CRITICAL AREAS REPORT AND MITIGATION PLAN

November 4, 2019—Updated July 2020

Lytle Road Property

Bainbridge Island, Washington

Prepared for

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The information and data in this report were compiled and prepared under the supervision and direction of the undersigned.

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INTRODUCTION

Ecological Land Services, Inc. (ELS) was contracted by Tom White to conduct a wetland boundary delineation and critical areas report for the property located at 3945 Lytle Road, Kitsap County Tax Parcel No. 4164-006-001-0208, in the Pleasant Beach area of Bainbridge Island, Washington. The project site is located within a portion of Section 3, Township 24, Range 2 East of the Willamette Meridian (Figure 1). This report summarizes the findings of the wetland delineation according to the *Bainbridge Island Municipal Code (BIMC), Chapter 16.20.160* (2018) for delineation methodology, wetland categorization, and required buffer widths. The report also includes buffer mitigation discussion required for the Reasonable Use Exception (RUE) to reduce the required buffer. The report will be updated to include the formal mitigation plan after the pre-application meeting.

METHODOLOGY

The wetland delineation followed the Routine Determination Method according to the U.S. Army Corps of Engineers, *Wetland Delineation Manual* (Environmental Laboratory 1987) and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys and Coast Region, Version 2.0* (U.S. Army Engineer Research and Development Center 2010).

The Routine Determination Method examines three parameters—vegetation, soils, and hydrology—to determine if wetlands exist in a given area. Hydrology is critical in determining what is wetland but is often difficult to assess because hydrologic conditions can change periodically (hourly, daily, or seasonally). Consequently, it is necessary to determine if hydrophytic vegetation and hydric soils are present, which would indicate that water is present for long enough duration to support a wetland plant community. By definition, wetlands are those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands are regulated as "Waters of the United States" by the U.S. Army Corps of Engineers (USACE), as "Waters of the State" by the Washington Department of Ecology (Ecology), and locally by the City of Bainbridge Island.

To delineate the wetland boundary on the property, ELS biologists collected data on vegetation, hydrology, and soils. A site visit was conducted on May 31, 2019, during which one wetland was identified and delineated. The wetland boundaries were delineated using consecutively numbered fluorescent flags labeled "WETLAND DELINEATION." Wetland boundary was determined through breaks in topography, changes in vegetation, and evidence of wetland hydrology. Vegetation, hydrology, and soil data was collected at five test plots to verify the wetland boundary (Appendix A). The wetland boundary was mapped using a Trimble handheld Global Positioning System (GPS) unit to show on the site map (Figure 2). The location of the stream was also mapped using the GPS unit for the site map.

SITE DESCRIPTION

This 0.20-acre property is located in the Pleasant Beach area on the southwest side of Bainbridge Island (Figure 1). The property is currently undeveloped and accessed via Lytle Road, which borders the eastern property boundary (Photoplate 1). Neighboring properties to the north, west, and south are developed with single-family homes. The vegetation throughout the property consists of emergent and scrub/shrub vegetation. The topography slopes moderately from the east and west down into the middle of the property, where a stream channel is present. The stream begins offsite north of Beck Road, then is tightlined underneath the road and daylights midway through the property to the north. This stream channel flows onsite near the middle of the northern property boundary, continues to the southwest across this property and exits near the southwestern property corner. The stream then flows into a pipe and is tightlined under the property to the south until it outlets as a roadside ditch along Pleasant Beach Drive NE (Photoplates 2 and 5).

One wetland, Wetland A, is located mostly offsite on the neighboring property to the north so only the onsite boundary was delineated on both sides of the stream channel (Photoplates 3 and 4). Wetland A is a riverine system dominated by scrub/shrub and emergent vegetation, which begins midway through property to the north and ends at the north end of this property. The wetland is seasonally flooded, and its hydrology is significantly influenced by the seasonally flowing stream. Wetland A was rated as a Category II wetland with a habitat score of 5. A score of 5 points, according to the Washington Department of Ecology publication, *July 2018 Modifications for Habitat Score Ranges*, qualifies as a low habitat score. The resulting buffer per *BIMC* is 75 feet for moderate intensity land uses. The portion of wetland to the north was planted with native trees as part of a mitigation plan for development of the house on the property to the north approximately 10 to 12 years ago.

VEGETATION

Wetland Vegetation

Wetland A is dominated by scrub/shrub and emergent vegetation. Areas dominated by shrubs consisted primarily of Pacific ninebark (*Physocarpus capitatus*, FACW) with the offsite portion consisting mainly of scrub/shrub species within both the wetland and buffer. Emergent vegetation throughout the rest of the onsite wetland was dominated by creeping buttercup (*Ranunculus repens*, FAC), tall fescue (*Schedonorus arundinaceus,* FAC), softrush (*Juncus effusus,* FACW), velvet grass (*Holcus lanatus,* FAC), lady fern (*Athyrium cyclosorum*, FAC), and other unidentified grasses.

Upland Vegetation

The upland area on the property consisted mostly of emergent species. Dominant species included orchard grass (*Dactylus glomerata*) and sweet vernal grass (*Anthoxanthum odoratum,* FACU) with some velvet grass, tall fescue, bedstraw (*Galium sp.,* FAC) and sheep sorrel (*Rumex acetosella*, FACU) also present. There were scattered shrubs throughout the rest of the property, including Pacific ninebark, just outside of the wetland. A large big leaf maple (*Acer macrophyllum*, FACU) was also present offsite to the south but overhangs much of the southern portion of the property.

The dominant vegetation found onsite is recorded on the attached wetland determination data forms (Appendix A). The indicator status, following the common and scientific names, indicates how likely a species is to be found in wetlands. Listed from most likely to least likely to be found in wetlands, the indicator status categories are:

- **OBL** (obligate wetland) – Almost always occur in wetlands.
- **FACW** (facultative wetland) – Usually occur in wetlands, but may occur in non-wetlands.
- **FAC** (facultative) – Occur in wetlands and non-wetlands.
- **FACU** (facultative upland) – Usually occur in non-wetlands, but may occur in wetlands.
- **UPL** (obligate upland) – Almost never occur in wetlands.
- **NI** (no indicator) – Status not yet determined.

SOILS

As referenced on the U.S.D.A. Natural Resources Conservation Service (NRCS 2019) website, Neilton gravelly loam sand, 0 to 3 percent slopes (34) is mapped across most of the property and a small area of Kapowsin gravelly ashy loam, 0 to 6 percent slopes (22) is mapped in the northeast corner (Figure 3). Neilton soils formed in gravelly and sandy outwash and are excessively drained. The depth to the water table is greater than 80 inches. Kapowsin soils formed in volcanic ash mixed with glacial drift over dense glaciomarine deposits. They are moderately well drained and the depth to water table ranges between 11 and 24 inches. Kapowsin and Neilton soils are not classified as hydric (NRCS 2016). Areas mapped as hydric soils do not necessarily mean that an area is or is not a wetland—hydrology, hydrophytic vegetation, and hydric soils must all be present to classify an area as a wetland.

Wetland Soils

The observed wetland soils at Test Plot 1 consisted of black (10YR 2/2) silty clay loam with five percent dark brown (10YR 3/6) redoximorphic features. This top layer extended down to 12 inches and was underlain by a second layer of black (10YR 2/2) gravelly sandy loam with no redoximorphic features. The soil profile met indicator F6: Redox dark surface. At wetland Test Plot 3, the entire 16 inches of the soil profile consisted of black (10YR 2/2) gravelly sandy loam with five percent dark brown (10YR 3/6) redoximorphic features and also met indicator F6.

Upland Soils

The upland soil profile at Test Plot 2, consisted of a top layer of black (10YR 2/2) gravelly sandy loam underlain at 5 inches by dark grey brown (10YR 4/2) gravelly sandy loam with two percent medium brown (10YR 4/4) faint redoximorphic features down to 7 inches. Below the second layer is a third layer of black (10YR 2/2) gravelly sandy loam with five percent dark brown (10YR 3/3) redoximorphic features. This soil profile does not meet any of the hydric soil indicators either because thickness requirements are not met or because redoximorphic features were not prominent or distinct. All 16 inches of the soil profile at Test Plot 4 consisted of dark brown (10YR 3/4) gravelly sandy loam; the matrix chroma was too high to meet hydric soil indicators. Test Plot 4 consisted of one layer to 16 inches of black (10YR 2/2) gravelly sandy loam; no redoximorphic features were present in the soil profile, so no hydric soil indicators were met.

HYDROLOGY

Water was observed in the wetland as saturation at 12 inches and 10 inches in Test Plots 1 and 3, respectively. The primary sources of hydrology to the wetland include water flow from the seasonal stream and water seeping from the slope. The wetland may also receive inputs from water runoff from Lytle Road, which runs downslope into the wetland, and direct precipitation.

The upland showed no signs of wetland hydrology; there was no saturation, high water table, water staining, etc. or other indicators present throughout the upland.

STREAM TYPING

The mapped stream begins offsite north of Beck Road. Once the stream reaches Beck road it is tightlined until it daylights at the north end of Wetland A. The stream flows south through the wetland and flows onsite near the middle of the northern property boundary. The stream then flows southwest through the property, exiting at the southwestern property corner. The stream enters a pipe at the southwestern property corner and is tightlined again until it outlets at the north side of Pleasant Beach Drive NE and continues to the west as a roadside ditch. Water was not present in the stream channel during the May 31, 2019 field visit. On average, the channel is approximately one foot wide and is mostly obscured by grasses and emergent vegetation that grows over the channel. The stream was determined a Type Ns, non-fish seasonally flowing stream. The stream does not appear to flow year-round and does not meet the WDNR definition of a fish-bearing water.

NATIONAL WETLAND INVENTORY

The National Wetlands Inventory (NWI) does not map wetlands on or within 300 feet of the property (Figure 4). The ELS findings disagree with the mapping as an emergent and forested riverine wetland was found to exist onsite. The NWI maps should be used with discretion because they are used to gather general wetland information about a regional area and therefore are limited in accuracy for smaller areas because of their large scale.

BAINBRIDGE ISLAND CRITICAL AREAS MAPS

The City of Bainbridge Island GIS website (COBI 2018) maps the stream across the property as non-fish perennial stream, which agrees with the observations made by ELS (Figure 5). The COBI also maps a Category II wetland to the north of this property (Figure 5). This mapped wetland represents the northern portion of the onsite wetland delineated by ELS on May 31, 2019. ELS generally agrees with the mapping of these critical areas, but onsite observations show that the wetland extends further south than was previously mapped. Critical area maps should be used with discretion because they are used to gather general wetland information about a regional area and therefore are limited in accuracy for smaller areas because of their large scale.

CRITICAL AREAS SUMMARY

WETLAND CATEGORIZATION

The wetland was rated according to *Washington State Wetlands Rating System for Western Washington-2014 Update* (Rating System) (Hruby 2014), and received ratings based on functions (Appendix B). Wetland A is a riverine system with saturated only and seasonally flowing stream hydroperiods. The wetland received a total of 20 points on the Rating System with a habitat score of 5 points, and a rating as a Category II wetland.

CRITICAL AREA REGULATIONS

The *BIMC Chapter 16.20.140.I* specifies buffers based on wetland category, scores for habitat functions on the rating form, and the intensity of the proposed land use in accordance with the Rating System. Wetland A is a Category II wetland that received a low score for habitat function.
This lot is within the R-2 zone and onsite development is considered a moderate intensity land use; a 75-foot buffer is required from the onsite wetland area. A 15-foot building and impervious surface setback is also specified from the edge of the critical area buffers.

The Type Ns, non-fish perennial, stream continues to the south where it drains into Puget Sound. This stream has a 50-foot buffer per the *BIMC Section 16.20.110.E(2)*.

SITE DEVELOPMENT PROPOSAL

This small 0.20-acre property is encumbered by the stream and wetland, which lie in the middle of the property. The position of these critical areas is such that buffers cover the entire lot. The project proposes to construct a small single-family home on the eastern side of the property as close to Lytle Road NE as is feasible. The house uses a low-impact design by utilizing cantilevers on the western and eastern sides of the house. This design keeps the footprint of the house on the ground low, at 480 square feet, reducing the amount of impervious surface on the ground and limiting disturbance onsite. With the cantilevers, the overall footprint of the house is only 840 square feet. The primary drainfield and septic system will be placed east of the new residence. The reserve drainfield is proposed west of the home on this property but can be placed on the property to the north, if deemed necessary by the city (Figure 3A). This project will result in approximately 3,020 square feet of permanent buffer impacts. The buffer impact will be mitigated for by enhancing the wetland and stream buffer west of the residence; plantings will also be placed within the wetland itself to enhance the existing condition of the critical area.

REASONABLE USE EXCEPTION

The project proposes building one single-family home on the eastern side of the lot. Administrative buffer reductions are permitted by the *BIMC Section 16.20.140.I.8* and *16.20.110.E(8)* for wetland and streams, respectively. The buffers can be reduced through the buffer averaging process wherein the buffer is reduced in one location and increased in another by the same square footage to create a buffer that averages the required buffer width. The *BIMC* also permits 25 percent reductions of wetland buffers if it can be documented that the reduction will provide a buffer that provides adequate protection for the wetland. Buffer reductions beyond what is allowed administratively are required to proceed through the Reasonable Economic Use Exception (RUE) process. Buffer

reductions allowed administratively will not result in a reduced buffer that allows construction of a home on the lot so the project will proceed through the RUE process. Buffer mitigation is required to compensate for the buffer reduction per the *BIMC*. The Reasonable Use Review Criteria per *BIMC 16.20.080(F)* is listed below (*in italics*) along with the reason the project meets these criteria:

1. *The application of this chapter would deny all reasonable use of the property;*
   This entire property is encumbered by the 75-foot wetland buffer, which extends past the eastern property line, and the 50-foot stream buffer. Application of these buffers denies all reasonable use of the property to build a small single-family home.

2. *There is no reasonable alternative to the proposal with less impact to the critical area or its required buffer;*
   The project proposes all impacts—the septic system, house, and driveway—as close to Lytle Road as possible. The home also proposes a small footprint of 480 square feet on the ground with cantilevers on the west and east sides of the house to reduce ground disturbance and impervious surfaces. There is no alternative to the onsite development that would have less of an impact to the critical areas. Furthermore, the project will mitigate for the impact area by enhancing the wetland and buffer with native vegetation and preserving as much native vegetation onsite as is possible (Figure 9).

