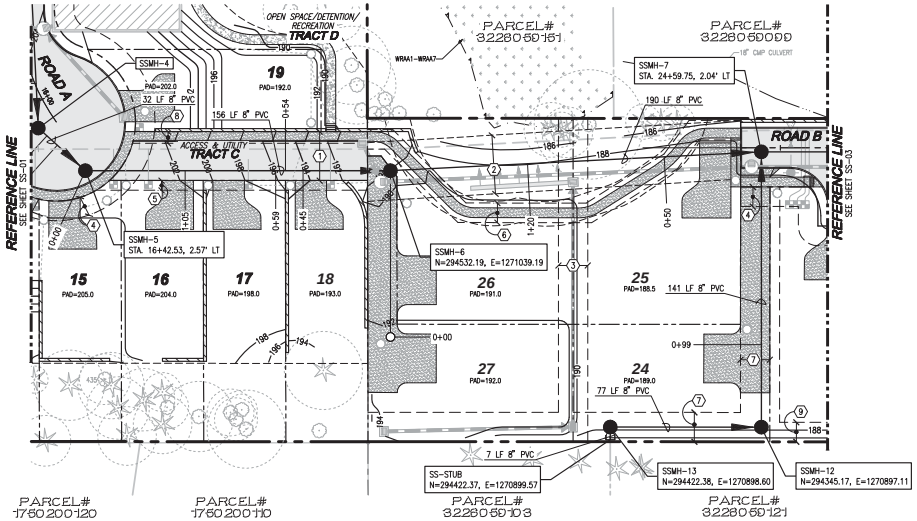
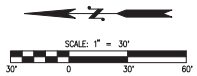
NE 1/4, NE 1/4, SEC 32, TWN 26 N, RGE 5 E, W.M., KING COUNTY, WASHINGTON



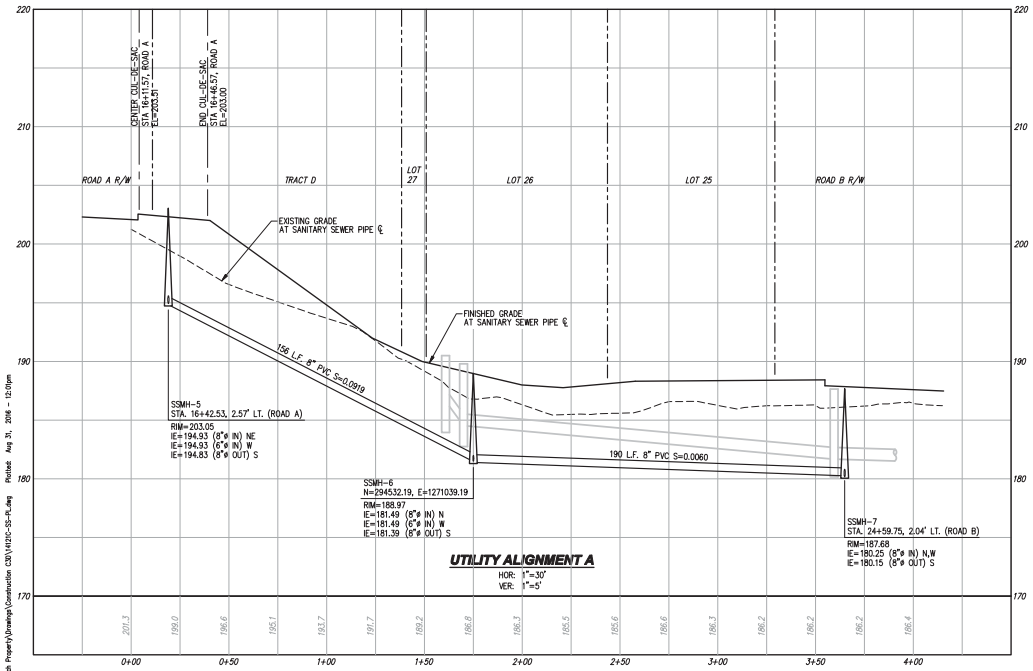


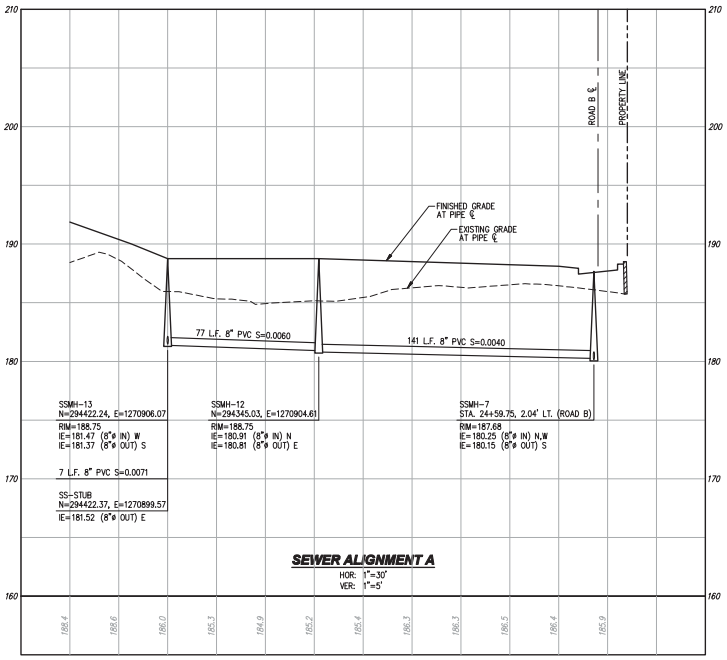
LEGEND

- STORM PIPE
- SEWER PIPE
- WATER PIPE

EASEMENT LEGEND

1. 25' ACCESS AND UTILITY ESMT
2. 30' UTILITY ESMT
3. 15' STORM ESMT
4. 10' UTILITY AND SIDEWALK ESMT
5. 5' WATER ESMT
6. 10' PEDESTRIAN ESMT
7. 15' SANITARY SEWER ESMT
8. 6' PEDESTRIAN ESMT
9. 10' SANITARY SEWER ESMT





Call 2 Business Days Before You Dig
811 or 1-800-424-5555
Utilities Underground Location Center

REVISIONS

NO.	DATE	DESCRIPTION	BY
1	8-19-16	PUBLIC WORKS COMMENTS FROM 6-17-16	JLS
2	8-31-16	SAVED TREE 457 AND PARKING	JLS

LDC
THE CIVIL ENGINEERING GROUP
Engineering
Structural
Planning
Survey
14201 NE 55th St., #100
Woodinville, WA 98072
Ph. 425.806.1095
Fx. 425.806.1096
www.LDCinc.com

LARRY SCRIVANICH

SCRIVANICH PROPERTY

SANITARY SEWER PLAN AND PROFILES

JEREMY L. SATTLER
STATE OF WASHINGTON
REGISTERED PROFESSIONAL ENGINEER
9-21-15

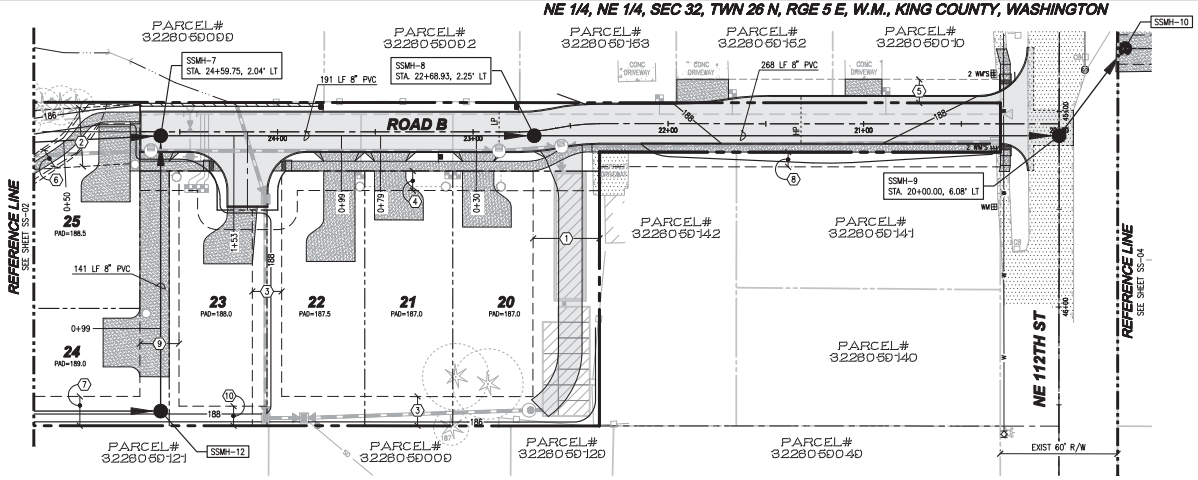
JOB NUMBER:	14-121
DRAWING NAME:	14121C-SS-PL
DESIGNER:	JLS
DRAFTING BY:	BJN
DATE:	9-21-15
SCALE:	1"=30'
JURISDICTION:	CITY OF KIRKLAND

SS-02

SHEET 23 OF 25

Drawing: P:\2014\14-121 Scrivanich Property\Drawings\Construction CD\14121C-SS-PL.dwg Plotted: Aug 31, 2016 - 12:01pm

NE 1/4, NE 1/4, SEC 32, TWN 26 N, RGE 5 E, W.M., KING COUNTY, WASHINGTON



SCALE: 1" = 30'

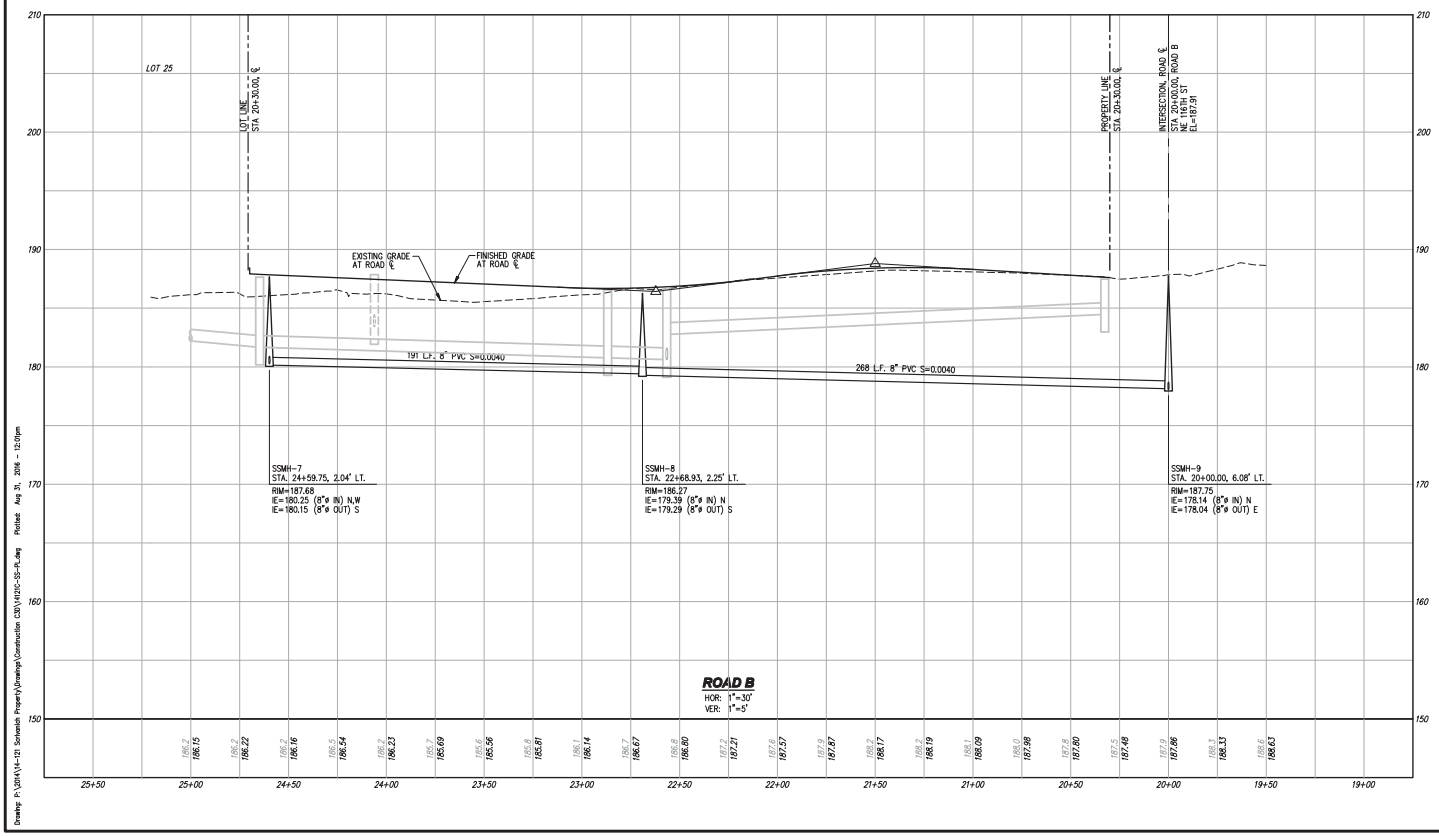
30' 0 30' 60'

LEGEND

- STORM PIPE
- SEWER PIPE
- WATER PIPE

EASEMENT LEGEND

1. 34' STORM ESMT
2. 30' UTILITY ESMT
3. 15' STORM ESMT
4. 10' UTILITY ESMT
5. EXISTING 12' ACCESS AND UTILITY ESMT
6. 10' PEDESTRIAN ESMT
7. 15' SANITARY SEWER ESMT
8. 7.5' TEMPORARY GRADING ESMT
9. 20' SANITARY SEWER ESMT
10. 10' SANITARY SEWER ESMT



Drawing: P:\12014\14-121 Scrivanich Property\Drawings\Construction CD\14121C-SS-PL.dwg Plotted: Aug 31, 2016 - 12:01pm

Call 2 Business Days Before You Dig
811 or 1-800-424-5555
Utilities Underground Location Center

REVISIONS

NO.	DATE	DESCRIPTION	BY
1	8-19-16	PUBLIC WORKS COMMENTS FROM 6-17-16	JLS
2	8-31-16	SWED TREE 457 AND PARKING	JLS

LDC
THE CIVIL ENGINEERING GROUP
Engineering
Structural
Planning
Survey
14201 NE 55th St., #100
Woodinville, WA 98072
Ph. 425.806.1095
Fx. 425.806.1096
www.LDCinc.com

LARRY SCRIVANICH

SCRIVANICH PROPERTY

SANITARY SEWER PLAN AND PROFILES

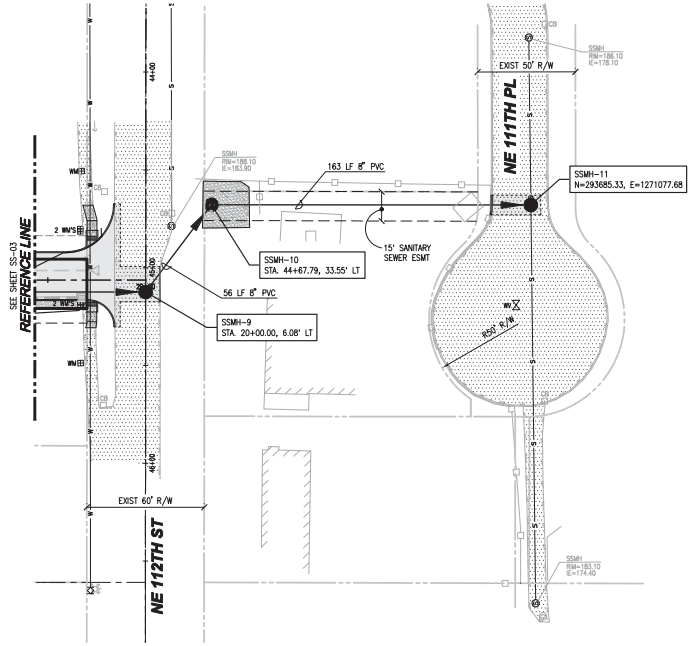
JEREMY L. SATTLER
STATE OF WASHINGTON
PROFESSIONAL ENGINEER
8-31-16

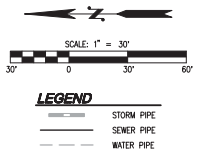
JOB NUMBER:	14-121
DRAWING NAME:	14121C-SS-PL
DESIGNER:	JLS
DRAFTING BY:	BJN
DATE:	9-21-15
SCALE:	1"=30'
JURISDICTION:	CITY OF KIRKLAND

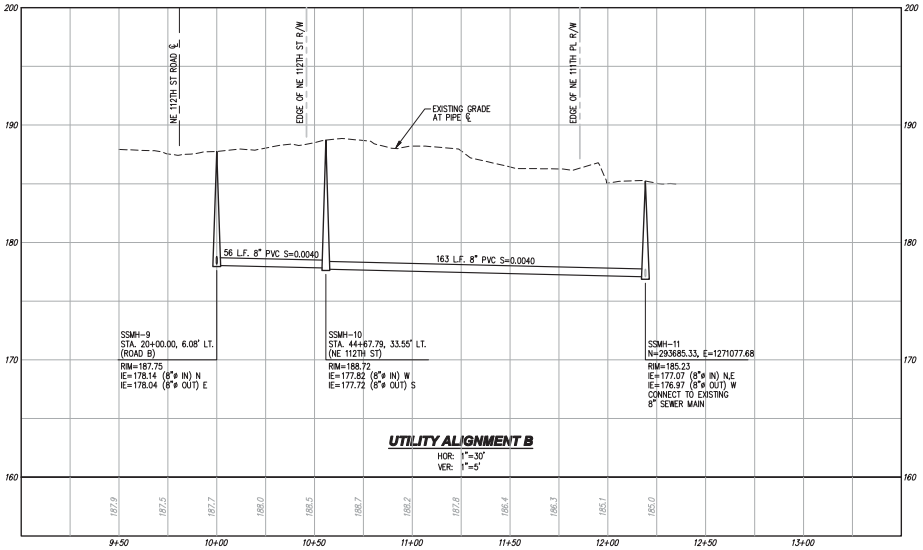
SS-03

SHEET 24 OF 25

NE 1/4, NE 1/4, SEC 32, TWN 26 N, RGE 5 E, W.M., KING COUNTY, WASHINGTON







Call 2 Business Days Before You Dig
811 or 1-800-424-5555
Utilities Underground Location Center

REVISIONS

NO.	DATE	DESCRIPTION	BY
1	8-19-16	PUBLIC WORKS COMMENTS FROM 6-17-16	JLS
2	8-31-16	SAVED TREE 457 AND PARKING	JLS

LDC
THE CIVIL ENGINEERING GROUP
Engineering
Structural
Planning
Survey
14201 NE 50th St., #100
Woodinville, WA 98072
Ph. 425.806.1869
Fx. 425.806.9230
www.LDCteam.com

LARRY SCRIVANICH
SCRIVANICH PROPERTY
SANITARY SEWER PLAN AND PROFILES

JEREMY L. SATTLER
STATE OF WASHINGTON
REGISTERED
PROFESSIONAL ENGINEER
9-21-15

JOB NUMBER:	14-121
DRAWING NAME:	14121C-SS-PL
DESIGNER:	JLS
DRAFTING BY:	BJN
DATE:	9-21-15
SCALE:	1"=30'
JURISDICTION:	CITY OF KIRKLAND

SS-04
SHEET 25 OF 25

Drawing: P:\14121\14-121 Scrivanich Property\Drawings\Construction CD\14121C-SS-PL.dwg Plotted: Aug 31, 2016 - 12:01pm

SCRIVANICH

Planned Unit Development - Preliminary Plat

Project Narrative / Benefit
Analysis
October 5, 2016

I. Project Description
II. Modifications Proposed Through PUD Process
III. PUD Conformance Criteria

I. - Project Description

Site Description

The Scrivanich PUD is proposing to develop the 5.16 acre site into a 27 lot single family Planned Unit Development (PUD). The project is bounded by NE 116th St to the north and NE 112th St to the south. There are critical areas (wetlands) in the central eastern portion of the site. Access to the site would be from a Public Road accessing from NE 116th St and terminating on-site in a Cul-de-Sac. Access would also be from NE 112th to the south in the form of a Public Road. The proposed Public Road would be a modified road section with portions of the planter strip and sidewalk located in easements granted to the City. This site is currently served by public water and sewer. Zoning for the site is RS-8.5.

