



CITY OF KIRKLAND
Planning and Community Development Department
123 Fifth Avenue, Kirkland, WA 98033
425.587-3225 - www.kirklandwagov

ADVISORY REPORT
FINDINGS, CONCLUSIONS, AND RECOMMENDATIONS

To: Kirkland Hearing Examiner
From: David Barnes, Project Planner
 Eric R. Shields, AICP, Planning Director

Date: November 1, 2013

File: SUB13-01180

Hearing Date and Place: November 7, 2013
 City Hall Council Chamber
 123 Fifth Avenue, Kirkland

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I. INTRODUCTION

A. APPLICATION

1. Applicant: Gerald Lohnes
2. Site Location: No Address, Vacant parcel (see Attachment 1)
3. Request: Proposal to subdivide a 2.05 acre parcel into 7 lots in the RSX 7.2 Zone. The applicant is using the Low Impact Development Project code in Kirkland Zoning Code Chapter 114 and is requesting a stream buffer reduction for a Class A stream and a wetland buffer reduction for a Type II wetland (see Attachment 2)
4. Review Process: Process IIA, pursuant to KZC Section 90.100.2 and KZC Section 90.60.2.b, the Hearing Examiner conducts public hearing and makes final decision on Class A Stream Buffer Modification and Type II Wetland Buffer Modification. Pursuant to KZC 145.10, since the proposed short plat application, which would normally be reviewed through Process I, is part of a proposal that requires Process IIA review, the entire short plat proposal requires Process IIA review and approval. Pursuant to KZC 114.25, the LID Project will be reviewed concurrent and through the same review process as the underlying subdivision proposal and will require Process IIA review and approval.
5. Summary of Key Issues and Conclusions: The key issues addressed in this report are compliance with the Development Regulations, compliance with the applicable short plat requirements, Stream Buffer Modification and Wetland Buffer Modification requirements, and Low Impact Development Project requirements.

B. RECOMMENDATIONS

1. Based on Statements of Fact and Conclusions (Section II), and Attachments in this report, I/we recommend approval of this application subject to the following conditions:
2. This application is subject to the applicable requirements contained in the Kirkland Municipal Code, Zoning Code, and Building and Fire Code. It is the responsibility of the applicant to ensure compliance with the various provisions contained in these ordinances. Attachment 3, Development Standards, is provided in this report to familiarize the applicant with some of the additional development regulations. This attachment does not include all of the additional regulations. When a condition of approval conflicts with a development regulation in Attachment 3, the condition of approval shall be followed (see Conclusion II.G.2).
3. Trees shall not be removed or altered following short plat approval except as approved by the Planning Department. Attachment 3, Development Standards, contains specific information concerning tree retention requirements.
4. Prior to recording the short plat, the applicant shall:
 - a. Install the required improvements as described in Attachment 3. In lieu of completing these improvements, the applicant may submit to the Department of Public Works a security device to cover the cost of installing the improvements and guaranteeing installation within one year of the date of plat approval (see Conclusion II.E.5.b)
 - b. Record a Native Growth Protective Easement on the face of the short

- plat for the Required Common Open Space (See II.E.1).
- c. Record a Note on the face of the short plat that states that the gross floor area for each lot must not exceed 3,600 square feet (See II.E.1).
5. Prior to issuance of any permits, the applicant shall submit to the Planning Department:
 - a. A final site plan, buffer mitigation plan, and monitoring and maintenance plans consistent with the plans included in Attachment 4.
 - b. A financial security device to cover Performance of wetland/stream buffer planting plan and activities that will need to be done including stream/wetland consultant site visits, reports to the Planning Department, and any vegetation that needs to be replaced. The security shall be consistent with the standards outlined in Zoning Code section 90.145 (see Conclusion II.D.3.b).
 6. Prior to issuing a Grading Permit, the applicant shall provide engineering to ensure compliance with the requirement to show that Low Impact Development techniques have been employed to control 50% of stormwater from all new surfaces (see II.E.1).
 7. As part of the application for a Building Permit the applicant shall submit:
 - a. A site plan for each building permit that shows that the front entry porch of the dwelling unit does not encroach any closer than 5 feet into an interior front yard (see Conclusion II.E.1).
 - b. A site plan and floor plans for each building permit that show that the gross floor area for each dwelling unit does not exceed 3,600 square feet (see II.E.1).
 8. Prior to final inspection of any permits, the applicant shall:
 - a. Complete installation of the stream and wetland buffer enhancement plan, subject to inspection by the City's wetland consultant at the applicant's expense (see Conclusion II.D.3.b).
 - b. Submit the final as-built stream and wetland buffer enhancement plan for review and approval by the City's Consultant, The Watershed Company.
 - c. Provide proof of a written contract with a qualified professional who will perform the monitoring program, together with a completed contract and fees to fund review of the monitoring and maintenance activities, (i.e. inspection of plant materials, annual monitoring reports or revegetation activities) by the City's wetland consultant. Alternatively, the applicant shall provide a copy of a completed contract and fees to fund completion of the monitoring program by the City's wetland consultant (see Conclusion II.D.3.b).
 - d. Provide proof of a written contract to cover maintenance activities outlined in the buffer report (see Conclusion II.D.3.b).

II. FINDINGS OF FACT AND CONCLUSIONS

A. SITE DESCRIPTION

1. Site Development and Zoning:

a. Facts:

- (1) Size: 91,118 square feet (2.05 acres). The site is irregularly shaped with approximately 375 feet of frontage on Slater Avenue NE.
- (2) Land Use: The site is currently a horse pasture and undeveloped.
- (3) Zoning: Single Family Residential, RSX 7.2 zone with a minimum lot size of 7,200 square feet. Pursuant to KZC 114.15 (Low Impact Development), individual lot sizes must be at least 50% of the minimum lot size for the underlying zone. Lot sizes are proposed as follows:

Lot 1: 3,994 square feet

Lot 2: 5,303 square feet

Lot 3: 4,345 square feet

Lot 4: 4,413 square feet

Lot 5: 4,465 square feet

Lot 6: 5,645 square feet

Lot 7: 3,994 square feet

- (4) Terrain: The property slopes downward from the eastern property line (adjacent to Slater Avenue NE) to the west at an approximate slope of 8 percent.
- (5) Vegetation: There are 47 significant trees on the property that are primarily located in a sensitive area buffer. Within the understory of these mature western red cedar and alder trees, the vegetation consists of salmonberry, creeping buttercup and occasional reed canarygrass. The remaining vegetation to the west consists of lawn.
- (6) Stream and Wetland: A Class A Stream and a Type II Wetland (Forbes Creek and a tributary to Forbes Creek) exists on the Western portion of the property. The streams and wetlands are part of the Forbes Creek Basin, which is a primary basin and requires a 75 foot buffer and a ten foot buffer setback. The applicant submitted a stream and wetland report on August 20, 2012 by JS Jones & Associates (See Attachment 5) and the Watershed Company, reviewed the applicants report (see Attachment 6) and agreed with the ratings of the streams and wetlands.

- b. Conclusions: Size, land use, zoning, terrain and vegetation are not constraining factors in the consideration of this application. The minimum lots size requirements are met with this proposal. The stream and wetland are constraining factors. The applicant has requested a Stream and Wetland Buffer Modification (see Section II.E.3).

2. Neighboring Development and Zoning:
 - a. Facts: The subject site is bordered by the following uses:
 - North: To the north is an area zoned RSX 7.2 and developed with single family homes.
 - South: The area is zoned RSX 7.2 and is developed with single family homes.
 - East: The area is zoned RSX 7.2 and is developed with single family homes
 - West: The area is zoned RSX 7.2 and is developed with a horse arena and paddocks that is directly adjacent to Interstate 405.
 - b. Conclusion: The neighboring development and zoning are not constraining factors in this application.

B. PUBLIC COMMENT

The public comment period for the proposed short plat extended from August 29, 2013 to September 16, 2013. Two public comments were received during the comment period. The comments include:

1. Concerns about the suitability of the site for 7 new homes (See Attachment 7).

Staff Response: The subject property is zoned for single family homes and the density of seven lots is supported by the Comprehensive Plan, Kirkland Municipal Code and the Kirkland Zoning Code. This application is being reviewed under all applicable regulations.

2. A comment was received from the Muckleshoot Indian Tribe Fisheries Division (see Attachment 8). This comment states that juvenile Coho Salmon have been observed up to the I-405 culvert on Forbes Creek and the report provided by the applicant did not provide information about the fish bearing status of the Forbes Creek on the subject property. Concerns were also expressed about the loss of the Forbes Creek buffer, lack of discussion about where and how the stormwater from the site is being discharged, and how a loss of stream buffer will affect the function of the stream.

Staff Response: The stream was determined to be a Class A stream by both the applicant's consultant, JS Jones & Associates and the City's consultant, The Watershed Company (see Attachments 5 and 6). In 1998, the Kirkland Streams, Wetlands, and Wildlife Area Study was completed and identified the onsite stream as salmon bearing. This is also shown graphically on the City's Sensitive Areas Map. The Kirkland Zoning Code definition of Class A stream assumes it has the capability to be salmon bearing. See Sections II.D.3, below for further discussion of code requirements related to the buffer modification.

C. STATE ENVIRONMENTAL POLICY ACT (SEPA) and C ONCURRENCY

- a. Facts:
 - (1) WAC 197-11-800 states that the approval of short plats is exempt except on lands covered by water.
 - (2) The proposal includes a 7 lot short plat. The applicant is not proposing any development activity in any stream or wetland.

- (3) Lands covered by water is defined in WAC 197-11-756 as lands underlying the water areas of the state below the ordinary high water mark, including salt waters, tidal waters, estuarine waters, natural water courses, lakes, ponds, artificially impounded waters, marshes, and swamps.
 - (4) Concurrency is not required if a proposal is exempt from SEPA review.
- b. Conclusion: The applicant's proposal is exempt from SEPA review and therefore also exempt from Concurrency.

D. APPROVAL CRITERIA

1. SHORT PLAT APPROVAL CRITERIA

- a. Facts: Municipal Code section 22.20.140 states that the Planning Director may approve a short subdivision only if:
 - (1) There are adequate provisions for open spaces, drainage ways, rights-of-way, easements, water supplies, sanitary waste, power service, parks, playgrounds, and schools; and
 - (2) It will serve the public use and interest and is consistent with the public health, safety, and welfare. The Planning Director shall be guided by the policy and standards and may exercise the powers and authority set forth in RCW 58.17.
- b. Conclusions: The proposal complies with Municipal Code section 22.20.140. It is consistent with the Comprehensive Plan. With the recommended conditions of approval, it is consistent with the Zoning Code and Subdivision regulations and there are adequate provisions for open spaces, drainage ways, rights-of-way, easements, water supplies, sanitary waste, power service, parks, playgrounds, and schools. It will serve the public use and interest and is consistent with the public health, safety, and welfare because it will add housing stock to the City of Kirkland in a manner that is consistent with applicable development regulations.

2. GENERAL ZONING CODE CRITERIA

- a. Fact: Zoning Code section 150.65.3 states that a Process IIA application may be approved if:
 - (1) It is consistent with all applicable development regulations and, to the extent there is no applicable development regulation, the Comprehensive Plan; and
 - (2) It is consistent with the public health, safety, and welfare.
- b. Conclusion: The proposal complies with the criteria in section 150.65.3. It is consistent with all applicable development regulations (see Sections II.E) and the Comprehensive Plan (see Section II.F). In addition, it is consistent with the public health, safety, and welfare because it enhances and protects a stream and wetland which contribute to higher water quality standards.

3. BUFFER MODIFICATION FOR A TYPE II WETLAND AND A CLASS A STREAM

a. Facts:

- (1) Currently, the 10 to 30 feet of buffer closest to the stream is forested. Outside of that, the area is cleared and vegetated with a mix of pasture grasses and herbaceous volunteer species. This area has been used as a horse pasture for several decades according to the current owner.
- (2) KZC Section 90.60.2.a.2 states that a wetland/stream buffers cannot be reduced by more than one-third of the standard buffer width with enhancement. The applicant is proposing a reduction in the standard 75 foot Type II wetland buffer by as much as one-third (leaving a minimum of 50 feet of buffer remaining). The applicant is also proposing to modify the standard 75 foot buffer from a Class A stream by as much as one-third (50 feet). (See Attachment 4)
- (3) As mitigation for 11,976 of buffer reduction, 26,166 square feet of enhanced wetland/stream buffer is proposed.
- (4) Zoning Code Sections 90.60.2.b and 90.100.2 establishes nine decisional criteria for approving an improvement in a Type II wetland buffer or an environmentally sensitive area buffer for a stream. The Applicant's response to the criteria is included in Attachment 4
- (5) Attachment 9 includes two review letters from the City's wetland and stream consultant, The Watershed Company. The Lohnes Property proposal went through several revisions in order to satisfy the City's consultant that the standards for the wetland/stream buffer modification were met. Both of these letters are attached, demonstrating that the City's wetland/stream consultant has reviewed and recommended approval of the buffer reduction plan.

b. Conclusions: Pursuant to the attachments included with this report, which include the proposed site plan, buffer mitigation plan, and monitoring and maintenance plans (see Attachment 4), and the review letters from The Watershed Company (see Attachment 9), the proposed development is consistent with the above criteria, subject to the following conditions:

- (1) The enhancement/mitigation plan should be completed prior to the final inspection of any grading development activity.
- (2) The final as-built stream/wetland enhancement plan drawings should include all stream/wetland buffer enhancement areas where mitigation was implemented.

- (3) The applicant should submit proof of a written contract with a qualified professional who will perform the monitoring and maintenance program outlined in Attachment 4.
- (4) The final inspection of the buffer mitigation installation and subsequent maintenance and monitoring work should be reviewed by the City's wetland consultant, and the cost of which should be borne by the applicant.

E. DEVELOPMENT REGULATIONS

1. LOW IMPACT DEVELOPMENT PROJECT

The following is a review, in a checklist format, of compliance with the parameters for Low Impact Development Projects in KZC 114 and KMC 22.28.041.

Complies as proposed	Complies as conditioned	Low Impact Development Parameters
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Permitted Housing Types <input checked="" type="checkbox"/> Detached Dwelling Units <input type="checkbox"/> Accessory Dwelling Units <input type="checkbox"/> 2/3 Unit Homes
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Minimum Lot Size must be at least 50% of the minimum lot size for the underlying zone.
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Must include at least 4 lots
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Maximum Density is not greater than underlying Use Zone Chart, plus a maximum 10% density bonus
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Low Impact Techniques are employed to control stormwater runoff from 50% of all hard surfaces.
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Location of Project is not allowed in PLA 16, PLA 3C, RSA1, RSA8, RS 35 and RSX 35 in the Bridle Trails neighborhood, and the Holmes Point Overlay zone.
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Must provide two parking stalls per detached dwelling unit
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Ownership Structure <input checked="" type="checkbox"/> Subdivision <input type="checkbox"/> Condominium
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Must meet minimum 20 foot setback from all exterior front property lines and 10 foot setback from all other exterior property lines
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Must meet following minimum required yards from all property lines internal to the project: Front: 10 feet Side and Rear: 5 feet Front yard may be reduced to 5 feet if required rear yard is increased by same amount as reduction

<input checked="" type="checkbox"/>	<input type="checkbox"/>	Front Entry Porches must comply with KZC 115.115.3(n), except that front entry porches may extend to within 5 feet of the interior front yard
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Garage Setbacks must comply with KZC 115.43, except attached garages on front façade of dwelling unit facing internal front property line must only be set back 18 feet from internal front property line
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Maximum Lot Coverage for entire site must not exceed the maximum lot coverage percentage of underlying zone
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Must provide at least 40% of site area as common open space, protected by a Landscape Greenbelt Easement
<input type="checkbox"/>	<input checked="" type="checkbox"/>	The Maximum Floor area must not exceed 50% of the minimum lot size for the underlying zone

2. Maximum Development Potential

a. Facts:

- (1) Zoning Code Section 90.135 provides that the maximum potential number of dwelling units for a site which contains a wetland, stream, minor lake, or their buffers shall be the buildable area in square feet divided by the maximum lot area per unit as specified in KZC Chapters 15 through 60, plus the required sensitive area buffer in square feet divided by the minimum lot area as specified in KZC chapters 15 through 60, multiplied by the development factor from Subsection 2 of KZC Section 90.135.
- (2) The gross site area of the subject site is 89,296 square feet. The gross site area less the 15,766 square foot stream and wetland and the 43,515 square foot stream and wetland buffer provides 30,015 of net buildable area.
- (3) The maximum potential number of units allowed based on the buildable area only is only 4.16 dwelling units.
- (4) Based on KZC Section 90.135.2, the allowable development factor for the buffer is 60%. The maximum potential number of units based on the sensitive area is 3.63 units. The maximum potential number of units allowed is 7 units.

b. Conclusion: The proposal for 7 units conforms to the maximum development potential requirements of KZC Section 90.135.

