NADLAN GROUP, LLC
AMIT EERZ
425.365.3456

## CIVIL ENGINEER

JOSEPH SMEBY, P.E.
OMEGA ENGINEERING, INC.
2707 WETMORE AVE.
EVERETT, WA 98201
425.387.3820

## ARCHITECT/CONTACT

J. STEPHEN PETERSON & ASSOCIATES, P.S.
18209 NE 175TH PLACE
WOODINVILLE, WA 98072
425.788.9434

## DRAWING INDEX

1. SITE PLAN
2. CSWPPP
3. STORMWATER SITE PLAN & DETAILS

| R# | DATE | DESCRIPTION | BY |
|---|---|---|---|
| 1 | 4/14/21 | PLAN CHANGE 4/15/21 | MR |
| 2 | 3/15/21 | REVISIONS DATED 3/15/21 | MR |
| 3 | 10/20/20 | REVISIONS PER 10/19/20 COMMENTS | MR |
| 4 | 9/21/20 | REVISIONS PER 9/10/20 COMMENTS | JMS |

JOSEPH M. SMEBY PROFESSIONAL ENGINEER

SITE PLAN


2707 WETMORE AVE.
EVERETT, WA 98201
t 425.387.3820
f 425.259.1958

OMEGA ENGINEERING, INC.


NADLAN GROUP SFR

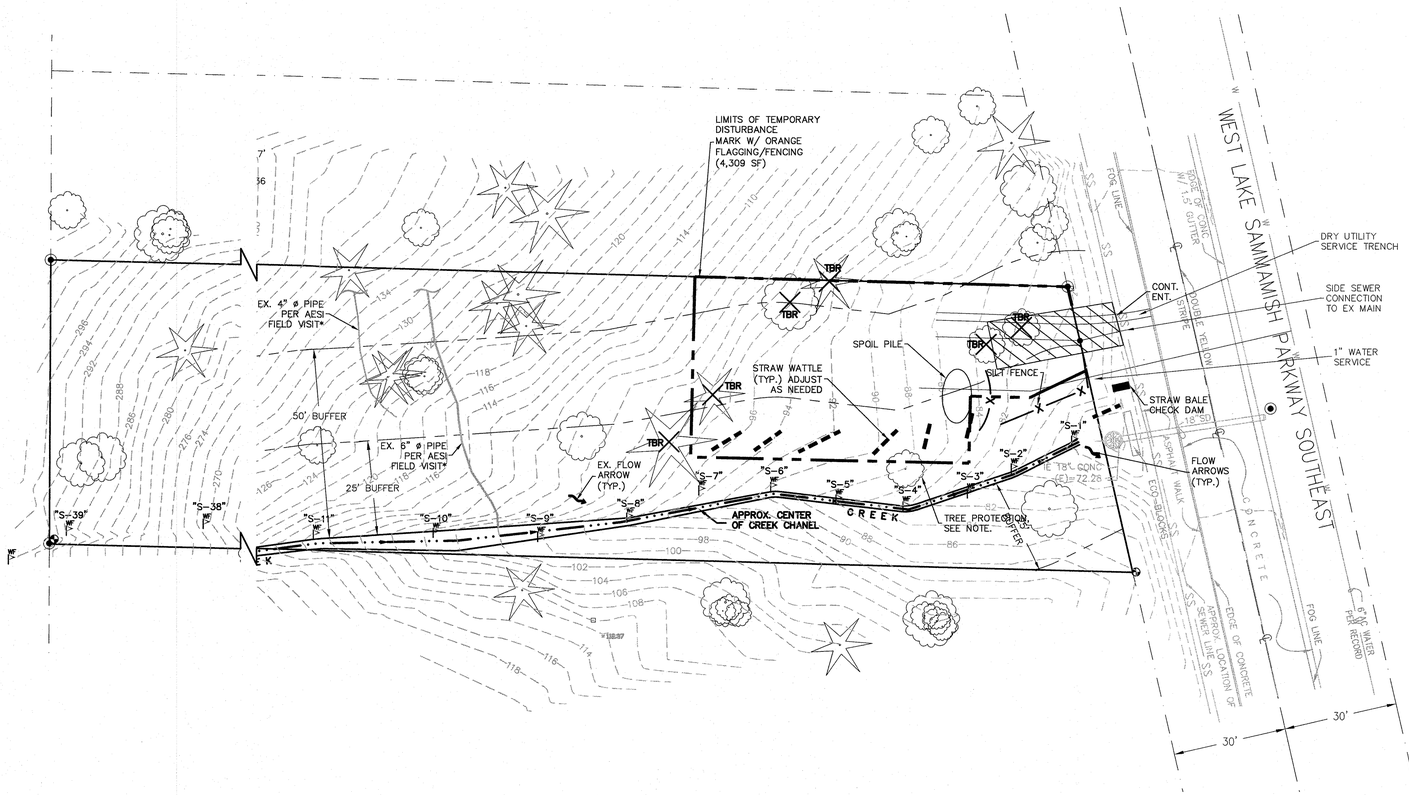
Bellevue, Snohomish County, Washington
PORTION OF SECTION 36, TOWNSHIP 25 NORTH, RANGE 5 EAST, W.M.

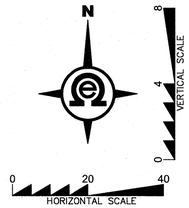
| PROJ. NO. | DSN. BY: |
|---|---|
| 15-0804 | RAJ |
| DATE: 8/24/20 | |
| SCALE: 1" = 20' | |
| DRAWING NO. 1 OF 3 | |

CALL 48 HOURS BEFORE YOU DIG 811

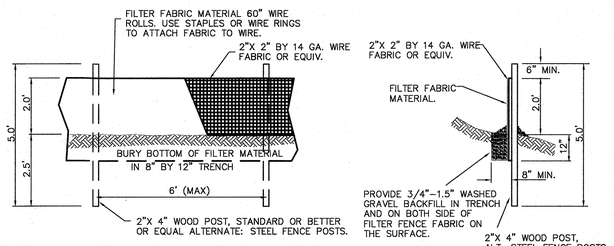
# NADLAN GROUP SFR

## SECTION 36, TOWNSHIP 25 N, RANGE 5 E, W.M.

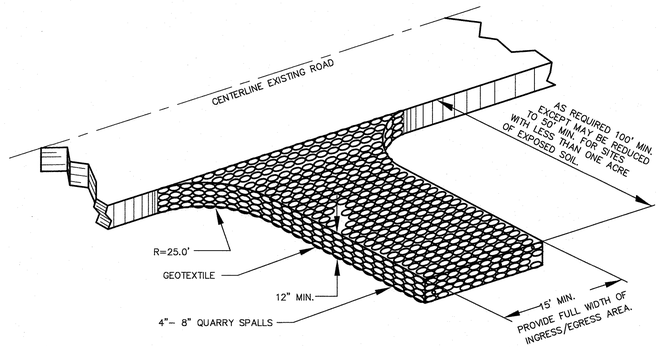



**NOTE:**
ALL TEMPORARY AREAS OF DISTURBANCE SHALL BE RESTORED BY NATIVE VEGETATION




SILT FENCE DETAIL
N.T.S.




GRAVEL CONSTRUCTION ENTRANCE
N.T.S.

### TRENCHING EROSION CONTROL NOTE

When constructing underground utility lines, no more trench should be opened than can be completed in a single day. Excavated material must be placed on the uphill side of the trench where consistent with safety and space considerations. Temporary trench dewatering devices must be discharged into a sediment trap or pond. Trenches must be filled at the end of each day unless otherwise allowed by the Director.

### TREE PROTECTION NOTE

Trees to be removed are noted on this plan. All other trees on the property are intended to be saved. Refer to the tree preservation plan prepared by the project arborist or landscape architect.

### SPOIL PILE/EXCAVATED MATERIAL NOTE

Stockpiled material from site excavations shall be covered in plastic at the end of each day during the wet season and anytime the pile will be left unworked for more than three days during the dry season. The plastic covering shall be anchored down with sandbags or other devices to ensure the plastic stays in place.

### CONCRETE WASHOUT NOTE

Prior to the start of concrete import for foundation work a concrete washout area shall be created. The area shall be lined with plastic and of a size sufficient to handle the expected trucks/deliveries per day. The contractor shall inspect the washout daily to ensure adequate capacity and cleanout as needed. Material removed/cleaned from the washout shall be disposed of off-site at an approved facility.

### MATERIAL STORAGE/HANDLING NOTE

The contractor shall minimize the storage of hazardous materials on-site. Storage shall be in conformance with BMP C153 as summarized:

All materials like fuel/oil, detergents, hazardous chemicals or other materials detrimental to the environment if released shall be stored off the ground in secondary containments. Secondary containments can include an earthen dike, kids wading poor or concrete mixing trays depending on the size of the container. Stored materials shall be covered during the wet-season.

A spill kit shall be kept on-site whenever hazardous materials or heavy equipment are on-site.

All equipment maintenance and fueling shall be done in a level area of the site with spill collection/containment devices in place along with a spill kit readily available.

| R# | DATE | DESCRIPTION | BY |
|---|---|---|---|
| 1 | 3/15/21 | REVISIONS DATED 3/15/21 | MR |
| 2 | 10/20/20 | REVISIONS PER 10/19/20 COMMENTS | MR |
| 3 | 9/21/20 | REVISIONS PER 9/10/20 COMMENTS | JMS |

JOSEPH SMEBY PROFESSIONAL ENGINEER

CSWPPP


2707 WETMORE AVE.
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t 425.387.3820
f 425.259.1958

OMEGA ENGINEERING, INC.


NADLAN GROUP SFR

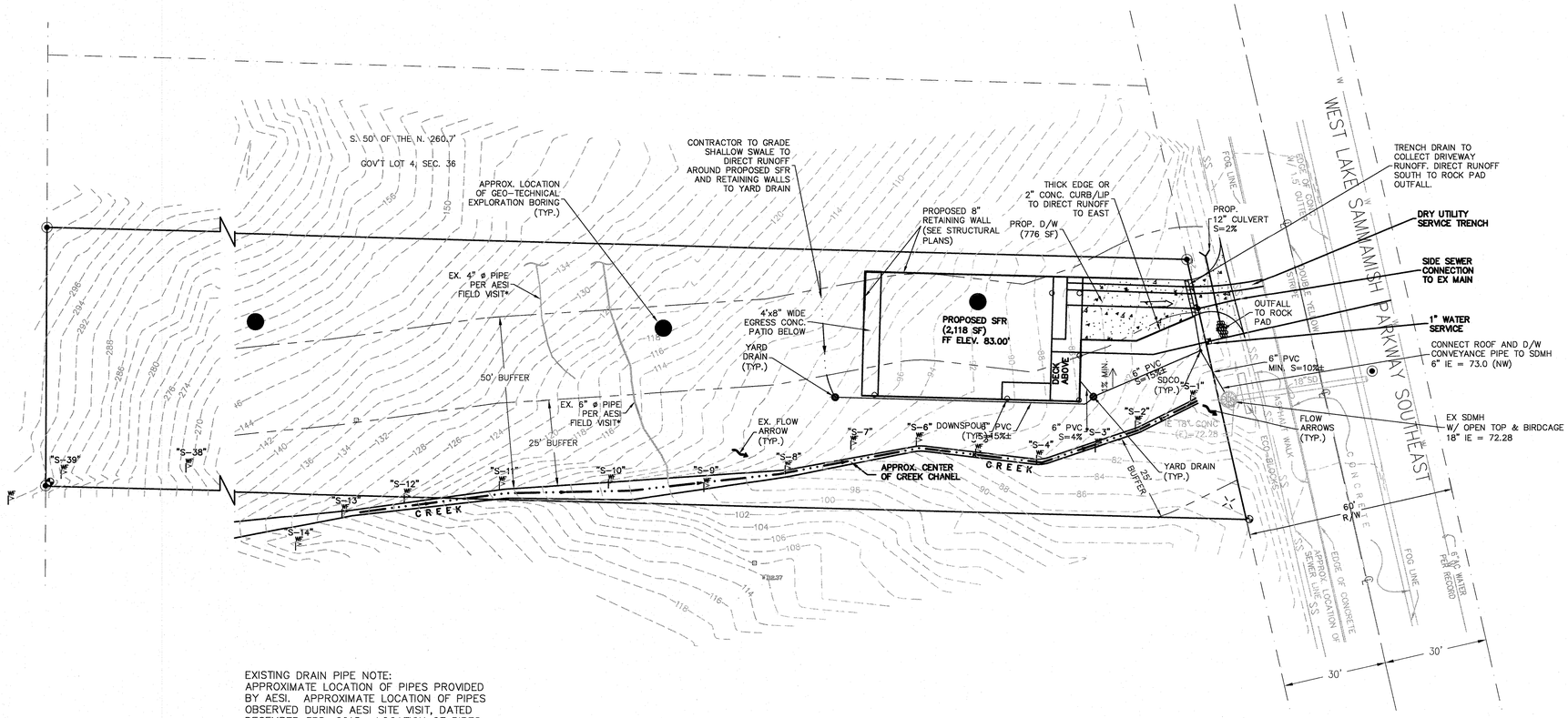
Bellevue, Snohomish County, Washington
PORTION OF SECTION 36, TOWNSHIP 25 NORTH, RANGE 5 EAST, W.M.

| PROJ. NO. | DSN. BY: |
|---|---|
| 15-0804 | RAJ |
| DATE: 8/24/20 | |
| SCALE: 1" = 20' | |
| DRAWING NO. 2 OF 3 | |

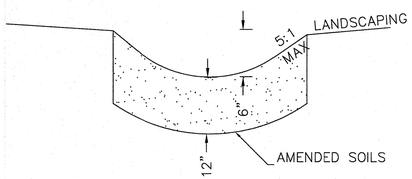
CALL 48 HOURS BEFORE YOU DIG 811

# NADLAN GROUP SFR

## SECTION 36, TOWNSHIP 25 N, RANGE 5 E, W.M.




EXISTING DRAIN PIPE NOTE:
APPROXIMATE LOCATION OF PIPES PROVIDED BY AESI. APPROXIMATE LOCATION OF PIPES OBSERVED DURING AESI SITE VISIT, DATED DECEMBER 3RD, 2015. LOCATION OF PIPES ESTIMATED BASED ON SURROUNDING SITE FEASTURES AND SHOULD NOT BE CONSIDERED AS SURVEYED.




TYPICAL SWALE SECTION
N.T.S.

CALL 48 HOURS BEFORE YOU DIG 811

| R# | DATE | DESCRIPTION | BY |
|---|---|---|---|
| 3 | 3/15/21 | REVISIONS DATED 3/15/21 | MR |
| 2 | 10/20/20 | REVISIONS PER 10/19/20 COMMENTS | MR |
| 1 | 9/21/20 | REVISIONS PER 9/10/20 COMMENTS | JMS |

STORMWATER SITE PLAN


2707 WETMORE AVE.
EVERETT, WA 98201
t 425.387.3820
f 425.259.1958

OMEGA ENGINEERING, INC.


NADLAN GROUP SFR

Lake Stevens, Snohomish County, Washington
PORTION OF SECTION 36, TOWNSHIP 25 NORTH, RANGE 5 EAST, W.M.

| PROJ. NO. | DSN. BY: |
|---|---|
| 15-0804 | RAJ |
| DATE: 8/24/20 | |
| SCALE: 1" = 20' | |
| DRAWING NO. 3 OF 3 | |

# CRITICAL AREAS REPORT

# NADLAN GROUP LLC RESIDENCE

## 439 West Lake Sammamish Parkway

**Parcel #3625059169**

**Bellevue, Washington**

*Prepared for:*

**Mr. Amit Erez & Mr. Eyal Hillel**
**Nadlan Group LLC**
17203 34th Street NE
Redmond Washington 98052

*Prepared by:*

**Cedarock Consultants, Inc.**
19609 244th Avenue NE
Woodinville, Washington 98077

March 17, 2021

This report and conceptual mitigation plan were prepared by Carl Hadley, a professional biologist with over 30 years of experience in western Washington.

Cedarock Consultants, Inc. 2021. Critical Areas Report for Nadlan Group LLC Residence, 439 West Lake Sammamish Parkway, Bellevue, WA. Consultant Report prepared for Nadlan Group, LLC. March 17, 2021.

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## LIST OF TABLES AND FIGURES



## APPENDICES

Critical Areas Map
Site Disturbance Limits
Conceptual Planting Plan and Details
Updated Wetland Report (Sewall Wetland Consulting. August 21, 2020)
Updated Geotechnical Report (PanGEO Inc. August 13, 2020)

# 1.0 PROPOSED PROJECT

## 1.1 Project Description and Critical Area Overview

Construction of a new house and driveway is proposed on a 1.30 acre undeveloped site more than 99 percent encumbered by critical areas including a type N stream, steep slopes, and two category IV wetlands. No sensitive wildlife habitat was identified on the site. Variance from standard critical areas code and lot coverage requirements is needed under a reasonable use exception (LUC 20.25H.200) to allow development of a maximum 3,000 sq.ft. residence. This report describes critical areas on the site, identifies proposed impacts, and describes conceptual mitigation being proposed to compensate for work in the critical areas.

The house and driveway would be constructed within the standard 50-foot buffer of a watercourse considered to be a Type N Stream by City of Bellevue staff. Buffer reduction to a minimum of 0 feet for the house and 0 feet for the driveway is proposed as the only way to obtain reasonable use of the property. Mitigation for buffer reduction will consist of buffer expansion elsewhere on the property, buffer enhancement, large woody debris placement, and a five-year monitoring program. Impacts will be minimized by designing the house and driveway to allow preservation of all but between four to six existing large trees on the site. The existing stream buffer to be disturbed consists predominantly of shrubs. Most of the mature trees on the site are located upslope and will be preserved. The proposed future condition is expected to be functionally equivalent to existing conditions and provide somewhat better riparian functions and values than if the site was developed under standard reasonable use exception rules.

Some of the house will be placed on a slope with a grade in excess of 40 percent. A detailed subsurface exploration, geologic hazard, and preliminary geotechnical engineering study was completed. Results showed stiff or dense soils, and absence of ground water. These factors, combined with a lack of evidence of previous landslide activity on the site, indicate a relatively low risk of landsliding. With a number of site-specific design considerations provided by the geotechnical engineering consultants, the site is believed to be suitable for construction of the proposed house with generally acceptable risks.

Two category IV wetlands were found on the site approximately 90 feet west of the proposed house location. Both are hillslope wetlands created by seeps. One is approximately 400 square feet and the second is approximately 2,200 square feet. Neither wetland would be affected by the house.

The owner plans to use low impact development techniques throughout construction including siting and grading the house to minimize the number of trees that have to be cut as well as the amount of earth that has to be moved or removed.

## 1.2 Code Modifications

The following identifies each regulation and standard of the code intended to be modified by this proposal, further defining the relevant code requirement and the specific modification request for each. The discussion outlines the request for relief from the reasonable use exception standards and the impacts to the critical areas of streams and geologic hazard areas.

Streams

- *LUC 20.25H.075.C.1.a.i*: This code section designates stream critical area buffers for open streams on an undeveloped site.
    - Required Critical Area Buffer: (Type N stream) 50-ft measured from top-of-bank
    - ***Requested Modification:*** Reduce the critical area buffer to a minimum of 0 feet for the house and driveway. Up to a little less than **3,000 sq.ft.** of stream critical area buffer will be permanently impacted.
- *LUC 20.25H.075.D.2.a.i*: This code section designates the structure setbacks for open streams on an undeveloped site.
    - Required Structure Setback: (Type N stream) 15 feet measured from edge of critical area buffer.
    - ***Requested Modification:*** Reduce the stream structure setback to 0 feet.