Neighborhood

The proposed development is within the Juanita neighborhood. The northern portion of the PUD (proposed lots 1-19), is eligible to use the higher density provisions found in North/South Juanita Neighborhood Plan. To utilize the higher density provisions of the Neighborhood plan you must satisfy the 7 criteria found in the Plan. The North/South Juanita Neighborhood Plan on page XV.I-5, under Item 3 "Living Environment" states–"Low density development up to five units per acre is allowed, and higher densities up to seven units per acre may be permitted subject to the following conditions:" While the Living Environment section makes a general reference to allowing clustered housing, there is no requirement in the code or comprehensive plan that clustered housing must be provided to achieve higher densities. Rather, the code specifies seven specific conditions that the proposed PUD must meet.

Listed below are these seven conditions followed by a response as to how the proposed PUD meets these enumerated conditions.

1. "This added increment of density would only be allowed through a Planned Unit Development permit."

   This application is in the form of a Planned Unit Development permit.

2. "Visual buffering by a landscaped setback (normally 40 feet) should separate the slightly higher density development from adjacent single-family residences."

   A 40 foot Landscape Easement is being proposed along the south side of the PUD adjacent to exiting single family detached residences. The remaining perimeter of the site abuts existing higher density developments or critical areas. To the south of the combined development is NE 112th Street.

3. "There is to be no direct access from individual dwelling units onto NE 116th Street. Access to NE 116th Street is to be limited to interior loop roads, cul-de-sacs or similar streets. The added increment of density should not be available to properties where topographic conditions pose traffic hazards due to line-of-sight problems. Furthermore, access should be limited to NE 116th Street and not onto residential streets to the south."

   No individual dwelling units will directly access directly onto NE 116th Street. Also, no access from the higher density portion of this PUD will be provided onto residential streets to the south.

4. "Pedestrian access through the development should be required to facilitate access to schools or other public destinations."

   Pedestrian access will be extended to the south property line to NE 112th Street. This will provide access to Alexander Graham Bell Elementary School on NE 112th Street and to Metro bus service and McAuliffe Park on NE 116th Street.

5. "Extensions of higher-density development should not penetrate into lower-density areas and should, therefore, be permitted only within a specified distance of NE 116th Street (approximately NE 114th Street)."

   The higher-density 7 units per acre development would be terminated at the south property line (approximately NE 114th Street). There is also a wetland to the south that provides a natural buffer between the higher density and lower densities along much of the southern property line.

6. "The height of structures should not exceed that of adjacent residential areas."

   The applicant does not propose for the height of structures to exceed that of adjacent residential areas per the attached building height exhibit. KZC 15.30.060 states building heights are measured from Average Building Elevation, we are proposing a modification to this requirement as described below.

7. "Some common open space usable for a variety of activities should be included on site."

   Open space will be provided adjacent to the wetland buffer in Tract D and on the north end of the property along NE 116th Street (Tract A), which will provide improved with amenities for the residents and general public's benefit. Tract A will be provided with

picnic facilities, including tables, so residents can enjoy the open space while still providing a natural bu8ffer between Ne 116th Street and homes within the development. Tract D will include playground equipment which will provide a great active recreation space for families to enjoy.

This proposal meets all seven of the specific conditions for "densities up to seven units per acre" contained in the North/South Juanita Neighborhood Plan on page XV.I-5, under Item 3 "Living Environment".

Proposed Site Plan

By utilizing Raingardens and the meandering sidewalk, the appearance of greater visual separation is provided between the front of the residences and the travel way. This provides a greater sense of community and a feeling of being screened from vehicular traffic by the Raingarden vegetation.

The allowed site density has been calculated per Section 125.30 which reads:
125.30 Decision on the PUD - Density

4. If the PUD is proposed in an RS 35, RSX 35, RS 12.5, RSX 12.5, RS 8.5, RSX 8.5, RS 7.2, RSX 7.2, RS 5.0 or RSX 5.0 Zone, the City will subtract the area actually used for vehicular circulation and surface parking areas that serve more than one (1) dwelling unit, before determining the maximum number of dwelling units potentially permitted under this section (emphasis added.) The Raingardens and sidewalk will be located in an easement. The area calculated for "vehicular circulation and surface parking areas" is the area between the curb lines. This area is subtracted from the gross site area to determine the net area for density purposes

The two proposed roadway sections will be dedicated as public roads. The northern public road consists of a 35' right of way. The pavement section is 24' where on-street parking is available and 20' where parking is not available. Sidewalk is provided on one side and there is a cul-de-sac at the end of the north road which meets City standards. We believe this roadway section with meandering sidewalk and Raingardens represents a design that is superior to the current City standard while still meeting emergency vehicle requirements. The public road on the south half of the site consists of a 25' right of way with a 12' access and utility easement, with 24' of pavement, in the panhandle portion and a 35' right of way in the balance of the road with 20' of pavement. Sidewalk is provided along the entire length of the public road on one side. A hammerhead turnaround is provided at the end of the southern public road to meet emergency vehicle standards. This hammerhead also meets City standards.

Clustering

After meeting with City staff, it is unclear if the clustering requirements contained within the comprehensive plan apply to this project. However, we have designed our project to meet

the clustering requirements and have adjusted our site plan per the direction of city staff in order to do so.

Pursuant to the City of Kirkland Comprehensive Plan and Code, Clustered Development is defined as the grouping or attaching of buildings in such a manner as to achieve larger aggregations of open space than would normally be possible from lot by lot development at a given density.

Open space is not required to be provided in a standard subdivision in this zone. We have proposed Tract A, which will provide 2,986 square feet of active recreation space. We have also proposed Tract D, which contains 22,529 square feet. Although Tract D contains critical areas and required buffers, we have intentionally placed this in an open space tract as opposed to attaching it to a lot in order to provide greater open space amenities.

Open Space

Approximately 12% of the site, 25,515 square feet will be devoted to passive and active Open Space, which would not be required in a standard subdivision in this zone. Open space amenities include:

- Seating benches
- Play equipment
- Grassed play area
- A trail completing a connection between NE 116th St and NE 112th St

Open Space Tract A is located on the North end of the site and contains 2,986 square feet of active open space. Tract D contains 22,529 square feet of open space which is dedicated to detention and recreation. While the area contains some critical areas and buffer which are required to be protected, we have intentionally not included Tract D with a lot which allows the area to be enjoyed as open space by all property owners.

In addition to the open space tracts to be created, a 40' wide landscape easement, containing 12,000 square feet in area, will be created along the southern central portion of the property, adjacent to the property boundary, to provide a buffer between this proposed PUD development and the existing, traditional lot by lot residential development located to the west.

II. - Modifications Proposed through the PUD Process

City of Kirkland Zoning Code (KZC) section 125.20 details what elements may be modified with a PUD application. The following elements are requested as modifications to the PUD that would otherwise not be allowed in a standard subdivision:

- Minimum Lot Size
- Minimum Lot Width

- Front Building Setback
- Floor Area Ratio (FAR)
- Building Height calculation
- Lot coverage
- Side yard building setbacks

The City may, per KZC 125.20, modify any of the provisions of the code for a PUD except:

1. *The City may not modify any of the provisions of this chapter; and*
2. *The City may not modify any provision of this code that specifically states that its requirements are not subject to modifications under a PUD; and*
3. *The City may not modify any of the procedural provisions of this code; and*
4. *The City may not modify any provision that specifically applies to development on a regulated slope; and*
5. *The City may not modify any provision pertaining to the installation and maintenance of storm water retention/detention facilities; and*
6. *The City may not modify any provision pertaining to the installation of public improvements; and*
7. *The City may not modify any provision regulating signs; and*
8. *The City may not modify any provision regulating the construction of one (1) detached dwelling unit.*

Minimum Lot Size

Requested Modification: Minimum lot size be measured as an average of the total area in lots, plus all open space.

The minimum lot size for the RSA-8.5 zone is 8500 square feet. The proposed average lot size based on gross area, less roadway driving surface is, 5,556 square feet per lot. The PUD density increase results in smaller lot sizes than allowed by the underlying zoning and is the overarching purpose of the PUD process.

The proposed lot size averaging formula allows the development to provide areas for recreation and open space, while reducing the average lot size. This averaging also allows for compatible lot sizes and compatible housing opportunities for prospective home buyers, creating a greater sense of community.

Minimum Lot Width

Requested Modification: It is request that the lot width at the back of the required front yard shall not be less than forty feet.

The required lot width per KMC 22.28.050 is 50 feet. We are requesting it be reduced to 40 feet on 2 lots, to 42 feet on 15 lots and to 48 feet on 1 lot. The remaining 9 lots will be 50 feet or wider. The project wide average lot width is over 51 feet.

Allowing this reduction in lot width allows the development to provide additional area for open space adjacent to NE 116th St. On-site passive and active open space allows developments to create a sense of community and cohesiveness. This reduction in lot widths also means the project can approach the densities designated by the Neighborhood Plan in a clustered development.

Front Building Setbacks

Requested Modification: We are requesting that the front building setback for living space be reduced to 15' while maintaining the 20' garage setback.

Garages are setback 20' from the right of way line to provide for parking in the driveways without impeding vehicular or pedestrian traffic. With a 20' setback from R/W parked cars will not block the sidewalk.

Having living space setback only 15' from the right of way line creates an opportunity to develop a streetscape with modulation and character. It eliminates a flat home façade, setback 20' from the right of way line, dominated by garage doors. In fact, the reduced living space setback creates the opportunity for porches and other features within the front yard setback which can become focal points for neighbor interaction, creating a greater sense of community.

Floor Area Ratio (FAR)

Requested Modification: We are requesting that the FAR for the project be evaluated and measured on a site wide basis, as 50% of the net development area (gross site area less roadway driving surface.)

Chapter 125.20 of the KZC allows for provisions of the code to be modified when a PUD is proposed that is innovative or includes amenities that are otherwise beneficial to the project. Our request that the FAR be measured on a site wide basis, including the Open Space Tracts, reflects the fact that the areas within the proposed Open Space Tracts are not required to be provided under a standard subdivision. The project includes 25,518 square feet of passive and active public open space that is not required in a standard subdivision. Included within the Open Space Tracts are recreational improvements as listed previously, which are also not required in a standard subdivision.

The applicant also recognizes that a more holistic approach would provide for a better community, with similar home sizes.

The proposed modification actually would promote a more unified, yet diverse development promoting a progressive neighborhood atmosphere.

Building Height Calculation

Requested Modification: We are requesting that the building height calculation be based on the existing grade after site grading is completed.

Current City of Kirkland code requires that allowed building height be calculated based on average existing grade of a parcel prior to the time of construction. For individual residences on existing parcels this makes sense in order to protect view corridors, eliminate overly tall structures, etc.

Application of the strict building height calculation on this project creates inherent problems due to the variably sloping topography from south to north and the irregular shape of the property itself. These factors create challenges from not only a site design standpoint but

also from a grading perspective. It is imperative that the internal roads be designed to the city standards for slopes etc. That then affect at what elevation that homes can access off the road and be constructed. In order to maintain the home entries at street level, significant grading has to occur. This grading will alter the building pad elevations by up to 5-8 feet from pre-grading elevations. In fact, the site limitations are such that many of the homes, even after mass grading, will be daylight basements or tuck under garage style homes. This results in the high portion of the lot being as much as 8 feet above the low portion of the lot. To attempt to establish building height from pre-construction grades on a site like this will result in homes that do not fit the intended character and cohesiveness of the community. By utilizing post site construction grades to establish building height, as proposed, a more consistent and compatible community will be developed, which is the underlying intent of the building height calculation requirement. While we are requesting this modification for the entire plat, in fact, only 17 lots out of the 27 proposed will utilize this requested Building Height Calculation modification. These are lots 1, 2, 3, 4, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, and 27.

Most of the lots exceed the current method of calculating building height by approximately 0.55' to 5.82'. Lot 19 is the most severe in that it exceeds the current methodology of calculating building height by 11.92'. However, the impact to surrounding residences is minimal since lot 19 does not abut any adjacent properties and is located adjacent to the on-site wetland.

A cross section showing how we are complying with the requirement that the height of structures not exceed that of adjacent residential zones has been provided as part of the site plan.

Lot Coverage

Requested Modification: We are requesting that the Lot Coverage be measured at 45% of the net site area (gross area less roadway driving surface) as opposed to 45% of the individual lots themselves.

As detailed and explained previously this proposed development is providing approximately 24,158 square feet in passive and active public Open Space that would not be required as part of a standard subdivision. This results in less area available to do a standard lot coverage calculation. The requested modification is to allow the percentage to be calculated using the provided open space tracts and lot area.

Side yard Building Setbacks

Requested Modification: We are requesting that the side yard building setback be reduced from 5' minimum, total of 15' to 5' on both sides for a total of 10'.

By reducing the total side yard setback to 10 feet we are able to narrow the lot width to produce more open space. This matches the setbacks in the RSX and RSA zones.

III. - PUD Conformance Criteria

KZC 125.35 states that the City may approve a PUD only if it finds all of the following requirements are met:

1. *The proposed PUD meets the requirements of this chapter.*
2. *Any adverse impacts or undesirable effects of the proposed PUD are clearly outweighed by specifically identified benefits to the residents of the City.*
3. *The applicant is providing one or more of the following benefits to the City as part of the proposed PUD:*
    a. *The applicant is providing public access to the facilities that could not be required by the City for development of the subject property without a PUD.*
    b. *The proposed PUD will preserve, enhance or rehabilitate natural features of the subject property such as significant woodlands, wildlife habitats or streams that the City could not require the applicant to preserve enhance or rehabilitate through development of the subject property without a PUD.*
    c. *The Design of the PUD incorporates active or passive solar energy systems*
    d. *The Design of the proposed PUD is superior in one or more of the following ways to the design that would result from development of the subject property without a PUD:*
        i. *Increased provision of open space or recreational facilities.*
        ii. *Superior circulation patterns or location of screening of parking facilities.*
        iii. *Superior landscaping, buffering, or screening in or around the PUD.*
        iv. *Superior architectural design, placement, relationship or orientation of structure.*
        v. *Minimum use of impervious surfacing materials.*
4. *Any PUD which is proposed as special needs housing shall be reviewed for its proximity to existing or planned services (i.e. shopping centers, medical centers, churches, parks, entertainment, senior centers, public transit, etc.)*

Consistency with the PUD Criteria:

1. *The proposed PUD meets the requirements of this chapter*

    The following responses to the approval criteria, in concert with the submittal materials will demonstrate that the project meets the requirements of the chapter.

2. *Any adverse impacts or undesirable effects of the proposed PUD are clearly outweighed by specifically identified benefits to the residents of the City.*

    The terms that we need to analyze are "impacts" or "undesirable effects." In order to approve the PUD as a subdivision overlay, public benefits must exceed the level of impact from the differing component.

An impact is the effect of the differing component, not the component itself. In the case of this proposed PUD, the differing components are:

- Minimum Lot Size
- Minimum Lot Width
- Front Building Setback
- Floor Area Ratio (FAR)
- Building Height calculation
- Lot coverage
- Side yard building setbacks

The visual effect of the above components is negligible and will most likely be unnoticed by adjacent residents. Further, the remaining requested modifications will have the positive impact of having a much more consistent, yet architecturally varied, community in terms of home size and scale. This will only result in a greater sense of community and belonging for future residents of the Scrivanich PUD.

These differences must be weighed in comparison to the identified benefits of the PUD. The proposed benefits that have been identified is the creation of active and passive public open space. The project is providing 25,518 square feet of passive and active public Open Space. Improvements include the following elements:

- Seating benches
- Play equipment
- Grassed play area
- A trail completing a connection between NE 116th St and NE 112th St

The applicant has also agreed to install a Rectangular Rapid Flashing Beacon (RRFB) across NE 116th St at McAuliffe Park, just west of 108th Ave NE.
None of the above Public Benefit items are required as part of a standard subdivision, and outweigh the minimal impacts associated with the requested modifications.

<u>Determination of an appropriate level of Public Benefit improvements</u>

Chapter 125 – Planned Unit Development of the Kirkland Zoning Code (KZC) discusses the need to provide Public Benefits to mitigate the impacts of requested Code modifications as part of a PUD application. However, it does not clearly define the level of Public Benefits that coincide with the PUD Code. Absent any definitive guidance from the KZC, one can attempt to quantify the value of the proposed PUD modifications and provide a commensurate level of Public Benefit improvements.