3. *The proposal minimizes the impact on critical areas in accordance with mitigation sequencing (BIMC 16.20.030);*
   Mitigation for this project is listed in the Mitigation Sequencing section below. The project has worked to keep all impacts as far from the critical areas as possible and proposes a small house footprint with a low-impact design.

4. *The proposed impact to the critical area is the minimum necessary to allow reasonable use of the property;*
   There are no direct impacts to the critical areas. The project has designed a house with a small footprint and proposed all impacts as far from the critical areas as possible to keep impacts to a minimum. If necessary, the reserve drainfield can be placed on the property to the north to further reduce impacts to the stream and wetland buffers.

5. *The inability of the applicant to derive reasonable use of the property is not the result of actions by the applicant, or of the applicant's predecessor, that occurred after February 20, 1992;*
   The applicant and applicant's predecessor have not caused the conditions that deny the property of reasonable use.

6. *The proposed total lot coverage does not exceed 1,200 square feet for residential development;*
   The house footprint on the ground is only 480 square feet; with the cantilevers, the total footprint is 840 square feet, which is well below the 1,200 square foot threshold.

7. *The proposal does not pose an unreasonable threat to public health, safety, or welfare on or off the property;*

The project does not propose any direct impacts to these critical areas or threaten public health, safety, or welfare. The primary drainfield has been proposed as far from the critical area as possible and side yard setbacks have been reduced to minimize impacts. The closest impact to the wetland is the house, however, the runoff from the roof will be clean. The project also proposes a house with a small footprint to keep impacts as low as possible. Compensatory mitigation is also proposed to enhance the wetland and critical areas buffers, ensuring there are no detrimental effects to these areas.

8. *Any alterations permitted to the critical area are mitigated in accordance with mitigation requirements applicable to the critical area altered;*
   All impacts will be mitigated for by enhancing the wetland and buffer areas closest to the house with native trees and shrubs at a ratio of 1:1. The overall impact area is 3,020 square feet; 2,744 square feet of mitigation plantings are proposed in the buffer and 276 square feet of plantings are proposed within the wetland. There will also be 2,651 square feet of wetland and buffer that will be preserved outside of the impact area on the west side of the property. The mitigation plantings in the wetland consist of Pacific willow, red osier dogwood, and Pacific ninebark. These species are quick growing, thrive in wet environments, and will increase species diversity within the wetland. The buffer species—Douglas fir, vine maple, black twinberry, and nootka rose—are proposed adjacent to the home and will help to screen light and noise, filter runoff, increase species diversity, and create a additional habitat niches for wildlife.

9. *The proposal protects the critical area functions and values consistent with the best available science and results in no net loss of critical area functions and values;*
   The project will result in no net loss of function for the critical areas because it will compensate for buffer impacts onsite through mitigation. The mitigation plan will improve habitat function in the buffer and wetland because this area currently consists primarily of grasses. The trees and shrubs will create additional habitat niches along with the existing emergent species, eventually creating a forested environment. These plantings will also filter light and noise from the new home, filter runoff from impervious surfaces, and will preserve and enhance the functions and values of the stream, wetland, and buffers. Some species will be planted west of the stream, closest to the channel to help with screening, but most of the meadow west of the stream will be preserved in its existing state. It is advantageous to preserve the meadow because it and forest habitats provide different niches for wildlife.

10. *The proposal addresses cumulative impacts of the action; and*
    Cumulative impacts from residential development may include increased noise and light, habitat loss, and increased runoff. However, this project addresses these potential impacts by minimizing the impact area and proposing mitigation to better shield the critical areas from light and noise, improve habitat function, and filter and slow runoff. The buffer will see a lift in function once mitigation is complete.

11. *The proposal is consistent with other applicable regulations and standards.*
    The proposed project meets all other regulations and standards.

MITIGATION SEQUENCING

Avoid the Impact: The entirety of this property is encumbered by a stream, wetland, and their associated buffers. The project cannot avoid impacts to the buffers but does avoid direct impacts to the stream or wetland.

Minimize the Impact: This project will minimize the impacts to critical areas and their buffers by placing the house and drainfield as close to the road as possible and will avoid direct impacts to the wetland. The house is also designed with cantilevers on either side to reduce impervious surfaces and ground disturbance. The house footprint on the ground is only 480 square feet. In addition, the septic system will be placed as close to Lytle Road as possible, away from the wetland and stream. If needed, a "backup reserve" is proposed on the property to the north, outside of the buffer, as an alternative to the onsite reserve west of the home. The project also proposes a variance to the side and front yard setbacks to limit intrusion into the stream and wetland buffers. This reduction of the side and front yard setbacks will allow additional stream buffer and ensure the house does not encroach into the wetland. This will also allow the septic system to be placed further from the critical areas. Mitigation plantings will also be chosen to provide light and noise screening from the new home.

Rectifying the Impacts. The home, driveway, and drainfield represent permanent features within this area of buffer so the impacts cannot be fully rectified.

Reducing or Eliminating the Impacts through Preservation or Maintenance. The project cannot eliminate the impacts by preservation and maintenance.

Compensate for the Impact: The project cannot avoid, rectify, or reduce the impact to the wetland and stream buffers but has minimized the impact to the extent possible by proposing the home, driveway, and septic system as far from the wetland boundary as possible. Because the project cannot avoid all impacts to the wetland and stream buffers, mitigation is proposed to compensate for the 3,020 square feet of reduced buffer area (Figure 9). The mitigation plan will include installation of 2,744 square feet of native trees and shrubs within the wetland and stream buffers, which will provide screening for the critical areas from the proposed home, driveway and Lytle Road. The entire onsite wetland will also be enhanced with 276 square feet of native shrubs and trees. The existing wetland and stream buffer areas are mostly vegetated by mowed grasses and native mitigation plantings will increase plant species diversity in the buffer. The rest of the buffer to the west of the stream and wetland, approximately 2,664 square feet, will be preserved because this area has more cover by forest vegetation and is higher functioning than the rest of the buffer. To ensure that the mitigation area is protected, split rail fencing will be installed along the edge of the designated buffer area to demarcate the critical area and to limit human intrusion.

Monitor the Affects of the Impact: The mitigation plan will be monitored for a period of 5 years to ensure that the plan meets the goals, objectives, and performance standards of the mitigation.

IMPACT ANALYSIS

STREAM IMPACTS

The wetland and Type Ns stream will not be directly impacted by the proposed onsite activities because the home, driveway, and drainfield will be maintained at least 24 feet from the OHWM of the stream and 6 feet from the wetland boundary at the closest point. However, the house footprint on the ground will be 25 feet from the OHWM and 10 feet from the wetland boundary because the cantilevers do not touch the ground and thereby reduce the overall impact to the buffer. The project includes no crossing or direct impacts to the stream or wetland. Furthermore, the Type Ns stream is non-fish bearing so no fish or fish habitat will be impacted by the project. Noise will be generated during home construction due to the use of heavy equipment and workers. Typical use of the single-family residence after construction will result in a minor increase in noise and light. The mitigation plantings will help to dampen noise and light from the new residence and protect the critical areas.

WETLAND AND STREAM BUFFER IMPACTS

The width of buffers necessary to protect a critical area from degradation is related to the functions of the critical area and the buffer itself (Castelle, et al. 1992). Buffers function to protect water quality of critical areas including streams by removing sediment and nutrients from runoff. The function depends on the type of soils, vegetation, and characteristics of the runoff. The function of buffers is also based on width and slope. In some cases, buffers as low as 50 feet are effective in filtering pollutants when there is dense groundcover, no slope or a gradual slope, and the runoff sheet flows across the buffer.

The proposed buffer intrusion will impact approximately 3,020 square feet of the stream and wetland buffer to allow for construction of the house, driveway and septic system on this small property. The project seeks to place the house, driveway, and septic as far from the critical areas as possible but cannot avoid impacting buffer. The existing stream and wetland buffers consist primarily of mowed grasses and a few scattered shrubs, which provide very little shielding of light and noise to these critical areas from the roadway or neighboring residential activity. The addition of native shrubs and trees within the buffer and wetland will not only increase the capacity of the buffers to shield the critical areas from light and noise but will also help to slow and filter runoff from upslope, and increase habitat function in the buffer.

MITIGATION PLAN

The project proposes to impact 3,020 square feet of wetland buffer and stream buffer in order to build the single-family house, driveway, and septic drainfield (Figure 3). Because options for offsite mitigation are not available on Bainbridge Island at this time, mitigation is proposed onsite. Due to the size of this property, mitigation is proposed within the wetland and stream buffer and will include planting native species to enhance the vegetation community. The new plantings will increase diversity in the vegetation community, provide shielding of noise and light from the new residence, and increase habitat function. The wetland buffer on the property to the north was planted as part of a RUE mitigation in the past. The new mitigation plan on this property will use similar plants to provide a natural transition and create a similar vegetation community. Runoff generated on the roof of the single-family home will not impact the water quality of the stream as the new and existing vegetation will act to slow down and filter the water. The current wetland

and buffer consist primarily of mowed grasses and the addition of shrubs and trees will increase habitat function, the wetland's ability to slow and filter runoff, and will help to shield the critical area from light and noise generated by the new residence.

STRUCTURES AND FUNCTIONS SOUGHT

The onsite wetland and stream buffer is composed of a grasses including orchard grass, tall fescue, Poa species, velvet grass, and other meadow species including softrush, creeping buttercup, sheep sorrel, and bedstraw. The meadow areas are mowed regularly; some shrubs and trees are scattered throughout the buffer and include Pacific ninebark, Douglas fir, and one cherry. The current buffer function is water quality protection provided by the dense grass and emergent vegetation. The existing shrubs and small trees provide little screening of light and noise because there are few of these species onsite. Enhancing the buffer with native shrubs and trees adjacent to the impact area would create denser forest vegetation of differing heights and would improve this function. In addition, planting native species will allow for additional buffer function by providing sources of downed wood (Hruby 2013).

The new trees and shrubs would also create a more diverse vegetation community improving habitat function for the critical areas and their buffers (Granger et. Al. 2005). Diversity is a goal of riparian zone management practices because a variety of plants provides a variety of function particularly within a younger forest situation (WDFW 2018). The plan increases the number of species from what is currently growing within the buffer to the extent possible as close to the homesite as possible. Furthermore, 2,651 square feet of vegetation will be preserved on the west side of the property. Most of this area consists of meadow, which will be maintained in an unmowed state. The meadow and forest habitat will provide different habitat niches, attracting a more diverse array of wildlife to the area. It is important to have a diversity of habitats in urban and residential areas because it provides refuge to many more species which will both utilize the stream and wetland.

The onsite development intends to maintain as much of the existing woody vegetation as it allows for construction of the home, driveway, and drainfield. Once construction is complete, the planting plan proposes to install deciduous and evergreen trees and shrubs from the edge of the home to the east across the stream and wetland buffers and within the wetland itself. The plants to be installed will have varying heights, which will enhance the function of the onsite and offsite buffers and replace the vegetation removed to construct the house. No emergent vegetation is proposed because the existing meadow vegetation is densely vegetated and will provide continued water quality protection after the property is developed. Mitigation plantings are proposed west of the house and reserve drainfield. By planting in this location, the trees and shrubs will block much of the noise and light generated by the home.

CRITICAL AREA ENHANCEMENT

The areas disturbed within the stream and wetland buffers to accomplish development consist of emergent meadow vegetation and will not require any tree removal. Currently, the stream buffer, wetland, and wetland buffer are vegetated by grasses and other emergent vegetation and consist of very few shrubs or trees. The reduced buffer area will be planted with 2,744 square feet of native shrubs and trees as will 276 square feet of the wetland. These species will help to create a multistory

forest with shrubs and trees of different heights, which will enhance the buffer's ability to block light and noise and increase habitat function and species diversity in these critical areas. The current buffer function is fairly low, except for its ability to filter runoff, because there is very little species diversity in the existing plant community. Despite the addition of the home, driveway, and septic system, there will be a functional lift in the critical areas after mitigation is complete.

The installed plants will also aid in protection of the water supply and quality to the stream and wetland because they will provide additional filtration of water as it flows and slow the flow of water across the buffer. The house will take up some upland area where groundwater currently filters down into the water table, but it will not impact the quantity of water within the stream because the stream is fed by upstream sources with minimal input from this small property. The planting plan proposes a maintenance plan to ensure the planting survive and are not in competition with invasive species.

Buffer Mitigation Success

The likelihood of success is typically associated with creation or restoration of wetland for direct impacts to the wetland. No direct wetland impacts or direct stream impacts are proposed for this project, therefore mitigation for the wetland or stream is not required. This property has been cleared and maintained as a grassy field for many years, as evidenced by historical aerials, and it is difficult to determine what the original critical area was like before human disturbance occurred. However, the buffer was likely composed of upland forest, similar to some of the neighboring properties. This project proposes to recreate a forested environment by adding trees and shrubs to the buffer and within the wetland itself. Buffer mitigation is often conducted onsite for single-family residences. There is little data on the success of buffer mitigation except anecdotally from local wetland professionals, including Ecological Land Services, Inc. (ELS). ELS has conducted many buffer mitigation plans over the years that have successfully improved buffer functions and diversity through installation of native plants.

The success of the mitigation plan depends on the species selected for installation and should include native species that occur in the area. The project biologist is a professional wetland scientist (PWS) certification and with 29 years of experience in Kitsap County and Bainbridge Island and has done hundreds of buffer mitigation plans that have proven successful and provide high quality native buffers. The likelihood of the ability of the enhanced buffer to provide improved buffer functions is high when comparing the condition of the existing buffer, which consists primarily of grasses, with the proposed mitigated buffer which will consist of a more diverse vegetation community with shrubs and trees. The likelihood of success is also determined by designing a monitoring plan with attainable performance standards, compensation goals, and follow-up maintenance. There are no changes to the water dynamics of the buffer or the wetland because there are no direct impacts to stream or wetland.

Specifications for Site Preparation

The tasks listed below will achieve the buffer mitigation goals and objectives. These tasks are listed in the order they are anticipated to occur; however, some tasks may occur concurrently or may precede other tasks due to site and procedural constraints.