Geologic Hazard Areas

- *LUC 20.25H.120.A.2*: This code section designates steep slopes as a critical area.
    - Requirement for Critical Area: Slopes of 40 percent or more that have a rise of at least 10 feet and exceed 1,000 square feet in area.
    - ***Requested Modification:*** Allow development within steep slope areas by utilizing performance standards sited in 20.25H.125 and site-specific recommendations in AESI 2014[1] and updated in PanGEO Inc. 2020[2].
- *LUC 20.25H.120.B.1.b*: This code section designates the steep slope critical area buffer.
    - Required Critical Area Buffer: 50-ft from top-of-slope.
    - ***Requested Modification:*** Allow development on and immediately adjacent to steep slope areas by utilizing performance standards sited in 20.25H.125 and site-specific recommendations in AESI 2014 and updated in PanGEO Inc. 2020.
- *LUC 20.25H.120.C.2.b*: This code section designates the structure setbacks for steep slopes.
    - Required Structure Setback: 75-ft toe-of-slope setback

[1] Associated Earth Sciences, Inc. 2014. Subsurface Exploration, Geologic Hazard, and Preliminary Geotechnical Engineering Report, Washburn Residence, Bellevue, Washington. Prepared August 1, 2006 and updated September 19, 2014

[2] Geotechnical Report Update – PanGEO Inc. August 13, 2020.

- ***Requested Modification:*** Allow development within 75-feet of the toe of steep slope areas by utilizing performance standards sited in 20.25H.125 and site-specific recommendations in AESI 2014 and updated in PanGEO Inc. 2020.
- 

Variance Request

- *LUC 20.20.010.* This code section describes maximum lot coverage.
  - Requirement: 35 percent land coverage by structures after subtracting all critical areas and stream critical area buffers.
  - ***Requested Modification:*** Because less than 0.4 percent of the site (216 sq.ft.) is unencumbered, a variance is requested to allow development on the site to a maximum permanent disturbance of 3,000 sq.ft. (5.3 percent of site).
- *LUC 20.25H.200.A.2.b.i*: This code section described reasonable use guidelines for small lots.
  - Required Critical Area Buffer: Areas zoned R-1.8 require a reasonable use exception if developable area is less than 3,000 sq.ft.
  - ***Requested Modification:*** A variance is requested to allow development on the site to a maximum permanent disturbance of 3,000 sq.ft.

### 1.3 Decision Criteria

This section summarizes how the proposed action is designed to meet decision criteria found in Sections 20.30P.140 and 20.25H of the Land Use Code.

Under **LUC 20.30P.140** (Decision criteria) the Director may approve or approve with modifications an application for a Critical Areas Land Use Permit if:

A. The proposal obtains all other permits required by the Land Use Code; and

The applicant will work with the City of Bellevue to identify and obtain all required land use and building permits needed to build a single-family residential structure on this lot.

B. The proposal utilizes to the maximum extent possible the best available construction, design and development techniques which result in the least impact on the critical area and critical area buffer; and

As described further in Section 5.1 of this Critical Areas Report, impact avoidance was the primary concern when designing the proposed development footprint. Most of the critical areas including the most valuable wildlife habitat, the two wetlands, and the stream will be avoided. It is not possible to develop a house on unencumbered land. The house will be located within buffers and on a steep slope found by geotechnical engineers to be stable. Compensatory mitigation will be provided for unavoidable impacts.

C. The proposal incorporates the performance standards of Part 20.25H LUC to the maximum extent applicable; and

This has been done. See discussion below.

D. The proposal will be served by adequate public facilities including streets, fire protection, and utilities; and

The proposed house will be located adjacent to West Lake Sammamish Parkway, a major city street served by all required public utilities and services.

E. The proposal includes a mitigation or restoration plan consistent with the requirements of LUC 20.25H.210; and

A conceptual mitigation plan has been provided to restore and enhance all areas of the buffer that are currently degraded, or will suffer temporary disturbance during construction of the house. The final mitigation plan will be provided with submittal of the building plans once the precise location of the house and driveway is known.

F. The proposal complies with other applicable requirements of this code.

We believe this is true.

Under **LUC 20.25H.205** (Reasonable use exception – Performance standards), where disturbance of a critical area or critical area buffer is allowed under this section, development is subject to the following performance standards.

A. The structure shall be located on the site in order to minimize the impact on the critical area or critical area buffer, including modifying the non-critical area setbacks to the maximum extent allowed under LUC 20.25H.040;

The proposed house was located as close to West Lake Sammamish Parkway, and as far from the Type N stream and wetlands as possible. Reduction of setbacks was not deemed possible because of the proposed future use of the area adjacent to the road as a bicycle and utility corridor for the City, and because of additional steep slopes to the north and the difficulty in constructing the required retaining walls adjacent to the neighbor's property.

B. Ground floor access points on portions of the structure adjacent to undisturbed critical area or critical area buffer shall be limited to the minimum necessary to comply with the requirements of the International Building Code and International Fire Code, as adopted and amended by the City of Bellevue;

Only two ground floor access points are provided. One exits to the driveway, and the other exits to the rear of the house as required by code. No other location is further from critical areas.

C. Associated development, including access driveways and utility infrastructure, shall be located outside of the critical area or critical area buffer to the maximum extent technically feasible;

This was completed.

D. Areas of disturbance for associated development, including access and utility infrastructure, shall be consolidated to the maximum extent technically feasible;

The proposed house was located as close as possibly to West Lake Sammamish to minimize the driveway size and length. All utilities will be located within the driveway corridor.

E. All areas of temporary disturbance associated with utility installation, construction staging and other development shall be determined by the Director and delineated in the field prior to construction and temporary disturbance shall be restored pursuant to a restoration plan meeting the requirements of LUC 20.25H.210;

This shall be completed.

F. Areas of permanent disturbance shall be mitigated to the maximum extent feasible on site pursuant to a mitigation plan meeting the requirements of LUC 20.25H.210; and

The mitigation plan is designed to enhance areas of the site nearest the stream and wetlands that are currently degraded by non-native and invasive species. A conceptual mitigation plan has been prepared with a final to be submitted as allowed under 20.25H.220.A.

G. Fencing, signage and/or additional buffer plantings should be incorporated into the site development in order to prevent long-term disturbance within the critical area or critical area buffer.

Fencing has been added to the site plan to help prevent future intrusion into critical areas.

Under **LUC 20.25H.080** (Stream) and **LUC 20.25H.100** (Wetland) Performance Standards

1. Lights shall be directed away from the stream and wetland.

Almost all planned exterior lighting will be directed towards the driveway and street, which is not towards any critical area. Any exterior lighting that may be placed elsewhere will either be downcast or at ground level. This includes a code-required light at the back door.

2. Activity that generates noise such as parking lots, generators, and residential uses shall be located away from the stream and wetland or any noise shall be minimized through use of design and insulation techniques.

Little noise other than occasional vehicular traffic will be generated by this single-family residence. No generators are planned.

3. Toxic runoff from new impervious area shall be routed away from the stream and wetland.

Runoff from the driveway will be directed with curbs to the municipal storm drains associated with West Lake Sammamish.

4. Treated water may be allowed to enter the stream or wetland critical area buffer.

   No water will be routed into stream and wetland buffer.

5. The outer edge of the stream and wetland critical area buffer shall be planted with dense vegetation to limit pet or human use.

   Dense planting is proposed in most locations as enhancement. A fence will be added near the front of the house to help limit pet or human use.

6. Use of pesticides, insecticides and fertilizers within 150 feet of the edge of the stream and wetland critical area buffer shall be in accordance with the City of Bellevue's "Environmental Best Management Practices," now or as hereafter amended.

   No lawn or other landscaping material is proposed as part of this project so there is no reason for chemical use.

7. All applicable standards of Chapter 24.06 BCC, Storm and Surface Water Utility Code, are met.

   All applicable standards of Chapter 24.06 BCC will be met.

Under **LUC 20.25H.125** (Performance standards – Landslide hazards and steep slopes.)

A. Structures and improvements shall minimize alterations to the natural contour of the slope, and foundations shall be tiered where possible to conform to existing topography;

   The structure was placed on the flattest part of the lot.

B. Structures and improvements shall be located to preserve the most critical portion of the site and its natural landforms and vegetation;

   The proposed house was located as close to West Lake Sammamish Parkway, and as far from the Type N stream and wetlands as possible. This area had been partially cleared in the past for some unknown use and is currently trending to invasive species.

C. The proposed development shall not result in greater risk or a need for increased buffers on neighboring properties;

   We believe this to be true. The geotechnical engineers have confirmed there is a very low risk of slope failure.

D. The use of retaining walls that allow the maintenance of existing natural slope area is preferred over graded artificial slopes where graded slopes would result in increased disturbance as compared to use of retaining wall;

   Only minimal reconturing is proposed for the house and driveway. All steep slopes will be managed with retaining walls and the home foundation.

E. Development shall be designed to minimize impervious surfaces within the critical area and critical area buffer;

Extensive efforts have been made to limit both permanent disturbance and new impervious surface as required under the RUE regulations.

F. Where change in grade outside the building footprint is necessary, the site retention system should be stepped and regrading should be designed to minimize topographic modification. On slopes in excess of 40 percent, grading for yard area may be disallowed where inconsistent with this criteria;

The proposed design utilizes the flattest portion of the site to minimize slope disturbance. Where necessary, slope retention is managed with a single level of retaining wall and/or the home foundation. No yard is proposed.

G. Building foundation walls shall be utilized as retaining walls rather than rockeries or retaining structures built separately and away from the building wherever feasible. Freestanding retaining devices are only permitted when they cannot be designed as structural elements of the building foundation;

All slopes with the exception of one area at the west end of the house are managed with the building foundation. A code-required exit at the west end of the home mandates a small retaining wall set to provide a minimal egress walkway.

H. On slopes in excess of 40 percent, use of pole-type construction which conforms to the existing topography is required where feasible. If pole-type construction is not technically feasible, the structure must be tiered to conform to the existing topography and to minimize topographic modification;

The "pole-type construction" requirement is satisfied with the cantilevered soldier piles.

Disturbance on the steep slopes is minimized with the cantilevered soldier piles that conform to the existing topography.

I. On slopes in excess of 40 percent, piled deck support structures are required where technically feasible for parking or garages over fill-based construction types; and

No fill-based construction is proposed.

J. Areas of new permanent disturbance and all areas of temporary disturbance shall be mitigated and/or restored pursuant to a mitigation and restoration plan meeting the requirements of LUC 20.25H.210. (Ord. 5680, 6-26-06, § 3)

A mitigation planting plan has been proposed that meets this requirement.

Under **LUC 20.25H.255** (Decision Criteria – Proposals to Reduce Regulated Critical Area Buffer) the Director may approve, or approve with modifications, a proposal to reduce the regulated critical area buffer on a site where the applicant demonstrates:

1. The proposal includes plans for restoration of degraded critical area or critical area buffer functions which demonstrate a net gain in overall critical area or critical area buffer functions;

A conceptual restoration plan designed to ultimately provide a net gain in buffer functions and overall habitat value is described in Section 5.4 of the CAR. The net gain will come from enhancing areas currently degraded by infestations of invasive, non-native plants; the addition of woody debris to the stream and riparian buffer; and by replacing removed trees at a 3:1 ratio.

2. The proposal includes plans for restoration of degraded critical area or critical area buffer functions which demonstrate a net gain in the most important critical area or critical area buffer functions to the ecosystem in which they exist;

   Steep slopes and stream buffers on the site that are currently degraded by dense infestations of invasive, non-native plants (e.g. English ivy and Himalayan blackberry) will be restored by removing the plants and installing native species designed specifically to enhance wildlife habitat value and slope protection (see Section 5.4 of the CAR).

3. The proposal includes a net gain in stormwater quality function by the critical area buffer or by elements of the development proposal outside of the reduced regulated critical area buffer;

   Although stormwater quality coming from the site is not believed to be compromised, new vegetative plantings in degraded portions of the riparian buffer should provide increased beneficial nutrient and leaf litter inputs and should reduce surface erosion from steep slopes where an informal trail system has left the surface unprotected.

4. Adequate resources to ensure completion of any required restoration, mitigation and monitoring efforts;

   The applicant will post a bond for mitigation and monitoring if required by the City of Bellevue. The bond amount will be determined one the final mitigation plan is prepared.

5. The modifications and performance standards included in the proposal are not detrimental to the functions and values of critical area and critical area buffers off-site; and

   All proposed development is located in an area which slopes toward the on-site stream so drainage issues are not expected to be a problem. Development will eliminate only about five percent of the large trees on the site so a relatively intact canopy will remain. This is important in protecting forested off-site areas from increased damage due to blow down. Steep slopes, including those that extend off-site, will be protected using site-specific design guidelines and monitoring by professional geotechnical engineers. Development of a single small foot-print house in the proposed location near the road is reasonably not expected to have any off-site impacts to critical areas and critical area buffers.

6. The resulting development is compatible with other uses and development in the same land use district.

The applicant is requesting development of one relatively moderately-sized home that is entirely consistent with the home sizes and uses enjoyed on other lots in this neighborhood.

## 2.0 PROJECT LOCATION

The proposed action is located at 439 West Lake Sammamish Parkway in the City of Bellevue (Figure 1). A watercourse meanders on and off the property along the southern boundary.

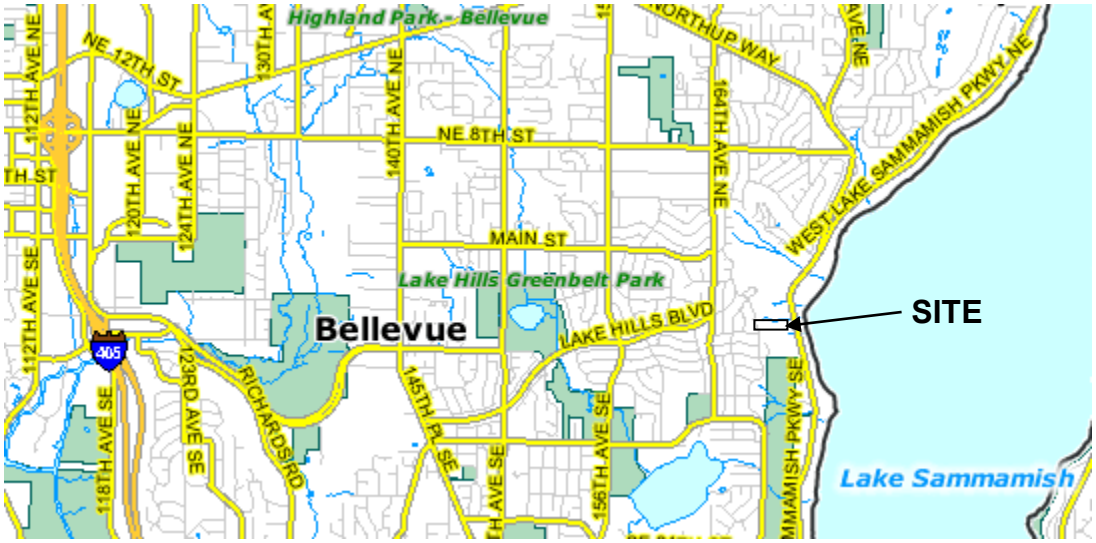



Figure 1. Vicinity Map

## 3.0 EXISTING CONDITIONS

Critical areas include a Type N stream channel, a riparian buffer, two Category IV wetlands, wetland buffers, and slopes in excess of 40 percent exist on the subject property. Adjoining properties also include critical areas including the stream and buffer, possible additional wetlands, and continuation of the steep slopes.

This section provides a description of critical areas and proposed disturbances. Environmental effects are described in Section 4.0.

### 3.1 Stream

Stream surveys were conducted on May 25, 2006, September 4, 2014[3], and August 18, 2020 by Carl Hadley, a professional fisheries biologist. A stream with an average depth of 0.5-inch, a maximum depth of about 2-inches, an average width of 10 inches, and an average gradient of

[3] Cedarock Consultants, Inc. 2014. Water Typing Analysis, 439 West Lake Sammamish Parkway. Consultant report prepared for Heather Washburn. May 25, 2006 and updated on September 22, 2014.

27 percent runs from west to east across parts of the subject property and the property to the south. The stream is collected in the City's stormwater system along West Lake Sammamish Parkway near the eastern property boundary. It then travels at least 300 feet downslope at a 15 percent grade to Lake Sammamish.

Given the small channel size, steep gradient, shallow depth, and lack of habitat, the stream was classified as a Type N waterbody. Type N waters have a 50-foot riparian buffer and a 15-foot building setback under LUC 20.25H.035.

### 3.2 Wetlands

A critical areas evaluation was conducted by Dr. Kenneth E. Neiman, Ph.D., Certified Senior Ecologist, to identify and evaluate any wetlands on the site (Resource Analysis *and* Management 2014[4]). Wetland investigations were conducted using methods outlined in *Washington State Wetland Identification and Delineation Manual (Ecology #96-94)*.

The site was visited on October 18, 2006 and again on September 12, 2014 to perform a wetland determination and search for regulated wildlife habitat for areas that are on or contiguous with the proposed activities. Two Category IV wetlands were observed and flagged. A wildlife survey for sensitive species and their habitat was also completed (See Section 3.4).

The wetlands were redelineated on August 6, 2020 and found to be nearly identical to when last delineated in 2014. The wetlands were rated using the 2014 WADOE Wetland Rating system and found to be Type 4 with a 40-foot buffer requirement. The updated wetland report is attached as Appendix 1.

### 3.3 Steep Slopes

Most of the site (approximately 80 percent) consists of slopes in excess of 40 percent, including most of the proposed building footprint (Design Sheet 2). A subsurface exploration, geologic hazard, and preliminary geotechnical engineering report was prepared to provide information to be utilized in the preliminary design and construction of the residence (Associated Earth Sciences, Inc. [AESI] 2014). The study included a review of City codes, available geologic literature, drilling three exploration borings, and performing geologic studies to assess the type, thickness, distribution, and physical properties of the subsurface sediments and ground water conditions. Geotechnical engineering studies were also conducted to determine allowable foundation soil bearing pressures, suitable types of foundations, lateral earth pressures, shoring design, and recommendations for site preparation, drainage considerations, and erosion control.

[4] Resource Analysis *and* Management. 2014. Critical Areas Evaluation - Tax Parcel #3625059169, City of Bellevue. Consultant report prepared for Heather Washburn. October 23, 2006 updated on September 14, 2014.

The field study included drilling three exploration borings to gain information about the site. All exploration borings encountered medium stiff silt, interpreted as weathered transitional beds. The depths of the weathered transitional beds ranged from 12 to 15 feet. One boring encountered a hard, clayey silt interpreted as unweathered transitional beds at approximately 12 feet below the existing ground surface elevation. The transitional beds generally consist of a silt, clayey silt, and/or silty clay deposited in lowland or proglacial lakes. Transitional bed deposits typically possess high-strength and low-compressibility attributes, which are favorable for support of foundations, floor slabs, and paving with proper preparation. These sediments extended beyond the maximum depths explored of approximately 30 feet below the existing surface elevation at one boring and extended to a depth of approximately 16 feet at a second boring. Dense to very dense sand with gravel interpreted as Olympia beds were encountered below the colluvium at approximately 16 feet below the existing ground surface elevation at the second boring. Olympia beds generally consisted of dense to very dense sand and gravel. Olympia beds typically possess high-strength and low-compressibility attributes, which are favorable for support of foundations, floor slabs, and paving with proper preparation. These sediments extended beyond the maximum depths explored of approximately 20 feet below the existing surface elevation at the second exploration boring.

Ground water seepage was not encountered in any of the exploration borings.

The project site was characterized by a sloped topography, stiff or dense soils, and absence of ground water, and therefore was interpreted by AESI (2006) as a low landslide hazard risk. These factors, combined with no evidence of previous landslide activity on the site, present a relatively low risk of landsliding. The majority of the lower, east side of the site and upper, west side contain steep slopes, defined by the City of Bellevue as slopes of 40 percent or steeper.

In support of this new design, a geotechnical engineer revisited the site in early August 2020 and did not observe any obvious evidence of past slope instability. They found the site to be stable in its current configuration and still suitable for construction of the proposed residence. The updated geotechnical report is attached as Appendix 2.