The proposed Scrivanich PUD is requesting seven modifications to the Kirkland Zoning Code. These are for:

- Minimum Lot Size
- Minimum Lot Width

- Front Building Setback
- Floor Area Ratio (FAR)
- Building Height calculation
- Lot coverage
- Side yard setback

KMC 27.06.010 Findings and Authority
The city council finds and determines that new residential growth and development in the city will create additional demand and need for public facilities (parks) in the city and finds that new residential growth and development should pay a proportionate share of the cost of new public facilities needed to serve the new growth and development. The city has conducted an extensive study documenting the procedures for measuring the impact of new residential development on public facilities and has prepared a rate study. The city council accepts the methodology and data contained in the rate study. Therefore, pursuant to Chapter 82.02 RCW, the city council adopts this chapter to assess impact fees for public facilities.

Pursuant to the above code section, the City of Kirkland recognizes that public parks are a finite resource to be scaled up with population. The City has established an impact fee system. Park Impact Fees fund the parks needs of a growing City.

By providing on site recreation, the proposed passive and active public open space areas will reduce the use and impacts on other City facilities. It should also be noted that the project will also pay mitigation fees for impacts to parks, with no requested credit.

Tracts A and D provide public open space and amenities that would otherwise not occur in a standard subdivision. Tract D also serves as a detention facility with an underground vault. Some may argue that it would be required anyway and no additional benefit is provided. However the same facility could be built as a pond, less expensively, with no lid, therefore providing no opportunity for recreation in the same area. In addition, the pond area would be fenced and gated for safety and no pedestrian access would be available.

There will be an expense incurred by the applicant in the installation of the recreation improvements to the public open space. There will also be an expense associated with the construction of the on-site public trail located between the two roads.

The applicant has also agreed to install a Rectangular Rapid Flashing Beacon (RRFB) across NE 116th St at McAuliffe Park, just west of 108th Ave NE.

3. The applicant is providing one or more of the following benefits to the City as part of the proposed PUD:

a. The applicant is providing public facilities that could not be required by the City for development of the subject property without a PUD.

Tract A and D which contain the recreation elements of the project and the Trail from NE 116th St to NE 112th St. will be available for public access and use.

b. The proposed PUD will preserve, enhance or rehabilitate natural features of the subject property such as significant woodlands, wildlife habitats or streams that the City could not require the applicant to preserve enhance or rehabilitate through development of the subject property without a PUD.

N/A

c. The design of the PUD incorporates active or passive solar energy systems.

N/A

d. The Design of the proposed PUD is superior in one or more of the following ways to the design that would result from development of the subject property without a PUD:

i. Increased provision of open space or recreational facilities.

If the project was not developed as a PUD, the 25,518 square feet of passive and active public Open Space would not be provided nor would the recreation improvements be constructed therein. Additionally, in this project the recreation facilities will be made available to the public for their use and enjoyment. In a standard subdivision these open space tracts and recreation improvements would not be required, and if developed would not have to provide public access.

ii. Superior circulation patterns or location of screening of parking facilities.

N/A

iii. Superior landscaping, buffering, or screening in or around the PUD.

N/A

iv. Superior architectural design, placement, relationship or orientation of structure.

N/A

v. Minimum use of impervious surfacing materials.

N/A

4. Any PUD which is proposed as special needs housing shall be reviewed for its proximity to existing or planned services (i.e. shopping centers, medical centers, churches, parks, entertainment, senior centers, public transit, etc.)

N/A

Closing

As proposed, and demonstrated in the submitted materials, the Scrivanich PUD will provide many benefits to the residents of the project, the neighborhood, and the City. The provided public open space will be available for both passive and active uses. These elements will add to the character of the neighborhood and go beyond those elements required as part of a standard subdivision. This proposed subdivision/PUD meets the goals and intent of the Planned Unit Development code as noted in this narrative and in the other submitted materials. Respectfully, as such, it is worthy of approval by the City of Kirkland.

Prepared by: Mark Villwock, PE
Vice President
LDC, Inc (Land Development Consultants)

Wetland Resources, Inc.
Delineation / Mitigation / Restoration / Habitat Creation / Permit Assistance
9505 19th Avenue S.E.
Suite 106
Everett, Washington 98208
(425) 337-3174
Fax (425) 337-3045

CRITICAL AREAS REPORT
AND
BUFFER MODIFICATION PLAN

FOR

SCRIVANICH-116TH STREET

Wetland Resources, Inc. Project #13185

Prepared By:

Wetland Resources, Inc.
9505 19th Ave SE, Suite 106
Everett, WA 98208
(425) 337-3174

For:

Larry Scrivanich
P.O. Box 2174
Woodinville, WA 98072

September 10, 2015

2nd Revision: September 15, 2016

Table of Contents

1.0 Proposed Project 1
1.1 Introduction 1
1.2 Project Description 3
2.0 Review of Existing Information 3
2.1 USFWS National Wetlands Inventory 3
2.2 USDA/NRCS Web Soil Survey 3
2.3 WDFW SalmonScape Interactive Mapping System 4
2.4 WDFW Priority Habitat and Species (PHS) Maps 4
2.5 King County iMap Interactive Mapping Tool 4
2.6 Kirkland Sensitive Areas Map 4
3.0 Methodology 4
3.1 Limit of Study 4
3.2 Wetland Determination and Delineation 4
3.2.1 Vegetation Criteria 5
3.2.2 Soils Criteria 5
3.2.3 Hydrology Criteria 5
4.0 Wetland Determination 5
4.1 Wetland Boundary Determination Findings 6
4.1.1 Wetland A 6
5.0 Proposed Development Activities 8
6.0 Buffer Modification, Enhancement, and Restoration 8
6.1 Kirkland Zoning Code Buffer Modification Requirements 9
6.2 Level Spreaders 11
6.3 Buffer Enhancement 12
6.4 Buffer Restoration 13
6.4.1 Project Notes 13
6.4.2 Planting Notes 14
6.5 Fencing and Signage 16
7.0 Goals, Objectives, and Performance Standards 17
7.1 Goals 17
7.2 Objectives 17
7.3 Performance Standards 17
8.0 Monitoring 18
9.0 Maintenance 18
10.0 Contingency 18
11.0 Bonding 19
12.0 Use Of This Report 20
13.0 References 21

List of Tables

Table 1: Soil Units Present in the Project Area 4
Table 2: Buffer Enhancement Planting Plan (4,287 square feet) 13
Table 3: Buffer Restoration Planting Plan: Area A (501 square feet) 13
Table 4: Buffer Restoration Planting Plan: Area B (321 square feet) 13

List of Figures

Figure 1: Aerial view of the subject property. 2
Figure 2: Wetland A, looking south. 6

Appendices

Appendix A: Wetland Rating Form
Appendix B: Determination Data Forms
Appendix C: Site Photos
Appendix D: Bond Quantity Worksheet
Appendix E: Maps

Executive Summary

Project Name: Scrivanich – 116th St.

Location: Parcel numbers 3226059114, -135, -078, -083, and -113 between NE 112th St. and NE 116th St. in the City of Kirkland.

Limit of Study: The subject properties, the adjacent parcel to the south/east (#3226059151), and those portions of adjacent properties visible from the edge of the subject property.

Applicant: Larry Scrivanich
PO Box 2174
Woodinville, WA 98072

Wetland Resources Staff: Jim Rothwell, PWS (Senior Ecologist), and Nick Whiting (Associate Ecologist).

Critical Areas Determination: One wetland (Wetland A) was observed on the subject property, extending offsite to the south and slightly to the east. This wetland is categorized as a Type 3 wetland that requires a 50-foot protective buffer per Kirkland Zoning Code (KZC) section 90.45. No streams were observed on or near the subject property.

Proposed Project: The applicant is proposing to construct a 27-lot plat on the subject property. In order to achieve this, buffer width reduction with enhancement must be employed.

1.0 Proposed Project

1.1 Introduction

Wetland Resources, Inc. (WRI) performed a series of site investigations in August 2013, July 2014, and July 2015 to locate jurisdictional wetlands and streams on and in proximity to King County parcel numbers 3226059114, -113, -135, -083, and -078. The subject property is located between NE 116th Street and NE 112th Street in the City of Kirkland, Washington. The Public Land Survey System (PLSS) locator for the subject property is Section 32, Township 26N, Range 05E, W.M. The study site is situated within the Cedar/Sammamish Watershed, or Water Resources Inventory Area (WRIA) 8, as well as the City of Kirkland Forbes Creek Drainage Basin.

The 5.20-acre subject property is comprised of five separate parcels, three of which are developed. Parcel numbers 3226059114, -083, and -078 each contain a single-family home while parcel number -113 contains a small garage/accessory structure near the northern property boundary (the majority of the parcel is undeveloped). Parcel 3226059135 is undeveloped yet appears to be used by the parcel to the north (number -078). The subject property is located in a residential setting that also contains some commercial use. Housing subdivisions border the subject property on the east and northwest while single-family parcels are located to the south and southwest. The northern property boundary is bordered by NE 116th Street; NE 112th Street is located to the south. Interstate 405 (I-405) is approximately 2,000 feet to the east, the Totem Lake neighborhood is approximately 2,800 feet to the north and northeast, and downtown Kirkland is located approximately 2 miles to the southwest.

Vegetation on the subject property is comprised of upland forested and scrub-shrub species, wetland species, landscaped areas, and maintained lawn. A large landscaped area is located on parcel 3226059113, immediately south of parcel -114. A relatively dense forested area containing native species sits to the south of the landscaped area and encompasses the remainder of the parcel. Parcel 3226059135 is dominated by native conifers and low-growing herbaceous vegetation. The northernmost portion of the study site slopes down gently to the south-southeast while the slope gradually steepens on the center portion of the site. The southern portion (on parcel -113) then slopes down gently again to the south-southeast. Parcel -083 is relatively flat.

One Type 3 wetland was identified on the subject property during the site investigations. The subject property is located in a City of Kirkland primary basin; Type 3 wetlands found in primary basins require 50-foot buffers from their delineated edges (Kirkland Zoning Code (KZC) 90.45(1)). The Watershed Company confirmed this Type 3 rating during their June 5, 2014 site visit. The results of this visit are summarized in a June 9, 2014 review letter addressed to David Barnes with the City of Kirkland.

Figure 1: Aerial view of the subject property.

1.2 Project Description

The applicant proposes to demolish the existing structures on the subject property and construct a 27-lot subdivision with associated infrastructure. As part of the development plan, the applicant is proposing to construct a pedestrian walkway in the outer portion of the wetland buffer adjacent to lots 25 and 26. This will require a slight reduction in buffer width in this location. To compensate for this impact, buffer enhancement will be employed. Buffer reduction with enhancement is allowable per KZC 90.60(2)(a)(2).

In addition to the aforementioned buffer impacts, construction of Road A will require two rockery/retaining walls to be assembled adjacent to the road curve, one of which will extend slightly into the northern portion of the wetland buffer. The proposed buffer enhancement actions mentioned above will compensate for this minor impact.

Two level spreaders will be placed within the wetland buffer to aid in stormwater dispersion and to maintain wetland hydrology. One level spreader will be located in the northern portion of the buffer, south of Road A and east of the stormwater detention tract. The other level spreader will be located in the western portion of the buffer, immediately east of lot 26 and the pedestrian walkway. Temporary impact areas resulting from the installation of the northern level spreader will be replanted with native vegetation. The southern level spreader will be located in the proposed buffer enhancement area.

Two stormwater ditches are located on the southern portion of the subject property (parcel #3226059083). These ditches serve to collect and remove stormwater and runoff from adjacent developments to the northwest and northeast of the subject property. The project applicant is proposing to fill these ditches and install piped conveyances in their place in order to maintain the flow of stormwater. The City of Kirkland does not recognize these features as critical areas and, as such, does not regulate them. A Hydraulic Project Approval (HPA) from the Washington Department of Fish and Wildlife will be secured to work within and alter the ditches.

2.0 Review of Existing Information

Prior to conducting the site investigation, public resources were reviewed to gather background information on the subject property and the surrounding area in regards to critical areas. The following information was examined:

2.1 USFWS National Wetlands Inventory

The National Wetland Inventory (NWI) does not indicate any wetland areas on the subject property.

2.2 USDA/NRCS Web Soil Survey

The Natural Resources Conservation Service (NRCS) web soil survey and the 2014 national hydric soil list (for Washington State) were used to identify soil types on the subject property and determine their hydric properties. The subject property is underlain by Alderwood gravelly sandy loam, 6 to 15 percent slopes, Indianola loamy fine sand, 0 to 4 percent slopes, and Everett

gravelly sandy loam, 5 to 15 percent slopes. None of these soils are classified as hydric by the Natural Resources Conservation Service. The following table describes the hydric component percentages found in these mapped soil types. The likelihood that a given map unit is a hydric soil is partly based on the percentage of hydric components found in the soil type.

Map Unit Name	Hydric Component	Component Percentage
Alderwood gravelly sandy loam (8-15%)	Shalcar	3
	Norma	2
Everett gravelly sandy loam (5-15%)	None	N/A
Indianola loamy fine sand (0-4%)	None	N/A

Table 1: Soil Units Present in the Project Area

2.3 WDFW SalmonScape Interactive Mapping System

The SalmonScape interactive map does not show any streams on or near the subject property.

2.4 WDFW Priority Habitat and Species (PHS) Maps

There are no priority habitats or listed species on the subject property per the PHS Interactive Map. The nearest PHS area is a wetland located approximately 1,000 feet to the north and northeast.

2.5 King County iMap Interactive Mapping Tool

The King County iMap does not show any wetlands or streams on the subject property.

2.6 Kirkland Sensitive Areas Map

The Kirkland Sensitive Areas Map illustrates an off-site wetland bordering the subject property to the south and east.

3.0 Methodology

3.1 Limit of Study

The initial August 2013 site visit was constrained to the subject property. Lack of legal access to adjacent parcels prevented WRI staff from performing routine wetland determinations in off-site areas at that time. Access was granted to parcel 3226059151 (east and south of the project site) during the June 2014 site investigation for the purposes of more accurately delineating Wetland A.

3.2 Wetland Determination and Delineation

Wetland boundaries were determined using the routine approach described in *the Corps of Engineers Wetlands Delineation Manual* (Environmental Laboratory 1987) and the *Regional Supplement*

to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region (Version 2.0) (U.S. Army Corps of Engineers 2010). Under the routine methodology, the process for making a wetland determination is based on three steps:

1.) Examination of the site for hydrophytic vegetation (species present and percent cover);

2.) Examination of the site for hydric soils;

3.) Determining the presence of wetland hydrology

The following criteria must be met in order to make a positive wetland determination:

3.2.1 Vegetation Criteria

The Corps Manual and 2010 Regional Supplement define hydrophytic vegetation as "*the assemblage of macrophytes that occurs in areas where inundation or soil saturation is either permanent or of sufficient frequency and duration to influence plant occurrence.*" Field indicators are used to determine whether the hydrophytic vegetation criteria have been met. Examples of these indicators include, but are not limited to, the rapid test for hydrophytic vegetation, a dominance test result of greater than 50%, and/or a prevalence index score less than or equal to 3.0.

3.2.2 Soils Criteria

The 2010 Regional Supplement (per the National Technical Committee for Hydric Soils) defines hydric soils as soils *"that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part."* Field indicators are used to determine whether a given soil meets the definition for hydric soils. Indicators are numerous and include, but are not limited to, presence of a histosol or histic epipedon, a sandy gleyed matrix, depleted matrix, and redoximorphic depressions.

3.2.3 Hydrology Criteria

Wetland hydrology encompasses all hydrologic characteristics of areas that are periodically inundated or have soils saturated to the surface for a sufficient duration during the growing season. Areas with evident characteristics of wetland hydrology are those where the presence of water has an overriding influence on the characteristics of vegetation and soils due to anaerobic and chemically reducing conditions, respectively. The strongest indicators include the presence of surface water, a high water table, and/or soil saturation within at least 12 inches of the soil surface.

4.0 Wetland Determination

Wetlands identified on the subject property were rated pursuant to the City of Kirkland's Wetland Field Data Form as required by KZC section 90.40(3)(h). Wetlands were classified according to the U.S. Fish and Wildlife Service (USFWS) Classifications of Wetlands and Deepwater Habitats of the United States (Cowardin et al., 1979), also known as the Cowardin Classification System, as well as the Hydrogeomorphic (HGM) Classification System (Brinson 1993).

One wetland, referred to as Wetland A for the purposes of this report, was identified on the subject property. This feature is described below.

4.1 Wetland Boundary Determination Findings

4.1.1 Wetland A

Cowardin Classification: Palustrine, Forested, Broad-Leaved Deciduous, Seasonally flooded & Saturated

City of Kirkland Wetland Classification: Type 3 Wetland

City of Kirkland Standard Buffer Requirement: 50 feet

Figure 2: Wetland A, looking south.

Wetland A is a slope wetland per the HGM classification system and is located in the right-central portion of the subject property (the southeast corner on parcel 3226059113). It extends off-site to the south and slightly to the east. Based on the Cowardin classification system, Wetland A is a palustrine/forested/broad-leaved deciduous/seasonally flooded & saturated wetland system.

The southern, off-site portion of Wetland A extends westward across the southern parcel. Access to the off-site portion (for the purpose of continuing the wetland delineation) was granted by the current property owner in July 2014. Two data points were established on the off-site property; one in the northwest corner (data point S-5) and another in approximately the north-central portion of the site (point S-6). The soils at data point S-5 exhibited a very dark brown (10YR 2/2) matrix to a depth of 9 inches, a dark yellowish-brown (10YR 3/6) matrix between 9 and 15 inches in depth, and a brown matrix (10YR 4/3) matrix between 15 and 20 inches in depth. Although redoximorphic features were observed in the second and third soil layers, the matrix

colors are not representative of typical hydric soils; they do not meet any hydric soil indicators on the 2010 Regional Supplement Wetland Delineation Data Form. Furthermore, the soils were dry at the time of the delineation and no wetland hydrology indicators were observed (it should be noted, however, that this portion of the wetland was delineated during the summer months). The vegetation at soil log S-5 is dominated by black cottonwood (*Populus balsamifera*), Greene's mountain ash (*Sorbus scopulina*), red alder (*Alnus rubra*), Indian plum (*Oemleria cerasiformis*), trailing blackberry (*Rubus ursinus*), creeping buttercup (*Ranunculus repens*), bluegrass (*Poa* sp.), and herb Robert (*Geranium robertianum*). Although the vegetation in this area meets the hydrophytic vegetation criteria per the 2010 Regional Supplement, the lack of hydric soils and wetland hydrology signify that this area is not a wetland. Data point S-6, however, met all three wetland criteria and, thus, is located within a wetland (the wetland determination data forms for this project cant be found in Appendix B of this report). Therefore, the off-site portion of Wetland A does not extend all the way to the northwest property corner of the southern, off-site parcel.