Mitigation Area

1. Define extent of mitigation area onsite following construction of the home, driveway, and drainfield.
2. Remove invasive species and mow the tall grass to allow proper planting techniques to be used.
3. Install plantings according to specifications proposed herein.
4. Place woody mulch or organic compost around plants after installation to minimize regrowth of invasives and to allow soil moisture retention.
5. The grasses will be retained to provide an understory for the future forested buffer and to allow for continued water quality protection for the wetland and stream.

GOALS, OBJECTIVES, AND PERFORMANCE STANDARDS

Project Goal: Improve buffer functions to compensate for construction within the wetland buffer.
Objective 1: Control invasive species.

Performance Standards 1 (a): During monitoring Years 1 through 5, invasive species will be removed and suppressed within the planting areas as often as necessary to meet a performance standard of no greater than 10 percent cover by invasive species. Percent cover will be recorded annually and include in monitoring reports.

Objective 2: Improve native plant cover and buffer function.

Performance Standard 2 (a): The project will maintain 100 percent survival of plants during the entire 5-year monitoring period. Plant species number will be recorded annually and compared with as-built conditions for inclusion with the monitoring reports.

Performance Standard 2 (b): Native installed and volunteer species in the buffer mitigation areas will provide a minimum of 10-percent cover in Year 1, 10 to 15-percent cover in Year 2, 15 to 25 percent cover in Year 3, 25 to 35 percent cover in Year 4, and at least 45 percent cover within the planted areas. Plant species and percent cover will be recorded annually and included in monitoring reports.

SPECIFICATIONS FOR PLANTING

The plants specified for installation are intended to enhance the wetland and stream buffer by screening noise and light from the developed upland and providing shade and wildlife habitat for the critical areas onsite. The plants will be potted, 1 gallon in size, from local nurseries stocking native plants. Plant installation shall take place following construction and installation of the development features.

Plant Materials

1. Plants will be purchased from local nurseries.
2. Potted plants will be 1 gallon in size.
3. No damaged or desiccated roots or diseased plants will be accepted.

Planting Specifications

Plants will be installed per the attached mitigation plan around existing trees and native shrubs. Table 1 provides a list of plants proposed for installation within the wetland and stream buffer.

Plantings will be spaced to allow for access around the planted species for the continual need for removal of invasive plants.

Table 1 summarizes the total plant species, spacing, size, and quantities for the mitigation area. The spacing of plants will allow for healthy mature growth of individual species and range from 3 feet on center for lower stratum plants to 6 feet on center for the high stratum shrub species. Plants indicated on the planting plan are subject to availability from regional native plant nurseries and may be substituted with similarly performing native plants. The final location of the plants may differ from the planting plan, as site conditions dictate, and any changes will be documented on the as-built drawing prepared after completion of plant installation.

Table 1. Plant specifications

Species	Spacing (feet)	Quantity	Size
WETLAND MITIGATION AREA (276 FT^2)			
Pacific willow (*Salix lucida var. lasiandra)*	5	3	1 gallon pots
Red osier dogwood (*Cornus sericea*)	5	3	1 gallon pots
Pacific ninebark (*Physocarpus capitatus*)	5	3	1 gallon pots
BUFFER MITIGATION AREA (2,744 FT^2)			
Douglas fir (*Pseudotsuga menziesii*)	15	12	1 gallon pots
Vine maple (*Acer circinatum*)	10	15	1 gallon pots
Black twinberry (*Lonicera involucrata*)	5	35	1 gallon pots
Nootka rose (*Rosa nutkana*)	5	35	1 gallon pots
	Total	**106**	

Plant Installation Specifications

1. Plant the specified trees and shrubs the winter following construction as listed in Table 1. Space the plants somewhat irregularly and in groups to create eventual dense heterogeneity in the planting area, leaving enough space between each group to allow for access for weed removal. Plant the potted stock with a tree shovel or comparable tool. Mow the existing meadow vegetation before installing to allow the new plants to establish.
2. Place the plants in the planting holes and position the root crowns so that they are at, or slightly below, the level of the surrounding soil. Planting just below the surrounding soil will create a shallow depression around each plant for retention of water.
3. Firmly compact the soil around the planted species to eliminate air spaces.
4. Install anti-herbivory devices, such as seedling protection tubes or mesh protection netting, around the stems of planted species when appropriate, and secure them with stakes.

5. The existing grasses growing within the buffer should be mowed consistently during the monitoring period so that the new plants are able to thrive. The grasses will be retained within the buffer area to provide continued protection for the wetland and stream.
6. Irrigate all newly installed plants as site and weather conditions warrant.

MAINTENANCE PLAN

Maintenance of the mitigation area will occur for five years and will involve removing invasive plant species, irrigating planted species, and reinstalling failed plantings, as necessary. The maintenance may include the following activities:

1. Remove and control invasive vegetation around all newly installed plants a minimum of two times during the growing season for the first five years. Mow the existing emergent vegetation around the plantings to ensure they are able to get enough sunlight.
2. Irrigate planted species as necessary during the dry season, approximately July 1 through October 15. ELS recommends that watering occur at least every two weeks during the dry season for the first three years. The most successful method of watering plants is using a temporary above-ground irrigation system set to a timer to ensure the plants are regularly watered.
3. Replace dead or failed plants as described for the original installation to meet the minimum annual survival rate and percent cover performance standards.

MONITORING PLAN

The buffer mitigation area will be monitored annually for a 5-year period following plant installation. Monitoring is proposed at the end of the growing season in Years 1 through 5. Monitoring reports will be submitted to the Bainbridge Island Department of Community Development (BIDCD) by December 31st of each monitored year. The goal of monitoring is to determine if the previously stated performance standards are being met. The mitigation area will be monitored once during the growing season, preferably during the same two-week period each year to better compare the data. Individual monitoring units may be established within the mitigation area to track the changes occurring over the monitoring period.

Vegetation

Vegetative monitoring will document the developing shrub and tree layers. The following information will be collected in the buffer mitigation area:

- Percent cover and frequency of sapling/shrub species
- Percent cover and frequency of tree species
- Species composition of shrubs and trees, including non-native, invasive species.
- Photo documentation of vegetative changes over time.

Monitoring Report Contents

The annual monitoring reports will contain at least the following:

- Location map and representational drawing.
- Historic description of project, including dates of plant installation, current year of monitoring, and restatement of goals, objectives, and performance standards.
- Description of monitoring methods.
- Documentation of plant cover and overall development of plant communities.
- Assessment of non-native, invasive plant species and recommendations for management.
- Photographs from permanent photo points.
- Summary of maintenance and contingency measures proposed for the next season and completed for the past season.

CONTINGENCY PLAN

If the performance standards are not being met during the 5-year monitoring period, contingency measures will be implemented to achieve the standard by the next monitoring season. The contingency measures utilized will depend on the failure of the plants or maintenance activities and will include but are not limited to replacement of dead plants (with the same or a similar species) when the survival rate standard is not met, addition of plants when the yearly percent cover standard is not met, and more intensive maintenance if the invasive plant cover exceeds 10 percent. All contingency actions will be undertaken only after consulting and gaining approval from the BIDCD. The applicant will be required to complete a contingency plan that describes (1) the causes of failure, (2) proposed corrective actions, (3) a schedule for completing corrective actions, and (4) whether additional maintenance and monitoring are necessary.

CONCLUSIONS

This property is encumbered by a Category II riverine wetland and Type Ns stream located in the middle of the property. Due to the location of these features, their buffers extend beyond the property lines and it is not possible to build on this property without impacting the buffers. Administrative buffer reductions cannot provide enough buildable space for a modestly sized home, driveway, and septic system on the property and must proceed through the RUE process. Buffer mitigation is required to compensate for the reduced buffer area per the *BIMC*. The mitigation proposes to plant native trees and shrubs, while retaining the existing emergent vegetation, within the buffers and within the wetland. These mitigation plantings will provide a functional lift for the existing buffers and critical areas, resulting in no net loss of ecological functions as a result of the project.

LIMITATIONS

ELS bases this report's determinations on standard scientific methodology and best professional judgment. In our opinion, local, state, and federal regulatory agencies should agree with our determinations. However, the information contained in this report should be considered preliminary and used at your own risk until it has been approved in writing by the appropriate regulatory agencies. ELS is not responsible for the impacts of any changes in environmental standards, practices, or regulations after the date of this report.

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FIGURES AND PHOTOPLATES

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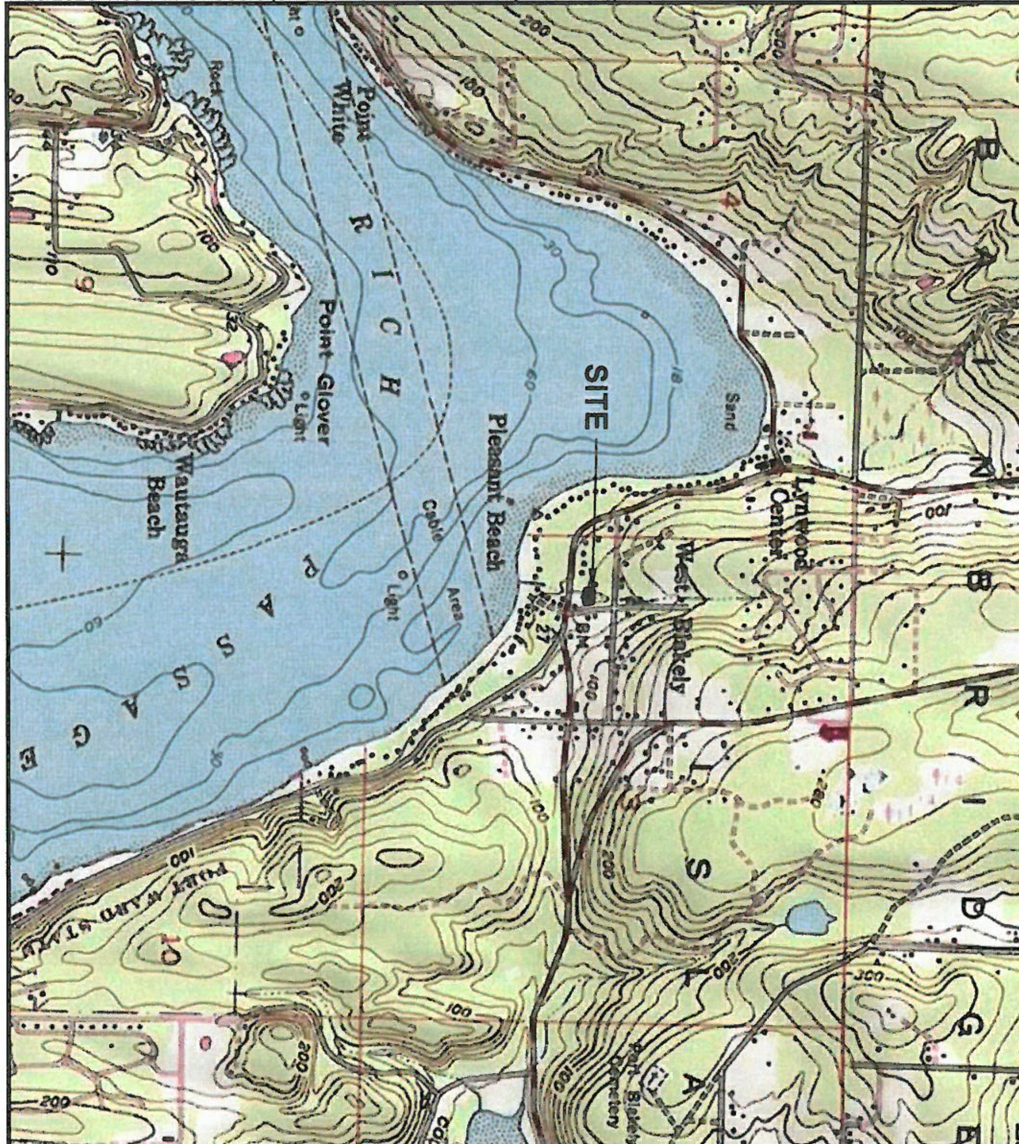

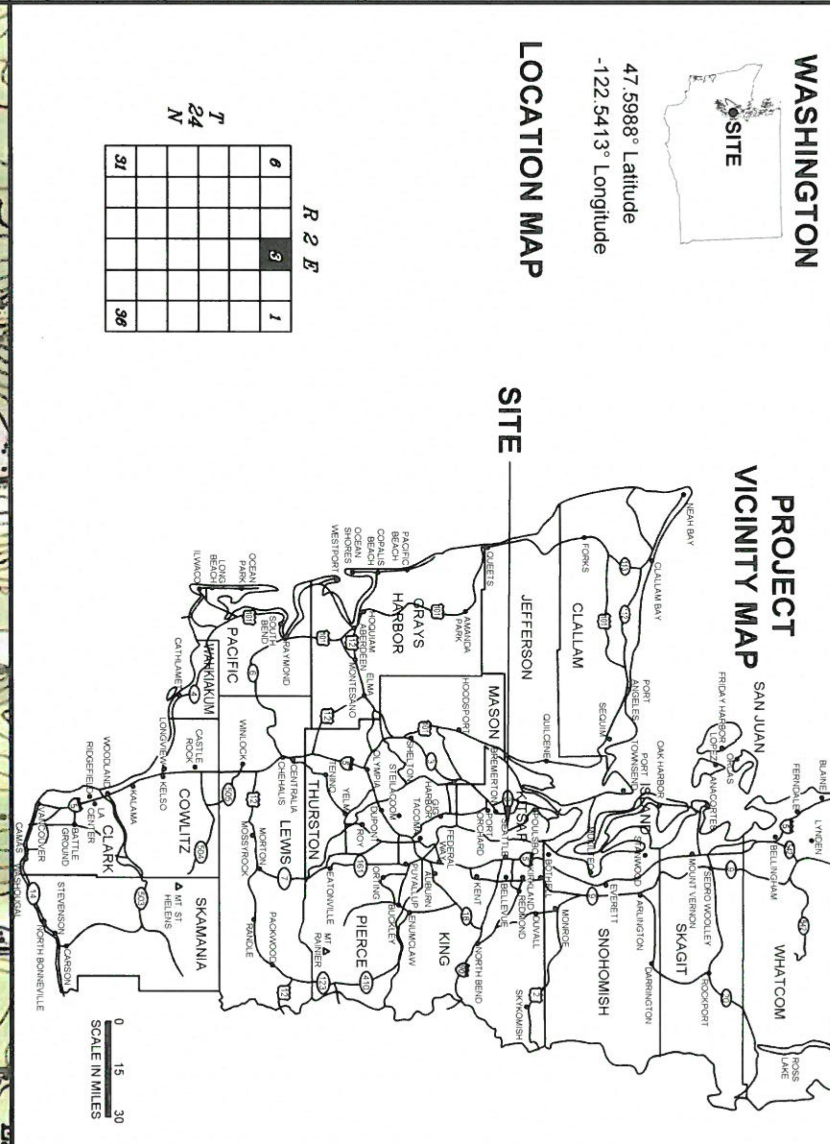

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CHK:
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Figure 1
VICINITY MAP
Lytle Road Property
Tom White
City of Bainbridge Island, Kitsap County, WA
Section 3, Township 24N, Range 2E, W.M.

