



CITY OF KIRKLAND
Planning and Building Department
123 Fifth Avenue, Kirkland, WA 98033
www.kirklandwa.gov ~ 425.587.3225

DETERMINATION OF NON-SIGNIFICANCE (DNS)

Case No.: SEP15-00576

DATE ISSUED: January 29, 2016

Project Name: Bridlestone Estate Subdivision and Rezone

Project Location: 4600 – 4646 116th Ave NE

Project Description: Preliminary plat application to create 35 single family residential lots on 17.6 acres. The project includes a rezone request to change the zoning designation from RS 35 (single-family residential 35,000 sq. ft. minimum lot size) to RS 12.5 (single-family residential 12,500 sq. ft. minimum lot size). The project also includes: 1) "paper fill" and fill of wetland area to provide road access to the property from 116th Avenue NE near the southwest corner of the property and required right-of-way improvements along 116th Avenue NE. 2) Reduction in standard wetland buffer width to meet the City required right-of-way improvements for road access. 3) Installation of a culvert or bridge to widen the road access to meet City requirements. 4) The proposed mitigation for the wetland and buffer impacts includes a combination of wetland re-establishment, enhancement, restoration, and buffer restoration and enhancement.

Proponent: Cher Anderson, KLN Construction, Inc.

Project Planner: Désirée Goble, AICP

Lead agency is the City of Kirkland

The lead agency for this proposal has determined that it does not have a probable significant adverse impact on the environment. An environmental impact statement (EIS) is not required under RCW 43.21.030 (2)(c). This decision was made after review of a completed environmental checklist and other information on file with the lead agency. This information is available to the public upon request.

This DNS is issued under WAC 197-11-340(2); the lead agency will not act on this proposal for 14 days from the date issued. Comments must be submitted to Désirée Goble, project planner at dgoble@kirklandwa.gov by **5:00 PM on February 12, 2016**. Please reference case number SEP15-00576.

Responsible official:		January 29, 2016
	Paul Stewart, AICP, Acting Planning Director City of Kirkland Planning & Building Department 123 Fifth Avenue, Kirkland, WA 98033 - (425) 587-3225	Date

You may appeal this determination to the Planning & Building Department at City of Kirkland, 123 Fifth Avenue, Kirkland, WA 98033 no later than **5:00 PM on February 12, 2016** by a Written Notice of Appeal. You should be prepared to make specific factual objections and reference case number SEP15-00576. Contact Désirée Goble, project planner in the Planning & Building Department at (425) 587-3251 to ask about the procedures for SEPA appeals. See also KMC 24.02.230 Administrative Appeals.

Publish in The Seattle Times on: February 4, 2016

Distribute this notice with a copy of the Environmental Checklist to:

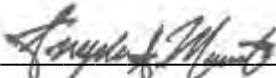
GENERAL NOTICING

- Department of Ecology - Environmental Review
- Muckleshoot Tribal Council - Environmental Division, Tribal Archeologist
- Muckleshoot Tribal Council - Environmental Division, Fisheries Division Habitat
- Cascade Water Alliance – Director of Planning
- South Rose Hill/Bridle Trails Neighborhood Association
- Lake Washington School District No. 414: Budget Manager and Director of Support Services

AGENCIES WITH JURISDICTION, AFFECTED AGENCIES, AND/OR INTERESTED PARTIES

- Department of Ecology - Environmental Review
- Department of Fish and Wildlife – Olympia
- Department of Natural Resources – SEPA Center
- Washington State Department of Transportation – Local and Development Services Manager
- Muckleshoot Tribal Council - Environmental Division, Fisheries Division Habitat Program
- U.S. Army Corps of Engineers - Seattle District
- King County Natural Resources and Parks - Director
- Washington State Parks & Recreation Commission – Agency Director
- Eastside Audubon Society
- City of Bellevue - Director, Planning Dept.
- Parties of Record

cc: Cher Anderson, KLN Construction, Inc., 19000 33rd Ave W, Suite 200, Lynnwood, WA 98036
Planning Department File, Case No. SUB15-00572

Distributed by:  January 29, 2016
 (Angela Martin, Office Specialist) Date



CITY OF KIRKLAND
Planning & Building Department
123 Fifth Avenue, Kirkland, WA 98033
425.587.3225 ~ www.kirklandwa.gov

MEMORANDUM

To: Paul Stewart, AICP, SEPA Responsible Official
From: Désirée Goble, AICP, Planner
Date: January 27, 2016
File: SEP15-00576, SUB15-00572
Subject: STATE ENVIRONMENTAL POLICY ACT (SEPA) DETERMINATION
BRIDLESTONE ESTATE SUBDIVISION & REZONE

GENERAL

The subject property, located at 4600 through 4646 116th Ave NE (see Enclosure 1), contains 17.6 acres and currently contains 5 dwelling units, numerous out building, barns and paddocks. The applicant, Cher Anderson with KLN Construction, has proposed to (see Enclosure 2):

- Rezone the property from RS 35 (minimum lot size of 35,000 s.f.) to RS 12.5 (minimum lot size of 12,500 s.f.), and
- Subdivide the property into 35 lots, and
- Eliminate the existing northern access to 116th Ave NE, and
- Relocate and widen the existing southern access to 116th Ave NE to meet the City's right-of-way improvement requirements while complying with all stream and wetland requirements, and
- Fill and "paper fill" a portion of the wetland to provide road access to the property from 116th Avenue NE at the existing southern access and install the required right-of-way improvements along 116th Ave NE, and
- Reduce and enhance wetland buffer from 75 feet to 50 feet in a limited area to allow the require widening of the existing southern access to 116th Ave NE, and
- Install a new culvert to allow the wider access to 116th Ave NE, and
- Demolish all existing structures.

ANALYSIS

The SEPA "threshold determination" is the formal decision as to whether the proposal is likely to cause a significant adverse environmental impact for which mitigation cannot be identified. If it is determined that a proposal may have a significant adverse impact that cannot be mitigated, an Environmental Impact Statement (EIS) would be required.

Many environmental impacts are mitigated by City codes and development regulations. For example, the Kirkland Zoning Code has regulations that protect sensitive areas, limit noise, provide setbacks, establish height limits, etc. Where City regulations have been adopted to address an environmental impact, it is presumed that such regulations are adequate to achieve sufficient mitigation [WAC 197-11-660(1)(e) and (g)].

I have had an opportunity to visit the subject property and review the following documents:

- Environmental Checklist dated March 18, 2015 (see Enclosure 3)

- Critical Areas Report and Mitigation Plan prepared by Wetland Solutions, Inc. and revised on November 6, 2015 (see Enclosure 4)
- Traffic Impact Analysis Review Memo from Thang Nguyen dated April 22, 2015 (see Enclosure 5)
- Traffic Concurrency Test Notice from Thang Nguyen dated January 26, 2016 (see Enclosure 6)

It will be necessary to further analyze certain aspects of the proposal to determine if the project complies with all the applicable City codes and policies. That analysis is most appropriately addressed within the staff advisory report, which will be presented at the public hearing.

Below is an analysis of key SEPA elements identified by staff and/or brought up by the general public (see Enclosure 7).

Transportation

The Public Works Department has reviewed the Traffic Study for the proposed development (see Enclosure 5) and concluded that the project will not have a significant adverse traffic impact. The project is forecasted to generate 36 net new PM peak trips. The project will be required to pay traffic impact fees as outlined in the memo. A new traffic concurrency test notice was issued on January 26, 2016 and will expire on January 26, 2017 (see Enclosure 6) unless the conditions listed under Expiration are met.

Public Comment

A large number of public comments were received on this project mostly dealing with the loss equestrian facilities (boarding, lessons, 4-H program, etc.) that previously operated on the subject property, loss of equestrian access to Bridle Trails State Park from an equestrian facility on the subject property, fire response times, increased traffic, fill and "paper fill" of the wetlands. The staff report to be presented at the public hearing for the project will respond to these issues.

Karen Walter, Watersheds and Land Use Team Leader for the Muckleshoot Indian Tribe Fisheries Division, has requested that the project treat its stormwater using enhanced treatment methods as the stormwater will eventually discharge to Yarrow Creek, a fish-bearing water. She states that enhanced treatment is necessary to avoid impacts to coho salmon, in particular. She provided scientific literature to support her comments (see Enclosure 7).

Public Works Surface Water staff reviewed Ms. Walter's comments and provided the following response regarding stormwater treatment. The other issues identified in the e-mail will be dealt with in the Staff Report.

Kirkland concurs that treatment of stormwater is an important aspect of mitigating the impacts of development on fish and fish habitat. Kirkland follows surface water design manuals that were developed based on best available science, and adopts new regulations as scientific knowledge changes. These design manuals have the intent of protecting fish and fish habitat from the impacts of stormwater. We have reviewed requirements in the current manual that Kirkland uses, the 2009 King County Surface Water Design Manual, as well as newer manuals that the City will be adopting by the end of 2016. Based on that review, the Basic level of water quality treatment will be required for all pollution generating impervious surface area in the Bridlestone Estates Subdivision. The land use of this project does not warrant the enhanced level of water quality treatment. Per the 2014 Stormwater Management Manual for Western WA (prepared by the WA State Department of Ecology), enhanced treatment is only required for industrial, commercial, and multi-family residential projects, and roads with high annual average daily traffic. This is the standard used by the City of Kirkland. The most recent stormwater manual in our area, the 2016

King County Surface Water Design Manual, which Kirkland will be adopting by the end of 2016, only requires the use of enhanced treatment in high density subdivisions (with densities equal to or greater than 8 units per acre), in addition to commercial, industrial, multifamily and some roads. These requirements were the same in the 2009 King County Surface Water Design Manual. The Bridlestone Estates Subdivision does not meet this high density and therefore enhanced treatment is not warranted.

CONCLUSION

Based on my review of all available information and adopted policies of the City, I have not identified any significant adverse environmental impacts. Therefore, I recommend that a Determination of Non-Significance be issued for this proposed action.

ENCLOSURES

1. Vicinity Map
2. Site Plan
3. Environmental Checklist
4. Critical Areas Report and Mitigation Plan prepared by Wetland Solutions, Inc.
5. Traffic Impact Analysis Review Memo prepared by Thang Nguyen
6. Traffic Concurrency Test Notice prepared by Thang Nguyen
7. Karen Walter, Muckleshoot Indian Tribe Fisheries Division letter and e-mail attachment regarding Coho Salmon

I concur I do not concur

Comments: _____



1-28-2016

Paul Stewart, Acting Planning Director Date

cc: Cher Anderson, KLN Construction, Inc., 19000 33rd Ave W, Suite 200, Lynnwood, WA 98036

Statement of Compliance for Quasi-judicial Rezone (KZC 130.40)

The City may approve an application for a quasijudicial rezone only if it finds that:

1. Conditions have substantially changed since the property was given its present zoning or the proposed rezone implements the policies of the Comprehensive Plan.

The proposed rezone implements Comprehensive Plan (April 2013) policies LU-2.2, LU-2.3, and LU-4.3. The properties proposed for rezone are large, underdeveloped residential uses that are designated Low Density Residential (1-3) in the Comprehensive Plan Land Use Map (Ord. No. 4392). With Residential Densities identified up to 3 dwelling units per acre, the Comparable Zoning Classification allowed is RS – 12,500 (Table LU-3).

2. The proposed rezone is compatible with the existing land uses in the immediate vicinity of the subject property.

As identified in Criteria 1 above, the proposed zoning is consistent with existing Comprehensive Plan designations and policies. The proposal provides for residential uses which are consistent with existing residential uses to the north and south. East of the proposal is Bridle Trails State Park, and the proposal would allow for continued equestrian access as anticipated in the Bridle Trails Neighborhood Plan (September 2011). To the west of the proposal, across 116th Ave NE, is open space which is compatible with the proposed residential uses on the subject property.

3. The proposed rezone bears a substantial relationship to the public health, safety, or welfare.

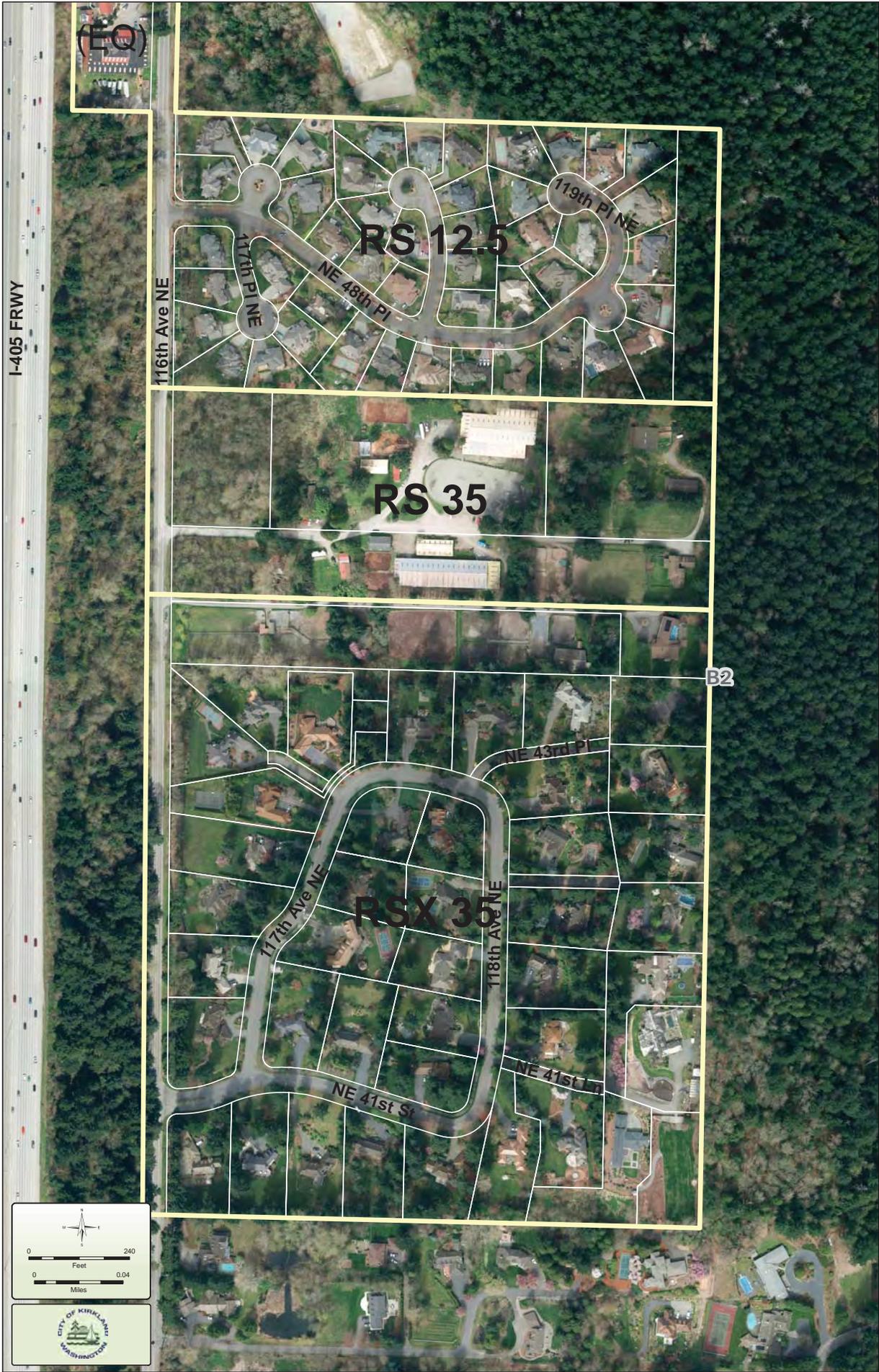
This proposed rezone is compliant with the Comprehensive Plan and Zoning code because it lies within adopted ranges for Low Density Residential. The Comprehensive Plan and Zoning code were adopted to help preserve the public's health, safety, and/or welfare, therefore this proposed rezone is substantially related to the public's health, safety, and/or welfare.

4. The proposed rezone is in the best interest of the community of Kirkland.

This proposed rezone is compliant with the Comprehensive Plan and Zoning code, which were both adopted to ensure the City's growth occurs consistent with its adopted vision and goals. Therefore, this proposed rezone maintains the best interests of the community of Kirkland.

5. If the rezone is to place or remove an overlay zoning designation on the Zoning Map, the proposal meets the applicable designation criteria of Chapters 70 through 80 KZC.

The rezone does not propose to place or remove an overlay zoning designation on the Zoning map, and therefore is not required to meet the designation criteria of Chapters 70 through 80 KZC.



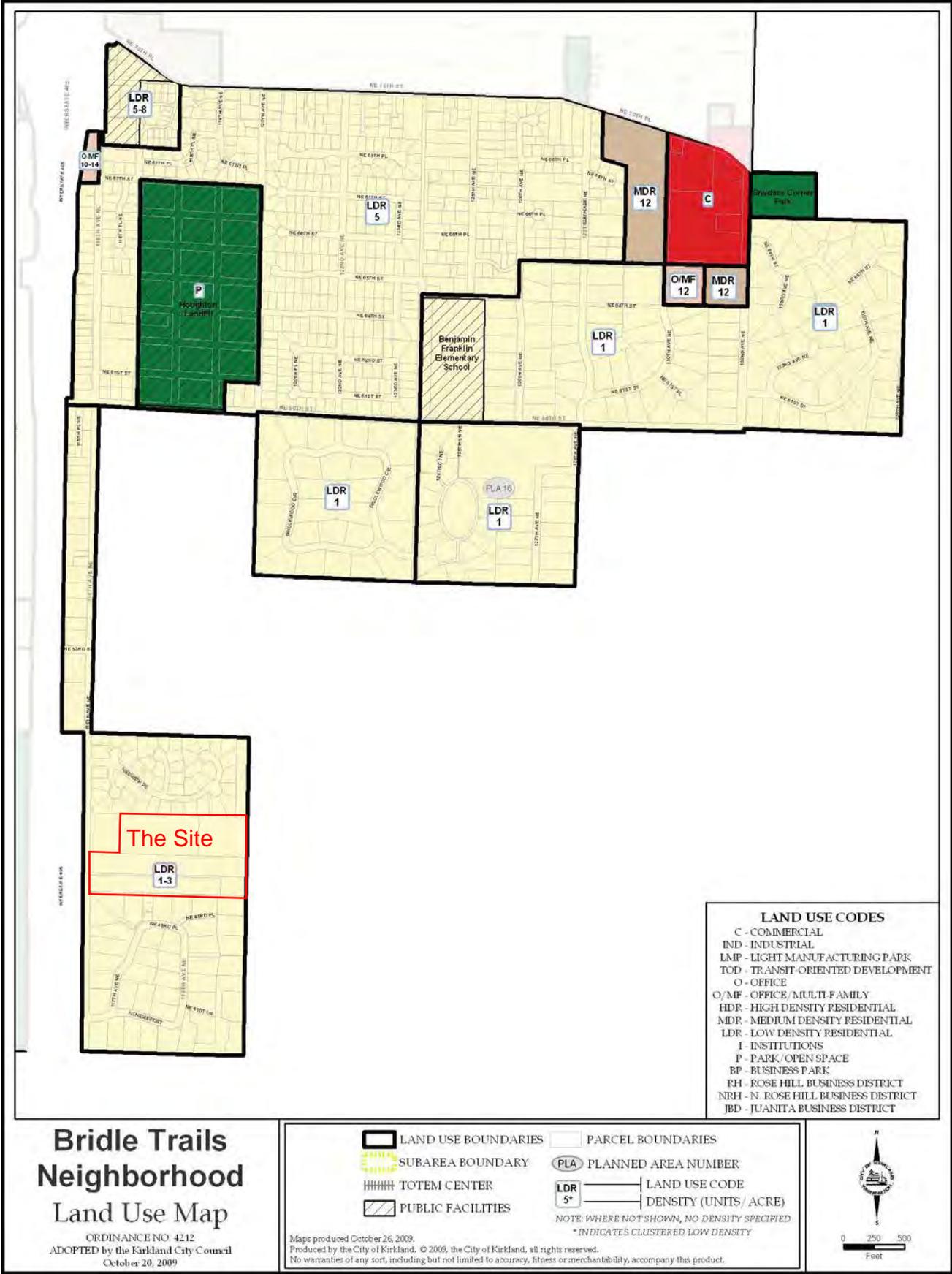


Figure BT-1: Bridle Trails Land Use

CRITICAL AREAS REPORT AND MITIGATION PLAN

BRIDLESTONE ESTATES

4626 116TH AVE NE
KIRKLAND, WASHINGTON 98125

TAX ID: 162505-9017, 162505-9021, 162505-9022, 162505-9031, 162505-9034



Prepared By:



Wetland Solutions, Inc.
Environmental Consultants

Kyle Legare
Wetland Ecologist/Certified Arborist/CESCL
18820 3rd Ave NE
Arlington, WA 98223

Phone: (425) 308-4628

Prepared:

3rd Revision: November 6, 2015
2nd Revision: September 18, 2015
Revised August 18, 2015
May 11, 2015

Executive Summary

The purpose of this document is to satisfy the City of Kirkland regulations that requires a Critical Areas Study according to KZC 90.40. The purpose of this report is to provide a conceptual mitigation plan for proposed critical area and buffer impacts associated with the project. A detailed mitigation planting plan (sheets M-1 to M-6) has been completed and should be reviewed in conjunction with this report.

The proposed 17.6 -acre project is a 35-lot residential subdivision that is located at 4626 116th Ave NE, Kirkland, Washington. The site is located in Section 16 of Township 25N, Range 5E in the southeastern corner of the City of Kirkland. The site is bordered by single family residential development to the north and south, 116th Avenue NE to the west, and Bridle Trails Park to the east. The applicant is requesting a rezone from RS 35 to RS 12.5. All existing equestrian facilities including the paddocks, stables, and arenas will be removed during initial clearing and grading of the site. The new development will include the installation of utilities, sanitary sewer, stormwater management facilities, tree protection areas, sensitive area protection areas, and road frontage improvements.

Three wetlands were identified as a result of this work referred to as Wetlands A, B, and C for the purposes of this report. The Watershed Company, Inc. completed a wetland delineation review in March 2013. Five recommendations were provided in the review letter, which have been addressed in this report.

The proposed residential development has been designed to avoid and minimize impacts to critical areas and associated buffers to the greatest extent practicable. Proposed impacts where unavoidable have been located in areas that were previously disturbed and have lower existing functions and values. Impacts to wetland and stream areas are limited to the required access road to the site. Buffer impacts are limited to the access road and stormwater outfall. A total of 47,628 SF of wetland area is located on the subject site. Per KZC 90.55(2) no *land surface modification* can occur in more than 10 percent of the total wetland area or 4,762 SF for the project site, may be modified.

The proposed mitigation for the wetland and buffer impacts associated with development activities includes a combination of wetland re-establishment, enhancement, restoration, and buffer enhancement. The proposed mitigation measures meet or exceed the ratios outlined in KZC 90.55.

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1.0 Introduction

The proposed Bridlestone Estates Project is a 35 – Lot residential sub-division located within the City of Kirkland. A wetland delineation and critical area study was completed by Wetland Resources, Inc. in February 2013. This was followed by a Wetland/Stream Delineation Report Review completed by the Watershed Company in March 2013. Five recommendations were provided in the review letter that included revisions to wetland field data forms, wetland connections, and wetland boundaries. These revisions have been applied to the proposed project and are reflected in the information included in this mitigation plan.

Applicant:
KLN Construction, Inc.
19000 33rd Ave W, Suite 200
Lynnwood, WA 98036

1.1 Purpose

The purpose of this document is to satisfy the City of Kirkland regulations that requires a Critical Areas Study according to KZC 90.40. The purpose of this report is to provide a conceptual mitigation plan for proposed critical area and buffer impacts associated with the project. A detailed mitigation planting plan (sheets M-1 to M-6) has been completed and should be reviewed in conjunction with this report.

1.2 Statement of Qualifications

Kyle Legare has eleven years of experience working as a wetland ecologist in the northern Puget Sound area in over twenty different local jurisdictions as well as working with state and federal agencies. This work has included successfully completing wetland delineations, mitigation planting plans, mitigation installation management and monitoring, habitat management plans, wildlife studies, JARPA submittals, and project management. Kyle is also a Certified Arborist with the International Society of Arboriculture with a TRAQ endorsement and a Certified Erosion and Control Lead. He has nearly two years of experience as a water quality specialist for Island County, co-managing the surface water quality monitoring program in support of the local critical areas regulations and managing the Pollution Identification and Correction Program for Island County.

1.3 Statement of Accuracy and Assumptions

The information contained herein is, to our knowledge, correct and accurate. It should be recognized that the establishment of stream and wetland boundaries is an inexact science. Streams are subject to weather patterns, in addition to upstream and downstream activities. Wetlands are, by definition, transition areas, and wetland boundaries often change with time. The presence of wetland indicators may also vary depending on the time of year. Additionally, individual professionals may disagree on the precise location of wetland boundaries or the functions and values of a wetland. All stream and wetland boundaries, classifications, and buffer widths should be considered subject to change until reviewed and approved by the appropriate regulatory agencies with jurisdiction. The applicant intends to obtain jurisdictional approval before completing final site plans and/or beginning construction activities. Within the limitations of schedule, budget, and scope-of-work, we warrant that this study was conducted in accordance with generally accepted environmental science practices, including the technical guidelines and criteria in effect at the time of this study. The results and conclusions of this report represent the authors' best professional judgment based upon the information available to the

by the project proponent and information obtained during the course of this study. No other warranty, expressed or implied, is made.

1.4 Proposed Development Project

The proposed project is a 35 – lot residential subdivision of five existing parcels that total 17.6 – Acres. The applicant is requesting a rezone from RS 35 to RS 12.5. All existing equestrian facilities including the paddocks, stables, and arenas will be removed during initial clearing and grading of the site. The new development will include the installation of utilities, sanitary sewer, stormwater management facilities, tree protection areas, and sensitive area protection areas.

1.4.1 Description of the Development Site

The proposed project is a residential subdivision that is located at 4626 116th Ave NE, Kirkland, Washington. The project includes an assemblage of five existing parcels currently zoned RS 35 that account for 17.6-Acres and include Tax ID numbers:

Tax ID	Size (Acres)	Current Zone
• 162505-9017	2.99	RS 35
• 162505-9021	3.66	RS 35
• 162505-9022	4.83	RS 35
• 162505-9031	4.95	RS 35
• 162505-9034	1.17	RS 35

The entire site is located within WRIA 8 and the Yarrow Creek sub-basin. The site is located in Northern King County, within the jurisdiction of the City of Kirkland (see Figure 1, Vicinity Map). The site is located in Section 16 of Township 25N, Range 5E in the southeastern corner of the City of Kirkland. The site is bordered by single family residential development to the north and south, 116th Avenue NE to the west, and Bridle Trails Park to the east.