### 3.4 Wildlife Habitat

The wildlife habitat review consisted of a site-specific survey (Resource Analysis and Management 2014, Cedarock Consultants 2020) and consultation with the Washington Department of Fish and Wildlife (2020)[5]. The Nadlan Group, LLC site is surrounded by land developed mostly as high-density single-unit residential housing. Although suitable wildlife habitat for terrestrial and avian species is found on this and adjacent property, it provides no corridor to or from adjacent tracts of much larger (greater than 250 acres) habitats. Species that may be expected to be found intermittently on this site are: deer, bear, coyote, mountain

[5] Washington Department of Fish and Wildlife. 2021. Priority habitat and species map for T25R05E, Section 36. September 22, 2014.

beavers, eastern grey squirrels, other assorted rodent species, raptors, woodpeckers, and song birds. There are several large conifer trees suitable for red-tailed hawk or owl nesting within the steep slope portion of the property, but no nesting activity by these species is occurring nor is known to have occurred in the recent past. Large trees in the area undoubtedly provide short-term perching sites for bald eagles, but none of these are known to be critical nesting or roosting habitat sites (WDFW 2021). Pileated woodpecker foraging activity was observed on scattered dead tree trunks, but there are no suitable sites for pileated woodpecker nesting in the area. No other species listed by the U.S. Fish and Wildlife Service, Washington Department of Fish and Wildlife, King County, or City of Bellevue as threatened, endangered, sensitive or candidate are expected to utilize habitats found on this property. WDFW has classified much of the undeveloped hillside in the area that includes the Nadlan Group, LLC property as Urban Natural Open Space (UNOS). UNOS is listed as a priority habitat but no specific management guidelines are recommended. There are no priority species uses listed for this habitat unit in general or on the Nadlan Group, LLC property in specific (WDFW 2014).

## 4.0 EFFECTS ON CRITICAL AREAS

Critical areas on the site, critical area buffers, and proposed modifications to the buffers are quantified in Table 1. Effects of proposed development (including requested variances) on the functions and values of the critical areas and general mitigation measures are described below. A conceptual mitigation plan is provided in Section 5.0.

Table 1. Critical Area Impacts
*(Maximum impacts based on conceptual design)*

| Type of Impact | Disturbance Area (sq.ft.) | |
|---|---|---|
| | **Temporary** | **Permanent** |
| Steep Slope | 809 | 450 |
| Steep Slope Buffer | 0 | 0 |
| Active Stream Channel [(a)] | 0 | 0 |
| Stream Channel [(b)] | 1,201 | 250 |
| Stream Buffer | 3,848 | 2,794 |
| Wetland | 0 | 0 |
| Wetland Buffer | 0 | 0 |
| **Total [(c)]** | **4,304** | **2,858** |

[(a)] The portion of channel below ordinary high water where instream flow commonly occurs (RCW 77.55.011[11]**)**.
[(b)] Below top of bank per City of Bellevue Land Use Code.
[(c)] Totals include areas where buffers overlap – disturbance impacts are not counted twice.

## 4.1 Streams

Non-fish-bearing stream channels and their riparian buffers are important to the contribution of clean, cool, and productive flows to fish habitat downstream as well as providing wildlife habitat. Primary ecological functions provided by Type N stream channels and their buffers are described below along with a description of existing conditions for each function and an evaluation of the impact created by the project. Riparian functions and values are based on WDFW guidelines[6].

### 4.1.1 Water Quality

Vegetation adjacent to streams can improve water quality by filtering pollutants, removing nutrients, and preventing sediment introduction. The water quality function of the existing on-site buffer is generally fair to good. While not dense due to the naturally shady character of the site, existing vegetation is for the most part native and well established. The thick, relatively undisturbed forest duff layer absorbs most rainfall so very little surface flow naturally occurs on the site.

The proposed action includes both temporary and permanent development within the stream buffer. Areas of temporary disturbance will be restored and replanted. Rain falling on these areas will continue to infiltrate and discharge to the stream channel. Drainage from new impervious surfaces including the house and driveway will be collected and routed downslope to the storm drain along West Lake Sammamish Parkway. No impervious surface will discharge to the buffer for treatment. Therefore, the water quality function of the remaining buffer will not change. Water discharged to the storm drain is piped directly to Lake Washington.

Under standard reasonable use exception rules a wider buffer would remain adjacent to the creek. As for the proposed action, neither case would result in water discharging from developed areas to the buffer. So no difference in water quality function would result with development under the proposed alternative.

### 4.1.2 Water Quantity

Natural vegetation and undisturbed soils moderate the rate at which rainfall is released to streams. As vegetation is removed, and soils compacted or paved, runoff from the area typically increases resulting in physical channel changes and possible impacts to fish and macroinvertebrate habitat.

Stream flows in the onsite creek are controlled primarily by upslope groundwater contributions. No springs or tributaries feeding the creek will be impacted by the proposed action. While an increase in impervious surface is proposed, stormwater from the new paved surfaces will be collected and delivered to the stormwater system adjacent to West Lake Sammamish Parkway.

[6] Knutson, K. L. and V. L. Naef. 1997. Management recommendations for Washington's priority habitats: riparian. Washington Department of Fish and Wildlife, Olympia, WA. 181p.

The stormwater system downstream of the site is tightlined downslope to Lake Sammamish so no effect on channel morphology is possible. The action under both standard proposed reasonable use exception rules is not expected to have any adverse effect on instream flow rates or volumes.

### 4.1.3 Food

Type N streams are very important to stream productivity being the primary source of leaf litter and insects delivered to fish habitat downstream. Overhanging vegetation contributes leaves, vegetative litter, and small woody debris directly to the channel. This material forms the source of food for aquatic invertebrates, which are in turn eaten by fish. Terrestrial insects, another food source, also utilize riparian vegetation as habitat. The majority of material comes from directly over the stream. Function diminishes rapidly after about 25 feet from channels edge though some benefit is still realized up to about 50 feet away.

Because of the relatively mature forest class, and the relatively incised character of the channel, overhanging vegetation consists of small shrubs and forbs immediately adjacent to the channel, and the tree canopy layer 50 to 100 feet above the channel. No permanent disturbance of the stream bank within 9 feet of the flowing channel will occur so existing functions of the small shrub/forb layer will continue unchanged. A maximum of six large trees within 50 feet of the channel will be removed. All six of the trees contribute organic material to the channel.

The homeowners have located the house and driveway away from the highest density of large trees which is located further upslope. In addition, a buffer enhancement plan includes additional planting adjacent to the creek in the area to be exposed to increased lighting due to new canopy openings. Expanded buffers and permanent protection of plantings on the upper slope beyond the house will insure this densely vegetated area will continue to contribute material to the creek.

The loss of vegetative material from four to six removed trees is expected to be fully mitigated over time by the additional streamside plantings. In the short term, the additional LWD to be added by the applicant will help capture and hold small organic material, thus immediately improving aquatic macroinvertebrate habitat. No adverse change in food supply is expected and the proposed action will result in similar effects to standard reasonable use exception rules.

### 4.1.4 Microclimate

Riparian vegetation protects streams from climate changes caused by widespread development away from the stream, including soil and air temperature, humidity, and wind. There is no direct link between microclimate and the condition of salmonid habitat, however, it has been suggested that microclimate needs protection to maintain desirable assemblages of plants and animal species, including insects, beneficial to fish.

The removal of the four to six mature trees from within 50 feet of the creek will expose the channel to additional air movement and solar radiation. Preservation of additional large trees that normally might have been removed to develop this lot will help preserve the microclimate of the site. With the additional plantings proposed adjacent to the stream, the permanent protection of the upper forested slope, and the small footprint of the overall project, it is not expected any significant affect on microclimate will occur.

Under standard reasonable use exception rules additional large trees could be removed. Thus, the proposed action is expected to provide a small improvement over conditions that would occur under standard rules.

### 4.1.5 Temperature & Shade

All flow from the site drains to a storm drain system that flows a minimum of 300 feet underground before discharging to Lake Sammamish. Neither the proposed action or an action under standard reasonable use exception rules would be expected to have an adverse effect on water temperature in Lake Sammamish for three reasons:

1. All trees to be removed are located north of the stream channel thus contribute minimal shade to the stream,
2. The stream contains little flow during the summer. Thus, the net effect of the stream on water temperature in the 283,860 acre-ft Lake Sammamish would be insignificant,
3. While water temperature in the creek is not expected to be affected by removal of the trees or changes in microclimate, any slight change would be overwhelmed by the effects of travel through the buried culvert after flow leaves the site. The temperature of the buried culvert would be maintained at ground temperature year-round so the small amount of flow passing over the pipe would rapidly chill back to this temperature.

### 4.1.6 Human Access Control

One function of buffers in populated areas can be reducing the direct encroachment of humans on the watercourse. Buffers generally function most effectively when the adjacent land use consists of low intensity development. Because the proposed action and one developed under standard reasonable use exception rules consists of low density housing, and the lot is not generally accessible to other neighbors, the proposed action will have little effect on access control.

### 4.1.7 Woody Debris

Large and small woody debris consists of downed tree stems and branches and is a functionally important structural component of stream channels in the Pacific Northwest. In non-fish-bearing stream channels such as near the project site, woody material acts as a surface for biological activity which contributes to the productivity of a stream system. In a mature coniferous forest, the majority (70 to 90 percent) of wood in a stream comes from within 50 feet of the stream.

The existing channel contains a moderate quantity of instream wood. Numerous large trees on the property offers good future opportunity for recruitment of relatively high value coniferous debris and stems. All of the large trees proposed for removal might potentially have contributed woody debris to the channel under existing and future conditions. However, the trees are on the north side of the channel and prevailing strong winds usually come from the south. Therefore, the majority of their material shed by these trees might normally be expected to fall away from the channel.

As partial mitigation for removal of each large tree, the applicant will contribute and place three pieces of large woody debris (LWD) into the active channel. The logs/branches will be culled from trees being removed from the site and will meet specifications in the mitigation plan. New trees will be planted in the riparian buffer at a 3:1 ratio with removed trees to provide long term replacement of the woody debris function.

With the active placement of LWD, removal of only four to six trees, and preservation of all trees on the south side of the stream, the proposed action will have an insignificant adverse effect of woody debris recruitment to the channel.

#### 4.1.8 Bank Stability

Roots from vegetation growing along the streambank help stabilize soils and reduce erosion. Root strength benefits are normally low beyond 40 feet from the channel. Due to the small size and generally low energy of the channel, virtually all root strength on this site comes from within 5 to 10 feet of the channel.

Under the proposed action, the applicant will stay at least 9 feet from the active channel. Some bank reinforcement will be completed as required in this area to maintain slope stability. Additional mitigation plantings will be provided to the remaining buffer wherever disturbance occurs.

### 4.2 Wetlands

All proposed construction is approximately 90 feet downslope of the wetlands and will have no effect on the two wetlands, their buffers, or hydrology.

### 4.3 Steep Slopes

Development of the site will require driveway access and building construction in steep slope areas. AESI (2006) provided a number of site-specific mitigation measures based on their site review under which construction of the residence and associated driveway and utilities could occur on the mid to lower (east) portion of the site with a relatively low risk of slope failure. These measures included routing stormwater away from steep slopes, maintaining as much existing vegetation as possible, minimizing fill, and utilizing appropriate structural footings. Additional measures were suggested to prevent soil erosion during and after construction. Preliminary site design recommendations were provided by AESI with a recommendation that

additional geotechnical consultation be completed as the project design develops into the final product. With recommended mitigation measures, the site is believed to be suitable for construction of the proposed house within generally acceptable risks.

### 4.4 Wildlife Habitat

The large trees and dense patches of vegetation provide good urban wildlife habitat. Trees near the creek provide perching and nesting habitat for native and neo-tropical migrant birds. Woodpeckers, and possibly pileated woodpeckers may utilize some of the larger trees on the site. No other species of local importance (20.25H.150(A)) are known to, or likely to occur on or in the immediate vicinity of the site (WDFW 2021).

While the proposed development will eliminate several trees on the site and will bring additional human disturbance, permanent protection of the most valuable portion away from West Lake Sammamish Parkway will be preserved. Increased planting of native species adjacent to the creek will enhance wildlife habitat by providing both refuge habitat and a source of increased prey and vegetative material (for example fruit on huckleberry and currant).

With proposed mitigation, the overall effect on wildlife habitat of the proposed action is small. There is no critical wildlife habitat on the site (Resource Analysis and Management 2014, WDFW 2014).

### 4.5 Effects Summary

With the mitigation package consisting of avoidance of most large trees, enhanced planting near the stream, and placement of LWD, habitat value for most riparian functions under the proposed development action is expected to be relatively indistinguishable from existing conditions. Given that the entire watercourse downstream to Lake Sammamish is non-fish-bearing and in a culvert, the effect of the proposed action on fish, wildlife, and natural habitat will be negligible. No net loss of critical area function is expected as a result of the development.

While most of the building site consists of steep slopes, soils at depth are solid and there is no indication of past landsliding on the site. With site-specific design and construction measures provided by the geotechnical engineer, the site is believed to be suitable for construction of the proposed house within generally acceptable risks.

The two on-site wetlands will not be affected by the proposed action.

There is no critical wildlife habitat on the site and proposed conservation measures will protect almost all large trees during development. With proposed stream and riparian buffer enhancements, the final site condition will maintain the mature canopy over 95 percent of the lot and create a younger age category of habitat near the eastern boundary. Despite permanent

impacts to approximately 3,000 square feet of the lot, overall habitat quality is expected to be preserved.

Avoidance of steep slopes would require the entire project be constructed along the extreme eastern edge of the property where additional stream buffer and mature trees would be impacted. Because the proposed building site is stable, and allows construction further from the channel, this alternative is preferable as a way to protect sensitive areas.

### 4.6 Cumulative Effects

While some portion of the instream flow may come from the plateau upslope, the majority of flow in the on-site channel appears to originate from groundwater springs in the upper portion of the property to the south. And as described previously, upon leaving the site, all flow enters the city storm drain system where it is carried to Lake Sammamish. Thus, the above ground portion of the creek only exists on the subject and neighboring properties. Because the channel on the neighboring property is located on the steepest portion of the site (slopes much greater than 40 percent), any development would most likely occur well away from the channel to the east; thus no cumulative effects from future development near the channel are expected.

The proposed building is located downslope of the wetlands and will not affect them in any way. No critical wildlife habitat is present on the site. So no cumulative effects to wetlands or critical wildlife habitat is possible. The project has been designed with site-specific measures to protect slope stability. Any future projects in the vicinity would require the same analysis and mitigation actions. Thus, no cumulative effects are expected from the proposal to build on steep slopes.

## 5.0 MITIGATION PLAN

The goal of the Conceptual Mitigation Plan is to avoid, and then where necessary, to compensate for impacts to stream buffers, wetlands, steep slopes, and wildlife habitat created by development of the proposed action. Potential impacts to fish, wildlife, wetlands, and steep slopes, along with conceptual mitigation measures were described in Section 4.

### 5.1 Mitigation Process and Philosophy

Impact avoidance was the primary concern when designing the proposed development footprint. The two wetlands and the active stream channel (below ordinary high water) are completely avoided. But, because of the narrow lot and preponderance of steep slopes, impacts to the stream buffers could not be avoided altogether. So an effort was made to identify the least potential harm to the environment. When geotechnical engineers found a stable area for development near the east side of the property, the next concern was minimizing impacts to the stream buffer and particularly mature trees. While brush and young

trees can be replaced, the site has an unusually large component of mature trees which the landowner wanted to preserve wherever possible.

### 5.2 Impact Avoidance

- No disturbance to the two wetlands and their buffers is proposed.
- No disturbance to the Type N stream channel below ordinary high water is proposed.

### 5.3 Impact Minimization

- The home was designed:
    - to be as close to the West Lake Sammamish roadway as possible;
    - to be as far from the stream as possible;
    - to be within the stable area identified by the geotechnical engineer;
    - to avoid the large contiguous forested area on the upper slope; and
    - to avoid as many of the large trees as possible on the lower slope.
- Permanent disturbance to the landscape will not exceed 3,000 square feet.

### 5.4 Impact Compensation

As quantified in Table 1, not all impacts could be avoided. While the active portion of the stream channel (below ordinary high water) could be avoided altogether, the regulated portion between ordinary high water and top of bank will be impacted. In keeping with the design philosophy of remaining as far from the stream as possible, the design maintains the structure well outside any potential for flow (the structure is a minimum of five feet above ordinary high water).

Compensation for impacts described in Section 4 is described in the following sections. Compensation takes two forms: repairing temporary disturbances to the riparian buffer (e.g. replanting) and compensating for enduring impacts to the buffer by providing permanent protection of substitute buffer area, and keeping stormwater away from steep slopes.

#### 5.4.1 Stream Mitigation

Functions and values of the on-site sensitive areas are described above in Section 4.0. Stream-related functions and values, and project impacts to these functions and values are described in Section 4.1. The conceptual mitigation design is described below. Final details to include a site-specific planting plan will be submitted with the final building plans.

*Compensation*:

1. Non-native plants will be removed from the riparian buffer. All non-native, noxious, and invasive plants as described by the Washington State Noxious Weed Control Board (*http://www.nwcb.wa.gov*) will be hand-removed from within 50-feet of the developed footprint of the project before new planting begins. The plants and roots will be dug up

and removed from the site to prevent accidental spreading of cuttings or seeds. No herbicides will be allowed.

2. The riparian plant community within 50-feet of the developed footprint of the project will be enhanced, including all areas of temporary disturbance. A final buffer restoration plan will be prepared after the total extent of disturbance can be quantified. All non-developed areas on the Nadlan Group, LLC property within 50-feet of the final project footprint will be enhanced with native species plantings. This will include all areas within the riparian buffer where disturbance took place (and where no permanent development occurs) and other nearby areas that might benefit from additional planting. Existing native shrubs and trees will be counted in this area and additional plantings added to meet plant density requirements. Species shall be selected to enhance riparian function and value including bank stability, shading, nutrient contribution and wildlife habitat.

   The following three categories of plants will be counted within the buffer and enough additional plants added to achieve the final density as shown in Table 2.

Table 2. Planting Schedule

| **Species [1]** | **Size** | **Final Buffer Density [2]** | **Final Count** |
|---|---|---|---|
| Trees (conifer) | Minimum 4 ft to 6 ft height | 0.01 tree / sq.ft. | Minimum 12 trees (3:1 ratio) |
| Larger shrubs (e.g. willow, red-osier dogwood, salmonberry, elderberry, hazelnut, Nootka rose, vine maple, etc.) | 2 gallon | 0.05 plants / sq.ft. | To be determined [2] |
| Smaller shrubs (sword fern, sallal, snowberry, Oregon grape, etc.) | 1 gallon | 0.05 plants / sq.ft. | To be determined |

[1] Prior to planting, the site shall be surveyed and species selected to meet specific site growing conditions. A minimum of three tree, five larger shrub, and five smaller shrub species will be selected for diversity.

[2] Final number of new plants to be added will be based on final design. Additional plants will be added if actual disturbance exceeds expectations during construction.

   Planting will occur during the appropriate season within twelve months after all work in the buffer is complete. A final buffer restoration plan will be prepared and submitted for review to the City after the total area of disturbance can be quantified.

3. The applicant will contribute and place large woody debris (LWD) into the active channel within the area where the large trees will be removed at a 3:1 ratio with the number of trees removed. Logs and rootwads used for enhancement purposes shall consist of parts

of the trees actually removed from the property (big leaf maple and western red cedar). Specifications for the LWD are described in Table 3.

Table 3. Large Woody Debris Specifications

| **Log Specifications** | **4-8" DBH >6 feet length w/o rootball** | **8"-12" DBH 10-15 feet length w/o rootball** | **>12" DBH 10-15 feet length w/ rootball** |
|---|---|---|---|
| # Logs | 33% | 33% | 34% |

Root wads shall have a relatively even spread of roots with a minimum rootball diameter of four feet. Limbs shall be maintained on the stems to the greatest extent practical. Excess dirt shall be shaken off root wads prior to placement in the channel. All logs shall be placed by equipment operating outside of the ordinary high water. Logs shall be placed along waters edge at and below the ordinary high water mark. Exact log placement and grouping size shall be field adjusted by a biologist representing WDFW or the applicant during placement.

Due to the low energy of the subject stream, logs shall not be anchored. Instead, they shall be placed such as to provide natural resistance to movement. This can be accomplished by wedging longer logs into the banks and using small jams and root wads to create stability.

