


J. S. Jones and Associates, Inc.

Request for Wetland Buffer Modification

of the

***HGL Investment Properties
102XX 124th Avenue N.E.***

***Tax Parcel Numbers: 663990-0250
Northeast Quarter of Section 33, Township 26 N, Range 5 E***

***Prepared for:
HGL Investment Properties
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***Dated:
March 31st, 2016***

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Attachments

- HGL Investments, 3 Lot Short Plat, Buffer Enhancement Plan
- Wetland AU Sketch
- Forbes Creek Basin Map 15, “*Kirkland’s Streams, Wetlands and Wildlife Study*”, The Watershed Company, 1998
- 2014 Wetland Rating Form, Western WA

1.0 Project Description

The applicant, HGL Investment Properties, requests a wetland buffer reduction from 75 feet to 50 feet, for the eastern wetland buffer. The applicant proposes to short plat the property into three single-family lots and a sensitive area tract. A wetland buffer reduction is needed to meet provide a 10-foot street dedication, and meet building setbacks and wetland buffer requirements.

A wetland delineation and rating has been approved for the subject property. The wetland is rated as a Type II with a 75-foot buffer requirement. Kirkland Zoning Code, 90.60.2 allows for a buffer reduction of up to 1/3 the full buffer width, provided certain decision criteria can be met.

2.0 Parcel Identification and Directions

The subject parcel is located in the Southwest quarter of Section 33, Township 26 North, Range 5 East, of the Willamette Meridian. The King County tax parcel number is 663990-0250. The property is 1.4 acres.

Directions from downtown Kirkland are as follows: head east on NE 85th St.; turn north onto 124th Ave. N.E.; proceed to 10200 block and park on the east side of 124th Ave. N.E. (see attached Vicinity Map).

3.0 Kirkland Zoning Code (KZC) 90.60 Wetland Buffer Modifications

The KZC allows for two types of wetland buffer modifications, see code below. Underlined wording specifically relate to the proposed buffer reduction.

2. Modification of Wetland Buffers when Wetland Is Not To Be Modified – No land surface modification may occur and no improvement may be located in a wetland buffer, except as provided for in this subsection. Buffer widths may be decreased if an applicant receives a modification request approval.

a. Types of Buffer Modifications – Buffers may be reduced through one (1) of two (2) means, either (1) buffer averaging, or (2) buffer reduction with enhancement. A combination of these two (2) buffer reduction approaches shall not be used:

2) Buffers may be decreased through buffer enhancement. The applicant shall demonstrate that through enhancing the buffer (by removing invasive plants, planting native vegetation, installing habitat features such as downed logs or snags, or other means), the reduced buffer will function at a higher level than the existing standard buffer. At a minimum, a buffer enhancement plan shall provide the following:

- (a) a map locating the specific area of enhancement;
- (b) a planting plan that uses native species, including groundcover, shrubs, and trees; and
- (c) a monitoring and maintenance program prepared by a qualified professional consistent with the standards specified in KZC 90.55(4).

Buffers may not be reduced at any point by more than one-third (1/3) of the standards in KZC 90.45(1).

b. Review Process and Decisional Criteria – Modification requests for averaging or reduction/enhancement of Types 1 and 2 wetland buffers shall be considered by the Hearing Examiner pursuant to Process IIA, described in Chapter 150 KZC. Modification requests for averaging or reduction/enhancement of Type 3 wetland buffers shall be considered by the Planning Official.

An improvement or land surface modification shall be approved in a wetland buffer only if:

- 1) It is consistent with *Kirkland's Streams, Wetlands and Wildlife Study* (The Watershed Company, 1998) and the *Kirkland Sensitive Areas Regulatory Recommendations Report* (Adolfson Associates, Inc., 1998);
- 2) It will not adversely affect water quality;
- 3) It will not adversely affect fish, wildlife, or their habitat;

- 4) It will not have an adverse effect on drainage and/or storm water detention capabilities;
- 5) It will not lead to unstable earth conditions or create an erosion hazard;
- 6) It will not be materially detrimental to any other property or the City as a whole;
- 7) Fill material does not contain organic or inorganic material that would be detrimental to water quality or to fish, wildlife, or their habitat;
- 8) All exposed areas are stabilized with vegetation normally associated with native wetland buffers, as appropriate; and
- 9) There is no practicable or feasible alternative development proposal that results in less impact to the buffer.

As part of the modification request, the applicant shall submit a report prepared by a qualified professional and fund a review of this report by the City's wetland consultant. The report shall assess the habitat, water quality, storm water detention, ground water recharge, shoreline protection, and erosion protection functions of the buffer; assess the effects of the proposed modification on those functions; and address the nine (9) criteria listed in this subsection (2)(b) of this section. (Ord. 4072 § 1, 2007; Ord. 3834 § 1, 2002)

4.0 Compliance with Decision Criteria

1) The report "*Kirkland's Streams, Wetland and Wildlife Study, Part 2*", discusses Forbes Creek Basin, but does not specifically address buffer modifications (Watershed, 1998). It describes wetland and streams in the city and their functions.

The report "*City of Kirkland Sensitive Areas Recommendations Report*" states, "that modifications of wetland buffers not exceed one-third of the buffer width, regardless of the basin designation, as long as the buffer enhancement or averaging is provided" (Adolphson, 1998). The proposed buffer reduction complies with this recommendation. Direct impacts to wetlands are not proposed.

2) The proposed single-family residence will not impact water quality of the wetland system, provided homeowners are not allowed to use products exterior of the houses, such as chemical pesticide, herbicides, detergents, fertilizers. The sensitive area notice on title for these parcels should include a requirement that these products are not used.

3) The "*Kirkland's Streams, Wetlands and Wildlife Study, Part 2*", determined that Forbes Wetland #9 is rated high quality for wetland functions (Watershed, 1998). The 2014 Western Washington Rating Form provides more specific information on the functions and values of the wetland, see attached (Hruby, 2014). The current Department of Ecology rating form, rates Forbes Wetland #9 high for wetland functions.

Forbes Creek is located within the wetland and more than 100 feet from the outside of the wetland buffer. Therefore, fish habitat should not be directly affected.

The proposed wetland buffer reduction of 5,288 square feet, appears to be less than 5% of the entire remaining wetland buffer, and therefore not an additional significant buffer impact. The goal of vegetative enhancement is to improve wildlife habitat, and increase shading and screening of the wetland. There are no wildlife studies for this particular wetland. Wildlife species that utilize wetland buffers larger than provided by the current City of Kirkland zoning code, may have already been impacted by the high level of development around Forbes Creek Wetland #9.

The Department of Ecology document, "*Update on Wetland Buffers: The State of the Science, Final Report*", suggests "150 to 300+ feet (46 to 92+ m) for wetlands with high habitat functions, regardless of the intensity of the land uses adjacent to the wetland (Hruby, T. 2013). However,

this documents states, “this synthesis DOES NOT contain agency recommendations or suggestions for implementing programs to protect or manage wetlands using buffers. Its purpose is to identify the sources of information reviewed and relied upon by Ecology in the process of updating our guidance on wetland buffers as required in state law (HB1113). Any recommendations documented here are those that have been described in the literature. They are included here only as part of the synthesis of existing scientific information”.

Current science suggests much larger wetland buffers than required in Western Washington. “The Planner’s Guide to Wetland Buffers for Local Governments prepared by the Environmental Law Institute recommends a range of 100–1000 ft. for wildlife, 30– 100 ft. for sediment removal, 100–180 ft. for nitrogen removal, and 30–100 ft. for phosphorus removal” (Environmental Law Institute. 2008).

4) Runoff from new impervious roof tops will be directed to dispersion trenches, located on each lot, just outside of the wetland buffer. Driveway surfaces will disperse to the side of the driveway. Dispersion recharges groundwater. The pre and post hydrologic conditions of the wetland will not be measurably altered. Stormwater provisions will be designed and submitted by the civil engineer. Stormwater detention is not required for single-family residences.

5) The maximum slope of the eastern wetland buffer is 18%. The buffer slope appears to be stable. All enhancement work will be done with hand tools. An erosion and sediment control plan will provide for erosion control fencing and other measures to protect the buffer. An erosion and sediment control plan will be designed and submitted by the civil engineer.

6) The proposed wetland buffer reduction will not be detrimental to any other properties. The area of buffer reduction will be behind single-family residences and generally not visible from the street. The adjoining existing single-family residences, in the Pars plat to the south, will be able to see the proposed new single-family residence and buffer reduction area.

7) All fill material for the proposed development must be from a licensed materials supplier. The materials supplier must provide test results for major soil pollutants. The tested pollutants should include at a minimum general screening tests for hydrocarbons, heavy metals (lead, zinc, cadmium, mercury, arsenic), pcb’s, pH, phosphorus and nitrogen. Negative results will require additional testing or other sources of materials.

8) Soils exposed by removal of non-native vegetation will be protected by a grass seeding. The grass seed mix is provided on the HGL Properties, 3 Lot Short Plat Buffer Enhancement Plan.

9) Buffer averaging for the three lots does not provide adequate house footprints. The applicant is required to dedicate 10 feet of the property, along 124th Ave. N.E., to the city for street improvements. The front setback requirement is 20 feet and the rear setback requirement from the wetland buffer is 10 feet. These setbacks leave a minimum distance of 12 feet on the middle lot and an average buildable depth of 18 feet. Houses dimensions would have to be 18 feet by 43 feet, which are 774 square foot building footprints.

The applicant is proposing a wetland buffer reduction to create three lots with building footprints of 1,827 sf, 1,578 sf and 1920 sf, respectively from north to south. The middle lot has a smaller footprint because the reduced buffer extends farther into the lot. Lot density calculations would

allow for more than three lots. However, the minimum lot width, 75 feet, determines the number of lots along 124th Ave. N.E.