3. Lot Dimension

a. Facts:

- (1) Municipal Code section 22.28.050 states that lots must be of a shape so that reasonable use and development may be made of the lot. Generally, the depth of the lot should not be more than twice the width of the lot. In no case should a lot be less than fifteen feet in width where it abuts the right-of-way, vehicular access easement or tract providing vehicular access to subject lot. For lots smaller than 5,000 square feet in size located in

"low density zones" as defined in the Zoning Code, the lot width at the back of the required front yard shall be no less than 50' (unless the lot is a flag lot or a covenant is signed prior to plat recording ensuring that the garage will be located at the rear of the lot).

- (2) The proposed lots range in size from 3,994 to 5,645 square feet.
- (3) The lot width at the back of the required front yards is 58.24 feet.

b. Conclusion: The proposal complies with the lot and dimension regulations as set forth in Municipal Code section 22.28.050

5. Bonds and Securities

a. Facts:

- (1) Municipal Code section 22.32.080 states that in lieu of installing all required improvements and components as part of a plat or short plat, the applicant may propose to post a bond for a period of one year to ensure completion of these requirements within one year of the decision approving the plat or short plat.
- (2) Zoning Code section 175.10.2 establishes the circumstances under which the City may consider the use of a performance security in lieu of completion of certain site work prior to occupancy. The City may consider a performance security only if: the inability to complete work is due to unavoidable circumstances beyond the control of the applicant; there is certainty that the work can be completed in a reasonable period of time; and occupancy prior to completion will not be materially detrimental to the City or properties adjacent to the subject site.
- (3) Zoning Code section 90.145 establishes the requirement for the applicant to submit a performance or maintenance bond to ensure compliance with any aspect of the Drainage Basin regulations contained in Chapter 90 of the Kirkland Zoning Code or any decision or determination made pursuant to the chapter.

b. Conclusions:

- (1) Site and right-of-way improvements required as a result of the plat should be completed prior to recording the short plat, unless a security device to cover the cost of installing the improvements and guaranteeing installation within one year of the date of plat approval is submitted.
- (2) In order to ensure timely completion of all required site and right-of-way improvements, such improvements should be completed prior to occupancy, unless the applicant can demonstrate compliance with the criteria in Zoning Code section 175.10.2.
- (3) In order to ensure that the buffer enhancement work is completed in compliance with the approved plans, , the applicant should submit a financial security device to the Planning Department to cover the cost of completing the improvements.

- (4) In order to ensure continued compliance with the stream/wetland buffer enhancement plan, prior to final inspection of any permits, the applicant should submit to the Planning Department a financial security device to cover all monitoring and maintenance activities that will need to be done including consultant site visits, reports to the Planning Department, and any vegetation that needs to be replaced.

6. Natural Features - Significant Vegetation

a. Facts:

- (1) Regulations regarding the retention of trees can be found in Chapter 95 of the Kirkland Zoning Code. Attachment 10 shows the location, tree number, and general health of the trees, as assessed by the applicant's arborist.
- (2) The applicant is proposing a phased review of the short plat pursuant to KZC 95.30.6.a.
- (3) See Attachment 3, Development Standards, for information on the City's review of the Arborist report as well as tree preservation requirements.
- (4) All of the trees are outside of the proposed developed area and should be able to be retained.

b. Conclusions:

The applicant has provided a Tree Retention Plan with the short plat application and this plan has been reviewed by the City's Arborist. The applicant should retain all viable trees during the construction of plat improvements and residences and comply with the specific recommendations of the City's arborist.

F. COMPREHENSIVE PLAN

1. Fact: The subject property is located within the North Rose Hill neighborhood. Figure NRH-4 on page XV.F-11 designates the subject property for Low Density Residential, 6 dwelling Units per acre (see Attachment 11).
2. Conclusion: The proposed use of the subject property is consistent with the Comprehensive Plan.

G. DEVELOPMENT STANDARDS

1. Fact: Additional comments and requirements placed on the project are found on the Development Standards, Attachment 3.
2. Conclusion: The applicant should follow the requirements set forth in Attachment 3.

III. SUBSEQUENT MODIFICATIONS

Modifications to the approval may be requested and reviewed pursuant to the applicable modification procedures and criteria in effect at the time of the requested modification.

IV. APPEALS AND JUDICIAL REVIEW

The following is a summary of the deadlines and procedures for and appeals. Any person wishing to file or respond to an appeal should contact the Planning Department for further procedural information.

A. APPEALS

1. Appeal to City Council:

Section 150.80 of the Zoning Code allows the Hearing Examiner's decision to be appealed by the applicant and any person who submitted written or oral testimony or comments to the Hearing Examiner. A party who signed a petition may not appeal unless such party also submitted independent written comments or information. The appeal must be in writing and must be delivered, along with any fees set by ordinance, to the Planning Department by 5:00 p.m., _____, fourteen (14) calendar days following the postmarked date of distribution of the Hearing Examiner's decision on the application.

B. JUDICIAL REVIEW

Section 150.130 of the Zoning Code allows the action of the City in granting or denying this zoning permit to be reviewed in King County Superior Court. The petition for review must be filed within 21 calendar days of the issuance of the final land use decision by the City.

V. LAPSE OF APPROVAL

Under KZC150.135:

For final approvals under this chapter issued on or before December 31, 2014, the applicant must begin construction or submit to the City a complete building permit application for the development activity, use of land or other actions approved under this chapter within seven (7) years after the final approval of the City of Kirkland on the matter, or the decision becomes void; provided, however, that in the event judicial review is initiated per KZC [150.130](#), the running of the seven (7) years is tolled for any period of time during which a court order in said judicial review proceeding prohibits the required development activity, use of land, or other actions. For final approval under this chapter issued on or after January 1, 2015, the applicant must begin construction or submit to the City a complete building permit application for the development activity, use of land or other actions approved under this chapter within five (5) years after the final approval of the City of Kirkland on the matter, or the decision becomes void; provided, however, that in the event judicial review is initiated per KZC [150.130](#), the running of the five (5) years is tolled for any period of time during which a court order in said judicial review proceeding prohibits the required development activity, use of land, or other actions.

For final approvals under this chapter issued on or before December 31, 2014, the applicant must substantially complete construction for the development activity, use of land, or other

actions approved under this chapter and complete the applicable conditions listed on the notice of decision within nine (9) years after the final approval on the matter, or the decision becomes void. For final approvals under this chapter issued on or after January 1, 2015, the applicant must substantially complete construction for the development activity, use of land, or other actions approved under this chapter and complete the applicable conditions listed on the notice of decision within seven (7) years after the final approval on the matter, or the decision becomes void.

For development activity, use of land, or other actions with phased construction, lapse of approval may be extended when approved under this chapter and made a condition of the notice of decision.

Under KMC 22.20.370 Short plat documents – Recordation – Time limits

The short plat must be recorded with King County within seven (7) years of the date of approval or the decision becomes void; provided, however, that in the event judicial review is initiated, the running of the seven (7) years is tolled for any period of time during which a court order in said judicial review proceeding prohibits the recording of the short plat.

Date of approval" means the date of approval by the City of Kirkland, or the termination of review proceedings if such proceedings were initiated pursuant to RCW 90.58.180 and WAC 173-27-220.

V. APPENDICES

Attachments 1 through 11 are attached.

1. Vicinity Map
2. Applicant's Development Proposal
3. Development Standards
4. Stream and Wetland Buffer Modification Report/Plans prepared by macwhinney Environmental Consulting, LLC dated 09/12/13
5. Stream and Wetland Determination Report prepared by JS Jones & Associates dated 08/20/12
6. Watershed Company Acceptance Letter for Stream and Wetland Determination dated 09/14/12
7. Public Comment #1
8. Public Comment #2
9. Watershed Revision Letter dated 08/28/13 and Final Acceptance Letter for Buffer Reduction Proposal dated 09/27/13
10. Arborist Report prepared by Favero Greenleaf dated 08/13/13
11. North Rose Hill Land Use Map

VI. PARTIES OF RECORD

Applicant: Gerald Lohnes, 10239 Slater Avenue NE Kirkland, WA 98033
Parties of Record
Department of Planning and Community Development
Department of Public Works
Department of Building and Fire Services

A written decision will be issued by the Hearing Examiner within eight calendar days of the date of the open record hearing.

**LOHNES SHORT PLAT
SUB13-01180**

NE 106TH ST

NE 105TH ST

SUBJECT PROPERTY

**PUD
Heather Glen**

P

NE 100TH P.

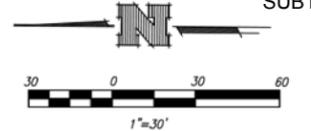
SLATER AVE NE



d

LOHNES PRELIMINARY SHORT PLAT

A PORTION OF THE NE 1/4 & SE 1/4 OF THE SW 1/4, SECTION 33, TWP. 26 N., RANGE 5 EAST., W.M.



PROJECT DATA:

OWNER / APPLICANT: JERRY & LOIS LOHNES
10239 SLATER AVE
KIRKLAND, WA 98033

AGENT: JIM HART & ASSOCIATES
220 6TH ST.
KIRKLAND, WA 98033

PROJECT LOCATION: 10239 SLATER AVE
KIRKLAND, WA 98033

VERTICAL DATUM: NAVD 88

HORIZONTAL DATUM: NAD 83/91

BENCHMARK: COOK MONUMENT 31, ELEVATION 259.02
INTERSECTION OF 124TH AVE NE & NE 100TH ST.

LEGAL DESCRIPTION:
LOT J, KIRKLAND LOT LINE ALTERATION NO. LLA-06-00006 AS RECORDED UNDER RECORDING NUMBER 20070215900001

PROPOSED LOTS:

AREA:

TOTAL AREA	= 91,118 SQ. FT ±
QUIT CLAIM DEED	= 1,822 SQ. FT ±
TOTAL AREA MINUS THE QUIT CLAIM	= 89,296 SQ. FT
LOT 1 AREA	= 3,994 SQ. FT ±
LOT 2 AREA	= 4,080 SQ. FT ± (5,303 SQ. FT ±)
LOT 3 AREA	= 4,345 SQ. FT ±
LOT 4 AREA	= 4,413 SQ. FT ±
LOT 5 AREA	= 4,465 SQ. FT ±
LOT 6 AREA	= 5,645 SQ. FT ±
LOT 7 AREA	= 3,994 SQ. FT ±
PRIVATE ROAD AREA	= 4,530 SQ. FT ±
OPEN SPACE AREA	= 35,903 SQ. FT ±
SENSITIVE AREA	= 15,768 SQ. FT ± (WETLAND & STREAMS)
UTILITY TRACT AREA	= 1,005 SQ. FT ±
ACCESS & UTILITY EASEMENT AREA	= 1,223 SQ. FT ±

TAX PARCEL NO.:

6639900055

ZONING: RSX 7.2

WATER: CITY OF KIRKLAND

SEWER: CITY OF KIRKLAND

PHONE: AT&T

SCHOOLS: LAKE WASHINGTON SCHOOL DISTRICT #414

GAS/ELECTRIC: PUGET SOUND ENERGY CO.

SANITARY SEWER NOTES:

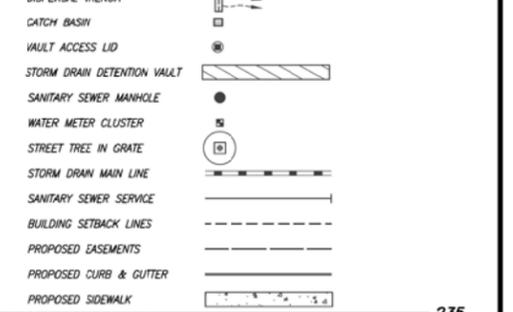
LOTS 4 & 5 SHALL PUMP SANITARY WASTE TO THE PROPOSED SSMH. FROM THAT POINT, IT WILL GRAVITY FLOW TO SS MAIN IN SLATER AVE. 3 EXISTING SS STUBS ARE SHOWN.

LOW IMPACT DEVELOPMENT NOTES:

THE APPLICANT PROPOSES TO REDUCE THE EXISTING 75' BUFFER A MAXIMUM OF 33% OR 25'. LOW IMPACT DEVELOPMENT TECHNIQUES TO BE USED INCLUDE BUT ARE NOT LIMITED TO:

- DISPERSAL TRENCHES FOR LOTS 3, 4, 5 & 6
- A 16'x50' VAULT FOR STORMWATER FROM THE PRIVATE ROAD & LOTS 1, 2, & 7. THE PROPOSED VAULT WILL DRAIN TO A LARGE DISPERSAL TRENCH SO THAT THE WATER CAN BE SPREAD ACROSS A VEGETATED BUFFER PRIOR TO REACHING ANY SENSITIVE AREA.
- ALL DRIVEWAYS SHALL BE PAVER BLOCKS OVER CRUSHED ROCK FILL TO ENCOURAGE INFILTRATION.

LEGEND (PROPOSED):



HAZARDOUS PIPELINE:

NO KNOWN HAZARDOUS PIPELINE EXISTS ON SITE OR WITHIN 500 FEET OF THE PROPERTY.