The primary source of hydrology for Wetland A is groundwater and overland flow. Wetland A is located in a geomorphic position that is capable of collecting excess water from precipitation, runoff, groundwater, etc. A dry-season water table was observed at a depth of 14" below the soil surface during the August 2013 site inspection and soils were saturated to the surface in the off-site portion of Wetland A during the July 2014 site investigation. Small areas of surface water were also observed during the July 2014 site investigation. These characteristics meet wetland hydrology indicators A1, A3, C2 and D2 on the 2010 Regional Supplement Wetland Delineation Data Form. A non-jurisdictional watercourse/drainage channel is located in the southeast corner of Wetland A. This ditch originates off-site to the east, flows through the wetland, and continues south through the off-site portion of the wetland. It exits the southern, off-site parcel and continues to flow south and eventually to the west. A second non-jurisdictional watercourse flows in an easterly direction through parcel 3226059083, eventually connecting to the north-south oriented watercourse on the off-site parcel. The non-jurisdiction status of these watercourses has been confirmed in the June 9, 2014 review letter prepared by The Watershed Company.

Vegetation within Wetland A is comprised of deciduous forested and scrub-shrub species as well as herbaceous vegetation. Dominant species observed at data point S-1 include red alder (*Alnus rubra*), black cottonwood (*Populus balsamifera*), salmonberry (*Rubus spectabilis*), trailing blackberry (*Rubus ursinus*), lady fern (*Athyrium filix-femina*), giant horsetail (*Equisetum telmateia*), and sword fern (*Polystichum munitum*). Dominant species observed at data point S-6 (off-site wetland area) include black cottonwood (shrub layer), creeping buttercup (*Ranunculus repens*), bluegrass (*Poa* sp.), and common velvetgrass (*Holcus lanatus*). More than 50% of the dominant species within Wetland A have an indicator status of facultative (FAC) or wetter, which meets the hydrophytic vegetation criteria per the Corps Manual and the 2010 Regional Supplement.

Soils within Wetland A (at data point S-1) are black (10YR 2/1) clay loam to a depth of 11 inches, dark grayish brown (10YR 4/2) between 11 and 18 inches in depth, and pale brown (10YR 6/3) between 18 and 20 inches in depth. Distinct redoximorphic (redox) features were observed in the second soil layer; this meets the criteria for a "depleted below dark surface," or hydric soil indicator A11 on the on the 2010 Regional Supplement Wetland Delineation Data Form. The soil at data point S-6 (off-site wetland area) is black (10YR 2/1) silty clay loam to a

depth of 12 inches and grayish brown (10YR 5/2) silty clay loam between 12 and 20 inches in depth. Distinct redoximorphic features were observed in the upper soil layer while prominent redox features were observed in the bottom soil layer. The soil at data point S-6 meets hydric soils indicators F6 ("redox dark surface") and A11 on the delineation data form.

Wetland A received an overall score of 19 points on the City of Kirkland Wetland Field Data Form. This equates to a Type 3 wetland rating. Per KZC 90.45, the buffer for a Type 3 wetland located in a primary drainage basin is 50 feet (the Forbes Creek Drainage Basin is considered a primary basin per the City of Kirkland Sensitive Areas Map). In addition, a 10-foot structure setback is required from the edge of the wetland buffer.

No nesting, denning, or breeding areas were observed in Wetland A or the surrounding area during the site investigation. The wetland and surrounding buffer is most likely utilized by various songbirds, small mammals, common amphibians and reptiles, and species suited to life in urban/suburban settings.

5.0 Proposed Development Activities

The project applicant is proposing to construct a 27-lot subdivision on the subject property, which will include internal roadways and a stormwater management system. As part of the development plan, the applicant is proposing to construct a pedestrian walkway in the outer portion of the wetland buffer adjacent to lots 25 and 26.

Parts of the trail, as well as the southeast corner of the stormwater detention tract, will extend into portions of the outer wetland buffer. Therefore, buffer width reduction with enhancement will be employed to compensate for these impacts and improve buffer functions. In addition, construction of the northern access road (Road A) will require two rockery/retaining walls to be assembled adjacent to the road curve, one of which will extend slightly into the northern portion of the wetland buffer. The proposed buffer enhancement actions mentioned above will compensate for this minor impact. Finally, two level spreaders will be placed within the wetland buffer to aid in stormwater dispersion and to maintain wetland hydrology. Temporary impact areas resulting from the installation of the northern level spreader will be replanted with native vegetation. The western level spreader will already be located in the proposed buffer enhancement area.

6.0 Buffer Modification, Enhancement, and Restoration

To accommodate the proposed development, the applicant is planning to employ buffer width reduction with enhancement per KZC 90.60(2)(a)(2) and is also planning to restore the northern, temporarily impacted buffer area with native vegetation. The proposed trail, the southeast corner of the stormwater detention tract, and a portion of the rockery wall will impact 2,668 square feet (SF) of wetland buffer. The buffer enhancement area totals 4,287 SF in size. According to KZC 90.60(2)(a)(2), a wetland buffer may not be reduced by more than 1/3 of the standard buffer width listed in KZC 90.45(1). For a 50-foot buffer, this equates to a 16.7-foot

reduction to 33.3 feet. The buffer of Wetland A will measure 37.5 feet in width at its narrowest point (east of lots 25 and 26), which thereby complies with the Kirkland Zoning Code.

6.1 Kirkland Zoning Code Buffer Modification Requirements

Per KZC 90.60(2)(b), a request for buffer width averaging shall be approved only if specific requirements are met. The requirements are listed below in italics with project-specific responses following each one.

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);

The objective of Kirkland's Streams, Wetlands and Wildlife Study is to "*provide the foundation for development of policies, regulations and incentives that will maintain, and to the degree possible, improve the quality of Kirkland's streams, wetlands and natural areas.*" The Study provides a list of opportunities for enhancement and restoration of critical areas within the Forbes Creek Basin. Two of the wetland-specific opportunities that the proposed project/mitigation will address include:

- Establishment of vegetated buffers wherever possible along wetlands surrounded by developed areas.
- Removal of garbage and invasive vegetation from even the smallest wetlands; establishment of native buffer vegetation to provide an improvement for screening, water quality, and wildlife habitat.

The existing buffer for Wetland A is primarily vegetated with dense, native trees and shrubs. The exception to this is the buffer enhancement area (adjacent to lots 25 and 26), which primarily contains dense herbaceous vegetation and invasive species. The wetland is located in a residential area that contains several nearby developed parcels. With the exception of the small buffer impact areas, the wetland buffer width will be maintained, and enhancement of the western portion with native vegetation will improve buffer functions.

The Kirkland Sensitive Areas Regulatory Recommendations Report outlines recommendations for buffer width reductions adjacent to streams and wetlands. The Report recommends that stream buffer modification only be allowed if buffer averaging or buffer enhancement is proposed. It states, "*Similar to the stream buffer modification recommendations, we recommend that modification of wetland buffers not exceed one-third of the buffer width, regardless of the basin designation, as long as buffer enhancement or averaging is provided.*" The Report also recommends that a 10-foot building setback be required from both modified and standard buffers. The proposed project is in compliance with these recommendations.

2) It will not adversely affect water quality;

Although a portion of the wetland buffer will be reduced, the remainder of the buffer will maintain the required 50-foot width. Furthermore, the enhancement of the degraded buffer area

will compensate for the buffer reduction. The northern buffer impact area will be restored with native vegetation following construction. Maintenance of the majority of the existing buffer, enhancement actions, and restoration of the northern portion will maintain the water quality functions of the buffer and wetlands.

3) It will not adversely affect fish, wildlife, or their habitat;

There is no fish habitat within the immediate project area, so fish and fish habitat will not be affected. Wildlife habitat will be maintained by the proposed buffer enhancement and buffer restoration.

4) It will not have an adverse effect on drainage and/or storm water detention capabilities;

The overall size (square footage) of the buffer will only be slightly reduced, and the wetland itself will not be impacted by the proposed project. Any drainage and/or stormwater detention capabilities that the wetland and buffer provide will be maintained. Furthermore, a stormwater management system will serve the proposed 27-lot development.

5) It will not lead to unstable earth conditions or create an erosion hazard;

The proposed project and mitigation measures will not result in unstable earth conditions or create erosion hazards. The project site slopes gently to the southeast and no steep slopes or erosion hazard areas are present on-site. Buffer enhancement and buffer restoration will not create any hazards. Standard best management practices (BMP's) will be employed to address graded areas and bare earth areas.

6) It will not be materially detrimental to any other property or the City as a whole;

The proposed project and mitigation plan will be contained entirely on the subject property. Similar developments as well as single-family parcels surround the project site on all sides. The proposal is similar in nature to the surrounding land uses and will not negatively affect the City of Kirkland or other properties. Maintaining and protecting the critical areas will be beneficial to the surrounding area.

7) Fill material does not contain organic or inorganic material that would be detrimental to water quality or to fish, wildlife, or their habitat;

Any fill material placed on-site will not contain materials detrimental to water quality or fish and wildlife habitat.

8) All exposed areas are stabilized with vegetation normally associated with native wetland buffers, as appropriate; and

Exposed buffer areas will be re-vegetated with native trees and shrubs. A wood chip mulch will also be applied to buffer enhancement and restoration areas.

9) There is no practicable or feasible alternative development proposal that results in less impact to the buffer.

The proposed development has been designed to avoid and minimize impacts to the wetland and buffer to the maximum extent practicable. The stormwater detention vault, which extends slightly into the buffer, is necessary to serve the development by managing stormwater and runoff. The trail will provide recreation opportunities for the inhabitants of the development. The proposed design represents the most efficient use of the subject property and provides adequate protection of the critical area and buffer. There are currently no other alternative proposals that will meet the goals of the project and provide greater critical area and buffer protection. The proposed buffer modification will maintain and/or improve buffer functions and restore temporarily impacted areas.

6.2 Level Spreaders

Per KZC 90.45(3), surface discharge of stormwater through a wetland buffer and buffer setback is required unless a piped system is approved by the City. Two level spreaders will be placed in the wetland buffer, one in the northern portion (east of the stormwater detention tract) and one in the western portion (east of lot 26). These level spreaders will allow for stormwater to dissipate into the buffer and wetland without causing erosion or scour and will aid in maintaining wetland hydrology. The level spreaders will be placed in the outer portions of the wetland buffer and as far from the wetland as possible. Due to the presence of the retaining/rockery walls, the roadway, and the proposed lots, the level spreaders cannot be moved entirely out of the buffer.

Per KZC 90.45(3), the City may allow stormwater outfalls to be placed in wetland buffers and buffer setbacks provided they do not:

- *Adversely affect water quality*

  The proposed level spreaders are part of a typical stormwater management system that is meant to avoid water quality impacts. They will collect concentrated runoff/flows and convert it to sheet flow, releasing it uniformly into the wetland buffer. This reduces the potential for erosion and, therefore, water quality impacts. Existing and proposed native vegetation adjacent to the level spreaders will assist in slowing dispersal water and will filter pollutants before they enter the nearby wetland.

- *Adversely affect fish, wildlife, or their habitat*

  The size of the level spreaders is so small (100 SF each) that they will not be removing any significant wildlife habitat. Furthermore, vegetated flow paths adjacent to the structures will filter the dispersal water before it enters the wetland and travels downstream to fish-bearing waters. Proposed buffer enhancement and restoration actions will improve habitat for local wildlife. It should be noted that there are no fish-bearing waters on or near the project site.

- *Adversely affect drainage or storm water detention capabilities*

  The proposed level spreaders will have no impact on the project site's drainage or stormwater detention capabilities. The proposed stormwater detention vault will handle stormwater retention/detention on the project site. In addition, the wetland will provide additional stormwater detention functions. The level spreaders will handle runoff and drainage from the project site. Ongoing drainage within the wetland and wetland buffer will continue.

- *Lead to unstable earth conditions or create erosion hazards or contribute to scouring actions*

  The level spreaders will be placed on relatively flat and gently sloping terrain and will not result in erosion hazards or unstable earth conditions. The flows exiting the level spreaders will not be excessive enough or a high enough volume to result in erosion hazards. Furthermore, the vegetated flow paths and vegetated buffer will assist with slowing dispersal water velocity.

- *Be materially detrimental to any other property in the area of the subject property or to the City as a whole, including the loss of significant open space or scenic vistas.*

  Due to their small size, the proposed level spreaders will not impact any surrounding properties or the City of Kirkland as a whole. The structures themselves will only occupy 200 SF and will be at ground level; therefore, they will not alter any open space or vistas. The level spreaders will be located only on the project site and will direct water into the wetland buffer and wetland.

6.3 Buffer Enhancement

Per section 90.60(2)(a)(2), wetland buffers may be reduced in size if buffer enhancement is provided. Three portions of the existing wetland buffer are proposed for reduction. The southeast corner of the stormwater detention tract will impact 112 SF of the wetland buffer while the rockery/retaining wall will impact 80 SF. These buffer areas contain native forested and scrub-shrub vegetation and provide decent vegetative structure and habitat. The outermost 12-13 feet of the western portion of the wetland buffer (2,476 SF total) will be reduced for the pedestrian walkway. This portion of the buffer is characterized by dense herbaceous vegetation as well as invasive species. It provides limited habitat functions and wetland protection. The remainder of the western wetland buffer, immediately east of the walkway and lots 25 and 26, is being proposed for enhancement (4,287 SF total). Like the adjacent impact area, this portion of the buffer contains dense herbaceous vegetation and invasive species. Removing the existing invasive vegetation and installing native trees, shrubs, and herbaceous vegetation/ground cover will significantly improve buffer functions. Vegetative structure, wildlife habitat, wetland protection, and water quality improvement functions will all be improved with the addition of native vegetation. Table 2 lists the plant species that will be installed within the enhancement area. It must be noted that 1,511 SF of the buffer enhancement area is within the flow path of the level spreader. This area will be planted with species suited to wet/moist soils.

Table 2: Buffer Enhancement Planting Plan (4,287 square feet)

Species	Latin Name	Size	Spacing	Quantity
Douglas fir	*Pseudotsuga menziesii*	1 gallon	10'	14
Big leaf maple	*Acer macrophyllum*	1 gallon	10'	14
Black cottonwood*	*Populus balsamifera*	1 gallon	10'	15
Red-osier dogwood*	*Cornus sericea*	1 gallon	5'	45
Thimbleberry	*Rubus parviflorus*	1 gallon	5'	20
Beaked hazelnut	*Corylus cornuta*	1 gallon	5'	20
Snowberry	*Symphoricarpos albus*	1 gallon	5'	20
Vine maple	*Acer circinatum*	1 gallon	5'	20
Woodland straw.**	*Fragaria vesca*	1 gallon	3'	308

*To be installed in flow path only (1,511 SF)
** To be installed throughout entire enhancement area

6.4 Buffer Restoration

Construction of the northern level spreader will result in temporary buffer impacts. This temporary impact area will be restored with native trees and shrubs. Tables 3 and 4 list the species that will be installed in the restoration area.

Table 3: Buffer Restoration Planting Plan: Area A (501 square feet)

Species	Latin Name	Size	Spacing	Quantity
Douglas fir	*Pseudotsuga menziesii*	1 gallon	8'	4
Big leaf maple	*Acer macrophyllum*	1 gallon	8'	4
Thimbleberry	*Rubus parviflorus*	1 gallon	5'	4
Beaked hazelnut	*Corylus cornuta*	1 gallon	5'	4
Snowberry	*Symphoricarpos albus*	1 gallon	5'	4
Sword fern	*Polystichum munitum*	1 gallon	3'	36

Table 4: Buffer Restoration Planting Plan: Area B (321 square feet)

Species	Latin Name	Size	Spacing	Quantity
Black cottonwood	Populus balsamifera	1 gallon	8'	5
Red-osier dogwood	*Cornus sericea*	1 gallon	5'	3
Black twinberry	*Lonicera involucrata*	1 gallon	5'	3
Nootka rose	Rosa nutkana	1 gallon	5'	3

6.4.1 Project Notes

Pre-construction Meeting

Monitoring by the lead biologist for all portions of this project is strongly recommended. An on-site, pre-construction meeting will be held between the lead biologist, project applicant, and City of Kirkland personnel. The objective of such a meeting is to discuss project sequencing, confirm the location of the mitigation areas, and verify the mitigation actions.

Inspections
The lead biologist will periodically inspect the mitigation installation process. Minor adjustments to the original design may be necessary prior to and during construction due to unusual or unknown site conditions. A City of Kirkland representative and/or the lead biologist will make these decisions during construction.

6.4.2 Planting Notes

Planting Schedule
If possible, plant installation will take place in late fall or early spring (prior to the start of the growing season). Plants shall be obtained from a reputable nursery familiar with native vegetation and that is capable of providing local genetic stock. Limited species substitution may be allowed. City of Kirkland personnel shall approve modifications proposed by the lead biologist in regards to species substitution, spacing, plant locations, etc. BEFORE these modifications are implemented on-site.

Handling
Plants shall be handled so as to avoid 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 period between delivery and installation. Do not lift container stock by trunks, stems, or tops. Do not remove from containers until ready to plant. Water all plants as necessary to keep moisture levels appropriate to the species 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.

Storage
Plants stored for longer than one month prior to planting shall be planted in nursery rows and treated in a manner suitable to specific species requirements. Plants must be re-inspected by the lead biologist prior to installation.

Damaged plants
Damaged, dried out, or otherwise mishandled plants will be rejected at installation inspection. All rejected plants shall be immediately removed from the site.

Plant Names
Plant names shall comply with those generally accepted in the native plant nursery trade. Any question regarding plant species or variety shall be referred to the lead biologist. All plant materials shall be true to species and variety and legibly tagged.

Quality and condition
Plants shall be normal in pattern of growth, healthy, well branched, and 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.

Roots
All plants shall be containerized unless explicitly authorized by the lead biologist. Root bound plants or B&B plants with damaged, cracked, or loose rootballs (major damage) will be rejected. Immediately before installation, plants with minor root damage (e.g. broken and/or twisted roots) must be root-pruned. Matted or circling roots of containerized plantings must be pruned or straightened and the sides of the root ball must be roughened.