4. Monitoring will be conducted for five years with the purpose of ensuring the new plant community thrives and invasive species are discouraged (see Section 6 for details). Performance standards are described in Section 6.2.

### 5.4.2 Wetlands

Wetland mitigation consists of complete avoidance of all on-site wetlands and their buffers.

### 5.4.3 Steep Slopes

Development will occur on steep slopes. To mitigate potential damage, geotechnical engineers designed a number of site-specific measures necessary to protect slopes from failing and/or eroding. These measures are described in detail by AESI (2006 and 2014) and are summarized below. The report includes erosion and sediment control (ESC), and slope drainage measures specific to the site. A final ESC and drainage plan taking these measures into consideration will be submitted to the City as part of the engineering design package to be provided later as part of the building plan.

***Landslide Hazard Mitigation Measures***

From AESI (2006) Section 6.0.

1. All surface and roof water is properly tightlined to an approved discharge location and is not allowed to flow over the slope face or near the slope crest.
2. The existing drain lines originating from outside of the site property should be rerouted in a way as not to direct any runoff onto the slope areas on the property.
3. Yard (lawn) areas should be graded such that irrigation water will flow away from the slope crest and into the site storm system.
4. As much of the existing vegetation should be retained as possible.
5. Areas where vegetation is removed should be replanted with deep-rooted, low-maintenance ground cover.
6. Excavations for structures should be sloped and/or shored, as recommended in this report.
7. Driveway grading should follow existing topography as much as possible to minimize grade separation walls.
8. Permanent landscape fills (non-structural) should be kept to a minimum and graded no steeper than 3H:1V (Horizontal:Vertical). Steeper, structural fills may be suitable with specific review and approval by AESI.
9. The structure footings should be placed on medium stiff to hard natural sediments or pile-supported where bearing soils are too deep for conventional footings. Footing and pile design should follow the recommendations in this report.

***Erosion Hazards and Mitigation***

From AESI (2006) Section 7.0.

1. Surface water should not be allowed to flow across the site over unprotected surfaces, nor should surface water be allowed to flow onto or over steep slopes.
2. All storm water from impermeable surfaces, including driveways and roofs and landscape areas, should be tightlined into approved facilities and not be directed onto or above cut or sloped areas.
3. Clearing beyond the areas to be developed should be avoided. Disturbed areas should be revegetated as soon as possible.
4. If possible, construction should proceed during the drier periods of the year.
5. A rocked construction entrance should be constructed to prevent tracking of soil onto adjacent right-of-ways.
6. Silt fences should be placed and maintained around the downslope perimeter of the proposed construction area and along the creek throughout the entire construction phase of the project until permanent landscaping and permanent storm water collection facilities have been installed.

7. Soils that are to be reused around the site should be stored in such a manner as to reduce erosion from the stockpile. Protective measures may include, but are not necessarily limited to, covering with plastic sheeting, the use of low stockpiles in flatter areas, or the use of straw bales and/or additional silt fences around pile perimeters. Soils should not be stockpiled on or nearby the steeply sloping or cut portions of the site.
8. Areas stripped of natural vegetation during construction should be replanted as soon as possible, or otherwise protected.

#### 5.4.4 Wildlife Habitat

No critical wildlife habitat would be affected by the proposed action. Impacts to non-critical wildlife habitat will be mitigated by the riparian buffer improvements and set-asides discussed in Section 5.1.

# 6.0 MONITORING

Two types of monitoring will be required for this project. The first consists of construction monitoring to ensure steep slopes are protected during construction. The second consists of long term monitoring of riparian buffer plantings.

## 6.1 Construction Monitoring

At the time of this report, site grading, structural plans, and construction methods have not been finalized, and steep slope protection recommendations presented by AESI (2006 and 2014) are preliminary. Geotechnical review of the plans prior to final design completion was recommended by AESI to ensure proper interpretation and implementation of earthwork and foundation recommendations are reflected in the final design. It was also recommended that geotechnical engineering and monitoring services be provided during construction. The integrity of the foundations depends on proper site preparation and construction procedures. In addition, engineering decisions may have to be made in the field in the event that variations in subsurface conditions become apparent.

## 6.2 Riparian Buffer Monitoring

#### 6.2.1 Sampling Methodology

New plantings will be monitored in the fall once a year for a five year period. Monitoring will be conducted to quantify the survival, relative health and growth of plant material. An annual monitoring report submitted to the City following each years monitoring visit will describe and quantify the status of each mitigation component. The monitoring report will document the changes occurring within the planting areas and make recommendations for improving the

degree of success or correcting any problems noted during monitoring. Monitoring reports will document how the riparian planting is meeting the goals and objectives of the plan.

Vegetation monitoring will consist of plant inspection to determine the health and vigor of the installation. All planted material in the buffer will be inspected during each monitoring visit to determine the level of survival of the installation. Each plant will be rated either dead, dying, or healthy. Dead or dying material will be replaced the following fall unless plant crowding is believed to be a problem. Plant species substitutions may be made if site conditions are believed responsible for plant mortality. Replacement plants must be approved by the City. Volunteer native, non-invasive species will be included as acceptable components of the mitigation project.

At least three photo points will be established giving complete coverage of the buffer area. Photos will be taken at each point during every monitoring visit and submitted as part of the annual monitoring report.

### 6.2.2 Standards of Success

- Logs shall persist in the stream channel upstream of the West Lake Sammamish Parkway right-of-way (ROW). Though logs are expected to shift periodically, and some movement downstream is expected, any logs which migrate to the ROW shall be retrieved and replaced in a new location within the mitigation area. Anchoring may be considered if migration becomes chronic.
- A thriving native riparian habitat is present within the planting area defined in the final landscape plan (to be prepared after construction of the house).
- Within the buffer area there is one hundred (100) percent survival after Year 1, ninety (90) percent survival after Year 3, and eighty (80) percent survival for all planted woody vegetation (shrubs and trees) at the end of Year 5.
- Within the buffer area there is not more than 2 percent cover of non-native invasive species at the end of each monitoring year.
- No significant areas of erosion (defined as material loss of greater than one cubic yard) occurs in the buffer area.

Volunteer native, non-invasive species will be included as acceptable components of the mitigation if they are thriving at the end of the monitoring period.

## 7.0 CONTINGENCY PLAN

A contingency plan would be implemented if necessary. Contingency plans would be developed based on the specific failure to meet success standards described in Sections 6.1 and 6.2.2 of this plan. Contingency plans could include changes to the foundation design, erosion control, additional plant installation, and plant substitutions including type, size, and location.

If monitoring results indicate that any of the performance standards are not being met, it may be necessary to implement all or part of a contingency plan. Careful attention to detail and site maintenance is essential in ensuring that problems do not arise. Should any of the site fail to meet success criteria, a contingency plan will be developed and implemented with City approval. Such plans are prepared on a case-by-case basis to reflect the failed mitigation characteristics.

Contingency/maintenance activities may include:

- Engineering plan revisions for foundations, drainage, slope protection, etc.
- Replacing all plants lost to browsing, drought, or disease, as necessary.
- Replacing any plant species with a 20 percent or greater mortality rate with the same species or similar species approved by the City Biologist.
- Irrigating the planting area only as necessary during dry weather if plants appear to be too dry, with a minimal quantity of water.
- Streambank erosion protection measures.
- Removing trash or other undesirable debris from the buffer areas as necessary.

## 8.0 MITIGATION COST ESTIMATE

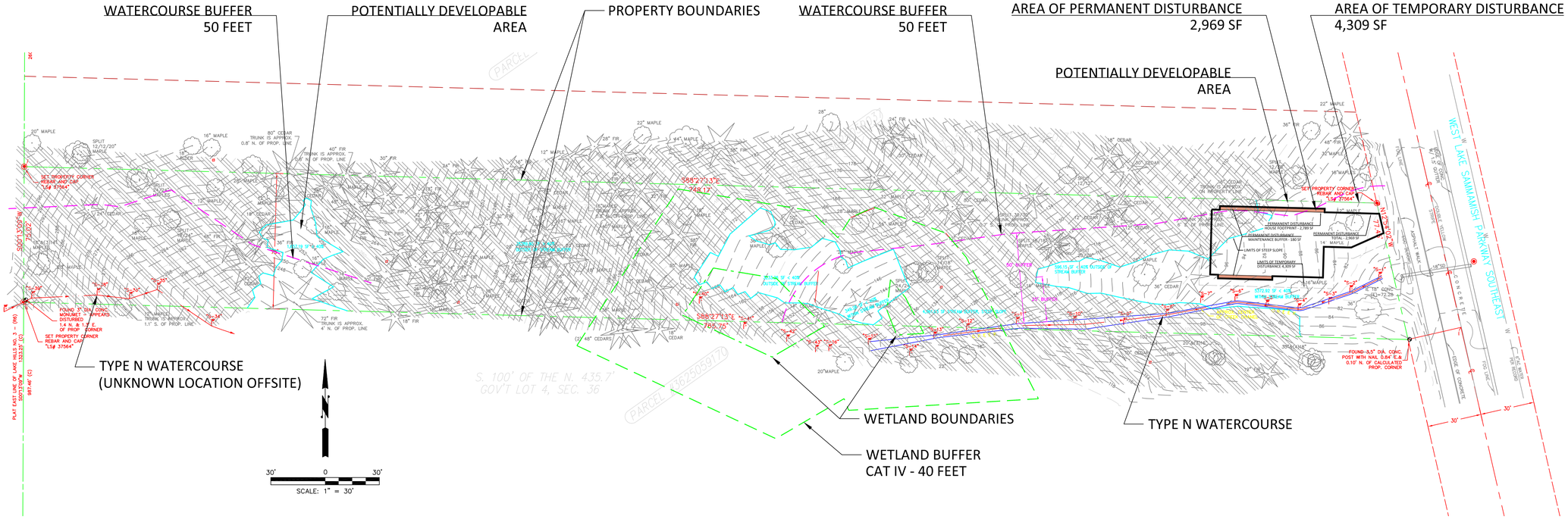
A cost estimate for the riparian planting plan shall be provided with the final mitigation plan.

# APPENDICES

**Critical Areas Map**
**Site Disturbance Limits**
**Conceptual Planting Plan and Details**
**Updated Wetland Report (Sewall Wetland Consulting. August 21, 2020)**
**Updated Geotechnical Report (PanGEO Inc. August 13, 2020)**

A PORTION OF THE SW 1/4 OF SEC. 36, TWN. 25N, RGE. 5E, W.M.
439 WEST LAKE SAMMAMISH PARKWAY SE
CITY OF BELLEVUE, KING COUNTY, WASHINGTON

# NADLAN GROUP, LLC RESIDENCE
# Critical Areas Map




## LEGEND (SURVEY):

- (C) CALCULATED INFO.
- (M) MEASURED INFO.
- (R#) REFERENCED DOCUMENT
- REBAR W/CAP
- MONUMENT
- WETLAND FLAG
- TREE, CONIFEROUS
- TREE, DECIDUOUS
- STEEP SLOPE >40%

## CRITICAL AREA SUMMARY TABLE

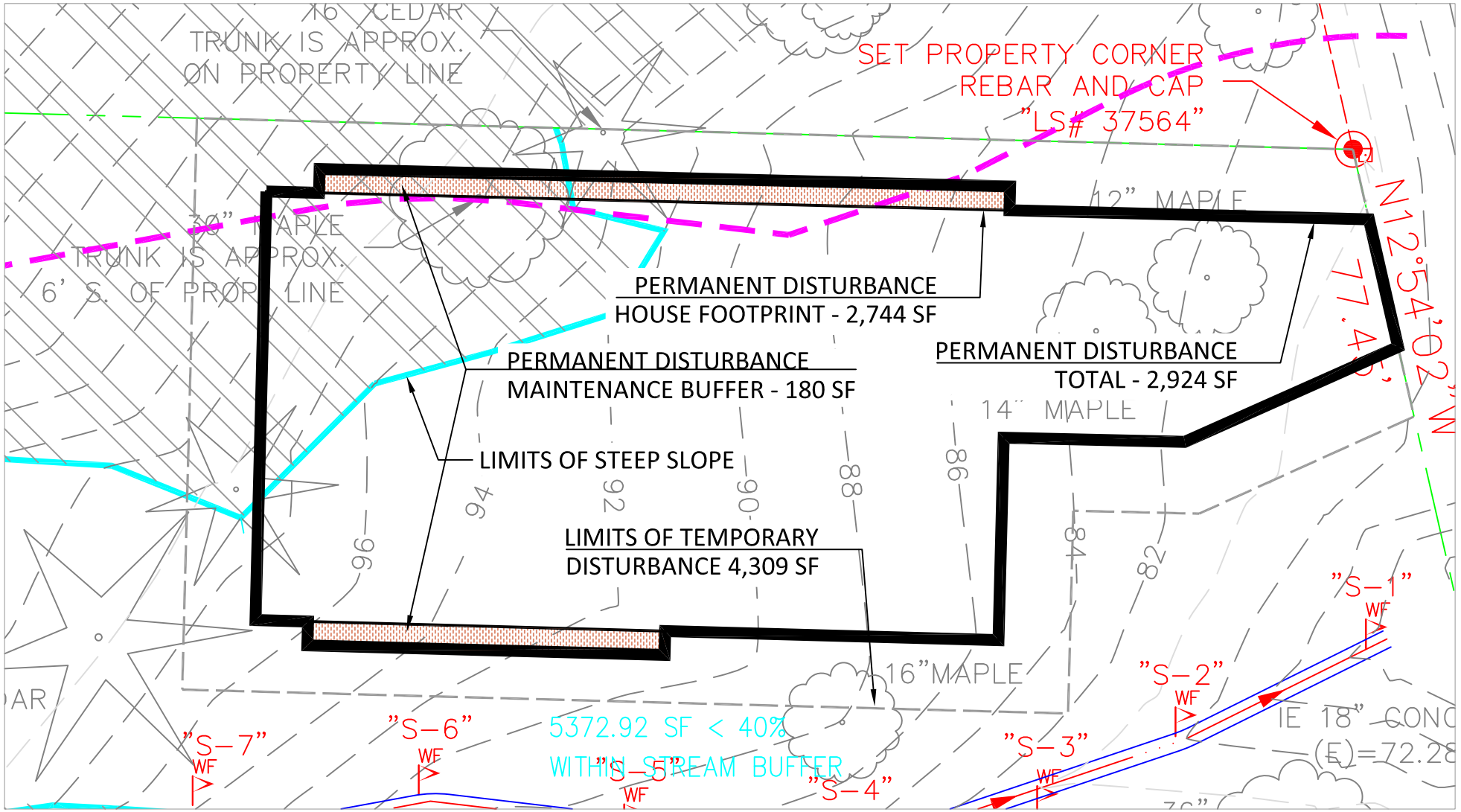
| | SF | % OF SITE |
|---|---|---|
| TOTAL SITE AREA | 56,772 | 100 |
| TOTAL CRITICAL AREAS | 56,556 | 99.62 |
| NON CRITICAL AREA | 216 | 0.38 |

## SITE INFORMATION:

| | |
|---|---|
| KC PARCEL #: | 3625059169 |
| SITE AREA: | 56,771.85 SF (1.30 AC) |
| BELLEVUE ZONING: | R-1.8 (RESIDENTIAL ESTATE) |
| BELLEVUE COMP PLAN: | SF-L (SINGLE FAMILY-LOW) |

Drawing Date: March 17, 2021

# DISTURBANCE LIMITS




Temporary Disturbance - 4,309 sf
Permanent Disturbance (House) - 2,744 sf
Permanent Disturbance (Maintenance Buffer) - 180 sf
Permanent Disturbance (Total) - 2,924 sf
Steep Slope Disturbance - 809 sf
Impervious Surface - 2,894 sf

Nadlan Group LLC
439 W. Lk. Samm. Pkwy SE
Bellevue, WA
Permit #20-115301 LO
March 17, 2021

# LWD SPECIFICATIONS

- LOG W/O ROOTBALL: >12" DBH 15-20 FEET LONG; CEDAR OR FIR - 4 PIECES
- LOG W/ ROOTBALL: >12" DBH 10-15 FEET LONG; CEDAR OR FIR - 2 PIECES

AREA OF TEMPORARY DISTURBANCE
1,520 SF

Project:
MITIGATION PLANTING PLAN

Client:
NADLAN GROUP, LLC

CEDAROCK CONSULTANTS
19609 244th Avenue NE
Woodinville, WA 98077
(425) 788-0961

Designed: CGH
Date: 03/16/21

Sheet No.:
1
NO: 1 OF 3 Sheets

GRAPHIC SCALE 1"=10'
10' 0' 10' 20'

| No. | Revision: | Int. | Date: |
|---|---|---|---|
| 1 | FIRST ED. | | 03/16/21 |

HOUSE NORTH 543 SF

FAR EAST
1,617 SF

AREA OF PERMANENT DISTURBANCE (2,789 SF)
HOUSE, DRIVEWAY, RETAINING WALLS

50'

MIDDLE EAST
1,191 SF

HOUSE SOUTH 1,110 SF

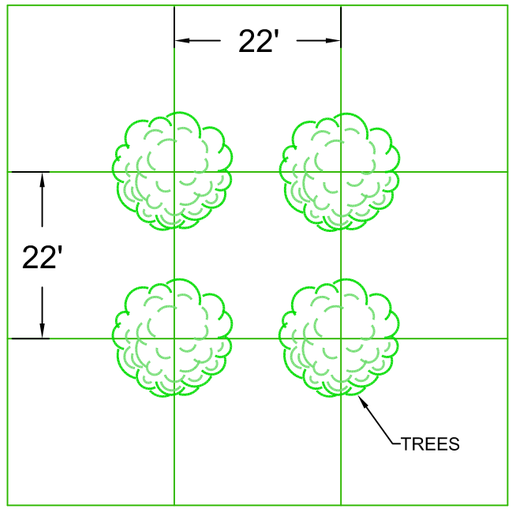
RIPARIAN NORTH
1,182 SF

RIPARIAN SOUTH
2,626 SF

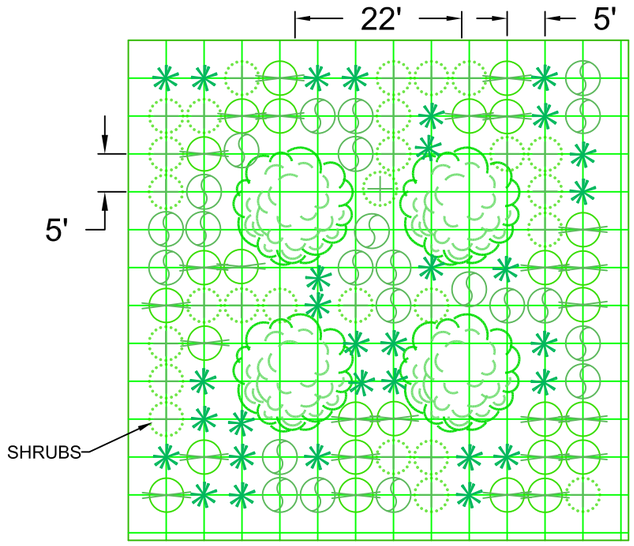
# PLANTING DENSITY BY AREA

| | | |
|---|---|---|
| Project: MITIGATION PLANTING PLAN | CEDAROCK CONSULTANTS | Designed: CGH Date: 03/16/21 |
| Client: NADLAN GROUP, LLC | 19609 244th Avenue NE Woodinville, WA 98077 (425) 788-0961 | Sheet No.: 2 NO: 2 OF 3 Sheets |

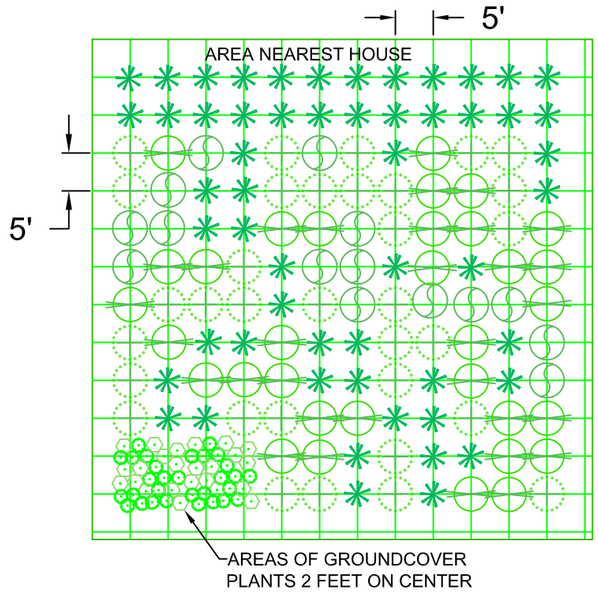
## Riparian South




## Riparian North, Middle East, Far East Areas




## House South and House North Areas




## RECOMMENDED PLANT SPECIES

| SHRUB / GC NAME AND SPECIES | SIZE | # |
|---|---|---|
| KINNIKINNIK (Arctostaphylos uva-ursi) | 1-GAL | 4 |
| PACIFIC BLEEDING HEART (Dicentra formosa) | 4" | 8 |
| WILD GINGER (Asarum caudatum) | 4" | 10 |
| LILY-OF-THE-VALLEY (Maianthemum dilatatum) | 4" | 10 |
| SALAL (Gaultheria shallon) | 1-GAL | 14 |
| SWORD FERN (Polystichum munitum) | 1-GAL | 56 |
| PACIFIC RHODODENDRON (R. macrophylum) | 2-GAL | 6 |
| LOW OREGON GRAPE (Mahonia nervosa) | 1-GAL | 32 |
| SALMONBERRY (Rubus spectabilis) | 1-GAL | 7 |
| OCEANSPRAY (Holodiscus discolor) | 1-GAL | 7 |
| SNOWBERRY (Symporicarpos albus) | 1-GAL | 10 |
| INDIAN PLUM (Oemlaria cerasiformis) | 1-GAL | 6 |

| TREE NAME AND SPECIES | SIZE | # |
|---|---|---|
| VINE MAPLE (Acer circinatum) | 5-GAL | 2 |
| WESTERN RED CEDAR (Thuja plicata) | 5-GAL | 7 |
| WESTERN HEMLOCK (Tsuga heterophyla) | 5-GAL | 3 |
| | TOTAL: | 12 |

## PLANTING DETAILS BY AREA

RIPARIAN SOUTH

This area located south of the creek will not be disturbed during construction. It currently consists of dense sword fern, and scattered salmonberry, devil's club, and mature trees. A mix of western hemlock, western redcedar, and vine maple will be added at a density 1 / 500 SF. No additional shrubs are proposed. (Total: 6 trees; 0 shrubs).