TREE RETENTION:

A = ALDER
C = CEDAR
CW = COTTONWOOD
M = MAPLE
F = FIR
H = HEMLOCK

RETAIN

REMOVE

47 TREES TOTAL
3 TREES TO BE REMOVED
TREES RETAINED = 93.6%

LOHNES SHORT PLAT DENSITY & OPEN SPACE CALCULATIONS:

- TOTAL AREA 89,296 SQ. FT
- SENSITIVE AREA 15,768 SQ. FT
- 75' BUFFER 43,515 SQ. FT
- BUILDABLE AREA 30,015 SQ. FT

DENSITY CALCULATIONS PER CHAPTER 90.135 OF ZONING CODE:

- A. BUILDABLE AREA DIVIDED BY THE UNDERLYING ZONE (7200)
- $$\frac{30,015}{7200} = 4.1687 \text{ BUT YOU MUST SUBTRACT OUT THE PRIVATE ROAD AREA}$$
- $$\frac{30,015 - 4,530}{7200} = 3.5396$$
- B. BUFFER ZONE = 6.0575
- $$\frac{43,515}{7200} = 6.04375$$
- C. PERCENT OF SITE IN BUFFER
- $$\frac{43,515 \text{ SF}}{89,296 \text{ SF}} = 48.73\%$$
- PER THE CHART IN CH. 90 OF CODE, 49% IS A VALUE OF .60

DENSITY = (B x C) + A

$$6.04375 \times .60 + 3.5396 = 7.1658$$

ROUNDING UP DOES NOT APPLY

$$3.6263 + 3.5396 = 7.1658$$

APPLYING THE DENSITY BONUS OF 1.1 = 7.1658 x 1.1 = 7.88

8 UNITS ARE ALLOWABLE. 7 UNITS ARE PROPOSED.

OPEN SPACE CALCULATIONS:

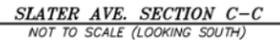
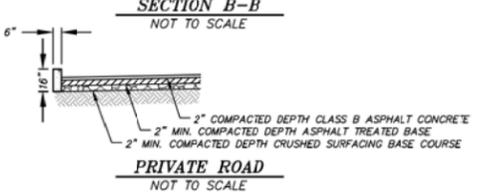
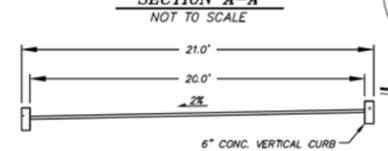
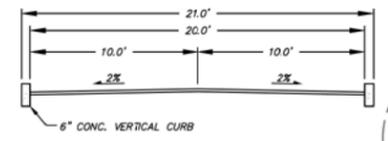
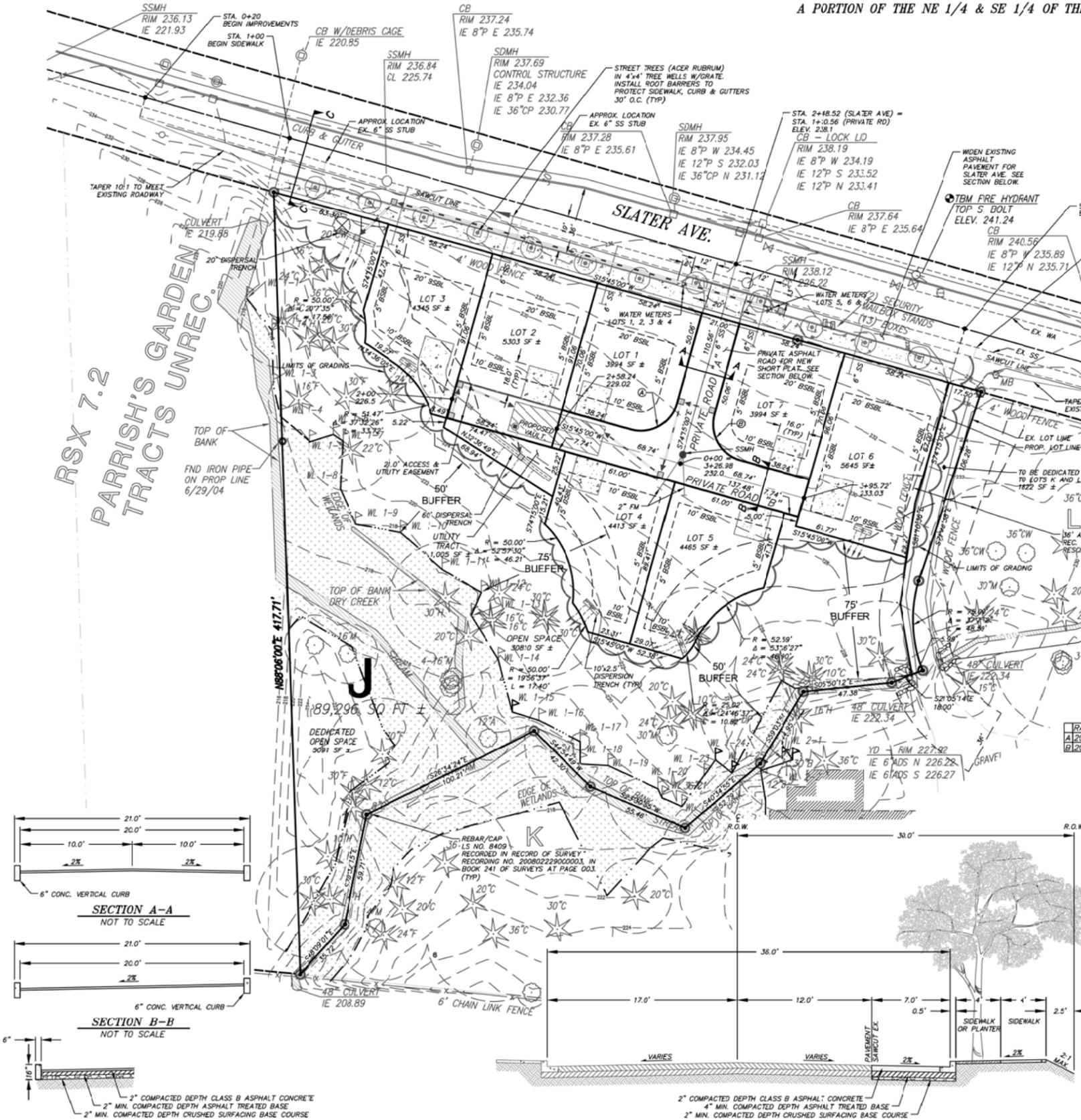
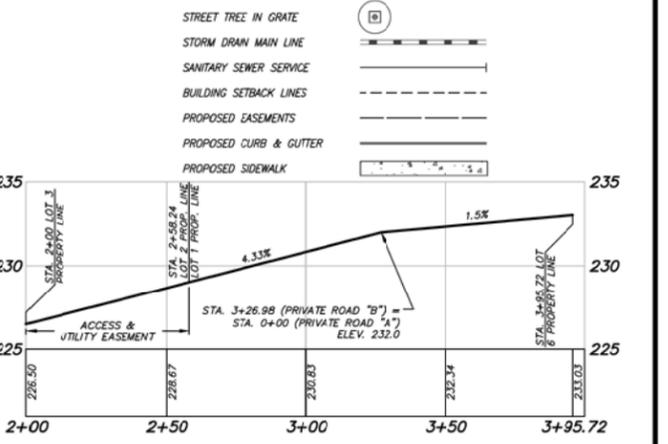
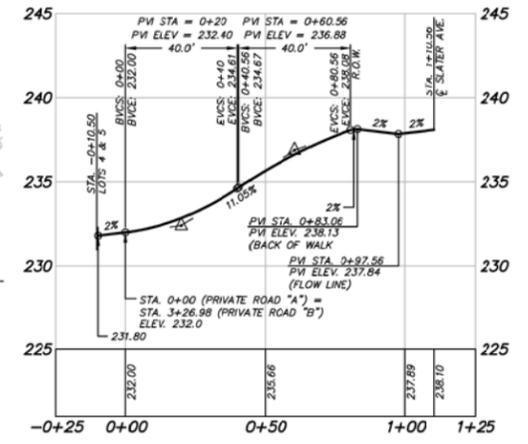
THE REQUIRED OPEN SPACE IS 40% OF THE TOTAL SITE

$$89,296 \text{ SF} \times .40 = 35,718.4 \text{ OR } 35,718 \text{ SF}$$

PROPOSED OPEN SPACE = 35,903 SF

CURVE DATA

RADIUS/DELTA	LENGTH/LOT
A 20.00' / 90.00'	31.42' / 1
B 20.00' / 90.00'	31.42' / 7



DESIGNED: JER
DRAWN: BM
CHECKED: JER/JAH
DATE: 7/7/13

CLIENT: JERRY LOHNES
10239 SLATER AVE NE, KIRKLAND, WA 98033

JIM HART & ASSOCIATES, LLC
SURVEYORS
P.O. BOX 2369 KIRKLAND, WASHINGTON 98083 (425) 822-4171

SHEET TITLE: LOHNES PRELIMINARY SHORT PLAT
10239 SLATER AVE NE
KIRKLAND, WA
NE & SE 1/4, SW 1/4, SEC 33, T26N, R5E, W.M.

SCALE: 1" = 30'
JOB NO.: 12-37
SHEET: 1
OF: 1



CITY OF KIRKLAND
Planning and Community Development Department
123 Fifth Avenue, Kirkland, WA 98033
425.587-3225 ~ www.kirklandwa.gov

DEVELOPMENT STANDARDS LIST

File: SUB13-01180

Lohnes Short Plat

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. During the review of the short plat, all proposed improvements were unknown. Therefore KZC Section 95.30 (6)(a) – Phased Review applies in regards to tree retention. There are 10 significant trees on the developable portion of the site, of which 10 are viable. These trees have been assessed by the City’s Urban Forester. They are identified by number in the following chart.

Significant Trees:	High Retention Value	Moderate Retention Value	Low Retention Value (V) – viable (NV) – not viable
1	✓		
2	✓		
3	✓		
4	✓		
5	✓		
6	✓		
9	✓		
10	✓		

Tree #1 may be required to remove due to construction impacts from the level drainage spreader coming from the ROW drainage which may destabilize the tree.

No trees are to be removed with an approved short plat or subdivision permit. Based on the approved Tree Retention Plan, the applicant shall retain and protect all viable trees throughout the development of each single family lot except for those trees allowed to be removed for the installation of the plat infrastructure improvements with an approved Land Surface Modification permit. Subsequent approval for tree removal is granted for the construction of the house and other associated site improvements with a required Building Permit. The Planning Official is authorized to require site plan alterations to retain High Retention value trees at each stage of the project. In addition to retaining viable trees, new trees may be required to meet the minimum tree density per KZC Section 95.33.

22.32.010 Utility System Improvements. All utility system improvements must be designed and installed in accordance with all standards of the applicable serving utility.

22.32.030 Stormwater Control System. The applicant shall comply with the construction phase and permanent stormwater control requirements of the Municipal Code.

22.32.050 Transmission Line Undergrounding. The applicant shall comply with the utility lines and appurtenances requirements of the Zoning Code.

22.32.060 Utility Easements. Except in unusual circumstances, easements for utilities should be at least ten feet in width.

27.06.030 Park Impact Fees. New residential units are required to pay park impact fees prior to issuance of a building permit. Please see KMC 27.06 for the current rate. Exemptions and/or credits may apply pursuant to KMC 27.06.050 and KMC 27.06.060. If a property contains an existing unit to be removed, a "credit" for that unit shall apply to the first building permit of the subdivision.

Prior to Recording:

22.20.362 Short Plat - Title Report. The applicant shall submit a title company certification which is not more than 30 calendar days old verifying ownership of the subject property on the date that the property owner(s) (as indicated in the report) sign(s) the short plat documents; containing a legal description of the entire parcel to be subdivided; describing any easements or restrictions affecting the property with a description, purpose and reference by auditor's file number and/or recording number; any encumbrances on the property; and any delinquent taxes or assessments on the property.

22.20.366 Short Plat - Lot Corners. The exterior short plat boundary and all interior lot corners shall be set by a registered land surveyor. If the applicant submits a bond for construction of short plat improvements and installation of permanent interior lot corners, the City may allow installation of temporary interior lot corners until the short plat improvements are completed.

22.20.390 Short Plat - Improvements. The owner shall complete or bond all required right-of-way, easement, utility and other similar improvements.

22.24.050 Innovative or Unusual Plat. The recorded plat or short plat must clearly reflect that each lot in the plat or short plat must be used, developed or maintained consistent with the entire approved plat or short plat. Any proposed change to the use, development or existence of any of the lots or tracts in the plat or short plat will not be approved unless the entire plat or short plat is subject to City review and modification.

22.26.460 Plat Alteration - Lot Corners. The exterior plat boundary and all interior lot corners shall be set by a registered land surveyor.

22.26.470 Plat Alteration - Title Report. The applicant shall submit a title company certification which is not more than 30 calendar days old verifying ownership of the subject property on the date that the property owner(s) (as indicated in the report) sign(s) the plat

alteration documents.

22.26.480 Plat Alteration - Improvements. The owner shall complete or bond all required right-of-way, easement, utility and other similar improvements.

22.26.680 Plat Vacation - Lot Corners. The exterior plat boundary and all interior lot corners shall be set by a registered land surveyor.

22.26.690 Plat Vacation - Title Report. The applicant shall submit a title company certification which is not more than 30 calendar days old verifying ownership of the subject property on the date that the property owner(s) (as indicated in the report) sign(s) the plat vacation documents..

22.26.700 Plat Vacation - Improvements. The owner shall complete or bond all required right-of-way, easement, utility, and other similar improvements.

22.28.050 Lot Dimensions. The owner of the property shall sign a covenant to ensure that the garage will be located at the rear of any lot which is smaller than 5,000 square feet in a low density zone, has a lot width at the back of the required front yard less than 50 feet, and is not a flag lot.

22.32.020 Water System. The applicant shall install a system to provide potable water, adequate fire flow and all required fire-fighting infrastructure and appurtenances to each lot created.

22.32.040 Sanitary Sewer System. The developer shall install a sanitary sewer system to serve each lot created.

22.32.080 Performance Bonds. In lieu of installing all required improvements and components as part of a plat or short plat, the applicant may propose to post a bond, or submit evidence that an adequate security device has been submitted and accepted by the service provider (City of Kirkland and/or Northshore Utility District), for a period of one year to ensure completion of these requirements within one year of plat/short plat approval.

Prior to occupancy:

22.32.020 Water System. The applicant shall install a system to provide potable water, adequate fire flow and all required fire-fighting infrastructure and appurtenances to each lot created.

22.32.040 Sanitary Sewer System. The developer shall install a sanitary sewer system to serve each lot created.

22.32.090 Maintenance Bonds. A two-year maintenance bond may be required for any of the improvements or landscaping installed or maintained under this title.

ZONING CODE STANDARDS

85.25.1 Geotechnical Report Recommendations. The geotechnical recommendations contained in the report by Geo Group NW dated July 26, 2013 shall be implemented.

85.25.3 Geotechnical Professional On-Site. A qualified geotechnical professional shall be present on site during land surface modification and foundation installation activities.

90.45 Wetlands and Wetland Buffers. No land surface modification may take place and no improvement may be located in a wetland or within the environmentally sensitive area buffers for a wetland, except as specifically provided in this Section.

90.50 Wetland Buffer Fence. Prior to development, the applicant shall install a six-foot high construction phase fence along the upland boundary of the wetland buffer with silt screen fabric installed per City standard. The fence shall remain upright in the approved location for the duration of development activities. Upon project completion, the applicant shall install

between the upland boundary of all wetland buffers and the developed portion of the site, either 1) a permanent 3 to 4 foot tall split rail fence, or 2) permanent planting of equal barrier value.

90.55 Monitoring and Maintenance of Wetland Buffer Modifications: Modification of a wetland buffer will require that the applicant submit a 5-year monitoring and maintenance plan consistent with the criteria found in 95.55 and which is prepared by a qualified professional and reviewed by the City's wetland consultant. The cost of the plan and the City's review shall be borne by the applicant.

90.80 Streams. No land surface modification may take place and no improvements may be located in a stream except as specifically provided in this Section.

90.90 Stream Buffers. No land surface modification may take place and no improvement may be located within the environmentally sensitive buffer for a stream, except as provided in this Section.

90.95 Stream Buffer Fence. Prior to development, the applicant shall install a six-foot high construction phase fence along the upland boundary of the entire stream buffer with silt screen fabric installed per City standard. The fence shall remain upright in the approved location for the duration of development activities. Upon project completion, the applicant shall install between the upland boundary of all stream buffers and the developed portion of the site, either 1) a permanent 3 to 4 foot tall split rail fence, or 2) permanent planting of equal barrier value.