The subject parcels have been previously developed with single family residences, accessory buildings, driveways, and associated utilities. The west-central portion of the site has been used for equestrian purposes with fenced pasture, riding areas, and paddocks visible from aerial photography and verified through site investigations (see Appendix A for survey overlay with aerial photography). The remaining site area is either lawn or mixed forest. The mixed forest within the upland area appears to be second or third growth trees, with Douglas fir representing the dominant species.

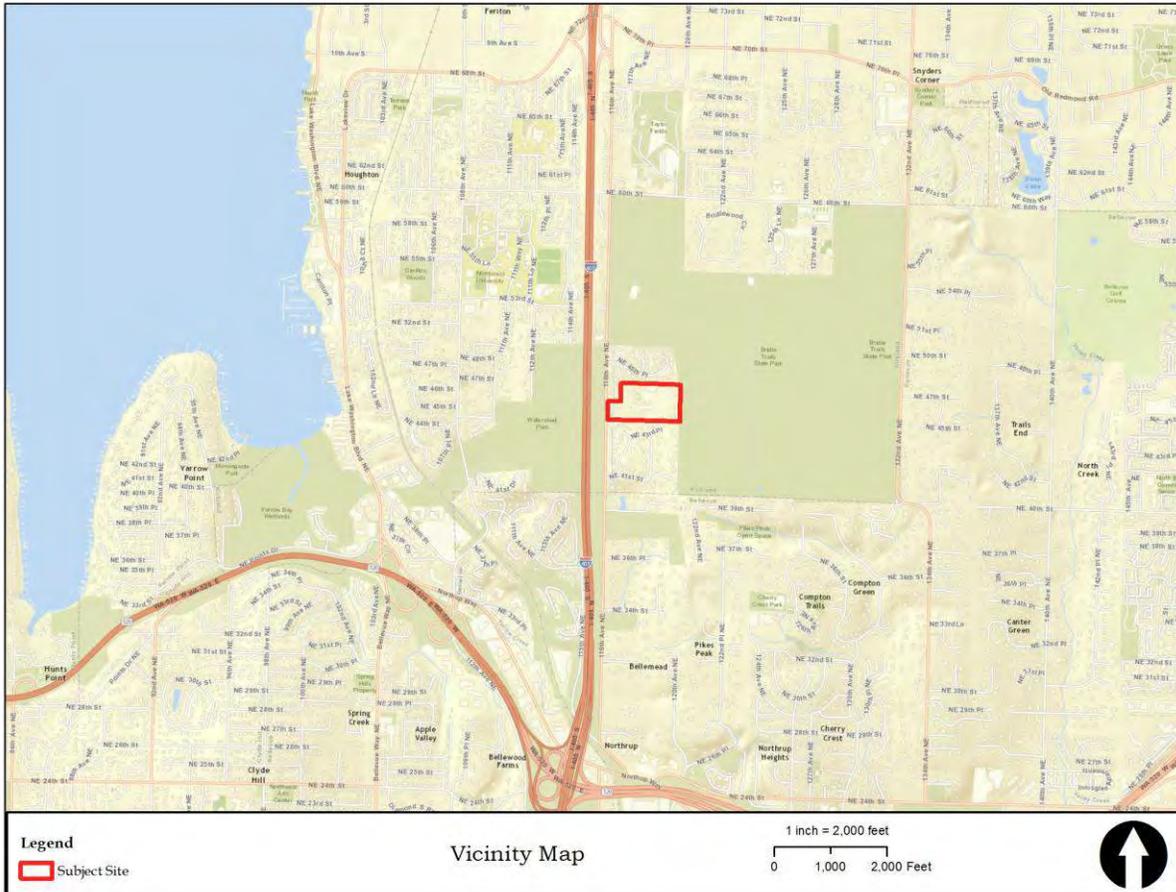


Figure 1: Vicinity map for the project site.

2.0 Methods and Definitions

2.1 Office Research

The analysis of the resources on the subject property and associated off-site area includes preliminary office research and site-specific investigations with respect to existing vegetation communities, hydrology patterns, and soils. Public resource documents have been reviewed to provide initial site information regarding hydrology, soils, and vegetation. Sources include:

- ❖ **Aerial photographs:** USGS, 2002; Google Earth Imagery, 2007-2012, City of Kirkland 2014.
- ❖ **Topographic maps:** City of Kirkland two foot contour isolines, retrieved July 22, 2014. City of Kirkland GIS Services.
- ❖ **Soil Survey of King County Area, Washington:** USDA, Natural Resource Conservation Service (NRCS), Current web soil survey; Soil Survey Geographic Database for King County Area (wa663).

- ❖ **NWI, City of Kirkland Sensitive Areas Map:** U.S. Fish & Wildlife Service, 2003; National Wetlands Inventory (NWI) website, US Department of the Interior, Fish & Wildlife Service, St. Petersburg, FL; City of Kirkland, 2013, Sensitive Areas Map.
- ❖ **Hydrology Map:** City of Kirkland, Sensitive Areas Map, July 9, 2013.
- ❖ **Salmonscape Fish Distribution Maps:** Washington Department of Fish and Wildlife, Salmonscape website. Retrieved August 18, 2015.

2.2 Site Investigation

Wetland Resources, Inc. completed a wetland delineation of the five parcels in February 2013. The Watershed Company, Inc. provided a third party review of this work in March 2014, documenting their findings and recommendations a wetland/stream delineation report review letter. The wetland delineation report, rating forms and associated wetland determination forms completed by Wetland Resources, Inc. These documents are on file at the City of Kirkland and should be reviewed in conjunction with this report. Wetland and stream determinations were made based on the following criteria.

2.2.1 Wetland Determination

When all three parameters (vegetation, hydrology, and soils) have been examined at an observation point, a wetland determination can be made. A positive determination requires that all three parameters be positive for a wetland area to be present. If any one of the three is not positive, the observation point is not within a wetland. If all three parameters are met at all observation points, then the entire area is a wetland. If one or more parameters are not met at some observation points, then some of the area is wetland and some is not, and the boundary must be determined by additional sampling.

Site investigations were conducted to examine the presence or absence of hydric soils, wetland hydrology, and hydrophytic vegetation following the methodology described in the *Interim Regional supplement to the corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region Version 2.0* (ACOE, 2010). Hydric soils when identified were described using the *field Indicators of Hydric soil sin the United States* (USDA, 2010). Wetland categories were rated using the *Department of Ecology's Washington State Wetland Rating System for Western Washington* (Hruby, 2004). Critical areas within 300' of the property line were assessed using available natural resource maps and visually in the field when possible. Photos were taken that were representative of each critical area and its buffer, when identified.

2.2.2 Stream Determination

The determination for the presence or absence of any streams on-site was completed based on the water typing criteria in the WAC 222-16-030 and KZC 90.30(16), which includes: channel width, gradient, substrate type, flow, impoundment, fish, diversion, and other factors.

3.0 Results

The following is a summary of the results of both the office research and on-site investigation. The wetland and stream delineation was completed in February 2013 by Wetland Resources, Inc. The Watershed Company provided a third party wetland/stream delineation report review in March 2013.

Kyle Legare of KLN Construction completed multiple site visits in fall/winter 2013 to 2014 and in the summer of 2014 to assess current site conditions, which included existing vegetation, general topography, habitat features, and existing structures were also noted at this time. Representative site photographs are included in Appendix A.

3.1 Background Research

The National Wetlands Inventory (NWI) and the City of Kirkland sensitive areas map identify two wetland units on the subject site and one immediately south of the site. A stream segment that parallels 116th Ave NE on the east side of the road flowing from north to south has been mapped on the subject property. The stream is identified as a fish bearing water by both the Washington Department of Fish and Wildlife and the City of Kirkland. The City of Kirkland map indicates the stream segment on and immediately upstream and downstream of the subject site as fish bearing. The newly updated WDFW Salmonscape indicates that the entire reach of Yarrow Creek up to NE 60th Street has salmonids present.

Three soil map units have been mapped on-site by the NRCS; (AgC) Alderwood gravelly sandy loam, 6-15% slopes, (AgD) Alderwood gravelly sandy loam, 15-30% slopes, and (No) Norma sandy loam (see Figure 4). These soil map units have components that meet the criteria for hydric soils, with Norma sandy loam specifically being a poorly drained soil.

Aerial photography (1936, 1990, 2002, 2011, and 2014) was used to assess historical and current land cover. Two homes appear to have been present on the subject property in 1936, with approximately 50% of the site area being cleared. It also appears that there were two access driveways across Wetland B. The Yarrow Creek channel can vaguely be seen running parallel to 116th Ave NE.

Since 1990, land use on the site appears to have remained much the same. There appears to be an increase in overall canopy cover associated with the maturation of existing vegetation over the 24 year period. The livestock paddocks, arenas, barns, and associated accessory buildings were present in the 1990 photographs and are largely unchanged today.

3.2 On-site Critical Areas Determination

A wetland/stream delineation was completed in February 2013 by wetland Resources, Inc. At that time all wetland boundaries were marked in the field and professionally surveyed. The Watershed Company, Inc. completed a wetland delineation review in March 2013. Five recommendations were provided in the review letter that included:

1. Expand the delineated boundary of Wetland A. *This was completed in the field by Kyle Legare and subsequently surveyed.*
2. Revise the wetland field data form for Wetland A to score less than 22 points, qualifying for a Type 3 wetland. *The form has been revised and the corresponding information is reflected in this report and on all plan sheets.*
3. Depict the southern wetland unit as Wetland C and note as a separate unit. *This has been noted in this report.*
4. Update the wetland delineation map to show corrections to Wetlands A and C. *Both wetland areas have been revised and are called out correctly on the Sensitive Areas Map.*

5. If any direct wetland impacts are proposed, the applicant is advised that Ecology wetland rating forms will be required for state and Federal permitting. *Wetland fill will be required for the proposed access road and therefore Ecology wetland rating forms will be provided for the state and Federal permit application.*

Three wetlands were identified as a result of this work referred to as Wetlands A, B, and C for the purposes of this report. The following is a summary of the identified wetlands in regards to physical characteristics, existing functions and values, and regulatory requirements, which are used to help consider mitigation measures. The delineation report should be reviewed for details regarding methodology, rating forms, and conclusions.

3.2.1 Wetland A Determination Summary

Wetland A is located along the north property line in the eastern portion of the site. The wetland was identified as a small depressional system (2,620 SF on-site) that flows from northeast to southwest. Based on further review and data from the topographic survey, the wetland may be classified as a slope system with the outfall located at the lowest point of the wetland area. This does not affect the rating of the wetland and is only offered as additional information regarding the system.

Hydric Soil Assessment

Soils samples were assessed and reported in the delineation report completed by Wetland Resources, Inc. Soils within the wetland boundary displayed a chroma 1 matrix within the upper 6 inches followed by a horizon with 10YR 5/4 loamy sand with redoximorphic features present.

Hydrology Assessment

Saturation to the surface, shallow ponding, and surface runoff hydrologic indicators were observed within the delineated wetland boundaries during KLN's follow – up site visit in January 2014. The hydrology appears to be a result of shallow groundwater and subsurface flow with surface flow draining to the southwest and into an existing culvert. The eastern wetland boundary near the north property line is at an elevation of 410 FT and continues downhill to 400 FT near the existing culvert. There is a natural drainage feature extending off-site flowing from northeast to southwest.

Hydrophytic Vegetation Assessment

Vegetation throughout the majority of the wetland area on and off site is dominated by salmonberry, creeping buttercup, red alder, black cottonwood, and some Himalayan blackberry. This vegetation transitions quickly within the buffer area to big leaf maple and Douglas fir canopy cover.

Existing Functions and Values

Wetland A provides moderate overall functions and values based on the size, location, and condition of the wetland system. Wetland A provides very good habitat and refuge for local wildlife. The wetland corridor connects to the Bridle Trails State Park, which is forested with mature trees and shrubs. The wetland provides low to moderate stormwater control functions, with limited area available for storage and detention. Wetland A provides moderate to high water quality improvement functions based on the opportunity (surface runoff received residential and agricultural sources) and ability to filter and infiltrate water with the existing vegetation and soil characteristics.

Regulatory Requirements

The wetland received an overall score of 21 points using the City of Kirkland's Wetland Field Data Form, which qualifies for a Type 3 wetland. Type 3 wetlands require a standard 50 – foot buffer in primary basins per KZC 90.45(1). Structures shall be set back at least 10 - feet from the designated or modified wetland buffer (KZC 90.45(2)).

3.2.2 Wetland B Determination Summary

Wetland B is a large depressional system located along the west property line of the subject site. The wetland is approximately 2.4 – Acres in total area including off-site area, with 41,216 SF of wetland area located on the subject property. The wetland is bounded by topography to the east, access driveways to the south, existing development to the north, and 116th Ave NE to the west. Yarrow Creek flows south through the western portion of the wetland area, providing for the conveyance of surface water from the wetland area.

Hydric Soil Assessment

Soils within the wetland were reported as having a chroma 1 A horizon followed by a sandy loam chroma 2 B horizon.

Hydrology Assessment

Saturation to the surface, shallow ponding, a high water table hydrologic indicators were observed within the delineated wetland boundaries during multiple site visits made by KLN staff in the fall and winter 2013/2014. Yarrow Creek enters the wetland unit near the northwest corner of the City owned parcel adjacent to the Bridlestone Estates assemblage. The wetland likely provides hydrologic input for Yarrow Creek.

Hydrophytic Vegetation Assessment

The wetland is forested with a mix of black cottonwood, red alder, Pacific willow, Scouler's willow, Douglas spiraea, salmonberry, skunk cabbage, water parsley, and giant horsetail. These species were observed throughout the wetland and represent dominant cover.

Existing Functions and Values

Wetland B provides moderate to high overall functions and values based on the size, location, and condition of the wetland system. Some of the existing factors that negatively influence the functions and values include the lack of a functional buffer along the western boundary and fragmentation from existing access driveways through the wetland.

Regulatory Requirements

The wetland qualifies for a Type 2 wetland. Type 2 wetlands require a standard 75 – foot buffer in primary basins per KZC 90.45(1). Structures shall be set back at least 10 - feet from the designated or modified wetland buffer (KZC 90.45(2)).

3.2.3 Wetland C Determination Summary

Wetland C is located in the southwest corner of the site and was originally included as part of the Wetland B unit. The wetland is now identified as a separate unit based on the wetland delineation review completed by The Watershed Company, Inc. and includes 3,792 SF of area on-site. The wetland is a slope system that is associated with Yarrow Creek. Wetland C extends off-site to the south (see Appendix A for approximate location) flowing along 116th Ave NE.

Hydric Soil Assessment

Soils within the wetland were reported as having a chroma 1 A horizon followed by a sandy loam chroma 2 B horizon.

Hydrology Assessment

Saturation to the surface and runoff was observed throughout both the on and off-site portions of Wetland C during fall and winter 2013/2014 site visits completed by KLN staff. Yarrow Creek is a perennial stream that flows from north to south through the wetland.

Hydrophytic Vegetation Assessment

The on-site portion of Wetland C is dominated by reed canary grass, creeping butter cup, and three weeping willows. The off-site portion of the wetland is also located adjacent to 116th Ave NE, however is dominated by black cottonwood, red alder, Pacific willow, salmonberry, creeping buttercup, and water parsley.

Existing Functions and Values

Wetland C provides low to moderate overall functions and values based on the size, location, and condition of the wetland system. Some of the existing factors that negatively influence the functions and values include the lack of a functional buffer along the western boundary, fragmentation from existing access driveways through the wetland, and encroachment from equestrian activities to the east. The majority of buffer area on-site has been severely impacted from past clearing and grading and current livestock use.

Regulatory Requirements

The wetland qualifies for a Type 2 wetland. Type 2 wetlands require a standard 75 – foot buffer in primary basins per KZC 90.45(1). Structures shall be set back at least 10 - feet from the designated or modified wetland buffer (KZC 90.45(2)).

3.2.4 Stream (Yarrow Creek) Determination Summary

One stream (Yarrow Creek) was identified and flagged on the western portion of the site flowing from northeast to north to south through the site by Wetland Resources, Inc. The stream has been mapped by the City of Kirkland, with the on-site reach identified as a Class A. The stream is perennial and has been mapped by both WDFW and the City of Kirkland as being fish bearing, which meets the requirements for a Class A Stream per KZC 90.30(4). Class A streams require a standard 75-foot buffer with a 10-building setback per KZC 90.90(1).

The stream corridor has been degraded by land development throughout the majority of the stream segment. The stream continues south through the City of Bellevue and eventually drains to Lake Washington. The stream flows through urbanized areas and adjacent to paved roadways, with limited areas of native vegetation. The stream segment immediately north of the subject site has been piped along 116th Ave NE.

3.2.5 Stream and Wetland Buffer Assessment

Overall, the on-site buffers are vegetated with either a mixed overstory of black cottonwood and red alder with an understory of salmonberry and Himalayan blackberry or are maintained as lawn or pasture for horses. The enhancement of the buffer areas for Wetland B and C will include the installation of native trees and shrubs that include plants that are considered pioneering species or display faster than

average growth rates. These biotic characteristics will help the plants compete with invasive plant cover and reach a closed native canopy system vegetation community. In addition, a dense planting scheme will be employed to create a physical barrier that will help minimize encroachment into the buffer.

3.3 Off-Site Critical Areas

Yarrow Creek and associated Wetlands B and C continue off-site to the north and south. Wetland A extends off-site to the north and northeast. The off-site areas have been identified on the critical area map in Appendix A. These areas appear to be largely defined by the existing topography. Additional wetland areas have been observed on the west side of 116th Ave NE adjacent to the subject site. No other wetland or streams have been mapped within 300-feet of the subject site.

4.0 Proposed Development Activities

The proposed residential development has been designed to avoid and/or minimize impacts to critical areas and associated buffers to the greatest extent practicable. Proposed impacts where unavoidable have been located in areas that were previously disturbed and have lower existing functions and values. Impacts to wetland and stream areas are limited to the required access road to the site. Buffer impacts are limited to the access road and stormwater outfall structure. A total of 47,628 SF of wetland area is located on the subject site. Per KZC 90.55(2) no more than 10 percent of the total wetland area or 4,762 SF for the project site, may be modified. The specific proposed impacts are discussed in the following sections.

4.1 Impacts Associated with New Access Road and Road Frontage

A new access road is proposed to be constructed on the subject site to serve the proposed development. The road will connect to 116th Ave NE in the southwest corner of the subject site and will result in permanent wetland and buffer impacts, as well as impacts to the stream channel.

The access road (including stormwater management) will have 1,253 SF of permanent wetland fill, 2,448 SF of wetland paperfill, 7,900 SF of permanent buffer impact, and 10,878 SF of temporary buffer impact. The temporary buffer impact will occur in areas that do not have any existing native woody vegetation. These areas are currently used as horse pasture or are part of the existing paved driveway. A retaining wall is proposed along the road section that crosses Wetland C to help reduce wetland and stream impacts.

The location of the new road is primarily influenced by the City's interpretation of KZC 90.55(2), which states that *no land surface modification shall occur and no improvement shall be located in a Type 2 wetland, except as provided in KZC 90.55(a)*, which further states that the modification shall not affect more than 10 percent of the wetland on the subject property. To stay under 10 percent of the total wetland area (including paperfill) affected by the project, the access road was located south of the existing paved access road and further into Wetland C. This provides the opportunity to restore buffer area for the wetland, provides additional wetland re-establishment, and provides a minimum 50 – foot buffer for Wetland B. The larger buffer will help increase local functions and values to Wetland B through the re-establishment of a diverse native vegetation community.

The combination of permanent fill and paper fill is 3,952, which is 8.3% of the total wetland area on-site. The area of Wetland C located on-site has been historically degraded through clearing, grading, channelization, and regular impacts from livestock (see Appendix A for photographs). The 7,900 SF of buffer will be permanently impacted from the new road alignment and stormwater bioswale treating road runoff.

In addition, 251 SF of Wetland B will be permanently impacted along 116th Ave NE for the construction of the required equestrian path. The frontage improvement area outside of the wetland fill has been previously converted to roadside gravel shoulder. This area is considered buffer area and therefore not included in the buffer impact calculation. Rock gabion baskets have been proposed along the frontage improvements north of the proposed access road, extending north to the existing gravel driveway. The purpose of the gabion baskets is to eliminate the need to grade out the fill slope and reduce overall wetland/buffer impacts. The gabion baskets will tie into the proposed retaining wall for associated with the new access road. Again, the combination of the gabion baskets and retaining wall helps reduce wetland and buffer impacts associated with the project.

The proposed stream crossing has been revised to include a 12-foot wide hollowcore plank by 2 – foot tall box with reinforced concrete walls that will be placed under the new road and in line with the existing stream channel. The location of the hollowcore plank was revised to maintain the existing channel, while still providing adequate conveyance and connectivity to critical areas. The size and volume of the proposed crossing was redesigned to meet Washington Department of Fish and Wildlife design criteria for fish passage and flow volumes. The proposed design will be a substantial upgrade to the existing undersize culvert that is under the current road alignment. The size of the proposed hollowcore plank crossing will help increase the opportunity for both fish and wildlife movement along the stream/wetland corridor. The designed stream crossing allows for native stream substrate to remain in place, avoiding or reducing impacts to the existing stream condition.

4.1.1 Wetland Modification Review Criteria per KZC 90.55

Kirkland Zoning Code 90.55 requires an assessment of the following criteria prior to allowing for any wetland land surface modification. The following is a summary of how each criterion is met through the proposed development activities and mitigation measures.

a. It will not adversely affect water quality;

The proposed project will likely result in a net improvement of water quality (nutrients, bacteria, temperature) for both the on-site wetlands and stream. Existing conditions include the presence of active horse pasture immediately adjacent to Wetlands A, B, and C, which provide a potential source for fecal coliform, nitrogen, and phosphorus. These water quality parameters are commonly found to be sources of water quality impairment per state water quality standards. The proposed project will eliminate this source input from the surface and shallow sub-surface water draining towards the on-site wetlands. Additionally, the enhanced buffer will provide greater water quality improvement functions, filtering and reducing surface water turbidity created from overland flow over the existing gravel driveway and overgrazed pasture areas.

b. It will not adversely affect fish, wildlife, or their habitat;

No adverse impacts to fish, wildlife, or associated habitat is expected from the proposed development. The proposed mitigation measures that include wetland re-establishment, wetland enhancement, and buffer enhancement as well as relocation of existing roadways should result in a net increase in habitat

and biological support functions and values. The proposed access road will be located at least 50-feet south of the boundary of Wetland B, which will provide additional buffer habitat and screening functions than what is currently available on-site. The relocation of the stream channel away from 116th Ave NE will also help increase noise and visual screening functions. The enhancement of the wetland and buffer areas will also provide vegetative cover for wildlife movement/migration on-site.

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

The proposed wetland mitigation will result in a net increase in wetland area and thereby increase available stormwater storage area. Specific stormwater runoff calculations have been completed and provided to the City.

d. It will not lead to unstable earth conditions or create an erosion hazard or contribute to scouring actions;

No erosion hazard or scouring action is anticipated as a result of the proposed development activities. No steep slopes or erosion hazard areas have been identified within or adjacent to the proposed impact areas. Standard best management practices will be implemented during site construction to minimize short term impacts. Regular sampling in accordance with an approved stormwater pollution prevention plan and construction stormwater general permit will occur to monitor surface water quality during construction activities.

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

The proposed mitigation measures for the entire project should result in an increase to both aesthetic and habitat support functions for the subject property and for upstream and downstream properties connected to the existing riparian corridor.

f. It will result in land surface modification of no more than ten (10) percent of the wetland on the subject property;

The proposed wetland impacts are limited to 1,504 SF of permanent fill and 2,448 SF of wetland paperfill. Combined the total impact is 3,952 SF or 8.3% of the total wetland area on-site. Actual land surface modification will result in 1,504 SF of wetland area or 3.2% of the on-site area.

g. Compensatory mitigation is provided in accordance with the table in subsection (4) of this section;

The proposed compensatory mitigation measures will exceed the required mitigation outlined in the table within KZC 90.55(4). This will include 6,173 SF of wetland re-establishment, 2,610 SF of wetland enhancement, 10,878 SF of buffer restoration, and 18,675 SF of wetland buffer enhancement.

h. Fill material does not contain organic or inorganic material that would be detrimental to water quality or fish and wildlife habitat;

Because the purpose of the proposed fill is for new road construction, the fill material will be required to meet engineering specifications for sub-grade. This will not include organic material, nor any material that would be detrimental to water quality and wildlife habitat.

i. All exposed areas are stabilized with vegetation normally associated with native wetlands and/or buffers, as appropriate; and

All exposed soils during construction activities will be stabilized in accordance with the Surface Water Pollution Prevention Plan (SWPPP). The wetland, stream, and buffer areas located adjacent to the

proposed roadway will be either restored or enhanced with native vegetation as part of the mitigation measures (please see the associated mitigation planting plan, M-1 to M-6 for planting locations).

j. There is no practicable or feasible alternative development proposal that results in less impact to the Type 2 wetland and its buffer.

The proposed site design has minimized impacts to wetlands and associated buffers to the greatest extent practicable. The existing roadway will be shifted south to create a larger buffer for Wetland B. The proposed permanent wetland impact will occur in the most degraded wetland area on-site. The proposed road is necessary to provide access to the proposed development area.

4.1.2 Wetland Buffer Modification Review Criteria per KZC 90.60

Kirkland Zoning Code 90.60 requires an assessment of the following criteria prior to allowing for any buffer land surface modification. The following is a summary of how each criterion is met through the proposed development activities and mitigation measures. An improvement or land surface modification shall be approved in a wetland buffer only if:

1) It is consistent with *Kirkland's Streams, Wetlands and Wildlife Study (The Watershed Company, 1998)* and the *Kirkland Sensitive Areas Regulatory Recommendations Report (Adolfson Associates, Inc., 1998)*;

The referenced document above identifies a number of existing problems (as identified in 1998), opportunities, and management recommendations for the Yarrow Creek Basin. Some of these included issues with fish passages, improving wildlife corridors, removing invasive vegetation, removing non-point water quality sources, improving buffer and instream habitat. The proposed project will remove the existing northern access road and culverts and re-establish wetland area. Mitigation measures will also re-establish a native plant community in the southwest corner of the project site. This will expand the potential wildlife corridor and cover and provide a better connection to the wetland area north of the proposed access road. Water quality leaving the site should improve due to the removal of non-point pollution sources associated with the presence of the horses.