10) The Kinney Place Short Plat, also known as PARS Short Plat, is located adjacent to the south property line of the subject property. In 2005, the Kinney Place Short Plat was granted a wetland buffer reduction from 75 feet to 50 feet, for Forbes Creek Wetland #9.

5.0 References

Adolphson Associates, Inc. 1998. "City of Kirkland Sensitive Areas Recommendations Report".

Environmental Law Institute. 2008. Planner's guide to wetland buffers for local governments. 25pp. ISBN 978-58576-137-1.

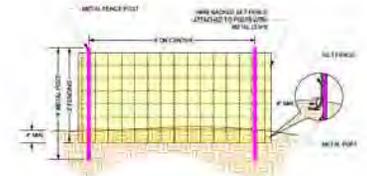
The Watershed Company, 1998. *Kirkland's Streams, Wetlands and Wildlife Study*.

Hruby, T. 2013. Update on Wetland Buffers: The State of the Science, Final Report, October 2013. Washington State Department of Ecology Publication #13-06-11.

Hruby, T. (2014). Washington State Wetland Rating System for Western Washington: 2014 Update. (Publication #14-06-029). Olympia, WA: Washington Department of Ecology.

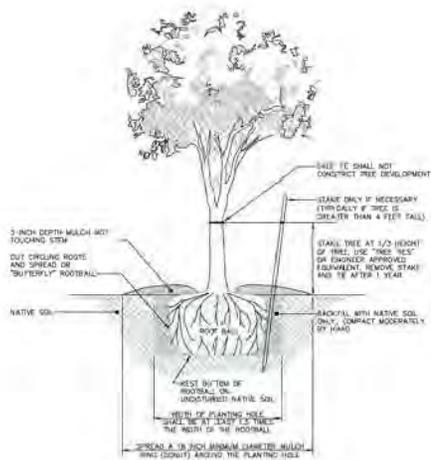
Attachments

**HGL Investment Properties
3 Lot Short Plat
Buffer Enhancement Plan**
102XX 124th Ave. N.E., Kirkland, Washington
King County Tax Parcel No.: 663990-0250
Kirkland Planning Dept. File No.: PRE16-00435

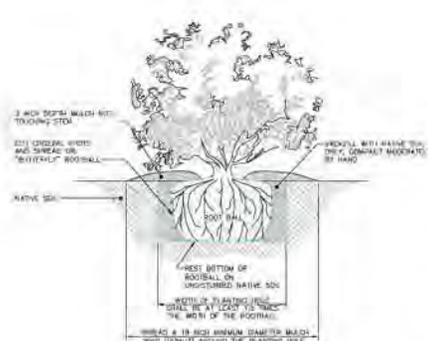


SILT FENCE DETAILS

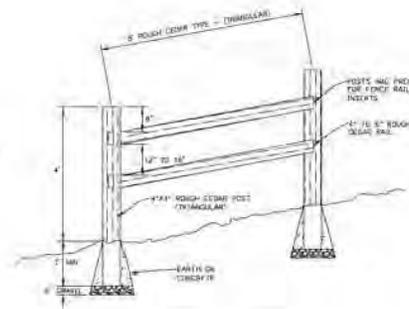
NOTES:
Silt fence located at the outside boundary of the wetland buffer. See the Erosion and Sediment Control Plans for other erosion control measures and details.



Tree Planting Detail

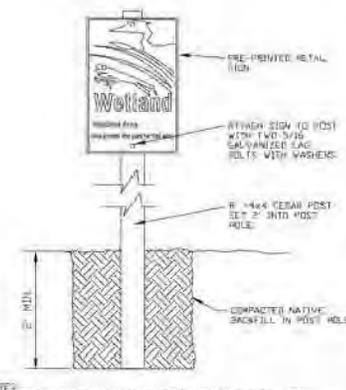


Shrub Planting Detail



Split Rail Fence Detail

NOTES:
POSTS AND RAILS ARE PRECUT FOR ASSEMBLY.
RAILS ARE PERMITTED.
FENCES SHALL BE PLACED AT THE APPROVED BUFFER EDGE.



Wetland Sign Detail

NOTES:
THE WETLAND/STREAM SIGN SHALL BE PLACED AT THE BOUNDARY BETWEEN DEVELOPMENT AND THE SENSITIVE AREA BUFFER. ONE SIGN SHALL BE POSTED FOR EVERY RESIDENTIAL LOT. SIGNS MAY BE POSTED ON SPLIT RAIL FENCE POSTS.

NO.	DATE	BY	REVISION

CONSULTANT
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P.O. BOX 1981 ISSAQUAH, WASHINGTON 98029

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Elina Zhang, 919-981-3155, elinazh@gmail.com

PROJECT: **HGL Investment Properties
3 Lot Short Plat
Buffer Enhancement Plan**

DESIGNED BY: J. Jones
DRAWN BY: J. Jones
CHECKED BY:
APPROVED BY:
DATE: 3/20/2016

SCALE: NONE
SHEET: 3 of 4

HGL Investment Properties 3 Lot Short Plat Buffer Enhancement Plan

102XX 124th Ave. N.E., Kirkland, Washington
King County Tax Parcel No.: 663990-0250
Kirkland Planning Dept. File No.: PRE16-00435

1.0 Executive Summary

The applicant proposes to short the property into three (3) single-family lots. In order to create lots of adequate depth for single-family residences, a buffer reduction from 75 feet to 50 feet is necessary. The area of the 75-ft buffer on the east side of the wetland is 14,258 sf. The area of the reduced 50-ft buffer on the east side of the wetland is 9,370 sf. The buffer reduction is 5,288 sf. The south buffer is 9,632 sq-ft. A reduction of the south buffer is not proposed. All the remaining buffer is proposed to be enhanced. For purposes of plant quantities for the created lots and future owners, the plant quantities are listed for each lot. Buffer area #4 is additional area on the southern most lot.

To mitigate for a buffer reduction, invasive plants will be removed from all remaining buffer areas in-situ by hand and a supplemental planting of native shrub and trees will be installed. The existing invasive plants species include, Himalayan blackberry, English ivy, holly, and Japanese knotweed. English ivy growing up the trunks of existing trees will be killed by cutting vine in a circle around the trunk. Japanese knotweed will require a herbicide stem injection program. Maintenance of invasive plants will occur for a five (5) time period. Removal of invasive plants and vegetative enhancement will improve the functions of the buffer. A buffer impact and functional assessment report will be submitted as part of this buffer reduction request.

1.1 Goals and Objectives
The goal of mitigation is to increase the functions and values of the existing critical area buffer through enhancement. In the current degraded state, the critical area buffer does not provide the functions necessary to adequately protect the non-site wetland. The objectives necessary to meet the above stated goal area as follows:

- Remove invasive non-native plants from the Buffer
- Install native vegetation
- Maintain and monitor the enhancement area for a period of five years or until the site meets the specified performance standards
- Install sensitive area signs, one per lot, at the limit of the buffer to deter future intrusions into the sensitive area
- Install a solid wood or split rail wood fence at the limit of the buffer.
- Record the sensitive area in a "Notice on Title"
- If the enhancement area fails to meet performance standards provide a contingency plan to rectify the situation.

1.2 Mitigation Sequencing
A buffer reduction is undesirable because there are several setback requirements that limit the buildable area. The setback requirements affecting the buildable area are as follows: 10-ft setback to the public right-of-way along 124th Ave. N.E. 20-ft setback from setback 10-foot setback from the wetland buffer. Buffer averaging was considered but provided 774 sq. ft. building envelope. The Kirkland Zoning Code always for a wetland buffer reduction provided certain criteria are met. The decision criteria are discussed in another document, titled "Request for Wetland Buffer Modification", J. S. Jones and Associates, Inc. March 3rd 2016.

The wetland buffer is currently degraded by the presence of invasive non-native plant species. Removal of invasive plants and a vegetative enhancement provides a functional lift for the remaining buffer. The enhanced buffer will improve wildlife habitat by eliminating non-native plants and increasing plant diversity. English ivy is covering portions of the soil surface and growing up the trunks of trees.

1.3 Impact Analysis	
Proposed Impacts	
East Buffer Reduction, 75 feet to 50 feet	-5,288 sf
Proposed Buffer Mitigation	
Buffer Enhancement Area	10,002 sf
Ratio of Enhancement to Buffer Impact	3.03:1

2.0 Project Location
The property is located at 13786 N.E. 5th Place, Kirkland, Washington 98005

3.0 Responsible Parties
Property Owners
HGL Investment Properties
16507 SE 4th Ct
Bellevue, Washington 98006
619-941-3156
elinazhang@gmail.com

Environmental Consultant
J. S. Jones and Associates, Inc.
Attn: Jeffrey S. Jones PWS
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Issaquah, Washington 98027
253-905-5736

4.0 Standards
All work and materials shall conform to City of Kirkland standards and specifications, and to the specifications and details shown on these plans.

5.0 City of Kirkland Contact
Certain actions within this mitigation/restoration plan require inspection or approval by City of Kirkland staff. Requests for inspection/approval shall be coordinated through the City of Kirkland staff.

6.0 Contractor Information
When it is available, contact information shall be provided to City of Kirkland that includes name, addresses and phone numbers of persons/firms that will be responsible for grading the

mitigation/restoration area, installing required plants, and performing required maintenance and monitoring.

7.0 Contractor's Qualifications
Contractor/Landscape installer must be experienced in mitigation and restoration work. The Permittee shall provide that there is one person on the site at all times during work and installation who is thoroughly familiar with the type of materials being installed and the best methods for their installation, and who shall direct all work being performed under these specifications. This person shall be experienced in installing native plant materials for wetland mitigation or restoration projects, unless otherwise allowed by the City of Kirkland staff.