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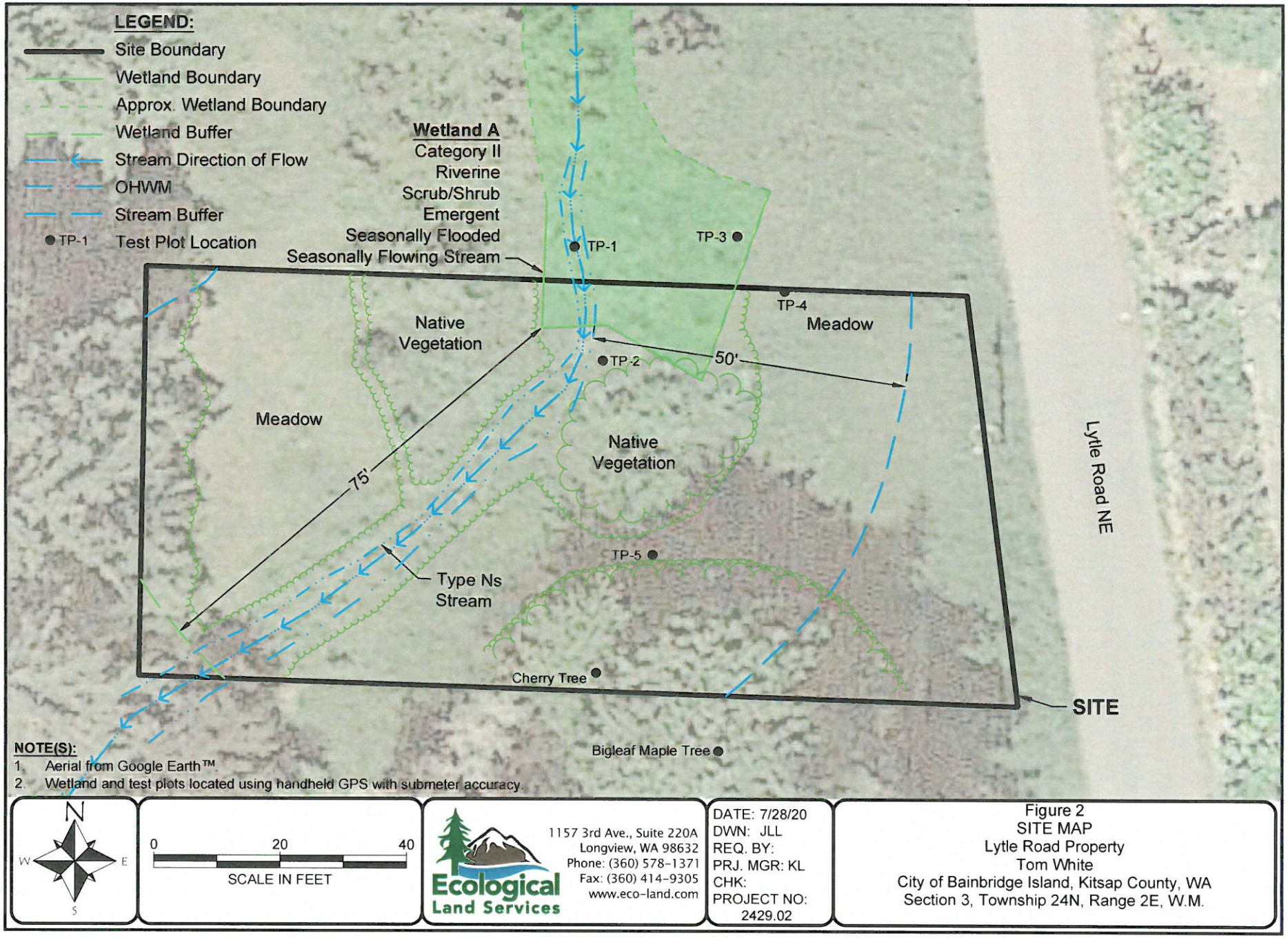

NOTE(S):

1. Aerial from Google Earth™.
2. Wetland and test plots located using handheld GPS with submeter accuracy.

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Figure 2
SITE MAP
Lytle Road Property
Tom White
City of Bainbridge Island, Kitsap County, WA
Section 3, Township 24N, Range 2E, W.M.

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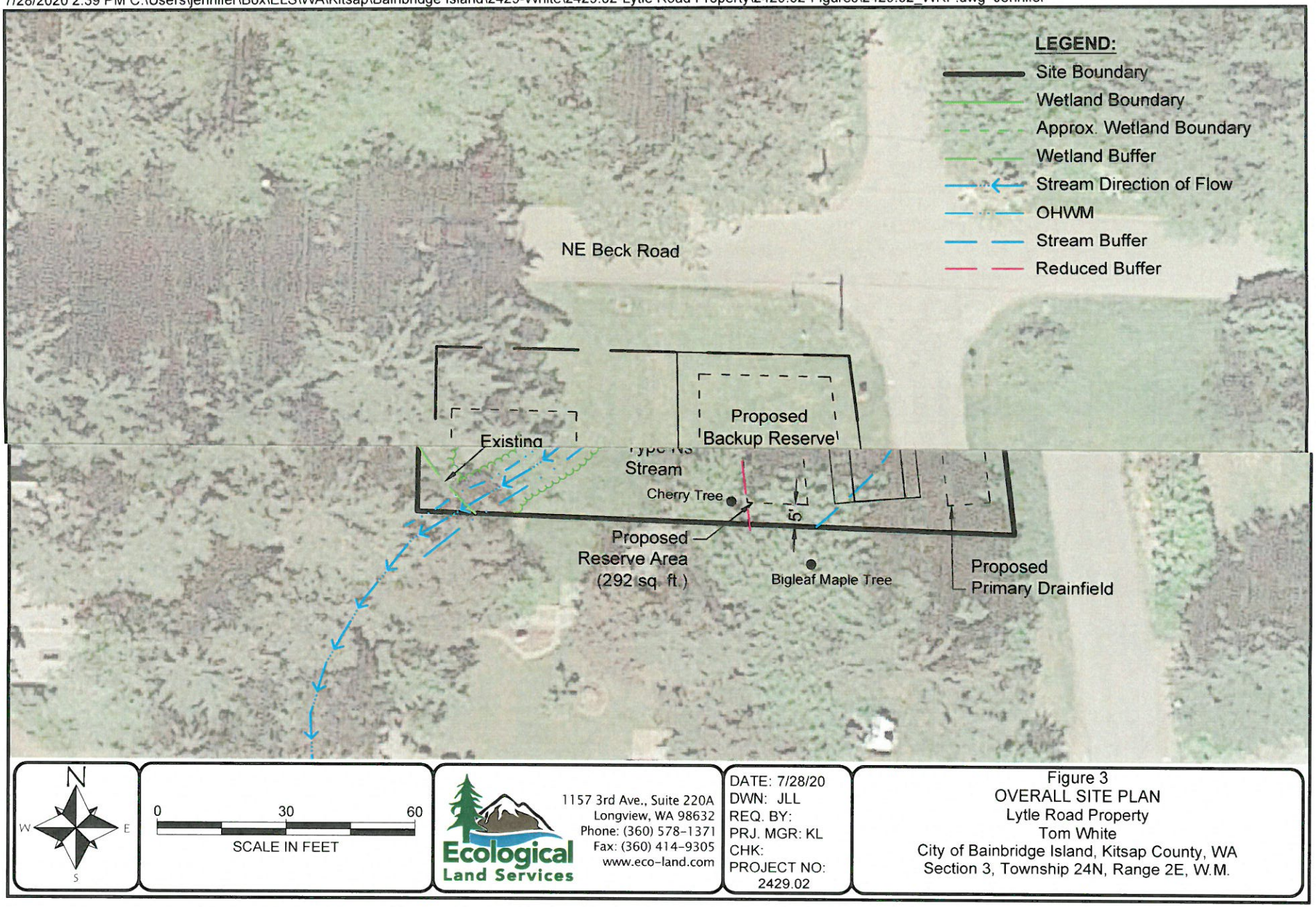

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Figure 3
OVERALL SITE PLAN
Lytle Road Property
Tom White
City of Bainbridge Island, Kitsap County, WA
Section 3, Township 24N, Range 2E, W.M.

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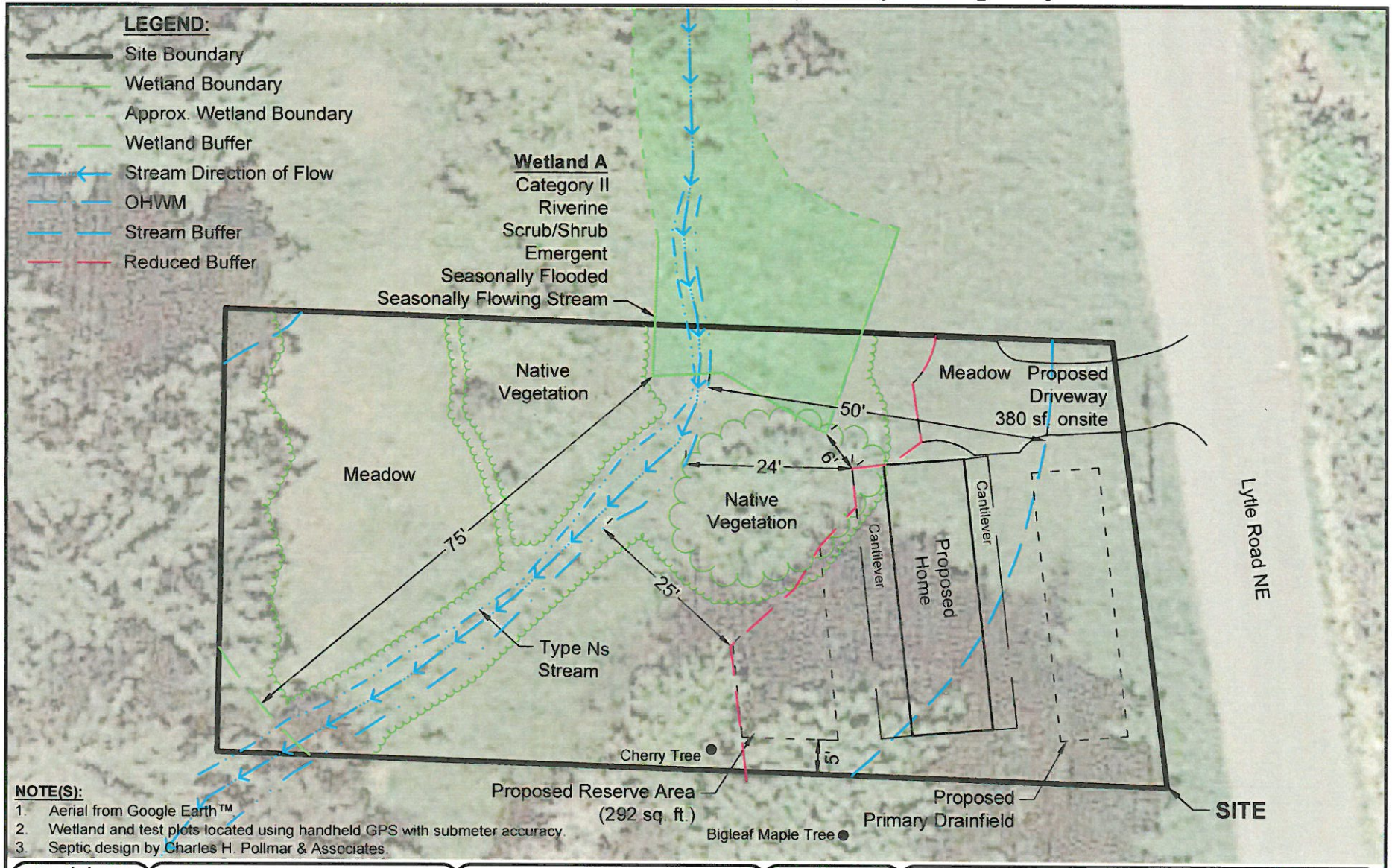

NOTE(S):

1. Aerial from Google Earth™
2. Wetland and test plots located using handheld GPS with submeter accuracy
3. Septic design by Charles H. Pollmar & Associates

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Figure 4
SITE PLAN
Lytle Road Property
Tom White
City of Bainbridge Island, Kitsap County, WA
Section 3, Township 24N, Range 2E, W.M.

Figure 5
SOIL SURVEY MAP
Lytle Road Property
Tom White
City of Bainbridge Island, Kitsap County, WA
Section 3, Township 24N, Range 2E, W.M.

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LEGEND:

22 Kapowsin gravelly ashy loam, 0 to 6 percent slopes. Not hydric.
34 Neilton gravelly loamy sand, 0 to 3 percent slopes. Not hydric.