2) It will not adversely affect water quality;

No adverse effect to water quality is expected from the proposed buffer modification. The proposed project will require the permanent protection of all wetland and buffer areas on the subject property. Additionally, mitigation measures will help re-establish wetland area and enhance existing wetland and buffer area. The mitigation areas on the subject site are currently used as horse pasture and have existing driveways bisecting them. Removing the non-point pollution source from horse manure should have a positive impact on surface water quality draining the area. The addition of a native plant community within will also help increase water quality improvement functions.

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

The proposed compensatory mitigation is anticipated to result in a net increase in fish and wildlife habitat on-site and downstream. The re-establishment of a native vegetation community will help increase local habitat support functions including foraging, roosting, and shading.

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

The proposed project activities will not have an adverse effect on drainage or stormwater detention capabilities. The establishment of wetland and buffer area with native plant cover in place of over-

grazed pasture and lawn areas will help provide increased water quality improvement functions as well as increase stormwater attenuation.

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

No erosion hazard or scouring action is anticipated as a result of the proposed development activities. No steep slopes or erosion hazard areas have been identified within or adjacent to the proposed impact areas.

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

The proposed mitigation measures for the entire project should result in an increase to both aesthetic and habitat support functions for the subject property and for upstream and downstream properties connected to the existing riparian corridor.

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

Because the purpose of the proposed fill is for new road construction, the fill material will be required to meet engineering standards for sub-grade. This will not include organic material, nor any material that would be detrimental to water quality and wildlife habitat.

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

All exposed soils during construction activities will be stabilized following the Surface Water Pollution Prevention Plan (SWPPP). The wetland, stream, and buffer areas located adjacent to the proposed roadway will be either restored or enhanced with native vegetation as part of the mitigation measures (please see the associated mitigation planting plan, M-1 to M-6 for planting locations).

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

The proposed site design has minimized impacts to wetlands and associated buffers to the greatest extent practicable. The existing roadway will be shifted south to create a larger buffer for Wetland B. The proposed permanent wetland impact will occur in the most degraded wetland area on-site. The proposed road is necessary to provide access to the proposed development area and has been minimized to the greatest extent practicable.

4.1.3 Stream Culvert Review Criteria per KZC 90.115

Kirkland Zoning Code 90.115 regulates the placement of culverts within stream channels. KZC states "Culverts are not permitted in streams except as specified in [this] section. The Planning Official shall review and decide upon an application to place a stream in a culvert under an access drive, driveway, or street. Decisions made under this subsection may be appealed in accordance with KZC 90.160.

The Planning Director will review and decide upon proposals to place streams in culverts, other than as specified above, using Process I, described in Chapter 145 KZC. A stream shall be allowed to be put in a culvert only if:" the following items are met. Additionally, the applicant has applied for a HPA through the Washington Department of Fish and Wildlife, which will also be reviewed for adequate fish passage, sizing, and potential impacts.

1. Placing the stream in a culvert is necessary to provide required vehicular, pedestrian, or utility access to the subject property. Convenience to the applicant in order to facilitate general site design shall not be considered; and

The proposed hollowcore plank span (12' x 2') is necessary for the new access road that will service the development. Due to the length and orientation of the on-site wetlands and stream channel, the crossing of the stream is unavoidable. The proposed crossing design minimizes impacts to the greatest extent feasible, while still providing fish passage and adequate flood volume.

2. The applicant submits a plan prepared by a qualified professional approved by the Planning Official that shows the culvert and implementation techniques that meet the following criteria:

a. There will be no adverse impact to water quality;

The re-establishment of wetland area and enhancement of wetland and buffer areas on-site should help improve water quality over time. The installation of the hollowcore plank crossing is an upgrade to an existing culvert that is present under the south access driveway on the site. The new crossing will improve the connection between Wetlands B and C and help convey the Yarrow Creek channel. The proposed crossing will be a substantial improvement for water conveyance and fish access.

b. There will be no adverse impact to fish, wildlife, and their habitat;

The proposed hollowcore plank crossing is not anticipated to have an adverse impact on fish, wildlife, or associated habitat. The proposed wetland re-establishment, stream crossing, and buffer enhancement will result in an increase in native plant cover and connectivity to other wetlands. The size of the new stream crossing provides better access and opportunity for fish movement within the riparian corridor.

c. There will be no increase in the velocity of stream flow, unless approved by the Planning Official to improve fish habitat;

The proposed mitigation and grading plans increase the sinuosity of the existing stream channel, which should help mimic natural conditions. This should also help ensure that the velocity of the stream flow will not increase. Specific flow calculations have been completed by Triad Associates in response to review comments.

d. There will be no decrease in flood storage volumes;

The proposed compensatory mitigation includes approximately 6,173 SF of wetland re-establishment, which should actually increase flood storage volume. Additionally, the proposed culvert will increase the channel area that currently exits under the paved driveway.

e. Neither the installation, existence, nor operation of the culvert will lead to unstable earth conditions or create erosion hazards or contribute to scouring actions; and

The proposed culvert installation and associated development activities will follow engineering standards and best management practices. The proposed culvert is not anticipated to lead to unstable earth conditions or increased erosion.

f. Neither the installation, existence, nor operation of the culvert will be detrimental to any other property or to the City as a whole.

The proposed road with associated stream crossing will not be materially detrimental to any other property in the subject area. The proposed road will replace two existing driveways used to access the property and therefore open space area adjacent to 116th Ave NE will increase. The compensatory

mitigation area will increase net wetland area, buffer quality, and stream channel length on the subject site, which should result in an overall improvement of local functions and values associated with these critical areas.

4.1.4 Impacts Associated with Stormwater Bioswale

Kirkland Zoning Code 90.45(4)(a)-(h) regulates water quality facilities within wetland buffers. The following items (a) through (h) are taken directly from KZC with a written response regarding how the project meets each provision.

a. It will not adversely affect water quality;

The proposed bioswale is proposed and designed to treat stormwater runoff prior to any water reaching critical areas. Stormwater runoff is currently flowing untreated into the wetland and buffer areas. The proposed bioswale is not anticipated to adversely affect water quality.

b. It will not adversely affect fish, wildlife, or their habitat;

The impact from the footprint of the bioswale will be mitigated by substantially enhancing the wetland/stream buffer on-site. The removal of horses within the buffer, re-establishment of a diverse native plant community, and treatment of stormwater will help increase local functions and values. The proposed bioswale is not anticipated to adversely affect fish, wildlife, or habitat.

c. It will not adversely affect drainage or storm water detention capabilities;

The installation of the bioswale should not have any adverse effect on drainage or stormwater detention capabilities on-site. The installation of a bioswale will also improve the existing stormwater drainage system.

d. It will not lead to unstable earth conditions or create erosion hazards or contribute to scouring actions;

The installation of the bioswale is not anticipated to result in any unstable earth conditions or erosion hazards. The King County Surface Water Design Manual (KCSWDM) sets clear design guidelines to prevent any unstable earth conditions. The KCSWDM states that design stormwater velocities shall be less than 3 feet per second in order to prevent erosion and/or unstable earth conditions. However, our design produces little to no stormwater velocity (less than 0.01 feet per second).

e. It will not be materially detrimental to any other property in the area of the subject property or to the City as a whole, including the loss of significant open space or scenic vistas;

The establishment of a wetland and stream protection area will restore native open space on the subject site. The re-establishment of a diverse native plant community will result in an increase in functions and values that will benefit both on-site and adjacent downstream landowners. The location of the bioswale immediately adjacent to the proposed access road will help provide a transition into the wetland and stream protection area. No impact to scenic vistas is anticipated.

f. The existing buffer is already degraded as determined by a qualified professional;

As discussed in the critical areas study and mitigation plan, the existing buffer is degraded. The on-site buffer has a paved driveway and fenced horse pasture, with no tree and shrub vegetation present. The horse pasture is overgrazed and provides little to no functional support for the adjacent wetland and stream area.

g. Its installation would be followed immediately by enhancement of an area equal in size and immediately adjacent to the affected portion of the buffer; and

The entire remaining wetland/stream buffer on-site will be enhanced by removing existing fencing, and installing native trees, shrubs, and woody debris. The buffer enhancement area will be more than twice the size of the impact area.

h. Once installed, it would not require any further disturbance or intrusion into the buffer.

After the installation of the bioswale, no further disturbance or intrusion to the adjacent buffer will be necessary.

4.1.5 Impacts Associated with Stormwater Outfall

The proposed stormwater management system includes a vault located outside of the eastern buffer for Wetland B. The outfall for the vault has been designed to be piped through a portion of the buffer and discharged through a level spreader near Wetland B, which result in 1,400 SF of temporary buffer impact. The pipe system design is consistent with Plate 25 "Piped Systems within Buffer Setbacks) in the Kirkland Zoning Code. Kirkland Zoning Code 90.45 states that "Surface discharge of storm water through wetland buffers and buffer setbacks is required unless a piped system is approved pursuant to this section. Storm water outfalls (piped systems) may be located within the buffer setback specified in subsection (2) of this section (90.45) and within the buffers specified in subsection (1) of this section only when the Public Works and Planning Officials both determine, based on a report prepared by a qualified professional under contract to the City and paid for by the applicant, that surface discharge of storm water through the buffer would clearly pose a threat to slope stability, and if the storm water outfall will not:

a. Adversely affect water quality;

The proposed stormwater outfall is not anticipated to adversely affect water quality. The quality and volume of water discharging will be managed by the proposed detention system in accordance with local and state standards.

b. Adversely affect fish, wildlife, or their habitat;

The temporary buffer impacts associated with the proposed stormwater outfall will be fully restored through the installation of native vegetation. The outfall location is located in an area that is currently colonized with some invasive vegetation (primarily Himalayan blackberry). The invasive plant cover will be removed and maintained in this area as part of the mitigation measures. The proposed outfall is not anticipated to have an adverse effect on fish, wildlife, or associated habitat areas.

c. Adversely affect drainage or storm water detention capabilities;

No adverse effect to drainage or stormwater detention capabilities is anticipated from the proposed stormwater outfall. The location of the outfall has been placed to help provide recharge to Wetland B and the associated stream and avoid destabilization of adjacent slopes.

d. Lead to unstable earth conditions or create erosion hazards or contribute to scouring actions; and

No erosion hazard or scouring action is anticipated as a result of the proposed development activities. No steep slopes or erosion hazard areas have been identified within or adjacent to the proposed impact areas. Standard best management practices will be implemented during site construction to minimize short term impacts. Regular sampling in accordance with an approved stormwater pollution prevention plan and construction stormwater general permit will occur to monitor surface water quality during

construction activities. The piped system will convey stormwater over slopes to a level spreader discharge area where slopes flatten out.

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

The proposed stormwater outfall will be fully restored by removing any invasive plant species and installing native vegetation. The proposed restoration will be in conjunction with the larger mitigation project that includes wetland and buffer enhancement and wetland re-establishment.

4.2 Assessment of Probable Cumulative Impacts to Critical Areas

Cumulative impacts to critical areas and their associated buffers for the proposed project can be difficult to assess on a small scale. Impacts associated with this project are limited to a new access road and road improvements being constructed adjacent to existing critical areas. The buffer impact is relatively minor and should not result in a decrease in functional value to the stream corridor or wetland area.

The on and off-site riparian corridor immediately adjacent to the project site varies from good to poor condition based on the presence of culverts, road crossings, and existing development. The biological and structural diversity that is expected to result from the proposed mitigation measures will help to maintain current functions and values.

4.3 Alternative Analysis

A variety of development alternatives exist for the subject property. For the purposes of this section this includes (1) no development (2) reduced building density (less than the proposed 35) single family residences) or (3) revised lot layout. For the first option, the existing residences, equestrian facilities, and accessory buildings would remain. There would be no new utilities, stormwater management facilities, or associated site development activities. With this option, the proposed wetland and buffer impact would not occur, however the untreated surface water runoff from the horse pastures and areas would still occur. In addition, both access roads would be left in place and the current activities within the buffer areas would continue.

A reduction in building density would result in fewer homes on the subject site. This could include fewer building lots, however this will not result in less buffer or critical area impacts because the access road would still be required and the footprint would remain the same.

A revised lot layout would also not result in less critical area impacts because of the required access road. Multiple site layouts have been developed to reach the current version. The different layouts were created with the purpose of reducing impacts to critical areas and associated buffers and to retain as many significant trees as practicable.

4.4 Mitigation Sequencing Assessment

The applicant for the proposed project has gone through multiple iterations of the site plan layout, with the intent to reduce impacts to existing significant trees and critical areas. The size and shape of the site in relation to critical areas and associated buffers and existing grade influence the lot layout, stormwater discharge area, and road locations. This has included a thorough analysis of stormwater management options and site design revisions.

4.5 Consistency with Kirkland's Streams, Wetlands and Wildlife Study

Wetlands B and C are identified as Yarrow 3 in the Watershed's Company 1998 final report. The report identifies opportunities to restore and enhance the functions and features of the basin, which include but are not limited to removal of non-native vegetation, correction of fish passage problems, improvement of habitat in the roadside channel along 116th Avenue NE, and removing debris piles and garbage from the southeast corner of wetland Yarrow 3. All four of these opportunities will be implemented as part of the mitigation efforts on the Bridlestone Estates development project. The mitigation will include removal of any non-native vegetation within the identified areas in conjunction with the installation of native trees and shrubs.

4.6 Proposed Mitigation

The proposed mitigation for the wetland and buffer impacts associated with development activities includes a combination of wetland re-establishment, enhancement, restoration, and buffer restoration and enhancement. The proposed mitigation measures meet or exceed the ratios outlined in KZC 90.55. The temporary impact and restoration areas have not been identified on these plans because they are preliminary and conceptual.

4.6.1 Proposed Mitigation for New Access Road

Mitigation for the impacts associated with the new access road meets the requirements outlined in KZC 90.55(4). Approximately 6,173 SF of wetland area will be re-established by removing old fill material associated with the existing driveways. The majority of the re-establishment area will be located within the existing gravel driveway that access the north portion of the site. The stream channel within the wetland areas north or south of the wetland re-establishment area is not well defined. A constructed channel detail has been included in the mitigation plans to account for low flow conditions, however during the wetter months it is expected that the wetland will be either occasionally or seasonally inundated.

The remaining re-establishment areas will be located immediately north and south of the proposed access road. On the north side of the road the area will be graded to remove existing fill and the associated culvert. A stream channel will be constructed in this area, which will include the placement of cobble and coarse gravel in the bed. On the south side of the road, a small wetland re-establishment area will be created in conjunction with the installation of the hollowcore plank stream crossing. The re-establishment will match the existing grades of Wetland C and will help provide a natural transition from wetland/stream channel to adjacent uplands.

In addition the re-establishment areas, all of the remaining area of Wetland C (2,610 SF) on-site will be enhanced by planting native trees and shrubs. This will help provide canopy cover over time for both the wetland and associated Yarrow Creek. A total of 18,675 SF of buffer areas that are maintained as horse pasture will be enhanced by removing existing fencing and planting native trees and shrubs. Additionally, 10,878 SF of existing buffer area that is also currently used as horse pasture or as an access road will be restored from grading activities by planting native trees and shrubs.

4.6.2 Proposed Mitigation for Stormwater Outfall

Mitigation for the temporary buffer impact associated with the installation of the stormwater outfall for the detention vault into the buffer of Wetland B includes the restoration of approximately 1,400 SF of buffer area. This area will be replanted with native shrubs and any invasive vegetation (primarily

Himalayan blackberry and Japanese knotweed) will be removed. A performance standard has been added to include annual monitoring of the outfall to ensure that point discharge, erosion, and/or channelization is not occurring as a result of the stormwater outfall.

4.6.3 Fencing

KZC 90.50 states: "Prior to beginning development activities, the applicant shall install a 6-foot-high construction-phase chain link fence or equivalent fence, as approved by the Planning Official along the upland boundary of the entire wetland buffer with silt screen fabric installed per City standard, in a manner approved by the Planning Official. The construction-phase 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; or (3) equivalent barrier, as approved by the Planning Official. Installation of the permanent fence or planted barrier must be done by hand where necessary to prevent machinery from entering the wetland or its buffer. A fence detail will be provided on the final mitigation planting plan.

4.7 Post-Construction Functions and Values Assessment

The proposed development has minimized impacts to critical areas and associated buffers to the greatest extent practicable. The intent of the proposed mitigation measures is to replace, restore, and ultimately increase local functions and values. The combination of wetland re-establishment and enhancement, along with buffer enhancement should result in an increase in functions and values associated with the wetland/stream buffer area.

The removal of invasive plant cover and addition of native trees and shrubs will help increase a variety of local functions and values including water quality improvement, reduction in surface water runoff reaching the stream, and biological support for local wildlife. The portion of buffer enhancement and wetland re-establishment immediately north and south of the proposed access road will see a substantial change in biological and structural diversity. These areas are currently either maintained as lawn along the road or are located within actively used pasture areas. The exclusion of regular disturbance (grazing and mowing) and addition of a dense native plant community will increase water quality improvement, stormwater control, and biological support functions.

The wetland re-establishment area located where the existing northern access driveway will provide a net increase of existing wetland area on-site. The mitigation measures in this area will provide an excellent opportunity to connect a fragmented habitat and remove regular disturbance. The existing gravel road bisects wetland area and limits habitat functions within this area. The road is also a conveyance of impaired surface water runoff that includes turbid water (observed during site investigations) and water that is likely high in nutrients (assumed) due to local sources.

The diversity of stem width and density will restore water quality improvement through filtration of surface water runoff. The presence of a large overstory with a sub canopy will also intercept precipitation and reduce erosion of the soil surface. Biological support functions will be increased by increasing the availability of nesting and refuge areas, as well as foraging opportunities within the buffer

area. The resulting forested cover will also help maintain noise and visual screening between the adjacent development and wetland interior.

Water temperature is a crucial environmental factor influencing the survival rates for salmonids. The reestablishment of a forested riparian corridor within Wetland C on-site will help shade the stream channel, keeping water temperatures lower during the warmer months.

The preservation of upland area with forested cover and a dense shrub canopy cover will also continue to provide water quality improvement for surface water draining towards Wetland B and Yarrow Creek. The upland area will continue to intercept and infiltrate precipitation falling on-site and filter any surface flow that occurs across the site. The dense vegetation will also continue to provide forage and refuge opportunities for local wildlife utilizing the riparian corridor.

Table 1: Wetland & Buffer Mitigation Summary Table

WETLAND & BUFFER MITIGATION SUMMARY												
Wetland Name	Location on property	Impact Reason	Critical Areas		Buffer Area		Critical Area			Buffer Area		
			Existing (SF)	Impacted (SF)	Existing (SF)	Impacted (SF)	Mit. Size (SF)	Mit. Type	Mit. Ratio	Mit. Size (SF)	Mit. Type	Mit. Ratio
C	SW Corner	New Access Road Crossing	3,792 (on-site)	1,253 (P)	NA	NA	5,012	Re-establishment	4:1	NA	NA	NA
				2,448 (PF)			2,610	Enhancement	1:1	NA	NA	NA
			NA	NA	26,379	7,900 (P)	NA	NA	NA	18,675	Enhancement	2.4:1
						10,878(T)	NA	NA	NA	10,878	Restoration	1:1
B	South of Lot 35	Stormwater outfall	27,593 (on-site)	NA	NA	1,400 (T)	NA	NA	NA	1,400	Restoration	1:1
	Frontage along 116 th Ave.	Equestrian Trail		251	NA	NA	1,161	Re-establishment	4:1	NA	NA	NA
			Total Permanent Wetland Impact: 1,504 SF 2,448 SF Paperfill		Total Permanent Buffer Impact: 7,900 SF		Total Wetland Mitigation: 8,783 SF			Total Buffer Mitigation: 30,953 SF		

Total On-site Wetland Area = 47,628 SF (10% = 4,762 SF)
Total Wetland Impact = 3,952 SF (Paperfill and Actual Fill)

5.0 Goals, Objectives, and Performance Standards

Goal 1: Increase the habitat and water quality improvement functions within a portion of the western wetland area on the subject site.

Objective 1: Re-establish 6,173 SF of wetland area by removing old fill material and installing native trees and shrubs.

Objective 2: Enhance 2,610 SF of wetland area by removing invasive plant cover and installing native trees and shrubs.

Performance Standards for Objective 1

- i) Survival of planted trees and shrubs will be a minimum of 80% after two years. Staged survivability requirements include:
 - 100% survivability after Year 1
 - Year 2 survivability is at 80%
 - Years 3-5 - A minimum of four native tree species and four shrub species will each comprise >10% cover within wetland enhancement and re-establishment areas

Evaluation Method: Transect sampling, visual inspection

- ii) Native tree and shrub canopy cover percentages (including volunteers) during the monitoring period will be:
 - 20% or greater at the end of Year 1
 - 40% or greater at the end of Year 3
 - 80% or greater at the end of Year 5

Evaluation Method: Quadrat sampling / *Alternative Method:* Line intercept

- iii) Invasive and non-native species will have 10% or less aerial coverage within the mitigation areas. Weeds include but are not limited to Japanese knotweed, Himalayan blackberry, and Scot's broom.

Evaluation Method: Quadrat sampling / *Alternative Method:* Line intercept

- iv) Wetland re-establishment areas shall have saturation between soil surface and 12 inches depth from March 1 through May 15.

Evaluation Method: Weekly visits for at least six weeks during early spring (usually beginning in March) to verify depth of surface or subsurface hydrology. A minimum of one PVC monitoring well will be installed in the wetland re-establishment areas that will allow for direct hand measurements of ground water during the monitoring visits.

- v) Wetland re-establishment areas shall have greater than 80% plant composition of FAC, FACW or OBL species.

Evaluation Method: Transect sampling, visual inspection

- vi) Soils within wetland re-establishment areas shall have at least 30% organic matter by bulk density at the time of mitigation plant installation.
Evaluation Method: Verified by invoices

Contingency:

- Substitute species that are more suited to local conditions for species that had high mortality (> 80%)
- Irrigate at regular intervals during the growing season to reduce transplant stress
- Promote optimum growth by removing competing vegetation in plant pits
- Replant with stock that propagates quickly
- Re-grade to increase or decrease elevation to achieve wetland hydrology

Goal 2: Increase the habitat and water quality improvement functions within portions of the western wetland buffer area on the subject site.

Objective 1: Enhance 18,675 SF of buffer area removing invasive plant cover and installing native trees and shrubs.

Performance Standards for Objective 1

- i) Survival of planted trees and shrubs will be a minimum of 80% after five years. Staged survivability requirements include:
- 100% survivability after Year 1
 - Years 2-4 survivability is at a level to meet 80% by the end of Year 4
 - 80% at the end of Year 5

Evaluation Method: Transect sampling, visual inspection

- ii) Native tree and shrub canopy cover percentages (including volunteers) during the monitoring period will be:
- 20% or greater at the end of Year 1
 - 40% or greater at the end of Year 3
 - 80% or greater at the end of Year 5
 -

Evaluation Method: Quadrat sampling / *Alternative Method:* Line intercept

- iii) Invasive and non-native species will have 10% or less aerial coverage within the mitigation areas. Weeds include but are not limited to Japanese knotweed, Himalayan blackberry, and Scot's broom.

Evaluation Method: Quadrat sampling / *Alternative Method:* Line intercept

Contingency:

- Substitute species that are more suited to local conditions for species that had high mortality (> 80%)

- Irrigate at regular intervals during the growing season to reduce transplant stress
- Promote optimum growth by removing competing vegetation in plant pits
- Replant with stock that propagates quickly

Goal 3: Restore the habitat and water quality improvement functions within the portions of wetland buffer disturbed for road construction and stormwater management facilities.

Objective 1: Restore 10,878 SF of buffer area impacted by grading activities by installing native trees and shrubs.

Objective 2: Restore 1,400 SF of buffer area by installing native vegetation and removing and invasive plant species.

Performance Standards for Objectives 1 & 2

- i) Survival of planted trees and shrubs will be a minimum of 80% after five years. Staged survivability requirements include:
- 100% survivability after Year 1
 - Years 2-4 survivability is at a level to meet 80% by the end of Year 4
 - 80% at the end of Year 5

Evaluation Method: Transect sampling, visual inspection

- ii) Native tree and shrub canopy cover percentages (including volunteers) during the monitoring period will be:
- 20% or greater at the end of Year 1
 - 40% or greater at the end of Year 3
 - 60% or greater at the end of Year 5

Evaluation Method: Quadrat sampling / *Alternative Method:* Line intercept

- iii) Invasive and non-native species will have 10% or less aerial coverage within the mitigation areas. Weeds include but are not limited to Japanese knotweed, Himalayan blackberry, and Scot's broom.

Evaluation Method: Quadrat sampling / *Alternative Method:* Line intercept

Performance Standard for Objective 2:

- i) No point discharge, erosion, or channelization is to occur downstream of the stormwater outfall.

Evaluation Method: Visual Inspection during each monitoring visit

Contingency:

- Substitute species that are more suited to local conditions for species that had high mortality (> 80%)
- Irrigate at regular intervals during the growing season to reduce transplant stress

- Promote optimum growth by removing competing vegetation in plant pits
- Replant with stock that propagates quickly
- Modify stormwater outfall to reduce point discharge

Goal 4: Preserve critical areas, buffers, and additional areas included as mitigation

Objective 1: Designate and sign the boundary of on-site wetlands, streams, and buffers as Protected Wetland Area

Performance Standards for Objective 1:

- i) Permanent signs are installed according KZC
- ii) Fencing installed around perimeter of buffer areas per KZC 90.50

Contingency:

- Replace or install missing signs as necessary

Evaluation Method: Sign inspection by engineer following installation or by the project biologist during the monitoring period

5.1 Monitoring

General

The monitoring period for this mitigation project will last for five years per KZC 90.55(4)(C)). After the completion of the Time Zero/As-built Report and subsequent Final Plat approval, the bond anniversary date will be set and the monitoring period shall begin. The mitigation sites will be monitored using standardized techniques and procedures described below for vegetation survival, vigor and growth of plant material, and the success of the mitigation plan overall. The monitoring strategy will include vegetation transects, vegetation quadrats, and photopoints unless otherwise approved by City Staff.

Vegetation Transects

Vegetation data will be collected within each mitigation area to help evaluate the success of the mitigation project. Transects will be established in each vegetation community during the Time Zero/As-built inspection to collect baseline monitoring data, however baseline data does not need to be included in the As-built Report. The number and length of the transects shall be determined in the field at the initiation of the monitoring program and shall be based on lengths that most accurately represent the composition of planted vegetation within the mitigation areas. A minimum of five transects shall be established within the mitigation planting areas. Total percent cover for trees, shrubs, and herbs (not including grasses) and percent cover for each individual species will be recorded in each quadrat.