RIPARIAN NORTH

This area is located between the north edge of the creek and the top of bank. It currently consists of dense sword fern, and scattered salmonberry and devil's club. A few bare spots were noted. A mix of western hemlock, western redcedar, and vine maple will be added at a density 1 tree/ 500 SF. Additional sword fern and salmon berry are proposed at a density of 1 / 20 SF (5' o.c.) where needed. For planning purposes it is estimated that additional shrub will be needed over about 20 percent of the area. (Total: 2 trees; 12 shrubs).

HOUSE SOUTH

This area is located between the top of bank and the proposed house. It currently consists of sparse sword fern and non-native ground-covers. For planning purposes it is assumed that all of this area will suffer temporary disturbance during construction and will need to be replanted. The area within 4-feet of the proposed house will consist entirely of swordf fern to allow periodic maintenance access. From four feet onward plantngs shall consist of small to medium shrubs to include sword fern, sallal, Oregon grape, oceanspray, snowberry, Indian plum, kinnikkinnik, and rhododendron; plus some groundcovers such as oxalis, bleeding heart, and wild ginger. Shrubs are proposed at a density of 1 / 20 SF (5' o.c.). (Total: 0 trees; 54 shrubs, 16 groundcovers).

HOUSE NORTH

This area is located between the proposed house and the north property line. It currently consists of sparse sword fern, Oregon grape, and non-native ground-covers. For planning purposes it is assumed that all of this area will suffer temporary disturbance during construction and will need to be replanted. This area will be planted entirely with swordf fern to allow periodic maintenance access. Shrubs are proposed at a density of 1 / 20 SF (5' o.c.). (Total: 0 trees; 28 sword fern).

MIDDLE EAST

This is a shady area located east of the proposed house that currently contains very little vegetation. For planning purposes it is assumed that all of this area will require planting, Western redcedar will be added at a density 1 tree/ 500 SF. Shrubs will include sword fern, Oregon grape, oceanspray, salmonberry, snowberry, and Indian plum at a density of 1 / 20 SF (5' o.c.). (Total: 2 tree; 60 shrubs).

FAR EAST

This area extends east to 50 feet from the proposed house. It is currently fairly open with moderately dense sword fern and a few salmonberry. For planning purposes it is assumed that only about 20 percent of this area will require new shrubbery. Trees will be planted throughout at a density of 1 / 500 SF. Vegetation will be the same as described for the Middle East area. (Total: 3 trees; 15 shrubs).

Final planting locations will be determined after construction of the house. Final plant densities, to include existing plants, will be as follows:

- Trees - spaced on 22 foot centers (all under existing canopy).
- Shrubs - 5 foot on center.
- Groundcovers - 24" on center.

Approximate plant counts shown on above based on these densities. Bond quantity estimation based on these quantities with a 30 percent contingency added to total plant count in case of additional disturbance.

# PLANTING DETAILS

PLANT INSTALLATION
1. Plant materials shall be nursery grown or collected in the Puget Sound area. Plants shall be normal in pattern of growth, healthy, well–branched, vigorous, with well–developed root systems, and free of pests and diseases. Damaged, diseased, pest–infested, scraped, bruised, dried out, burned, broken, or defective plants will be rejected.
2. If selected species are not available or desirable, then similar species may be substituted with approval from owner and City of Bellevue.
3. Planting shall occur during the cool season (September 15 through March 15).
4. All non–native species shall be removed from the planting areas shown on Sheet 1 prior to replanting.
5. Landscaper shall examine soils in the area to determine suitability for selected plants. New topsoil or compost amendment shall be added to a depth of 12" where necessary to support plants.
6. Plant locations and final plant counts will be determined after construction when final areas of disturbance are known. Actual planting locations shall be field determined at time of planting by landscape architect or biologist. If significant changes are made, an as–built plan shall be prepared and submitted to the City of Bellevue. A minimum of 170 plants shall be installed and maintained.
7. Immediately after planting, plants shall be watered to saturation.
8. Provide good quality landscape mulch around all shrubs and trees.

LANDSCAPING MAINTENANCE
1. Controlling any non–native species and re–establishing native vegetation are the primary goals of this maintenance plan. Activities required to maintain new plantings include initial watering of the new plants, and periodic removal of non–native vegetation (weeding) within the planting area.
2. New plantings shall be watered from May through mid–October during the first season. A temporary irrigation system is allowed. A potable water source is available for this use.
3. Due to the aggressively invasive habit of many non–native species (e.g. English ivy, vinca), and the existence of nearby seed sources, control efforts shall be completed for five years following initial plant installation. Establishment of native plantings over the five year time period will create a well established native habitat lessening the chance for non–native vegetation invasion.
4. The control of invasive weeds (competing grasses and herbs) shall be mechanically provided throughout the planting area at a minimum of twice per year, or more should additional weeding be deemed necessary. The optimal season for weed control occurs in April thru September. The use of herbicides and pesticides after new planting operations is strictly prohibited unless given written permission by the City of Bellevue. All work shall be performed by hand with the lightest possible equipment.

MONITORING
1) Compliance monitoring consists of evaluating the plants and shoreline planting area immediately after plant installation. The objective is to verify that all design features, as agreed to in the plans, have been correctly and fully implemented, and that any changes made in the field are consistent with the intent of the design. Evaluation of the planting areas after restoration will be done by the biologist or landscape architect. A brief compliance report will be prepared describing final plant counts and noting any substitutions or movement of plants when compared to the design. Rationale for changes shall be provided. Three photo points will be established giving complete coverage of the buffer area.

2) Long Term Monitoring – New plantings will be monitored in the summer once a year for a five year period. Monitoring will be conducted by the homeowner to quantify the survival, relative health and growth of plant material. An annual monitoring report submitted to the City following each years monitoring visit will describe and quantify the status of the mitigation and provide the three photos from the same locations as the compliance report.

Vegetation monitoring will consist of plant inspection to determine the health and vigor of the installation. All planted material in the buffer will be inspected during each monitoring visit to determine the level of survival of the installation. Each shrub and tree will be rated either as dead, dying, or healthy. Dead or dying material will be replaced the following fall unless plant crowding is believed to be a problem. Plant species substitutions may be made if site conditions are believed responsible for plant mortality. Replacement plants must be approved by the City. Volunteer native, non–invasive species will be included as acceptable components of the mitigation project. Ground covers will be rated as percent ground coverage for each of the major areas covered with these species.

At least three photo points will be established giving complete coverage of the buffer area. Photos will be taken at each point during every monitoring visit and submitted as part of the annual monitoring report.

PERFORMANCE STANDARDS
Year 1 (from date of plant installation)
- 100% survival of all installed plants and/or replanting in following dormant season to reestablish 100% of original plantings
- Less than 10% coverage of invasive plants in planting area.

Year 2 (from date of plant installation)
- At least 90% survival of all installed material (100% of trees)
- Less than 10% coverage of planting area by invasive species or non–native/ornamental vegetation.

Year 3, 4, & 5 (from date of plant installation)
- At least 85% survival of all installed material (100% of trees)
- At least 35% (Yr3), 50% (Yr4), 70% (Yr5) coverage of the planting area by native plants in each year respectively.
- Less than 10% coverage by invasive species or non–native/ornamental vegetation.

PLANTING PLAN - DETAILS
APPLICANT: NADLAN GROUP, LLC
439 W. Lake Samm. Pkwy SE
Bellevue Washington 98008

March 16, 2021 | 

**Sewall Wetland Consulting, Inc.**
PO Box 880
Fall City, WA 98024
Phone: 253-859-0515

August 21, 2020

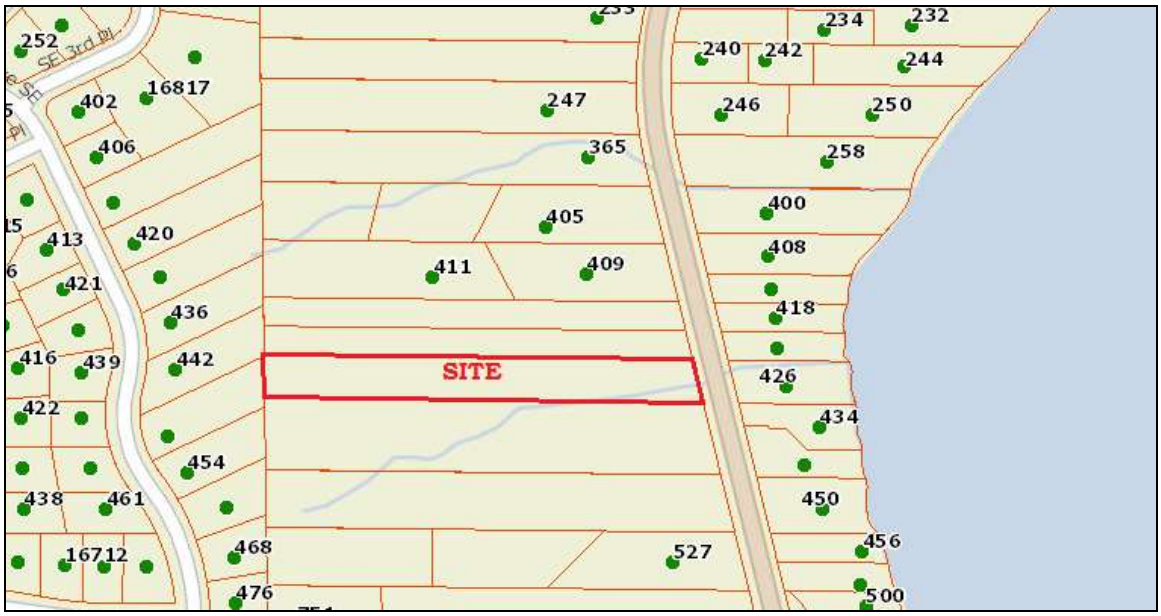
Eyal Hillel
Nadlan Group, LLC
17203 34th Street NE
Redmond, Washington 98052

RE: Critical Area Report – Parcel #3625059169
King County, Washington
SWC Job #20-145

Dear Eyel,

This report describes our observations of jurisdictional wetlands and buffers on or within 200' the area north Parcel #3625059169 located off West Lake Sammamish Parkway SE in the city of Bellevue, Washington (the "site").

The rectangular shaped 1.27 acre forested is located within the SW ¼ of Section 36, Township 25 North, Range 5 East of the W.M.




*Above: Vicinity map of the site.*

## METHODOLOGY

Ed Sewall of Sewall Wetland Consulting, Inc. inspected the site on August 6, 2020. The site was reviewed using methodology described in the *Corps of Engineers Wetlands Delineation Manual* (Environmental Laboratory, 1987), and the *Western Mountains, Valleys and Coast region Supplement* (Version 2.0) dated June 24, 2010, as required by the US Army Corps of Engineers and City of Bellevue. Soil colors were identified using the 1990 Edited and Revised Edition of the *Munsell Soil Color Charts* (Kollmorgen Instruments Corp. 1990).

*Above: iMap aerial photograph of the site*

## OBSERVATIONS

*Existing Site Documentation.*

Prior to visiting the site, a review of several natural resource inventory maps was conducted. Resources reviewed included a previous critical area study by Resource Analysis and Management, the National Wetland Inventory Map and the NRCS Soil Survey online mapping and Data and the King County iMap website with wetland and stream layers activated.

### Resource Analysis and Management Study September 14, 2014

This study identified two small Category 4 slope wetlands in close proximity near the center of the site along the south property line as well as a small stream along the southeast part of the site.

**King County iMap**

The King County iMap website with wetland and stream layers activated portrays no wetlands on the site. A small stream is depicted crossing the southeast corner of the site (*see image Page 1 & 2 of this report*).

**Soil Survey**

According to the NRCS Soil Mapper, the site is mapped primarily as moderately well drained Alderwood Gravelly Sandy Loam and somewhat excessively drained Everett soils.


*Above: USDA Soil Survey Map of the site*

**National Wetlands Inventory (NWI)**

According to the NWI map for the site, there no wetlands on the site. An excavated pond (PUBh) is depicted to the north of the site. This was not observed and appears to be a mapping error.


*Above: National Wetlands Inventory Map of the site.*

**Field observations**

*Uplands*

The site consists of a forested east facing hillside with a small stream (covered by the Cedar Rock Consulting report) which flows to the east towards West Lake Sammamish Parkway and eventually Lake Sammamish.

The site is vegetated with an overstory mix of large western red cedar, big leaf maple, douglas fir and western hemlock. The understory consists of a mix of salmonberry, vine maple, devils club and sword fern.

Soil pits excavated within the upland portions of the site were found to be similar to the Alderwood soil series with B-horizon soil chromas of 10YR 3/4 Soils throughout the upland portion of the site were dry during the time of our field investigation.

*Wetlands*

Two small, slope wetlands in very close proximity were observed and roughly matched those delineated in the 2014 study by Resource Analysis and Management. These slope type seep wetlands are scrub-shrub in character and were reflagged with flags A1-A10 and B1-B3.

Both wetland connect to the small stream just to the south of the site and seep water into this channel. The overall size of the complex is approximately 2,700sf.

Vegetation noted in this wetland area included salmonberry, vine maple, lady fern, and skunk cabbage.

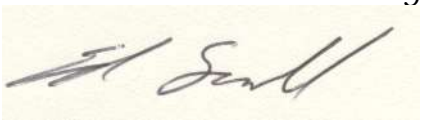
Soil pits excavated within the wetland revealed a mix of gravelly sandy soils with a color of 2.5Y 3/2 with common, medium distinct redoximorphic concentrations, and in some areas a thin layer of sapric organic matter on the surface.

According to the United States Fish and Wildlife Service (USFWS) wetland classification method (Cowardin et al. 1979), the wetland areas on-site that would be classified as PSS1E.

Using the 2014 WADOE Wetland Rating system and rating the wetlands as slope type wetland, this wetland complex scored a total of 15 points with 4 for habitat. This indicates a Category IV wetland. According to BMC Chapter 20.25H.095.D.1.a, Category IV wetlands >2,500sf in size have a 40' buffer measured from the wetland edge. This buffer would not encroach on the proposed single family home.

If you have any questions in regards to this report or need additional information, please feel free to contact me at (253) 859-0515 or at esewall@sewallwc.com .

Sincerely,
*Sewall Wetland Consulting, Inc.*



Ed Sewall
Senior Wetlands Ecologist PWS #212

Attached: Data sheets/rating forms

**REFERENCES**

Cowardin, L., V. Carter, F. Golet, and E. LaRoe. 1979. Classification of Wetlands and Deepwater Habitats of the United States. U.S. Fish and Wildlife Service, FWS/OBS-79-31, Washington, D. C.

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SW 1/4, SEC.36, TWN.25N, RGE. 5E, W.M.

# CONCEPTUAL MITIGATION PLAN

KAMOH RESIDENCE

439 West Lake Sammamish Parkway SE

## TEMPORARY DISTURBANCE RESTORATION AREA:

= TEMPORARY DISTURBANCE RESTORATION AREA

TEMPORARY DISTURBANCE RESTORATION AREA NOTES:

1. AREA TO BE RESTORED TO PREDEVELOPED CONDITIONS.
2. THE CONDITION OF THE AREAS OF TEMPORARY DISTURBANCE EXISTING PRIOR TO UNDERTAKING ANY DEVELOPMENT ACTIVITY SHALL BE DOCUMENTED WITH THE FINAL LANDSCAPE PLAN.

## LARGE WOODY DEBRIS SPECIFICATIONS

| LOG SPECIFICATIONS | #LOGS |
|---|---|
| LOG & ROOTWAD (>12" DBH; 10'-15' LENGTH WITH ROOTBALL) | 34% |
| LOG (8" - 12" DBH; 10' - 15' LENGTH W/O ROOTBALL) | 33% |
| LOG (4" - 8" DBH, > 6' LENGTH W/O ROOTBALL) | 33% |

LARGE WOODY DEBRIS NOTES

1. LOGS AND ROOTWADS SHALL CONSIST OF PARTS OF TREES ACTUALLY REMOVED FROM THE PROPERTY.
2. LIMBS SHALL BE MAINTAINED ON STEMS TO GREATEST EXTENT PRACTICAL.
3. ROOT WADS SHALL HAVE RELATIVELY EVEN SPREAD OF ROOTS WITH MINIMUM ROOTBALL DIAMETER OF FOUR FEET. EXCESS DIRT SHALL BE SHAKEN OFF PRIOR TO PLACEMENT.
4. ALL LOGS SHALL BE PLACED BY EQUIPMENT OPERATING OUTSIDE OF THE ORDINARY HIGH WATER.
5. LOGS SHALL BE PLACED AT WATERS EDGE AT AND BELOW ORDINARY HIGH WATER MARK.
6. EXACT LOG PLACEMENT AND GROUPING SIZE SHALL BE FIELD ADJUSTED BY A BIOLOGIST REPRESENTING WDFW OR THE APPLICANT DURING PLACEMENT.
7. LOGS SHALL NOT BE ANCHORED BUT SHALL BE PLACED TO PROVIDE NATURAL RESISTANCE TO MOVEMENT.