8.0 Site Conditions
The Permittee and/or Wetland Scientist shall immediately notify City of Kirkland staff of any discrepancies between these plans and the site conditions. The locations of plants shown may be modified in the field by the Wetland Scientist and/or City of Kirkland staff, based on field conditions at the time of planting. Changes should be documented and as-built drawings submitted to City of Kirkland upon request for formal construction approval.

9.0 Plants
9.1 Origin: Plant materials shall be Northwest native plants, nursery grown in the Puget Sound region of Washington. Dug plants may only be used upon approval of City of Kirkland staff.
9.2 Handling: Plants shall be handled so as to avoid all damage, including breaking, bruising, root damage, sunburn, drying, freezing or other injury. Plants must be covered during transport. Plants shall not be bound with wire or rope in a manner that could damage branches. Protect plant roots with shade and wet soil in the time period between delivery and installation. Do not lift container stock by trunks, stems, or logs. Do not remove from containers until ready to plant. Water all plants as necessary to keep moisture levels appropriate to the species horticultural requirements. Plants shall not be allowed to dry out. All plants shall be watered thoroughly immediately upon installation. Soak all containerized plants thoroughly prior to installation. Bare root plants are subject to the following special requirements, and shall not be used unless planted between November 1 and March 31, and only with the written permission of the City of Kirkland staff. Bare root plants must have enough fibrous root to insure plant survival. Roots must be covered at all times with mulch and/or wet straw, moss, or other suitable packing material until time of installation. Plants whose roots have dried out from exposure will not be accepted at installation.
9.3 Storage: Plants stored by the Permittee for longer than one month prior to planting shall be planted in nursery rows, and treated in a manner suitable to that species horticultural requirements. Plants must be inspected by the Wetland Scientist prior to installation.

9.4 Damaged Plants: Damaged, dried out, or otherwise re-handled plants will be rejected at installation inspection. All rejected plants shall be immediately removed from the site.
9.5 Plant Names: Plant names shall comply with those generally accepted in the native plant nursery trade. Any questions regarding plant species or variety shall be referred to the Wetland Scientist or City of Kirkland staff. All plants shall be true to species and variety.
9.6 Plant Substitutions: Plant substitutions are not permitted without the permission of the Wetland Scientist and/or City of Kirkland staff. Some species substitutions of larger size do not require special permission. However, small plants often experience less transplant shock and adapt more quickly to site conditions, resulting in a higher success rate. As such, smaller plants will be approved as substitutions based on certain site-specific conditions (does not less than 1 gallon size however).

9.7 Quality and Condition: Plants shall be normal in pattern of growth, healthy, well-branched, vigorous, with well-developed root systems, and free of pests and diseases. Damaged, diseased, pest-infested, scraped, bruised, dried-out, burned, broken, or defective plants will be rejected. Plants with pruning wounds over 1" in diameter will be rejected.
9.8 Roots: All plants shall be ball and burlap, or containerized, unless authorized by the Wetland Scientist. Root bound plants or 85B plants with damaged, cracked or loose rootballs (major damage) will be rejected. Immediately before installation, plants with minor root damage (some broken and/or twisted) must be root-pruned. Matted or circling roots of containerized plants must be pruned or straightened and the sides of the root ball must be roughened from top to bottom to a depth of approximately half and end in two to four places. Bare root plantings of woody material is allowed only with written permission from the City of Kirkland staff.

9.9 Sizes: Plant sizes shall be the size indicated in the plant schedule. Larger stock may be acceptable provided that it has not been cut back to size specified, and that the root ball is proportional to the size of the plant. Smaller stock may be acceptable, and under some circumstances preferable, based on site-specific conditions. Measurements, caliper, branching and ball and burlap shall conform to the American Standard of Nursery Stock by the American Association of Nurserymen (latest edition).
9.10 Form: Evergreen trees, if used, shall have single trunks and symmetrical, well-developed form. Deciduous trees shall be single-trunked unless specified as multi-stem in the plant schedule. Shrubs shall have multiple stems, and be well-branched.

9.11 Planting: Planting shall be done in accordance with illustrated details in the mitigation/restoration plan set and accepted industry standards.
9.12 Timing of Planting: Unless otherwise approved by City of Kirkland staff, all planting shall occur between September 1 and March 31.
9.13 Weeding: Existing and exotic vegetation in the mitigation and/or buffer areas will be hand weeded from around all newly installed plants at the time of installation and on routine basis through monitoring period. No chemical control of vegetation on any portion of the site is allowed.
9.14 Soil Amendments: Unless otherwise specified by City of Kirkland staff, native soil will be incorporated into the planting pits.
9.15 Mulch: The soil surface surrounding all planting pit areas shall receive no less than 2"-4" of medium bark mulch after planting. Mulch shall be kept well away (at least 2") from the trunks and stems of woody plants.
9.16 Site Conditions: Contractor shall immediately notify the Wetland Scientist of drainage or soil conditions likely to be detrimental to the growth or survival of plants. Planting operations shall not be conducted under the following conditions: freezing weather, when the ground is frozen, excessively wet weather, excessively windy weather, or in excessive heat.
9.17 Plant Locations: Locations shall be as depicted in the approved plan set. The Wetland Scientist may change the locations of plantings shown on plans based on field conditions.
9.18 Planting in Pits: Planting pits shall be circular or square with vertical sides, and shall be 3'

deeper and 6" larger in diameter than the root ball of the plant. Break up the sides of the pit in compacted soils. Set plants upright in pits, as illustrated in planting detail. Burlap shall be removed from the planting pit. Backfill shall be worked back into holes such that air pockets are removed without adversely compacting soil.
9.19 Fertilizer: Slow release fertilizer may be used if pre-approved by City of Kirkland staff. Fertilizers shall be applied only at the base of plants underneath the required covering of mulch that does not make contact with stems of the plants. No fertilizers will be placed in planting holes.
9.20 Water: Plants shall be watered upon completion of backfilling. Plants shall be watered a second time within 24-48 hours after installation.

10.0 Grass Seeding
Seeding of any seeded soils in the wetland buffer is required. Use specified native mix at rate specified. All seed materials shall be free of weed seeds or other foreign matter detrimental to plant growth.
10.1 Timing: Seeding shall not take place until mulch has been applied. Contractor shall insure that areas to receive seed are clear of debris. Seeding shall be performed after other plant installation is complete. Seeding is the final step of the initial installation. Seeding shall not take place when the ground is frozen or in windy weather. Seeds shall be hand broadcast with an even distribution as feasible.

11.0 Maintenance
Maintenance shall be required in accordance with City of Kirkland guidelines and approved plants.
11.1 Survival: The Permittee shall be responsible for the health of 100% of all newly installed plants for one growing season after installation. A growing season for these purposes is defined as occurring from spring to spring (March 15 to October 15). For fall installation (often required) the growing season will begin the following spring. The Permittee shall replace any plants that are failing, weak, defective in a manner of growth, or dead during this growing season, as directed by the Wetland Scientist and/or City of Kirkland staff.
11.2 Installation Timing for Replacement Plants: Replacement plants shall be installed between September 1 and March 31, unless otherwise determined by the Wetland Scientist and/or City of Kirkland staff.

11.3 Duration and Extent: In order to achieve performance standards, the Permittee shall have the mitigation/restoration area maintained for the duration of the monitoring period. 5 years. Maintenance will include watering, weeding around base of installed plants, pruning, replacement, installing, removal of all classes of noxious weeds (see Washington State Noxious Weeds List, WAC 16-750-005) as well as Himalayan blackberry, and any other measures needed to insure plant survival. All maintenance shall be directed by the Wetland Scientist.
11.4 Standards for Replacement Plants: Replacement plants shall meet the same standards for size and type as those specified for original installation unless otherwise directed by the Wetland Scientist, and/or City of Kirkland staff. Replacement plants shall be inspected as described above for the original installation.

11.5 Replanting: Plants that have settled in their planting pits too deep, too shallow, loose, or crooked shall be replanted as directed by the Wetland Scientist, and/or City of Kirkland staff.
11.6 Herbicides/Pesticides: Chemical controls shall not be used in the mitigation/restoration area, sensitive areas or their buffers. However, limited use of herbicides may be approved depending on site specific conditions, only if approved by City of Kirkland staff.
11.7 Irrigation/Watering: Water shall be provided during the dry season (July 1-October 15) for five years after installation to ensure plant survival and establishment. Water should be provided by a temporary above ground irrigation system and/or water truck. Water should be applied at a rate of 1" of water two times a week for year 1 and 1" of water one time a week during year 2.
11.8 General: The Permittee shall include in general maintenance activities the replacement of any vandalized or damaged signs, habitat features, fences or other structural component of the mitigation site.

12.0 Performance Standards - Plant Cover and Survival
Plant survival and cover standards are established to measure mitigation success as follows:

Performance Standards	Year 0	Year 1	Year 2	Year 3	Year 4
Shrub and Sapling Tree Cover*	5%	10%	15%	20%	25%
Shrub and Sapling Tree Survival	100%	85%	80%	75%	70%

*Includes beneficial native plants in plant category that are naturally recruiting volunteers

Less than 10% invasive vegetation during any monitoring event
12.0 Monitoring: Monitoring shall be conducted annually for 5 years in accordance with the approved mitigation/restoration monitoring plan.

12.1 Vegetation Monitoring: Sample plots will be established for vegetation monitoring, and photographs established from which photos will be taken throughout the monitoring period. Sample plots are the preferred method for vegetation monitoring for this site. No less than four (4) plots will be established in each enhancement area. Permanent plot location(s) must be identified on mitigation/restoration site plans in the first monitoring report. They may be drawn on approved monitoring/assessment plans by hand. Plots shall detail herb, shrub, and tree aerial cover at each of 1m, 5m, and 10m respectively, using the Braun-Blanquet method or other acceptable field method. Monitoring of vegetation plots shall occur annually between August 1 and September 30 (prior to leaf drop), unless otherwise specified.
12.2 Photopoint: No less than four (4) permanent photo point will be established within the buffer enhancement area. Photographs will be taken from these points to visually record the condition of the mitigation/restoration area.