Trees and shrubs that have been planted for the purpose of mitigation shall be visually evaluated to determine the rate of survival, health, and vigor of each plant within the sampling area, which will be recorded as Live, Stressed, Not found, and Dead during monitoring Years 1 and 2. For monitoring Years 3 through 5, plant species diversity and coverage will be recorded along each transect.

Vegetation Quadrats

Quadrats will be established at one or both ends of the transect, depending on site conditions, to monitor tree, shrub, herbaceous, and invasive percent cover; stakes, iron rebar, or other material will be situated so that each corner is clearly marked. Data collection will consist of species composition and percent cover, total percent plant cover, total percent woody cover (tree/shrub), total percent herbaceous cover (if applicable) for installed plants, as well as “volunteer” trees and shrubs. Percent cover of non-native/invasive plants such as Himalayan blackberry, scotch broom, reed canary grass will also be quantified. Quadrat number, location, and dimensions should be permanently recorded on the Transect PVC pipe. If needed, the line intercept methodology may be employed as an alternative to quadrat sampling. In addition to transect and quadrat sampling, the mitigation areas as a whole will be inspected and evaluated to generalize the overall level of success of the mitigation project.

Photopoints

Permanent photo points will be established using rebar and PVC pipe at locations representative of the mitigation project. Photographs will be taken from these photo points during each site visit to document the change over time of the mitigation site. These photos will provide indication of trends, current site conditions, and change over time and will be included in the yearly monitoring reports. An instruction sheet, with the direction and number of photographs to be taken, will be provided to allow continuity over time if monitoring personnel changes. In addition, photographs representing existing vegetation before construction takes place will be taken to provide a historical reference of onsite conditions.

5.2 Monitoring Schedule

An annual report describing and quantifying the level of success of the plan will be written and submitted to the City of Kirkland for review and approval. The monitoring strategy will consider, but is not limited to:

- a) Plant species composition and cover values for vegetation in the planting areas
- b) Survival rate of originally planted vegetation
- c) Wildlife use
- d) Indications of human disturbance

Time-Zero Report:

A Time Zero/As-built Report will be completed by the contractor and the consulting biologist when planting is finished. The Time-Zero Report will identify problems in obtaining materials, differences in sizes of materials than were originally called for, replacement materials, if necessary, and any other conditions that varied from the mitigation plan. If the installation is found to be significantly different from the prepared mitigation plan, the landscape contractor will be responsible for the creation of the As-built plan.

Baseline Data Collection

Permanent sampling points should be established and recorded during the Time Zero/As-built inspection to collect baseline monitoring data for total plant numbers, canopy cover, and photopoints. If baseline data collection is deferred to Year 1, plant counts and species composition may be incorrect compared with the actual installation and photo documentation cannot be adequately evaluated.

Baseline information is only relevant for subsequent monitoring years and does not need to be included in the As-built Report.

Site Visits

Additional site visits may be necessary between the scheduled monitoring site visits, if problems are identified in the mitigation areas, to monitor actions taken by the responsible party.

Year 1-5:

Two site visits each year will be conducted for monitoring purposes, with the first visit occurring during spring in the form of a maintenance visit and formal monitoring visit during late summer/early fall (before leaf drop). Site visits in Year 1 will be completed to determine the initial survival of the shrubs and trees in the planting areas and if the site is meeting the performance standards. It will include a plant-by-plant inspection with a notation of any species that appear to be stressed, dead or delayed in initial growth. The responsible party will be notified of any problems identified within the mitigation areas. Photos will be taken of the site according to the established photo schedule. An on-site meeting between the monitoring biologist and the landscape maintenance contractor may be necessary to discuss additional maintenance requirements.

Site visit(s) in Years 3-5 will occur to determine minimum species diversity. A minimum of four native tree species and four shrub species will each comprise >10% cover within wetland enhancement and re-establishment areas.

The responsible party, landscape maintenance contractor and City of Kirkland will be notified of any dead plants that need replacement, additional plants needed to meet diversity standards, or other maintenance requirements.

If applicable, the first visit of Year 5 will be conducted to determine if the site is meeting the performance standards. The final visit will be in Year 5. At this time, the monitor will determine, with assistance from the appropriate regulatory agency, whether the site has met the performance standards and goals as identified in the Mitigation Plan. If it is determined that the site has met the goals, no additional work will be done. If it is determined that the site has not yet met the goals, a contingency plan meeting will be established between the developer, consulting biologist, contractor, monitor and appropriate regulatory agency, to modify the project so it will meet the performance standards. This could include additional plantings, replacement of plant species and/or an extension of the monitoring period.

5.3 Monitoring Reporting

Annual monitoring reports will be submitted to the developer and appropriate regulatory agency by the bonding anniversary date. The monitoring reports will include photographic documentation for each site visit, with photo descriptions and a plot-by-plot analysis of the vegetation sampling plots. The report will generalize the overall conditions and address the effectiveness of the Mitigation Plan in meeting the performance standards including the presence of wetland hydrology. If problems are identified within the mitigation areas during the spring site visits, the responsible party will be notified of the problems and actions to be taken in order to rectify the problems. Additional site visits may be required to ensure that the identified actions are implemented. If no action is taken to rectify the

identified problems, the City of Kirkland will be notified of the problem, and apparent lack of response by the responsible party.

A final report will be completed by the bonding anniversary date of the final year and will include a summation and final analysis. If at that time, the performance standards have not been fully satisfied, but the monitor believes that the site is viable, growing and that the standards will be met, it should be noted. The final report will be the determination of whether the site is a success and whether the Maintenance Bond can be released.

5.4 Contingency Plan

If the mitigation plantings do not meet established performance goals for wetland hydrology, vegetative cover and plant survival, revisions to the plan will be made and implemented. Depending on the problems addressed, activities could include changes in soil or hydrologic conditions and/or the replanting of vegetation or modifying species selected for the initial planting. Specific Performance Standards have contingency options applied to them.

5.5 Performance Security

An assignment of funds or other financial guarantee shall be required to secure the mitigation plan. The financial guarantee shall be for 125 percent of the estimated completion costs of the mitigation plants and installation or as otherwise required by the City of Kirkland (KZC 90.145). The financial guarantee may only be released after the City has inspected the site, and the applicant's appropriate professional consultant has provided written confirmation that the mitigation installation, monitoring and performance standards have been met. If the performance standards have not been met, a contingency plan shall be implemented and must be successfully completed prior to the release of the financial guarantee. The performance bond is based off of the King County Critical Areas Mitigation Bond Quantity Worksheet and is included on the detailed mitigation planting plan (see Appendix B for worksheet).

6.0 Conclusions

KLN Construction has completed the site investigation and critical areas assessment for the subject property. Three wetland areas and one stream were identified on-site based on observed vegetation and soil conditions and primary and secondary indicators of hydrology. Impacts to critical areas have been minimized to the greatest extent practicable, however permanent and temporary wetland and buffer impacts are proposed to allow for the installation and construction of the new road access and for road frontage improvements adjacent to 116th Ave NE. Mitigation in the form of wetland re-establishment, and enhancement has been proposed to offset the project impacts.

This critical area determination should be considered subject to change until reviewed and approved by the appropriate regulatory agencies with jurisdiction.

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Appendix A: Natural Resource Maps and Site Photographs



Figure 2: 2002 USGS color aerial photograph of the subject property



Figure 3: 2012 aerial photograph of the subject site



Figure 4: Topographic map of the project site.

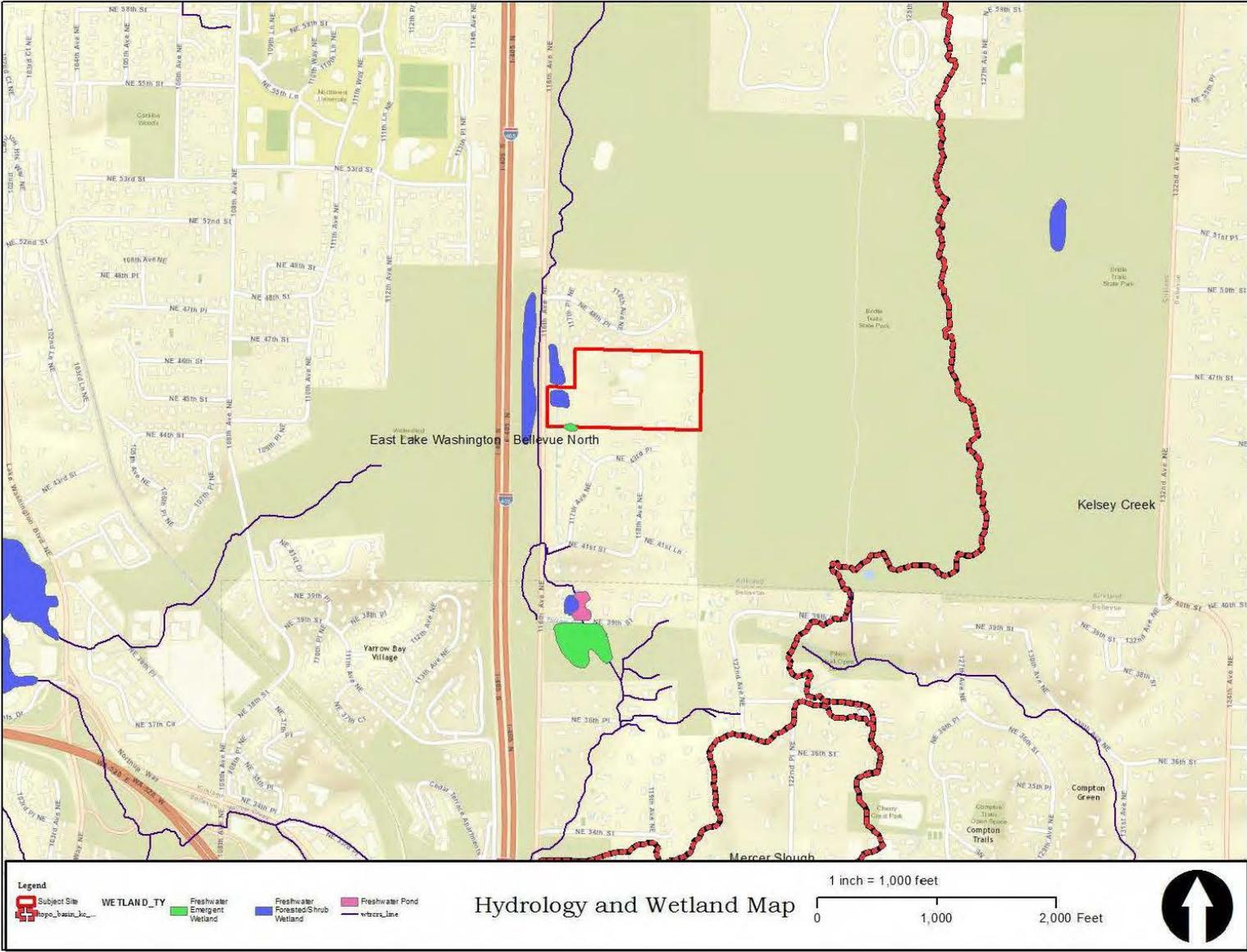


Figure 5: Watercourse and Wetland Map.

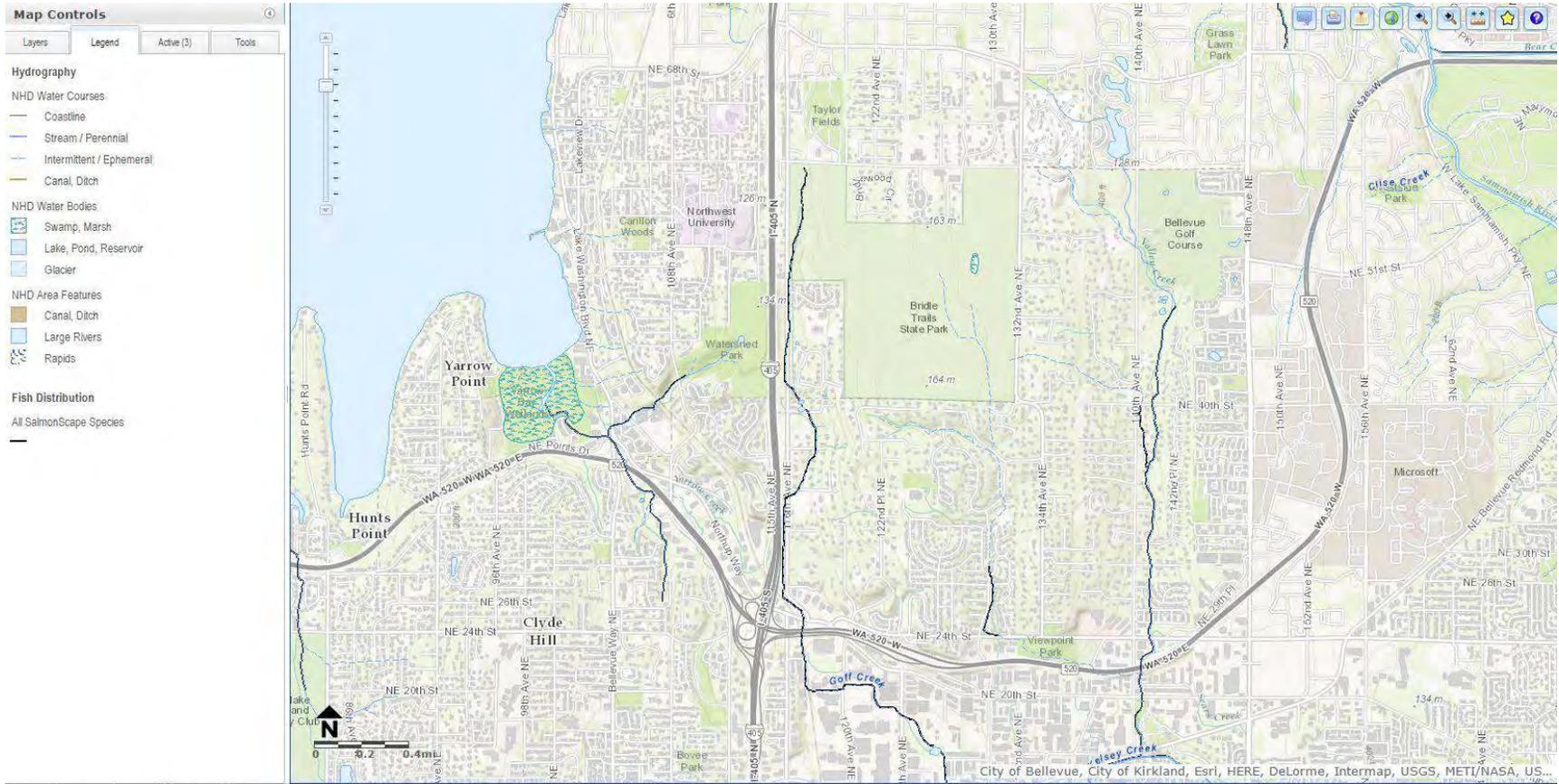


Figure 6: WFDW Salmonscape fish distribution map.



Figure 7: NRCS soil survey of the project area.



Figure 8: Existing conditions of Wetland A facing north off-site.



Figure 9: Existing vegetation gravel road bisecting Wetland B – wetland re-establishment area.



Figure 10: Existing vegetation community Wetland C facing north towards proposed road impact area.



Figure 11: Existing vegetation community Wetland C facing south near proposed road impact area.



Figure 12: Off-site Wetland C connection.



Figure 13: Existing road frontage conditions facing north along 116th Street

BRIDLESTONE ESTATES

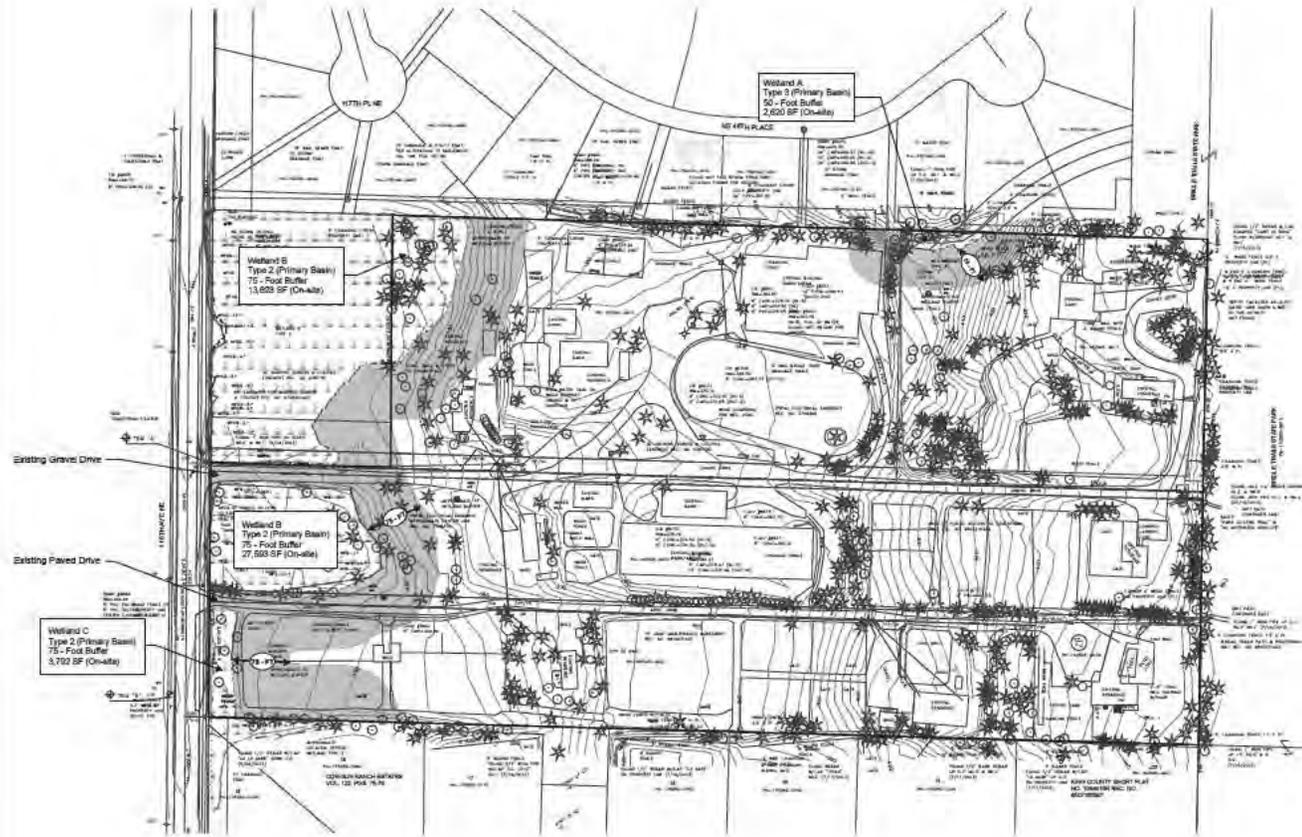
KING COUNTY, WASHINGTON
PORTION OF SECTION 16, TOWNSHIP 25 NORTH, RANGE 5 EAST, W.M.

Vicinity Map



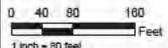
SHEET INDEX

Sheet Number	Sheet Title
M-1	Existing Conditions
M-2	Proposed Impact Areas
M-3	Proposed Mitigation Areas
M-4	Mitigation Details & Grading
M-5	Mitigation Planting Plan
M-6	Mitigation Notes Page



Legend

- Wetland
- Buffer



1 inch = 50 feet



Call 2 Working Days Before You Dig
1-800-424-5555
Utilities Underground Location Center

CITY OF KIRKLAND PLANNING AND
COMMUNITY DEVELOPMENT

APPROVED FOR CONSTRUCTION

BY: _____

R/W PERMIT NO. _____

DATE	REVISION	BY
08/07/18	City/DC comments	KJL
08/17/18	City/DC comments	KJL
11/01/18	City/DC comments	KJL

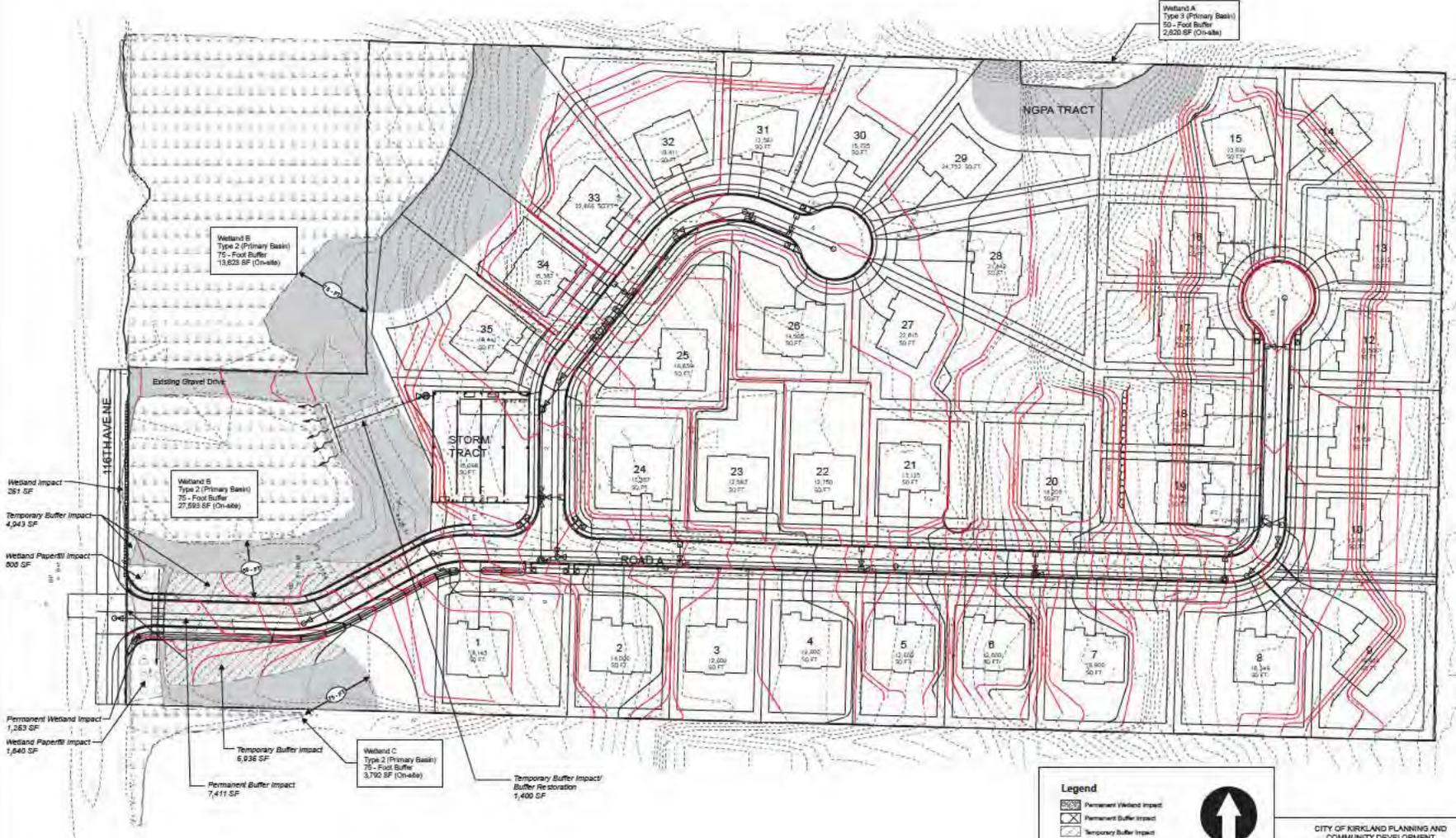
KLN CONSTRUCTION, INC.
19009 33RD AVE. W. SUITE 200, LYNNWOOD, WA 98096
PHONE: 425-770-4111

WESTLAND SOLUTIONS, INC.
18229 3rd Ave NE
Arlington, WA 98223
P: 360-452-8010
E: Kyle@westlandsoil.com

**BRIDLESTONE ESTATES
DETAILED MITIGATION PLAN
EXISTING CONDITIONS**

ENGINEER	ROY LEWIS
CONTACT	CHER ANDERSON
JOB NO.	1410
DATE	09/11/2015
DRAWN BY	KJL
CHECKED BY	CA
SHEET	M-1 of 6

BRIDLESTONE ESTATES
KING COUNTY, WASHINGTON
PORTION OF SECTION 18, TOWNSHIP 25 NORTH, RANGE 5 EAST, W.M.



Wetland Impact 251 SF
Temporary Buffer Impact 4,943 SF
Wetland Paperfill Impact 800 SF
Permanent Wetland Impact 1,263 SF
Wetland Paperfill Impact 1,640 SF
Temporary Buffer Impact 6,936 SF
Permanent Buffer Impact 7,411 SF
Wetland C Type 2 (Primary Basin) 75 - Four Buffer 3,792 SF (On-Abn)
Temporary Buffer Impact/ Buffer Restoration 1,400 SF

Legend

- Permanent Wetland Impact
- Permanent Buffer Impact
- Temporary Buffer Impact
- Paperfill
- Buffer
- Wetland
- Proposed Grading

0 25 50 100 Feet
1 Inch = 50 feet

CITY OF KIRKLAND PLANNING AND
COMMUNITY DEVELOPMENT
APPROVED FOR CONSTRUCTION

BY: _____
R/W PERMIT NO: _____

DATE	BY	REVISION
05/12/15	KUL	City/DC comments
08/17/15	KUL	City/DC comments
11/16/15	KUL	City/DC comments

 KLN CONSTRUCTION, INC. 1900 3RD AVE W SUITE 200, LYNNWOOD, WA 98095 PHONE: 425-710-4111
 Wetland Solutions, Inc. 18225 3rd Ave NE Arlington, WA 98223 P: 866-452-5810 E: Kyle@WetlandSolutions.net

BRIDLESTONE ESTATES
DETAILED MITIGATION PLAN
PROPOSED IMPACT AREAS

ENGINEER	ROY LEWIS
CONTACT	CHER ANDERSON
JOB NO.	1410
DATE	05/12/2015
DRAWN BY	KUL
CHECKED BY	CA
SHEET	M-2 OF 6

BRIDLESTONE ESTATES

KING COUNTY, WASHINGTON
PORTION OF SECTION 10, TOWNSHIP 25 NORTH, RANGE 6 EAST, W.M.



GENERAL NOTES

SITE PREPARATION SHALL INCLUDE CLEARING AND GRUBBING OF ALL INVASIVE SPECIES ESPECIALLY HIMALAYAN BLACKBERRY (RUBUS DISCOLOR), WHICH IS TO EXISTING NATIVE VEGETATION IS TO BE AVOIDED.

EXISTING NATIVE VEGETATION IS TO TAKE PRECEDENCE OVER LOCATIONS OF PROPOSED PLANTINGS.