NOTE(S):
1. Map provided on-line by NRCS at web address: *http://websoilsurvey.nrcs.usda.gov/app/*

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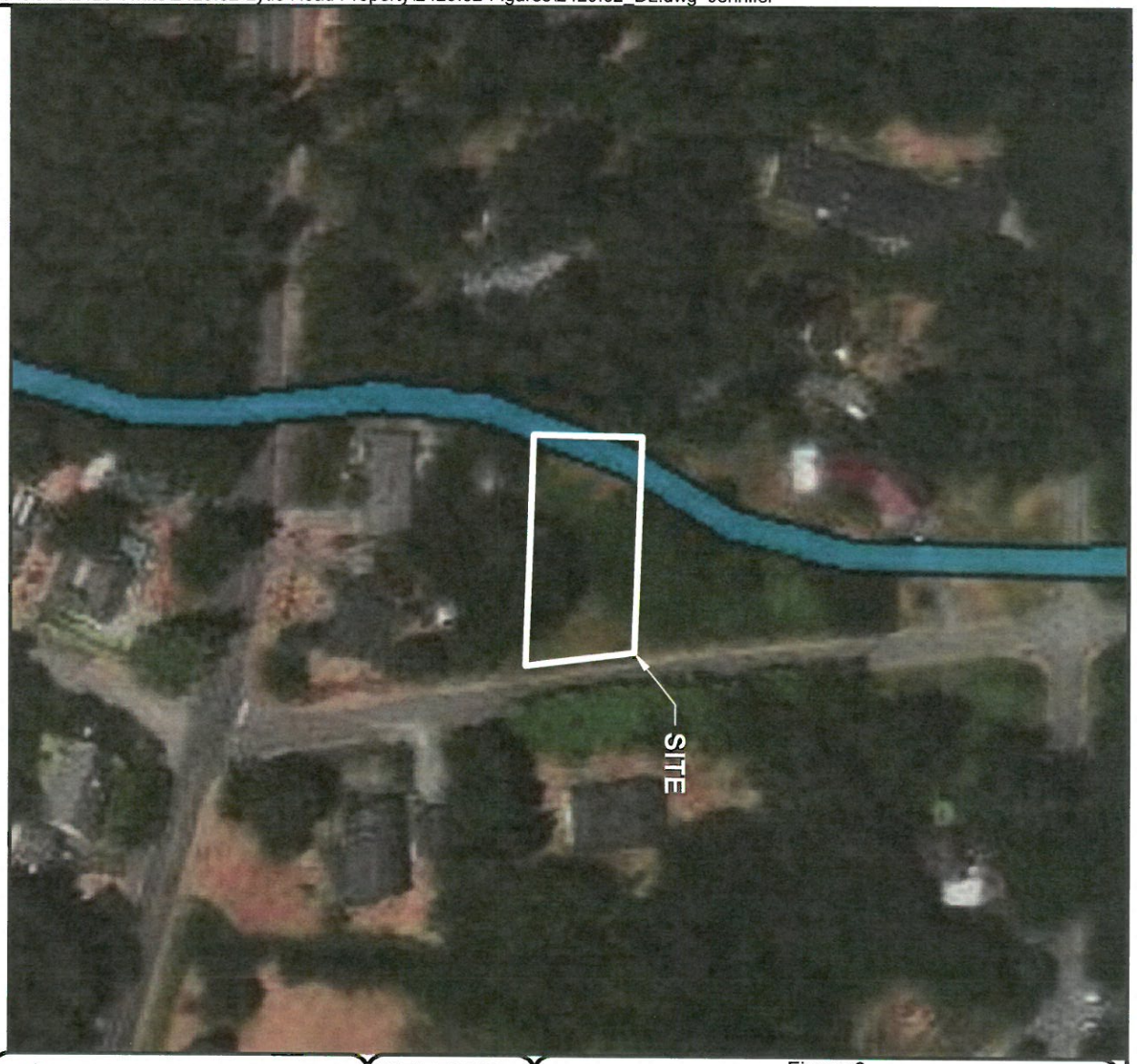

LEGEND:

Riverine

NOTE(S):

1. Map provided on-line by US Fish & Wildlife Service at web address: http://www.fws.gov/wetlands/data/index.html

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Figure 6
NATIONAL WETLANDS INVENTORY MAP
Lytle Road Property
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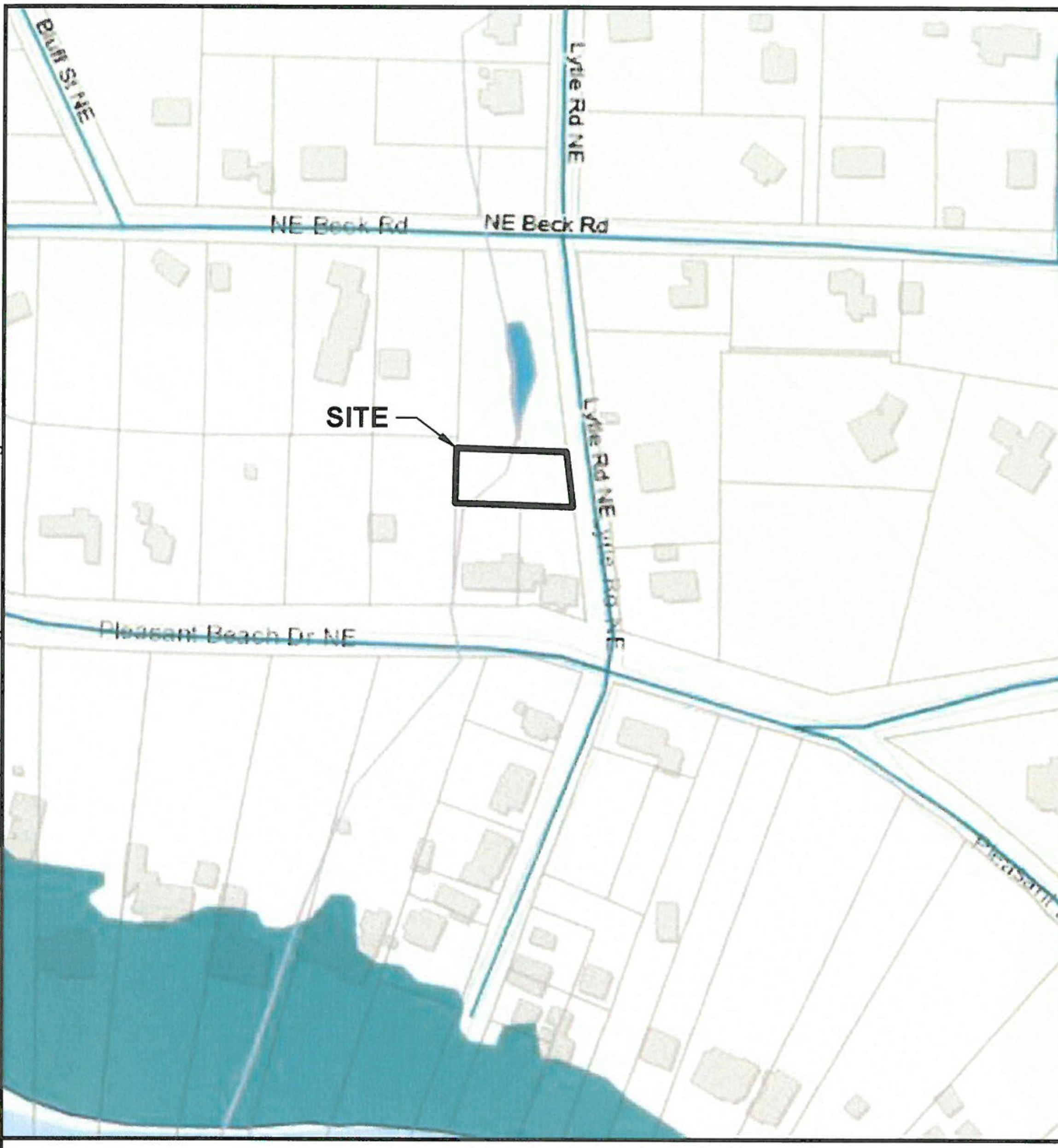
Section 3, Township 24N, Range 2E, W.M.



LEGEND:

Wetlands	Streams	FEMA Flood Hazard
Delineated	Fish	A = Low Flood Risk
No Delineation	Non-Fish	AE = High Flood Risk
Not a Wetland	Non-Fish Perennial	VE = High Flood Risk
	Non-Fish Seasonal	
Shoreline		Kitsap County Parcels

NOTE(S):

1. Map provided on-line by the City of Bainbridge Island at web address: *https://cityofbi.maps.arcgis.com/home/index.html*

Figure 7
BAINBRIDGE ISLAND CRITICAL AREAS MAP
Lytle Road Property
Tom White
City of Bainbridge Island, Kitsap County, WA
Section 3, Township 24N, Range 2E, W.M.

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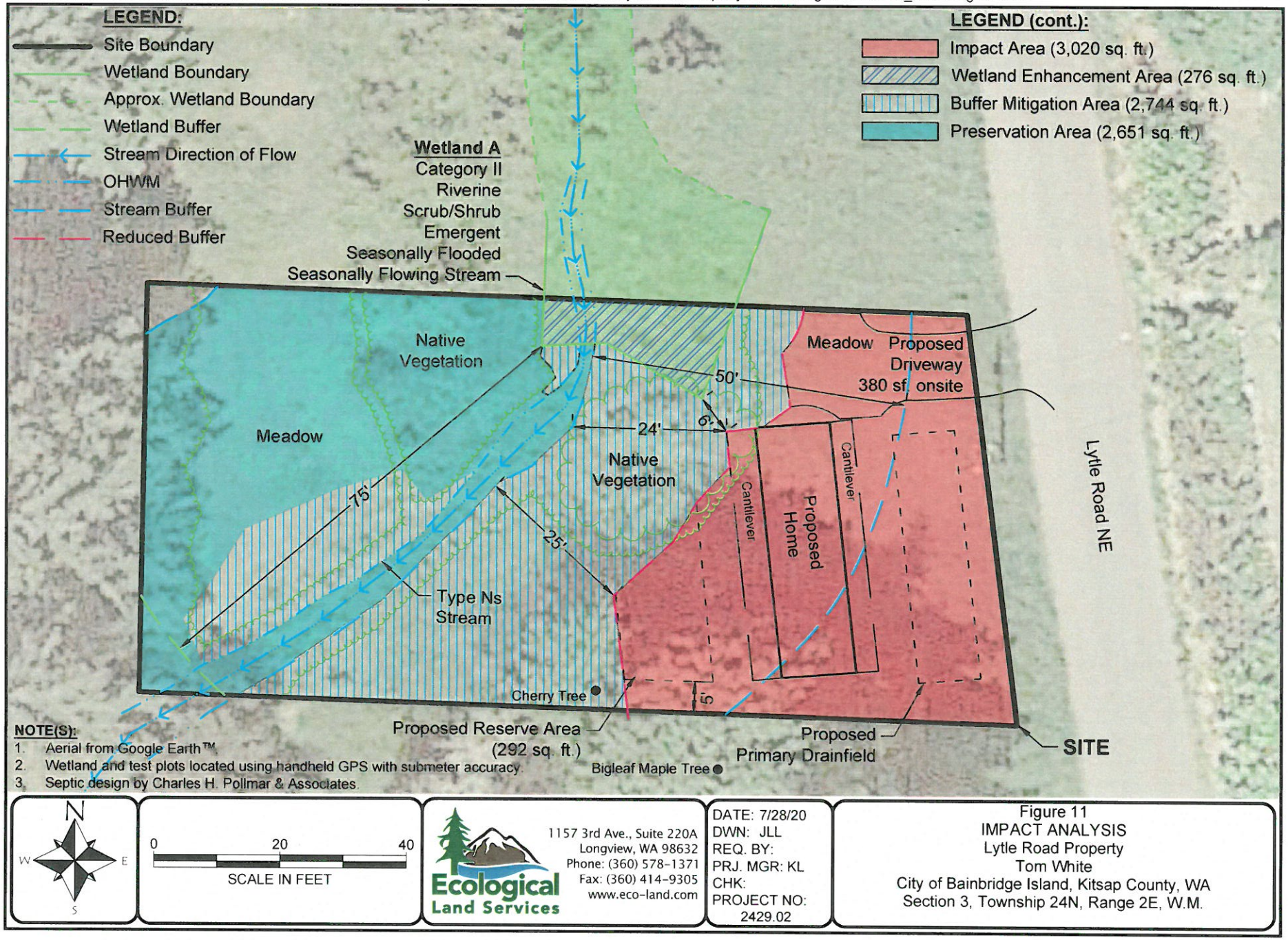

NOTE(S):

1. Aerial from Google Earth™.
2. Wetland and test plots located using handheld GPS with submeter accuracy.
3. Septic design by Charles H. Pollmar & Associates.

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Figure 11
IMPACT ANALYSIS
Lytle Road Property
Tom White
City of Bainbridge Island, Kitsap County, WA
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Table 1. Plant specifications