Sizes
Plant sizes are indicated in Table 2, above. Larger stock may be acceptable provided that it has not been cut back to the size specified, and that the root ball is proportionate to the size of the plant. Smaller stock may be acceptable, and preferable under some circumstances, based on site-specific conditions. Any changes to the original mitigation design must be approved by the lead biologist and the City of Kirkland. Measurements, caliper, branching, and balling-and-burlapping shall conform to industry standards.

Form
Evergreen trees 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.

Weeding
Non-native and invasive vegetation in the mitigation areas will be hand weeded from around all newly installed plants at the time of installation and on a routine basis throughout the monitoring period. No chemical control of vegetation on any portion of the site is allowed without the approval of the City of Kirkland.

Site conditions
The contractor shall immediately notify the lead biologist of drainage or soil conditions likely to be detrimental to the growth or survival of plants. Planting operations should not be conducted under the following conditions: freezing weather, when the ground is frozen, excessively wet weather, excessively windy weather, or in excessive heat.

Planting Pits
Planting pits should be circular with vertical sides, and should be 6" deeper and 12" larger in diameter than the root ball of the plant. In compacted soils, the sides of the planting pits should be scarified/broken up. Set plants upright in pits. Burlap, if used, shall be removed from the planting pits. Backfill shall be worked back into holes such that air pockets are removed without compacting the soils.

Water
Plants should be watered midway through backfilling, and again upon completion of backfilling. For spring plantings (if approved), a rim of earth should be mounded around the base of the tree or shrub no closer than the drip line, or no less than 30" in diameter, except on steep slopes or in

hollows. Plants should be watered a second time within 24-48 hours after installation. The earthen rim/dam should be leveled prior to the second growing season.

Irrigation shall be provided during the first two years of the monitoring period and will occur during the summer/dry season (e.g. June through September), any extensive dry periods, and/or as determined by the lead biologist. Special attention should be paid to sword ferns, which require ample soil moisture to survive transplanting, particularly if shade is not available. Water shall be applied to the new plants at a rate of one (1) inch per week. The irrigation system shall be installed by an experienced landscaper. Watering by hand is also allowable. The chosen method shall be discussed in the as-built plan and/or the first monitoring report.

Staking

Most shrubs and trees do not require staking. If the plant can stand upright without staking in a moderate wind, stakes should not be used. If the plant needs support, then strapping or webbing should be used as low as possible on the trunk to loosely brace the tree with two stakes. Do not brace the tree tightly or too high on the trunk. Do not use wire in a rubber hose for strapping as it exerts too much pressure on the bark. As soon as supporting the plant becomes unnecessary, stakes should be removed. All stakes must be removed within two (2) years of installation.

Plant Location

Lath staking, brightly colored flagging, or another form of marking shall be placed on or near each installed plant to assist in locating the plants during maintenance and monitoring activities.

Arrangement and Spacing

The plants shall be arranged with the appropriate numbers, sizes, species, and distribution to achieve the required vegetation coverage. The actual placement of individual plants shall mimic natural, asymmetric vegetation patterns found on similar undisturbed sites in the area.

Inspection(s)

The lead biologist shall be present on site to inspect the plants prior to planting. Minor adjustments to the original design may be required prior to and during construction. City of Kirkland personnel shall approve modifications proposed by the lead biologist in regards to species substitution, spacing, plant locations, etc. BEFORE these modifications are implemented on-site.

Mulch

A layer of wood chip mulch (containing some green/vegetative material) will be placed throughout each planting area at a depth of 4 inches. Mulch shall not be allowed to contact plant stems in order to avoid plant decay and rot.

6.5 Fencing and Signage

Section 90.50 of the KZC requires temporary construction phase fencing be installed along the upland boundary of the wetland buffer. Silt screen fabric must also be installed. The construction fencing shall remain in place for the duration of the development activities. Upon

completion of the project, a 3 to 4-foot tall split rail fence shall be installed between the upland boundary of the wetland buffer and the developed portion of the site.

Sensitive/critical area signs shall be placed at the edge of the wetland buffer in lots 25 and 26 (one sign per lot) so that homeowners are aware of the adjacent critical areas and mitigation actions. Sign specifications shall be provided by the City of Kirkland.

7.0 Goals, Objectives, and Performance Standards

Project goals identify what the mitigation plan is attempting to accomplish. Objectives identify specific actions that are taken or components that are initiated in order to meet the project goals. Finally, performance standards provide measurable criteria for determining if the goals and objectives are being achieved (WA. State Department of Ecology et al., 2006)

7.1 Goals

The goals of this mitigation plan include the following:

- Implementation of buffer width reduction with enhancement to compensate for 2,980 SF of buffer reduction/impact
- Restoration of approximately 626 SF of wetland buffer impacted by grading activities.
- Protection of on-site critical areas.

7.2 Objectives

The goals will be met by performing the following actions (i.e. objectives):

- Enhancing approximately 4,187 SF of existing buffer. This shall include removal of invasive and non-native vegetation and installation of three tree species, five shrub species, and one native herbaceous species (487 plants total).
- Installing two species of native trees, four species of native shrubs, and one native herbaceous species within the buffer restoration area (70 plants total).
- Installing a split-rail fence between the upland boundary of the wetland buffer and the developed portion of the site.

7.3 Performance Standards

The performance standards for the buffer restoration area include the following:

- Survival of planted trees, shrubs, and herbaceous vegetation throughout the restoration area will be 100% following the first year of monitoring; 80% following the third year; and 70% by the end of the fifth year. All dead plants shall be replaced following the first year of monitoring.
- Tree and shrub aerial coverage throughout the restoration areas will be 50% at the end of the third monitoring year and 80% at the end of the fifth monitoring year. (Note:

desirable native volunteer species may contribute up to 20% cover. If volunteer species exceed 20% cover, control measures shall be initiated in an effort to maintain species diversity).

- Herbaceous species aerial coverage throughout the restoration areas will be 25% at the end of the third year of monitoring and 50% at the end of the fifth year.
- Invasive and non-native species shall not provide more than 10% aerial coverage within any of the restoration areas at any time.
- Level spreaders shall not cause point-discharge or channelization impacts

8.0 Monitoring

A five-year monitoring plan will begin with the preparation of an as-built report following mitigation installation. This report will outline what occurred on the project site during construction and identify if any changes were made to the approved mitigation plan. Following submittal of the as-built plan, monitoring visits will occur. Monitoring will begin the first year following mitigation installation. Monitoring visits will occur twice yearly (once in the spring, once in the fall) and will continue for five years.

Monitoring techniques will include general visual observations to assess tree and shrub survivability and coverage. In addition, transects and quadrats may be used to assess plant survivability and aerial coverage. Specific monitoring techniques will be discussed in the first monitoring report.

Monitoring reports will be prepared and submitted to the City of Kirkland at the end of each monitoring year. The reports will summarize the overall conditions of the mitigation areas and discuss whether the performance standards are being met. Photos of the mitigation areas will also be provided. On year 5, the final monitoring report will be prepared and will determine if the mitigation plan has been successful per the established goals, objectives, and performance standards. If the mitigation plan is deemed unsuccessful, contingency actions will be utilized and/or the monitoring period may be extended.

9.0 Maintenance

Periodic maintenance will be performed within the restoration area. Maintenance actions may include, but are not limited to, replacement of dead vegetation, removal of invasive and non-native vegetation, trash cleanup, and repair of damaged fencing. Maintenance needs will be discussed in the annual monitoring reports. Completed maintenance tasks and maintenance that needs to be performed will be addressed in each monitoring report.

10.0 Contingency

If, during any of the monitoring visits, 20% of the plants within any restoration area, or in any particular stratum within a restoration area, are severely stressed, or it appears that 20% may not survive, additional plants will be added to the mitigation areas. If invasive and non-native species

exceed 10% aerial coverage within any of the restoration areas at any time, control measures will be initiated. Additional contingency actions may include, but will not be limited to, more aggressive weed control, additional mulching, species substitution, soil amendments, and/or additional irrigation. If necessary, a meeting between the lead biologist and City of Kirkland personnel will be held to develop new contingency actions.

Should the level spreaders cause point-discharge or channelization of dispersal water, a meeting between the project engineer, lead biologist, and City of Kirkland will be held to determine the best course of action. This may include re-installation of the level spreaders or installation of new structures.

11.0 Bonding

Pursuant to requirements set forth in KZC 90.145, a performance bond is required to ensure compliance with chapter 90 of the KZC. The amount of the bond shall be 125% of the cost of the mitigation plan, including plant materials and installation, monitoring, and maintenance. The City of Kirkland shall release this bond at the end of five years, only upon successful determination for all portions of this mitigation project.

The following is a cost estimate for plant materials, labor, monitoring, maintenance, etc. based on the bond quantity worksheet included in Appendix D. This does not represent an actual bid for work:

Mitigation Preparation and Installation*	$34,898.52*
As-built documentation:	$720.00
Total:	**$35,618.52**
Performance Bond Amount:	**$44,523.15**

*See bond quantity worksheet, Appendix D

12.0 Use Of This Report

This Critical Area Study and Buffer Modification Plan is supplied to Larry Scrivanich as a means of determining on-site wetland conditions, and as a means of implementing mitigation actions for a development proposal as required by the City of Kirkland. This report is based largely on readily observable conditions and, to a lesser extent, on readily ascertainable conditions. No attempt has been made to determine hidden or concealed conditions.

The laws applicable to wetlands and streams are subject to varying interpretations and may be changed at any time by the courts or legislative bodies. This report is intended to provide information deemed relevant in the applicant's attempt to comply with the laws now in effect.

This report conforms to the standard of care employed by wetland ecologists. No other representation or warranty is made concerning the work or this report and any implied representation or warranty is disclaimed.
Wetland Resources, Inc.

Jim Rothwell, PWS
Senior Ecologist
Wetland Resources, Inc.

13.0 References

Brinson, M.M. 1993. A Hydrogeomorphic Classification for Wetlands. Technical Report WRPDE-4. US Army Engineers Waterways Experiment Station, Vicksburg, MS.

City of Kirkland. 2013. Kirkland Sensitive Areas Map.

Code Publishing Company. Kirkland Zoning Code. http://kirklandcode.ecitygov.net/CK_KZC_Search.html. Accessed September 2015.

Cowardin, L.M., V. Carter, F.C. Golet and E.T. Laroe. 1979. Classification of Wetlands and Deep Water Habitats of the United States. U.S. Fish and Wildlife Service. FWS/OBS 79/31.

Environmental Laboratory. 1987. Corps of Engineers Wetland Delineation Manual. Technical Report Y-87-1. Environmental Laboratory, Department of the Army, Corps Waterways Experiment Station, Vicksburg, MS.

King County GIS Center. King County iMap Interactive Mapping Tool. http://www.kingcounty.gov/operations/GIS/Maps/iMAP.aspx. Accessed September 2015.

Lichvar, R.W. 2013. The National Wetland Plant List: 2013 wetland ratings. Phytoneuron 2013-49: 1–241. Published July 17, 2013. ISSN 2153 733X

Munsell Color. 2012. Munsell Soil Color Book. Munsell Color, Grand Rapids, MI.

U.S. Army Corps of Engineers (Corps). 2010. Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region (Version 2.0). U.S. Army Engineer Research and Development Center Environmental Laboratory. Vicksburg, MS. Publication # ERDC/EL TR-10-3.

U.S. Fish and Wildlife Service. National Wetland Inventory (NWI). Wetlands Mapper. http://www.fws.gov/wetlands/. Accessed September 2015.

USDA-NRCS. Web Soil Survey. (http://websoilsurvey.nrcs.usda.gov/app/HomePage.htm) Accessed September 2015.

Washington State Department of Fish and Wildlife (WDFW). Priority Habitats and Species: PHS on the Web. (http://wdfw.wa.gov/mapping/phs/). Accessed September 2013.

Washington State Department of Fish and Wildlife (WDFW). SalmonScape. (http://wdfw.wa.gov/mapping/salmonscape/index.html). Accessed September 2015.

Appendix A

Wetland Rating Form

Plate 26
WETLAND FIELD DATA FORM

(Note: Applicable to Chapter 90 KZC, but not Chapter 83 KZC)

WETLAND FIELD DATA FORM

BEGIN BY CHECKING ANY OF THE FOLLOWING (a. – e.) THAT APPLY:

a. The wetland is contiguous to Lake Washington;

b. The wetland contains at least 1/4 acre of organic soils, such as peat bogs or mucky soils;

c. The wetland is equal to or greater than 10 acres in size and having three or more wetland classes, as defined by the U.S. Fish & Wildlife Service (Cowardin et al., 1979), one of which is open water;

d. The wetland has significant habitat value to state or federally listed threatened or endangered wildlife species; or

e. The wetland contains state or federally listed threatened or endangered plant species.

IF ANY OF THE CRITERIA LISTED ABOVE ARE MET, THEN THE WETLAND IS CONSIDERED TO BE TYPE 1. IF THAT IS THE CASE, PLEASE CONTINUE TO COMPLETE THE ENTIRE FORM, BUT DO NOT ASSIGN POINTS.

IF THE WETLAND DOES NOT MEET THE CRITERIA LISTED ABOVE FOR TYPE 1, COMPLETE THE ENTIRE FORM, USING THE ASSIGNED POINTS TO DETERMINE IF IT IS A TYPE 2 OR TYPE 3 WETLAND.

Type 2 wetlands typically have at least two wetland vegetation classes, are at least partially surrounded by buffers of native vegetation, connected by surface water flow (perennial or intermittent) to other wetlands or streams, and contain or are associated with forested habitat.

1. Total wetland area

Estimate wetland area and score from choices	Acres		Point Value	Points
	>20.00	=	6	
	10-19.99	=	5	
	5-9.99	=	4	
	1-4.99	=	3	
	0.1-0.99	=	**2**	**2**
	<0.1	=	1	

2. Wetland classes: Determine the number of wetland classes that qualify, and score according to the table.

	# of Classes		Points
Open Water: if the area of open water is >1/3 acre or >10% of the total wetland area	1	=	1
Aquatic Beds: if the area of aquatic beds is >10% of the **open water** area **or**>1/2 acre	**2**	**=**	**3**
Emergent: if the area of emergent class is >1/2 acre **or** >10% of the total wetland area	3	=	5
Scrub-Shrub: if the area of scrub-shrub class is >1/2 acre **or** >10% of the total wetland area	4	=	7
Forested: if the area of forested class is >1/2 acre or >10% of the total wetland area	5	=	10

3. Plant species diversity.

For all wetland classes which qualified in 2 above, count the number of different plant species and score according to the table below. You do not have to name them.

e.g., if a wetland has an aquatic bed class with 3 species, and emergent class with 4 species and a scrub-shrub class with 2 species, you would circle 2, 2, and 1 in the second column (below).

Class	# of Species		Point Value	Class	# of Species		Point Value
Aquatic Bed	1-2	=	1	Scrub-Shrub	1-2	=	1
	3	=	2		3-4	=	2
	>3	=	3		>4	=	3
Emergent	1-2	=	1	Forested	**1-2**	**=**	**1**
	3-4	=	2		3-4	=	2
	>4	**=**	**3**		>4	=	3

4. Structural diversity.

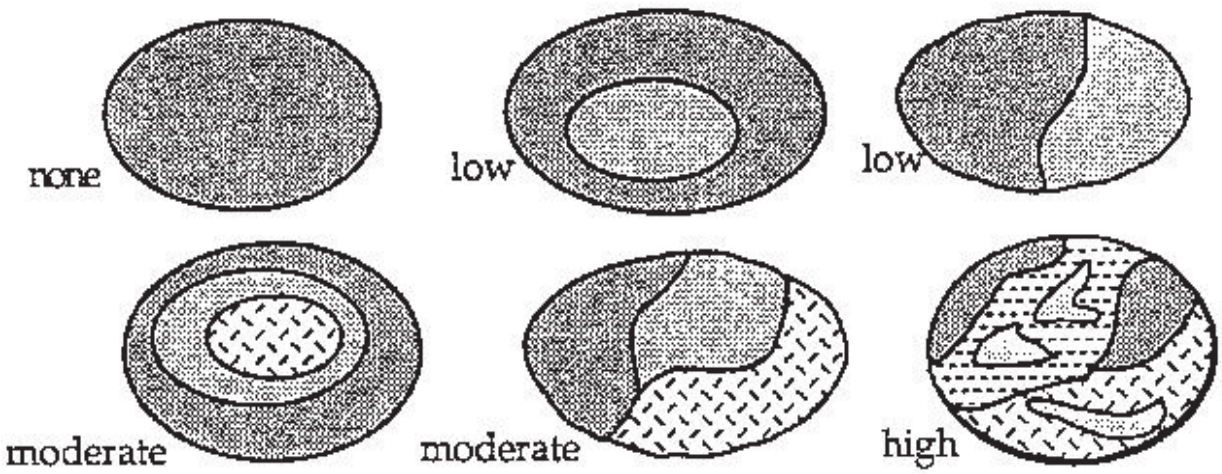
If the wetland has a forested class, add 1 point for each of the following attributes present:

Trees >50′ tall	=	**1**
Trees 20′ to 49′ tall	=	**1**
Shrubs	=	**1**
Herbaceous ground cover	=	**1**

5. Interspersion between wetland classes.

Decide from the diagrams below whether interspersion between wetland classes is high, moderate, low or none

3	=	High
2	=	Moderate
1	**=**	**Low**
0	=	None



6. Habitat features

Add points associated with each habitat feature listed:	=	3
Is there evidence of current use by beavers?	=	2
Is a heron rookery located within 300′?	=	1
Are raptor nest(s) located within 300′?	=	1
Are there at least 2 standing dead trees (snags) per acre?	=	**1**
Are there any other perches (wires, poles, or posts)?	=	1
Are there at least 3 downed logs per acre?	=	**1**

7. Connection to streams

Is the wetland connected at any time of the year via surface water? (score one answer only)

To a perennial stream or a seasonal stream *with* fish	=	5
To a seasonal stream *without* fish	=	3
Is not connected to any stream	=	**0**

8. Buffers

Step 1: Estimate (to the nearest 5%) the percentage of each buffer or land-use type (below) that adjoins the wetland boundary. Then multiply these percentages by the factor(s) below and enter result in the column to the right.