90.100.3 Monitoring and Maintenance of Stream Buffer Modifications: Modification of a stream buffer will require that the applicant submit a 5-year monitoring and maintenance plan consistent with KZC section 95.55. This plan shall be prepared by a qualified professional and reviewed by the City's wetland consultant. The cost of the plan and the City's review shall be borne by the applicant.

90.125 Frequently Flooded Areas. No land surface modification may take place and no improvements may be located in a frequently flooded area, except as specifically provided in Chapter 21.56 of the Kirkland Municipal Code.

95.51.2.a Required Landscaping. All required landscaping shall be maintained throughout the life of the development. The applicant shall submit an agreement to the city to be recorded with King County which will perpetually maintain required landscaping. Prior to issuance of a certificate of occupancy, the proponent shall provide a final as-built landscape plan and an agreement to maintain and replace all landscaping that is required by the City.

95.44 Parking Area Landscape Islands. Landscape islands must be included in parking areas as provided in this section.

95.45 Parking Area Landscape Buffers. Applicant shall buffer all parking areas and driveways from the right-of-way and from adjacent property with a 5-foot wide strip as provided in this section. If located in a design district a low hedge or masonry or concrete wall may be approved as an alternative through design review.

95.50 Tree Installation Standards. All supplemental trees to be planted shall conform to the Kirkland Plant List. All installation standards shall conform to Kirkland Zoning Code Section 95.45.

95.52 Prohibited Vegetation. Plants listed as prohibited in the Kirkland Plant List shall not be planted in the City.

100.25 Sign Permits. Separate sign permit(s) are required. In JBD and CBD cabinet signs are prohibited.

105.10.2 Pavement Setbacks. The paved surface in an access easement or tract shall be set back at least 5 feet from any adjacent property which does not receive access from that easement or tract. An access easement or tract that has a paved area greater than 10 feet in width must be screened from any adjacent property that does not receive access from it. Screening standards are outlined in this section.

105.20 Required Parking. 2 parking spaces for each lot are required for this use.

105.47 Required Parking Pad. Except for garages accessed from an alley, garages serving detached dwelling units in low density zones shall provide a minimum 20-foot by 20-foot parking pad between the garage and the access easement, tract, or right-of-way providing access to the garage.

105.60.2 Parking Area Driveways. Driveways which are not driving aisles within a parking area shall be a minimum width of 20 feet.

110.60.5 Street Trees. All trees planted in the right-of-way must be approved as to species by the City. All trees must be two inches in diameter at the time of planting as measured using the standards of the American Association of Nurserymen with a canopy that starts at least six feet above finished grade and does not obstruct any adjoining sidewalks or driving lanes.

115.25 Work Hours. It is a violation of this Code to engage in any development activity or to operate any heavy equipment before 7:00 am. or after 8:00 pm Monday through Friday, or before 9:00 am or after 6:00 pm Saturday. No development activity or use of heavy equipment may occur on Sundays or on the following holidays: New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving, and Christmas Day. The applicant will be required to comply with these regulations and any violation of this section will result in enforcement action, unless written permission is obtained from the Planning official.

115.40 Fence Location. Fences over 6 feet in height may not be located in a required setback yard. A detached dwelling unit abutting a neighborhood access or collector street may not have a fence over 3.5 feet in height within the required front yard. No fence may be placed within a high waterline setback yard or within any portion of a north or south property line yard, which is coincident with the high waterline setback yard.

A detached dwelling unit may not have a fence over 3.5 feet in height within 3 feet of the property line abutting a principal or minor arterial except where the abutting arterial contains an improved landscape strip between the street and sidewalk. The area between the fence and property line shall be planted with vegetation and maintained by the property owner.

115.42 Floor Area Ratio (F.A.R.) Limits. Floor area for detached dwelling units is limited to a maximum floor area ratio in low density residential zones. See Use Zone charts for the maximum percentages allowed. This regulation does not apply within the disapproval jurisdiction of the Houghton Community Council.

115.43 Garage Requirements for Detached Dwelling Units in Low Density Zones. Detached dwelling units served by an open public alley, or an easement or tract serving as an alley, shall enter all garages from that alley. Whenever practicable, garage doors shall not be placed on the front façade of the house. Side-entry garages shall minimize blank walls. For garages with garage doors on the front façade, increased setbacks apply, and the garage width shall not exceed 50% of the total width of the front façade. These regulations do not apply within the disapproval jurisdiction of the Houghton Community Council. Section 115.43 lists other exceptions to these requirements.

115.45 Garbage and Recycling Placement and Screening. For uses other than detached dwelling units, duplexes, moorage facilities, parks, and construction sites, all garbage receptacles and dumpsters must be setback from property lines, located outside landscape buffers, and screened from view from the street, adjacent properties and pedestrian walkways or parks by a solid sight-obscuring enclosure.

115.75.2 Fill Material. All materials used as fill must be non-dissolving and non-decomposing. Fill material must not contain organic or inorganic material that would be detrimental to the water quality, or existing habitat, or create any other significant adverse impacts to the environment.

115.90 Calculating Lot Coverage. The total area of all structures and pavement and any other impervious surface on the subject property is limited to a maximum percentage of total lot area. See the Use Zone charts for maximum lot coverage percentages allowed. Section 115.90 lists exceptions to total lot coverage calculations See Section 115.90 for a more detailed

explanation of these exceptions.

115.95 Noise Standards. The City of Kirkland adopts by reference the Maximum Environmental Noise Levels established pursuant to the Noise Control Act of 1974, RCW 70.107. See Chapter 173-60 WAC. Any noise, which injures, endangers the comfort, repose, health or safety of persons, or in any way renders persons insecure in life, or in the use of property is a violation of this Code.

115.115 Required Setback Yards. This section establishes what structures, improvements and activities may be within required setback yards as established for each use in each zone.

115.115.3.g Rockeries and Retaining Walls. Rockeries and retaining walls are limited to a maximum height of four feet in a required yard unless certain modification criteria in this section are met. The combined height of fences and retaining walls within five feet of each other in a required yard is limited to a maximum height of 6 feet, unless certain modification criteria in this section are met.

115.115.3.n Covered Entry Porches. In residential zones, covered entry porches on dwelling units may be located within 13 feet of the front property line if certain criteria in this section are met. This incentive is not effective within the disapproval jurisdiction of the Houghton Community Council.

115.115.3.o Garage Setbacks. In low density residential zones, garages meeting certain criteria in this section can be placed closer to the rear property line than is normally allowed in those zones.

115.115.3.p HVAC and Similar Equipment: These may be placed no closer than five feet of a side or rear property line, and shall not be located within a required front yard; provided, that HVAC equipment may be located in a storage shed approved pursuant to subsection (3)(m) of this section or a garage approved pursuant to subsection (3)(o)(2) of this section. All HVAC equipment shall be baffled, shielded, enclosed, or placed on the property in a manner that will ensure compliance with the noise provisions of KZC 115.95.

115.115.5.a Driveway Width and Setbacks. For a detached dwelling unit, a driveway and/or parking area shall not exceed 20 feet in width in any required front yard, and shall be separated from other hard surfaced areas located in the front yard by a 5-foot wide landscape strip. Driveways shall not be closer than 5 feet to any side property line unless certain standards are met.

115.120 Rooftop Appurtenance Screening. New or replacement appurtenances on existing buildings shall be surrounded by a solid screening enclosure equal in height to the appurtenance. New construction shall screen rooftop appurtenances by incorporating them in to the roof form.

115.135 Sight Distance at Intersection. Areas around all intersections, including the entrance of driveways onto streets, must be kept clear of sight obstruction as described in this section.

150.22.2 Public Notice Signs. Within seven (7) calendar days after the end of the 21-day period following the City's final decision on the permit, the applicant shall remove all public notice signs.

Prior to recording:

110.60.5 Landscape Maintenance Agreement. The owner of the subject property shall sign a landscape maintenance agreement, in a form acceptable to the City Attorney, to run with the subject property to maintain landscaping within the landscape strip and landscape island portions of the right-of-way (see Attachment). It is a violation to pave or cover the landscape strip with impervious material or to park motor vehicles on this strip.

110.60.6 Mailboxes. Mailboxes shall be installed in the development in a location approved by the Postal Service and the Planning Official. The applicant shall, to the maximum extent possible, group mailboxes for units or uses in the development.

Prior to issuance of a grading or building permit:

85.25.1 Geotechnical Report Recommendations. A written acknowledgment must be added to the face of the plans signed by the architect, engineer, and/or designer that he/she has reviewed the geotechnical recommendations and incorporated these recommendations into the plans.

90.50 Wetland Buffer Fence. Prior to development, the applicant shall install a six-foot high construction phase fence along the upland boundary of the wetland buffer with silt screen fabric installed per City standard. The fence shall remain upright in the approved location for the duration of development activities. Upon project completion, the applicant shall install between the upland boundary of all wetland buffers and the developed portion of the site, either 1) a permanent 3 to 4 foot tall split rail fence, or 2) permanent planting of equal barrier value.

90.95 Stream Buffer Fence. Prior to development, the applicant shall install a six-foot high construction phase fence along the upland boundary of the entire stream buffer with silt screen fabric installed per City standard. The fence shall remain upright in the approved location for the duration of development activities. Upon project completion, the applicant shall install between the upland boundary of all stream buffers and the developed portion of the site, either 1) a permanent 3 to 4 foot tall split rail fence, or 2) permanent planting of equal barrier value.

90.150 Natural Greenbelt Protective Easement. The applicant shall submit for recording a natural greenbelt protective easement, in a form acceptable to the City Attorney, for recording with King County.

90.155 Liability. The applicant shall enter into an agreement with the City which runs with the property, in a form acceptable to the City Attorney, indemnifying the City for any damage resulting from development activity on the subject property which is related to the physical condition of the stream, minor lake, or wetland.

95.30(4) Tree Protection Techniques. A description and location of tree protection measures during construction for trees to be retained must be shown on demolition and grading plans.

95.34 Tree Protection. Prior to development activity or initiating tree removal on the site, vegetated areas and individual trees to be preserved shall be protected from potentially damaging activities. Protection measures for trees to be retained shall include (1) placing no construction material or equipment within the protected area of any tree to be retained; (2) providing a visible temporary protective chain link fence at least 6 feet in height around the protected area of retained trees or groups of trees until the Planning Official authorizes their removal; (3) installing visible signs spaced no further apart than 15 feet along the protective fence stating "Tree Protection Area, Entrance Prohibited" with the City code enforcement phone number; (4) prohibiting excavation or compaction of earth or other damaging activities within the barriers unless approved by the Planning Official and supervised by a qualified professional; and (5) ensuring that approved landscaping in a protected zone shall be done with light machinery or by hand.

27.06.030 Park Impact Fees. New residential units are required to pay park impact fees prior to issuance of a building permit. Please see KMC 27.06 for the current rate. Exemptions and/or credits may apply pursuant to KMC 27.06.050 and KMC 27.06.060. If a property contains an existing unit to be removed, a "credit" for that unit shall apply to the first building permit of the subdivision.

Prior to occupancy:

85.25.3 Geotechnical Professional On-Site. The geotechnical engineer shall submit a final report certifying substantial compliance with the geotechnical recommendations and

geotechnical related permit requirements.

90.145 Bonds. The City may require a bond and/or a perpetual landscape maintenance agreement to ensure compliance with any aspect of the Drainage Basins chapter or any decision or determination made under this chapter.

95.51.2.a Required Landscaping. All required landscaping shall be maintained throughout the life of the development. The applicant shall submit an agreement to the city to be recorded with King County which will perpetually maintain required landscaping. Prior to issuance of a certificate of occupancy, the proponent shall provide a final as-built landscape plan and an agreement to maintain and replace all landscaping that is required by the City

95.51.2.b Tree Maintenance. For detached dwelling units, the applicant shall submit a 5-year tree maintenance agreement to the Planning Department to maintain all pre-existing trees designated for preservation and any supplemental trees required to be planted.

95.51.3 Maintenance of Preserved Grove. The applicant shall provide a legal instrument acceptable to the City ensuring the preservation in perpetuity of approved groves of trees to be retained.

110.60.5 Landscape Maintenance Agreement. The owner of the subject property shall sign a landscape maintenance agreement, in a form acceptable to the City Attorney, to run with the subject property to maintain landscaping within the landscape strip and landscape island portions of the right-of-way. It is a violation to pave or cover the landscape strip with impervious material or to park motor vehicles on this strip.

110.60.6 Mailboxes. Mailboxes shall be installed in the development in a location approved by the Postal Service and the Planning Official. The applicant shall, to the maximum extent possible, group mailboxes for units or uses in the development.

110.75 Bonds. The City may require or permit a bond to ensure compliance with any of the requirements of the Required Public Improvements chapter.

DEVELOPMENT STANDARDS

SUB13-01180



FIRE DEPARTMENT

Contact: Grace Stuart at 425-587-3660; or gstuart@kirklandwa.gov

Because the vault is under the private road, which is fire department access, it shall be designed to support fire department vehicles. (A maximum vehicle weight of 68,000 lbs and a maximum single axle weight of 27,000 lbs)

Existing hydrants are adequate to provide coverage for the project. The hydrant across the street from the property is already equipped with a 5" Storz fitting. Fire flow in the area is approximately 2,250 gpm, which is adequate.

PUBLIC WORKS DEPARTMENT

PUBLIC WORKS CONDITIONS

Public Works Staff Contacts

Land Use and Pre-Submittal Process:

Rob Jammerman, Development Engineering Manager

Phone: 425-587-3845 Fax: 425-587-3807

E-mail: rjammer@kirklandwa.gov

Building and Land Surface Modification (Grading) Permit Process:

John Burkhalter, Development Engineer Supervisor

Phone: 425-587-3846 Fax: 425-587-3807

E-mail: jb Burkhalter@kirklandwa.gov

OR

Building and Land Surface Modification (Grading) Permit Process:

Philip Vartanian, Development Engineer

Phone: 425-587-3856 Fax: 425-587-3807

E-mail: pVartanian@kirklandwa.gov

General Conditions:

1. All public improvements associated with this project including street and utility improvements, must meet the City of Kirkland Public Works Pre-Approved Plans and Policies Manual. A Public Works Pre-Approved Plans and Policies manual can be purchased from the Public Works Department, or it may be retrieved from the Public Works Department's page at the City of Kirkland's web site at www.kirklandwa.gov.
2. This project will be subject to Public Works Permit and Connection Fees. It is the applicant's responsibility to contact the Public Works Department by phone or in person to determine the fees. The fees can also be review the City of Kirkland web site at www.kirklandwa.gov The applicant should anticipate the following fees:
 - o Water and Sewer connection Fees (paid with the issuance of a Building Permit)
 - o Side Sewer Inspection Fee (paid with the issuance of a Building Permit)
 - o Water Meter Fee (paid with the issuance of a Building Permit)
 - o Right-of-way Fee
 - o Review and Inspection Fee (for utilities and street improvements).
 - o Traffic, Park and School Impact Fee (paid with the issuance of Building Permit). For additional information, see notes below.
3. All street and utility improvements shall be permitted by obtaining a Land Surface Modification (LSM) Permit. If a

Building Permit for a new house is applied for prior to applying for the LSM Permit, the Building Permit will not be issued until a complete LSM Permit is applied for.