12.3 Reports: Monitoring reports shall be submitted by December 31 of each year during the monitoring period. As applicable, monitoring reports must include descriptions for:
i. Site plan and location map
ii. Historic description of plot, including date of installation, current year of monitoring, restoration of mitigation/restoration goals, and performance standards
iii. Plant survival, vigor and aerial coverage from every plant community (percent data), and explanation of monitoring methodology in the context of assessing performance standards
iv. Site hydrology, including extent of inundation, saturation, depth to groundwater.

v. Slope condition, site stability, any structures or special features
vi. Buffer conditions, e.g. surrounding land use, use by humans, wild and domestic creatures
vii. Observed wildlife, including amphibians, avians and others
viii. Assessment of nuisance-specific tools and recommendations for management
ix. 4"x6" color photograph taken from permanent photo-points
x. Summary of maintenance and contingency measures proposed for next season and completed for past season
13.4 Deficiencies: Any deficiency discovered during any monitoring or inspection visit must be corrected within 90 days of approval by City of Kirkland.
13.5 Contingency Plan: Should any monitoring report reveal the mitigation has failed in whole or in part, and should that failure be beyond the scope of routine maintenance, a Contingency Plan will be submitted. The Contingency Plan may range in complexity from a list of plants substituted, to cross-sections of proposed engineered structures. Once approved, it may be installed, and will replace the approved mitigation/restoration plan. If the failure is substantial, the City of Kirkland may extend the monitoring period for this mitigation.

14.0 Bond
Prior to beginning any work, the Permittee must provide a mitigation/restoration bond or assignment of funds, per City of Kirkland procedures. Upon approval of the mitigation plan, a bond quantity worksheet will be completed based on all elements of the mitigation/restoration plan.

DESIGNED BY: J. Jones	DRAWN BY: J. Jones	CHECKED BY: J. Jones	APPROVED BY:	DATE: 5/20/2016
HGL Investment Properties 16507 SE 4th Court, Bellevue, Washington 98006 Elinazhang, 919-961-3155; elinazhang@gmail.com				
HGL Investment Properties Buffer Enhancement Plan				
Environmental Consultants Wetlands, Streams, and Wildlife <small>10100 1st Avenue, Issaquah, Washington 98027</small>				
J. S. Jones and Associates, Inc.				

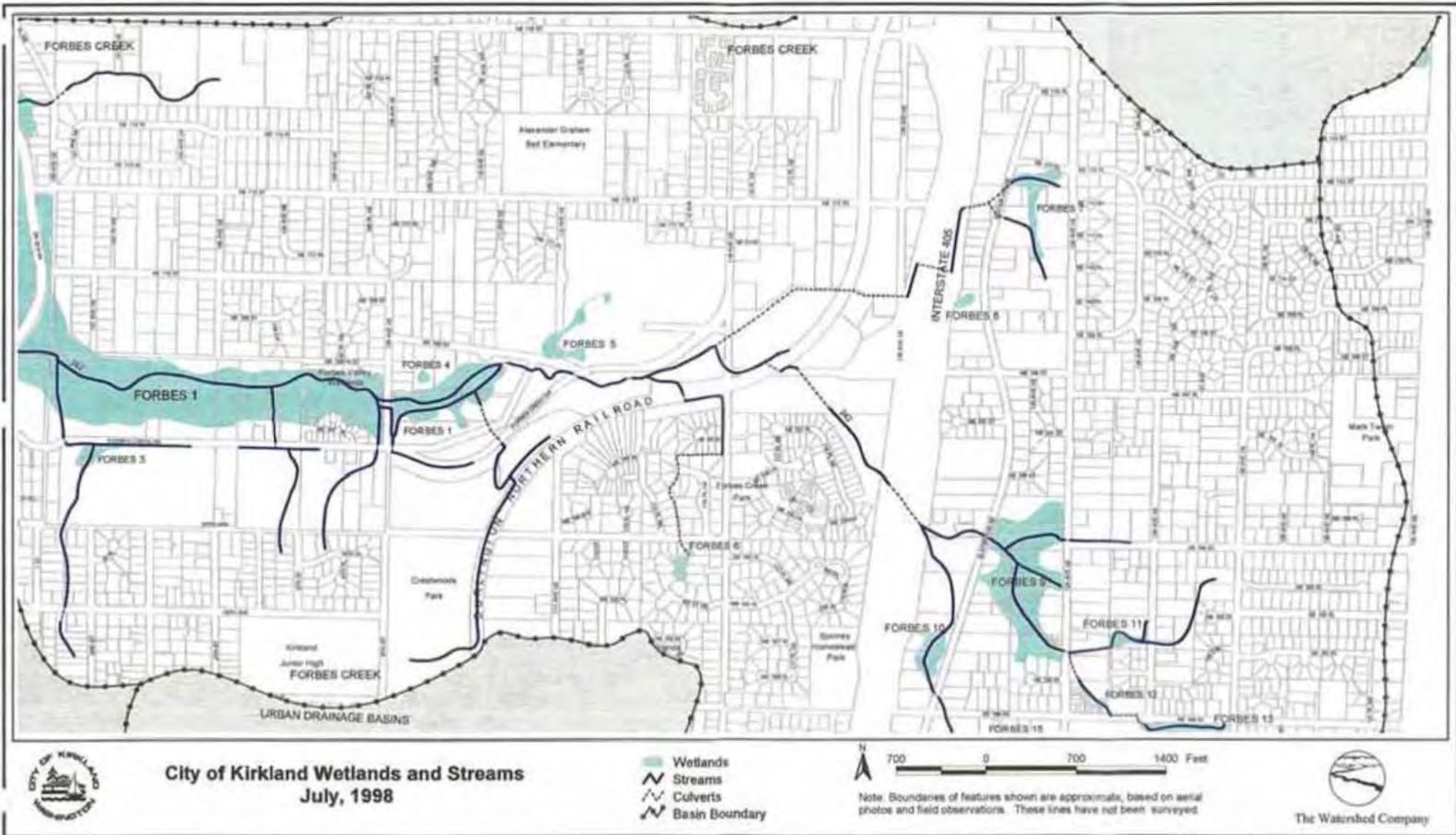
Wetland AU Sketch



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Map 15. Forbes Creek Basin

Wetland name or number Forbes #9

RATING SUMMARY – Western Washington

Name of wetland (or ID #): Forbes Wetland #9 Date of site visit: 3/29/16
 Rated by Jeff Jones Trained by Ecology? Yes No Date of training 12/06

HGM Class used for rating Riverine Wetland has multiple HGM classes? Y N

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

Source of base aerial photo/map Imap

OVERALL WETLAND CATEGORY I (based on functions___ or special characteristics___)

1. Category of wetland based on FUNCTIONS

- Category I – Total score = 23 - 27
- Category II – Total score = 20 - 22
- Category III – Total score = 16 - 19
- Category IV – Total score = 9 - 15

FUNCTION	Improving Water Quality			Hydrologic			Habitat			
	<i>Circle the appropriate ratings</i>									
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			9			7			24

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

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

2. Category based on SPECIAL CHARACTERISTICS of wetland

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

Wetland name or number _____

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 (<i>can be added to map of hydroperiods</i>)	D 1.1, D 4.1	
Boundary of area within 150 ft of the wetland (<i>can be added to another figure</i>)	D 2.2, D 5.2	
Map of the contributing basin	D 4.3, D 5.3	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	D 3.1, D 3.2	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	D 3.3	

Riverine Wetlands

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

Lake Fringe Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	L 1.1, L 4.1, H 1.1, H 1.4	
Plant cover of trees, shrubs, and herbaceous plants	L 1.2	
Boundary of area within 150 ft of the wetland (<i>can be added to another figure</i>)	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 (<i>can be added to figure above</i>)	S 4.1	
Boundary of 150 ft buffer (<i>can be added to another figure</i>)	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 FC #9

HGM Classification of Wetlands in Western Washington

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

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

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

NO - go to 2

YES - the wetland class is **Tidal Fringe** - go to 1.1

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

NO - Saltwater Tidal Fringe (Estuarine)

YES - Freshwater Tidal Fringe

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

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

NO - go to 3

YES - The wetland class is **Flats**

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

3. Does the entire wetland unit **meet all** of the following criteria?

The vegetated part of the wetland is on the shores of a body of permanent open water (without any plants on the surface at any time of the year) at least 20 ac (8 ha) in size;

At least 30% of the open water area is deeper than 6.6 ft (2 m).

NO - go to 4

YES - The wetland class is **Lake Fringe** (Lacustrine Fringe)

4. Does the entire wetland unit **meet all** of the following criteria?

The wetland is on a slope (*slope can be very gradual*),

The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks,

The water leaves the wetland **without being impounded**.

NO - go to 5

YES - The wetland class is **Slope**

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

5. Does the entire wetland unit **meet all** of the following criteria?

The unit is in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river,

The overbank flooding occurs at least once every 2 years.