	% of Buffer	Step 1	Width Factor	Step 2
Roads, buildings or parking lots	20% X 0 =	0	=	0
Lawn, grazed pasture, vineyards or annual crops	35% X 1 =	35	=	70
Ungrazed grassland or orchards	% X 2 =		=	
Open water or native grasslands	% X 3 =		=	
Forest or shrub	45% X 4 =	180	=	360
			Add buffer total:	**430**

Step 2: Multiply result(s) of step 1:

By 1 if buffer width is 25-50′

By 2 if buffer width is 50-100′

By 3 if buffer width is >100′

Enter results and add sub-scores

Step 3: Score points according to the following table:

Buffer Total

900-1200 = 4

600-899 = 3

300-599 = **2**

100-299 = 1

9. Connection to other habitat areas:

Is there a riparian corridor to other wetlands within 0.25 of a mile, or a corridor >100′ wide with good forest or shrub cover to any other habitat area?	=	5
Is there a narrow corridor <100′ wide with good cover or a wide corridor >100′ wide with low cover to any other habitat area?	=	3
Is there a narrow corridor <100′ wide with low cover or a significant habitat area within 0.25 mile but no corridor?	=	**1**
Is the wetland and buffer completely isolated by development and/or cultivated agricultural land?	=	0

10. Scoring

Add the scores to get a total: **19**

Question: Is the total greater than or equal to 22 points?

Answer:

Yes = Type 2 **No = Type 3**

Appendix B

Wetland Determination Data Forms

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

Project/Site: Scrivanich-116th Street City/County: Kirkland/King Sampling Date: 8/26/13

Applicant/Owner: Larry Scrivanich State: WA Sampling Point: S-1

Investigator(s): JR Section, Township, Range: S32, T26N, R05E

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

Subregion (LRR): LRR-A Lat: _____ Long: _____ Datum: _____

Soil Map Unit Name: Everett gravelly sandy loam, 5 to 15 percent slopes NWI classification: NA

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

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

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

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

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

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. Alnus rubra	45%	Yes	FAC
2. Populus balsamifera	20%	Yes	FAC
3.			
4.			
	65%	= Total Cover	

Sapling/Shrub Stratum (Plot size: 30')			
1. Rubus spectabilis	50%	Yes	FAC
2. Rubus armeniacus	15%		FACU
3. Rubus ursinus	20%	Yes	FACU
4.			
5.			
	85%	= Total Cover	

Herb Stratum (Plot size: 10')			
1. Athyrium filix-femina	10%	Yes	FAC
2. Polystichum munitum	5%	Yes	FACU
3. Equisetum telmatiea	5%	Yes	FACW
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	20%	= Total Cover	

Woody Vine Stratum (Plot size:)			
1.			
2.			
		= Total Cover	

% Bare Ground in Herb Stratum 80%

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 5 (A)

Total Number of Dominant Species Across All Strata: 7 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 71.4% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species	0	x 1 = 0
FACW species	0	x 2 = 0
FAC species	0	x 3 = 0
FACU species	0	x 4 = 0
UPL species	0	x 5 = 0
Column Totals:	0 (A)	0 (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

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

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

Hydrophytic Vegetation Present? Yes ☑ No ☐

Remarks:

SOIL

Sampling Point: S-1

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-11	10YR 2/1	98%	7.5YR 2.5/2	2%	C	M	Clay Loam	
11-18	10YR 4/2	97%	7.5 YR 3/4	1%	C	PL	Sandy Loam	
			10 YR 4/4	2%	C	M		
18-20	10YR 6/3	93%	10YR 5/6	7%	C	M	Silty Clay	

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

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

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

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type:_____

Depth (inches):_____

Hydric Soil Present? Yes ☑ No ☐

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

Surface Water Present?	Yes ☐	No ☑	Depth (inches): _____
Water Table Present?	Yes ☑	No ☐	Depth (inches): 14 inches
Saturation Present? (includes capillary fringe)	Yes ☐	No ☑	Depth (inches): _____

Wetland Hydrology Present? Yes ☑ No ☐

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

Remarks:

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

Project/Site: Scrivanich-116th Street City/County: Kirkland/King Sampling Date: 8/26/13

Applicant/Owner: Larry Scrivanich State: WA Sampling Point: S-2

Investigator(s): JR Section, Township, Range: S32, T26N, R05E

Landform (hillslope, terrace, etc.): Slope Local relief (concave, convex, none): _____ Slope (%): <1%

Subregion (LRR): LRR-A Lat: _____ Long: _____ Datum: _____

Soil Map Unit Name: Alderwood gravelly sandy loam, 8 to 15 percent slopes NWI classification: NA

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

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

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

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

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

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. Alnus rubra	30%	Yes	FAC
2. Populus balsamifera	15%	Yes	FAC
3. Frangula purshiana	5%	No	FAC
4. Prunus Emarginata	5%	No	FACU
	55%	= Total Cover	

Sapling/Shrub Stratum (Plot size: 30')			
1. Rubus spectabilis	60%	Yes	FAC
2. Rubus armeniacus	20%	Yes	FACU
3. Crataegus sp.	10%	No	FAC
4.			
5.			
	90%	= Total Cover	

Herb Stratum (Plot size: 10')			
1. Polystichum munitum	5%	Yes	FACU
2. Athyrium filix-femina	5%	Yes	FAC
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	10%	= Total Cover	

Woody Vine Stratum (Plot size:)			
1.			
2.			
		= Total Cover	

% Bare Ground in Herb Stratum 90%

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: 6 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 67% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species	0	x 1 = 0
FACW species	0	x 2 = 0
FAC species	0	x 3 = 0
FACU species	0	x 4 = 0
UPL species	0	x 5 = 0
Column Totals:	0 (A)	0 (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

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

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

Hydrophytic Vegetation Present? Yes ☑ No ☐

Remarks:

SOIL

Sampling Point: S-2

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-9	10YR 2/1						Sa. Cl. Loam	
9-16	2.5YR 5/3		10YR 4/6	3%	C	M	Sa. Cl. Loam	
16-20	10YR 6/2		7.5 YR 4/6	7%	C	M	Clay	Possible restrictive layer.

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

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

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

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type: Clay

Depth (inches): Starting at 16"

Hydric Soil Present? Yes ☐ No ☑

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

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

Water Table Present? Yes ☑ No ☐ Depth (inches): 13 inches

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

Wetland Hydrology Present? Yes ☐ No ☑

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

Remarks:

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

Project/Site: Scrivanich-116th Street City/County: Kirkland/King Sampling Date: 8/26/13

Applicant/Owner: Larry Scrivanich State: WA Sampling Point: S-3

Investigator(s): JR Section, Township, Range: S32, T26N, R05E

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

Subregion (LRR): LRR-A Lat: _____ Long: _____ Datum: _____

Soil Map Unit Name: Everett gravelly sandy loam, 5 to 15 percent slopes NWI classification: UPL

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

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

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

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

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

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. Prunus Emarginata	15%	Yes	FACU
2. Populus balsamifera	15%	Yes	FAC
3. Pseudotsuga menzesii	10%	Yes	FACU
4.			
	40%	= Total Cover	
Sapling/Shrub Stratum (Plot size: 30')			
1. Corylus cornuta	20%	Yes	FACU
2. Oemleria cerasiformus	10%	No	FACU
3. Rubus armeniacus	20%	Yes	FACU
4. Lonicera involucrata	10%	No	FAC
5.			
	60%	= Total Cover	
Herb Stratum (Plot size: 10')			
1. Polystichum munitum	10%	Yes	FACU
2. Athyrium filix-femina	2%	No	FAC
3. Geranium robertianum	15%	Yes	FACU
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	27%	= Total Cover	
Woody Vine Stratum (Plot size: 10')			
1. Rubus ursinus	5%	Yes	FACU
2.			
		= Total Cover	

% Bare Ground in Herb Stratum 73%

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: 8 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 12.5% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	27%	x 3 =	81
FACU species	105%	x 4 =	420
UPL species	0	x 5 =	0
Column Totals:	132 (A)		501 (B)

Prevalence Index = B/A = 3.80

Hydrophytic Vegetation Indicators:

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

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

Hydrophytic Vegetation Present? Yes ☐ No ☑

Remarks:

SOIL

Sampling Point: S-3

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-7	10YR 2/2	100%					Sa. Cl. Loam	
7-18	7.5YR 3/4	97%	7.5YR 4/6	3%	C	M	Sa. Cl. Loam	

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

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

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

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type:_____

Depth (inches):_____

Hydric Soil Present? Yes ☐ No ☑

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

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

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

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

Wetland Hydrology Present? Yes ☐ No ☑

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

Remarks:

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

Project/Site: Scrivanich-116th Street City/County: Kirkland/King Sampling Date: 8/26/13

Applicant/Owner: Larry Scrivanich State: WA Sampling Point: S-4

Investigator(s): JR Section, Township, Range: S32, T26N, R05E

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

Subregion (LRR): A Lat: _____ Long: _____ Datum: _____

Soil Map Unit Name: Alderwood gravelly sandy loam, 8 to 15 percent slopes NWI classification: NA

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

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

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

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

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

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. Pseudotsuga menzesii	75%	Yes	FACU
2.			
3.			
4.			
	75%	= Total Cover	
Sapling/Shrub Stratum (Plot size: 30')			
1. Mahonia nervosa	10%	Yes	FACU
2. Acer circinatum	5%	Yes	FAC
3.			
4.			
5.			
	15%	= Total Cover	
Herb Stratum (Plot size: 10')			
1. Geranium robertianum	80%	Yes	FACU
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	80%	= Total Cover	
Woody Vine Stratum (Plot size: 10')			
1. Rubus ursinus	5%	Yes	FACU
2.			
	5%	= Total Cover	

% Bare Ground in Herb Stratum 20%

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 20% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	5%	x 3 =	15
FACU species	170%	x 4 =	680
UPL species	0	x 5 =	0
Column Totals:	175 (A)		695 (B)

Prevalence Index = B/A = 3.97

Hydrophytic Vegetation Indicators:

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

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

Hydrophytic Vegetation Present? Yes ☐ No ☑

Remarks:

SOIL

Sampling Point: S-4

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-5	10YR 3/2	100%					Loam	
5-17	2.5Y 4/3	99%	10YR 3/6	1%	C	M	Loam	

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

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

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

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type:_____

Depth (inches):_____

Hydric Soil Present? Yes ☐ No ☑

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

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

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

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

Wetland Hydrology Present? Yes ☐ No ☑

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

Remarks:

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

Project/Site: Scrivanich-116th Street City/County: Kirkland/King Sampling Date: 7\31\14

Applicant/Owner: Larry Scrivanich State: WA Sampling Point: S-5

Investigator(s): JR Section, Township, Range: S32, T26N, R05E

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

Subregion (LRR): A Lat: ____ Long: ____ Datum: ____

Soil Map Unit Name: Everett gravelly sandy loam, 5 to 15 percent slopes NWI classification: NA

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

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

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

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

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

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 20')	Absolute % Cover	Dominant Species?	Indicator Status
1. Populus balsamifera	40%	Y	FAC
2.			
3.			
4.			
	40%	= Total Cover	
Sapling/Shrub Stratum (Plot size: 20')			
1. Sorbus scopulina	25%	Y	FACU
2. Alnus rubra	10%	Y	FAC
3. Oemleria cerasiformis	15%	Y	FAC
4. Rubus ursinus	10%	Y	FACU
5. Crataegus sp.	2%		
	62%	= Total Cover	
Herb Stratum (Plot size: 10')			
1. Ranunculus repens	40%	Y	FAC
2. Poa sp.	40%	Y	
3. Geranium robertianum	10%	Y	FACU
4. Taraxacum officinale	5%		FACU
5. Mycelis muralis	5%		NA
6.			
7.			
8.			
9.			
10.			
11.			
	100%	= Total Cover	
Woody Vine Stratum (Plot size:			
1.			
2.			
		= Total Cover	

% Bare Ground in Herb Stratum ____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 5 (A)

Total Number of Dominant Species Across All Strata: 8 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 62.5 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	145	x 3 =	435
FACU species	50	x 4 =	200
UPL species	0	x 5 =	0
Column Totals:	195 (A)		635 (B)

Prevalence Index = B/A = 3.25

Hydrophytic Vegetation Indicators:

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

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

Hydrophytic Vegetation Present? Yes ☑ No ☐

Remarks:

Traces of snowberry (Symphoricarpos albus), and orchard grass (Dactylis glomerata) also observed.

SOIL

Sampling Point: S-5

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-9	10YR 2/2	100%					Loam	
9-15	10YR 3/6	96%	10YR 4/2	2%	C	M	Sa. Loam	
			5YR 3/4	2%	C	M		
15-20	10YR 4/3	90%	10YR 3/6	10%	C	M	Sa. Loam	

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

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

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

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type:_____

Depth (inches):_____

Hydric Soil Present? Yes ☐ No ☑

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

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

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

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

Wetland Hydrology Present? Yes ☐ No ☑

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

Remarks:

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

Project/Site: Scrivanich-116th Street City/County: Kirkland/King Sampling Date: 7\31\14

Applicant/Owner: Larry Scrivanich State: WA Sampling Point: S-6

Investigator(s): JR Section, Township, Range: S32, T26N, R05E

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

Subregion (LRR): A Lat: ____ Long: ____ Datum: ____

Soil Map Unit Name: Everett gravelly sandy loam, 5 to 15 percent slopes NWI classification: NA

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

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

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

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

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

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size: 30')			
1. Populus balsamifera	15%	Yes	FAC
2.			
3.			
4.			
5.			
	15%	= Total Cover	
Herb Stratum (Plot size: 10')			
1. Ranunculus repens	60%	Yes	FAC
2. Poa sp.	60%	Yes	FAC
3. Holcus lanatus	25%	Yes	FAC
4. Convolvulus sp.	20%		NA
5. Juncus tenuis	2%		FAC
6. Veronica americana	1%		OBL
7.			
8.			
9.			
10.			
11.			
	168%	= Total Cover	
Woody Vine Stratum (Plot size:)			
1.			
2.			
		= Total Cover	

% Bare Ground in Herb Stratum ____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 5 (A)

Total Number of Dominant Species Across All Strata: 7 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 71.4% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	0 (A)		0 (B)

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:

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

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

Hydrophytic Vegetation Present? Yes ☑ No ☐

Remarks:

SOIL

Sampling Point: S-6

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-12	10YR 2/1	98%	5YR 2.5/2	2%	C	M	Si. Cl. Lo.	
12-20	10YR 5/2	93%	10YR 4/6	7%	C	M	Si. Cl. Lo.	

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

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

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

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type:_____

Depth (inches):_____

Hydric Soil Present? Yes ☑ No ☐

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

Surface Water Present? Yes ☑ No ☐ Depth (inches): Approx. 2"

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

Saturation Present? (includes capillary fringe) Yes ☑ No ☐ Depth (inches): Within 12"

Wetland Hydrology Present? Yes ☑ No ☐

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

Remarks:

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

Project/Site: Scrivanich-116th Street City/County: Kirkland/King Sampling Date: 7\20\15

Applicant/Owner: Larry Scrivanich State: WA Sampling Point: S-7

Investigator(s): JR Section, Township, Range: S32, T26N, R05E

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

Subregion (LRR): A Lat: ____ Long: ____ Datum: ____

Soil Map Unit Name: Everett gravelly sandy loam, 5 to 15 percent slopes NWI classification: NA

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

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

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

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

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

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 20')	Absolute % Cover	Dominant Species?	Indicator Status
1. Pseudotsuga menziesii	10%	Y	FACU
2. Populus balsamifera	10%	Y	FAC
3. Betula papyrifera	2%		FAC
4. Prunus emarginata	10%	Y	FACU
	32%	= Total Cover	

Sapling/Shrub Stratum (Plot size: 20')			
1. Corylus cornuta	5%		FACU
2. Rubus armeniacus	45%	Y	FACU
3.			
4.			
5.			
	50%	= Total Cover	

Herb Stratum (Plot size: 10')			
1. Athyrium filix-femina	40%	Y	FAC
2. Polystichum munitum	5%		FACU
3. Chamerion angustifolium	5%		FACU
4. Stachys chamissonis	30%	Y	FACW
5. Rumex crispus	15%		FAC
6.			
7.			
8.			
9.			
10.			
11.			
	95%	= Total Cover	

Woody Vine Stratum (Plot size:)			
1.			
2.			
		= Total Cover	

% Bare Ground in Herb Stratum 5%

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: 6 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	30	x 2 =	60
FAC species	67	x 3 =	201
FACU species	80	x 4 =	320
UPL species	0	x 5 =	0
Column Totals:	177 (A)		581 (B)

Prevalence Index = B/A = 3.28

Hydrophytic Vegetation Indicators:

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

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

Hydrophytic Vegetation Present? Yes ☐ No ☑

Remarks:

SOIL

Sampling Point: S-7

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-13	10YR 2/2	97%	7.5YR 2.5/3	3%	C	M	Sa. Loam	
13-20	10YR 4/3	80%	7.5YR 3/4	20%	C	M	Sa. Loam	

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

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

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

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type:_____

Depth (inches):_____

Hydric Soil Present? Yes ☐ No ☑

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

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

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

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

Wetland Hydrology Present? Yes ☐ No ☑

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

Remarks:

Appendix C

Site Photos

Looking south at Wetland A as it exits the subject property.

Off-site portion of Wetland A.

Buffer and non-wetland area west of Wetland A.

Buffer area near data point S-5.