PROPOSED PLANTINGS ARE TO BE LOCATED IN AREAS WHERE NATIVE VEGETATION IS SPARSE. CONTACT PROJECT BIOLOGIST REGARDING QUESTIONS ABOUT PROPOSED PLANTING LOCATIONS.

SUBSTITUTIONS ARE DISCOURAGED, HOWEVER CONTACT PROJECT BIOLOGIST IF ON THE GROUND CONDITIONS WARRANT CHANGES OR IF PLANT AVAILABILITY IS A PROBLEM.

CONTACT PROJECT BIOLOGIST IF THE SITE WORK IS DIFFERENT THAN SHOWN ON THE PLANTING PLAN OR POOR SOILS AND DEBRIS ARE DISCOVERED THAT REQUIRE CHANGES TO THE PLANTING PLAN.

THE LANDSCAPE CONTRACTOR IS RESPONSIBLE FOR MAINTAINING THE MITIGATION PLANTS DURING THE INSTALLATION AND UNTIL FINAL ACCEPTANCE BY THE OWNER'S REPRESENTATIVE.

THE LANDSCAPE CONTRACTOR SHALL WARRANTY ALL MATERIALS AND WORKMANSHIP FOR A PERIOD OF ONE YEAR FROM THE TIME OF FINAL ACCEPTANCE.

DURING THE WARRANTY PERIOD THE LANDSCAPE CONTRACTOR WILL NOT BE RESPONSIBLE FOR PLANT DEATH CAUSED BY UNUSUAL CLIMATIC CONDITIONS, VANDALISM, THEFT, OR POOR MAINTENANCE PRACTICES.

IDENTIFICATION OF CLEARING LIMITS

PRIOR TO ANY CONSTRUCTION OR GRADING, A LICENSED SURVEYOR SHALL SURVEY, STAKE, AND CLEARLY MARK DISTURBANCE/CLEARING LIMITS. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY ACTUAL LOCATIONS OF VEGETATION TO BE SAVED.

RESTORATION OF DISTURBED AREAS

ANY CRITICAL AREAS DISTURBED DURING CONSTRUCTION ACTIVITIES THAT WERE NOT IDENTIFIED ON THE APPROVED MITIGATION PLAN WILL BE FULLY RESTORED TO THEIR ORIGINAL CONDITION BY PLANTING NATIVE TREES AND SHRUBS. THE CONTRACTOR SHOULD CONTACT THE PROJECT BIOLOGIST TO COORDINATE PLANT SPECIES SELECTION AND PLANTING LOCATIONS.

CLEAN-UP

THE CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVAL OF ALL CONSTRUCTION MATERIALS AND DEBRIS (I.E. SILT FENCING, STAKING, GARBAGE, ETC.) ON THE SITE FOLLOWING MITIGATION INSTALLATION.

MULCH

A THREE TO SIX INCH LAYER OF MULCH SHALL BE PLACED AROUND THE BASE OF EACH NEW TREE (36 INCH DIAMETER BING) AND SHRUB PLANTING (24 INCH DIAMETER BING) FOR EROSION, WEED CONTROL, AND MOISTURE RETENTION. ADDITIONAL MULCH MAY BE USED FOR WEED SUPPRESSION IN AREAS WHERE EXISTING PLANT COVER IS DOMINATED BY INVASIVE PLANT SPECIES (I.E. HIMALAYAN BLACKBERRY, REED CANARYGRASS, ETC.).

SITE LOGGING/MULCH PRODUCTION

DURING SITE LOGGING AND CLEARING ANY NON-MARKETABLE DEBRIS (SMALL TREES AND BRANCHES) MAY BE GROUND UP AS COURSE WOOD MULCH AND USED LATER WITH THE MITIGATION PLANTINGS. CONTRACTOR WILL DETERMINE LOCATION OF MULCH STOCKPILE.

MITIGATION PLANTING AND MAINTENANCE NOTES

ALL TREES AND SHRUBS TO BE PLANTED AT A DEPTH 6" HIGHER THAN THE LEVEL THAT THEY WERE GROWN IN THE NURSERY.

ALL TREES AND SHRUBS TO BE NURSERY GROWN. ANY COLLECTED STOCK SHALL BE FROM A SOURCE APPROVED BY THE PROJECT BIOLOGIST PRIOR TO DELIVERY.

IT IS PERMISSIBLE TO SUBSTITUTE BARE ROOT STOCK FOR THE APPROPRIATE SPECIES. BARE ROOT STOCK WILL BE ACCEPTABLE IF APPROVED BY THE PROJECT BIOLOGIST, INSTALLED IN THE APPROPRIATE SEASON, AND INSTALLED AT A RATIO OF 3:2.

AFTER PLANTING IMMEDIATELY SATURATE ALL PLANTING PITS TO ELIMINATE AIR POCKETS AND FACILITATE SETTLING OF THE BACK FILL MATERIAL.

USE EXISTING SOILS TO BACK FILL PLANTING PITS.

IF POOR SOIL OR DEBRIS IS ENCOUNTERED WHEN EXCAVATING PLANT PITS CONTACT THE PROJECT BIOLOGIST FOR ALTERNATIVE SOLUTIONS.

ALL TREES OVER 6" IN HEIGHT SHALL BE STAKED. TREE STAKES WILL BE 2"X4" TURNED LODGEPOLE PINE STAKES 6" IN HEIGHT DRIVEN TO REFUSAL. THE GRADING MATERIAL WILL BE 2" CHAINLOCK INSTALLED PER MANUFACTURER'S SPECIFICATIONS.

APPLY FINE GROUND BARK MULCH TO AN AREA 36" IN DIAMETER AROUND ALL INSTALLED WOODY PLANTS.

ALL PLANTS SHALL BE MARKED WITH BIODEGRADABLE SURVEY FLAGGING TO FACILITATE FUTURE MONITORING.

HAND WATERING SHALL BE PERFORMED AS NEEDED FOR PLANT SURVIVAL UNLESS OTHERWISE NOTED ON PLANTING PLAN.

THE MAINTENANCE PROGRAM REQUIRES MONTHLY VISITS DURING THE GROWING SEASON (MARCH THROUGH SEPTEMBER).

ALL NON-NATIVE / UNDESIRABLE PLANTS (HIMALAYAN BLACKBERRY, SCOTTS BROOM, REED CANARY GRASS, ETC.) THAT MAY INHIBIT THE GROWTH OF NEW PLANTINGS SHALL OCCUR AFTER CONSULTATION WITH THE PROJECT BIOLOGIST.

THE BARK MULCHED AREAS SHALL REMAIN FREE OF WEEDS OR COMPETING PLANTS TO INSURE OPTIMUM GROWTH.

THE TREE STAKING MATERIAL SHALL BE MONITORED AND REMOVED WHEN APPROPRIATE.

SOIL AMENDMENTS

SOILS MUST BE DECONSOLIDATED TO A MINIMUM DEPTH OF 12" WHERE TREES OR SHRUBS ARE TO BE PLANTED.

TYPICAL SOILS MUST BE AMENDED WITH 2" OF COARSE SAND AND 4" OF VEGETATIVE COMPOST SPREAD OVER ENTIRE AREA.

IN BUFFER ENHANCEMENT AREAS SOILS ARE TO CONTAIN 20% ORGANIC MATTER BY BULK DENSITY.

IN WETLAND RE-ESTABLISHMENT AND ENHANCEMENT AREAS, SOILS ARE TO CONTAIN AT LEAST 30% ORGANIC MATTER BY BULK DENSITY.

IN ALL GRADED WETLAND MITIGATION AREAS, 6" OF STOCKPILED OR IMPORTED TOPSOIL SHALL BE PLACED OVER SUBGRADE.

IN WETLAND RE-ESTABLISHMENT AREAS, OVER - EXCAVATE 6" BELOW FINISHED ELEVATION SHOWN ON PLANS FOR LATER PLACEMENT OF 6" OF STOCKPILED OR IMPORTED TOPSOIL.

FILL SOILS PROPOSED FOR USE WITHIN THE WETLAND MITIGATION AREAS SHALL BE SUBMITTED TO THE GEOTECHNICAL ENGINEER FOR ANALYSIS AND APPROVAL PRIOR TO USE. FILL SOILS SHALL MEET THE CRITERIA OUTLINED IN THIS SECTION IN REGARDS TO COMPOSITION AND MAKEUP.

Legend

- Wetland Re-Establishment
- Wetland Enhancement
- Buffer Enhancement
- Buffer Restoration
- Wetland
- Buffer

0 40 80 160 Feet

1 inch = 50 feet

↑

CITY OF KIRKLAND PLANNING AND
COMMUNITY DEVELOPMENT

APPROVED FOR CONSTRUCTION

BY: _____

R/W PERMIT NO: _____

DATE	REVISION	BY
08/07/18	City/DC comments	KAL
08/17/18	City/DC comments	KAL
11/01/18	City/DC comments	KAL

KLN CONSTRUCTION, INC.

19000 33RD AVE W SUITE 200, LYNNWOOD, WA 98095
PHONE: 822-7174-1111

WETLAND SOLUTIONS INC.

18220 3rd Ave NE
Artesia, WA 98223
P: 360-452-2610
E: Kyle@wetlandsolutions.net

BRIDLESTONE ESTATES
DETAILED MITIGATION PLAN
PROPOSED MITIGATION AREAS

ENGINEER	ROY LEWIS
CONTACT	CHER ANDERSON
JOB NO.	1410
DATE	05/11/2015
DRAWN BY	KAL
CHECKED BY	CA
SHEET	M-3 OF 6

Appendix B: Performance Security Bond Worksheet



King County

Critical Areas Mitigation Bond Quantity Worksheet

Project Name: BridleStone Estate

Date: 17-Sep-15

Prepared by: Kyle Legare

Permit Number: _____

Applicant: KLN Construction, Inc.

Location: 116th Ave NE

Phone #: 425-778-4111

PLANT MATERIALS*

Type	Unit Price	Unit	Quantity	Description	Cost	
PLANTS: Potted, 4" diameter, medium	\$5.00	Each			\$ -	
PLANTS: Container, 1 gallon, medium soil	\$11.50	Each	1077.00		\$ 12,385.50	
PLANTS: Container, 2 gallon, medium soil	\$20.00	Each	446.00		\$ 8,920.00	
PLANTS: Container, 5 gallon, medium soil	\$36.00	Each			\$ -	
PLANTS: Seeding, by hand	\$0.50	SY			\$ -	
PLANTS: Slips (willow, red-osier)	\$2.00	Each			\$ -	
PLANTS: Stakes (willow)	\$2.00	Each			\$ -	
PLANTS: Stakes (willow)	\$2.00	Each			\$ -	
					\$ -	
					\$ -	
* All costs include installation					TOTAL	\$ 21,305.50

INSTALLATION COSTS (LABOR, EQUIPMENT, & OVERHEAD)

Type	Unit Price	Unit	Quantity	Description	Cost
Compost, vegetable, delivered and spread	\$37.88	CY	580.00		\$ 21,970.40
Decompacting till/hardpan, medium, to 6" depth	\$1.57	CY			\$ -
Decompacting till/hardpan, medium, to 12" depth	\$1.57	CY	1450.00		\$ 2,276.50
Hydroseeding	\$0.51	SY			\$ -
Labor, general (landscaping)	\$40.00	HR	80.00		\$ 3,200.00
Labor, general (construction)	\$40.00	HR			\$ -
Labor, Consultant, supervising	\$55.00	HR	40.00		\$ 2,200.00
Labor, Consultant, on-site re-design	\$95.00	HR			\$ -
Rental of decompacting machinery & operator	\$70.00	HR			\$ -
Sand, coarse builder's, delivered and spread	\$42.00	CY	180.00		\$ 7,560.00
Staking material (set per tree)	\$7.00	Each			\$ -
Surveying, line & grade	\$250.00	HR	4.00		\$ 1,000.00
Surveying, topographical	\$250.00	HR	4.00		\$ 1,000.00
Watering, 1" of water, 50' soaker hose	\$3.62	MSF			\$ -
Irrigation - temporary	\$3,000.00	Acre	0.75		\$ 2,250.00
Irrigation - buried	\$4,500.00	Acre			\$ -
Tilling topsoil, disk harrow, 20hp tractor, 4"-6" deep	\$1.02	SY			\$ -
					\$ -
					\$ -
TOTAL					\$ 41,456.90

HABITAT STRUCTURES*

ITEMS	Unit Cost	Unit	Quantity	Description	Cost
Fascines (willow)	\$ 2.00	Each			\$ -
Logs, (cedar), w/ root wads, 16"-24" diam., 30' long	\$1,000.00	Each			\$ -
Logs (cedar) w/o root wads, 16"-24" diam., 30'	\$400.00	Each			\$ -
Logs, w/o root wads, 16"-24" diam., 30' long	\$245.00	Each			\$ -
Logs w/ root wads, 16"-24" diam., 30' long	\$460.00	Each	6.00		\$ 2,760.00
Rocks, one-man	\$60.00	Each			\$ -

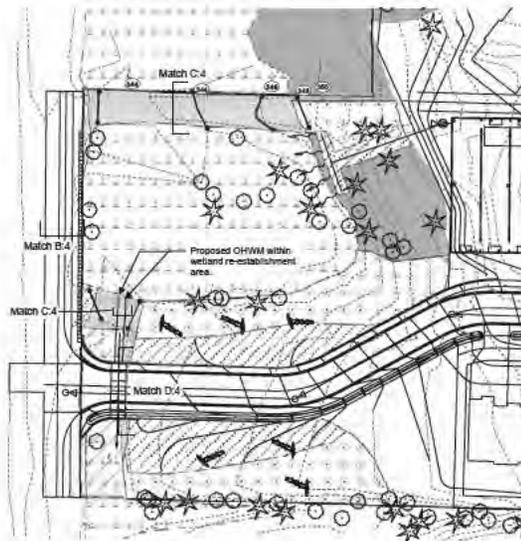
Rocks, two-man	\$120.00	Each			\$	-	
Root wads	\$163.00	Each			\$	-	
Spawning gravel, type A	\$22.00	CY			\$	-	
Weir - log	\$1,500.00	Each			\$	-	
Weir - adjustable	\$2,000.00	Each			\$	-	
Woody debris, large	\$163.00	Each			\$	-	
Snags - anchored	\$400.00	Each			\$	-	
Snags - on site	\$50.00	Each			\$	-	
Snags - imported	\$800.00	Each			\$	-	
					\$	-	
					\$	-	
* All costs include delivery					<i>TOTAL</i>	\$	2,760.00

Larger than 1,000 sq.ft. but < 1 acre with wetland or aquatic area impacts	\$ 630.00	EACH	12.00	(14 hrs @ \$45/hr)	\$ 7,560.00
Larger than 1 acre but < 5 acres - buffer and / or wetland or aquatic area impacts	\$ 1,600.00	DAY		(WEC crew)	\$ -
Larger than 5 acres - buffer and / or wetland or aquatic area impacts	\$ 2,000.00	DAY		(1.25 X WEC crew)	\$ -
Monitoring, annual					
Larger than 1,000 sq.ft. but < 0.5 acre -buffer impact only	\$ 720.00	EACH		(8 hrs @ \$90/hr)	\$ -
Larger than 1,000 sq.ft. but < 0.5 acre with wetland or aquatic area impacts	\$ 900.00	EACH		(10 hrs @ \$90/hr)	\$ -
Larger than 0.5 acre but < 1.0 acre -buffer impact only	\$ 900.00	EACH		(10 hrs @ \$90/hr)	\$ -
Larger than 0.5 acre but < 1.0 acre with wetland or aquatic area impacts	\$ 1,080.00	EACH	10.00	(12 hrs @ \$90/hr)	\$ 10,800.00
Larger than 1 acre but < 5 acres - buffer and / or wetland or aquatic area impacts	\$ 1,620.00	DAY		(18 hrs @ \$90/hr)	\$ -
Larger than 5 acres - buffer and / or wetland or aquatic area impacts	\$ 2,400.00	DAY		(24 hrs @ \$90/hr)	\$ -
Maintenance and Monitoring Inspection (DDES), annual	\$362.25	EACH	4.00	(2.5 hrs @ \$144.90/hr)	\$ 1,449.00
Maintenance and Monitoring Inspection (DDES), final	\$579.60	EACH	1.00	(4 hrs @ \$144.90/hr)	\$ 579.60
TOTAL					\$ 20,388.60
Total					\$143,535.96

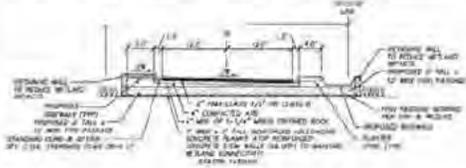
BRIDLESTONE ESTATES

KING COUNTY, WASHINGTON
PORTION OF SECTION 16, TOWNSHIP 25 NORTH, RANGE 5 EAST, W.M.

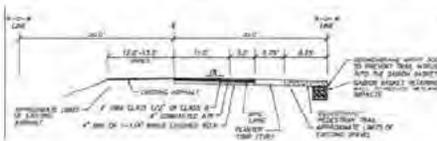
LARGE WOODY DEBRIS PLACEMENT & MITIGATION GRADING



Match A-4
Access Road Cross Section (From Triad Civil Plans Sheet 9 of 14)

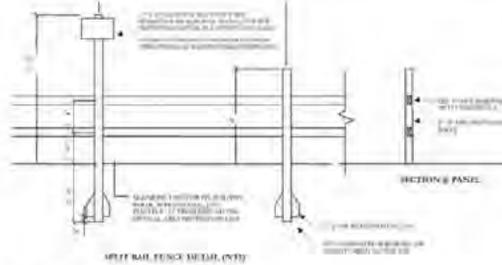


Match B-4
116th Road Frontage Improv. Cross Section (From Triad Civil Plans Sheet 9 of 14)



WETLAND BUFFER FENCE OR BARRIER

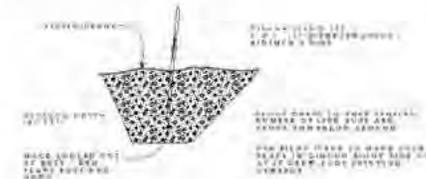
Upon project completion, the applicant shall install between the upland boundary of all wetland buffers and the developed portion of the site, either (1) a permanent 3 to 4 foot - tall split rail fence; or (2) permanent planting of equal barrier value; or (3) equivalent barrier, as approved by the planning official. Installation of the permanent fence or planted barrier must be done by hand where necessary to prevent machinery from entering in wetland or its buffer.



SHRUB PLANTING DETAIL : NTS

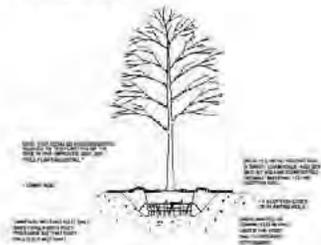


WILLOW STAKE PLANTING DETAIL : NTS



TREE PLANTING DETAIL : NTS

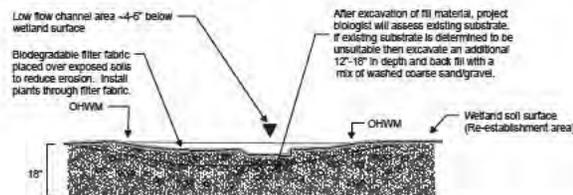
INTERNATIONAL SOCIETY
OF ARBORICULTURE



LARGE WOODY DEBRIS: 6 PIECES

SYMBOL	QUANTITY	DESCRIPTION / SIZE
	6	MINIMUM 12'-FEET IN LENGTH & 20 INCH DIAMETER ROCKY BALL PREFERRED BUT NOT REQUIRED

Match D-4
Constructed Stream Channel Cross Section



WETLAND RE-ESTABLISHMENT GRADING

Grading for the wetland re-establishment will follow the intent of the proposed grading within this plan. Field changes, where necessary, will occur with the approval of the project biologist.



0 25 50
1 Inch = 50 Feet

CITY OF KIRKLAND PLANNING AND
COMMUNITY DEVELOPMENT

APPROVED FOR CONSTRUCTION

BY: _____
R/W PERMIT NO: _____

ENGINEER: ROY LEWIS
CONTACT: CHER ANDERSON
JOB NO: 1410
DATE: 05/11/2015
DRAWN BY: KJL
CHECKED BY: CA
SHEET: M-4 OF 6

DATE	REVISION	BY
05/07/15	City/DC comments	KJL
05/17/15	City/DC comments	KJL
11/16/15	City/DC comments	KJL

APPLICANT

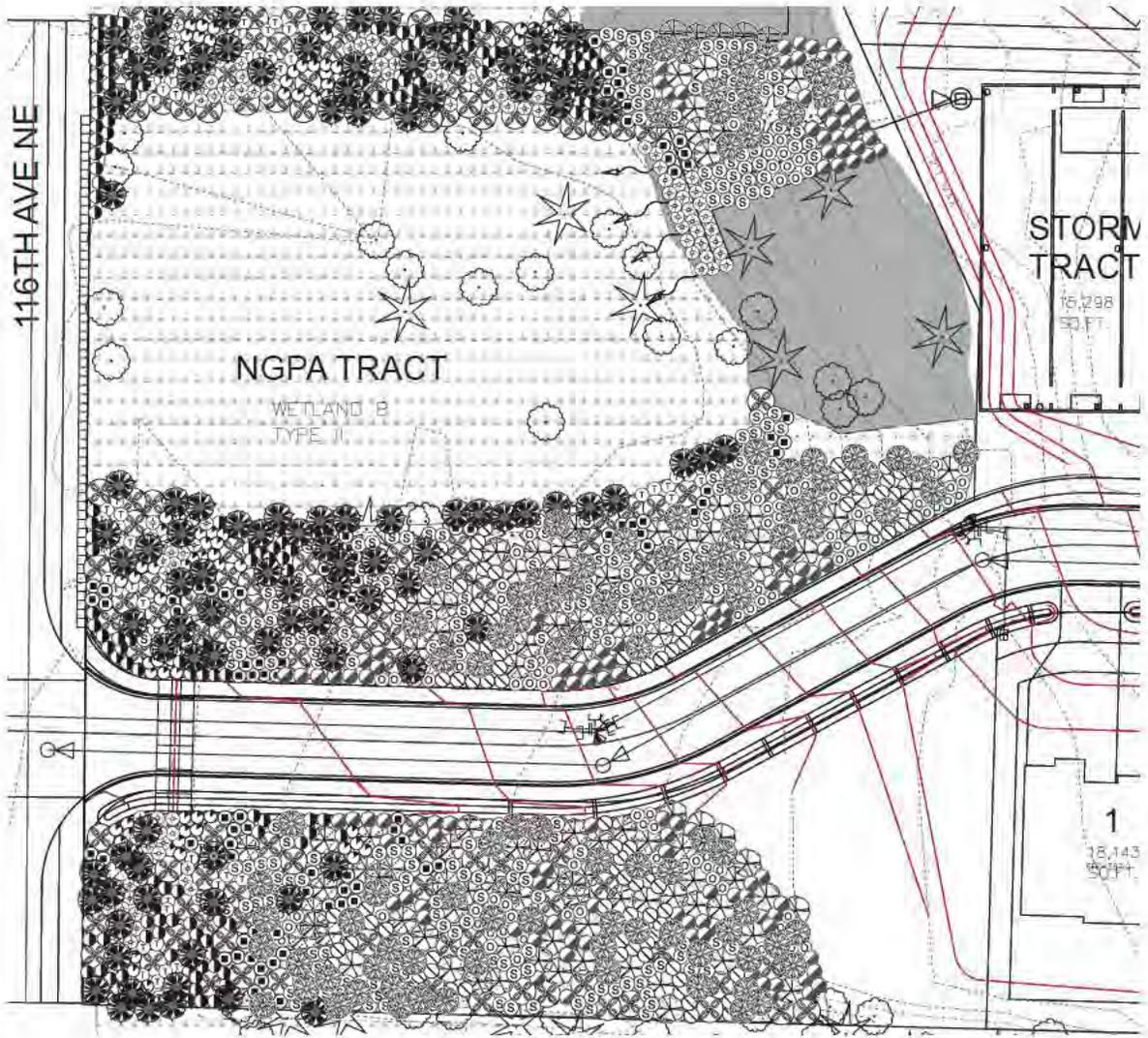
1900 33RD AVE W SUITE 205, LYNNWOOD, WA 98095
PHONE: 425-719-1111

Wetland Solutions, Inc.
18225 3rd Ave NE
Arlington, WA 98223
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BRIDLESTONE ESTATES
MITIGATION DETAILS AND GRADING

BRIDLESTONE ESTATES

KING COUNTY, WASHINGTON
PORTION OF SECTION 18, TOWNSHIP 25 NORTH, RANGE 5 EAST, W.M.



PLANT SCHEDULE

TREES: 446 TOTAL

SYMBOL	QUANTITY	BOTANICAL / COMMON	SIZE / COMMENT
	108	ACER MACROPHYLLUM / BIG LEAF MAPLE	1 1/2" CALIPER / 6' HT. MINIMUM
	104	PICEA SITCHENSIS / SITKA SPRUCE	6' HT / FULL TO BASE
	109	PSUEDOTSUGA MENZIESII / DOUGLAS FIR	6' HT / FULL TO BASE
	126	THUJA PLICATA / WESTERN RED CEDAR	6' HT / FULL TO BASE

SHRUBS: 1,077 TOTAL

SYMBOL	QUANTITY	BOTANICAL / COMMON	SIZE / COMMENT
	139	CORNUS SERICEA / RED OSIER DOGWOOD	1 GALLON - 18" HT / SP
	106	HOLIDOPSIS DISCOLOR / OCEANSPRAY	1 GALLON - 18" HT / SP
	93	LONICERA INVOLUCRATA / TWIMBERRY	1 GALLON - 18" HT / SP
	93	PHYSCARPUS CAPITATUS / PACIFIC HINEBARK	1 GALLON - 18" HT / SP
	129	ROSA NODOSANA / NOOTKA ROSE	1 GALLON - 18" HT / SP
	229	RUBUS SPECTABILIS / SALMONBERRY	1 GALLON - 18" HT / SP
	92	SALIX LASIANDRA / PACIFIC WILLOW	1 GALLON - 18" HT / SP
	105	SALIX SCOULERIANA / SCOULE'S WILLOW	1 GALLON - 18" HT / SP
	91	SYMPHORICARPOS ALBUS / SNOWBERRY	1 GALLON - 18" HT / SP

DATE	REVISION	BY
10/20/18	City/DC comments	KAL
10/17/18	City/DC comments	KAL
11/16/18	City/DC comments	KAL

KLN CONSTRUCTION, INC.
ARTICRAFT
1900 33RD AVE W, SUITE 200, LYNNWOOD, WA 98049
PHONE: 425-774-1111

Wetland Solutions, Inc.
18225 3rd Ave NE
Arlington, WA 98223
P: 360-452-8810
E: kyle@wetlandsolutions.net

BRIDLESTONE ESTATES MITIGATION PLANTING PLAN

ENGINEER	ROY LEWIS
CONTACT	CHER ANDERSON
JOB NO.	1410
DATE	02/10/2018
DRAWN BY	KAL
CHECKED BY	CA
SHEET	M-5 OF 6



Legend

- Utility
- Wetland B (Subdivision)
- Wetland C (Subdivision)
- Storm Water Run
- Water

CITY OF KIRKLAND PLANNING AND
COMMUNITY DEVELOPMENT
APPROVED FOR CONSTRUCTION

BY: _____

R/W PERMIT NO: _____

BRIDLESTONE ESTATES

KING COUNTY, WASHINGTON
PORTION OF SECTION 16, TOWNSHIP 25 NORTH, RANGE 5 EAST, W.M.