Wetland name or number #9

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 9**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 $> \frac{3}{4}$ area of wetland points = 8Depressions cover $> \frac{1}{2}$ area of wetland points = 4Depressions present but cover $< \frac{1}{2}$ 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 $> \frac{2}{3}$ area of the wetland points = 8Trees or shrubs $> \frac{1}{3}$ area of the wetland points = 6Herbaceous plants (> 6 in high) $> \frac{2}{3}$ area of the wetland points = 6Herbaceous plants (> 6 in high) $> \frac{1}{3}$ area of the wetland points = 3Trees, shrubs, and ungrazed herbaceous $< \frac{1}{3}$ 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 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

0

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 Roads Yes = 1 No = 0

1

Total for R 2 Add the points in the boxes above

4

Rating of Landscape Potential If score is: 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

1

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

4

Rating of Value If score is: 2-4 = H 1 = M 0 = L

Record the rating on the first page

Wetland name or number 9**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

6

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 $> \frac{1}{3}$ area OR emergent plants $> \frac{2}{3}$ area

points = 7

Forest or shrub for $> \frac{1}{10}$ area OR emergent plants $> \frac{1}{3}$ area

points = 4

Plants do not meet above criteria

points = 0

7

Total for R 4

Add the points in the boxes above

13

Rating of Site Potential If score is: 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

1

Total for R 5

Add the points in the boxes above

3

Rating of Landscape Potential If score is: 3 = H 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

2

Total for R 6

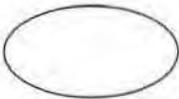
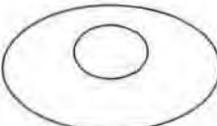
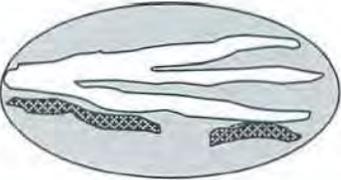
Add the points in the boxes above

3

Rating of Value If score is: 2-4 = H 1 = M 0 = L

Record the rating on the first page

Wetland name or number #9

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?	
<p>H 1.1. Structure of plant community: <i>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.</i></p> <p><input type="checkbox"/> Aquatic bed 4 structures or more: points = 4</p> <p><input type="checkbox"/> Emergent <u>5 structures: points = 2</u></p> <p><input checked="" type="checkbox"/> Scrub-shrub (areas where shrubs have > 30% cover) 2 structures: points = 1</p> <p><input checked="" type="checkbox"/> Forested (areas where trees have > 30% cover) 1 structure: points = 0</p> <p><i>If the unit has a Forested class, check if:</i></p> <p><input checked="" type="checkbox"/> 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</p>	2
<p>H 1.2. Hydroperiods</p> <p>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 (<i>see text for descriptions of hydroperiods</i>).</p> <p><input type="checkbox"/> Permanently flooded or inundated 4 or more types present: <u>points = 3</u></p> <p><input checked="" type="checkbox"/> Seasonally flooded or inundated 3 types present: points = 2</p> <p><input checked="" type="checkbox"/> Occasionally flooded or inundated 2 types present: points = 1</p> <p><input checked="" type="checkbox"/> Saturated only 1 type present: points = 0</p> <p><input type="checkbox"/> Permanently flowing stream or river in, or adjacent to, the wetland</p> <p><input checked="" type="checkbox"/> Seasonally flowing stream in, or adjacent to, the wetland</p> <p><input type="checkbox"/> Lake Fringe wetland 2 points</p> <p><input type="checkbox"/> Freshwater tidal wetland 2 points</p> <p style="text-align: center;"><i>margins are saturated only</i></p>	3
<p>H 1.3. Richness of plant species</p> <p>Count the number of plant species in the wetland that cover at least 10 ft². <i>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</i></p> <p>If you counted: > 19 species points = 2</p> <p>5 - 19 species points = 1</p> <p>< 5 species points = 0</p>	1
<p>H 1.4. Interspersion of habitats</p> <p>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. <i>If you have four or more plant classes or three classes and open water, the rating is always high.</i></p> <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;">  <p>None = 0 points</p> </div> <div style="text-align: center;">  <p>Low = 1 point</p> </div> <div style="text-align: center;">  <p>Moderate = 2 points</p> </div> </div> <div style="display: flex; justify-content: space-around; align-items: center; margin-top: 20px;"> <div style="text-align: center;">  </div> <div style="text-align: center;">  </div> <div style="text-align: center;">  </div> </div> <p>All three diagrams in this row are HIGH = 3points</p>	3

Wetland AU Sketch

King County GIS CENTER
SUB16-01244 & SAR16-01245



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King County
GIS CENTER

Date: 10/12/2015

Notes:

Wetland AU Sketch

Hydro Zhang
SUB16-01244 & SAR16-01245



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Date: 10/12/2015

Notes:

Wetland name or number # 9

<p>H 1.5. Special habitat features: Check the habitat features that are present in the wetland. <i>The number of checks is the number of points.</i></p> <p><input checked="" type="checkbox"/> Large, downed, woody debris within the wetland (> 4 in diameter and 6 ft long).</p> <p><input checked="" type="checkbox"/> Standing snags (dbh > 4 in) within the wetland</p> <p><input type="checkbox"/> 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)</p> <p><input checked="" type="checkbox"/> 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 (<i>cut shrubs or trees that have not yet weathered where wood is exposed</i>)</p> <p><input checked="" type="checkbox"/> At least ¼ ac of thin-stemmed persistent plants or woody branches are present in areas that are permanently or seasonally inundated (<i>structures for egg-laying by amphibians</i>)</p> <p><input type="checkbox"/> Invasive plants cover less than 25% of the wetland area in every stratum of plants (<i>see H 1.1 for list of strata</i>)</p>		4
Total for H 1	Add the points in the boxes above	13

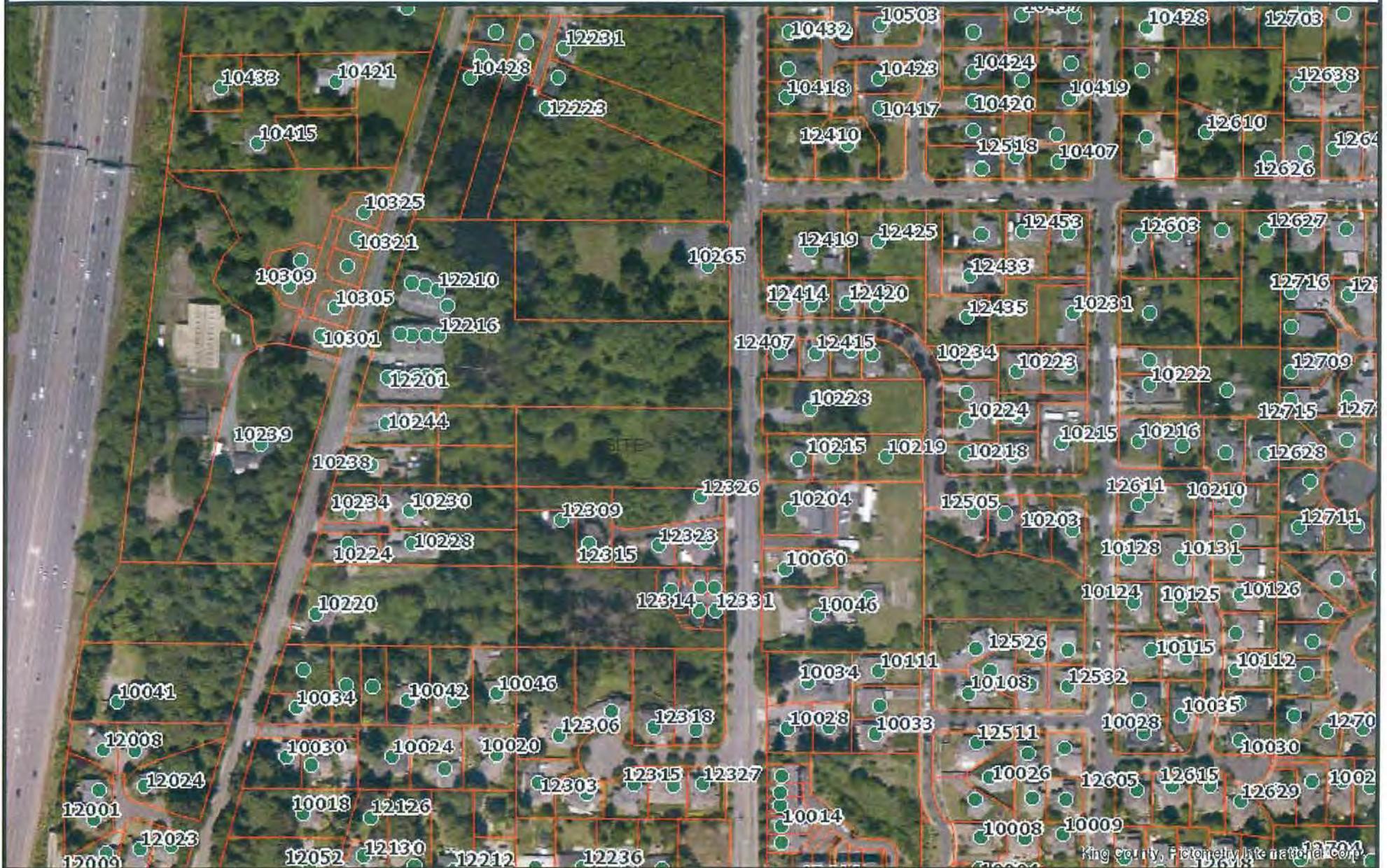
Rating of Site Potential If score is: 15-18 = H 7-14 = M 0-6 = L *Record the rating on the first page*