Species	Spacing (feet)	Quantity	Size
WETLAND ENHANCEMENT AREA (276 FT²)			
Pacific willow (*Salix lucida var. lasiandra*)	5	3	1 gallon pots
Red osier dogwood (*Cornus sericea*)	5	3	1 gallon pots
Pacific ninebark (*Physocarpus capitatus*)	5	3	1 gallon pots
BUFFER MITIGATION AREA (2,744 FT²)			
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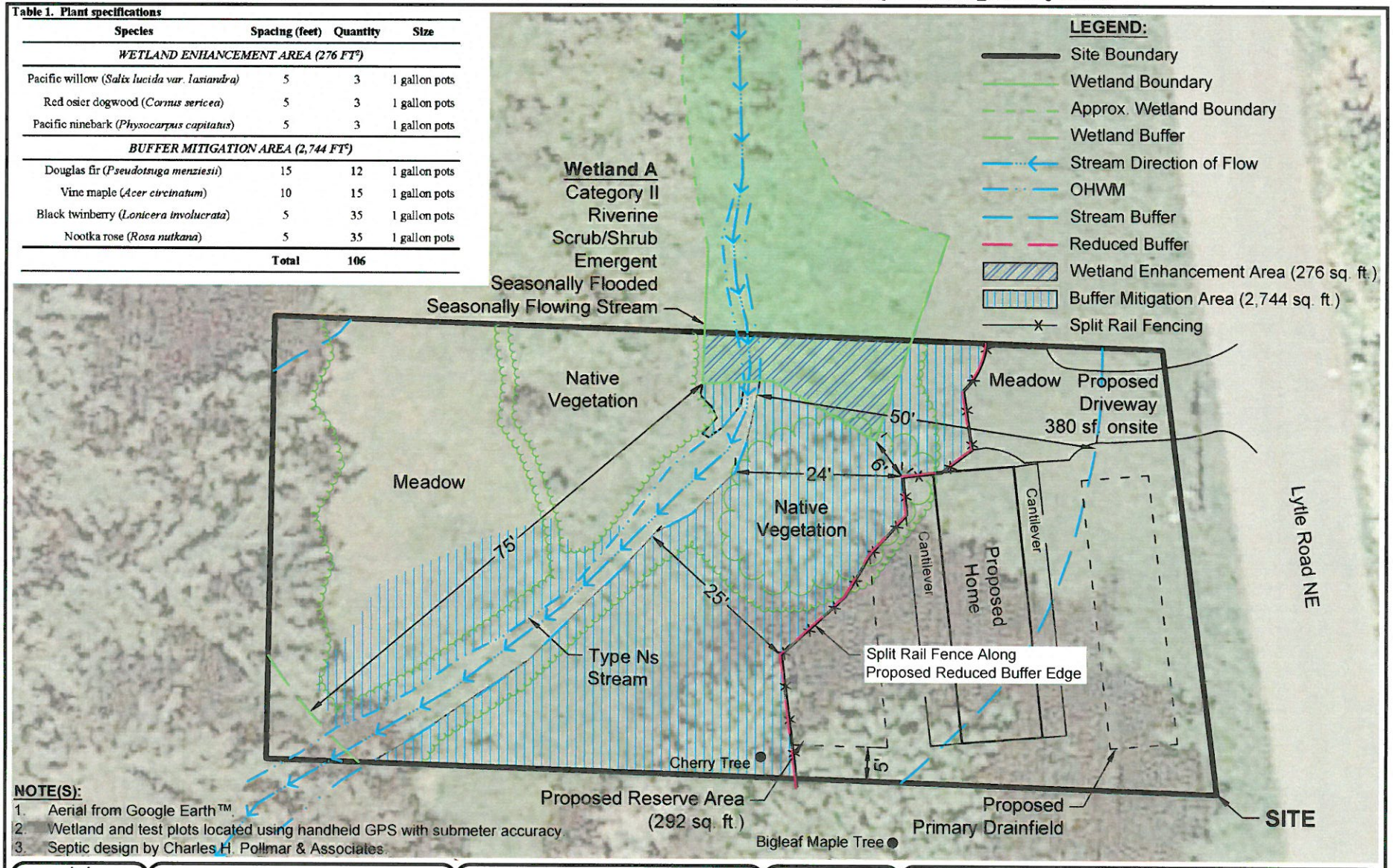
Nootka rose (*Rosa nutkana*)	5	35	1 gallon pots
	Total	**106**	



NOTE(S):

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Figure 12
MITIGATION PLANTING PLAN
Lytle Road Property
Tom White
City of Bainbridge Island, Kitsap County, WA
Section 3, Township 24N, Range 2E, W.M.

Photo 1 was taken from Lytle Road, which lies along the east property line. This photo looks south along the road with the property on the right.

Photo 2 was taken from the same location as Photo 1. It looks southwesterly across the property toward the bigleaf maple growing just offsite to the south but overhangs the south edge of the property.

Photo 3 was taken from the same location as Photos 1 and 2. It looks westerly across the property. As this photo indicates, the grasses were un-mowed at the time of the field visit.

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PROJ. #: 2429.02

Photoplate 1
Project Name: Lytle Road Property
Client: Tom White
Bainbridge Island, Washington

Photo 4 was taken from the southwest corner of the lot and looks north across the drainage toward the home on the property immediately north.

Photo 5 was taken from the same location as Photo 4. It looks northeasterly across the lot with the stream on the left side. The fir tree on the right was planted as part of a buffer mitigation prepared 10 to 12 years ago.

Photo 6 was taken from the same location as Photos 4 and 5. It looks easterly along the south property line, which is marked by the wood fence on the right.

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PROJ. #: 2429.02

Photoplate 2
Project Name: Lytle Road Property
Client: Tom White
Bainbridge Island, Washington

Photo 7 was taken from the upland east of the delineated wetland boundary, which runs just this side of the pacific ninebark bush on the left half of the photo.

Photo 8 was taken from the same location as Photo 7 and looks westerly across the onsite portion of the wetland.

Photo 9 was taken from the same location as Photos 7 and 8. It looks northerly along the east side of the wetland with the pin flag marking the location of Test Plot 3, visible on the left and a wetland boundary flag near the right edge of the photo.

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PROJ. #: 2429.02

Photoplate 3
Project Name: Lytle Road Property
Client: Tom White
Bainbridge Island, Washington

Photo 10 shows the soil conditions within the wetland test plots. This profile meets the criteria for hydric soil because of the low matrix chroma and presence of redoximorphic features.

Photo 11 shows the soil condition of the upland test plots. The pictured soil is typical of the upland areas which have high matrix chroma soils with no redoximorphic features present.

Photo 12 shows the dominant vegetation within the delineated wetland area. The species include common grasses, soft rush, and herbaceous plants. The area was un-mowed during the field delineation so was very dense that there were no bare areas within the wetland or upland.

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DATE: 7/2/19
DWN: JB
PRJ. MGR JB
PROJ. #: 2429.02

Photoplate 4
Project Name: Lytle Road Property
Client: Tom White
Bainbridge Island, Washington

Photo 13 is taken along the stream after it exits the wetland. It looks southerly along the channel, which is not visible due to the density of the tall grass.

Photo 14 was taken from near the southwest property corner (lower left corner) and looks back up along the channel.

Photo 15 was taken from the same location as Photo 14. It looks south along the stream channel, which ends abruptly at the double pipes pictured.

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DATE: 7/2/19
DWN: JB
PRJ. MGR JB
PROJ. #: 2429.02

Photoplate 5
Project Name: Lytle Road Property
Client: Tom White
Bainbridge Island, Washington

APPENDIX A

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

Project Site: Lytle Road Property City/County: Bainbridge Island/Kitsap Sampling Date: 5-31-19
Applicant/Owner: Tom White State: WA Sampling Point: TP 1
Investigator(s): J. Bartlett, K. Lacey Section, Township, Range: S 3 T 24 N R 1 EWM
Landform (hillslope, terrace, etc.): terrace Local relief (concave, convex, none): concave Slope (%): 1-2%
Subregion (LRR): MRLA 2 Lat: 47.598933 Long: -122.541353 Datum: NAD83
Soil Map Unit Name: 22 Kapowsin gravelly ashy loam, 0-6% slopes NWI classification: Riverine
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: This property is located along the west side of Lytle Road lying between homes to the north and south. It is currently composed of an undulating meadow with a seasonal stream entering the property midway along the north line and runs in a southwesterly direction. Wetland is present in a depression along the stream as it curves to the southwest. The wetland is composed of emergent and scrub/shrub communities with seasonally flooded hydroperiod. Test Plot 1 is located in the wetland on the west side of the stream.

VEGETATION – Use scientific names of plants

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1. _____			
2. _____			
3. _____			
4. _____			
50% = _____, 20% = _____		= Total Cover	
Sapling/Shrub Stratum (Plot size: _____)			
1. _____			
2. _____			
3. _____			
4. _____			
5. _____			
50% = _____, 20% = _____		= Total Cover	
Herb Stratum (Plot size: 10' diameter)			
1. *Schedonorus arundinaceus*	50	yes	FAC
2. *Poa pratensis*	50	yes	FAC
3. *Ranunculus repens*	10	no	FAC
4. _____			
5. _____			
6. _____			
7. _____			
8. _____			
9. _____			
10. _____			
11. _____			
50% = 55, 20% = 22	110	= Total Cover	
Woody Vine Stratum (Plot size: _____)			
1. _____			
2. _____			
50% = _____, 20% = _____		= Total Cover	
% Bare Ground in Herb Stratum 0			

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	_____	x1 =	_____
FACW species	_____	x2 =	_____
FAC species	_____	x3 =	_____
FACU species	_____	x4 =	_____
UPL species	_____	x5 =	_____
Column Totals:	_____ (A)		_____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

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

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

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

Remarks: The hydrophytic vegetation criterion is met because there is greater than 50% dominance by FAC species.

Project Site: Lytle Road Property

SOIL

Sampling Point: TP 1

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-12	10YR 2/2	95	10YR 3/6	5	C	M	si cl lo	
12-16	10YR 2/2	100					gr sa lo	
								si - silty
								cl - clay
								gr - gravelly
								lo - loam

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

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

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

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soils Present? **Yes** ☒ **No** ☐

Remarks: The soil profile meets hydric soil indicator F6 because of the presence of redoximorphic features in the surface layer.

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 Stresses 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):	12

Wetland Hydrology Present? **Yes** ☒ **No** ☐

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

Remarks: Hydrology present as soil saturation within 12 inches of the surface so wetland hydrology criterion is met.

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

Project Site: Lytle Road | City/County: Bainbridge Island/Kitsap | Sampling Date: 5-31-19

Applicant/Owner: Tom White | State: WA | Sampling Point: TP 2

Investigator(s): J. Bartlett, K. Lacey | Section, Township, Range: S 3 T 24 N R 1 EWM

Landform (hillslope, terrace, etc.): terrace | Local relief (concave, convex, none): concave | Slope (%): 1-2%

Subregion (LRR): MRLA 2 | Lat: 47.598884 | Long: -122.541333 | Datum: NAD83

Soil Map Unit Name: 22 Kapowsin gravelly ashy loam, 0-6 % slopes | NWI classification: Riverine

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: This property is located along the west side of Lytle Road lying between homes to the north and south. It is currently composed of an undulating meadow with a seasonal stream entering the property midway along the north line and runs in a southwesterly direction. Wetland is present in a depression along the stream as it curves to the southwest. The wetland is composed of emergent and scrub/shrub communities with seasonally flooded hydroperiod. Test Plot 2 is located in the upland south of the wetland and stream. A planted Pacific ninebark is present in the plot area.

VEGETATION – Use scientific names of plants

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1. _____			
2. _____			
3. _____			
4. _____			
50% = _____, 20% = _____		= Total Cover	
Sapling/Shrub Stratum (Plot size: 20' diameter)			
1. *Physocarpus capitatus*	20	yes	FACW
2. _____			
3. _____			
4. _____			
5. _____			
50% = 10, 20% = 4	20	= Total Cover	
Herb Stratum (Plot size: 10' diameter)			
1. *Dactylis glomerata*	50	yes	FACU
2. *Poa pratensis*	50	yes	FAC
3. *Schedonorus arundinaceus*	10	no	FAC
4. _____			
5. _____			
6. _____			
7. _____			
8. _____			
9. _____			
10. _____			
11. _____			
50% = 55, 20% = 22	110	= Total Cover	
Woody Vine Stratum (Plot size: _____)			
1. _____			
2. _____			
50% = _____, 20% = _____		= Total Cover	
% Bare Ground in Herb Stratum 0			

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:	67	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	_____	x1 =	_____
FACW species	_____	x2 =	_____
FAC species	_____	x3 =	_____
FACU species	_____	x4 =	_____
UPL species	_____	x5 =	_____
Column Totals:	_____ (A)		_____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

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

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

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

Remarks: The hydrophytic vegetation criterion is met because there is greater than 50% dominance by FAC and FACW species.

Project Site: Lytle Road Property

SOIL Sampling Point: TP 2

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-5	10YR 2/2	100					gr sa lo	
5-7	10YR 4/2	99	10YR 4/4	2	C	M	gr sa lo	
7-16	10YR 2/2	98	10YR 3/3	2	C	M	gr sa lo	
								si - silty
								cl - clay
								gr - gravelly
								lo - loam

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

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

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

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soils Present? **Yes** ☐ **No** ☒

Remarks: The soil profile meets none of the hydric soil indicators because the underlying soil layers are thin and the redoximorphic features are not distinct or prominent.

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 Stresses 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: The wetland hydrology criterion is not met because there was no hydrology or evidence of wetland hydrology.

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

Project Site: Lytle Road City/County: Bainbridge Island/Kitsap Sampling Date: 5-31-19
Applicant/Owner: Tom White State: WA Sampling Point: TP 3
Investigator(s): J. Bartlett, K. Lacey Section, Township, Range: S 3 T 24 N R 1 EWM
Landform (hillslope, terrace, etc.): terrace Local relief (concave, convex, none): concave Slope (%): 1-2%
Subregion (LRR): MRLA 2 Lat: 47.598939 Long: -122.541249 Datum: NAD83
Soil Map Unit Name: 34 Neilton gravelly loamy sand, 0-3% slopes NWI classification: Riverine
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: This property is located along the west side of Lytle Road lying between homes to the north and south. It is currently composed of an undulating meadow with a seasonal stream entering the property midway along the north line and runs in a southwesterly direction. Wetland is present in a depression along the stream as it curves to the southwest. The wetland is composed of emergent and scrub/shrub communities with seasonally flooded hydroperiod. Test Plot 3 is located in the wetland east of the stream where the vegetation is dominated by unmowed grasses.

VEGETATION – Use scientific names of plants

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1. _____			
2. _____			
3. _____			
4. _____			
50% = _____, 20% = _____		= Total Cover	
Sapling/Shrub Stratum (Plot size: _____)			
1. _____			
2. _____			
3. _____			
4. _____			
5. _____			
50% = _____, 20% = _____		= Total Cover	
Herb Stratum (Plot size: 10' diameter)			
1. *Schedonorus arundinaceus*	60	yes	FAC
2. *Poa pratensis*	40	yes	FAC
3. *Holcus lanatus*	20	no	FAC
4. *Ranunculus repens*	20	no	FAC
5. *Juncus effusus*	20	no	FACW
6. _____			
7. _____			
8. _____			
9. _____			
10. _____			
11. _____			
50% = 80, 20% = 32	160	= Total Cover	
Woody Vine Stratum (Plot size: _____)			
1. _____			
2. _____			
50% = _____, 20% = _____		= Total Cover	
% Bare Ground in Herb Stratum 0			

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	_____	x1 =	_____
FACW species	_____	x2 =	_____
FAC species	_____	x3 =	_____
FACU species	_____	x4 =	_____
UPL species	_____	x5 =	_____
Column Totals:	_____ (A)		_____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

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

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

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

Remarks: The hydrophytic vegetation criterion is met because there is greater than 50% dominance by FAC species.

Project Site: Lytle Road Property

SOIL Sampling Point: TP 3

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR 2/2	95	10YR 3/6	5	C	M	gr sa lo	
								si - silty
								cl - clay
								gr - gravelly
								lo - loam

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

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

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

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soils Present? **Yes** ☒ **No** ☐

Remarks: The soil profile meets hydric soil indicator F6 because of the presence of redoximorphic features in the surface layer.