Project Summary

The purpose of this plan is to satisfy the City of Kirkland regulations that requires a Critical Area Study and mitigation plan according to KZC 90.40. The proposed project is a 35 – lot residential subdivision of five existing parcels that total 17.6 – Acres. The applicant is requesting a rezone from RS 35 to RS 12.5. All existing equestrian facilities including the paddocks, stables, and arenas will be removed during initial clearing and grading of the site. The new development will include the installation of utilities, sanitary sewer, stormwater management facilities, tree protection areas, sensitive area protection areas, and road frontage improvements.

The proposed project is a residential subdivision that is located at 4626 116th Ave NE, Kirkland, Washington. The site is located in Section 16 of Township 25N, Range 5E in the southeastern corner of the City of Kirkland. The site is bordered by single family residential development to the north and south, 116th Avenue NE to the west, and Bridle Trails Park to the east.

Three wetlands were identified as a result of this work referred to as Wetlands A, B, and C for the purposes of the mitigation plans. The Watershed Company, Inc. completed a wetland delineation review in March 2013. Five recommendations were provided in the review letter, which have been addressed in the conceptual mitigation report.

The proposed residential development has been designed to avoid and minimize impacts to critical areas and associated buffers to the greatest extent practicable. Proposed impacts where unavoidable have been located in areas that were previously disturbed and have lower existing functions and values. Impacts to wetland and stream areas are limited to the required access road to the site and road frontage improvements along 116th Ave NE. Buffer impacts are limited to the access road. A total of 47,760 SF of wetland area is located on the subject site. Per KZC 90.55(2) no land surface modification can occur in more than 10 percent of the total wetland area or 4,776 SF for the project site, may be modified.

The proposed mitigation for the wetland and buffer impacts associated with development activities includes a combination of wetland re-establishment, enhancement, restoration, and buffer enhancement. The proposed mitigation measures meet or exceed the ratios outlined in KZC 90.55. It is expected that there will be an overall increase in local functions and values as a result of the proposed mitigation measures. The addition of trees and shrubs, along with the re-establishment of wetland area will provide greater stormwater control and biological support functions.

Goals, Objectives, and Performance Standards

Goal 1: Increase the habitat and water quality improvement functions within a portion of the western wetland area on the subject site.

Objective 1: Re-establish 6,173 SF of wetland area by removing old fill material and installing native trees and shrubs.

Objective 2: Enhance 2,610 SF of wetland area by removing invasive plant cover and installing native trees and shrubs.

Performance Standards for Objective 1

- i) Survival of planted trees and shrubs will be a minimum of 80% after two years. Staged survivability requirements include:
 - 100% survivability after Year 1
 - Year 2 survivability is at 80%
 - Years 3-5: A minimum of four native tree species and four shrub species will each comprise >10% cover within wetland enhancement and re-establishment areas

Evaluation Method: Transect sampling, visual inspection

- ii) Native tree and shrub canopy cover percentages (including volunteers) during the monitoring period will be:
 - 20% or greater at the end of Year 1
 - 40% or greater at the end of Year 3
 - 80% or greater at the end of Year 5

Evaluation Method: Quadrat sampling

Alternative Method: Line-intercept method

- iii) Invasive and non-native species will have 10% or less aerial coverage within the mitigation areas. Weeds include but are not limited to Japanese knotweed, Himalayan blackberry, and Scot's broom.

Evaluation Method: Quadrat sampling

Alternative Method: Line-intercept method

- iv) Wetland re-establishment areas shall have saturation between soil surface and 12 inches depth from March 1 through May 15.

Evaluation Method: Weekly visits for at least six weeks during early spring (usually beginning in March) to verify depth of surface or subsurface hydrology.

- v) Wetland re-establishment areas shall have greater than 80% plant composition of FAC, FACW or OBL species.

Evaluation Method: Transect sampling, visual inspection

- vi) Soils within wetland re-establishment areas shall have at least 30% organic matter by bulk density at the time of mitigation plant installation.

Evaluation Method: Verified by invoices

Contingency:

- Substitute species that are more suited to local conditions for species that had high mortality (>80%)
- Irrigate at regular intervals during the growing season to reduce transplant stress
- Promote optimum growth by removing competing vegetation in plant pits
- Replant with stock that propagates quickly
- Re-grade to increase or decrease elevation to achieve wetland hydrology

Goal 2: Increase the habitat and water quality improvement functions within portions of the western wetland buffer area on the subject site.

Objective 1: Enhance 18,675 SF of buffer area removing invasive plant cover and installing native trees and shrubs.

Performance Standards for Objective 1

- i) Survival of planted trees and shrubs will be a minimum of 80% after five years. Staged survivability requirements include:
 - 100% survivability after Year 1
 - Years 2-4 survivability is at a level to meet 80% by the end of Year 4
 - 80% at the end of Year 5

Evaluation Method: Transect sampling, visual inspection

- ii) Native tree and shrub canopy cover percentages (including volunteers) during the monitoring period will be:
 - 20% or greater at the end of Year 1
 - 40% or greater at the end of Year 3
 - 80% or greater at the end of Year 5

Evaluation Method: Quadrat sampling

Alternative Method: Line-intercept method

- iii) Invasive and non-native species will have 10% or less aerial coverage within the mitigation areas. Weeds include but are not limited to Japanese knotweed, Himalayan blackberry, and Scot's broom.

Evaluation Method: Quadrat sampling

Alternative Method: Line-intercept method

Contingency:

- Substitute species that are more suited to local conditions for species that had high mortality (>80%)
- Irrigate at regular intervals during the growing season to reduce transplant stress
- Promote optimum growth by removing competing vegetation in plant pits
- Replant with stock that propagates quickly

Goal 3: Restore the habitat and water quality improvement functions within the portions of wetland disturbed for road construction and stormwater management facilities.

Objective 1: Restore 10,878 SF of buffer area impacted by grading activities by installing native trees and shrubs.

Objective 2: Restore 1,400 SF of buffer area by installing native vegetation and removing and invasive plant species.

Performance Standards for Objectives 1 & 2

- i) Survival of planted trees and shrubs will be a minimum of 80% after five years. Staged survivability requirements include:
 - 100% survivability after Year 1
 - Years 2-4 survivability is at a level to meet 80% by the end of Year 4
 - 80% at the end of Year 5

Evaluation Method: Transect sampling, visual inspection

- ii) Native tree and shrub canopy cover percentages (including volunteers) during the monitoring period will be:
 - 20% or greater at the end of Year 1
 - 40% or greater at the end of Year 3
 - 60% or greater at the end of Year 5

Evaluation Method: Quadrat sampling/Alternative Method: Line-intercept method

- iii) Invasive and non-native species will have 10% or less aerial coverage within the mitigation areas. Weeds include but are not limited to Japanese knotweed, Himalayan blackberry, and Scot's broom.

Evaluation Method: Quadrat sampling/Alternative Method: Line-intercept method

Performance Standard for Objective 2:

- i) No point discharge, erosion, or channelization is to occur downstream of the stormwater outfall.

Evaluation Method: Visual inspection during each monitoring visit

Contingency:

- Substitute species that are more suited to local conditions for species that had high mortality (>80%)
- Irrigate at regular intervals during the growing season to reduce transplant stress
- Promote optimum growth by removing competing vegetation in plant pits
- Replant with stock that propagates quickly
- Modify stormwater outfall to reduce point discharge.

Goal 4: Preserve critical areas, buffers, and additional areas included as mitigation

Objective 1: Designate and sign the boundary of on-site wetlands, streams, and buffers as Protected Wetland Area

Performance Standards for Objective 1:

- i) Permanent signs are installed according KZC
- ii) Fencing installed around perimeter of buffer areas per KZC 90.50

Contingency: Replace or install missing signs as necessary

Evaluation Method: Sign inspection by engineer following installation or by the project biologist during the monitoring period

Monitoring

General

The monitoring period for this mitigation project will last for five years per KZC 90.55(A)(C). After the completion of the Time Zero/As-built Report and subsequent Final Plat approval, the bond anniversary date will be set and the monitoring period shall begin. The mitigation sites will be monitored using standardized techniques and procedures described below for vegetation survival, vigor and growth of plant material, and the success of the mitigation plan overall. The monitoring strategy will include vegetation transects, quadrats, and photopoints unless otherwise approved by City Staff.

Vegetation Transects

Vegetation data will be collected within each mitigation area to help evaluate the success of the mitigation project. Transects will be established in each vegetation community during the Time Zero/As-built inspection to collect baseline monitoring data, however baseline data does not need to be included in the As-built Report. The number and length of the transects shall be determined in the field at the initiation of the monitoring program and shall be based on lengths that most accurately represent the composition of planted vegetation within the mitigation areas. A minimum of five transects shall be established within the mitigation planting areas. Total percent cover for trees, shrubs, and herbs (not including grasses) and percent cover for each individual species will be recorded in each quadrat.

Trees and shrubs that have been planted for the purpose of mitigation shall be visually evaluated to determine the rate of survival, health, and vigor of each plant within the sampling area, which will be recorded as Live, Stressed, Not found, and Dead during monitoring Years 1 and 2. For monitoring Years 3 through 5, plant species diversity and coverage will be recorded along each transect.

Vegetation Quadrats

Quadrats will be established at one or both ends of the transect, depending on site conditions, to monitor tree, shrub, herbaceous, and invasive percent cover; stakes, iron rebar, or other material will be situated so that each corner is clearly marked. Data collection will consist of species composition and percent cover, total percent plant cover, total percent woody cover (tree/shrub), total percent herbaceous cover (if applicable) for installed plants, as well as "volunteer" trees and shrubs. Percent cover of non-native/invasive plants such as Himalayan blackberry, scotch broom, reed canary grass will also be quantified. Quadrat number, location, and dimensions should be permanently recorded on the Transect PVC pipe. As an alternative to quadrat sampling, the line intercept monitoring method may be used. In addition to transect and quadrat sampling, the mitigation areas as a whole will be inspected and evaluated to generalize the overall level of success of the mitigation project.

Photopoints

Permanent photo points will be established using rebar and PVC pipe at locations representative of the mitigation project. Photographs will be taken from these photo points during each site visit to document the change over time of the mitigation site. These photos will provide indication of trends, current site conditions, and change over time and will be included in the yearly monitoring reports. An instruction sheet, with the direction and number of photographs to be taken, will be provided to allow continuity over time if monitoring personnel changes. In addition, photographs representing existing

Monitoring Schedule

- An annual report describing and quantifying the level of success of the plan will be written and submitted to the City of Kirkland for review and approval. The monitoring strategy will consider, but is not limited to:
- a) Plant species composition and cover values for vegetation in the planting areas
 - b) Survival rate of originally planted vegetation
 - c) Wildlife use
 - d) Indications of human disturbance

Time-Zero Report:

A Time Zero/As-built Report will be completed by the contractor and the consulting biologist when planting is finished. The Time Zero Report will identify problems in obtaining materials, differences in sizes of materials than were originally called for, replacement materials, if necessary, and any other conditions that varied from the mitigation plan. If the installation is found to be significantly different from the prepared mitigation plan, the landscape contractor will be responsible for the creation of the As-built plan.

Baseline Data Collection

Permanent sampling points should be established and recorded during the Time Zero/As-built inspection to collect baseline monitoring data for total plant numbers, canopy cover, and photopoints. If baseline data collection is deferred to Year 1, plant counts and species composition may be incorrect compared with the actual installation and photo documentation cannot be adequately evaluated. Baseline information is only relevant for subsequent monitoring years and does not need to be included in the As-built Report.

Site Visits

Additional site visits may be necessary between the scheduled monitoring site visits, if problems are identified in the mitigation areas, to monitor actions taken by the responsible party.

Year 1-5:

Two site visits each year will be conducted for monitoring purposes, with the first visit occurring during spring in the form of a maintenance visit and formal monitoring visit during late summer/early fall (before leaf drop). Site visits in Year 1 will be completed to determine the initial survival of the shrubs and trees in the planting areas and if the site is meeting the performance standards. It will include a plant-by-plant inspection with a notation of any species that appear to be stressed, dead or delayed in initial growth. The responsible party will be notified of any problems identified within the mitigation areas. Photos will be taken of the site according to the established photo schedule. An on-site meeting between the monitoring biologist and the landscape maintenance contractor may be necessary to discuss additional maintenance requirements.

Site visit(s) in Years 3-5 will occur to determine minimum species diversity. A minimum of four native tree species and four shrub species will each comprise >10% cover within wetland enhancement and re-establishment areas.

The responsible party, landscape maintenance contractor and City of Kirkland will be notified of any dead plants that need replacement, additional plants needed to meet diversity standards, or other maintenance requirements.

If applicable, the first visit of Year 5 will be conducted to determine if the site is meeting the performance standards. The final visit will be in Year 5. At this time, the monitor will determine, with assistance from the appropriate regulatory agency, whether the site has met the performance standards and goals as identified in the Mitigation Plan. If it is determined that the site has met the goals, no additional work will be done. If it is determined that the site has not yet met the goals, a contingency plan meeting will be established between the developer, consulting biologist, contractor, monitor and appropriate regulatory agency, to modify the project so it will meet the performance standards. This could include additional plantings, replacement of plant species and/or an extension of the monitoring period.

Monitoring Reporting

Annual monitoring reports will be submitted to the developer and appropriate regulatory agency by the bonding anniversary date. The monitoring reports will include photographic documentation for each site visit, with photo descriptions and a plot-by-plot analysis of the vegetation sampling plots. The report will generalize the overall conditions and address the effectiveness of the Mitigation Plan in meeting the performance standards including the presence of wetland hydrology. If problems are identified within the mitigation areas during the spring site visits, the responsible party will be notified of the problems and actions to be taken in order to rectify the problems. Additional site visits may be required to ensure that the identified actions are implemented. If no action is taken to rectify the identified problems, the City of Kirkland will be notified of the problem, and apparent lack of response by the responsible party.

A final report will be completed by the bonding anniversary date of the final year and will include a summation and final analysis. If at that time, the performance standards have not been fully satisfied, but the monitor believes that the site is viable, growing and that the standards will be met, it should be noted. The final report will be the determination of whether the site is a success and whether the Maintenance Bond can be released.

Contingency Plan

If the mitigation plantings do not meet established performance goals for wetland hydrology, vegetative cover and plant survival, revisions to the plan will be made and implemented. Depending on the problems addressed, activities could include changes in soil or hydrologic conditions and/or the replanting of vegetation or modifying species selected for the initial planting. Specific Performance Standards have contingency options applied to them.

Performance Security

An assignment of funds or other financial guarantee shall be required to secure the mitigation plan. The financial guarantee shall be for 125 percent of the estimated completion costs of the mitigation plants and installation or as otherwise required by the City of Kirkland (KZC 90.145). The financial guarantee may only be released after the City has inspected the site, and the applicant's appropriate professional consultant has provided written confirmation that the mitigation installation, monitoring and performance standards have been met. If the performance standards have not been met, a contingency plan shall be implemented and must be successfully completed prior to the release of the financial guarantee.

CITY OF KIRKLAND PLANNING AND COMMUNITY DEVELOPMENT

APPROVED FOR CONSTRUCTION

BY: _____

R/W PERMIT NO. _____

DATE	REVISION	BY
08/29/15	City/TWC comments	KJL
09/17/15	City/TWC comments	KJL
11/06/15	City/TWC comments	KJL

APPLICANT:



19000 39RD AVE W, SUITE 200, LYNNWOOD, WA 98006
PHONE: 425-779-4111



APPLY LELAND APPLIES
FOR LEADERS
PN-5870A

Wetland Solutions, Inc.
18220 3rd Ave NE
Arlington, WA 98223
P: 360-652-9010
E: Kyle@WetlandSolutions.net

BRIDLESTONE ESTATES
DETAILED MITIGATION PLAN
NOTES PAGE

ENGINEER:	ROY LEWIS
CONTACT:	CHER ANDERSON
JOB NO:	1410
DATE:	05/11/2015
DRAWN BY:	KJL
CHECKED BY:	CA
	SHEET M-6 OF 6



November 25, 2015

Desiree Goble
City of Kirkland
Planning and Community Development
123 – 5th Avenue
Kirkland, WA 98125

**Re: Bridlestone Estates Revised Mitigation Plan Review
TWC #120622.19**

Dear Desiree:

The Bridlestone mitigation plan was revised again in November 2015. The revised submittal adequately addresses all past comments with one exception: The bond quantity worksheet is missing a line item for the biodegradable filter fabric lining the stream channel. There is a line item in the King County form under Erosion control. The item is called "Jute Mesh."

Other than this exception, the proposal has been reviewed and found to have demonstrated compliance with applicable Chapter 90 approval criteria:

- Wetland modification, KZC 90.55
- Wetland buffer modification, KZC 90.60
- Stream culvert, KZC 90.115
- Stormwater facility and outfall, KZC 90.45

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

Sincerely,

Hugh Mortensen, PWS
Senior Ecologist



CITY OF KIRKLAND
PLANNING AND COMMUNITY DEVELOPMENT DEPARTMENT
123 FIFTH AVENUE, KIRKLAND, WA 98033
425.587.3225 - www.kirklandwa.gov

OFFICIAL ZONING CODE INTERPRETATION

NUMBER	CODE SECTION	EFFECTIVE DATE	APPEAL PERIOD
15-2	90.55 WETLAND MODIFICATION	April 1, 2015	April 15, 2015

ISSUE:

The wetland modification regulations in Kirkland Zoning Code (KZC) 90.55 limit the amount of a wetland that may be modified on a subject property by wetland type and basin type. The strictest limitation is for a Type 1 wetland, where not more than five percent of the wetland on the subject property may be modified. The least restrictive is for a Type 3 wetland in a secondary basin, where all of the wetland on the property may be modified. Wetlands come in various sizes and configurations and only a small portion of a larger wetland may be located on a subject property, but located in a way that access to the unencumbered portion of the subject property is blocked.

INTERPRETATION:

When the Maximum Development Potential calculation of KZC 90.135 allows multiple dwelling units on the subject property and there is enough developable land on the property to accommodate multiple units, but access to the developable portion of the property would be prohibited due to the limitations on the amount of wetland that may be modified pursuant to KZC 90.55, the wetland modification limitations of KZC 90.55.1.f, 90.55.2 and 90.55.3 shall not apply. The remaining approval criteria and process requirements of KZC 90.55 shall continue to apply.

BACKGROUND:

The regulations in Chapter 90 of the KZC protect the environment, human life, and property by preserving the important ecological functions of wetlands, streams, lakes and frequently flooded areas. The chapter establishes wetland and stream classifications, standard buffer requirements, and limitations on wetland, stream and buffer disturbance. The chapter allows for culverts in streams when necessary to provide required vehicular, pedestrian or utility access to a subject property (KZC 90.115). There is no similar provision to allow access across a wetland when the limitations of KZC 90.55 would preclude it.

In addition, Chapter 90 establishes the Maximum Development Potential (KZC 90.135) for residential development. It reduces the standard density calculation for the area of the

property that is a wetland or stream and allows only a discounted density calculation for the portion of the property that is required buffer. In so doing, it provides further protection for wetlands and streams. Also included within the chapter is the concept of Reasonable Use (KZC 90.140), which establishes very specific guidelines to allow limited use and disturbance of a sensitive area and its buffer when the strict application of the regulations in Chapter 90 would deny all economically viable use of the property. Reasonable Use allows the construction of one single-family dwelling in a residential zone or an office of limited size in a commercial or industrial zone. However, on properties where the Maximum Development Potential limitations of KZC 90.135 allow multiple dwelling units and there is enough developable land to accommodate multiple units, allowing only one dwelling unit, pursuant to the Reasonable Use Exception, would be overly restrictive.

APPLICABLE CODE SECTIONS:

KZC 90.55.1, 90.55.2 and 90.55.3 all establish the limitations to and criteria for proposed wetland modifications. KZC 90.55.1 applies to Type 1 wetlands, KZC 90.55.2 applies to Type 2 wetlands, and KZC 90.55.3 applies to Type 3 wetlands.

ANALYSIS:

KZC Section 170.40.1 states that the Planning Director may issue an interpretation of any of the provisions of the Code. This section requires the Planning Director to base a decision on three criteria which are addressed below.

1. Defined or common meaning of the words of the provision.

This is not an issue.

2. The general purpose of the provision as expressed in the provision.

The purpose of the wetland modification limitations is to minimize direct impact to the wetland areas. However, the limitations do not take into account the location or configuration of the wetland or its relationship to property boundaries. The additional criteria that must be met for a modification to be approved ensure that the wetland functions and values will be maintained and include that "[t]here is no practicable or feasible alternative development proposal that results in less impact to the (Type 1) wetland and its buffer."

3. The logical or likely meaning of the provision viewed in relation to the Comprehensive Plan.

The Natural Environment Element of the Comprehensive Plan states:

The fundamental goal of the Natural Environment Element is to protect natural systems and features from the potentially negative impacts of nearby development and to protect life and property from certain environmental hazards.

The Natural Environment Element also notes that:

Additionally, Kirkland's desire and duty to protect natural resources must be balanced with the City's obligation to:

- Accommodate future growth; and
- Provide a development process that is timely, predictable, and equitable to developers and residents alike.

APPEAL PERIOD AND PROCEDURE TO APPEAL:

Any person who is aggrieved by this interpretation may appeal. An appeal, in the form of a letter of appeal and appeal fee established by ordinance, must be delivered to the Planning & Community Development Department by 5:00 PM on April 15, 2015, 14 days following the date the interpretation was posted to the City of Kirkland website. The letter of appeal must indicate how the interpretation affects the appellant's property and present any relevant arguments of information as to why the interpretation should not be issued.



Eric R. Shields, AICP, Planning Director

Effective date: April 1, 2015

ARBORIST REPORT

BRIDLESTONE ESTATES

4626 116TH AVE NE
KIRKLAND, WASHINGTON 98125

TAX ID: 162505-9017, 162505-9021, 162505-9022, 162505-9031, 162505-9034



Kyle Legare
Certified Arborist PN 5876A
Wetland Ecologist/CECSL
19000 33rd Ave W, Suite 200
Lynnwood, WA 98036

Phone: (425) 778-4111

Prepared:

February 12, 2015

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Bridlestone Estates Arborist Report

1.0 Introduction

The proposed Bridlestone Estates Project is a 37 – Lot residential sub-division located within the City of Kirkland. A complete tree survey that included a four digit numbering system, locations, and size was completed for the subject property by Triad Associates. The purpose of this report is to fulfill the City requirements outlined in KZC 95.30(4)(c) for the pre-application review. The findings included in this report were completed based on readily observable information gathered during site investigations. Tree retention proposals have determined based on preliminary grading plans, lot and road layouts, and utility infrastructure placement. Revisions to site design will necessitate changes to the tree retention plans.

Applicant:

KLN Construction, Inc.
19000 33rd Ave W, Suite 200
Lynnwood, WA 98036

1.1 Site Description

The subject site is located 4626 116th Ave NE, within the City of Kirkland and within Section 16, Township 27N Range 5E (see Figure 1). The subject site is an assemblage of five parcels that total 17.6-Acres and include tax parcel numbers: 16205-9017, 16205-9021, 16205-9022, 16205-9031, and 16205-9034. The site is accessed by two driveways, one paved and one gravel, which extend from west to east from 116th Ave NE. The site is bordered by residential development to the north and south, Bridle Trails State Park to the east, and 116th Ave NE to the west.

The site has been developed with nine residential structures, six barns/arenas, and eight sheds. The majority of the site area has been fenced and is used for pasture, paddocks, or arenas for equestrian purposes (see Figure 2 for color aerial photographs). This has resulted in changes to vegetative cover, soil structure and composition, drainage patterns, and nutrient cycling. With the exception of some of the wetland areas almost all of the site area is accessible to horse riding.

The site slopes from east to west, with surface flow draining towards the roadside wetland and stream system located along 116th Ave NE. Three soil types have been mapped on the subject site by the NRCS, which include AgC – Alderwood gravelly sandy loam 6-15% slopes, AgD – Alderwood gravelly sandy loam 15-30% slopes, and No – Norma sandy loam. The Alderwood series is moderately well drained, while the Norma soil unit is poorly drained.

1.2 Project Description

The proposed project is a 35-Lot residential subdivision on the 17.6-Acre property assemblage. Included in the project is the construction of internal roads, sewer lines, stormwater conveyance, water quality and detention facilities, and power to serve the proposed homes. The redevelopment of the site will result in removing the existing structures found throughout the site as well as the fenced pasture areas. Due to the existing topography found on the site a substantial amount of grading will be required to meet engineering requirements associated with roads, stormwater, and sewer infrastructure. Multiple site layout iterations were reviewed to help minimize impacts to critical areas and associated buffers, utilize existing roadways, and avoid impacts to significant trees while still allowing for the engineering requirements to be met.

Bridlestone Estates Arborist Report

2.0 Methods

2.1 Definitions

2.1.1 Critical Root Zone (KZC 95.10(2))

The area surrounding a tree at a distance from the trunk, which is equal to one (1) foot for every inch of trunk diameter measured at 4.5 feet from grade or otherwise determined by a qualified professional (example: one (1) foot radius per one (1) inch DBH).

2.1.2 Hazard Tree (KZC 95.10(7))

A tree that meets all the following criteria:

- a. A tree with a combination of structural defects and/or disease which makes it subject to a high probability of failure;
- b. Is in proximity to moderate to high frequency targets (persons or property that can be damaged by tree failure); and
- c. The hazard condition of the tree cannot be lessened with reasonable and proper arboricultural practices nor can the target be removed.

2.1.3 Limit of Disturbance (KZC 95.10(9))

The boundary between the protected area around a tree and the allowable site disturbance as determined by a qualified professional measured in feet from the trunk.