<p>H 2.0. Does the landscape have the potential to support the habitat functions of the site?</p>										
<p>H 2.1. Accessible habitat (include <i>only habitat that directly abuts wetland unit</i>). Calculate: <u>15</u> % undisturbed habitat + [(% moderate and low intensity land uses)/2] = <u>10</u> % If total accessible habitat is: <u>5%</u></p> <table style="width: 100%;"> <tr> <td>> 1/3 (33.3%) of 1 km Polygon</td> <td style="text-align: right;">points = 3</td> </tr> <tr> <td>20-33% of 1 km Polygon</td> <td style="text-align: right;">points = 2</td> </tr> <tr> <td>10-19% of 1 km Polygon</td> <td style="text-align: right;">points = 1</td> </tr> <tr> <td>< 10% of 1 km Polygon</td> <td style="text-align: right;">points = 0</td> </tr> </table>		> 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
> 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									
<p>H 2.2. Undisturbed habitat in 1 km Polygon around the wetland. Calculate: % undisturbed habitat + [(% moderate and low intensity land uses)/2] = _____ %</p> <table style="width: 100%;"> <tr> <td>Undisturbed habitat > 50% of Polygon</td> <td style="text-align: right;">points = 3</td> </tr> <tr> <td>Undisturbed habitat 10-50% and in 1-3 patches</td> <td style="text-align: right;">points = 2</td> </tr> <tr> <td>Undisturbed habitat 10-50% and > 3 patches</td> <td style="text-align: right;">points = 1</td> </tr> <tr> <td>Undisturbed habitat < 10% of 1 km Polygon</td> <td style="text-align: right;">points = 0</td> </tr> </table>		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	0
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									
<p>H 2.3. Land use intensity in 1 km Polygon: If <u>see appendix D</u></p> <table style="width: 100%;"> <tr> <td>> 50% of 1 km Polygon is high intensity land use</td> <td style="text-align: right;">points = (-2)</td> </tr> <tr> <td>≤ 50% of 1 km Polygon is high intensity</td> <td style="text-align: right;">points = 0</td> </tr> </table>		> 50% of 1 km Polygon is high intensity land use	points = (-2)	≤ 50% of 1 km Polygon is high intensity	points = 0	1				
> 50% of 1 km Polygon is high intensity land use	points = (-2)									
≤ 50% of 1 km Polygon is high intensity	points = 0									
Total for H 2	Add the points in the boxes above	1								

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

<p>H 3.0. Is the habitat provided by the site valuable to society?</p>		
<p>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.</p> <p>Site meets ANY of the following criteria: (points = 2)</p> <p><input checked="" type="checkbox"/> It has 3 or more priority habitats within 100 m (see next page)</p> <p><input type="checkbox"/> It provides habitat for Threatened or Endangered species (any plant or animal on the state or federal lists)</p> <p><input type="checkbox"/> It is mapped as a location for an individual WDFW priority species</p> <p><input type="checkbox"/> It is a Wetland of High Conservation Value as determined by the Department of Natural Resources</p> <p><input type="checkbox"/> 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</p> <p>Site has 1 or 2 priority habitats (listed on next page) within 100 m points = 1</p> <p>Site does not meet any of the criteria above points = 0</p>		2
<p>Rating of Value If score is: <input checked="" type="checkbox"/> <u>2 = H</u> <input type="checkbox"/> <u>1 = M</u> <input type="checkbox"/> <u>0 = L</u> <i>Record the rating on the first page</i></p>		

1 Kilometer Land Use



The information included on this map has been compiled by King County staff from a variety of sources and is subject to change without notice. King County makes no representations or warranties, express or implied, as to accuracy, completeness, timeliness, or rights to the use of such information. This document is not intended for use as a survey product. King County shall not be liable for any general, special, indirect, incidental, or consequential damages including, but not limited to, lost revenues or lost profits resulting from the use or misuse of the information contained on this map. Any sale of this map or information on this map is prohibited except by written permission of King County.



Date: 3/30/2016

Notes:

1 Kilometer Land Use



King County, Pictometry International Corp.

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Date: 3/30/2016

Notes:

 **King County**
GIS CENTER

Wetland name or number 9

WDFW Priority Habitats

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

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

- **Aspen Stands:** Pure or mixed stands of aspen greater than 1 ac (0.4 ha).
- **Biodiversity Areas and Corridors:** Areas of habitat that are relatively important to various species of native fish and wildlife (*full descriptions in WDFW PHS report*).
- **Herbaceous Balds:** Variable size patches of grass and forbs on shallow soils over bedrock.
- **Old-growth/Mature forests:** Old-growth west of Cascade crest – Stands of at least 2 tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) > 32 in (81 cm) dbh or > 200 years of age. Mature forests – Stands with average diameters exceeding 21 in (53 cm) dbh; crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80-200 years old west of the Cascade crest.
- **Oregon White Oak:** Woodland stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (*full descriptions in WDFW PHS report p. 158 – see web link above*).
- ✓ **Riparian:** The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.
- **Westside Prairies:** Herbaceous, non-forested plant communities that can either take the form of a dry prairie or a wet prairie (*full descriptions in WDFW PHS report p. 161 – see web link above*).
- **Instream:** The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources.
- **Nearshore:** Relatively undisturbed nearshore habitats. These include Coastal Nearshore, Open Coast Nearshore, and Puget Sound Nearshore. (*full descriptions of habitats and the definition of relatively undisturbed are in WDFW report – see web link on previous page*).
- **Caves:** A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils, rock, ice, or other geological formations and is large enough to contain a human.
- **Cliffs:** Greater than 25 ft (7.6 m) high and occurring below 5000 ft elevation.
- **Talus:** Homogenous areas of rock rubble ranging in average size 0.5 - 6.5 ft (0.15 - 2.0 m), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.
- **Snags and Logs:** Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 20 in (51 cm) in western Washington and are > 6.5 ft (2 m) in height. Priority logs are > 12 in (30 cm) in diameter at the largest end, and > 20 ft (6 m) long.

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

Scoring A. 2.3 1 priority habitat = 1 point

Wetland name or number 9

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

Wetland Type	Category
<i>Check off any criteria that apply to the wetland. Circle the category when the appropriate criteria are met.</i>	
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 <i>Spartina</i> , see page 25) — At least ¼ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or unmowed 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? <i>Use the key below. If you answer YES you will still need to rate the wetland based on its functions.</i> 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 9

<p>SC 4.0. Forested Wetlands</p> <p>Does the wetland have at least <u>1 contiguous acre</u> of forest that meets one of these criteria for the WA Department of Fish and Wildlife's forests as priority habitats? <i>If you answer YES you will still need to rate the wetland based on its functions.</i></p> <ul style="list-style-type: none"> — 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). <p style="text-align: right;">Yes = Category I No = Not a forested wetland for this section</p>	<p>Cat. I</p>
<p>SC 5.0. Wetlands in Coastal Lagoons</p> <p>Does the wetland meet all of the following criteria of a wetland in a coastal lagoon?</p> <ul style="list-style-type: none"> — 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 (<i>needs to be measured near the bottom</i>) <p style="text-align: right;">Yes – Go to SC 5.1 No = Not a wetland in a coastal lagoon</p> <p>SC 5.1. Does the wetland meet all of the following three conditions?</p> <ul style="list-style-type: none"> — 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 ft²) <p style="text-align: right;">Yes = Category I No = Category II</p>	<p>Cat. I</p> <p>Cat. II</p>
<p>SC 6.0. Interdunal Wetlands</p> <p>Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or WBUO)? <i>If you answer yes you will still need to rate the wetland based on its habitat functions.</i></p> <p>In practical terms that means the following geographic areas:</p> <ul style="list-style-type: none"> — 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 <p style="text-align: right;">Yes – Go to SC 6.1 No = not an interdunal wetland for rating</p> <p>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)?</p> <p style="text-align: right;">Yes = Category I No – Go to SC 6.2</p> <p>SC 6.2. Is the wetland 1 ac or larger, or is it in a mosaic of wetlands that is 1 ac or larger?</p> <p style="text-align: right;">Yes = Category II No – Go to SC 6.3</p> <p>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?</p> <p style="text-align: right;">Yes = Category III No = Category IV</p>	<p>Cat I</p> <p>Cat. II</p> <p>Cat. III</p> <p>Cat. IV</p>
<p>Category of wetland based on Special Characteristics</p> <p>If you answered No for all types, enter "Not Applicable" on Summary Form</p>	

Wetland name or number _____

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November 29, 2016

Sean LeRoy
City of Kirkland
Planning & Community Development
123 Fifth Avenue
Kirkland, WA 98033

Re: HGL Investments Project/Larson Property – Wetland Buffer Modification Plan Review. The Watershed Company Reference Number: 140622.21

Dear Sean:

This letter presents the findings of a buffer modification and buffer setback review. The delineated boundary and Type 2 classification of the wetland was verified by The Watershed Company in November 2015. This proposed buffer modification would support a short plat of parcel number 6639900250 into three separate lots. Modification through buffer enhancement is proposed and would reduce the standard 75-foot buffer by 1/3rd to 50-feet, the minimum width allowed for Type 2 wetlands in Kirkland (Primary Basin).

Stormwater dispersion within the buffer setback is also proposed.

A site visit was conducted on November 28, 2016 to evaluate the proposed buffer enhancement area. Additionally, the following documents were reviewed:

- *Request for Buffer Modification* report and mitigation plans. Prepared by JS Jones and Associates, Inc. (JSJ) March 31, 2016.
- *Request for Dispersion Trenches at Edge of Wetland Buffer*. Prepared by JSJ September 12, 2016.
- *Larson/Zhang Revised Site Plan*. Prepared by Core Design, Inc. September 22, 2016.
- *Arborist Report for Parcel # 6639900250 Kirkland, WA*. Prepared by American Forest Management (AFM) March 11, 2016.