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 Stresses 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):	10

Wetland Hydrology Present? **Yes** ☒ **No** ☐

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

Remarks: Hydrology present as soil saturation within 12 inches of the surface so wetland hydrology criterion is met.

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

Project Site: Lytle Road | City/County: Bainbridge Island/Kitsap | Sampling Date: 5-31-19
Applicant/Owner: Tom White | State: WA | Sampling Point: TP 4
Investigator(s): J. Bartlett, K. Lacey | Section, Township, Range: S 3 T 24 N R 1 EWM
Landform (hillslope, terrace, etc.): terrace | Local relief (concave, convex, none): concave | Slope (%): 1-2%
Subregion (LRR): MRLA 2 | Lat: 47.598916 | Long: -122.541218 | Datum: NAD83
Soil Map Unit Name: 34 Neilton gravelly loamy sand, 0-3% slopes | NWI classification: Riverine
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: This property is located along the west side of Lytle Road lying between homes to the north and south. It is currently composed of an undulating meadow with a seasonal stream entering the property midway along the north line and runs in a southwesterly direction. Wetland is present in a depression along the stream as it curves to the southwest. The wetland is composed of emergent and scrub/shrub communities with seasonally flooded hydroperiod. Test Plot 4 is located on the upland slope east of the wetland. The upland was dominated by unmowed, tall grasses during the field visit so was very dense.

VEGETATION – Use scientific names of plants

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1. _____			
2. _____			
3. _____			
4. _____			
50% = _____, 20% = _____		= Total Cover	
Sapling/Shrub Stratum (Plot size: 20' diameter)			
1. _____			
2. _____			
3. _____			
4. _____			
5. _____			
50% = ____, 20% = _____		= Total Cover	
Herb Stratum (Plot size: 10' diameter)			
1. *Anthoxanthum odoratum*	50	yes	FACU
2. *Holcus lanatus*	50	yes	FAC
3. *Rumex acetosella*	30	no	FACU
4. *Dactylis glomerata*	20	no	FACU
5. *Poa pratensis*	20	no	FAC
6. *Ranunculus repens*	10	no	FAC
7. _____			
8. _____			
9. _____			
10. _____			
11. _____			
50% = 90, 20% = 36	180	= Total Cover	
Woody Vine Stratum (Plot size: _____)			
1. _____			
2. _____			
50% = _____, 20% = _____		= Total Cover	
% Bare Ground in Herb Stratum 0			

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	1	(A)
Total Number of Dominant Species Across All Strata:	2	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	50	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	_____	x1 =	_____
FACW species	_____	x2 =	_____
FAC species	80	x3 =	240
FACU species	100	x4 =	400
UPL species	_____	x5 =	_____
Column Totals:	180 (A)		640 (B)

Prevalence Index = B/A = 3.56

Hydrophytic Vegetation Indicators:

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

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

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

Remarks: The hydrophytic vegetation criterion is not met because the prevalance index is greater than 3.0.

Project Site: Lytle Road Property

SOIL Sampling Point: TP 4

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR 3/4	100					gr sa lo	

si - silty
cl - clay
gr - gravelly
lo - loam

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

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

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

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soils Present? **Yes** ☐ **No** ☒

Remarks: The soil profile meets none of the hydric soil indicators because the soil matrix chroma is too high and does not meet the definition of a depleted matrix.

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 Stresses 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: The wetland hydrology criterion is not met because there was no hydrology or evidence of wetland hydrology.

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

Project Site: Lytle Road City/County: Bainbridge Island/Kitsap Sampling Date: 5-31-19
Applicant/Owner: Tom White State: WA Sampling Point: TP 5
Investigator(s): J. Bartlett, K. Lacey Section, Township, Range: S 3 T 24 N R 1 EWM
Landform (hillslope, terrace, etc.): terrace Local relief (concave, convex, none): concave Slope (%): 1-2%
Subregion (LRR): MRLA 2 Lat: 47.598800 Long: -122.541299 Datum: NAD83
Soil Map Unit Name: 34 Neilton gravelly loamy sand, 0-3% slopes NWI classification: Riverine
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: This property is located along the west side of Lytle Road lying between homes to the north and south. It is currently composed of an undulating meadow with a seasonal stream entering the property midway along the north line and runs in a southwesterly direction. Wetland is present in a depression along the stream as it curves to the southwest. The wetland is composed of emergent and scrub/shrub communities with seasonally flooded hydroperiod. Test Plot 5 is located in the low area near the south property line.

VEGETATION – Use scientific names of plants

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1. _____			
2. _____			
3. _____			
4. _____			
50% = _____, 20% = _____		= Total Cover	
Sapling/Shrub Stratum (Plot size: 20' diameter)			
1. _____			
2. _____			
3. _____			
4. _____			
5. _____			
50% = ____, 20% = _____		= Total Cover	
Herb Stratum (Plot size: 10' diameter)			
1. *Holcus lanatus*	35	yes	FAC
2. *Ranunculus repens*	35	yes	FAC
3. *Poa pratensis*	10	no	FAC
4. *Dactylis glomerata*	10	no	FACU
5. *Galium aparine*	5	no	FACU
6. _____			
7. _____			
8. _____			
9. _____			
10. _____			
11. _____			
50% = 47.5, 20% = 19	95	= Total Cover	
Woody Vine Stratum (Plot size: _____)			
1. _____			
2. _____			
50% = _____, 20% = _____		= Total Cover	
% Bare Ground in Herb Stratum 0			

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	_____	x1 =	_____
FACW species	_____	x2 =	_____
FAC species	_____	x3 =	_____
FACU species	_____	x4 =	_____
UPL species	_____	x5 =	_____
Column Totals:	_____ (A)		_____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

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

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

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

Remarks: The hydrophytic vegetation criterion is met because there is greater than 50% dominance by FAC species.

Project Site: Lytle Road Property

SOIL Sampling Point: TP 5

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR 2/2	100					gr sa lo	no redoximorphic features
								si - silty
								cl - clay
								gr - gravelly
								lo - loam

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

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

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

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soils Present? **Yes** ☐ **No** ☒

Remarks: The soil profile meets none of the hydric soil indicators because the soil matrix chroma is too high and does not meet the definition of a depleted matrix.

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 Stresses 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: The wetland hydrology criterion is not met because there was no hydrology or evidence of wetland hydrology.

APPENDIX B

Wetland name or number: A

RATING SUMMARY – Western Washington

Name of wetland (or ID #): Wetland A Date of site visit: 05/31/19

Rated by: J. Bartlett Trained by Ecology? X Yes ___No Date of training: 11/14

HGM Class used for rating: Riverine Wetland has multiple HGM classes? ___Y __X__N

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

Source of base aerial photo/map: Google Earth

OVERALL WETLAND CATEGORY II (based on functions X or special characteristics___)

1. Category of wetland based on FUNCTIONS

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

__X__**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	**8**			**7**			**5**			**20**

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	**X**

Wetland name or number: A

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	**2,6**
Hydroperiods	H 1.2	**2,6**
Ponded depressions	R 1.1	**6**
Boundary of area within 150 ft of the wetland *(can be added to another figure)*	R 2.4	**6**
Plant cover of trees, shrubs, and herbaceous plants	R 1.2, R 4.2	**2,6**
Width of unit vs. width of stream *(can be added to another figure)*	R 4.1	**2**
Map of the contributing basin	R 2.2, R 2.3, R 5.2	**7**
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	**7**
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	R 3.1	**8**
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	R 3.2, R 3.3	**8**

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?
   X The unit is in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river,
   X The overbank flooding occurs at least once every 2 years.

Wetland name or number _____

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 _____

RIVERINE AND FRESHWATER TIDAL FRINGE WETLANDS

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

R 1.0. Does the site have the potential to improve water quality?	
R 1.1. Area of surface depressions within the Riverine wetland that can trap sediments during a flooding event: Depressions cover > 3/4 area of wetland — points = 8 Depressions cover > ½ area of wetland — points = 4 Depressions present but cover < ½ area of wetland — points = 2 No depressions present — points = 0	2
R 1.2. Structure of plants in the wetland (areas with >90% cover at person height, **not** Cowardin classes) Trees or shrubs > 2/3 area of the wetland — points = 8 Trees or shrubs > 1/3 area of the wetland — points = 6 Herbaceous plants (> 6 in high) > 2/3 area of the wetland — points = 6 Herbaceous plants (> 6 in high) > 1/3 area of the wetland — points = 3 Trees, shrubs, and ungrazed herbaceous < 1/3 area of the wetland — points = 0	8
Total for R 1 — Add the points in the boxes above	10

Rating of Site Potential If score is: ___**12-16 = H** _**X**_ **6-11 = M** ___**0-5 = L** *Record the rating on the first page*

R 2.0. Does the landscape have the potential to support the water quality function of the site?	
R 2.1. Is the wetland within an incorporated city or within its UGA? Yes = 2 No = 0	2
R 2.2. Does the contributing basin to the wetland include a UGA or incorporated area? Yes = 1 No = 0	1
R 2.3. Does at least 10% of the contributing basin contain tilled fields, pastures, or forests that have been clearcut within the last 5 years? Yes = 1 No = 0	0
R 2.4. Is > 10% of the area within 150 ft of the wetland in land uses that generate pollutants? Yes = 1 No = 0	1
R 2.5. Are there other sources of pollutants coming into the wetland that are not listed in questions R 2.1-R 2.4 Other sources _____ Yes = 1 No = 0	0
Total for R 2 — Add the points in the boxes above	4

Rating of Landscape Potential If score is: _**X**_ **3-6 = H** ___**1 or 2 = M** ___**0 = L** *Record the rating on the first page*

R 3.0. Is the water quality improvement provided by the site valuable to society?	
R 3.1. Is the wetland along a stream or river that is on the 303(d) list or on a tributary that drains to one within 1 mi? Yes = 1 No = 0	1
R 3.2. Is the wetland along a stream or river that has TMDL limits for nutrients, toxics, or pathogens? Yes = 1 No = 0	0
R 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 drainage in which the unit is found*) Yes = 2 No = 0	2
Total for R 3 — Add the points in the boxes above	3

Rating of Value If score is: _**X**_ **2-4 = H** ___**1 = M** ___**0 = L** *Record the rating on the first page*

Wetland name or number _____

RIVERINE AND FRESHWATER TIDAL FRINGE WETLANDS

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

R 4.0. Does the site have the potential to reduce flooding and erosion?

R 4.1. Characteristics of the overbank storage the wetland provides: *Estimate the average width of the wetland perpendicular to the direction of the flow and the width of the stream or river channel (distance between banks). Calculate the ratio: (average width of wetland)/(average width of stream between banks).* If the ratio is more than 20 points = 9 If the ratio is 10-20 points = 6 If the ratio is 5-<10 points = 4 If the ratio is 1-<5 points = 2 If the ratio is < 1 points = 1	9
R 4.2. Characteristics of plants that slow down water velocities during floods: *Treat large woody debris as forest or shrub. Choose the points appropriate for the best description (polygons need to have >90% cover at person height. These are NOT Cowardin classes).* Forest or shrub for > $^{1}/_{3}$ area OR emergent plants > $^{2}/_{3}$ area points = 7 Forest or shrub for > $^{1}/_{10}$ area OR emergent plants > $^{1}/_{3}$ area points = 4 Plants do not meet above criteria points = 0	7
Total for R 4 Add the points in the boxes above	16

Rating of Site Potential If score is: **_X_ 12-16 = H ___ 6-11 = M ___ 0-5 = L** *Record the rating on the first page*

R 5.0. Does the landscape have the potential to support the hydrologic functions of the site?

R 5.1. Is the stream or river adjacent to the wetland downcut?	Yes = 0 No = 1	1
R 5.2. Does the up-gradient watershed include a UGA or incorporated area?	Yes = 1 No = 0	1
R 5.3. Is the up-gradient stream or river controlled by dams?	Yes = 0 No = 1	0*
Total for R 5	Add the points in the boxes above	2

Rating of Landscape Potential If score is: **___ 3 = H _X_ 1 or 2 = M ___ 0 = L** *Record the rating on the first page*

R 6.0. Are the hydrologic functions provided by the site valuable to society?

R 6.1. Distance to the nearest areas downstream that have flooding problems? *Choose the description that best fits the site.* The sub-basin immediately down-gradient of the wetland 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 No flooding problems anywhere downstream points = 0	1
R 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	0
Total for R 6 Add the points in the boxes above	1

Rating of Value If score is: **___ 2-4 = H _X_ 1 = M ___ 0 = L** *Record the rating on the first page*

**the up-gradient stream is not controlled by a dam but is conveyed into the onsite wetland from an underground pipe that begins north of Beck Road. It is therefore controlled by a man made feature.*

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.* **1**

____Aquatic bed	4 structures or more: points = 4
__X__Emergent	3 structures: points = 2
__X__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

H 1.2. Hydroperiods **1**

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
__X__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	
__X__Seasonally flowing stream in, or adjacent to, the wetland	
____**Lake Fringe wetland**	**2 points**
____**Freshwater tidal wetland**	**2 points**

H 1.3. Richness of plant species **1**

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

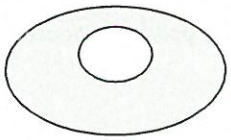
Different patches of the same species can be combined to meet the size threshold and you do not have to name the species. ***Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, Canadian thistle***

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

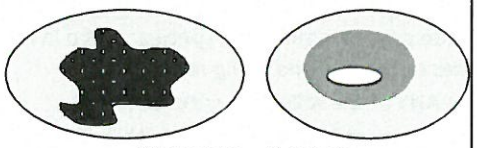
H 1.4. Interspersion of habitats **1**

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

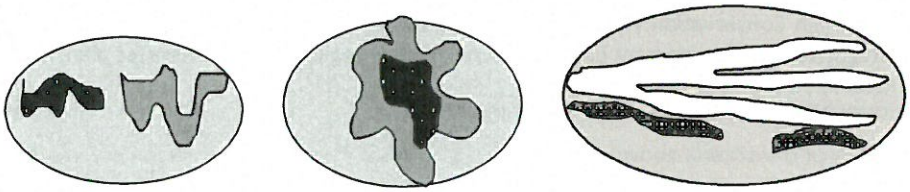


Low = 1 point



Moderate = 2 points

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



Wetland name or number _____

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)* __X__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)* __X__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	**6**

Rating of Site Potential If score is:___**15-18 = H** ___**7-14 = M** __**X**__**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:* % undisturbed habitat 0.3 + [(% moderate and low intensity land uses)/2] 0 = **0.3** % 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	**0**
H 2.2. Undisturbed habitat in 1 km Polygon around the wetland. *Calculate:* % undisturbed habitat 2.6 + [(% moderate and low intensity land uses)/2] 30.6 = **33.2** % 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	**0**
Total for H 2 Add the points in the boxes above	**2**

Rating of Landscape Potential If score is:___**4-6 = H** __**X**__**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

Rating of Value If score is:___**2 = H** __**X**__**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*).