4. The subdivision can be recorded in advance of installing all the required street and utility improvements by posting a performance security equal to 130% of the value of work. Contact the Development Engineer assigned to this project to assist with this process.
5. This project is exempt from concurrency review.
6. Building Permits associated with this proposed project will be subject to the traffic, park, and school impact fees per Chapter 27 of the Kirkland Municipal Code. The impact fees shall be paid prior to issuance of the Building Permit(s).
7. All civil engineering plans which are submitted in conjunction with a building, grading, or right-of-way permit must conform to the Public Works Policy titled ENGINEERING PLAN REQUIREMENTS. This policy is contained in the Public Works Pre-Approved Plans and Policies manual.
8. All street improvements and underground utility improvements (storm, sewer, and water) must be designed by a Washington State Licensed Engineer; all drawings shall bear the engineers stamp.
9. All plans submitted in conjunction with a building, grading or right-of-way permit must have elevations which are based on the King County datum only (NAVD 88).
10. A completeness check meeting is required prior to submittal of any Building Permit applications.
16. The required tree plan shall include any significant tree in the public right-of-way along the property frontage.
17. All subdivision recording mylar's shall include the following note:

Utility Maintenance: Each property owner shall be responsible for maintenance of the sanitary sewer or storm water stub from the point of use on their own property to the point of connection in the City sanitary sewer main or storm water main. Any portion of a sanitary sewer or surface water stub, which jointly serves more than one property, shall be jointly maintained and repaired by the property owners sharing such stub. The joint use and maintenance shall "run with the land" and will be binding on all property owners within this subdivision, including their heirs, successors and assigns.

Public Right-of-way Sidewalk and Vegetation Maintenance: Each property owner shall be responsible for keeping the sidewalk abutting the subject property clean and litter free. The property owner shall also be responsible for the maintenance of the vegetation within the abutting landscape strip. The maintenance shall "run with the land" and will be binding on all property owners within this subdivision, including their heirs, successors and assigns.

Sanitary Sewer Conditions:

1. The existing sanitary sewer main within the public right-of-way along the front of the property is adequate to serve all the lots within the proposed project.
2. Provide a 6-inch minimum side sewer stub to each lot. The lots along the west side of the project will need individual grinder pumps. A joint maintenance agreement shall be filed and recorded for any shared side sewer.

Water System Conditions:

1. The existing water main in the public right-of-way along the front of the subject property is adequate to serve this proposed development.
2. Provide a separate 1" minimum water service from the water main to the meter for each lot; City of Kirkland will set the water meter.

Surface Water Conditions:

1. Provide temporary and permanent storm water control per the 2009 King County Surface Water Design Manual and t Kirkland Addendum. See Policies D-2 and D-3 in the PW Pre-Approved Plans for drainage review information, or contact city of Kirkland Surface Water staff at (425) 587-3800 for help in determining drainage review requirements. Summarized below are the levels of drainage review based on site and project characteristics:

Full Drainage Review

A full drainage review is required for any proposed project, new or redevelopment, that will:

Add or replaces 5,000ft² or more of new impervious surface area,

Propose 7,000ft² or more of land disturbing activity, or,

Be a redevelopment project on a single or multiple parcel site in which the total of new plus replaced impervious surface area is 5,000ft² or more and whose valuation of proposed improvements (including interior improvements but excluding required mitigation and frontage improvements) exceeds 50% of the assessed value of the existing site improvements.

2. Evaluate the feasibility and applicability of dispersion, infiltration, and other stormwater low impact development facilities on-site (per section 5.2 in the 2009 King County Surface Water Design Manual). If feasible, stormwater low impact development facilities are required. See PW Pre-Approved Plan Policy L-1 for more information on this requireme

3. Because this project site is one acre or greater, the following conditions apply:

- Amended soil requirements (per Ecology BMP T5.13) must be used in all landscaped areas.
- If the project meets minimum criteria for water quality treatment (5,000ft² pollution generating impervious surface area: the enhanced level of treatment is required if the project is multi-family residential, commercial, or industrial. Enhanced treatment targets the removal of metals such as copper and zinc.
- The applicant is responsible to apply for a Construction Stormwater General Permit from Washington State Department of Ecology. Provide the City with a copy of the Notice of Intent for the permit. Permit Information can be four at the following website: <http://www.ecy.wa.gov/programs/wq/stormwater/construction/>
 - o Among other requirements, this permit requires the applicant to prepare a Storm Water Pollution Prevention Plan (SWPPP) and identify a Certified Erosion and Sediment Control Lead (CESCL) prior to the start of construction. The CESCL shall attend the City of Kirkland PW Dept. pre-construction meeting with a completed SWPPP.
- Turbidity monitoring by the developer/contractor is required if a project contains a lake, stream, or wetland.
- A Stormwater Pollution Prevention and Spill (SWPPS) Plan must be kept on site during all phases of construction and shall address construction-related pollution generating activities. Follow the guidelines in the 2009 King County Surface Water Design Manual for plan preparation.

4. The storm water detention system shall be designed to Level II standards. Historic (forested) conditions shall be usec as the pre-developed modeling condition.

5. This project is creating or replacing more than 5000 square feet of new impervious area that will be used by vehicles (PGIS - pollution generating impervious surface). Provide storm water quality treatment per the 2009 King County Surfacc Water Design Manual. The enhanced treatment level is encouraged when feasible for multi-family residential, commercia and industrial projects.

6. Provide a level one off-site analysis (based on the King County Surface Water Design Manual, core requirement #2).

7. It doesn't appear that any work within an existing ditch will be required, however the developer has been given notice that the Army Corps of Engineers (COE) has asserted jurisdiction over upland ditches draining to streams. Either an existing Nationwide COE permit or an Individual COE permit may be necessary for work within ditches, depending on the project activities.

Applicants should obtain the applicable COE permit; information about COE permits can be found at: U.S. Army Corps of Engineers, Seattle District Regulatory Branch http://www.nws.usace.army.mil/PublicMenu/Menu.cfm?sitename=REG&pagename=mainpage_NWPs

Specific questions can be directed to: Seattle District, Corps of Engineers, Regulatory Branch, CENWS-OD-RG, Post Office Box 3755, Seattle, WA 98124-3755, Phone: (206) 764-3495

8. Provide an erosion control report and plan with Building or Land Surface Modification Permit application. The plan shall be in accordance with the 2009 King County Surface Water Design Manual.
9. Construction drainage control shall be maintained by the developer and will be subject to periodic inspections. During the period from May 1 and September 30, all denuded soils must be covered within 7 days; between October 1 and April 30, all denuded soils must be covered within 12 hours. Additional erosion control measures may be required based on soil and weather conditions. Exposed soils shall be stabilized at the end of the workday prior to a weekend, holiday, or predicted rain event.
10. Provide collection and conveyance of right-of-way storm drainage
11. Provide a separate storm drainage connection for each lot.
12. All roof and driveway drainage must be tight-lined to the storm drainage system or utilize low impact development techniques.
13. Provide a 15' wide public access easement to the storm detention control manhole; asphalt within the access easement must meet public road standards for depth of asphalt to support the City's maintenance equipment.
14. A storm sewer "Joint Maintenance Agreement" must be recorded with the property for the jointly used storm sewer lines.

Street and Pedestrian Improvement Conditions:

1. The subject property abuts Slater Ave. This street is a Collector Neighborhood Access type street. Zoning Code sections 110.10 and 110.25 require the applicant to make half-street improvements in rights-of-way abutting the subject property. Section 110.30-110.50 establishes that this street must be improved with the following:
 - A. Widen the street to 18 ft. from centerline to face of curb.
 - B. Install storm drainage, curb and gutter, a 4.5 ft. planter strip with street trees 30 ft. on-center, and a 5 ft. wide sidewalk
 - C. If lots 1,2,6,7, and 8 are going to have no front door access to Slater Ave, the Public Works will modify the standards and require an 8 ft. wide sidewalk with street trees in tree wells 30 ft. on-center (the plans depict this modification). This modification will eliminate the landscape strip. Public Works has found this modification to be useful when new homes "back up" to a street and maintenance of the adjoining landscape strip is challenging for the new homeowners.
2. A 2-inch asphalt street overlay will be required where three or more utility trench crossings occur within 150 lineal ft. of street length or where utility trenches parallel the street centerline. Grinding of the existing asphalt to blend in the overlay will be required along all match lines.
3. The driveway for each lot shall be long enough so that parked cars do not extend into the access easement or right-of-way (20 ft. min.)
4. All street and driveway intersections shall not have any visual obstructions within the sight distance triangle. See Public Works Pre-approved Policy R.13 for the sight distance criteria and specifications.
5. It shall be the responsibility of the applicant to relocate any above-ground or below-ground utilities which conflict with the project associated street or utility improvements. It appears that some power pole relocation (s) may be necessary.
6. Underground all new on-site utility lines and overhead transmission lines.
7. Zoning Code Section 110.60.9 establishes the requirement that existing utility and transmission (power, telephone,

etc.) lines on-site and in rights-of-way adjacent to the site must be underground. The Public Works Director may determine if undergrounding transmission lines in the adjacent right-of-way is not feasible and defer the undergrounding by signing an agreement to participate in an undergrounding project, if one is ever proposed. In this case, the Public Works Director has determined that undergrounding of existing overhead utility on Slater Ave. NE is not feasible at this time and the undergrounding of off-site/frontage transmission lines should be deferred with a Local Improvement District (LID) No Protest Agreement. The final recorded subdivision mylar shall include a condition requiring all associated lots to sign a LID No Protest Agreement prior to the issuance of a building permit for said lot. In addition, if a house is to be saved on one of the lots within the subdivision, a LID No Protest Agreement shall be recorded against this lot at the time of subdivision recording.

8. New street lights may be required per Puget Power design and Public Works approval. Contact the INTO Light Division at PSE for a lighting analysis. If lighting is necessary, design must be submitted prior to issuance of a grading or building permit.

Buffer Reduction Proposal

Parcel 663990-0055

Prepared for: Jerry Lohnes



Source: BLM, 1870

September 12, 2013

Prepared by:

Betsy Macwhinney



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Introduction

This report has been prepared to describe existing conditions, evaluate impacts, and propose mitigation for a buffer reduction from the required 75 feet to the proposed 50 foot buffer. The purpose of the buffer reduction is to accommodate a seven lot short plat.

Existing Conditions

Watershed Context and General Site Description

The site is 2.09 acres in size, and is bounded by Slater Avenue NE to the east, and residential properties to the north and south. Interstate 405 is immediately west of the parcel. The site is situated in the upper portion of the Forbes Creek Basin, which encompasses approximately 1,000 acres.

Review of aerial photographs suggest that areas on the site that are cleared have been in that condition since at least 1998. 1936 photographs show the site forested.

The site slopes gently west, from a high point of 230 feet along Slater Avenue NE to the lowest point at approximately 215 elevation feet along Forbes Creek. Most of the elevation change occurs near Forbes Creek. There are no regulated steep slopes on the parcel.

The site is zoned Low Density Residential.

Wetland

The wetland was delineated by J.S. Jones & Associates, and described in a report dated August 20, 2012. Based on this review and a subsequent visit on May 15, 2013 to verify findings, the wetland is riparian, associated with Forbes Creek and it's tributary. Vegetation consists of an intermittent overstory of mature western red cedar and alder trees, and an understory that supports salmonberry, creeping buttercup, and occasional reed canarygrass. Further information about the wetland can be found in the J.S. Jones & Associates report.

The wetland has been verified by the City of Kirkland, and determined to be Type 2, which typically requires a 75 foot undisturbed buffer.

Stream

The most significant features on the site are Forbes Creek and a tributary to Forbes Creek. The stream is shown in Figure 1.



Figure 1. Forbes Creek

Forbes Creek flows roughly 1.8 miles through the City of Kirkland before entering Lake Washington. The tributary stream originates east of Slater Avenue NE, just upstream from a in a small pond. The outlet of the pond is a culvert with trash rack, as shown in Figure 2. The culvert goes under Slater Avenue NE and daylights just offsite, near the southeast corner of the subject parcel.



Figure 2. Outlet of Pond East of Slater Avenue NE

The King County website indicates that little is known about fish use of Forbes Creek. It states that the creek historically supported cutthroat trout and coho salmon have been introduced. Volunteers with the Salmon Watcher Program made observations at river mile 0.2 and at river mile 0.9. Only one coho was observed in the creek in 2001. However, the City of Kirkland's Streams, Wetlands, and Wildlife Study (July 1998) indicates that cutthroat trout, which, though not anadromous, are considered salmonids, are found in all sections of Forbes Creek downstream of I-405.

The stream has been determined previously to be Class A, with standard buffers of 75 feet (Jeff Jones & Associates, 2012). For the purpose of this report, it is presumed that fish use is possible, and at the very least, this stream affects downstream fish habitat, particularly pertaining to water quality.

Buffer

According to the landowner, the site was originally logged in 1925. The majority of the existing buffer has been used as horse pasture for decades, and shows as cleared on aerial photographs as far back as 1998, which is the oldest readily available.

The ten to 30 feet of buffer closest to the stream is forested. Outside of that, the area is cleared and vegetated with a mix of pasture grasses and herbaceous volunteer species. A few large significant trees, primarily western red cedar, are present in the pasture area. Upland species found in this area are listed in Table 1.

Table 1. Species Observed in Vegetated Portion of Buffer

Strata	Common Name	Scientific Name
Tree:		
	Big leaf maple	<i>Acer macrophyllum</i>
	Red alder	<i>Alnus rubra</i>
	Black cottonwood	<i>Populus balsamifera</i>
	Western hemlock	<i>Tsuga heterophylla</i>
	Western red cedar	<i>Thuja plicata</i>
Shrub:		
	Vine maple	<i>Acer circinatum</i>
	Indian plum	<i>Oemlaria cerasiformis</i>
	Japanese knotweed	<i>Polygonum cuspidatum</i>
	Salmonberry	<i>Rubus spectabilis</i>
	Hazelnut	<i>Corylus cornuta</i>
	Holly	<i>Ilex aquifolium.</i>
	Ivy	<i>Hedera sp.</i>
	Himalayan blackberry	<i>Rubus discolor</i>
	Canada thistle	<i>Cirsium arvense</i>
	Trailing blackberry	<i>Rubus ursinus</i>
Ground:		
	Bleeding heart	<i>Dicentra formosa</i>
	Creeping buttercup	<i>Ranunculus repens</i>
	False lily-of-the-valley	<i>Mianthemum dilatatum</i>
	Geum	<i>Geum macrophyllum</i>

	Lady fern	<i>Athyrium felix-femina</i>
	Pig-a-back	<i>Tolmiea menziesii</i>
	Reed canarygrass	<i>Phalaris arundinaceae</i>
	Robert geranium	<i>Geranium robertii</i>
	Lady fern	<i>Athyrium felix-femina</i>
	Forget me not	<i>Myosotis laxa</i>
	Stinging nettle	<i>Urtica doica</i>
	Sword fern	<i>Polysichitum munitum</i>
	Horsetail	<i>Equisetum telematia</i>
	Thistle	<i>Cytisus sp.</i>

Note: Invasive species are indicated with shading.

Functional Assessment of Buffer

Buffers provide a variety of functions, including habitat, water quality, stormwater detention, groundwater recharge, and erosion protection. Each of these is discussed below. In addition, the anticipated functions after the proposed mitigation and buffer reduction are also discussed. Mitigation referred to is discussed on page 7.

Habitat

In general, habitat at the site is limited due to the proximity to I-405, which is a barrier to mammal and fish migration, and the generally urbanizing nature of the area. Remaining habitat in this portion of Kirkland is fragmented and subject to noise and disturbance from human activity. However, the band of forest adjacent to Forbes Creek provides habitat for small mammals such as rabbit, raccoon, shrews, voles, and mice, as well as passerine birds. Raptors and larger mammals may also use the site on occasion. Habitat in the outer portion of the buffer is severely limited by the absence of structural and vegetative diversity, which limits feeding, cover, and nesting opportunities for wildlife.