November 29, 2016

Page 2

Findings

Buffer modification

The proposed buffer modification appears to satisfy most of the code requirements with a few exceptions. Additionally, several changes are needed to the mitigation plan to maximize the enhancement of the buffer and ensure the proposal does not result in adverse effects to water quality, wildlife habitat or drainage functions. Comments are as follows:

1. There is a discrepancy in the restoration area numbers. The notes on mitigation plan sheets 1 and 4 list 16,002 square feet while the four restoration areas listed in the plan view drawing on sheet 2 total 16,302.
2. The proposed planting density appears low. The existing native vegetation is not mapped and therefore, an accurate number of needed plants cannot be determined. Most of the native plants are salmonberry, a few other shrubs and alders in poor condition. These areas are almost completely overgrown with invasive Himalayan blackberry, English holly and ivy. It is likely that many of the existing native shrubs will be damaged during the weed removal effort. Therefore, the site should be considered almost entirely open for replanting with native species. Per past successful mitigation sites in Kirkland, a completely open site of this size should be planted with 196 trees and 456 shrubs. These numbers follow King County recommendations for forested buffer restorations.
3. No large woody debris or other habitat structures are proposed. Habitat structures should be proposed to more effectively improve wildlife habitat.
4. Seeding bare soil areas is proposed but not recommended. Seeding tends to compete with native woody species. A more cost efficient and effective soil stabilizing method is to use a blanket application of woodchip mulch. This has consistently improved mitigation success on Kirkland mitigation sites.
5. Performance standards for native cover are insufficient to provide suitable buffer functions. Past successful Kirkland mitigation efforts have routinely proposed and met cover standards of 60% in year 3 and 80% in year 5.
6. Per Chapter 90 monitoring is required to take place twice per year in each of the five monitoring years. In addition, the plan should require an as-built or year-0 report be submitted to Kirkland prior to acceptance of the installation.
7. For flexibility and efficiency, the monitoring plan should allow for line-intercept transects as a means for measuring cover.

November 29, 2016

Page 3

8. The monitoring report section mentions site hydrology measurements and reporting. This is not needed for a buffer-only plan.
9. The plan offers water trucks as an irrigation alternative. Water trucks would not have access to these areas behind the new houses. Also, water trucks have been unreliable on past mitigation sites. The preferred irrigation method is a temporary, above-ground system with zones set to automatic timers for reliability.
10. No financial security estimate was provided for review. Past projects have used the King County Bond Quantity Worksheet to determine installation, monitoring, inspection and reporting costs.

Stormwater outfall

From discussions with Core Design, the stormwater plan is conceptual at this time and shows both level spreaders and energy dissipation splash blocks as options. Provided they meet all other engineering requirements and won't result in erosive point-discharges, the splash blocks are preferred. The infiltration trenches are within or very close to the root zones of several buffer trees and their installation could be detrimental to the long-term tree viability.

If splash blocks are insufficient, the spreaders should be minimized and located as far from buffer trees as possible. Regardless of the selected option, a performance standard is needed to ensure the blocks or trenches are installed correctly, do not lead to point-discharge of stormwater and do not cause erosion within the buffer areas. Trenches should be inspected as part of the mitigation monitoring schedule (twice/year for 5 year duration).

Please call if you have any questions or if we can provide you with any additional information.

Sincerely,



Hugh Mortensen, PWS
President



NORTH

SCALE: 1" = 30'

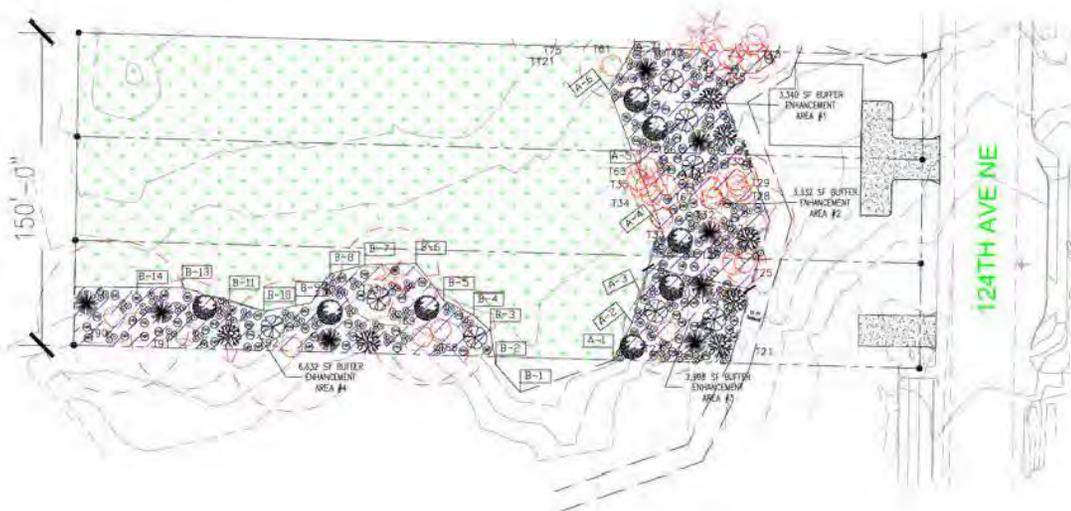
HGL Investment Properties 3 Lot Short Plat

Buffer Enhancement Plan

102XX 124th Ave. N.E., Kirkland, Washington

King County Tax Parcel No.: 663990-0250

Kirkland Planning Dept. File No.: SUB16-01244



PLANT SCHEDULE

SYMBOL	COMMON NAME	SCIENTIFIC NAME	AREA #1 QTY	AREA #2 QTY	AREA #3 QTY	AREA #4 QTY	SZ
	BIG-LEAF MAPLE	ACER MACROPHYLLUM	2	1	2	3	2 GAL
	RED ALDER	ALNUS RUBRA	2	1	2	3	2 GAL
	WESTERN RED CEDAR	THUJA PLICATA	2	9	2	3	2 GAL
	DOUGLAS FIR	PSEUDOTSUGA MENZIESII	2	9	2	3	2 GAL
	PACIFIC NINEBARK	PHYSCOCARPUS CAPITATUS	6	6	6	12	2 GAL
	SALMONBERRY	RIBUS SPECTABILIS	6	6	6	12	2 GAL
	NOOTKA ROSE	ROSA NUTKANA	6	6	6	12	2 GAL
	RED ELDERBERRY	SAMBUCUS RACEMOSA	6	6	6	12	2 GAL
	SALAL	GALLIOTERIA SHALLON	24	24	24	48	1 GAL

- Notes:
- 1) Approximately, the south one-third of the west buffer will be completely cleared, because of dense Himalayan blackberry. The remainder of the west buffer and entire south buffer will have hand removal of invasive plants. Native plants, including salmonberry, trailing blackberry, red alder and others will be retained in the buffer.
 - 2) The standard planting density requirement of 190 trees and 456 shrubs. The contractor will be required to meet the plant the standard planting density totals for trees and shrubs. If not met the contractor will be required to add plants. Existing native plants, in good condition, will be allowed to be counted in the plant totals to meet the standard planting density requirement.
 - 3) All existing snags and large wood debris will be retained in the buffers. These snags and six 12-foot long logs will be added to the west buffer. The source for these will be from existing trees in the proposed development areas. The location for placement of wood will be determined by the environmental consultant during clearing activities.

DESIGNED BY:	J. Jones
DRAWN BY:	J. Jones
CHECKED BY:	J. Jones
APPROVED BY:	J. Jones
DATE:	3/30/2016

CONSULTANT:
J. S. Jones and Associates, Inc.
Environmental Consultants
Wetlands, Streams, and Wildlife
P.O. BOX 906 SEASIDE, WASHINGTON 98177

CLIENT:
HGL Investment Properties
16607 SE 4th Court, Bellevue, Washington, 98006
Elina Zhang, 919-961-3155, elinazh@gmail.com

PROJECT:
HGL Investment Properties
3 Lot Short Plat
Buffer Enhancement Plan

SCALE	1"=30'
SHEET	2 of 4



January 16, 2017

Susan Lauinger
City of Kirkland
Planning & Community Development
123 Fifth Avenue
Kirkland, WA 98033

Re: HGL Investments Project/Larson Property – Revised Wetland Buffer Modification Plan Review. The Watershed Company Reference Number: 140622.21

Dear Susan:

This letter presents the findings of a revised buffer modification proposal review. The initial review of buffer modification plans and report was summarized in our November 29, 2016 letter to Sean LeRoy. Based on those review comments, a bond quantity worksheet and revised mitigation plan were submitted. Both documents are dated December 6, 2016.

Findings

Buffer modification

The November review recommended the following corrections be incorporated. Comments on the new plan set follow each correction in italics:

1. There is a discrepancy in the restoration area numbers. The notes on mitigation plan sheets 1 and 4 list 16,002 square feet while the four restoration areas listed in the plan view drawing on sheet 2 total 16,302. *The plans are now consistently using 16,302 square feet for the total enhancement area.*
2. The proposed planting density appears low. The existing native vegetation is not mapped and therefore, an accurate number of needed plants cannot be determined. Most of the native plants are salmonberry, a few other shrubs and alders in poor condition. These areas are almost completely overgrown with invasive Himalayan blackberry, English holly and ivy. It is likely that many of the existing native shrubs will be damaged during the weed removal effort. Therefore, the site should be considered almost entirely open for replanting with

native species. Per past successful mitigation sites in Kirkland, a completely open site of this size should be planted with 196 trees and 456 shrubs. These numbers follow King County recommendations for forested buffer restorations. *Density has been increased. Plan sheet 2 contains the following note: "The standard planting density requirement of 196 trees and 456 shrubs. The contractor will be required to meet the plant the standard planting density totals for trees and shrubs. If not met the contractor will be required to add plants. Existing native plants, in good condition, will be allowed to be counted in the plant totals to meet the standard planting density requirement."* The first sentence is unclear since it is incomplete and also does not reflect the proposed number of trees on the plan (168). The second sentence was suggested to give the contractor an incentive to avoid over-clearing and is appropriate.