X **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 _____

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

Wetland Type *Check off any criteria that apply to the wetland. Circle the category when the appropriate criteria are met.*	**Category**
SC 1.0. Estuarine wetlands Does the wetland meet the following criteria for Estuarine wetlands? — The dominant water regime is tidal, — Vegetated, and — 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? 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? — 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) — At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland. — 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** (**Cat. II**)
SC 2.0. Wetlands of High Conservation Value (WHCV) 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** SC 2.2. Is the wetland listed on the WDNR database as a Wetland of High Conservation Value? Yes = **Category I** No = **Not a WHCV** SC 2.3. Is the wetland in a Section/Township/Range that contains a Natural Heritage wetland? http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf Yes – **Contact WNHP/WDNR and go to SC 2.4** No = **Not a WHCV** 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 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.*** 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** 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** 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** **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. 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? Yes = **Is a Category I bog** No = **Is not a bog**	**Cat. I**

Wetland name or number _____

SC 4.0. Forested Wetlands 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.*** — **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. — **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). Yes = **Category I** No = **Not a forested wetland for this section**	**Cat. I**
SC 5.0. Wetlands in Coastal Lagoons Does the wetland meet all of the following criteria of a wetland in a coastal lagoon? — 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 — 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)* 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? — 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). — At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland. — The wetland is larger than $^{1}/_{10}$ ac (4350 ft^2) Yes = **Category I** No = **Category II**	**Cat. II**
SC 6.0. Interdunal Wetlands 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.*** In practical terms that means the following geographic areas: — Long Beach Peninsula: Lands west of SR 103 — Grayland-Westport: Lands west of SR 105 — Ocean Shores-Copalis: Lands west of SR 115 and SR 109 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? 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? Yes = **Category III** No = **Category IV**	**Cat. IV**
Category of wetland based on Special Characteristics If you answered No for all types, enter "Not Applicable" on Summary Form	

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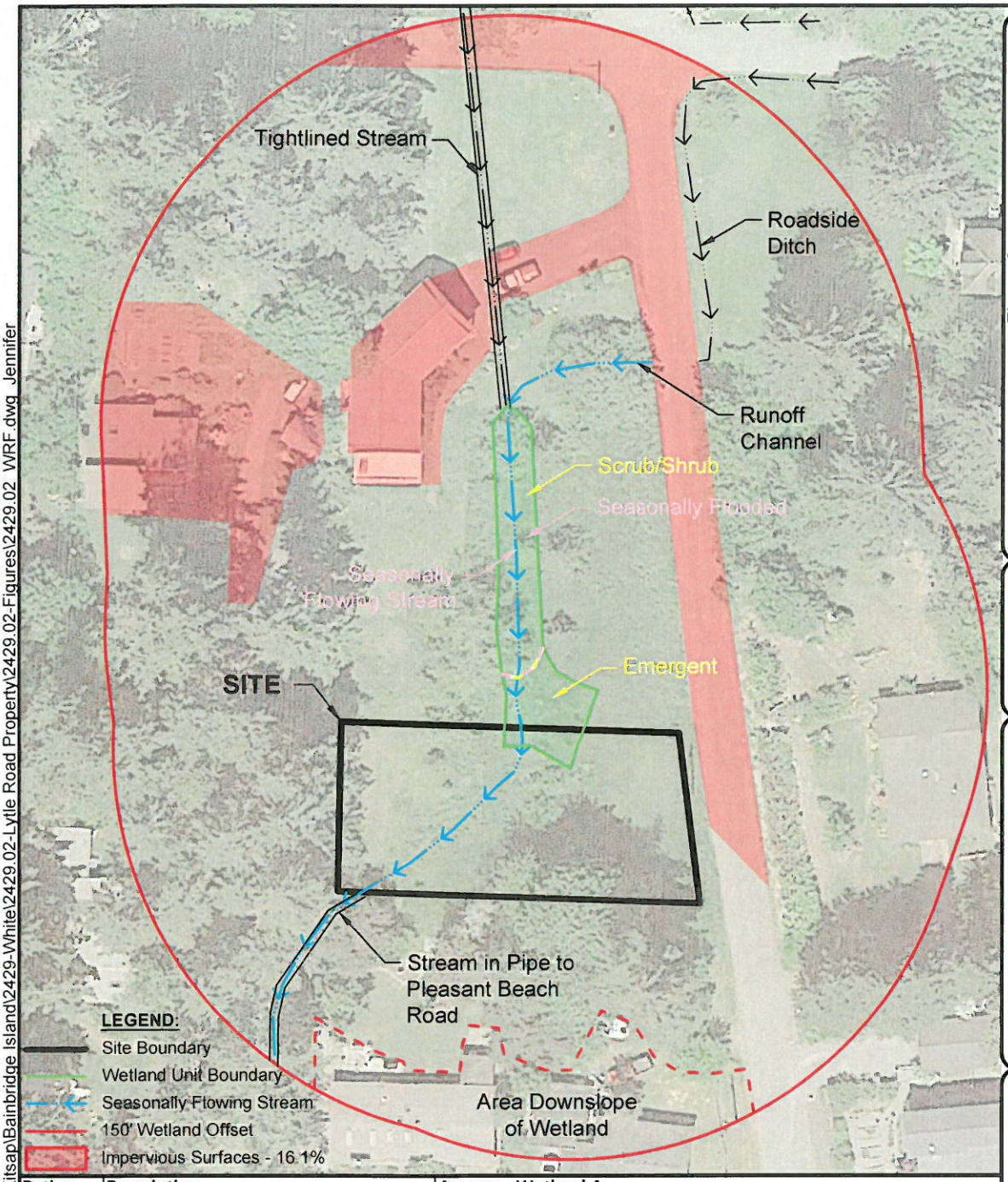

Rating Question	Description	Answer - Wetland A
R 1.1	Ponded Depressions	Depressions present but cover <½ area of wetland
R 1.2	Plant cover of trees, shrubs and herbaceous plants	Trees or shrubs >2/3 area of wetland
R 2.2	Contributing basin within a UGA or incorporated	Contributing basin includes UGA and/or incorporated areas
R 2.3	Contributing basin-tilled fields, pastures, or clear cut forests	< 10% of the contributing basin is composed of tilled fields and pastures
R 2.4	Boundary of area w/in 150' of the wetland	>10% of the area within 150' in land uses that generate pollutants
R 4.1	Ratio of Width of unit to width of stream	Width ratio is more than 20 (1:23.5)
R 4.2	Characteristics of plants that slow water flow	Forest or shrub for > 1/3 of area
R 5.2	Upgradient watershed in UGA or incorporated area	The upgradient area is composed of a UGA and/or incorporated area
H 1.1	Cowardin Plant Classes	Scrub/Shrub, Emergent
H 1.2	Hydroperiods	Seasonally flooded, seasonally flowing stream
H 1.4	Interspersion of habitats	Low interspersion of habitats

Figure 8
WETLAND RATING FIGURE-150' OFFSET
Lytle Road Property
Tom White
City of Bainbridge Island, Kitsap County, WA
Section 3, Township 24N, Range 2E, W.M.

DATE: 7/28/20
DWN: JLL
REQ. BY:
PRJ. MGR: KL
CHK:
PROJECT NO: 2429.02

1157 3rd Ave., Suite 220A
Longview, WA 98632
Phone: (360) 578-1371
Fax: (360) 414-9305
www.eco-land.com
Ecological Land Services

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SCALE IN FEET

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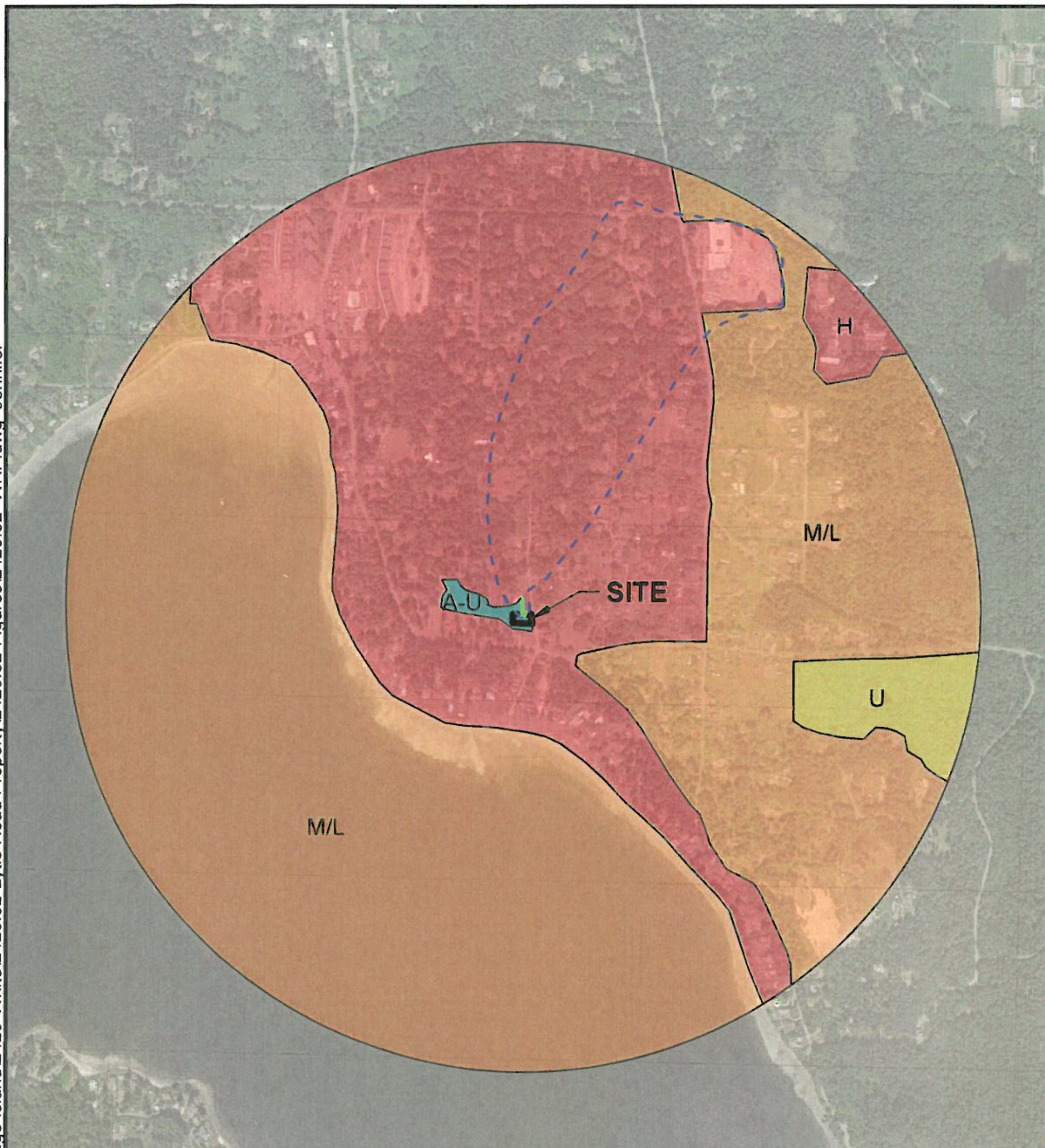

Figure 9
WETLAND RATING FIGURE-1 KM OFFSET
Lytle Road Property
Tom White
City of Bainbridge Island, Kitsap County, WA
Section 3, Township 24N, Range 2E, W.M.

DATE: 7/28/20
DWN: JLL
REQ. BY:
PRJ. MGR: KL
CHK:
PROJECT NO: 2429.02

Ecological Land Services
1157 3rd Ave., Suite 220A
Longview, WA 98632
Phone: (360) 578-1371
Fax: (360) 414-9305
www.eco-land.com

SCALE IN FEET: 0 — 1200 — 2400

N, E, S, W

LEGEND:

- Site Boundary
- Wetland Unit Boundary
- Contributing Basin (1172.8.0x area of wetland)

H2.1 Accessible Habitat

- A-U — A-U (00.3%)
- A-M/L — A-M/L (00.0%)

H2.2 Undisturbed Habitat

- U — U (02.3%)
- M/L — M/L (61.1%)

H2.3 Land Use Intensity

- H — H (36.4%)

H 2.1. Accessible Habitat Equation

% A-U habitat **00.3%** + [(% A-M/L intensity land uses)/2] **00.0%** = **00.3%**

H 2.2. Total Undisturbed Habitat Equation

% A-U + % U habitat **02.6%** + [(% A-M/L + % M/L land uses)/2] **30.6%** = **33.2%**

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WQ Improvement Projects - There is one water quality project in effect in Kitsap County.

- Approved
- In Development

Assessed Waters/Sediment - The wetland discharges within one mile into a Category 5 (303d) water.

Water	**Sediment**
Category 5 - 303d	Category 5 - 303d
Category 4C	Category 4C
Category 4B	Category 4B
Category 4A	Category 4A
Category 2	Category 2
Category 1	Category 1

NOTE(S):

1. Map provided on-line by Washington State Department of Ecology at web address: https://fortress.wa.gov/ecy/waterqualityatlas/map.aspx?

Figure 10
WETLAND RATING FIGURE-303(D) AND TMDL
Lytle Road Property
Tom White
City of Bainbridge Island, Kitsap County, WA
Section 3, Township 24N, Range 2E, W.M.

DATE: 7/28/20
DWN: JLL
REQ. BY:
PRJ. MGR: KL
CHK:
PROJECT NO: 2429.02

Ecological Land Services
1157 3rd Ave., Suite 220A
Longview, WA 98632
Phone: (360) 578-1371
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