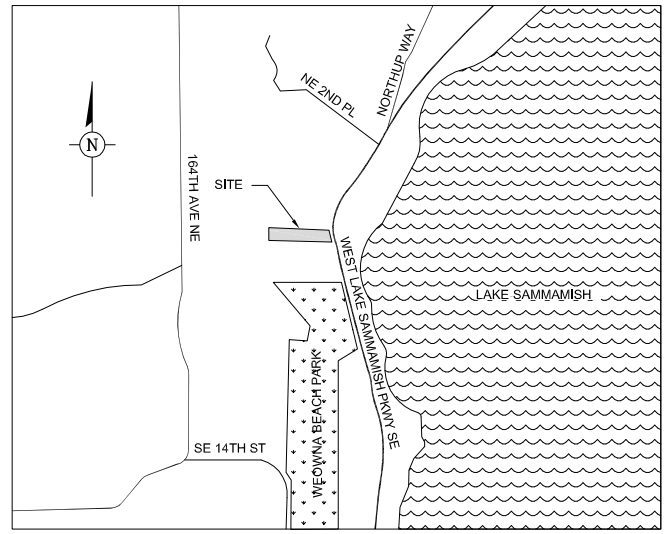
## PLANTING SCHEDULE

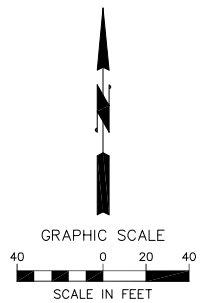
= RIPARIAN ENHANCEMENT AREA

| SPECIES | SIZE | FINAL BUFFER DENSITY | FINAL COUNT |
|---|---|---|---|
| TREES<br>● WESTERN RED CEDAR (THUJA PLICATA)<br>⊕ WESTERN HEMLOCK (TSUGA HETEROPHYLLA)<br>✳ DOUGLAS FIR (PSEUDOTSUGA MENZIESII) | MINIMUM 4FT TO 6FT HEIGHT | 0.01 TREES / SQ.FT. | MINIMUM 12 TREES (3:1 REPLANT RATIO), FINAL COUNT T.B.D. |
| LARGER SHRUBS<br>(RED-OSIER DOGWOOD, VINE MAPLE, SALMON BERRY, NOOTKA ROSE, HAZELNUT) | 2 GALLON | 0.05 PLANTS / SQ.FT. | T.B.D. |
| SMALLER SHRUBS<br>(SWORD FERN, SALAL, SNOWBERRY, OREGON GRAPE, DEER FERN) | 1 GALLON | 0.05 PLANTS / SQ.FT. | T.B.D. |

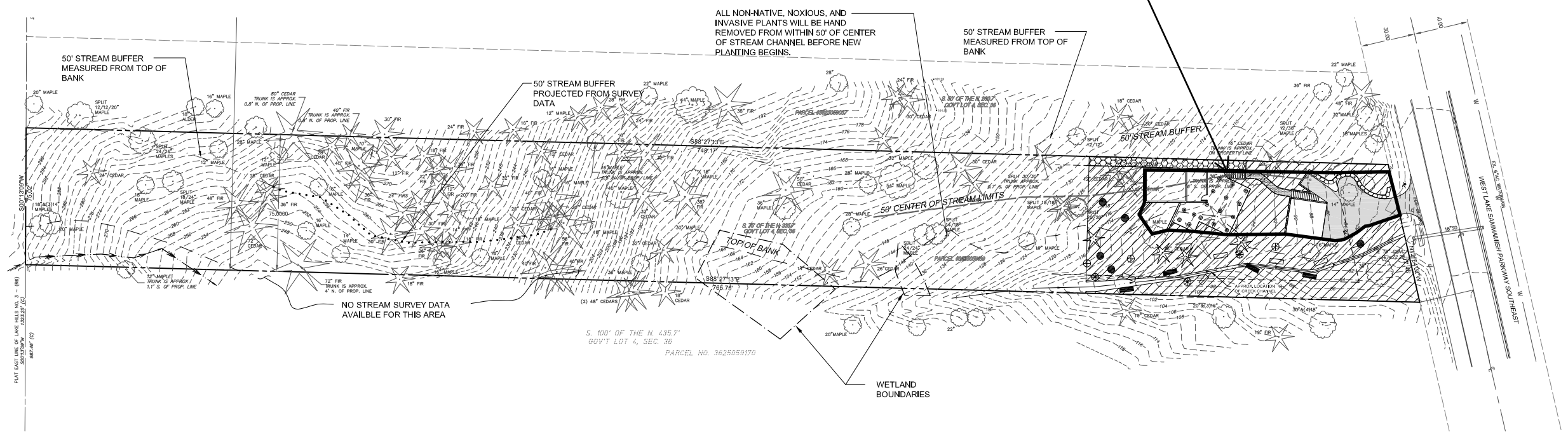
PLANTING NOTES

1. PRIOR TO PLANTING, THE SITE SHALL BE SURVEYED AND FINAL COUNT AND SPECIES DETERMINED TO MEET SPECIFIC SITE GROWING CONDITIONS.
2. MINIMUM FINAL BUFFER DENSITY WILL INCLUDE EXISTING PLANTS PLUS THOSE TO BE ADDED.




CONCEPTUAL HOUSE LAYOUT - FINAL HOUSE DESIGN WILL NOT EXCEED BOUNDS SHOWN HERE



wet A/B

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

Project/Site: Nadlan City/County: Bellevue Sampling Date: 8-6-20

Applicant/Owner: State: WA Sampling Point: DP#1

Investigator(s): EJ Sewell Section, Township, Range:

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

Subregion (LRR): Lat: Long: Datum:

Soil Map Unit Name: NWI classification:

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 ___ | **Is the Sampled Area within a Wetland?** Yes ✓ No ___ |
| Hydric Soil Present? | Yes ✓ No ___ | |
| Wetland Hydrology Present? | Yes ✓ No ___ | |

Remarks:

## VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: ___) | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| | = Total Cover | | |
| **Sapling/Shrub Stratum** (Plot size: ___) | | | |
| 1. Rubus spectabilis | 40 | | FAC |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| | = Total Cover | | |
| **Herb Stratum** (Plot size: ___) | | | |
| 1. Athyrium Filix femina | 30 | | FAC |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| 9. | | | |
| 10. | | | |
| 11. | | | |
| | = Total Cover | | |
| **Woody Vine Stratum** (Plot size: ___) | | | |
| 1. | | | |
| 2. | | | |
| | = Total Cover | | |

% Bare Ground in Herb Stratum ___

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (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:**

- ✓ Dominance Test is >50%
- ___ Prevalence Index is ≤3.0[1]
- ___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ 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: DP#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 |
|---|---|---|---|---|---|---|---|---|
| 6 | 10YR 3/2 | | | | | | fsm | |
| 16 | 2.5Y 3/2 | | common med dist. | | | | gsL | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

[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)
- ___ 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): 0"

**Wetland Hydrology Present?** Yes ___✓___ No _____

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

Remarks:

upland near WL-A/B

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

Project/Site: Nadland City/County: Bellevue Sampling Date: 8-6-20

Applicant/Owner: State: WA Sampling Point: DP#2

Investigator(s): Ed Sewall Section, Township, Range:

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

Subregion (LRR): Lat: Long: Datum:

Soil Map Unit Name: NWI classification:

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 ____ | **Is the Sampled Area within a Wetland?** Yes ____ No ✓ |
| Hydric Soil Present? | Yes ____ No ✓ | |
| Wetland Hydrology Present? | Yes ____ No ____ | |

Remarks:

## VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: ____) | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. Thuja plicata | 60 | | FAC |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| | = Total Cover | | |
| **Sapling/Shrub Stratum** (Plot size: ____) | | | |
| 1. Rubus spectabilis | 30 | | FAC |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| | = Total Cover | | |
| **Herb Stratum** (Plot size: ____) | | | |
| 1. Tolmiea menziesii | 20 | | upl |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| 9. | | | |
| 10. | | | |
| 11. | | | |
| | = Total Cover | | |
| **Woody Vine Stratum** (Plot size: ____) | | | |
| 1. | | | |
| 2. | | | |
| | = Total Cover | | |

% Bare Ground in Herb Stratum ____

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 66 (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:**

___ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ 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: DP#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 |
|---|---|---|---|---|---|---|---|---|
| 2" | dry FF | | | | | | | |
| 14 | 10YR 3/3 | | | | | | gsl | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

[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)
- ___ 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:

No indicators

## 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

Wetland name or number ____

# RATING SUMMARY – Western Washington

Name of wetland (or ID #): Nadlow A/B Date of site visit: 8-6-20

Rated by Ed Sewall Trained by Ecology? ✓Yes ___No Date of training_____

**HGM Class used for rating** Slope Wetland has multiple HGM classes?___Y ✓N

**NOTE: Form is not complete without the figures requested** *(figures can be combined).*

Source of base aerial photo/map _____

**OVERALL WETLAND CATEGORY** IV (based on functions ✓ or special characteristics___)

## 1. Category of wetland based on FUNCTIONS

_____**Category I** – Total score = 23 - 27

_____**Category II** – Total score = 20 - 22

_____**Category III** – Total score = 16 - 19

✓ **Category IV** – Total score = 9 - 15

| FUNCTION | Improving Water Quality | Hydrologic | Habitat | |
|---|---|---|---|---|
| | *Circle the appropriate ratings* | | | |
| Site Potential | H M (L) | H (M) L | H M (L) | |
| Landscape Potential | H M (L) | H M (L) | H (M) L | |
| Value | (H) M L | (H) M L | H M (L) | TOTAL |
| **Score Based on Ratings** | 5 | 6 | 4 | 15 |

**Score for each function based on three ratings** *(order of ratings is not important)*

9 = H,H,H
8 = H,H,M
7 = H,H,L
7 = H,M,M
6 = H,M,L
6 = M,M,M
5 = H,L,L
5 = M,M,L
4 = M,L,L
3 = L,L,L

## 2. Category based on SPECIAL CHARACTERISTICS of wetland

| CHARACTERISTIC | CATEGORY |
|---|---|
| **Estuarine** | I II |
| **Wetland of High Conservation Value** | I |
| **Bog** | I |
| **Mature Forest** | I |
| **Old Growth Forest** | I |
| **Coastal Lagoon** | I II |
| **Interdunal** | I II III IV |
| None of the above | ✓ |



Wetland name or number A/B

## Maps and figures required to answer questions correctly for Western Washington

Depressional Wetlands

| Map of: | To answer questions: | Figure # |
|---|---|---|
| Cowardin plant classes | D 1.3, H 1.1, H 1.4 | |
| Hydroperiods | D 1.4, H 1.2 | |
| Location of outlet *(can be added to map of hydroperiods)* | D 1.1, D 4.1 | |
| Boundary of area within 150 ft of the wetland *(can be added to another figure)* | D 2.2, D 5.2 | |
| Map of the contributing basin | D 4.3, D 5.3 | |
| 1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat | H 2.1, H 2.2, H 2.3 | |
| Screen capture of map of 303(d) listed waters in basin (from Ecology website) | D 3.1, D 3.2 | |
| Screen capture of list of TMDLs for WRIA in which unit is found (from web) | D 3.3 | |

Riverine Wetlands

| Map of: | To answer questions: | Figure # |
|---|---|---|
| Cowardin plant classes | H 1.1, H 1.4 | |
| Hydroperiods | H 1.2 | |
| Ponded depressions | R 1.1 | |
| Boundary of area within 150 ft of the wetland *(can be added to another figure)* | R 2.4 | |
| Plant cover of trees, shrubs, and herbaceous plants | R 1.2, R 4.2 | |
| Width of unit vs. width of stream *(can be added to another figure)* | R 4.1 | |
| Map of the contributing basin | R 2.2, R 2.3, R 5.2 | |
| 1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat | H 2.1, H 2.2, H 2.3 | |
| Screen capture of map of 303(d) listed waters in basin (from Ecology website) | R 3.1 | |
| Screen capture of list of TMDLs for WRIA in which unit is found (from web) | R 3.2, R 3.3 | |

Lake Fringe Wetlands

| Map of: | To answer questions: | Figure # |
|---|---|---|
| Cowardin plant classes | L 1.1, L 4.1, H 1.1, H 1.4 | |
| Plant cover of trees, shrubs, and herbaceous plants | L 1.2 | |
| Boundary of area within 150 ft of the wetland *(can be added to another figure)* | L 2.2 | |
| 1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat | H 2.1, H 2.2, H 2.3 | |
| Screen capture of map of 303(d) listed waters in basin (from Ecology website) | L 3.1, L 3.2 | |
| Screen capture of list of TMDLs for WRIA in which unit is found (from web) | L 3.3 | |

Slope Wetlands

| Map of: | To answer questions: | Figure # |
|---|---|---|
| Cowardin plant classes | H 1.1, H 1.4 | |
| Hydroperiods | H 1.2 | |
| Plant cover of **dense** trees, shrubs, and herbaceous plants | S 1.3 | |
| Plant cover of **dense, rigid** trees, shrubs, and herbaceous plants *(can be added to figure above)* | S 4.1 | |
| Boundary of 150 ft buffer (can be added to another figure) | S 2.1, S 5.1 | |
| 1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat | H 2.1, H 2.2, H 2.3 | |
| Screen capture of map of 303(d) listed waters in basin (from Ecology website) | S 3.1, S 3.2 | |
| Screen capture of list of TMDLs for WRIA in which unit is found (from web) | S 3.3 | |

Wetland name or number ____

# HGM Classification of Wetlands in Western Washington

**For questions 1-7, the criteria described must apply to the entire unit being rated.**

**If the hydrologic criteria listed in each question do not apply to the entire unit being rated, you probably have a unit with multiple HGM classes. In this case, identify which hydrologic criteria in questions 1-7 apply, and go to Question 8.**

1. Are the water levels in the entire unit usually controlled by tides except during floods?

NO - go to 2 **YES** - the wetland class is **Tidal Fringe** - go to 1.1

1.1 Is the salinity of the water during periods of annual low flow below 0.5 ppt (parts per thousand)?

**NO - Saltwater Tidal Fringe (Estuarine)** **YES - Freshwater Tidal Fringe**

*If your wetland can be classified as a Freshwater Tidal Fringe use the forms for **Riverine** wetlands. If it is Saltwater Tidal Fringe it is an **Estuarine** wetland and is not scored. This method **cannot** be used to score functions for estuarine wetlands.*

2. The entire wetland unit is flat and precipitation is the only source (>90%) of water to it. Groundwater and surface water runoff are NOT sources of water to the unit.

NO - go to 3 **YES** - The wetland class is **Flats**

*If your wetland can be classified as a Flats wetland, use the form for **Depressional** wetlands.*

3. Does the entire wetland unit **meet all** of the following criteria?
   ___The vegetated part of the wetland is on the shores of a body of permanent open water (without any plants on the surface at any time of the year) at least 20 ac (8 ha) in size;
   ___At least 30% of the open water area is deeper than 6.6 ft (2 m).

NO - go to 4 **YES** - The wetland class is **Lake Fringe** (Lacustrine Fringe)

4. Does the entire wetland unit **meet all** of the following criteria?
   ___The wetland is on a slope (*slope can be very gradual*),
   ___The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks,
   ___The water leaves the wetland **without being impounded**.

NO - go to 5 **YES** - The wetland class is **Slope**

**NOTE**: Surface water does not pond in these type of wetlands except occasionally in very small and shallow depressions or behind hummocks (depressions are usually <3 ft diameter and less than 1 ft deep).

5. Does the entire wetland unit **meet all** of the following criteria?
   ___The unit is in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river,
   ___The overbank flooding occurs at least once every 2 years.



Wetland name or number A/B

NO - go to 6 **YES** - The wetland class is **Riverine**

**NOTE**: The Riverine unit can contain depressions that are filled with water when the river is not flooding

6. Is the entire wetland unit in a topographic depression in which water ponds, or is saturated to the surface, at some time during the year? *This means that any outlet, if present, is higher than the interior of the wetland.*

NO - go to 7 **YES** - The wetland class is **Depressional**

7. Is the entire wetland unit located in a very flat area with no obvious depression and no overbank flooding? The unit does not pond surface water more than a few inches. The unit seems to be maintained by high groundwater in the area. The wetland may be ditched, but has no obvious natural outlet.

NO - go to 8 **YES** - The wetland class is **Depressional**

8. Your wetland unit seems to be difficult to classify and probably contains several different HGM classes. For example, seeps at the base of a slope may grade into a riverine floodplain, or a small stream within a Depressional wetland has a zone of flooding along its sides. GO BACK AND IDENTIFY WHICH OF THE HYDROLOGIC REGIMES DESCRIBED IN QUESTIONS 1-7 APPLY TO DIFFERENT AREAS IN THE UNIT (make a rough sketch to help you decide). Use the following table to identify the appropriate class to use for the rating system if you have several HGM classes present within the wetland unit being scored.

**NOTE**: Use this table only if the class that is recommended in the second column represents 10% or more of the total area of the wetland unit being rated. If the area of the HGM class listed in column 2 is less than 10% of the unit; classify the wetland using the class that represents more than 90% of the total area.

| HGM classes within the wetland unit being rated | HGM class to use in rating |
|---|---|
| Slope + Riverine | Riverine |
| Slope + Depressional | Depressional |
| Slope + Lake Fringe | Lake Fringe |
| Depressional + Riverine along stream within boundary of depression | Depressional |
| Depressional + Lake Fringe | Depressional |
| Riverine + Lake Fringe | Riverine |
| Salt Water Tidal Fringe and any other class of freshwater wetland | Treat as ESTUARINE |

*If you are still unable to determine which of the above criteria apply to your wetland, or if you have **more than 2 HGM classes** within a wetland boundary, classify the wetland as Depressional for the rating.*

Wetland name or number ____

## SLOPE WETLANDS

**Water Quality Functions** - Indicators that the site functions to improve water quality

| | | |
|---|---|---|
| S 1.0. Does the site have the potential to improve water quality? | | |
| S 1.1. Characteristics of the average slope of the wetland: *(a 1% slope has a 1 ft vertical drop in elevation for every 100 ft of horizontal distance)* | | |
| Slope is 1% or less | points = 3 | |
| Slope is > 1%-2% | points = 2 | |
| Slope is > 2%-5% | points = 1 | |
| Slope is greater than 5% | points = 0 | 0 |
| S 1.2. The soil 2 in below the surface (or duff layer) is true clay or true organic *(use NRCS definitions)*: | Yes = 3 No = 0 | 0 |
| S 1.3. Characteristics of the plants in the wetland that trap sediments and pollutants: | | |
| Choose the points appropriate for the description that best fits the plants in the wetland. *Dense means you have trouble seeing the soil surface (>75% cover), and uncut means not grazed or mowed and plants are higher than 6 in.* | | |
| Dense, uncut, herbaceous plants > 90% of the wetland area | points = 6 | |
| Dense, uncut, herbaceous plants > ½ of area | points = 3 | |
| Dense, woody, plants > ½ of area | points = 2 | 3 |
| Dense, uncut, herbaceous plants > ¼ of area | points = 1 | |
| Does not meet any of the criteria above for plants | points = 0 | |
| Total for S 1 | Add the points in the boxes above | 3 |

**Rating of Site Potential** If score is: ___12 = H ___6-11 = M ✓0-5 = L *Record the rating on the first page*

| | | |
|---|---|---|
| S 2.0. Does the landscape have the potential to support the water quality function of the site? | | |
| S 2.1. Is > 10% of the area within 150 ft on the uphill side of the wetland in land uses that generate pollutants? | Yes = 1 No = 0 | 0 |
| S 2.2. Are there other sources of pollutants coming into the wetland that are not listed in question S 2.1? Other sources _____ | Yes = 1 No = 0 | 0 |
| Total for S 2 | Add the points in the boxes above | 0 |

**Rating of Landscape Potential** If score is: ___1-2 = M ✓0 = L *Record the rating on the first page*

| | | |
|---|---|---|
| S 3.0. Is the water quality improvement provided by the site valuable to society? | | |
| S 3.1. Does the wetland discharge directly (i.e., within 1 mi) to a stream, river, lake, or marine water that is on the 303(d) list? | Yes = 1 No = 0 | 1 |
| S 3.2. Is the wetland in a basin or sub-basin where water quality is an issue? *At least one aquatic resource in the basin is on the 303(d) list.* | Yes = 1 No = 0 | 1 |
| S 3.3. Has the site been identified in a watershed or local plan as important for maintaining water quality? *Answer YES if there is a TMDL for the basin in which unit is found.* | Yes = 2 No = 0 | 2 |
| Total for S 3 | Add the points in the boxes above | 4 |

**Rating of Value** If score is: ✓2-4 = H ___1 = M ___0 = L *Record the rating on the first page*



Wetland name or number A/B

## SLOPE WETLANDS

**Hydrologic Functions** - Indicators that the site functions to reduce flooding and stream erosion

| | | |
|---|---|---|
| S 4.0. Does the site have the potential to reduce flooding and stream erosion? | | |
| S 4.1. Characteristics of plants that reduce the velocity of surface flows during storms: Choose the points appropriate for the description that best fits conditions in the wetland. *Stems of plants should be thick enough (usually > 1/8 in), or dense enough, to remain erect during surface flows.* | | |
| Dense, uncut, **rigid** plants cover > 90% of the area of the wetland | points = 1 | 1 |
| All other conditions | points = 0 | |

**Rating of Site Potential** If score is: ✓1 = M ___0 = L *Record the rating on the first page*

| | | |
|---|---|---|
| S 5.0. Does the landscape have the potential to support the hydrologic functions of the site? | | |
| S 5.1. Is more than 25% of the area within 150 ft upslope of wetland in land uses or cover that generate excess surface runoff? | Yes = 1 No = 0 | 0 |

**Rating of Landscape Potential** If score is: ___1 = M ✓0 = L *Record the rating on the first page*

| | | |
|---|---|---|
| S 6.0. Are the hydrologic functions provided by the site valuable to society? | | |
| S 6.1. Distance to the nearest areas downstream that have flooding problems: | | |
| The sub-basin immediately down-gradient of site has flooding problems that result in damage to human or natural resources (e.g., houses or salmon redds) | points = 2 | |
| Surface flooding problems are in a sub-basin farther down-gradient | points = 1 | 1 |
| No flooding problems anywhere downstream | points = 0 | |
| S 6.2. Has the site been identified as important for flood storage or flood conveyance in a regional flood control plan? | Yes = 2 No = 0 | 2 |
| Total for S 6 | Add the points in the boxes above | 3 |

**Rating of Value** If score is: ✓2-4 = H ___1 = M ___0 = L *Record the rating on the first page*

NOTES and FIELD OBSERVATIONS:

Wetland name or number ____

**These questions apply to wetlands of all HGM classes.**

**HABITAT FUNCTIONS** - Indicators that site functions to provide important habitat

H 1.0. Does the site have the potential to provide habitat?