3. No large woody debris or other habitat structures are proposed. Habitat structures should be proposed to more effectively improve wildlife habitat. *A Woody debris requirement has been added to mitigation plan sheet 2, note number 3. However, debris should also be shown on the plan so the contractor can better understand the distribution and approximate locations of individual pieces. For instance, the southern buffer enhancement area should not have any debris proposed since it would require traversing either private property or the wetland to access that area.*
4. Seeding bare soil areas is proposed but not recommended. Seeding tends to compete with native woody species. A more cost efficient and effective soil stabilizing method is to use a blanket application of woodchip mulch. This has consistently improved mitigation success on Kirkland mitigation sites. *Seeding has been removed from the plan; mulch is now proposed in cleared and planted areas.*
5. Performance standards for native cover are insufficient to provide suitable buffer functions. Past successful Kirkland mitigation efforts have routinely proposed and met cover standards of 60% in year 3 and 80% in year 5. *The performance standards have been revised as recommended.*
6. Per Chapter 90 monitoring is required to take place twice per year in each of the five monitoring years. In addition, the plan should require an as-built or year-0 report be submitted to Kirkland prior to acceptance of the installation. *The monitoring section has been revised as recommended.*
7. For flexibility and efficiency, the monitoring plan should allow for line-intercept transects as a means for measuring cover. *This has been revised as recommended.*

January 16, 2017

Page 3

8. The monitoring report section mentions site hydrology measurements and reporting. This is not needed for a buffer-only plan. *This has been revised as recommended.*
9. The plan offers water trucks as an irrigation alternative. Water trucks would not have access to these areas behind the new houses. Also, water trucks have been unreliable on past mitigation sites. The preferred irrigation method is a temporary, above-ground system with zones set to automatic timers for reliability. *This has been revised as recommended.*
10. No financial security estimate was provided for review. Past projects have used the King County Bond Quantity Worksheet to determine installation, monitoring, inspection and reporting costs. *The bond quantity worksheet was submitted. The following comments apply and recommended changes are needed:*
 - a. *The plant numbers do not agree with the plant schedule on sheet 2 of the revised mitigation plans. Please revise both the plant numbers and sizes to match the plan set.*
 - b. *There is no cost included for the woodchip mulch. Note the King County form uses 2 inches of mulch in its calculation and the plan (correctly) requires 4 inches. Therefore, the calculated mulch quantity should be doubled to accurately reflect the cost.*
 - c. *The as-built documentation cost is not included. The number of monitoring visits should be increased from ten to eleven to account for the year zero/as-built report.*

Stormwater outfall

No additional or revised stormwater plans were submitted for review. The following comments were supplied during the prior review:

From discussions with Core Design, the stormwater plan is conceptual at this time and shows both level spreaders and energy dissipation splash blocks as options. Provided they meet all other engineering requirements and won't result in erosive point-discharges, the splash blocks are preferred. The infiltration trenches are within or very close to the root zones of several buffer trees and their installation could be detrimental to the long-term tree viability.

If splash blocks are insufficient, the spreaders should be minimized and located as far from buffer trees as possible. Regardless of the selected option, a performance standard is needed to ensure the blocks or trenches are installed correctly, do not lead to point-discharge of stormwater and do not cause erosion within the buffer

January 16, 2017

Page 4

areas. Trenches should be inspected as part of the mitigation monitoring schedule (twice/year for 5 year duration).

Please call if you have any questions or if we can provide you with any additional information.

Sincerely,

A handwritten signature in blue ink that reads "Hugh Mortensen". The signature is written in a cursive style with a long, sweeping underline.

Hugh Mortensen, PWS
President

NATURAL GREENBELT PROTECTIVE EASEMENT

Grantor: _____, owner of the hereinafter described real property, hereby grants to

Grantee: The City of Kirkland, a municipal corporation.

A natural greenbelt protective easement over and across the following described real property to wit ("Easement Area"):

No tree trimming, tree topping, tree cutting, tree removal, shrub or brush-cutting or removal of native vegetation, application of pesticides, herbicides, or fertilizers; construction; clearing; or alteration activities shall occur within the Easement Area without prior written approval from the City of Kirkland. Application for such written approval to be made to the Kirkland Department of Planning and Community Development who may require inspection of the premises before issuance of the written approval and following completion of the activities. Any person conducting or authorizing such activity in violation of this paragraph or the terms of any written approval issued pursuant hereto, shall be subject to the enforcement provisions of Chapter 1.12, Kirkland Municipal Code. In such event, the Kirkland Department of Planning and Community Development may also require within the immediate vicinity of any damaged or fallen vegetation, restoration of the affected area by planting replacement trees and other vegetation as required in applicable sections of the Kirkland Zoning Code. The Department also may require that the damaged or fallen vegetation be removed.

It is the responsibility of the property owner to maintain critical areas and their buffers by removing non-native, invasive, and noxious plants in a manner that will not harm critical areas or their buffers and in accordance with Kirkland Zoning Code requirements for trees and other vegetation within critical areas and critical area buffers.

The City shall have a license to enter the Easement Area (and the property if necessary for access to the Easement Area) for the purpose of monitoring compliance with the terms of this easement.

Development outside of this Natural Greenbelt Protective Easement may be limited by codified standards, permit conditions, or movement of the critical area.

Each of the undersigned owners agree to defend, pay, and save harmless the City of Kirkland, its officers, agents, and employees from any and all claims of every nature whatsoever, real or imaginary, which may be made against the City, its officers, agents, or employees for any damage to property or injury to any person arising out of the existence of said Natural Greenbelt Protective Easement over said owner's property or the actions of the undersigned owners in carrying out the responsibilities under this agreement, including all costs and expenses, and recover attorney's fees as may be incurred by the City of Kirkland in defense thereof; excepting therefrom only such claims as may arise solely out of the negligence of the City of Kirkland, its officers, agents, or employees.

This easement is given to satisfy a condition of the development permit approved by the City of Kirkland under Kirkland File/Permit No. _____, for construction of _____ upon the following described real property:

This easement shall be binding upon the parties hereto, their successors and assigns, and shall run with the land.

DATED at Kirkland, Washington, this _____ day of _____, _____.

(Sign in blue ink)

(Individuals Only)

OWNER(S) OF REAL PROPERTY (INCLUDING SPOUSE)

(Individuals Only)

STATE OF WASHINGTON)
) SS.
County of King)

On this ____ day of _____, _____, before me, the undersigned, a Notary Public in and for the State of Washington, duly commissioned and sworn, personally _____ appeared _____ and _____ to me known to be the individual(s) described herein and who executed the Public Ingress and Egress Easement _____ and _____ acknowledged _____ that _____ signed the same as _____ free and voluntary act and deed, for the uses and purposes therein mentioned.
WITNESS my hand and official seal hereto affixed the day and year first above written.

Notary's Signature

Print Notary's Name
Notary Public in and for the State of Washington,
Residing at: _____
My commission expires: _____

(Corporations Only)

OWNER(S) OF REAL PROPERTY

(Name of Corporation)

By President

By Secretary

(Corporations Only)

STATE OF WASHINGTON)
County of King) SS.

On this ____ day of _____, _____, before me, the undersigned, a Notary Public in and for the State of Washington, duly commissioned and sworn, personally appeared _____ and _____ to me, known to be the President and Secretary, respectively, of _____, the corporation that executed the Public Ingress and Egress Easement and acknowledged the said instrument to be the free and voluntary act and deed of said corporation, for the uses and purposes therein set forth, and on oath stated that they were authorized to sign said instrument and that the seal affixed is the corporate seal of said corporation.

WITNESS my hand and official seal hereto affixed the day and year first above written.

Notary's Signature

Print Notary's Name
Notary Public in and for the State of Washington,
Residing at: _____
My commission expires: _____



SAVE HARMLESS AGREEMENT - WETLAND

The undersigned, being all of the owners of the hereinafter described real property, hereby agree to indemnify, defend, and save harmless the City of Kirkland, its officers and employees from any claim, real or imaginary, filed against the City of Kirkland, its officers, or employees, alleging damage or injury caused by fault on the part of the undersigned, their employees or agents, and/or the City of Kirkland, its officers, or employees and arising out of maintenance, flooding, damming or enlargement of the wetland existing on the hereinafter described real property; provided, however, this agreement shall not include damage resulting from the sole fault of the City of Kirkland, its officers, or employees. Fault as herein used shall have the same meaning as set forth in RCW 4.22.01. This Agreement shall also include all reasonable cost and expense, including attorney's fees, incurred by the City of Kirkland in investigation and/or defense of any such claim.

This Agreement shall be binding upon the heirs, successors, and assigns of the parties hereto and shall run with the land.

The real property subject to this Agreement is situated in Kirkland, King County, Washington, and described as follows:

DATED at Kirkland, Washington, this ____day of _____, _____.

(Partnerships Only)

OWNER(S) OF REAL PROPERTY

(Name of Partnership or Joint Venture)

By General Partner

By General Partner

By General Partner

(Partnerships Only)

STATE OF WASHINGTON)
County of King) SS.

On this ____ day of _____, _____, before me, the undersigned, a Notary Public in and for the State of Washington, duly commissioned and sworn, personally appeared _____ and _____ to me, known to be general partners of _____, the partnership that executed the Save Harmless Agreement for a Wetland and acknowledged the said instrument to be the free and voluntary act and deed of each personally and of said partnership, for the uses and purposes therein set forth, and on oath stated that they were authorized to sign said instrument.

WITNESS my hand and official seal hereto affixed the day and year first above written.

Notary's Signature

Print Notary's Name
Notary Public in and for the State of Washington,
Residing at: _____
My commission expires: _____

(Corporations Only)

OWNER(S) OF REAL PROPERTY

(Name of Corporation)

By President

By Secretary

(Corporations Only)

STATE OF WASHINGTON)
County of King) SS.

On this ____ day of _____, _____, before me, the undersigned, a Notary Public in and for the State of Washington, duly commissioned and sworn, personally appeared _____ and _____ to me, known to be the President and Secretary, respectively, of _____, the corporation that executed the Save Harmless Agreement for a Wetland and acknowledged the said instrument to be the free and voluntary act and deed of said corporation, for the uses and purposes therein set forth, and on oath stated that they were authorized to sign said instrument and that the seal affixed is the corporate seal of said corporation.

WITNESS my hand and official seal hereto affixed the day and year first above written.

Notary's Signature

Print Notary's Name
Notary Public in and for the State of Washington,
Residing at: _____
My commission expires: _____