Figure 3. Existing buffer with low habitat opportunity

The area proposed for buffer reduction very low existing habitat opportunity. With the proposed mitigation, which would involve enhancing all remaining areas of the buffer, overall habitat at the site would be improved.

Water Quality

Buffers can serve to improve water quality by slowing velocity, which allows water to be filtered prior to entering receiving waters. This function is high in areas that have a high stem density that are relatively flat. The pasture portion of the buffer provides water quality improvement due to the gentle slope and dense grass. The inner forested portion of the buffer has a reduced stem density and greater slopes, and thus, is less likely to provide significant water quality benefit. However, all vegetated areas, particularly those with some texture and roughness (areas with microtopographic depressions created by logs or other features) have the potential to improve water quality.

The proposed project should lead to an improvement in water quality, because existing vegetation will be supplemented. This will increase roughness over time, which will be a benefit. In addition, removing horses from the site will eliminate the possibility of fecal material migrating into the stream.

Stormwater Detention

Stormwater detention is high on sites that are topographically constrained, such that water is impounded. This site does not provide significant detention. However, any vegetated areas that allow water to move slowly and infiltrate offer some benefit to stormwater management.

The buffer reduction would not have a significant impact to the stormwater detention function on the site. Although the buffer is proposed to be reduced, most of the reduced area will be in lawns, and thus, the function will be unchanged. In addition, the planting proposed in the buffer will allow greater detention over time. Adding native vegetation, as proposed, will ultimately increase the organic content of the soil, which will increase the moisture holding capacity onsite. The proposed project would be developed consistently with the stormwater management requirements Kirkland Municipal Code (KMC 15.52.060). The proposed engineering design includes dispersion trenches at the back of the lots, outside of the wetland buffer, with the exception of one trench, near Lot 3. Approximately half of the 20-foot long trench is proposed to be in the wetland buffer to avoid Lot 3 and to work with the topography of the site. Water released from this will be filtered through vegetated buffer prior to entering the stream. This is anticipated to be a negligible impact.

Groundwater Recharge

Groundwater recharge is a function that some wetlands provide. A particular wetland's capacity to perform this function is related to underlying geology, soils, vegetation, and water sources for the wetland. Assessing this function is not easily done without detailed studies. Sites underlain by glacial till, such as this site, are less likely to perform the function.

Tree roots can assist in allowing movement of water downward, potentially contributing to recharge. The planting associated with the proposed development may offer a minor benefit to groundwater recharge capacity. However, the change in groundwater recharge function by reducing the buffer is expected to be negligible.

Erosion Protection

Erosion protection is performed by a buffers that are vegetated and relatively flat. The existing buffer offers protection from erosion. However, some areas are present within the forested area that are unvegetated, as shown in Figure 4.



Figure 4. Unvegetated ground adjacent to Forbes Creek

Under the proposed project, approximately 170 native trees and shrubs would be planted at the site, which would improve the erosion control function at the site. Roots of trees and shrubs, particularly as they become mature, have the ability to bind soils and protect them from erosion. No trees will be cut as part of this project.

Summary

The most significant changes to buffer function resulting from the proposed project will be significant improvements to wildlife habitat and erosion control functions. Other changes are anticipated to be negligible.

Regulatory Framework

The City of Kirkland regulates wetlands and their buffers through Chapter 90 of the zoning code. This project proposes to reduce buffers; the zoning code has specific criteria that must be addressed in order to do this. The relevant code section is provided below.

5.1 WETLAND BUFFER MODIFICATION

Wetland buffer widths may be reduced by up to one-third of the standard width with enhancement. Buffer reduction is allowed when the applicant demonstrates the proposed enhancement will result in the reduced buffer functioning at a higher level than the existing standard buffer.

Subsection 2(b) of the KZC also states an improvement or land surface modification shall be approved in a wetland buffer only if the following items are addressed:

- 1) It is consistent with Kirkland’s Streams, Wetlands and Wildlife Study (The Watershed Company 1998) and the City of Kirkland Sensitive Areas Recommendations Report (Adolfson Associates, Inc. 1998);
- 2) It will not adversely affect water quality;
- 3) It will not adversely affect fish, wildlife, or their habitat;
- 4) It will not have an adverse effect on drainage and/or stormwater detention capabilities;
- 5) It will not lead to unstable earth conditions or create an erosion hazard;
- 6) It will not be materially detrimental to any other property or the city as a whole;
- 7) Fill material does not contain organic or inorganic material that would be detrimental to water quality or to fish, wildlife, or their habitat;
- 8) All exposed areas are stabilized with vegetation normally associated with native wetland buffers, as appropriate; and
- 9) There is no practicable or feasible alternative development proposal that results in less impact to the buffer.

Anticipated Impacts and Proposed Mitigation

The landowner proposes to reduce buffers from 75 feet to 50 feet in order to create three additional lots on the property. As shown in Table 2 below, this results in a reduction in total buffer area of 11,976 square feet. With the reduction, 47,106 square feet, or 52 percent of the site, would be permanently protected as critical area and associated buffers.

The entire area proposed to be reduced is cleared pasture area, as shown in Figure 3.

Table 2. Summary of Area of Buffer Under Two Scenarios

	Square Feet	Percent of total site
Total Site Area	89,296	
Sensitive Area	15,766	18%
75 foot buffer	43,316	49%

50 foot buffer	31,340	35%
Change in buffer area from 75' to 50'	11,976	

To compensate for this buffer reduction, two restoration actions are proposed: removing invasive species, and planting native vegetation in the buffer. Each is discussed below.

Remove invasive species. Although the infestations are relatively minor at present, if left unchecked, they could increase their range and influence on the site. The following invasive species were observed on site, and proposed to be managed.

Reed canarygrass. One small stand of canarygrass was observed. This should be mowed or mowed or weedwhacked, covered with a thick layer of cardboard, and planted with native native species from

Table 3. Canarygrass is tenacious, but cutting it back, covering it, and planting to create shade will reduce it's spread over time. This area is shown in Figure 5.



Figure 5. Small area of reed canarygrass in buffer

Holly. A few holly trees are present in the buffer. These should be cut down, and the area should be surveyed for sprouts. Although suckering and resprouting from stumps can occur, suppressing growth can minimize spread of this plant. Holly is shown in Figure 6.



Figure 6. Holly in buffer

English Ivy. A few small areas of English ivy, as shown in Figure 7, are present. This plant should be hand pulled and removed from the site.



Figure 7. Small infestation of ivy in buffer

Robert geranium. Robert geranium, shown in Figure 8, occurs occasionally in the buffer. This should be hand pulled. Weeding will be an on-going effort for a few years, as the seed source exists in the soil.



Figure 8. Robert geranium in buffer

Thistle. A few thistle plants were observed in the outer portion of the forested buffer. These should be hand-pulled.

Japanese knotweed. A small area is present offsite, near where the tributary to Forbes Creek enters the subject parcel. If the neighbor were willing to allow control, stem injection of this plant should occur. It is a tenacious and harmful plant that spreads by traveling downstream. Eliminating it at the upper end of this reach could minimize further migration and spread of this plant downstream. This action would only be possible with neighbor cooperation, however. It is only mentioned because with such a small stand to control, and the potential large amount of harm from letting it remain in place, it is a worthy effort. This area is shown in Figure 9. This area is not necessarily part of the mitigation plan due to access issues, but is provided as a recommendation.

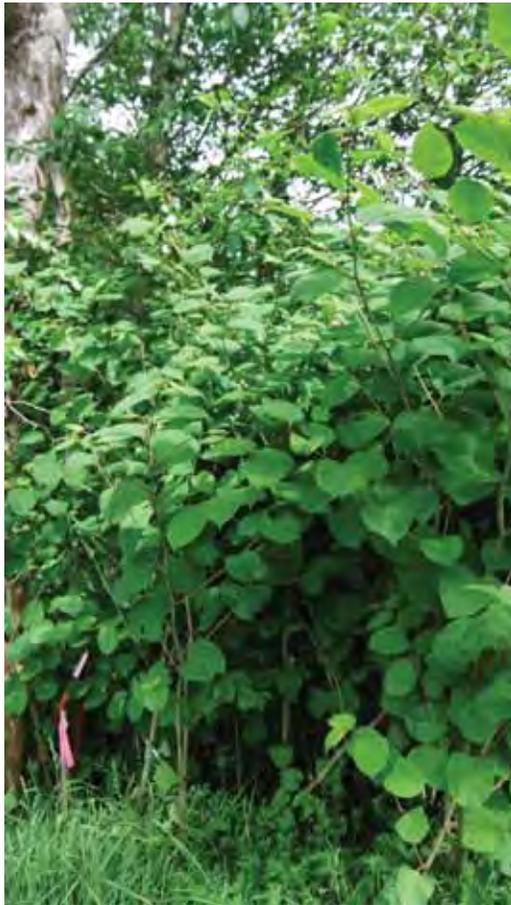


Figure 9. Knotweed upstream and immediately offsite

Enhancing buffer with native vegetation. A significantly larger area (26,166 square feet) of the buffer is proposed to be restored by planting native vegetation in the remaining buffer. A split-rail fence will be placed at the edge of the buffer. Plants will be spread throughout the entire buffer, as well as within a few disturbed areas within the wetland, as shown on the attached figure. A list of species to be planted is provided in

Table 3.

The plants listed below will be spaced throughout the remaining buffer, paying particular attention to the goals of stabilizing areas of bare ground, providing a barrier between the proposed lots and the buffer, and enhancing un-vegetated areas.

Table 3. Species proposed to be planted in buffer

Form	Common Name	Scientific Name	Spacing (on center)	Size/Condition	Quantity
Tree	big-leaf maple	<i>Acer macrophyllum</i>	10	2-gal, 2' height, single-trunk, well-branched	22
Tree	Western hemlock	<i>Tsuga heterophylla</i>	10	2-gal, 2' height, single-trunk, well-	22
Tree	Douglas fir	<i>Pseudotsuga douglassii</i>	10	2-gallon, 2' height, bushy	40
Tree	Western red cedar	<i>Thuja plicata</i>	10	2-gallon, 2' height, bushy	37
Tree	cascara	<i>Rhamnus purshiana</i>	10	1-gallon, 18" height, single stem	25
Shrub	salmonberry	<i>Rubus spectabilis</i>	6	1 gallon, 18", full & bushy	20
Shrub	salal	<i>Gaultheria shallon</i>	4	4" pot, vigorous	75
Shrub	red-flowering currant	<i>Ribes sanguineum</i>	6	1 gallon, 18", multi-cane	35
Shrub	twinberry	<i>Lonicera involucrata</i>	6	1 gallon, 18", multi-cane	40
Shrub	beaked hazelnut	<i>Corylus cornuta</i>	6	1 gallon, 18", multi-cane	40
Shrub	Indian plum	<i>Oemlaria cerasiformis</i>	6	1 gallon, 18", vigorous	25
Shrub	vine maple	<i>Acer circinatum</i>	6	2 gallon, 12' height, multi-stem	35
Shrub	Tall Oregon grape	<i>Mahonia aquifolium</i>	6	1 gallon, 18", full & bushy	35
	Total Area				451

Consistency with Regulations

This section addresses the nine items required by City of Kirkland zoning code.

Table 4. Summary of Zoning Code Criteria for Buffer Reduction

No.	Criteria	Comment
1	Consistent with Kirkland's Streams, Wetlands and Wildlife Study	The proposed mitigation and buffer reduction are consistent with Kirkland's Streams, Wetlands, and Wildlife Study.
2	Will not adversely affect water quality;	The proposed project may offer a slight improvement to water quality due to the removal of horses and the installation of native plants in the buffer.
3	Will not adversely affect fish, wildlife, or their habitat;	Because the site will be more densely vegetated with native vegetation after the project, a net benefit to fish, wildlife and habitat should result.
4	Will not have an adverse effect on drainage and/or stormwater detention capabilities;	The site will be developed consistently with KMC 15.52.060. Because the area proposed for buffer reduction offers little in the way of stormwater detention, no significant impact is anticipated.
5	Will not lead to unstable earth conditions or create an erosion hazard;	The site is relatively flat. No major clearing or grading is necessary for this project, and thus, no erosion hazards are anticipated. During home construction, suitable best management practices will be employed to minimize the potential of mobilizing sediment.
6	Will not be materially detrimental to any other property or the city as a whole;	No adverse impacts offsite are anticipated by reducing the buffer from 75 feet to 50 feet.
7	Fill material does not contain organic or inorganic material that would be detrimental to water quality or to fish, wildlife, or their habitat;	N/A. No fill is proposed. If minor amounts of fill are needed during home construction, suitable clean material would be procured.
8	Exposed areas are stabilized with vegetation normally associated with native wetland buffers, as appropriate; and	The buffer reduction would not require soils to be exposed. During home and road construction, areas temporarily exposed will be protected with appropriate measures, such as placement of silt fences or straw, will be taken to minimize erosion.
9	There is no practicable or feasible alternative development proposal that results in less impact to the buffer.	The buffer reduction allows the project to obtain three additional lots, which makes the project feasible financially. Allowing for an additional lot is consistent with the Comprehensive Plan goal H-3 (allow for greater housing capacity), NRH 3.4 (Enhance stream buffers) NRH 4.2 (preserve as many trees as possible during development)

Conclusions

It is anticipated that the proposed project, which includes buffer reduction and significant enhancement and restoration of the remaining buffer, will improve functions of the buffer over the current degraded condition.

References

JS Jones & Associates, August 20, 2012. Wetland Stream Assessment of the Gerald Lohnes Property.

King County, 1987. Forbes Creek Reconnaissance Project #7. King County Environmental Division, King County, WA

King County, 1990. King County Wetland Inventory. King County Environmental Division, King County, WA

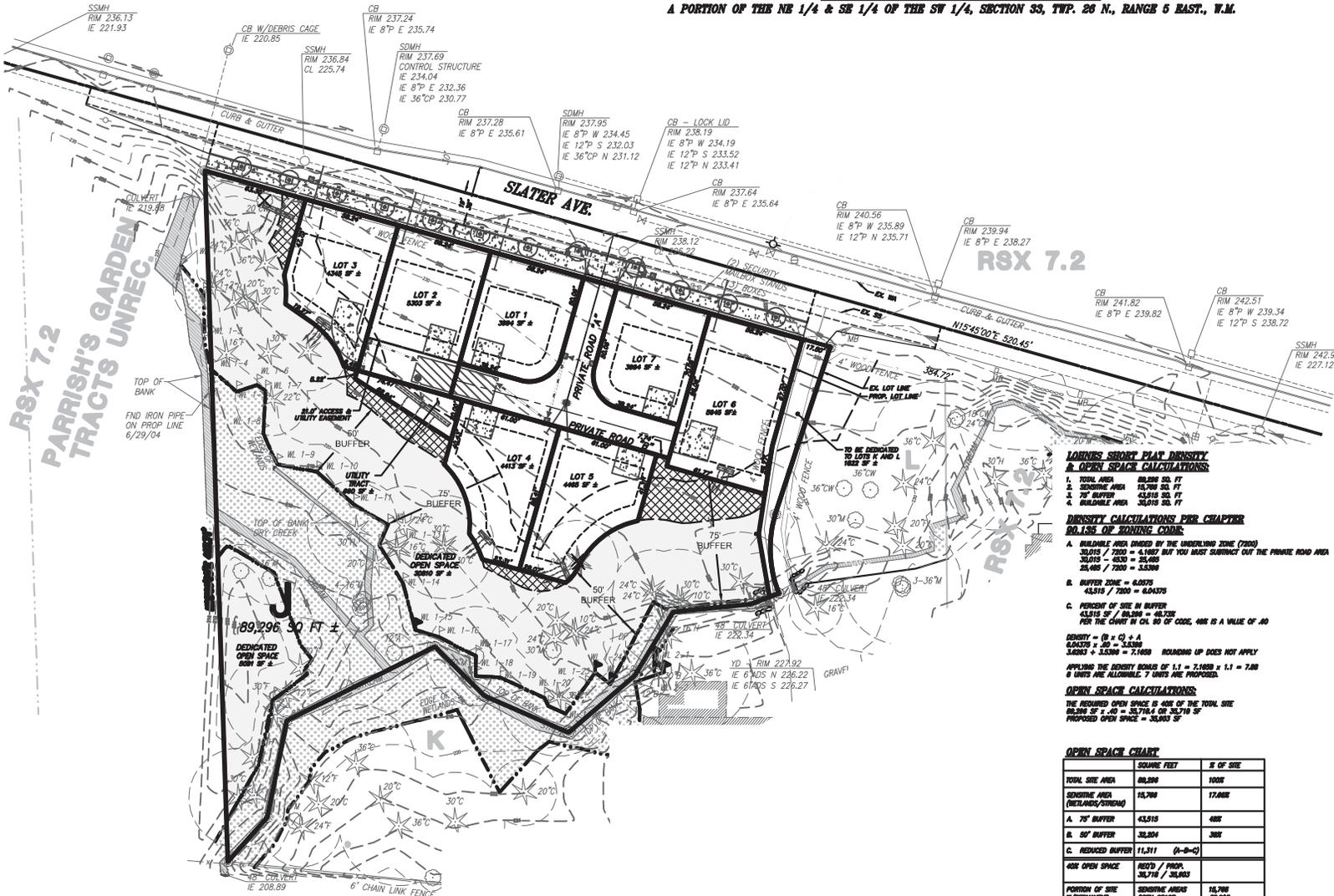
King County, 1991. Kirkland Sensitive Areas Mapping Project. King County Environmental Division, King County, WA.