Appendix D

Bond Quantity Worksheet

King County
Department of
Environmental Review
5030 SE Douglas Str, Suite 210
Snoqualmie, WA 98065-9266
206-296-6600 TTY Relay: 711

Critical Areas Mitigation
Bond Quantity Worksheet

C24 09/09/2015
ls-wks-sensareaBQ.xls
ls-wks-sensareaBQ.pdf

Project Name: Scrivanich - 116th Street **Date: 8\3\16** **Prepared by: Jim Rothwell**

Project Number: **Project Description: 27-lot subdivision in City of Kirkland**

Location: Kirkland, WA **Applicant: Larry Scrivanich** **Phone: 425-770-1197**

PLANT MATERIALS (includes labor cost for plant installation)

Type	Unit Price	Unit	Quantity	Description	Cost
PLANTS: Potted, 4" diameter, medium	$5.00	Each			$ -
PLANTS: Container, 1 gallon, medium soil	$11.50	Each	552.00		$ 6,348.00
PLANTS: Container, 2 gallon, medium soil	$20.00	Each			$ -
PLANTS: Container, 5 gallon, medium soil	$36.00	Each			$ -
PLANTS: Seeding, by hand	$0.50	SY			$ -
PLANTS: Slips (willow, red-osier)	$2.00	Each			$ -
PLANTS: Stakes (willow)	$2.00	Each			$ -
PLANTS: Stakes (willow)	$2.00	Each			$ -
PLANTS: Flats/plugs	$2.00	Each			$ -
				TOTAL	**$ 6,348.00**

INSTALLATION COSTS (LABOR, EQUIPMENT, & OVERHEAD)

Type	Unit Price	Unit			Cost
Compost, vegetable, delivered and spread	$37.88	CY			$ -
Decompacting till/hardpan, medium, to 6" depth	$1.57	CY			$ -
Decompacting till/hardpan, medium, to 12" depth	$1.57	CY			$ -
Hydroseeding	$0.51	SY			$ -
Labor, general (landscaping other than plant installation)	$40.00	HR	16.00	Site prep (weeding, etc.)	$ 640.00
Labor, general (construction)	$40.00	HR			$ -
Labor: Consultant, supervising	$120.00	HR	4.00	During mitigation installation.	$ 480.00
Labor: Consultant, on-site re-design	$95.00	HR			$ -
Rental of decompacting machinery & operator	$70.00	HR			$ -
Sand, coarse builder's, delivered and spread	$42.00	CY			$ -
Staking material (set per tree)	$7.00	Each			$ -
Surveying, line & grade	$250.00	HR			$ -
Surveying, topographical	$250.00	HR			$ -
Watering, 1" of water, 50' soaker hose	$3.62	MSF			$ -
Irrigation - temporary	$3,000.00	Acre	0.12		$ 360.00
Irrigation - buried	$4,500.00	Acre			$ -
Tilling topsoil, disk harrow, 20hp tractor, 4"-6" deep	$1.02	SY			$ -
				TOTAL	**$ 1,480.00**

HABITAT STRUCTURES*

ITEMS	Unit Cost	Unit			Cost
Fascines (willow)	$ 2.00	Each			$ -
Logs, (cedar), w/ root wads, 16"-24" diam., 30' long	$1,000.00	Each			$ -
Logs (cedar) w/o root wads, 16"-24" diam., 30'	$400.00	Each			$ -
Logs, w/o root wads, 16"-24" diam., 30' long	$245.00	Each			$ -
Logs w/ root wads, 16"-24" diam., 30' long	$460.00	Each			$ -
Rocks, one-man	$60.00	Each			$ -
Rocks, two-man	$120.00	Each			$ -
Root wads	$163.00	Each			$ -
Spawning gravel, type A	$22.00	CY			$ -
Weir - log	$1,500.00	Each			$ -
Weir - adjustable	$2,000.00	Each			$ -
Woody debris, large	$163.00	Each			$ -
Snags - anchored	$400.00	Each			$ -
Snags - on site	$50.00	Each			$ -
Snags - imported	$800.00	Each			$ -
* All costs include delivery and installation				*TOTAL*	**$ -**

EROSION CONTROL

ITEMS	Unit Cost	Unit			Cost
Backfill and Compaction-embankment	$ 4.89	CY			$ -
Crushed surfacing, 1 1/4" minus	$30.00	CY			$ -
Ditching	$7.03	CY			$ -
Excavation, bulk	$4.00	CY			$ -
Fence, silt	$1.60	LF	478.00		$ 764.80
Jute Mesh	$1.26	SY			$ -
Mulch, by hand, straw, 2" deep	$1.27	SY			$ -
Mulch, by hand, wood chips, 2" deep	$3.25	SY	568.00	Mulch must be 4" thick. Adjust price accordingly.	$ 1,846.00
Mulch, by machine, straw, 1" deep	$0.32	SY			$ -
Piping, temporary, CPP, 6"	$9.30	LF			$ -
Piping, temporary, CPP, 8"	$14.00	LF			$ -
Piping, temporary, CPP, 12"	$18.00	LF			$ -
Plastic covering, 6mm thick, sandbagged	$2.00	SY			$ -
Rip Rap, machine placed, slopes	$33.98	CY			$ -
Rock Constr. Entrance 100'x15'x1'	$3,000.00	Each			$ -
Rock Constr. Entrance 50'x15'x1'	$1,500.00	Each			$ -
Sediment pond riser assembly	$1,695.11	Each			$ -
Sediment trap, 5' high berm	$15.57	LF			$ -
Sediment trap, 5' high berm w/spillway incl. riprap	$59.60	LF			$ -
Sodding, 1" deep, level ground	$5.24	SY			$ -
Sodding, 1" deep, sloped ground	$6.48	SY			$ -
Straw bales, place and remove	$600.00	TON			$ -
Hauling and disposal	$20.00	CY			$ -
Topsoil, delivered and spread	$35.73	CY	47.00		$ 1,679.31
				TOTAL	**$ 4,290.11**

GENERAL ITEMS

ITEMS	Unit Cost	Unit			Cost
Fencing, chain link, 6' high	$18.89	LF			$ -
Fencing, chain link, corner posts	$111.17	Each			$ -
Fencing, chain link, gate	$277.63	Each			$ -
Fencing, split rail, 3' high (2-rail)	$10.54	LF	478.00		$ 5,038.12
Fencing, temporary (NGPE)	$1.20	LF			$ -
Signs, sensitive area boundary (inc. backing, post, install)	$28.50	Each	2.00		$ 57.00
				TOTAL	**$ 5,095.12**
				(Construction Cost Subtotal)	**$ 17,213.23**

OTHER

ITEMS	Percentage of Construction	Unit			Cost
Mobilization	10%	1			$ 1,721.32
Contingency	30%	1			$ 5,163.97
				TOTAL	**$ 6,885.29**

MAINTENANCE AND MONITORING

NOTE: Projects with multiple permit requirements may be required to have longer monitoring and maintenance terms. This will be evaluated on a case-by-case basis for development applications. Monitoring and maintance ranges may be assessed anywhere from 5 to 10 years.

Maintenance, annual (by owner or consultant)					
Less than 1,000 sq.ft. and buffer mitigation only	$ 1.08	SF		(3 X SF total for 3 annual events; Includes monitoring)	$ -
Less than 1,000 sq.ft. with wetland or aquatic area mitigation	$ 1.35	SF		(3 X SF total for 3 annual events; Includes monitoring)	$ -
Larger than 1,000 sq. ft. but less than 5,000 sq.ft. of buffer mitigation	$ 180.00	EACH		(4hr @$45/hr)	$ -
Larger than 1,000 sq. ft. but less than 5,000 sq.ft. of wetland or aquatic area mitigation	$ 270.00	EACH		(6hr @$45/hr)	$ -
Larger than 5,000 sq.ft. but < 1 acre -buffer mitigation only	$ 360.00	EACH	5.00	(8 hrs @ 45/hr)	$ 1,800.00
Larger than 5,000 sq.ft. but < 1 acre with wetland or aquatic area mitigation	$ 450.00	EACH		(10 hrs @ $45/hr)	$ -
Larger than 1 acre but < 5 acres - buffer and / or wetland or aquatic area mitigation	$ 1,600.00	DAY		(WEC crew)	$ -
Larger than 5 acres - buffer and / or wetland or aquatic area mitigation	$ 2,000.00	DAY		(1.25 X WEC crew)	$ -
Monitoring, annual (by owner or consultant)					
Larger than 1,000 sq.ft. but less than 5,000 wetland or buffer mitigation	$ 720.00	EACH		(8 hrs @ 90/hr)	$ -
Larger than 5,000 sq.ft. but < 1 acre with wetland or aquatic area impacts	$ 900.00	EACH	10.00	(10 hrs @ $90/hr)	$ 9,000.00
Larger than 1 acre but < 5 acres - buffer and / or wetland or aquatic area impacts	$ 1,440.00	DAY		(16 hrs @ $90/hr)	$ -
Larger than5 acres - buffer and / or wetland or aquatic area impacts	$ 2,160.00	DAY		(24 hrs @ $90/hr)	$ -
				TOTAL	**$ 10,800.00**

Total	**$34,898.52**

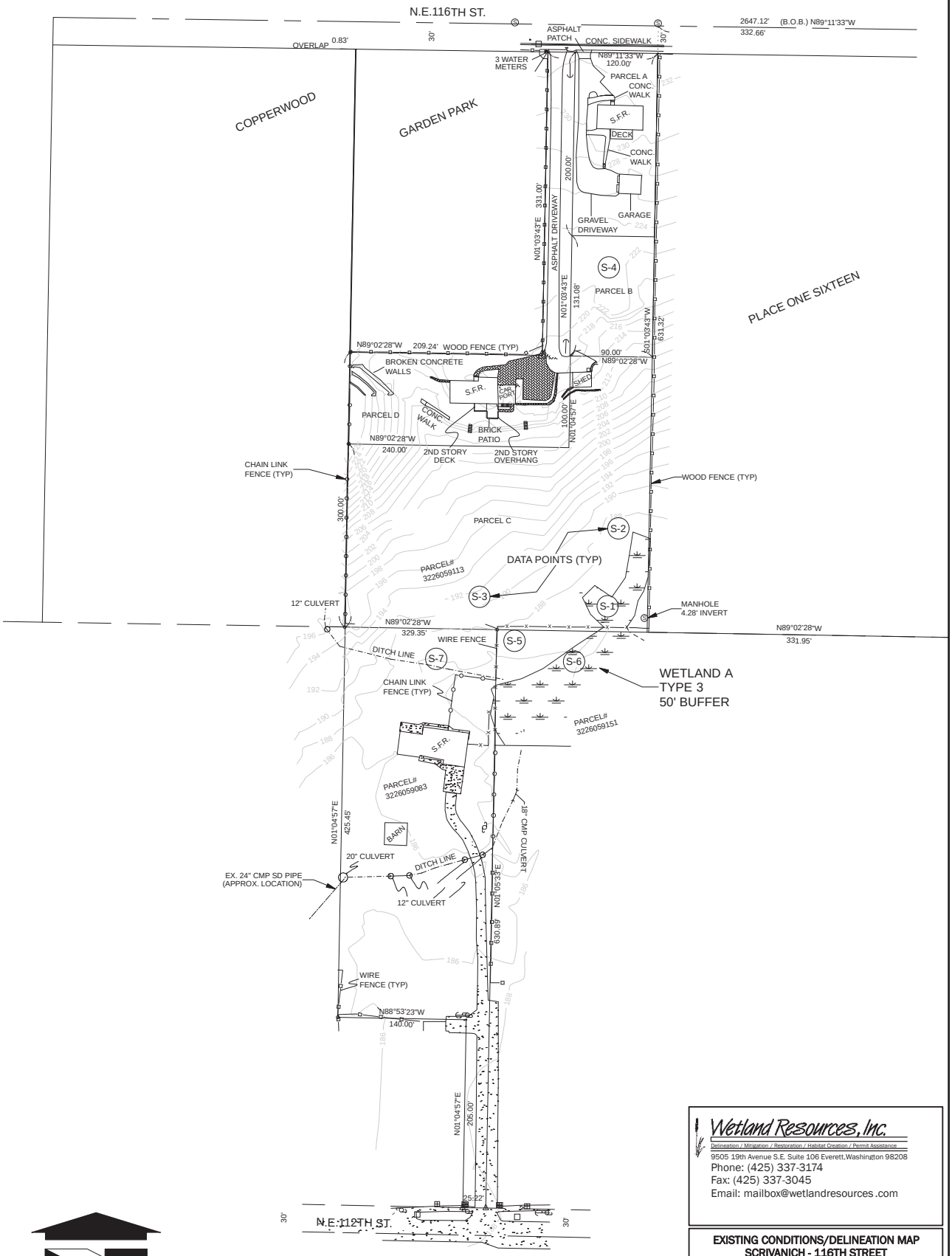
Appendix E

Maps

EXISTING CONDITIONS/DELINEATION MAP

SCRIVANICH - 116TH STREET

PORTIONS OF SECTION 32, TOWNSHIP 26N, RANGE 05E, W.M.



Wetland Resources, Inc.
Delineation / Mitigation / Restoration / Habitat Creation / Permit Assistance
9505 19th Avenue S.E. Suite 106 Everett,Washington 98208
Phone: (425) 337-3174
Fax: (425) 337-3045
Email: mailbox@wetlandresources.com

EXISTING CONDITIONS/DELINEATION MAP
SCRIVANICH - 116TH STREET
Kirkland, Washington

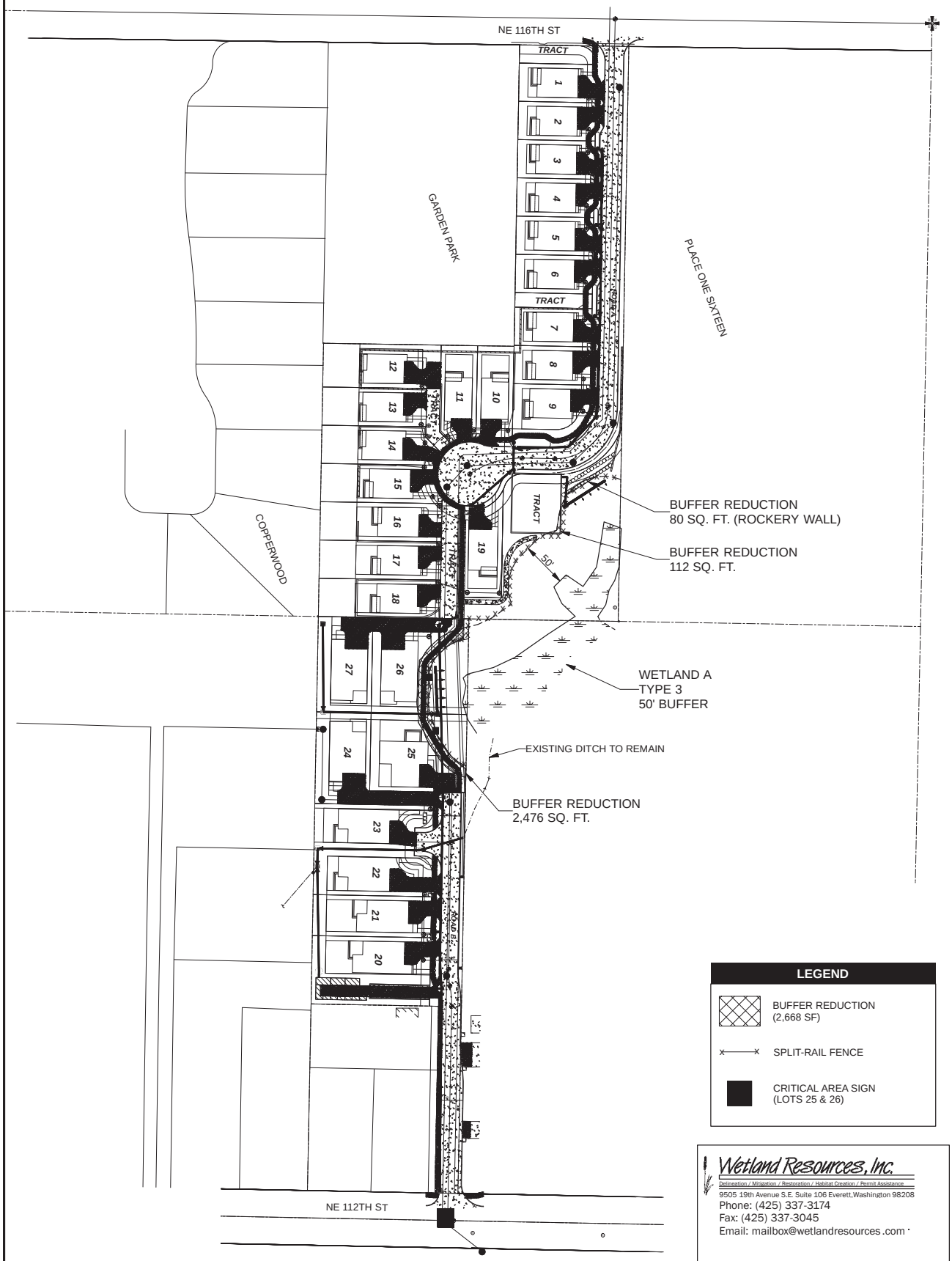
Sheet 1\4
WRI Job # 13185
Drawn by: JR
Date: 8.02.2016

Larry Scrivanich
P.O. Box 2174
Woodinville, WA 98072

SITE PLAN & CRITICAL AREAS MAP

SCRIVANICH - 116TH STREET

PORTIONS OF SECTION 32, TOWNSHIP 26N, RANGE 05E, W.M.



Wetland Resources, Inc.
Delineation / Mitigation / Restoration / Habitat Creation / Permit Assistance
9505 19th Avenue S.E. Suite 106 Everett, Washington 98208
Phone: (425) 337-3174
Fax: (425) 337-3045
Email: mailbox@wetlandresources.com

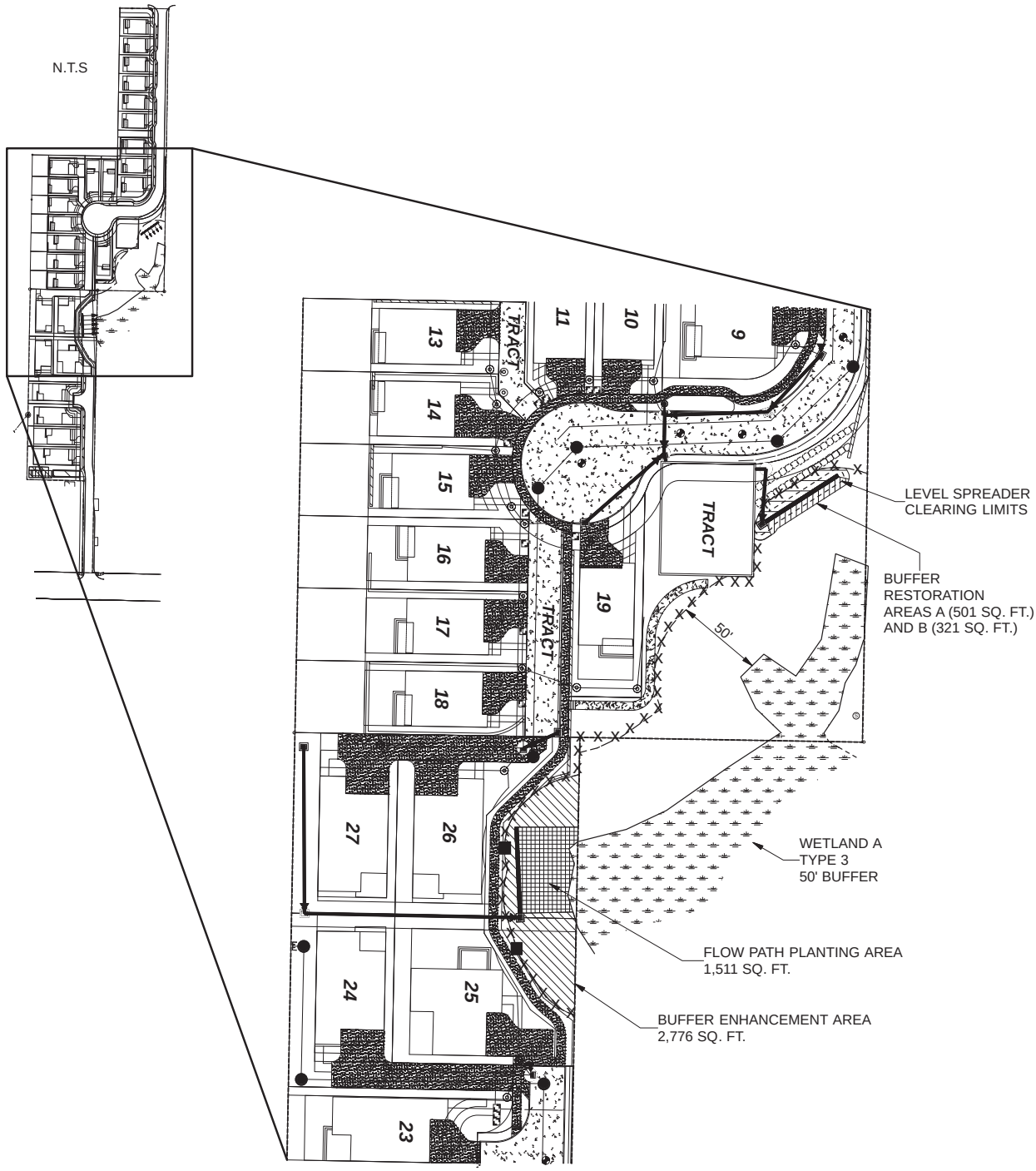
SITE PLAN & CRITICAL AREAS MAP
SCRIVANICH - 116TH STREET
Kirkland, Washington

Larry Scrivanich
P.O. Box 2174
Woodinville, WA 98072

Sheet 2\4
WRI Job # 13185
Drawn by: JR
Date: 8.02.2016

BUFFER MITIGATION PLAN
SCRIVANICH - 116TH STREET

PORTIONS OF SECTION 32, TOWNSHIP 26N, RANGE 05E, W.M.