2.1.4 Retention Value (KZC 95.10(13))

Retention value is the Planning Official's designation of a tree based on information provided by a qualified professional that is one (1) of the following:

- a. **High:** a viable tree, located within required yards and/or required landscape areas. Tree retention efforts shall be directed to the following trees if they are determined to be healthy and windfirm by a qualified professional, and provided the trees can be safely retained when pursuing alternatives to development standards pursuant to KZC 95.32:
 - 1) Specimen trees;
 - 2) Tree groves and associated vegetation that are to be set aside as preserved groves pursuant to KZC 95.51(3);
 - 3) Trees on slopes of at least 10 percent; or
 - 4) Trees that are a part of a grove that extends into adjacent property, such as in a public park, open space, sensitive area buffer or otherwise preserved group of trees on adjacent private property. If significant trees must be removed in these situations, an adequate buffer of trees may be required to be retained or planted on the edge of the remaining grove to help stabilize;
- b. **Moderate:** a viable tree that is to be retained if feasible; or
- c. **Low:** a tree that is either (1) not viable or (2) is in an area where removal is unavoidable due to the anticipated development activity.

Bridlestone Estates Arborist Report

2.1.5 Significant Tree (KZC 95.10(14))

A tree that is at least six (6) inches in diameter at breast height (DBH) as measured at 4.5 feet from the ground.

2.2 Regulatory Purpose

The proposed project is subject to the requirements outlined in KZC 95.30 – “Tree Retention Associated with Development Activity”. The City’s objective is to retain as many viable trees as possible, using a minimum tree density approach to meet this objective (KZC 95.30(1)). Additionally, tree retention standards outlined in the table in KZC 95.30(5) require the retention of trees with a high retention value to the maximum extent possible and trees with moderate retention value where feasible. Kirkland Zoning Code 95.10(13) states that the Planning Official will determine the retention value (per the definitions provided in KZC 95.10(13)) based on the information included in this report. Section 2.1.4 above also outlines the definitions for the three types of retention value.

2.3 Tree Assessment

Trees were evaluated with the purpose of determining which trees would be suitable for retention on the site following development, in relation to the locations the proposed road, building footprints, utility infrastructure, and overall site grading. Trees which are located in areas that physically allow retention can be retained if 1) the tree is of suitable health and lacks specific hazard features which would pose an unreasonable hazard to life and property; and 2) tree retention protection guidelines for construction and development can be followed.

This tree evaluation follows the methodology outlined in *Evaluation of Hazard Trees in Urban Areas* (Matheny and Clark, 1994) and *Tree Risk Assessment Manual* (Dunster, 2013). For the purposes of this assessment, the above ground portions of each tree surveyed were evaluated, including the occasional use of a wood hammer to determine the presence rot where such conditions were suspected. No inspection below the root crown was performed, and no excavations were done to assess root health.

The visual assessment of the above ground portions of the trees focused on specific hazard indicators such as the degree of lean, co-dominant leaders, dead wood and/or breakage in the crown or trunk, and the overall health and vigor of the tree. General health of each tree was given a rating of excellent, good, fair, or poor based on observed conditions. For the purposes of this report, the trees within the interior portions of the NGPA Tracts were not assessed because these trees will be protected in perpetuity through requirements found in KZC Chapter 90 – Drainage Basins.

3.0 Results

3.1 General Assessment of Existing Significant Trees

Many of the existing trees, with the exception of the perimeter trees and trees located in the NGPA tracts, are found in small ‘islands’ throughout the site. These groups have been isolated by the construction of homes, driveways, barns, and fenced pasture (see Figure 2 for aerial photograph).

There are also many trees that appear to have been planted or left as hedge row type vegetation along existing driveways and fenced pasture areas (see Appendix A for site photographs). Many of these trees have had grading within the critical root zone associated with past land use activities. The trees that border or are within pasture areas also have on-going activities from the presence of horses within the

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critical root zones that affect soil structure (primarily compaction) and subsequently may have impacts on tree health.

3.2 Proposed Tree Preservation Assessment

A total of 636 significant trees have been surveyed on the 17.6-Acre property assemblage. A total of 264 of these trees are proposed to be removed, leaving 372 trees to be retained. The City requires 30 tree credits (TC) per acre or 15.5 Acres (ROW area not included) x 30 = 465 Tree Credits required for the proposed project. The proposed 372 trees to be saved represents a total of 1,357 Tree Credits, with 395 of these credits coming from NGPA tracts (see Appendix B for tree inventory spreadsheet). The remaining tree credits are located in either the open space tract specifically left for the purpose of tree retention or along the site perimeter. The proposed tree retention will exceed the minimum tree density requirements for residential subdivisions.

A number of reasons are credited for the proposed removal of 264 existing significant trees on the subject site. The primary reason for the majority of the trees that are proposed to be removed is the extensive grading required to develop the site to engineering standards. The existing topography on the site dictates that extensive grading will be required to meet road grades, ADA standards, stormwater management, sewer elevations, and buildable lots. Much of this grading will occur in areas where significant trees are present or within the critical root zone of these trees.

The existing structures, historic grading (roads, pastures, etc.), and other infrastructure will also influence viable trees. As part of the proposed site development the existing structures will be removed, which in turn requires the use of heavy equipment, clearing, and grading. These activities can negatively impact existing vegetation and influence the retention value of some trees.

The retention approach for this project included preserving a grove of large conifer trees on the northern portion of the site in a separate tract. Retaining a group of trees minimizes potential impacts associated with development activities versus retaining many scattered individual trees. The trees are currently isolated and therefore should experience minimal impact from clearing activities throughout the remaining site area. It also allows for the retention of trees that may lack windfirmness if isolated. The proposed retention trees on lots 16-21, 27, & 28 are currently isolated, which should help reduce impacts as the proposed clearing and grading is completed. In addition, the tract area is currently relatively undisturbed in comparison to the rest of the site (see Figures 5 & 6). No grading appears to have occurred within this area and only limited horse access is present along the perimeter of this area. The existing conditions also makes this area highly he group of trees also helps to provide a small wildlife refuge area for small mammals and birds that might not utilize single trees located on developed lots.

In addition to the tree credits associated with the preservation of existing trees on the subject property, the applicant will be required to enhance the wetland buffer and rehabilitate wetland area as mitigation for project impacts. The mitigation measures will include installing native shrubs, which will also add to the tree credits on the subject site.

Table 1: Retention Tree Credit Summary Table

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Total Trees On-site = 636 (see Appendix B for Tree Inventory List)
Existing Tree Credits on-site = 2,532
Proposed Trees to be Removed = 262
Proposed Trees to be Retained = 372 (58% of existing trees)
Required Tree Credits for Project Site = 15.5-Acres x 30 = 465 TC
Total Proposed Save Tree Credits = 1,357 TC

4.0 Tree Protection during Development Activity

The City of Kirkland maintains specific tree protection guidelines within KZC 95.34 during site development activities that are intended to avoid impacts to proposed preservation trees. The following section is taken from the Kirkland Code and will be implemented on the project site to meet this goal. Limits of disturbance/tree protection barriers have been shown in Figure 3 of Appendix A based on critical root zone. Specific notes regarding work within critical root zone (i.e. demolition of existing structures near proposed save trees) will be included on future tree retention plans as more detail is provided with revised site plans.

4.1 City of Kirkland Tree Protection Requirements (KZC 95.34)

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 pursuant to the following standards:

1. Placing Materials near Trees. No person may conduct any activity within the protected area of any tree designated to remain, including, but not limited to, operating or parking equipment, placing solvents, storing building material or soil deposits, or dumping concrete washout or other chemicals. During construction, no person shall attach any object to any tree designated for protection.
2. Protective Barrier. Before development, land clearing, filling or any land alteration, the applicant shall:
 - a. Erect and maintain readily visible temporary protective tree fencing along the limits of disturbance which completely surrounds the protected area of all retained trees or groups of trees. Fences shall be constructed of chain link and be at least six (6) feet high, unless other type of fencing is authorized by the Planning Official.
The limits of disturbance for retention trees on this project has been identified as the critical root zone unless otherwise noted in the tree inventory. Figure 3 (Appendix A) depicts the proposed retention trees and adjacent off-site trees with protection zone/limit of disturbance buffers (critical root zone).
 - b. Install highly visible signs spaced no further than 15 feet along the entirety of the protective tree fence. Said sign must be approved by the Planning Official and shall state at a minimum "Tree Protection Area, Entrance Prohibited" and provide the City phone number for code enforcement to report violations.

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- c. Prohibit excavation or compaction of earth or other potentially damaging activities within the barriers; provided, that the Planning Official may allow such activities approved by a qualified professional and under the supervision of a qualified professional retained and paid for by the applicant.
 - d. Maintain the protective barriers in place for the duration of the project until the Planning Official authorizes their removal.
 - e. Ensure that any approved landscaping done in the protected zone subsequent to the removal of the barriers shall be accomplished with light machinery or hand labor.
 - f. In addition to the above, the Planning Official may require the following:
 - 1) If equipment is authorized to operate within the critical root zone, cover the areas adjoining the critical root zone of a tree with mulch to a depth of at least six (6) inches or with plywood or similar material in order to protect roots from damage caused by heavy equipment.
 - 2) Minimize root damage by excavating a 2-foot-deep trench, at edge of critical root zone, to cleanly sever the roots of trees to be retained.
 - 3) Corrective pruning performed on protected trees in order to avoid damage from machinery or building activity.
 - 4) Maintenance of trees throughout construction period by watering and fertilizing.
3. Grade.
- a. The grade shall not be elevated or reduced within the critical root zone of trees to be preserved without the Planning Official's authorization based on recommendations from a qualified professional. The Planning Official may allow coverage of up to one-half (1/2) of the area of the tree's critical root zone with light soils (no clay) to the minimum depth necessary to carry out grading or landscaping plans, if it will not imperil the survival of the tree. Aeration devices may be required to ensure the tree's survival.
It is recognized by the applicant that a revisions to the grading plan will be necessary to provide adequate protection to proposed saved trees. The current grading represents a preliminary plan that is expected to undergo changes with subsequent review and comments.
 - b. If the grade adjacent to a preserved tree is raised such that it could slough or erode into the tree's critical root zone, it shall be permanently stabilized to prevent suffocation of the roots.
 - c. The applicant shall not install an impervious surface within the critical root zone of any tree to be retained without the authorization of the Planning Official. The Planning Official may require specific construction methods and/or use of aeration devices to ensure the tree's survival and to minimize the potential for root-induced damage to the impervious surface.
 - d. To the greatest extent practical, utility trenches shall be located outside of the critical root zone of trees to be retained. The Planning Official may require that utilities be tunneled under the roots of trees to be retained if the Planning Official determines that trenching would significantly reduce the chances of the tree's survival.
 - e. Trees and other vegetation to be retained shall be protected from erosion and sedimentation. Clearing operations shall be conducted so as to expose the smallest practical area of soil to erosion for the least possible time. To control erosion, it is encouraged that shrubs, ground cover and stumps be maintained on the individual lots, where feasible.
4. Directional Felling. Directional felling of trees shall be used to avoid damage to trees designated for retention.
5. Additional Requirements. The Planning Official may require additional tree protection measures that are consistent with accepted urban forestry industry practices.

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4.2 Tree Retention Protection Guidelines

For the trees proposed to be retained on the site or adjacent to the site following construction, standard arboricultural practices should be followed during site development. Extensive clearing and grading to any depth (within the dripline or critical root zone) is considered a disturbance and may be detrimental to the health of trees. These practices are outlined below, and adherence to them will provide the greatest likelihood of success in tree retention. Additional protection measures are expected as site plan revisions or made. These measures will need to be followed and/or implemented during construction activities.

Stumps of trees to be removed within the root protection zone of preserved trees will be ground down to below ground surface and not excavated, but preferably left in place. The consulting arborist will determine to what extent backfilling is allowed within the root protection zone of a retained tree on a case-by-case basis.

ANSI A300 American Standards for pruning shall be followed, unless other standards are required by the local jurisdiction. The usage of preservation measures such as tree wells, rockeries, or aeration piping in areas of fill will be determined at the time of inspection of the clearing and grading limits. The trees proposed for retention on this project should have a high probability of survival and future landscape value if the above listed retention recommendations are followed.

4.3 Use and Limitations of this Report

This Tree Evaluation Report has been prepared for the applicant, as a means of determining, to the most thorough extent practicable, conditions of the existing trees on the subject property and recommending a course of action relative to these trees through the development and construction process. This report is based primarily on readily observable and ascertainable conditions, with limited use of invasive means to evaluate tree condition.

There are several conditions that can affect a tree's health that may be pre-existing and unable to be ascertained with a surficial analysis. These conditions include root and stem rot, internal cracks, structural flaws or construction damage to roots, which may be hidden beneath the soil. Additionally, post-construction circumstances can cause a relatively rapid deterioration of a tree's condition. This report has been prepared as an assessment of the current condition of trees on the project site, and may not be valid during or after construction. Every reasonable means has been used to examine the trees on the site, however, this report is a professional opinion and no expressed or implied guarantee is made of tree conditions on the site. No attempt has been made to determine the presence of hidden or concealed conditions which may contribute to the hazard or failure potential of trees on the site. The work for this report conforms to the standard of care employed by ISA Certified Arborists. No other representation or warranty is made concerning the work or this report and any implied representation or warranty is disclaimed. If you should have any questions or concerns, please feel free to contact me anytime.

5.0 Conclusions

KLN Construction has completed the site investigation and tree assessment for the subject property in regards to KZC chapter 95. The proposed tree retention plan exceeds the tree density requirements outlined in KZC 95.33 through the retention of existing significant trees. The location of the proposed retention trees represent areas (outside of NGPA tracts) that provide the greatest retention potential

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based on both existing conditions and post construction conditions. This plan has been prepared for the pre-application meeting with the City of Kirkland and is based on preliminary site grading and layout.

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6.0 References

- ANSI A300 (Part 5) – 2012 American National Standards Institute. *Tree, Shrub, and Other Woody Plant Management – Standard Practices (Management of Trees and Shrubs During Site Planning, Site Development, and Construction)*. New Hampshire: Tree Care Industry Association, 2012.
- Dunster, J. A. 2013. *Tree Risk Assessment Manual*. International Society of Arboriculture, Champaign, Illinois.
- Goheen, E.M. & E.A. Willhite. 2006. Field Guide to Common Diseases and Insects Pest of Oregon and Washington Conifers. R6-NR-FID-PR-01-06. Portland, Oregon: USDA Forest Service, Pacific Northwest Region.
- Kirkland, City of. 2005. Tree Management and Required Landscaping. Chapter 95 – Zoning Code. Kirkland, Washington.
- Matheny, N. & Clark, J.R. 1998. *Trees and Development: A Technical Guide to Preservation of Trees During Land Development*. International Society of Arboriculture, Champaign, Illinois.
- Pojar, J. and A. MacKinnon. 1994. *Plants of the Pacific Northwest Coast*. B.C. Ministry of Forests and Lone Pine Publishing. Vancouver, B.C., Canada.

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Appendix A: Natural Resource Maps and Site Photos

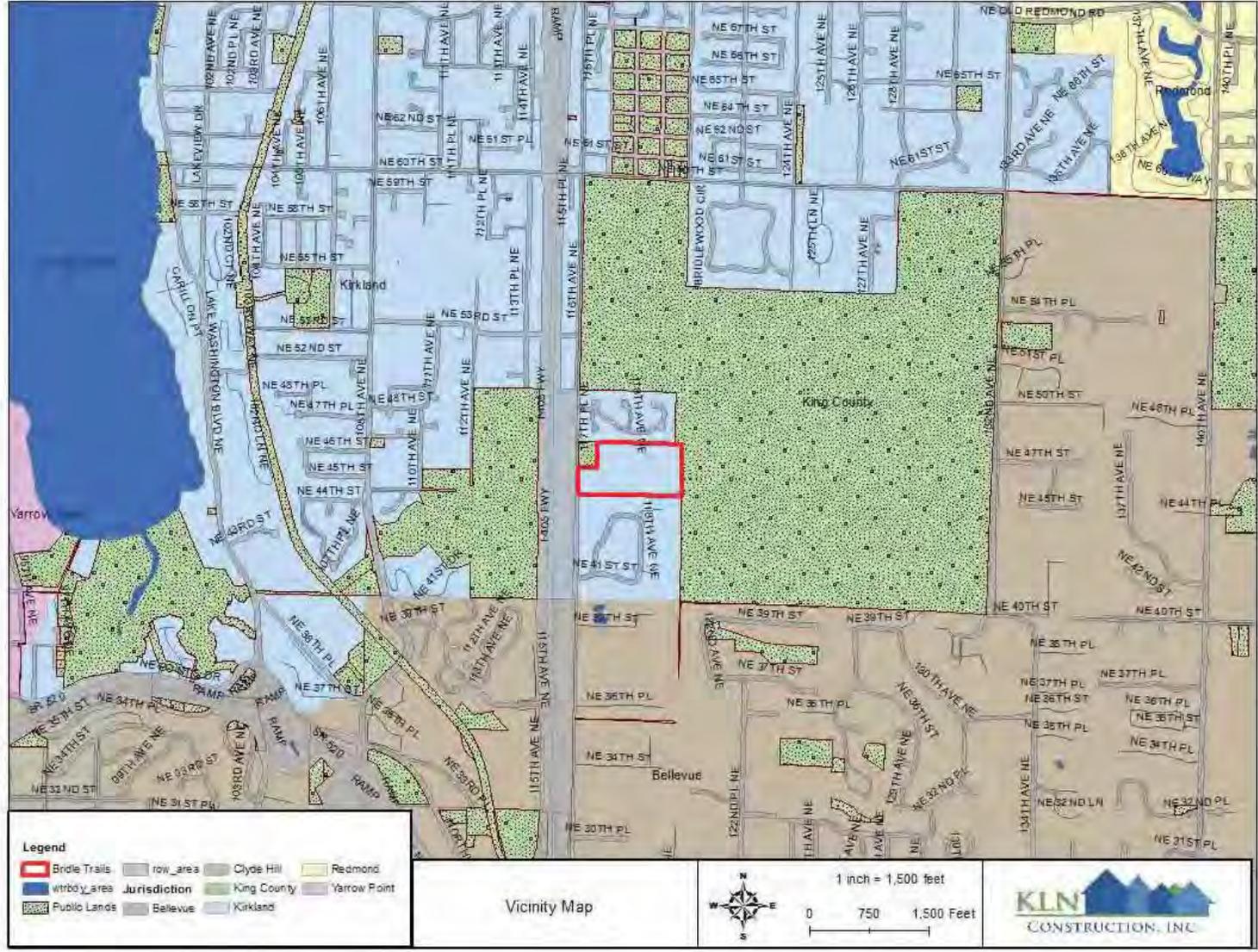


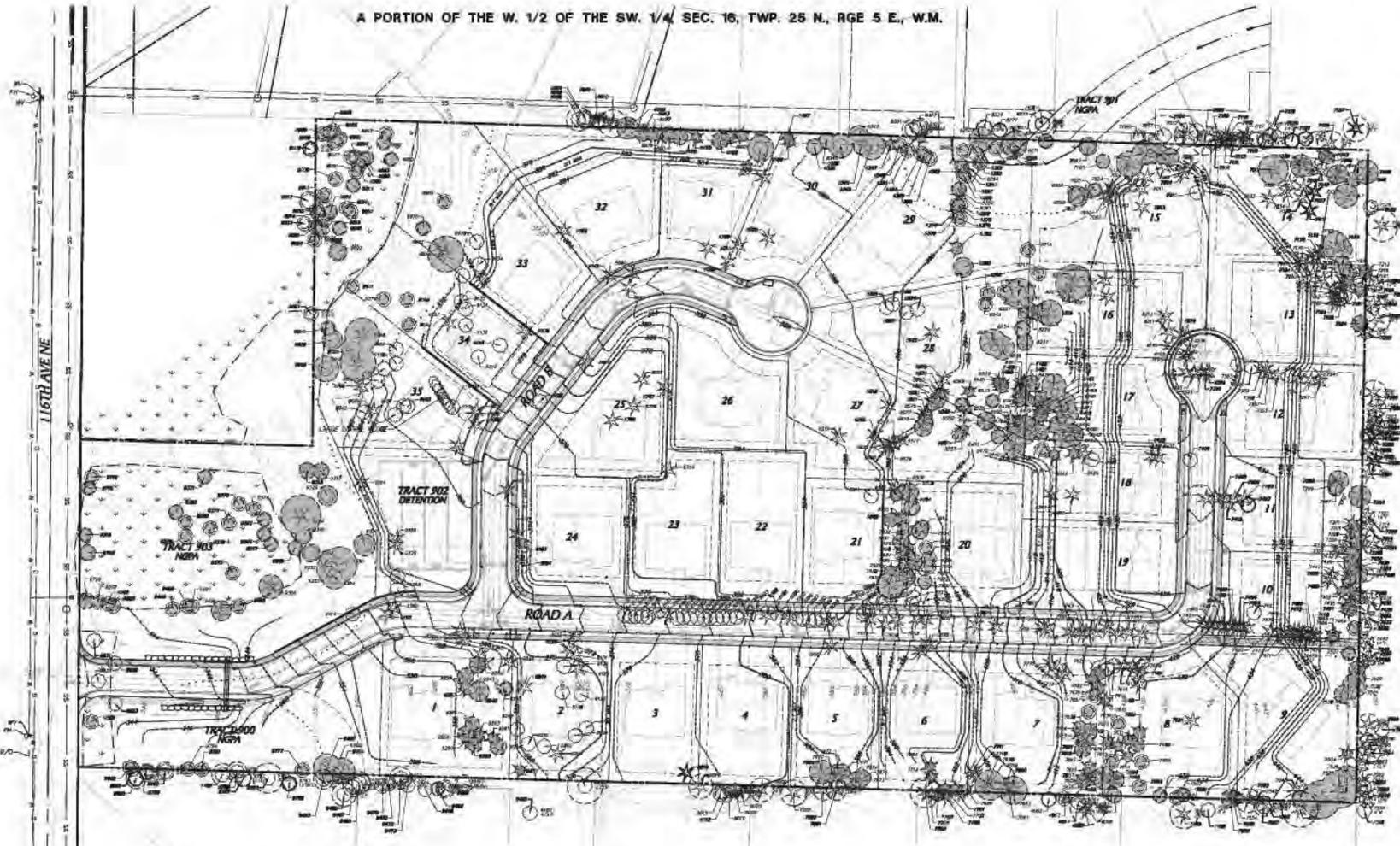
Figure 1: Vicinity map for the project area.

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Figure 2: 2002 color aerial photograph of the subject property.

A PORTION OF THE W. 1/2 OF THE SW. 1/4, SEC. 16, TWP. 25 N., RGE 5 E., W.M.



EXISTING TREE LEGEND

- | | |
|---------------------|---|
| CLP TREE CLUSTER | EXISTING OFFSITE CONIFEROUS TREE |
| A ALDER | EXISTING OFFSITE DECIDUOUS TREE |
| F DOUGLAS FIR | APPROXIMATE SHIPLINE OF OFFSITE TREE |
| DEC DECIDUOUS TREE | EXISTING CONIFEROUS TREE TO BE RETAINED |
| M MAPLE | EXISTING DECIDUOUS TREE TO BE RETAINED |
| COT COTTONWOOD | APPROXIMATE SHIPLINE OF ON SITE TREE TO BE RETAINED |
| C WESTERN RED CEDAR | EXISTING CONIFEROUS TREE TO BE REMOVED |
| MA MADRONA | EXISTING DECIDUOUS TREE TO BE REMOVED |
| P PINE | |
| H HEMLOCK | |
| FR FRUIT | |
| AP APPLE | |
| O OAK | |
| S SPRUCE | |
| H HOLLY | |
| W WILLOW | |

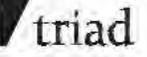
TREE DENSITY CALCULATION

SITE AREA (EXCLUDING ROW)	6,75,941 SF/15.5 ACRES
REQUIRED TREE CREDITS (#/30 PER ACRE)	465 TREE CREDITS (#/30 PER ACRE: 30 X 15.5)
PROPOSED TREE CREDITS	1,527 TREE CREDITS



SCALE: 1" = 60'

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PRELIMINARY TREE RETENTION PLAN

KLH CONSTRUCTION, INC.
BRIDLESTONE ESTATES

WASHINGTON

CITY OF KENNESAW

DATE	11/15/15
SCALE	AS SHOWN
PROJECT NO.	15-097
DATE	11/15/15
SCALE	AS SHOWN

JOY E. LIND, JR., PE
 PROJECT ENGINEER
 MARK B. HARRISON, P.E.
 PROJECT MANAGER
 KEVIN G. ALLEN, PE
 PROJECT ENGINEER
 SHAWN LUTZ, P.E.
 PROJECT ENGINEER
 2000 VANTAGE TRAIL, SUITE 100
 VINTON, VIRGINIA 24042
 SCALE: 1" = 60'

PRELIMINARY



STATE OF VIRGINIA
 PROFESSIONAL ENGINEER
 MARK B. HARRISON
 LICENSE NO. 5523
 EXPIRES 12/31/16

DATE: 11-097

SHEET NO. 11 of 13

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Figure 4: Existing conditions within riding area in the north-central portion of the site.



Figure 5: Typical conditions found along both existing access roads.

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Figure 6: Existing trees within proposed save tree/open space tract.



Figure 7: Existing conditions along south side of proposed save tree/open space tract.

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Figure 8: Typical conditions found throughout site. Structures, road, and invasive plants.



Figure 9: Proposed save trees along north property line.

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Appendix B: Tree Inventory List

Table 2: Tree evaluation abbreviations used in tree inventory spreadsheet.