Kirkland Municipal Code. Kirkland, Washington.

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

LOHNES PRELIMINARY SHORT PLAT

A PORTION OF THE NE 1/4 & SE 1/4 OF THE SW 1/4, SECTION 33, TWP. 28 N., RANGE 5 EAST., W.M.



PROJECT DATA:
OWNER / APPLICANT: JERRY & LISA LOHNES
 10239 SLATER AVE.
 KIRKLAND, WA 98033
SUBMIT BY: JIM HART & ASSOCIATES
 230 4TH ST.
 KIRKLAND, WA 98033
PROJECT LOCATION: 10239 SLATER AVE
 KIRKLAND, WA 98033
VERTICAL DATUM: NAVD 83
HORIZONTAL DATUM: NAD 83/01
BENCHMARK: COV MONUMENT 31, ELEXANDER BRIDGE
 INTERSECTION OF SLATER AVE NE & IVE 100TH SE.
LEGAL DESCRIPTION: LOT 4, NW/4, NW/4 LOT LINE ALTERNATION NO. 11A-08-0008 AS RECORDED UNDER
 RECORDING NUMBER 200703700001
PROPOSED LOTS: 7
AREA: TOTAL AREA = 91,110 SQ. FT ±
 OUT CLAIM AREA = 1,822 G. FT ±
 TOTAL AREA MINUS THE OUT CLAIM = 89,288 SQ. FT ±
 LOT 1 AREA = 3,994 SQ. FT ±
 LOT 2 AREA = 8,800 SQ. FT ± (8,800 SQ. FT ±)
 LOT 3 AREA = 4,345 SQ. FT ±
 LOT 4 AREA = 4,415 SQ. FT ±
 LOT 5 AREA = 4,405 SQ. FT ±
 LOT 6 AREA = 8,810 SQ. FT ±
 LOT 7 AREA = 3,994 SQ. FT ±
 PRIVATE ROAD AREA = 4,520 SQ. FT ±
 OPEN SPACE AREA = 35,803 SQ. FT ±
 SENSITIVE AREA 15,700 SQ. FT ± (WETLAND & STREAMS)
 WETLAND AREA = 1,822 SQ. FT ±
 UTILITY & EASEMENT AREA = 1,822 SQ. FT ±
TAX PARCEL NO.: 0639000005
ZONING: RSX 7.2
WATER: CITY OF KIRKLAND
SEWER: CITY OF KIRKLAND
PRONG: AT&T
SCHOOLS: LANE WASHINGTON SCHOOL DISTRICT #414
GAS/ELECTRIC: PUNET SOUND ENERGY CO.

LOHNES SHORT PLAT DENSITY & OPEN SPACE CALCULATIONS

DENSITY CALCULATIONS PER CHAPTER

RELAX OF SETBACK CODES:

A. REGULABLE AREA BASED BY THE UNDERLYING ZONE (7500)
 35,815 / 7200 = 4.974 BUT YOU MUST SUBTRACT OUT THE PRIVATE ROAD AREA
 35,815 - 4520 = 31,295
 31,295 / 7200 = 4.346

B. BUFFER ZONE = 4,025
 43,515 / 7200 = 6.04375

C. PERCENT OF SITE IN BUFFER
 43,515 SF / 89,288 = 48.73%
 PER THE CHART IN CH. 83 OF CODE, 48% IS A VALUE OF .70

DENSITY = .60 ± .03 ± .1
 6.04375 ± .20 = 6.24375
 3.6263 ± 3.5200 = 7.1463 ROUNDED UP DOES NOT APPLY

APPLYING THE DENSITY BONUS OF 1.1 = 7.1463 ± 1.1 = 7.8569
 8 UNITS ARE ALLOWED, 7 UNITS ARE PROPOSED.

OPEN SPACE CALCULATIONS:

THE REQUIRED OPEN SPACE IS 40% OF THE TOTAL SITE
 89,288 SF ± .40 = 35,715.2 SF ±
 PROPOSED OPEN SPACE = 35,803 SF

OPEN SPACE CHART

SQUARE FEET	% OF SITE
TOTAL SITE AREA	89,288
SENSITIVE AREA (WETLAND/STREAM)	15,700
A. 75' BUFFER	43,515
B. 50' BUFFER	35,204
C. REDUCED BUFFER	11,211 (A-B-C)
40% OPEN SPACE	35,715 (PROV.)
40% OPEN SPACE	35,715 (PROV.)
PORTION OF SITE W/PERMANENT PROTECTION	15,700 (WETLAND) 1,822 (STREAM)

LOW IMPACT DEVELOPMENT NOTES:
 THE APPLICANT PROPOSES TO REDUCE THE EXISTING 75' BUFFER A MINIMUM OF 30% OR 25'. LOW IMPACT DEVELOPMENT TECHNIQUES TO BE USED INCLUDE BUT ARE NOT LIMITED TO:
 • PERMEABLE TRENDLINES FOR LOTS 3, 4, 5 & 6
 • A 16"X24" WALKY FOR CONNECTION FROM THE PRIVATE ROAD & LOTS 1, 2, & 7.
 • THE PROPOSED WALKY WILL DRAIN TO A LARGE PERMEABLE TRENCH SO THAT THE WATER CAN BE SPREAD ACROSS A VEGETATED BUFFER PRIOR TO REACHING ANY SENSITIVE AREAS.
 • ALL DIMENSIONS SHALL BE FINISH GRADES OVER CRUSHED ROCK FILL TO EXISTING SURFACE.
MITIGATION FOR BUFFER REDUCTION:
 • REMOVAL OF INVASIVE/NON-NATIVE VEGETATION
 • DIMENSION BUFFER FACED BY PLANTING APPROPRIATE WETLAND BUFFER NATIVE VEGETATION
 • PER REPORT PREPARED BY BESSY WACHSMEYER, MAY 2013

TREE RETENTION:
 A = ALDER
 B = CEDAR
 CB = COTTERWOOD
 H = HAWK
 F = FIR
 M = REDLOCK
 IF TREES REMAIN, 3 TREES TO BE REMOVED THESE REMOVED = SLASH

AREA LEGEND:
 REDUCED OPEN SPACE TO EQUAL 40% OF SITE
 REQUIRED 35,715.2 SF
 PROPOSED 35,803 SF
 AREA ADDED TO 40% BUFFER TO ACHIEVE 40% OPEN SPACE

DESIGNED BY:
 JOHN RUBENKONG, ASLA
 6210 210TH PLACE SW
 EDMONDS, WA 98026
 PH: (206) 401-0821
 RUBENKONGPLANNING.COM
 WWW.RUBENKONGPLA.COM

RUBENKONG PLANNING AND LANDSCAPE ARCHITECTURE, PLLC



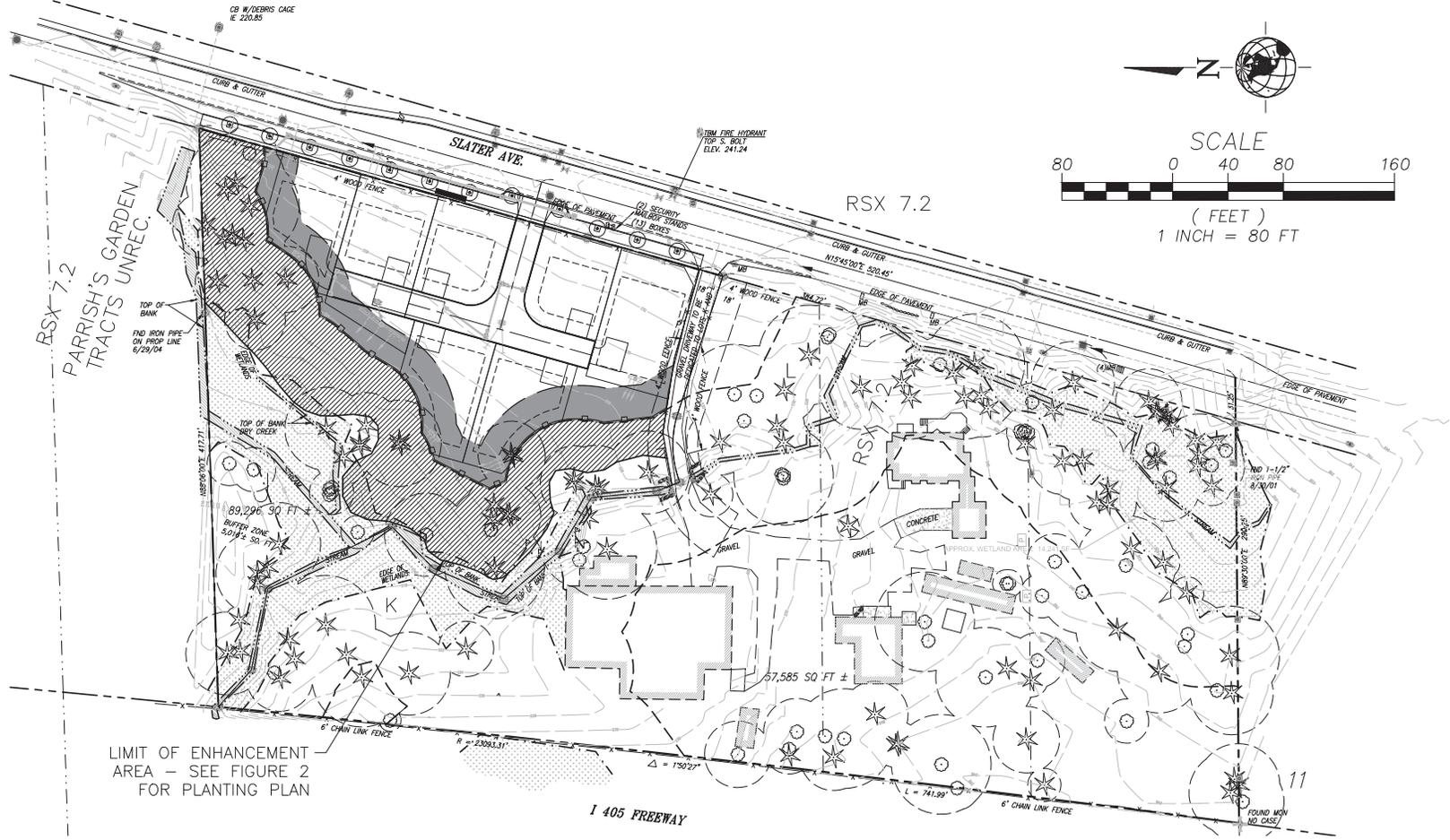
DESIGNED: JERRY LOHNES
DRAWN: JIM HART & ASSOCIATES, LLC
CHECKED: JIM HART & ASSOCIATES, LLC
JER: JIM HART & ASSOCIATES, LLC
DATE: 7/7/13

CLIENT: JERRY LOHNES
 10239 SLATER AVE NE, KIRKLAND, WA 98033

JIM HART & ASSOCIATES, LLC SURVEYORS
 P.O. BOX 8849 KIRKLAND, WASHINGTON 98033 (425) 822-4271

SHEET TITLE: BUFFER REDUCTION EXHIBIT FOR THE LOHNES PRELIMINARY SHORT PLAT
 10239 SLATER AVE NE KIRKLAND, WA
 NE & SE 1/4, SW 1/4, SEC 33, T28N, R5E, W.M.

SCALE: 1" = 30'
 SHEET NO. 12-37
 SHEET 1 OF 1



LIMIT OF ENHANCEMENT
AREA - SEE FIGURE 2
FOR PLANTING PLAN

PLAN LEGEND

- PROPERTY LINE
- EXISTING WETLAND
- STREAM ORDINARY HIGH WATER MARK
- STANDARD 75' STREAM/WETLAND BUFFER
- REDUCED 50' STREAM/WETLAND BUFFER
- SPLIT-RAIL FENCE ALONG REDUCED 50' STREAM/WETLAND BUFFER
- REDUCED BUFFER - 11,311 SF
- ENHANCED BUFFER - 26,166 SF