LEGEND

- BUFFER RESTORATION AREA-A (501 SQ. FT.)
- BUFFER RESTORATION AREA-B (321 SQ. FT.)
- FLOW PATH PLANTING AREA (1,511 SF)
- BUFFER PLANTING AREA (2,776 SF)
- LEVEL SPREADER CLEARING LIMITS
- SPLIT-RAIL FENCE
- CRITICAL AREA SIGNS

Scale 1" = 60'

0 30 60 90 120

Wetland Resources, Inc.
Delineation / Mitigation / Restoration / Habitat Creation / Permit Assistance
9505 19th Avenue S.E. Suite 106 Everett,Washington 98208
Phone: (425) 337-3174
Fax: (425) 337-3045
Email: mailbox@wetlandresources .com

BUFFER MITIGATION PLAN
SCRIVANICH - 116TH STREET
Kirkland, Washington

Sheet 3\4
Larry Scrivanich
P.O. Box 2174
Woodinville, WA 98072
WRI Job # 13185
Drawn by: JR
Date: 8.02.2016

MITIGATION PLAN DETAILS
SCRIVANICH - 116TH STREET

PORTIONS OF SECTION 32, TOWNSHIP 26N, RANGE 05E, W.M.

BUFFER ENHANCEMENT PLANTING PLAN (4,287 SQ. FT.)

Species	Latin Name	Size	Spacing	Quantity
Douglas fir	*Pseudotsuga menziesii*	1 gallon	10'	14
Big leaf maple	*Acer macrophyllum*	1 gallon	10'	14
Black cottonwood*	*Populus balsamifera**	1 gallon	10'	15
Red-osier dogwood*	*Cornus sericea**	1 gallon	5'	45
Thimbleberry	*Rubus parviflorus*	1 gallon	5'	20
Beaked hazelnut	*Corylus cornuta*	1 gallon	5'	20
Snowberry	*Symphoricarpos albus*	1 gallon	5'	20
Vine maple	*Acer circinatum*	1 gallon	5'	20
Woodland Strawberry**	*Fragaria vesca***	1 gallon	3'	308

*To be installed in flow path only (1,511 sq. ft.)

**To be installed throughout entire enhancement area

BUFFER RESTORATION PLANTING PLAN: AREA A (501 SQ. FT.)

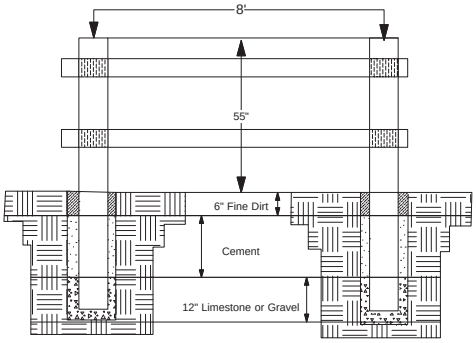
Species	Latin Name	Size	Spacing	Quantity
Douglas fir	*Pseudotsuga menziesii*	1 gallon	8'	4
Big leaf maple	*Acer macrophyllum*	1 gallon	8'	4
Thimbleberry	*Rubus parviflorus*	1 gallon	5'	4
Beaked hazelnut	*Corylus cornuta*	1 gallon	5'	4
Snowberry	*Symphoricarpos albus*	1 gallon	5'	4
Sword fern	*Polystichum munitum*	1 gallon	3'	36

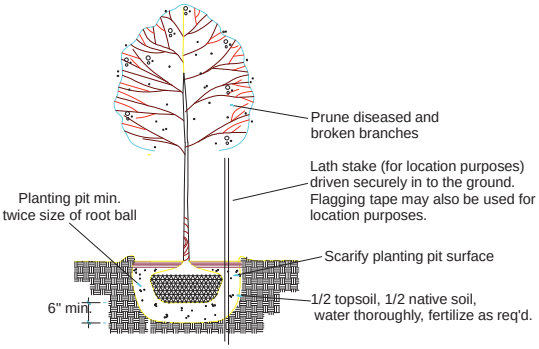
BUFFER RESTORATION PLANTING PLAN: AREA B (321 SQ. FT.)

Species	Latin Name	Size	Spacing	Quantity
Black cottonwood	Populus balsamifera	1 gallon	8'	5
Red-osier dogwood	*Cornus sericea*	1 gallon	5'	3
Black Twinberry	*Lonicera involucrata*	1 gallon	5'	3
Nootka rose	*Rosa nutkana*	1 gallon	5'	3

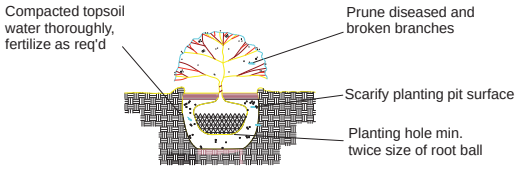
TWO-RAIL FENCE DETAIL

A two rail fence shall be installed to designate and to protect the critical areas and buffers. Fencing should be installed per the manufacturer's directions. The following installation techniques are provided as guidance.
Fence posts should be 5" x 5" x 85".
Fence posts should be spaced approximately 8' apart.
All fence post holes should be a minimum 30" deep.
Place post in hole and backfill with approximately 12" of small limestone or gravel.
Pour cement into hole (over small limestone) within 6" of existing grade.
Fill hole to grade with fine dirt.





TREE PLANTING DETAIL
Not to Scale



SHRUB PLANTING DETAIL
Not to Scale

Wetland Resources, Inc.
Delineation / Mitigation / Restoration / Habitat Creation / Permit Assistance
9505 19th Avenue S.E. Suite 106 Everett, Washington 98208
Phone: (425) 337-3174
Fax: (425) 337-3045
Email: mailbox@wetlandresources.com

MITIGATION PLAN DETAILS
SCRIVANICH - 116TH STREET
Kirkland, Washington

Larry Scrivanich
P.O. Box 2174
Woodinville, WA 98072

Sheet 4\4
WRI Job # 13185
Drawn by: JR
Date: 8.02.2016

CITY OF KIRKLAND
Planning and Building Department
123 5th Avenue, Kirkland, WA 98033
425.587.3600 ~ www.kirklandwa.gov

DEVELOPMENT STANDARDS LIST
File: SUB15-02157

SUBDIVISION STANDARDS

22.28.030 Lot Size. Unless otherwise approved in the preliminary subdivision or short subdivision approval, all lots within a subdivision must meet the minimum size requirements established for the property in the Kirkland zoning code or other land use regulatory document.

22.28.050 Lot Dimensions. For lots smaller than 5,000 square feet in low density zones, the lot width at the back of the required front yard shall not be less than 50 feet unless the garage is located at the rear of the lot or the lot is a flag lot.

22.28.130 Vehicular Access Easements. The applicant shall comply with the requirements found in the Zoning Code for vehicular access easements or tracts.

22.28.190 Subdivisions on the Shoreline. Subdivisions adjacent to Lake Washington must comply with the provisions of Kirkland's Shoreline Master Program regarding open space and public access along the waterfront.

22.28.210 Significant Trees. A Tree Retention Plan was submitted with the short plat in which the location of all proposed improvements were known. There are 316 significant trees on the site, of which 96 are viable and 67 trees are proposed for retention. These trees have been assessed by the City's Urban Forester. They are identified by number in the following chart.

Lot Size: 150,176 s.f.

Tree Density Required (round up to nearest whole number): 104

Right-of-way or parks trees impacted: Yes ☒ No ☐

Trees on adjoining property impacted: Yes ☒ No ☐

Existing grove of high retention value trees: Yes ☒ No ☐ If Yes, indicate on site plan and identify proposed impacts to grove: *one grove outside of wetland buffer and boundary is to be retained, see figure 1*

Site Plan Alterations Required: Yes ☐ No ☒ (*KZC 95.30)*

Development Standards Varied: Yes ☐ No ☒ (*KZC 95.32)*

There are 316 significant trees on the site, 96 are viable and 67 trees are proposed for retention.

Significant Trees:	High Retention Value	Moderate Retention Value	Low Retention Value (V) – viable (NV) – not viable
1	X		

2		X	
7	X		
8	X		
9			Not viable - snag
10	X		
11	X		
12			Not viable - snag
13	X		
14	X		
15	X		
16	X		
17	X		
18	X		
19	X		
20	X		
21	X		
22	X		
23	X		
101			Not viable
102			Not viable
103			Not viable
104			Not viable
105			Not viable - UDI
106			Not viable - UDI
107			Not viable - UDI
108			Not viable - UDI
109			Not viable - UDI
110		X	
111		X	
112		X	
113	X		
114	X		
115	X		
116	X		
117		X	
118			Not viable - UDI
119			Not viable
120			Not viable - UDI
121			Not viable - UDI
122			Not viable
123			Not viable - UDI
124			Not viable - UDI
125			Not viable - UDI

126			Not viable - UDI
127			Not viable - UDI
128			Not viable - UDI
129			Not viable
130			Not viable - UDI
131			Not viable - UDI
132			Not viable - UDI
133			Not viable
134			Not viable - UDI
135			Not viable - UDI
138			Not viable - UDI
139			Not viable - UDI
140			Not viable - UDI
142			Not viable
146			Not viable - UDI
147			Not viable - UDI
148			Not viable - UDI
149			Not viable - UDI
150			Not viable - UDI
151			Not viable - UDI
152			Not viable - UDI
153			Not viable - UDI
154			Not viable
155			Not viable - UDI
156			Not viable - UDI
157			Not viable
158			Not viable
159		X	
160		X	
161			Not viable
162			Not viable - UDI
163			Not viable - UDI
164			Not viable - UDI
165			Not viable
166			Not viable - UDI
167			Not viable - UDI
168			Not viable - UDI
169			Not viable - UDI
170			Not viable
171			Not viable - UDI
172			Not viable - UDI
173			Not viable - UDI
174			Not viable - UDI

175			Not viable - UDI
176			Not viable - UDI
177			Not viable - UDI
178			Not viable - UDI
179			Not viable
180			Not viable - UDI
181			Not viable - UDI
182			Not viable
183		X	
184			Not viable - UDI
185			Not viable - UDI
186			Not viable - UDI
188		X	
189		X	
190			Not viable - UDI
191			Not viable - UDI
192			Not viable
206			Not viable - UDI
208		X	
213		X	
214			Not viable - UDI
215			Not viable - UDI
216			Not viable - UDI
217			Not viable - UDI
218			Not viable - UDI
219			Not viable - UDI
223			Not viable
225			Not viable - UDI
226			Not viable - UDI
229		X	
235			Not viable
236		X	
237		X	
240		X	
241		X	
242			Not viable - UDI
243			Not viable - UDI
244			Not viable - UDI
245			Not viable - UDI
246			Not viable - UDI
247			Not viable - UDI
248			Not viable - UDI
249			Not viable - UDI

250			Not viable - UDI
251			Not viable - UDI
258		X	
259		X	
261			Not viable - UDI
262			Not viable - UDI
263			Not viable - UDI
264			Not viable - UDI
265		X	
266			Not viable - UDI
267			Not viable
268			Not viable - UDI
272		X	
273			Not viable - UDI
274			Not viable
275			Not viable - UDI
276			Not viable - UDI
277			Not viable - UDI
278			Not viable - UDI
279			Not viable
280			Not viable
281			Not viable - UDI
282			Not viable - UDI
283			Not viable - UDI
285			Not viable - UDI
287		X	
288		X	
314			Not viable - UDI
315			Not viable - UDI
319			Not viable - UDI
320			Not viable
321		X	
322			Not viable - UDI
323			Not viable - UDI
324			Not viable - UDI
325			Not viable - UDI
327			Not viable
329			Not viable
332			Not viable - UDI
333			Not viable - UDI
334			Not viable - UDI
335			Not viable - UDI
336			Not viable - UDI

337			Not viable - UDI
338		X	
340			Not viable - UDI
341		X	
342			Not viable - UDI
344			Not viable - UDI
345			Not viable - UDI
347		X	
349			Not viable - UDI
352			Not viable - UDI
356			Not viable - UDI
357			Not viable - UDI
359		X	
360			Not viable - UDI
362			Not viable - UDI
363			Not viable - UDI
365			Not viable - UDI
366			Not viable - UDI
367			Not viable - UDI
368			Not viable - UDI
369			Not viable - UDI
371			Not viable - UDI
372			Not viable - UDI
373			Not viable - UDI
374			Not viable - UDI
375			Not viable - UDI
376			Not viable - UDI
377			Not viable - UDI
378			Not viable
379			Not viable - UDI
380			Not viable - UDI
381			Not viable - UDI
382			Not viable - UDI
383			Not viable - UDI
384			Not viable - UDI
385			Not viable - UDI
386			Not viable - UDI
387			Not viable - UDI
388			Not viable
389			Not viable - UDI
390			Not viable - UDI
391			Not viable - UDI
392			Not viable - UDI

393			Not viable
394			Not viable - UDI
395			Not viable - UDI
396			Not viable - UDI
397			Not viable - UDI
398			Not viable - snag
399			Not viable
400	X		
414			Not viable - UDI
417	X		
418	X		
420		X	
422	X		
423	X		
425		X	
426	X		
427	X		
428			Not viable - UDI
429			Not viable - UDI
430			Not viable - UDI
431			Not viable - UDI
432			Not viable - UDI
433			Not viable - UDI
435			Not viable
436	X		
437	X		
438	X		
439			Not viable - UDI
440		X	
441			Not viable - UDI
443	X		
444	X		
445	X		
446	X		
447	X		
448			Not viable
449	X		
450	X		
451	X		
452			Not viable – snag
453			Not viable - snag
455			Not viable - UDI
456		X	

457	X		
458			Not viable - UDI
459			Not viable - UDI
460			Not viable - UDI
461			Not viable - UDI
462			Not viable - UDI
463			Not viable - UDI
464			Not viable - UDI
465			Not viable - UDI
466			Not viable - UDI
467		X	
468			Not viable
469			Not viable - UDI
470			Not viable - UDI
471			Not viable - UDI
472			Not viable - UDI
473			Not viable - UDI
474			Not viable - UDI
475			Not viable - UDI
476		X	
477		X	
478		X	
479		X	
480			Not viable - UDI
481			Not viable - UDI
482			Not viable - UDI
483			Not viable - UDI
484			Not viable - UDI
485			Not viable
486			Not viable - UDI
487			Not viable - UDI
488			Not viable
489	X		
490	X		
491			Not viable - snag
492	X		
493			Not viable - snag
494	X		
495	X		
496	X		
497	X		
498	X		
500	X		

503		X	
509			Not viable - UDI
510			Not viable - UDI
700		X	
701		X	
702		X	
703		X	
1001		X	
1002		X	
1003	X		
1004	X		
1005	X		
1006	X		
1007	X		

The arborist report is accurate. The plans have been updated to retain 7 additional trees beyond the initial proposal. They are trees #110, 111, 112, 188, 189, 347 and 457. The comments responded to were:

- Trees #110, 111 and 112 – trees should be retained, adjust grading slightly to ease impacts on these trees, they are young and vigorous enough to likely survive
- Tree #188 and 189 – trees should be retained; storm drain line is ~4.5′ deep and proposal includes 1′ of fill over pipe which should not detrimentally impact trees
- Tree #347 – tree should be fine to leave in place with proposed grading
- Tree #457 – lot 18 retaining wall should be moved 15 feet east to provide for limits of disturbance for this tree

I looked into saving tree #152 but at 44″ DBH it is too large of a tree to be accommodated in this space.

I recommend approving the Scrivanich IDP proposal from an urban forestry perspective. The proposal meets the intent of the tree code. The number of tree retention is greatly increased compared with other subdivision efforts by the presence of wetlands. The wetland and wetland buffer would benefit from noxious weed removal and enhancement planting pursuant to KZC 95.51 (5 & 6). I suggest conditioning the permit with the requirement to submit and execute a noxious weed removal and enhancement planting plan of the wetlands and wetland buffers to meet the intent of KZC 95.51 (5 & 6). Tree protection should be erected and maintained per the arborist report

recommendations and the tree code requirements through completion and final approval of the project.

Adjacent Property Trees:
ROW trees: no concerns at this time

Neighbor's trees: The proposed wall along the eastern property line will detrimentally impact neighbor's trees #331 and 358 with a likelihood of destabilization or significant reduction in windfirmness of these two neighbor's trees. The applicant should address how they are going to ensure the protection and preservation of these trees with their proposed development, specifically this wall.