H 1.1. Structure of plant community: *Indicators are Cowardin classes and strata within the Forested class.* Check the Cowardin plant classes in the wetland. *Up to 10 patches may be combined for each class to meet the threshold of ¼ ac or more than 10% of the unit if it is smaller than 2.5 ac. Add the number of structures checked.*

| | |
|---|---|
| ___Aquatic bed | 4 structures or more: points = 4 |
| ___Emergent | 3 structures: points = 2 |
| ___Scrub-shrub (areas where shrubs have > 30% cover) | 2 structures: points = 1 |
| ___Forested (areas where trees have > 30% cover) | 1 structure: points = 0 |

*If the unit has a Forested class, check if:*

___The Forested class has 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover) that each cover 20% within the Forested polygon

0

H 1.2. Hydroperiods

Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland or ¼ ac to count (*see text for descriptions of hydroperiods*).

| | |
|---|---|
| ___Permanently flooded or inundated | 4 or more types present: points = 3 |
| ___Seasonally flooded or inundated | 3 types present: points = 2 |
| ___Occasionally flooded or inundated | 2 types present: points = 1 |
| ___Saturated only | 1 type present: points = 0 |
| ___Permanently flowing stream or river in, or adjacent to, the wetland | |
| ___Seasonally flowing stream in, or adjacent to, the wetland | |
| ___**Lake Fringe wetland** | **2 points** |
| ___**Freshwater tidal wetland** | **2 points** |

1

H 1.3. Richness of plant species

Count the number of plant species in the wetland that cover at least 10 $ft^2$.

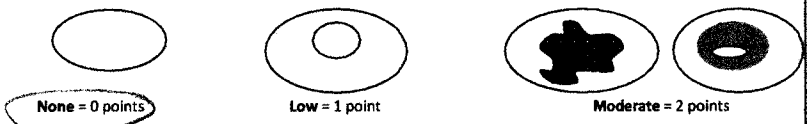
*Different patches of the same species can be combined to meet the size threshold and you do not have to name the species.* ***Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, Canadian thistle***

| | |
|---|---|
| If you counted: > 19 species | points = 2 |
| 5 - 19 species | points = 1 |
| < 5 species | points = 0 |

1

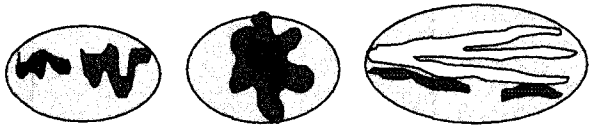
H 1.4. Interspersion of habitats

Decide from the diagrams below whether interspersion among Cowardin plants classes (described in H 1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, moderate, low, or none. *If you have four or more plant classes or three classes and open water, the rating is always high.*



**None** = 0 points **Low** = 1 point **Moderate** = 2 points

All three diagrams in this row are **HIGH** = 3points



0



Wetland name or number A/B

H 1.5. Special habitat features:

Check the habitat features that are present in the wetland. *The number of checks is the number of points.*

___Large, downed, woody debris within the wetland (> 4 in diameter and 6 ft long).
___Standing snags (dbh > 4 in) within the wetland
___Undercut banks are present for at least 6.6 ft (2 m) **and/or** overhanging plants extends at least 3.3 ft (1 m) over a stream (or ditch) in, or contiguous with the wetland, for at least 33 ft (10 m)
___Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 30 degree slope) OR signs of recent beaver activity are present *(cut shrubs or trees that have not yet weathered where wood is exposed)*
___At least ¼ ac of thin-stemmed persistent plants or woody branches are present in areas that are permanently or seasonally inundated *(structures for egg-laying by amphibians)*
___Invasive plants cover less than 25% of the wetland area in every stratum of plants (*see H 1.1 for list of strata*)

2

Total for H 1 — Add the points in the boxes above: 4

**Rating of Site Potential** If score is: ___**15-18 = H** ___**7-14 = M** ___**0-6 = L** *Record the rating on the first page*

H 2.0. Does the landscape have the potential to support the habitat functions of the site?

H 2.1. Accessible habitat (include *only habitat that directly abuts wetland unit*).

*Calculate:* 8 % undisturbed habitat 4 + [(% moderate and low intensity land uses)/2] 2 = 10 %

If total accessible habitat is:

| | |
|---|---|
| > 1/3 (33.3%) of 1 km Polygon | points = 3 |
| 20-33% of 1 km Polygon | points = 2 |
| 10-19% of 1 km Polygon | points = 1 |
| < 10% of 1 km Polygon | points = 0 |

1

H 2.2. Undisturbed habitat in 1 km Polygon around the wetland.

*Calculate:* 38 % undisturbed habitat 0 + [(% moderate and low intensity land uses)/2] ___ = 38 %

| | |
|---|---|
| Undisturbed habitat > 50% of Polygon | points = 3 |
| Undisturbed habitat 10-50% and in 1-3 patches | points = 2 |
| Undisturbed habitat 10-50% and > 3 patches | points = 1 |
| Undisturbed habitat < 10% of 1 km Polygon | points = 0 |

2

H 2.3. Land use intensity in 1 km Polygon: If

| | |
|---|---|
| > 50% of 1 km Polygon is high intensity land use | points = (- 2) |
| ≤ 50% of 1 km Polygon is high intensity | points = 0 |

-2

Total for H 2 — Add the points in the boxes above: 1

**Rating of Landscape Potential** If score is: ___**4-6 = H** ___**1-3 = M** ___**< 1 = L** *Record the rating on the first page*

H 3.0. Is the habitat provided by the site valuable to society?

H 3.1. Does the site provide habitat for species valued in laws, regulations, or policies? *Choose only the highest score that applies to the wetland being rated.*

Site meets ANY of the following criteria: points = 2

— It has 3 or more priority habitats within 100 m (see next page)
— It provides habitat for Threatened or Endangered species (any plant or animal on the state or federal lists)
— It is mapped as a location for an individual WDFW priority species
— It is a Wetland of High Conservation Value as determined by the Department of Natural Resources
— It has been categorized as an important habitat site in a local or regional comprehensive plan, in a Shoreline Master Plan, or in a watershed plan

Site has 1 or 2 priority habitats (listed on next page) within 100 m: points = 1

Site does not meet any of the criteria above: points = 0

0

**Rating of Value** If score is: ___**2 = H** ___**1 = M** ___**0 = L** *Record the rating on the first page*

Wetland name or number ____

# WDFW Priority Habitats

Priority habitats listed by WDFW (see complete descriptions of WDFW priority habitats, and the counties in which they can be found, in: Washington Department of Fish and Wildlife. 2008. Priority Habitat and Species List. Olympia, Washington. 177 pp. http://wdfw.wa.gov/publications/00165/wdfw00165.pdf or access the list from here: http://wdfw.wa.gov/conservation/phs/list/)

Count how many of the following priority habitats are within 330 ft (100 m) of the wetland unit: ***NOTE:*** *This question is independent of the land use between the wetland unit and the priority habitat.*

— **Aspen Stands:** Pure or mixed stands of aspen greater than 1 ac (0.4 ha).

— **Biodiversity Areas and Corridors:** Areas of habitat that are relatively important to various species of native fish and wildlife (*full descriptions in WDFW PHS report*).

— **Herbaceous Balds:** Variable size patches of grass and forbs on shallow soils over bedrock.

— **Old-growth/Mature forests:** Old-growth west of Cascade crest – Stands of at least 2 tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha ) > 32 in (81 cm) dbh or > 200 years of age. Mature forests – Stands with average diameters exceeding 21 in (53 cm) dbh; crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80-200 years old west of the Cascade crest.

— **Oregon White Oak:** Woodland stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (*full descriptions in WDFW PHS report p. 158 – see web link above*).

— **Riparian:** The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.

— **Westside Prairies:** Herbaceous, non-forested plant communities that can either take the form of a dry prairie or a wet prairie (*full descriptions in WDFW PHS report p. 161 – see web link above*).

— **Instream:** The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources.

— **Nearshore:** Relatively undisturbed nearshore habitats. These include Coastal Nearshore, Open Coast Nearshore, and Puget Sound Nearshore. (*full descriptions of habitats and the definition of relatively undisturbed are in WDFW report – see web link on previous page).*

— **Caves:** A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils, rock, ice, or other geological formations and is large enough to contain a human.

— **Cliffs:** Greater than 25 ft (7.6 m) high and occurring below 5000 ft elevation.

— **Talus:** Homogenous areas of rock rubble ranging in average size 0.5 - 6.5 ft (0.15 - 2.0 m), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.

— **Snags and Logs:** Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 20 in (51 cm) in western Washington and are > 6.5 ft (2 m) in height. Priority logs are > 12 in (30 cm) in diameter at the largest end, and > 20 ft (6 m) long.

**Note:** All vegetated wetlands are by definition a priority habitat but are not included in this list because they are addressed elsewhere.



Wetland name or number A/B

## CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

| **Wetland Type**<br>*Check off any criteria that apply to the wetland. Circle the category when the appropriate criteria are met.* | **Category** |
|---|---|
| **SC 1.0. Estuarine wetlands**<br>Does the wetland meet the following criteria for Estuarine wetlands?<br>— The dominant water regime is tidal,<br>— Vegetated, and<br>— With a salinity greater than 0.5 ppt Yes –Go to **SC 1.1** (No= **Not an estuarine wetland**) | |
| SC 1.1. Is the wetland within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151?<br>Yes = **Category I** No - Go to **SC 1.2** | **Cat. I** |
| SC 1.2. Is the wetland unit at least 1 ac in size and meets at least two of the following three conditions?<br>— The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and has less than 10% cover of non-native plant species. (If non-native species are *Spartina*, see page 25)<br>— At least ¼ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland.<br>— The wetland has at least two of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands. Yes = **Category I** No = **Category II** | **Cat. I**<br>**Cat. II** |
| **SC 2.0. Wetlands of High Conservation Value (WHCV)**<br>SC 2.1. Has the WA Department of Natural Resources updated their website to include the list of Wetlands of High Conservation Value? Yes – Go to **SC 2.2** (No – Go to **SC 2.3**)<br>SC 2.2. Is the wetland listed on the WDNR database as a Wetland of High Conservation Value?<br>Yes = **Category I** No = **Not a WHCV**<br>SC 2.3. Is the wetland in a Section/Township/Range that contains a Natural Heritage wetland?<br>http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf<br>Yes – **Contact WNHP/WDNR and go to SC 2.4** (No = **Not a WHCV**)<br>SC 2.4. Has WDNR identified the wetland within the S/T/R as a Wetland of High Conservation Value and listed it on their website? Yes = **Category I** No = **Not a WHCV** | **Cat. I** |
| **SC 3.0. Bogs**<br>Does the wetland (or any part of the unit) meet both the criteria for soils and vegetation in bogs? *Use the key below.* ***If you answer YES you will still need to rate the wetland based on its functions.***<br>SC 3.1. Does an area within the wetland unit have organic soil horizons, either peats or mucks, that compose 16 in or more of the first 32 in of the soil profile? Yes – Go to **SC 3.3** (No – Go to **SC 3.2**)<br>SC 3.2. Does an area within the wetland unit have organic soils, either peats or mucks, that are less than 16 in deep over bedrock, or an impermeable hardpan such as clay or volcanic ash, or that are floating on top of a lake or pond? Yes – Go to **SC 3.3** (No = **Is not a bog**)<br>SC 3.3. Does an area with peats or mucks have more than 70% cover of mosses at ground level, AND at least a 30% cover of plant species listed in Table 4? Yes = **Is a Category I bog** No – Go to **SC 3.4**<br>**NOTE:** If you are uncertain about the extent of mosses in the understory, you may substitute that criterion by measuring the pH of the water that seeps into a hole dug at least 16 in deep. If the pH is less than 5.0 and the plant species in Table 4 are present, the wetland is a bog.<br>SC 3.4. Is an area with peats or mucks forested (> 30% cover) with Sitka spruce, subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Engelmann spruce, or western white pine, AND any of the species (or combination of species) listed in Table 4 provide more than 30% of the cover under the canopy?<br>Yes = **Is a Category I bog** No = **Is not a bog** | **Cat. I** |

Wetland name or number A/B

| | |
|---|---|
| **SC 4.0. Forested Wetlands**<br>Does the wetland have at least 1 contiguous acre of forest that meets one of these criteria for the WA Department of Fish and Wildlife's forests as priority habitats? ***If you answer YES you will still need to rate the wetland based on its functions.***<br>— **Old-growth forests** (west of Cascade crest): Stands of at least two tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) that are at least 200 years of age OR have a diameter at breast height (dbh) of 32 in (81 cm) or more.<br>— **Mature forests** (west of the Cascade Crest): Stands where the largest trees are 80- 200 years old OR the species that make up the canopy have an average diameter (dbh) exceeding 21 in (53 cm).<br>Yes = **Category I** No = **Not a forested wetland for this section** | Cat. I |
| **SC 5.0. Wetlands in Coastal Lagoons**<br>Does the wetland meet all of the following criteria of a wetland in a coastal lagoon?<br>— The wetland lies in a depression adjacent to marine waters that is wholly or partially separated from marine waters by sandbanks, gravel banks, shingle, or, less frequently, rocks<br>— The lagoon in which the wetland is located contains ponded water that is saline or brackish (> 0.5 ppt) during most of the year in at least a portion of the lagoon *(needs to be measured near the bottom)*<br>Yes – Go to **SC 5.1** No = **Not a wetland in a coastal lagoon** | Cat. I |
| SC 5.1. Does the wetland meet all of the following three conditions?<br>— The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing), and has less than 20% cover of aggressive, opportunistic plant species (see list of species on p. 100).<br>— At least ⅓ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland.<br>— The wetland is larger than $^{1}/_{10}$ ac (4350 ft$^2$)<br>Yes = **Category I** No = **Category II** | Cat. II |
| **SC 6.0. Interdunal Wetlands**<br>Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or WBUO)? ***If you answer yes you will still need to rate the wetland based on its habitat functions.***<br>In practical terms that means the following geographic areas:<br>— Long Beach Peninsula: Lands west of SR 103<br>— Grayland-Westport: Lands west of SR 105<br>— Ocean Shores-Copalis: Lands west of SR 115 and SR 109<br>Yes – Go to **SC 6.1** No = **not an interdunal wetland for rating** | Cat I |
| SC 6.1. Is the wetland 1 ac or larger and scores an 8 or 9 for the habitat functions on the form (rates H,H,H or H,H,M for the three aspects of function)? Yes = **Category I** No – Go to **SC 6.2** | Cat. II |
| SC 6.2. Is the wetland 1 ac or larger, or is it in a mosaic of wetlands that is 1 ac or larger?<br>Yes = **Category II** No – Go to **SC 6.3** | Cat. III |
| SC 6.3. Is the unit between 0.1 and 1 ac, or is it in a mosaic of wetlands that is between 0.1 and 1 ac?<br>Yes = **Category III** No = **Category IV** | Cat. IV |
| **Category of wetland based on Special Characteristics**<br>If you answered No for all types, enter "Not Applicable" on Summary Form | NA |