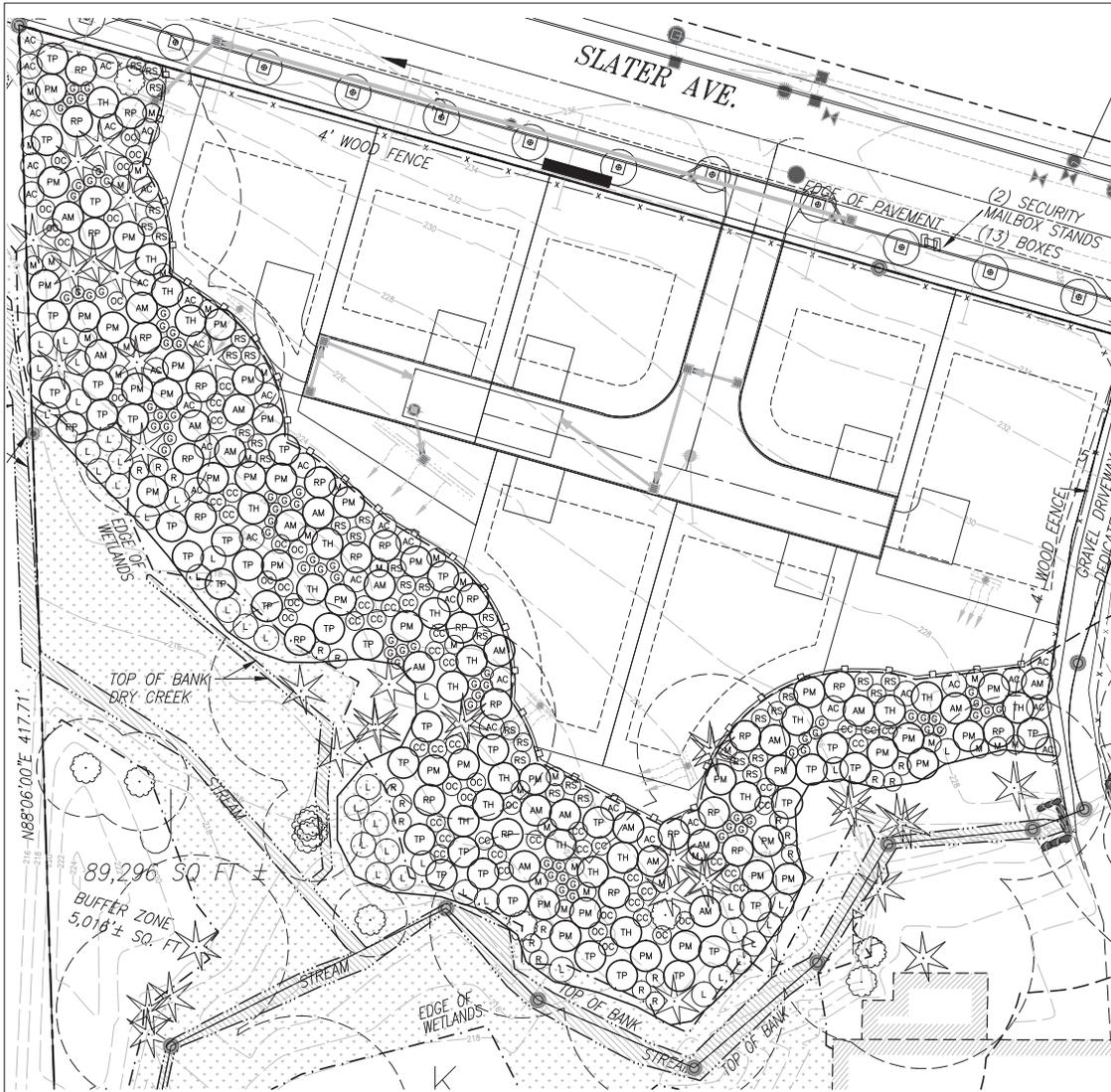
NOTES

1. BASE INFORMATION PROVIDED BY JIM HART & ASSOCIATES, P.O. BOX 2369, KIRKLAND, WA 98083, (425) 822-4171.



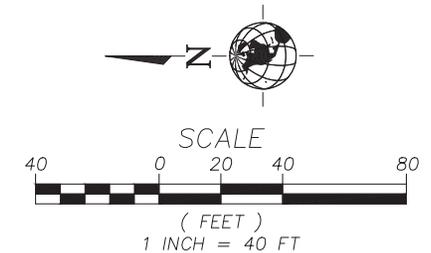
PROPOSED SITE PLAN
LOHNES PROPERTY
10239 SLATER AVE.
KIRKLAND, WA 98033
PARCEL #6639900055

DRAWN BY KG	CHECKED BY BM
SCALE AS NOTED	DATE 09.12.13
PROJECT NO.	LOHNES
FIGURE 1	OF 2



PLANT SCHEDULE

KEY	FORM	COMMON NAME	SCIENTIFIC NAME	SPACING	QUANTITY
AM	TREE	BIG-LEAF MAPLE	ACER MACROPHYLLUM	10' O.C.	22
TH	TREE	WESTERN HEMLOCK	TSUGA HETEROPHYLLA	10' O.C.	22
PD	TREE	DOUGLAS FIR	PSEUDOTSUGA MENZIESII	10' O.C.	40
TP	TREE	WESTERN RED CEDAR	THUJA PLICATA	10' O.C.	37
RP	TREE	CASCARA	RHAMNUS PURSHIANA	10' O.C.	25
R	SHRUB	SALMONBERRY	RUBUS SPECTABILIS	6' O.C.	20
G	SHRUB	SALAL	GAULTHERIA SHALLON	4' O.C.	75
RS	SHRUB	RED-FLOWERING CURRENT	RIBES SANGUINEUM	6' O.C.	35
L	SHRUB	TWINBERRY	LONICERA INVOLUCRATA	8' O.C.	40
CC	SHRUB	BEAKED HAZELNUT	CORYLUS CORNUTA	6' O.C.	40
OC	SHRUB	INDIAN PLUM	OEMLARIA CERASIFORMIS	6' O.C.	25
AC	SHRUB	VINE MAPLE	ACER CIRCINATUM	8' O.C.	35
M	SHRUB	TALL OREGON GRAPE	MAHONIA AQUIFOLIUM	6' O.C.	35



NOTES

1. BASE INFORMATION PROVIDED BY JIM HART & ASSOCIATES, P.O. BOX 2369, KIRKLAND, WA 98083, (425) 822-4171.

PLAN LEGEND

- PROPERTY LINE
- ▨ EXISTING WETLAND
- STREAM ORDINARY HIGH WATER MARK
- - - - - REDUCED 50' STREAM/WETLAND BUFFER



PLANTING PLAN
LOHNES PROPERTY
10239 SLATER AVE.
KIRKLAND, WA 98033
PARCEL #663990055

DRAWN BY KG	CHECKED BY BM
SCALE AS NOTED	DATE 09.12.13
PROJECT NO.	LOHNES
FIGURE 2	OF 2

MAINTENANCE AND MONITORING PLAN

Goal	Associated Performance Standard	Monitoring / Element, Year 1	Monitoring Element, Years 2-5	Possible Contingency Actions
Stabilize soils near stream	Percent bare ground will not exceed 15% at any time after completion of planting	Quadrat sampling throughout mitigation site to assess percent bare ground	Visually estimate; conduct quadrat sampling if needed to assess performance standard.	Hydroseed or plant additional trees and shrubs
Enhance 11,296 s.f. of existing disturbed buffer	80 percent of planted specimens will be surviving (or will have been replaced) at the end of three years.	Evaluate all planted species for survival and vigor	Evaluation of all planted species for survival and vigor. <i>NOTE: If / when planted areas become too vigorous and dense for count of individual specimens, line-intercept data will be collected along randomly placed transects.</i>	Replace dead or stressed species. Consider replacing with different species, if appropriate
Increase cover of native vegetation	Percent cover will be at least 20% by the end of Year 1, 30% by Year 2, 35% by Year 3, 50% by year 4, and 80% by Year 5	Evaluate percent cover using standard ecological methods.	Evaluate percent cover using standard ecological methods.	
Improve habitat value of buffer	Non-native invasive plants will not make up more than 10% cover in any growing season.	Quadrat sampling to determine percent cover of invasive species	Quadrat sampling to determine percent cover of invasive species	Remove or control invasive species. Increase planting density.
Avoid scouring or erosion at stormwater outfalls	Scouring, channelization or other evidence of erosion and concentration of flow will not be evident during any monitoring year	Visually evaluate for	Visually evaluate	Correct outlet placement, place logs, notched board, or straw bales at outlet to reduce velocity

Monitoring Reports

Monitoring reports will be prepared annually and submitted to the City of Kirkland, and will include:

1. Photographs of the mitigation site
2. Data collected along established transects as spelled out in the table to the left
3. Additional observations will be described
- 4.

Planting Detail

1. Plants shall be obtained from a reputable source, and shall be clearly labeled with genus and species. Any plant substitutions shall be approved by the biologist.
2. Plants shall be installed generally as shown on the attached plan, though some minor modification may be required in the field to avoid existing roots, and to accommodate micro-topography and minor hydrologic variation throughout the site.
3. The biologist shall be onsite to inspect plants and plant locations prior to planting.
4. For each plant, excavate a saucer-shaped planting hole, 3 times the width of rootball.
5. Plant tree or shrub in hole such that root flare is 1 to 3 inches above grade.
6. Amend planting hole with 1/3 organic material.
7. After planting, mulch a 3-foot diameter circle with partially decomposed bark or compost. DO NOT ALLOW MULCH TO CONTACT TRUNK.
8. Water thoroughly.

Maintenance Plan

Maintenance will be conducted routinely throughout the year, and will include:

- weed control (as needed)
- irrigation during summer drought. Natural rainfall shall be supplemented with an outside

source such that plants receive at least one inch of water, twice per week during the first year, and one inch of water once a week for the second year. Irrigation during subsequent years may not be necessary, depending on health and vigor of plants.

- Overall evaluation of site to allow for early identification of problems (such as pests, excessive deer browse, disease, etc.). Biologist will make recommendations to address any issues that arise.

MITIGATION PLAN: Lohnes Property

PARCEL: 5539900055

DATE: September 25, 2013





Critical Areas Mitigation Bond Quantity Worksheet

King County

Project Name: **Lohnes Plat** Date: **8/9/2013** Prepared by: **MacWhinney**

Project Number: Project Description:

Location: Applicant: Phone:

PLANT MATERIALS (purchase table cost for plant installation)

Type	Unit Price	Unit	Quantity	Description	Cost
PLANTS: Potted, 4" diameter, medium	\$5.00	Each	75.00		\$ 375.00
PLANTS: Container, 1 gallon, medium soil	\$11.50	Each	230.00		\$ 2,645.00
PLANTS: Container, 2 gallon, medium soil	\$20.00	Each	148.00		\$ 2,920.00
PLANTS: Container, 5 gallon, medium soil	\$38.00	Each			\$ -
PLANTS: Rooting, by each	\$0.60	EV			\$ -
PLANTS: Ripk (yellow, red-olive)	\$2.00	Each			\$ -
PLANTS: Stakes (yellow)	\$2.00	Each			\$ -
PLANTS: Stakes (yellow)	\$2.00	Each			\$ -
PLANTS: Fungus	\$2.00	Each			\$ -
TOTAL					\$ 5,940.00

INSTALLATION COSTS (LABOR, EQUIPMENT, & OVERHEAD)

Type	Unit Price	Unit	Quantity	Description	Cost
Compost, vegetable, delivered and spread	\$37.88	CY	110.00		\$ 4,166.80
Decompacting tiller/pan, medium, to 6" depth	\$1.57	CY			\$ -
Decompacting tiller/pan, medium, to 12" depth	\$1.57	CY			\$ -
Hydroseeding	\$0.51	SY			\$ -
Labor, general (landscaping other than plant installation)	\$40.00	HR			\$ -
Labor, general (construction)	\$40.00	HR			\$ -
Labor Consultant, supervising	\$50.00	HR	0.00		\$ -300.00
Labor Consultant, on-site design	\$95.00	HR			\$ -
Rental of decompacting machinery & operator	\$70.00	HR			\$ -
Seed, custom blend's, delivered and spread	\$42.00	CY			\$ -
Staking material (net per tree)	\$7.00	Each			\$ -
Surveying, line & grade	\$250.00	HR			\$ -
Surveying, topographical	\$250.00	HR			\$ -
Wearing, 1" of aster, 50' water hose	\$3.62	MSF			\$ -
Irrigation - temporary	\$3,000.00	Acres	0.60		\$ 1,800.00
Irrigation - buried	\$4,500.00	Acres			\$ -
Tilling topsoil, disk harrow, 20p tractor, 4' 4" deep	\$1.02	SY			\$ -
TOTAL					\$ 6,286.80

HABITAT STRUCTURES*

ITEMS	Unit Cost	Unit	Quantity	Description	Cost
Compost (pallet)	\$ 2.00	Each			\$ -
Logs (red), w/ root wash, 10" 24" diam, 30' long	\$1,000.00	Each			\$ -
Logs (red) w/ root wash, 10" 24" diam, 30'	\$400.00	Each			\$ -
Logs, w/ root wash, 10" 24" diam, 30' long	\$245.00	Each			\$ -
Logs w/ root wash, 10" 24" diam, 30' long	\$460.00	Each			\$ -
Rocks, one-man	\$80.00	Each			\$ -
Rocks, two-man	\$120.00	Each			\$ -
Root wash	\$165.00	Each			\$ -
Spawning gravel, type A	\$22.00	CY			\$ -
Weir - log	\$1,500.00	Each			\$ -
Weir - adjustable	\$2,000.00	Each			\$ -
Woody debris, large	\$190.00	Each			\$ -
Snags - reduced	\$400.00	Each			\$ -
Snags - on site	\$80.00	Each			\$ -
Snags - installed	\$100.00	Each			\$ -
TOTAL					\$ -

EROSION CONTROL

ITEMS	Unit Cost	Unit	Quantity	Description	Cost
Basalt and Compost attachment	\$ -4.80	CY			\$ -
Crack/rd surfacing, 1 1/4" hose	\$30.00	CY			\$ -
Detting	\$7.00	CY			\$ -
Excavation truck	\$4.00	CY			\$ -
Fabric sil	\$1.60	LF			\$ -
Tube Mat	\$1.26	EV			\$ -
Mulch, by hand, straw, 2" deep	\$1.37	EV			\$ -
Mulch, by hand, wood chips, 2" deep	\$3.25	SY			\$ -
Mulch, by machine, straw, 1" deep	\$0.32	SY			\$ -
Piping, temporary, CPP, 6"	\$9.30	LF			\$ -
Piping, temporary, CPP, 6"	\$14.00	LF			\$ -
Piping, temporary, CPP, 12"	\$18.00	LF			\$ -
Plastic covering, frost/ice, sandbagged	\$2.00	SY			\$ -
Rip/Rap machine placed, slopes	\$33.98	CY			\$ -
Rock Crush - 5/8" to 1 1/2"	\$3,000.00	Each			\$ -
Rock Constr. Entrance 50x15x1'	\$1,500.00	Each			\$ -
Sediment pond clear assembly	\$1,500.00	Each			\$ -
Sediment trap, 8' high berm	\$15.57	LF			\$ -
Sediment trap, 8' high berm, w/straw geo. fabric	\$59.80	LF			\$ -
Soiling, 1" deep, level ground	\$8.24	EV			\$ -
Soiling, 1" deep, sloped ground	\$8.48	EV			\$ -
Straw bales, place and remove	\$600.00	TON			\$ -
Hauling and disposal	\$20.00	CY			\$ -
Topsoil, delivered and spread	\$35.73	CY			\$ -
TOTAL					\$ -

GENERAL ITEMS					
ITEMS	Unit Cost	Unit			Cost
Fencing chain link 8' high	\$18.89	LF			\$ -
Concrete chain link corner posts	\$111.17	Each			\$ -
Fencing chain link gate	\$277.63	Each			\$ -
Fencing split rail 3' high (2-rail)	\$10.54	LF	480.00		\$ 5,059.20
Fencing temporary (NGP)	\$1.20	LF			\$ -
Signs sensitive area boundary (inc. backing post, install)	\$28.50	Each			\$ -
TOTAL					\$ 5,059.20
OTHER				(Construction Cost Subtotal)	\$ 17,296.00
ITEMS	Percentage of Contribution	Line			Cost
Mobilization	10%	1			\$ 1,729.60
Contingency	30%	1			\$ 5,188.80
TOTAL					\$ 6,918.40
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 maintenance 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	\$ 1.06	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	\$ 1,500.00	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 impacts	\$ 720.00	EACH	3.00	(8 hrs @ 90/hr)	\$ 3,600.00
Larger than 5,000 sq. ft. but < 1 acre with wetland or aquatic area impacts	\$ 900.00	EACH		(10 hrs @ \$90/hr)	\$ -
Larger than 1 acre but < 5 acres - buffer and / or wetland or aquatic area impacts	\$ 1,440.00	DAY		(16 hrs @ \$90/hr)	\$ -
Larger than 5 acres - buffer and / or wetland or aquatic area impacts	\$ 2,400.00	DAY		(24 hrs @ \$100/hr)	\$ -
TOTAL					\$ 5,400.00
Total					\$29,614.40