## Navigation Tools:

Pan | Zoom In | Zoom Out | Zoom Full | Zoom Last | Zoom Next

## Miscellaneous Tools:

Identify | Print Map | Share Map | Clear Graphics

## Spatial Filter Tools:

Box Filter | Polygon Filter | Buffer Point | Buffer Feature

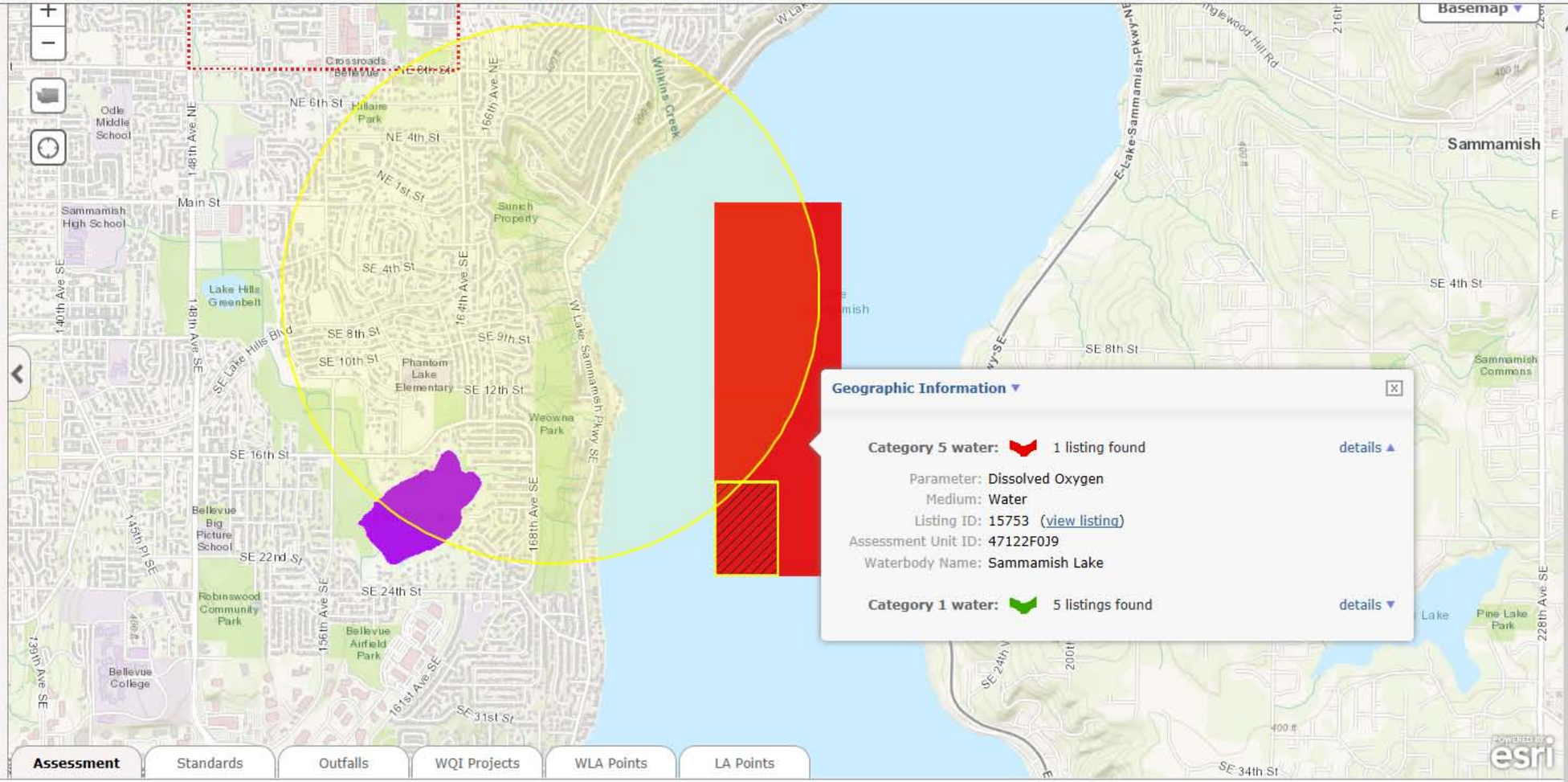
Spatial filter applied ✓

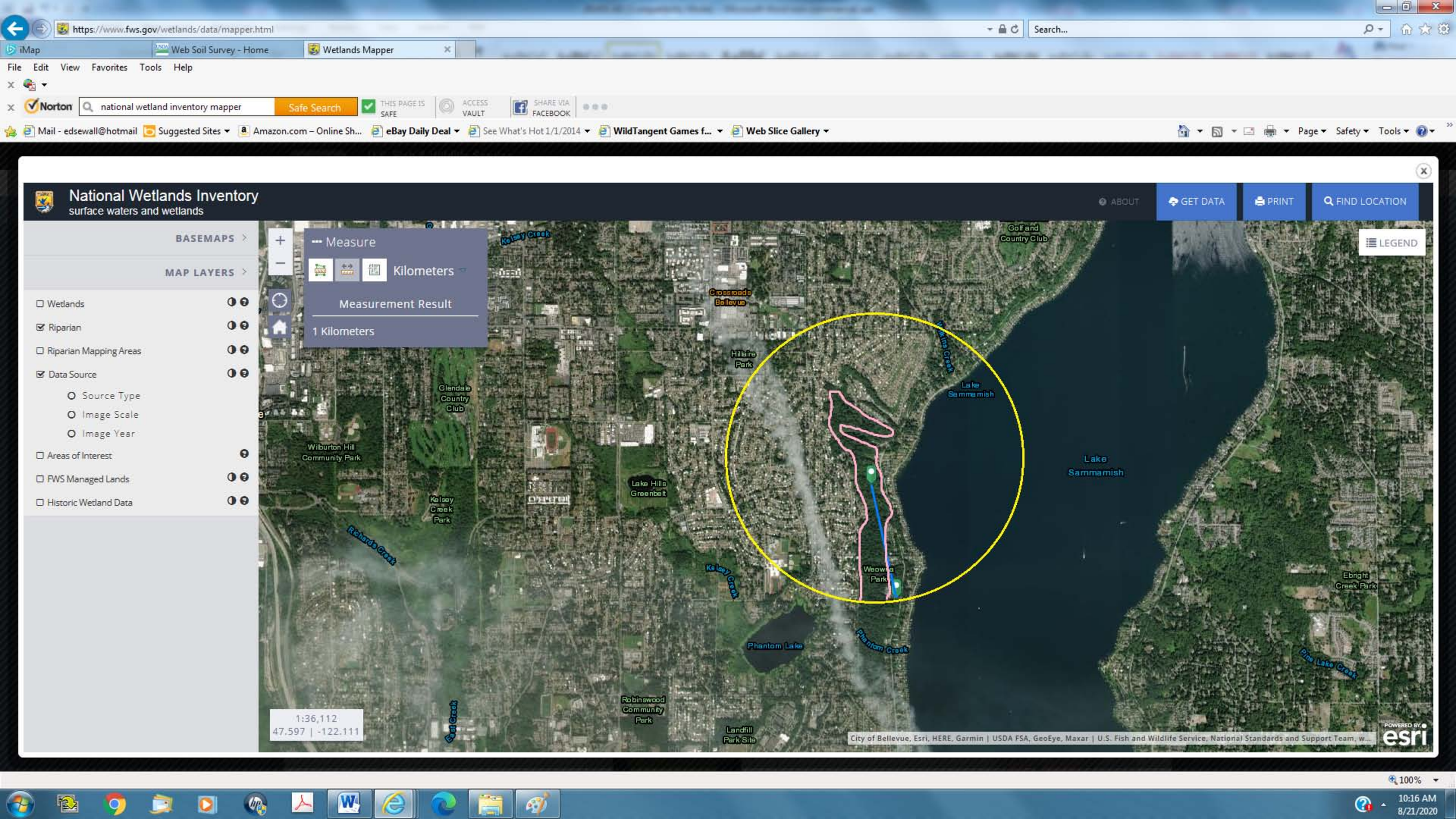
(remove filter)

**1) Choose buffer distance:**

1/4 mile | 1/2 mile | **1 mile** | 5 miles

**2) Click on map to make selection.**

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Glendale Country Club
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Ebright Creek Park
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Robinswood Community Park
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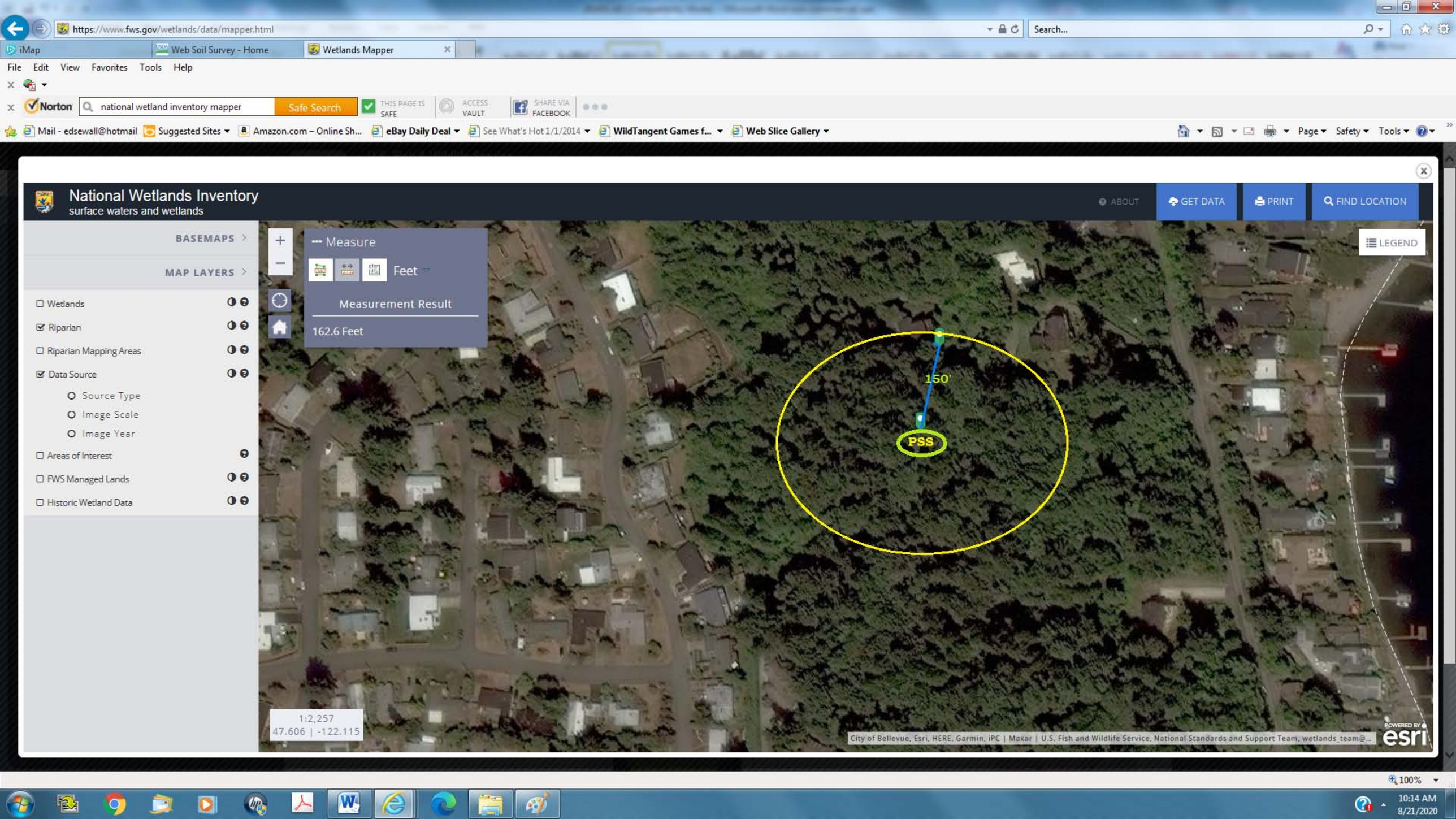
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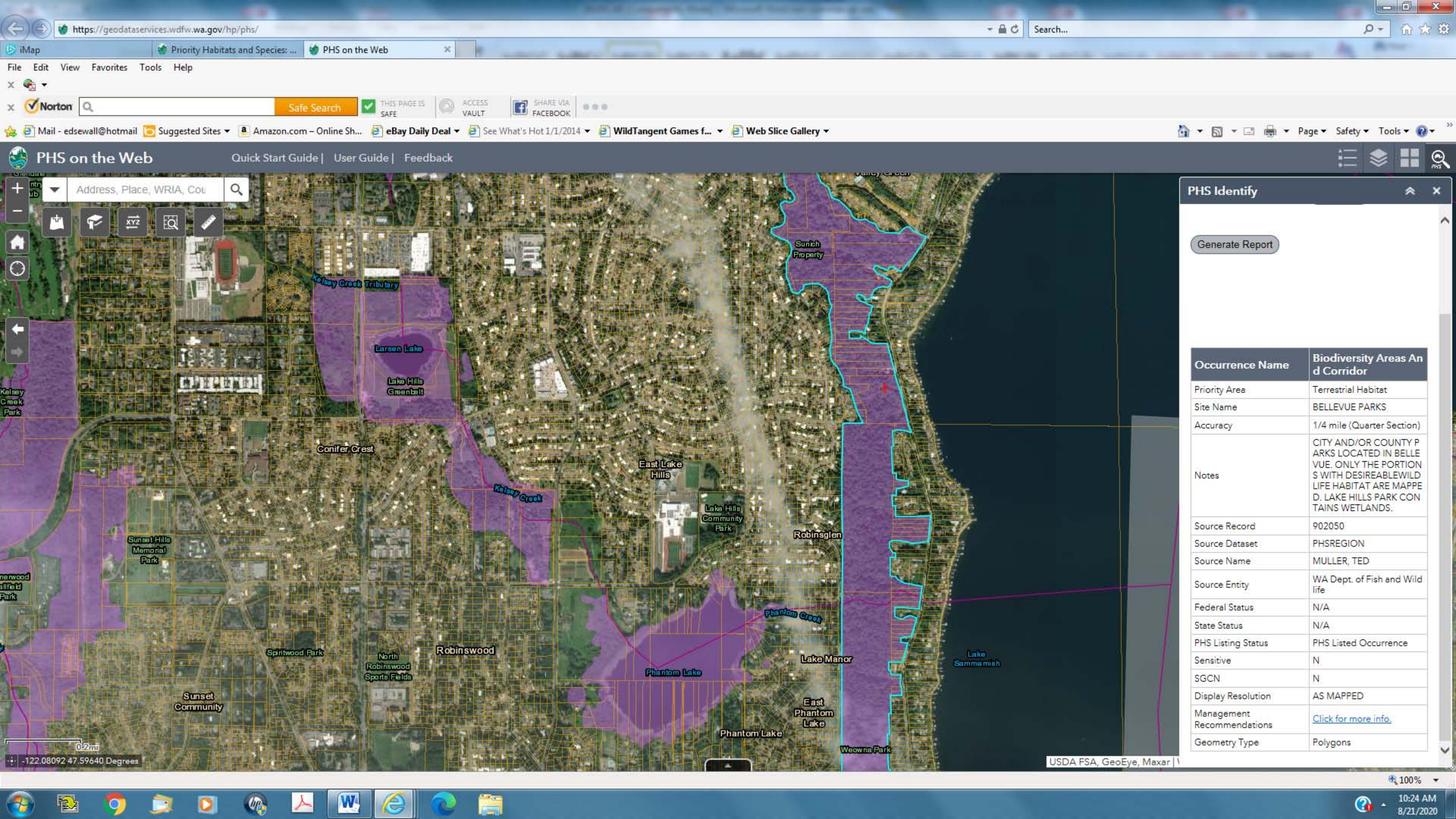
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Larsen Lake
Lake Hills Greenbelt
Kelsey Creek Park
Conifer Crest
East Lake Hills
Kelsey Creek
Lake Hills Community Park
Robinsglen
Sunset Hills Memorial Park
Phantom Creek
Spiritwood Park
North Robinswood Sports Fields
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Terrestrial Habitat
Site Name
BELLEVUE PARKS
Accuracy
1/4 mile (Quarter Section)
Notes
CITY AND/OR COUNTY PARKS LOCATED IN BELLEVUE. ONLY THE PORTIONS WITH DESIREABLEWILDLIFE HABITAT ARE MAPPED. LAKE HILLS PARK CONTAINS WETLANDS.
Source Record
902050
Source Dataset
PHSREGION
Source Name
MULLER, TED
Source Entity
WA Dept. of Fish and Wildlife
Federal Status
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State Status
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PanGEO INCORPORATED
Geotechnical & Earthquake
Engineering Consultants

August 13, 2020
File No. 20-282

Eyal Hillel
Nadlan Group LLC
Eyalhi2000@gmail.com

**Subject: Geotechnical Report Update**
**Proposed Single-Family Residence**
**439 West Lake Sammamish Pkwy SE, Bellevue, WA**

Dear Eyal,

As requested, this letter is prepared to serve an update to the 2006 and 2014 reports prepared by Associated Earth Science (AESI) for the above property. Our work was performed in general accordance with our mutually agreed scope of work outlined in our proposal dated July 30, 2020, which was subsequently approved by you on the same date. Our service scope included reviewing existing reports, reviewing current design plans, and providing our opinions and conclusions in this letter.

## SITE AND PROJECT DESCRIPTION

The project site is an approximately 1.27-acre vacant lot located at 439 West Lake Sammamish Pkwy SE in Bellevue, Washington (see Vicinity Map, Figure 1). The site is roughly rectangular in shape, and is bordered to the east by West Lake Sammamish Pkwy SE, to the west by existing single-family residences, and to the north and south by vacant lots (see Site and Exploration Plan, Figure 2). A small creek runs approximately from west to east across the southern portion of the site. Based on review of King County iMap, the site generally slopes down from west to east with an average gradient of about 28 percent and with a total vertical relief of about 210-220 feet. Our review of the City of Bellevue Critical Hazards Maps indicates portions of the site are mapped with steep slopes >40%.

We understand that a building permit was issued for construction of a new single-family residence (SFR) in the eastern portion of the site in 2016, however, construction was never started. We further understand that it is planned to re-submit plans to obtain a new building

permit, and the house design will virtually be the same as approved in 2016. The objective of our work is to review existing reports and plans, to update the seismic design parameters, and to conduct a site reconnaissance to evaluate the site conditions.

## DOCUMENT REVIEW

As part of our study, we have completed a review of the following documents:

1. Geotechnical report entitled "*Subsurface Exploration. Geologic Hazard, and Preliminary Geotechnical Engineering Report, Washburn Residence, 409 West Lake Sammamish Parkway SE, Bellevue, Washington."* prepared by Associated Earth Science. dated August 1, 20106,
2. Geotechnical Report Update, Kamoh Residence, *409 West Lake Sammamish Parkway SE, Bellevue, Washington.*
3. 2016 Permit plan set which include the following:

    - Architectural Plan Sheets 1 through 3, A-1 through A-16 last Revised on October 12, 2015;
    - Structural Plan Sheets S1 through S5 by BTL Engineering, Inc. last revised on November 23, 2015;
    - Shoring Plan Sheets SS1.0 through SS5.0 by CT Engineering, Inc. last revised on April 25, 2016).

## SITE RECONNAISSANCE

As part of our work, we conducted a site reconnaissance of the subject property and the steep slopes adjacent to the property on August 11, 2020. During our site reconnaissance, we observed the existing condition of the site and adjacent properties to look for evidence of past or ongoing instability, such as scarps, sloughs, tension cracks, uneven ground surfaces, jackstrawed trees, breaks in vegetation, water features and convergent landforms. We did not observe any obvious evidence of past slope instability during our site reconnaissance. Additionally, we observed that the steep slopes are covered with bushes and trees, and mature trees on the steep slopes are observed to be straight.

Based on our observations of ground features and the subsurface conditions (i.e. dense soil conditions at the shallow depths), it is our opinion that the site is globally stable in its current configuration. Based on the shoring walls currently designed, it is also our opinion that the proposed construction will not adversely impact the overall global stability of the subject site and surrounding properties, provided that the proposed project is properly constructed pe the approved plans.

## SEISMIC DESIGN PARAMETERS PER IBC 2015

The seismic evaluation of the structures should be accomplished in accordance with the 2015 or 2018 International Building Code (IBC). Table 1 below provides seismic design parameters for the site that are in conformance with the 2015/2018 IBC, which specifies a design earthquake having a 2% probability of occurrence in 50 years (return interval of 2,475 years), and the 2008 USGS seismic hazard maps.

**Table 1 – 2015/2018 IBC Seismic Design Parameters**

| | Site Class | Spectral Acceleration at 0.2 sec. (g) | Spectral Acceleration at 1.0 sec. (g) | Site Coefficients | | Design Spectral Response Parameters | |
|---|---|---|---|---|---|---|---|
| | | $S_S$ | $S_1$ | $F_a$ | $F_v$ | $S_{DS}$ | $S_{D1}$ |
| 2015 IBC | D | 1.295 | 0.496 | 1.0 | 1.5 | 0.863 | 0.497 |
| 2018 IBC | D | 1.308 | 0.456 | 1.0 | 1.85 | 0.872 | 0.564 |

## OPTIONS AND AND CONCLUSIONS

Based on our review, in general, we concur with the geotechnical findings and recommendations contained in the referenced geotechnical report and report update and, in our opinion, the geotechnical recommendations outlined in the report have been substantially incorporated in the project design.

Based on our review of the previous geotechnical reports by AESI, the current project design plans, and our evaluation of the Critical Hazards in context of the current Land Use

Code, it is our opinion that the proposed development as currently planned will not adversely affect the Critical Hazard Areas and meets the performance standards of the current Land Use Code.

## CLOSURE

We have prepared this report for Eyal Hillel and the project design team. Opinions and conclusions contained in this report are based on a review of pertinent subsurface information and our understanding of the project. The study was performed using a mutually agreed-upon scope of work.

This report has been prepared for planning and design purposes for specific application to the proposed project in accordance with the generally accepted standards of local practice at the time this report was written. No warranty, express or implied, is made.

We appreciate the opportunity to be of service.

Sincerely,

Bart Weitering

HONGBO MICHAEL XUE
STATE OF WASHINGTON
35016
REGISTERED
PROFESSIONAL ENGINEER
8/13/2020

Bart Weitering, G.I.T.
Staff Geologist

H. Michael Xue, P.E.
Principal Geotechnical Engineer

## REFERENCES

AESI, 2006, *Subsurface Exploration, Geologic Hazard, and Preliminary Geotechnical Engineering Report, Washburn Residence, 409 West Lake Sammamish Parkway SE, Bellevue, Washington*, dated August 1, 2006.

AESI, 2014, *Geotechnical Report Update, Kamoh Residence, 409 West Lake Sammamish Parkway SE, Bellevue, Washington*, dated September 19, 2014.

International Code Council, 2015/2018, *International Building Code (IBC), 2015/2018.*