Tree Evaluation Abbreviations	
Abrev.	Characteristic
BT	Broken Top
C	Conks visible
CD	Co-dominant crown
DC	Dead Crown
F	Fill material placed around tree
G	Grove - 3 or more Sign. Trees w/ overlapping crowns
GA	Evidence of grading within tree dripline/critical root zone
GI	Girdling present
H	Healthy - suitable for retention
I	Insect- boring or surface infestation
IV	Ivy present
L	Significant lean to tree
LC	Limited foliage in crown
LS	Livestock within dripline/critical root zone
NV	Not Viable - Not likely to live
P	Pruning
PR	Paved area within dripline/critical root zone
R	Rot noted in bole or roots
WP	Woodpecker- Active or other signs noted

Bridle Trails Residential Development Tree Inventory						
Tree Number	Species	DBH	Credit	Tree Assessment Codes	General Condition	Proposed Status
4059	Deciduous	22	7	H/G/L	Poor	SAVE
7004	PSME	28	10	H/G/LS/GR	Fair	TBR
7005	PSME	18	5	H/G	Good	SAVE
7006	PSME	12	2	H/G	Good	TBR
7007	PSME	28	10	H/G/GR/LS	Good	TBR
7008	PSME	20	6	H/G	Good	SAVE
7009	PSME	18	5	H/G/LS	Good	TBR
7010	PSME	24	8	H/G	Good	SAVE
7011	PSME	24	8	G/F/H/LS	Fair	TBR
7012	PSME	26	9	H/G	Good	SAVE
7013	TSHE	16	4	H/GR/F/G	Fair	TBR
7014	PSME	20	6	H/G	Good	TBR
7015	ACMA	6", 4-10" & 12"	7	CD/H	Good	TBR
7016	PSME	28	10	CD/F/GR	Good	TBR
7017	PSME	32	12	H/G/LS/F	Good	TBR
7018	PSME	22	7	H/G/LS/G	Good	TBR
7019	PSME	38	15	H/G	Good	SAVE
7020	PSME	24	8	H/F/LS/G	Good	TBR
7021	ACMA	14	3	L/CD	Poor	TBR
7022	PSME	24	8	H/G/LS	Good	S(NGPA)
7023	PSME	12	2	H/G	Excellent	TBR
7024	PSME	20	6	H/G	Excellent	TBR
7025	ACMA	12	2	H/G	Excellent	S(NGPA)
7031	PSME	30	11	H/LS/G/GR	Good	SAVE
7032	PSME	24	8	H/LS/G/GR	Good	TBR
7033	PSME	24	8	H/LS/G/GR	Good	TBR
7034	PSME	16	4	H/LS/G/GR/R	Fair	TBR
7035	PSME	18	5	H/LS/G/GR	Good	TBR
7036	PSME	28	10	H/LS/G/GR	Good	TBR
7037	PSME	18	5	H/LS/G/GR	Good	TBR
7038	PSME	24	8	H/LS/G/GR	Good	TBR
7039	PSME	10	1	H/G/GR/LS	Good	SAVE
7040	PSME	22	7	H/G/GR/LS	Good	SAVE

Tree Number	Species	DBH	Credit	Tree Assessment Codes	General Condition	Proposed Status
7041	PSME	20	6	H/G/GR/LS	Good	TBR
7042	PSME	24	8	H/G/GR/LS	Good	TBR
7043	PSME	12	2	H/G/GR/LS	Good	SAVE
7044	PSME	12	2	H/G/GR/LS	Good	SAVE
7045	PSME	18	5	H/G/GR/LS	Good	SAVE
7046	PSME	18	5	H/G/GR/LS	Good	SAVE
7047	PSME	24	8	H/G/GR/LS	Good	SAVE
7048	PSME	14	3	H/G/GR/LS	Good	SAVE
7049	PSME	24	8	H/G/GR/LS	Good	SAVE
7097	ACMA	18	5	H/G	Excellent	S(NGPA)
7103	ALRU	14	3	H/G	Excellent	S(NGPA)
7169	THPL	28	10	H/G	Good	SAVE
7172	THPL	18	5	H/G	Good	TBR
7174	PSME	16	4	H/G	Good	SAVE
7175	THPL	14	3	H/G	Good	TBR
7176	THPL	14	3	H/G	Good	TBR
7177	THPL	18	5	H/G	Good	TBR
7178	THPL	8	1	H/G	Good	TBR
7179	PSME	14	3	H/G	Good	TBR
7180	THPL	14	3	H/G	Good	TBR
7181	PSME	32	12	CD/G/	Good	TBR
7182	PSME	6	1	BT/L/G	Fair	TBR
7183	THPL	16	4	H/G	Good	TBR
7184	TSHE	6	1	H/G	Good	TBR
7185	THPL	14	3	H/G	Good	TBR
7188	PSME	6	1	H/G	Good	SAVE
7189	PSME	12	2	H/G	Good	SAVE
7190	PSME	6	1	H/G	Good	TBR
7191	PSME	8	1	H/G	Good	SAVE
7192	ACMA	6	1	L/NV/G	Poor	TBR
7193	PSME	8	1	H/G	Good	TBR
7194	PSME	14	3	H/G	Good	TBR
7195	PSME	10	1	H/G	Good	TBR
7196	ARME	6	1	L/NV	Poor	TBR
7197	PSME	6	1	H/G	Good	TBR

Tree Number	Species	DBH	Credit	Tree Assessment Codes	General Condition	Proposed Status
7212	THPL	12	2	H/G	Good	SAVE
7216	THPL	12	2	H/G	Good	SAVE
7220	PSME	14	3	H/G	Good	SAVE
7224	PSME	16	4	H/G	Good	SAVE
7241	PSME	14	3	G/PR/BT	Fair	TBR
7247	PSME	6" 3-8" & 10"	5	G/PR/BT	Fair	TBR
7252	PSME	24	8	G/CD/PR/BT	Fair	TBR
7297	ACMA	12	2	H/G/LS	Good	SAVE
7298	PSME	20	6	H/G/LS	Good	SAVE
7299	ACMA	6	1	H/L/G	Good	SAVE
7304	PSME	22	7	H/LS	Good	SAVE
7311	PSME	10	1	H/G	Good	SAVE
7315	PSME	12	2	H/G	Good	SAVE
7318	PSME	12	2	H/G	Good	SAVE
7319	PSME	16	4	H/G	Good	SAVE
7324	THPL	20	6	BT/R/G	Fair	SAVE
7326	PSME	6	1	H/G	Good	SAVE
7327	PSME	16	4	H/G	Good	SAVE
7328	PISI	8	1	H/G	Good	SAVE
7348	PSME	24	8	PR/G/	Good	TBR
7353	PSME	14" & 18"	8	CD/LS/G/PR	Fair	TBR
7357	PSME	16	4	BT/PR/LS/G	Fair	TBR
7360	PSME	12	2	BT/PR/G/	Fair	TBR
7361	ARME	2-12"	4	G/L/H	Good	TBR
7362	PSME	8	1	G/PR/	Good	TBR
7363	CEJA	6	1	H	Good	TBR
7393	PSME	6	1	G/LS/BT	Fair	TBR
7394	PSME	10	1	G/LS	Good	TBR
7395	PSME	20	6	G/LS/H	Good	TBR
7396	PSME	20	6	G/LS	Good	TBR
7397	THPL	16	4	H/S	Good	TBR
7405	PINUS	2-6"	2	CD/H	Good	TBR
7406	POBA	12	2	H/CD	Good	TBR
7407	ACMA	6	1	H/G	Good	TBR
7408	PINUS	8	1	NV/LC/G	Poor	TBR

Tree Number	Species	DBH	Credit	Tree Assessment Codes	General Condition	Proposed Status
7409	THPL	12	2	H/G	Good	TBR
7410	THPL	12	2	H/G	Good	TBR
7411	THPL	12	2	H/G	Good	TBR
7412	PISI	8	1	H/G	Good	TBR
7425	PSME	18" & 12"	7	CD/G/H	Good	TBR
7429	PSME	12	2	H/G	Good	TBR
7430	ARME	6	1	H/G	Good	SAVE
7432	ARME	10	1	H/G	Good	SAVE
7434	PSME	14	3	H/G	Good	SAVE
7436	PSME	8	1	H/G	Good	SAVE
7445	PSME	10	1	H/G	Good	SAVE
7447	PSME	6	1	H/G	Good	SAVE
7450	PSME	12	2	H/G	Good	SAVE
7452	PSME	10	1	H/G	Good	SAVE
7455	PSME	10	1	H/G	Good	SAVE
7458	PSME	12	2	H/G	Good	SAVE
7459	ARME	6	1	H/G	Good	TBR
7462	PSME	10	1	H/G	Good	SAVE
7464	PSME	6	1	H/G	Good	TBR
7465	PSME	8	1	G/LS	Good	SAVE
7466	PSME	12	2	LS/G/GR	Fair	SAVE
7468	PSME	14" & 8"	4	CD/LS	Fair	TBR
7469	PSME	8	1	H	Good	TBR
7470	PSME	12	2	LS/G/GR	Fair	TBR
7471	PSME	16	4	H/G	Good	TBR
7472	PSME	10	1	NV/LS/G	Poor	TBR
7473	PSME	8	1	H/G	Good	TBR
7475	PSME	6	1	NV/DEAD	Poor	TBR
7476	PSME	6" & 8"	2	H/CD	Fair	TBR
7477	PSME	14	3	H	Good	TBR
7478	PSME	14	3	H/G/OW	Fair	TBR
7479	PSME	18	5	H/G	Good	TBR
7480	PSME	22	7	H/G	Good	TBR
7481	MALUS SP	14	3	OW/P	Fair	TBR
7482	THPL	10	1	H/G	Good	TBR

Tree Number	Species	DBH	Credit	Tree Assessment Codes	General Condition	Proposed Status
7483	THPL	8	1	H/G	Good	TBR
7484	THPL	8	1	H/G	Good	TBR
7485	THPL	8	1	H/CD/G	Good	TBR
7486	THPL	10	1	H/G	Good	TBR
7487	THPL	8	1	H/G	Good	TBR
7488	THPL	8	1	H/G	Good	TBR
7490	THPL	10	1	H/G	Good	TBR
7491	THPL	8	1	H/G	Good	TBR
7492	THPL	12	2	H/G	Good	TBR
7526	PSME	24	8	H/G	Good	SAVE
7527	ARME	12	2	L/OW	Fair	SAVE
7528	ARME	2-8"	2	L	Good	SAVE
7529	PSME	16	4	H/G	Good	SAVE
7530	PSME	18	5	H/OW	Fair	SAVE
7534	THPL	8	1	H/G	Good	SAVE
7536	PSME	8" & 18"	6	CD/G	Good	SAVE
7537	PSME	30	11	H/G	Good	SAVE
7538	THPL	38	15	H/G	Good	SAVE
7539	ARME	16	4	DEAD	Poor	SAVE
7543	THPL	6	1	H	Good	SAVE
7547	PSME	12	2	H/G	Good	SAVE
7552	PSME	24	8	H	Good	TBR
7554	TSHE	12	2	G/OW	Good	SAVE
7555	TSHE	8	1	L/G	Good	SAVE
7556	PSME	18	5	H/G	Good	SAVE
7584	PINUS	20	6	PR/H	Fair	TBR
7591	ARME	12	2	OW/L/H	Fair	SAVE
7592	ARME	12	2	OW/L	Fair	SAVE
7593	ARME	8	1	H/L	Good	SAVE
7594	MALUS SP	8	1	H	Good	SAVE
7595	FRUIT TREE	8	1	H	Good	SAVE
7597	Deciduous	14	3	H/G	Good	SAVE
7598	PSME	14	3	H/G	Good	SAVE
7599	PSME	6	1	H/G	Good	SAVE
7601	PSME	12	2	H/G	Good	SAVE

Tree Number	Species	DBH	Credit	Tree Assessment Codes	General Condition	Proposed Status
7602	PSME	16	4	H/G	Good	SAVE
7603	PSME	14	3	H/G	Good	TBR
7604	PSME	8	1	H/G	Good	SAVE
7605	PSME	22	7	H/G	Good	SAVE
7606	PSME	10	1	H/G	Good	TBR
7607	PSME	6	1	H/G	Good	SAVE
7608	PSME	10	1	G/CD/PR/BT	Fair	SAVE
7609	PSME	12	2	H/G	Good	TBR
7610	PSME	14	3	G/GR	Good	SAVE
7611	PSME	10	1	H/G	Good	TBR
7612	THPL	12	2	H/G	Good	SAVE
7613	PSME	10	1	G/H	Good	TBR
7614	MALUS SP	8	1	H/G/WP	Fair	SAVE
7615	PSME	10	1	H/G	Good	SAVE
7616	PSME	6	1	G/NV	Poor	TBR
7617	PSME	8" & 16"	5	G/NV/CD	Poor	SAVE
7618	PSME	6	1	NV/G	Poor	TBR
7619	PSME	8	1	OW/G	Fair	SAVE
7620	PSME	14	3	H/G	Good	SAVE
7621	PSME	8	1	H/G	Good	SAVE
7622	PSME	12	2	OW/NV/G	Poor	SAVE
7623	PSME	8	1	G/GR/	Good	SAVE
7624	PSME	14	3	G/GR/NV	Poor	SAVE
7625	PSME	12	2	G	Good	SAVE
7626	PSME	16	4	G/H/CD/	Good	SAVE
7627	PSME	6	1	H/DEAD	Poor	SAVE
7628	PSME	8	1	H/G	Good	SAVE
7629	PSME	8	1	H/G	Good	SAVE
7630	PSME	8	1	H/G	Good	SAVE
7631	PSME	10	1	H/G	Good	SAVE
7634	FRUIT TREE	6	1	H/G	Good	SAVE
7638	Deciduous	3-6"	3	NV/G	Poor	SAVE
7658	PSME	14	3	H/G	Good	SAVE
7659	PSME	30	11	H/G	Good	SAVE
7660	PSME	12	2	OW/G	Fair	SAVE

Tree Number	Species	DBH	Credit	Tree Assessment Codes	General Condition	Proposed Status
7661	PSME	14	3	BT/G	Fair	TBR
7663	PSME	28	10	H/G	Good	TBR
7699	PSME	10	1	H/G	Good	SAVE
7701	PSME	10	1	L/G	Good	SAVE
7703	PSME	10	1	H/G	Good	SAVE
7710	PSME	16	4	H/G	Good	SAVE
7711	PSME	32	12	H/G	Good	SAVE
7712	PSME	10	1	H/G	Good	SAVE
7724	PSME	24	8	LS/P/PR/G	Good	TBR
7733	PSME	16	4	P/LS/PR/G	Good	TBR
7739	PSME	18	5	P/LS/PR/G	Good	TBR
7741	PSME	14	3	P/LS/PR/G	Good	TBR
7743	PSME	16	4	CD/PR/IV/GA/G	Fair	TBR
7746	PSME	16	4	IV/LS/PR/P/G	Fair	TBR
7754	PSME	14	3	P/LS/PR/G	Fair	TBR
7758	PSME	18	5	P/PR/LS/G	Good	TBR
7761	Deciduous	8" & 10"	2	NV/I/OW/LS	Poor	TBR
7765	PSME	24	8	G/LS	Good	TBR
7771	PSME	20	6	G/LS	Good	TBR
7773	PSME	16	4	PR/H/G	Good	TBR
7774	PSME	16	4	PR/H/G	Good	TBR
7775	PSME	14	3	PR/H/G	Good	TBR
7791	Deciduous	8	1		Good	TBR
7864	PSME	10	1	H/S	Good	SAVE
7873	PSME	18	5	G/I/NV	Poor	TBR
7874	PSME	26	9	H/G/LS	Good	TBR
7875	PSME	26	9	H/G/LS	Good	TBR
7892	POBA	38	15	H	Fair	TBR
7905	PSME	28	10	H/G	Good	TBR
7906	PSME	16	4	H/G	Good	TBR
7907	PSME	16	4	H/G	Good	TBR
7909	PSME	30	11	HG	Good	TBR
7910	Deciduous	14	3	L/BT/LS	Fair	SAVE
7913	PSME	14	3	G/NV/CD	Poor	TBR
7916	Deciduous	2-10"	2	H/CD	Fair	SAVE

Tree Number	Species	DBH	Credit	Tree Assessment Codes	General Condition	Proposed Status
7917	PSME	12	2	G/H	Good	TBR
7919	ACMA	2-8" & 3-12"	8	G/CD/OW/BT	Fair	SAVE
7920	ACMA	12	2	H/G	Good	TBR
7921	ACMA	2-6" & 10"	3	CD/LS/IV/	Fair	TBR
7922	PSME	14	3	G/H/IV	Good	SAVE
7923	PSME	12	2	G/H/IV	Good	SAVE
7924	PSME	14	3	G/H/IV	Good	SAVE
7926	THPL	8	1	H/G	Good	SAVE
7927	PSME	12	2	H/G	Good	SAVE
7928	PSME	14	3	NV/G	Poor	SAVE
7929	PSME	8	1	H/G	Good	SAVE
7930	PSME	12	2	H/G/IV	Good	SAVE
7931	PSME	16	4	H/G	Good	SAVE
7932	PSME	14	3	H/G	Good	SAVE
7933	THPL	26	9	H/G	Good	SAVE
7934	PSME	16	4	H/G/IV	Good	SAVE
7956	PSME	18	5	GA/LS/PR/P	Fair	TBR
7957	PSME	30	11	PR/LS	Fair	TBR
7968	PSME	24	8	LS	Good	SAVE
7970	PSME	12	2	LS	Good	SAVE
7971	PSME	16	4	LS	Good	SAVE
7972	PSME	14	3	LS/BT	Fair	SAVE
7973	PSME	20	6	LS	Good	SAVE
7974	PSME	6	1	LS	Good	SAVE
7975	PSME	16	4	LS	Good	SAVE
8019	PSME	30	11	H	Good	SAVE
8067	ACMA	18	5	H/OW/G	Fair	TBR
8072	ACMA	2-12" & 14"	7	G/CD/H	Good	TBR
8078	PSME	10	1	G/NV/CD	Poor	TBR
8082	PSME	14	3	H/G	Good	TBR
8083	PSME	12	2	H/G	Good	TBR
8085	PONI	16	4	H/G	Good	TBR
8086	PONI	12	2	H/G	Good	TBR
8087	PONI	14	3	H/G	Good	TBR
8088	PONI	10	1	H/G	Good	TBR

Tree Number	Species	DBH	Credit	Tree Assessment Codes	General Condition	Proposed Status
8089	PONI	14	3	H/G	Good	TBR
8090	PSME	14	3	H/G	Good	TBR
8091	PSME	14	3	H/G	Good	TBR
8092	PSME	14	3	H/G	Good	TBR
8093	PSME	12	2	H/G	Good	TBR
8094	PONI	14	3	H/G	Good	TBR
8095	PONI	12	2	H/G	Good	TBR
8096	PSME	14	3	H/G	Good	TBR
8097	PONI	10	1	H/G	Good	TBR
8098	PONI	12	2	H/G	Good	TBR
8099	PONI	8	1	H/G	Good	TBR
8100	PONI	12	2	H/G	Good	TBR
8102	PONI	14	3	H/G	Good	TBR
8103	PONI	14	3	H/G	Good	TBR
8104	PONI	8	1	H/G	Good	TBR
8105	PONI	18	5	H/G	Good	TBR
8106	PSME	12	2	H/G	Good	TBR
8107	PSME	14	3	H/G	Good	TBR
8108	PONI	12	2	H/G	Good	TBR
8109	PONI	12	2	H/G	Good	TBR
8110	PONI	8	1	H/G	Good	TBR
8111	PONI	14	3	H/G	Good	TBR
8112	PONI	14	3	H/G	Good	TBR
8122	SESE	30	11	H/PR	Good	TBR
8127	Deciduous	2-14"	6	F/CD	Good	TBR
8128	ACMA	20	6	H	Good	TBR
8129	PSME	12	2	H	Good	TBR
8130	MALUS SP	2-8"	2	L	Fair	TBR
8131	PINUS	12	2	C/BC	Poor	TBR
8134	PSME	18	5	H	Good	TBR
8136	ROPS	12	2	H	Good	TBR
8138	ROPS	8" & 2-10"	3	H/CD	Good	TBR
8192	PSME	20	6	H/G	Excellent	TBR
8195	PSME	12" & 18"	7	H/G/CD	Good	TBR
8199	PSME	18	5	R//L	Poor	TBR

Tree Number	Species	DBH	Credit	Tree Assessment Codes	General Condition	Proposed Status
8208	PSME	8	1	L/F	Fair	TBR
8210	PSME	12	2	G/BT	Fair	TBR
8211	PSME	14	3	H/G	Good	TBR
8212	PSME	26	9	LS	Good	TBR
8213	PSME	22	7	H/G/F	Good	TBR
8214	PSME	24	8	H/G/LS	Good	TBR
8215	Deciduous	8	1	H/L	Good	SAVE
8216	PSME	12", 16" & 26"	15	H/G/LS	Good	SAVE
8217	ACMA	3-8"	3		Good	SAVE
8218	PSME	8	1	GH/G/BT	Fair	SAVE
8219	PSME	36	14	H/G/LS	Good	SAVE
8220	PSME	16	4	H/G	Good	SAVE
8221	PSME	12	2	H/G/LS	Good	SAVE
8222	PSME	12	2	H/G	Good	SAVE
8223	PSME	16	4	H/G/LS	Good	TBR
8224	PSME	16	4	H/G	Good	SAVE
8227	ACMA	8	1	H/G	Good	SAVE
8234	POBA	16	4	H/G	Good	SAVE
8237	PSME	16	4	H/G	Good	SAVE
8239	PSME	24	8	H/G	Good	SAVE
8241	PSME	26	9	H/G	Good	SAVE
8243	Deciduous	6	1	H/G	Good	SAVE
8244	Deciduous	8	1	H/G	Good	SAVE
8245	Deciduous	8	1	H/G	Good	SAVE
8251	POBA	30	11	H/G	Good	SAVE
8255	ACMA	20	6	H/CD/LS	Fair	SAVE
8257	PSME	24	8	H/G	Good	S(NGPA)
8259	Deciduous	6	1	H/G	Good	S(NGPA)
8262	ACMA	8	1	H/G	Good	S(NGPA)
8267	ACMA	8	1	H/G	Good	S(NGPA)
8269	ACMA	6	1	H/G	Good	S(NGPA)
8271	POBA	24	8	H/G	Good	S(NGPA)
8273	POBA	22	7	H/G	Good	S(NGPA)
8275	POBA	18	5	H/G	Good	S(NGPA)
8278	Deciduous	14	3	H/G	Good	S(NGPA)

Tree Number	Species	DBH	Credit	Tree Assessment Codes	General Condition	Proposed Status
8289	ACMA	10	1	H/G	Good	S(NGPA)
8294	ACMA		2	H/G	Good	S(NGPA)
8297	ACMA	14	3	H/G	Good	S(NGPA)
8300	ACMA	8	1	H/G	Good	S(NGPA)
8303	ACMA	6	1	H/G	Good	SAVE
8305	ACMA	8" & 3-10"	4	H/G	Good	S(NGPA)
8312	Deciduous	10	1	H/G	Good	S(NGPA)
8336	Deciduous	8", 14" & 16"	8	G/PR/CD	Good	SAVE
8338	Deciduous	2-16"	8	H	Good	SAVE
8340	Deciduous	3-24"	24	G/OW/CD/BT	Fair	SAVE
8343	Deciduous	20	6	BT/G/H	Fair	SAVE
8345	Deciduous	14	3	H/G	Good	SAVE
8346	Deciduous	8", 12", & 26"	12	H/G	Good	SAVE
8347	PSME	8	1	H/G	Good	SAVE
8349	ACMA	4-6" & 8"	3	H/G	Good	SAVE
8351	ACMA	6" & 8"	2	H/G	Good	SAVE
8352	PSME	8	1	H/G	Good	S(NGPA)
8354	ACMA	2-6"	2	H/G	Good	S(NGPA)
8355	ACMA	2-6"	2	H/G	Good	S(NGPA)
8356	ACMA	2-6"	2	H/G	Good	S(NGPA)
8358	ACMA	8	1	H/G	Good	S(NGPA)
8359	ACMA	14	3	H/G/CD	Fair	S(NGPA)
8361	PSME	10	1	H/G	Good	S(NGPA)
8366	ACMA	10" & 8"	2	H/L/G	Good	S(NGPA)
8370	ACMA	10	1	H/G	Good	S(NGPA)
8374	PSME	8	1	H/G	Good	S(NGPA)
8375	PSME	10	1	H/G	Good	SAVE
8379	ACMA	10	1	H/G	Good	SAVE
8382	PSME	12	2	H/G	Good	SAVE
8383	PSME	2-20"	12	H/G	Good	SAVE
8399	PSME	20	6	G/T/LS	Good	TBR
8400	PSME	2-22"	14	CD/LS	Fair	TBR
8403	PSME	20	6	H	Good	TBR
8405	PSME	20	6	H	Good	TBR
8426	POBA	14	3	H/L	Good	TBR

Tree Number	Species	DBH	Credit	Tree Assessment Codes	General Condition	Proposed Status
8429	PSME	14	3	H/G	Good	TBR
8434	PSME	14" & 6"	4	H/G	Good	SAVE
8437	PSME	10	1	H/G	Good	SAVE
8440	ARME	8	1	H/G	Fair	SAVE
8442	PSME	22	7	H/G	Excellent	SAVE
8443	PSME	22	7	H/G/LS	Good	SAVE
8444	PSME	16	4	H/G	Excellent	SAVE
8445	PSME	14	3	H/G/LS/BT	Good	SAVE
8446	PSME	14	3	CD/G/	Good	SAVE
8449	PSME	18	5	H/G	Excellent	SAVE
8451	PSME	14	3	H/G/LS	Good	SAVE
8453	TSHE	20	6	G/H/LS	Good	SAVE
8455	TSHE	14	3	H/G/LS	Good	SAVE
8456	PSME	22	7	H/G/LS	Excellent	SAVE
8458	PSME	16	4	H/G	Good	SAVE
8466	PSME	24	8	H/G	Excellent	SAVE
8469	PSME	22	7	H/G	Excellent	SAVE
8470	ALRU	14	3	BT/G/habitat tree	Fair	SAVE
8471	PSME	24	8	H/G	Excellent	SAVE
8472	PSME	14	3	H/G	Good	SAVE
8473	PSME	14	3	H/G	Good	SAVE
8474	PSME	10	1	H/G	Good	SAVE
8475	PSME	10	1	H/G	Good	SAVE
8476	PSME	14	3	H/G	Good	SAVE
8477	TSHE	8	1	H/G	Good	SAVE
8478	PSME	10	1	H/G	Good	SAVE
8479	TSHE	10	1	H/G	Good	SAVE
8480	PSME	8	1	H/G	Good	SAVE
8481	PSME	22	7	H/G	Good	SAVE
8482	PSME	18	5	H/G	Good	SAVE
8483	PSME	12	2	H/G	Good	TBR
8484	PSME	12	2	H/G	Good	SAVE
8485	PSME	14	3	H/G	Good	SAVE
8486	PSME	16	4	H/G	Good	SAVE
8487	PSME	14	3	H/G	Good	SAVE

Tree Number	Species	DBH	Credit	Tree Assessment Codes	General Condition	Proposed Status
8488	PSME	12	2	H/G/BT	Good	SAVE
8489	PSME	24	8	H/G	Good	SAVE
8504	ACMA	16	4	H/G	Good	SAVE
8505	PSME	12	2	H/G/L/C	Good	SAVE
8506	PSME	14	3	H/F/G/BT	Fair	TBR
8507	PSME	12	2	H/G/LC	Good	SAVE
8508	ACMA	6", 8", & 12"	4	H/G/CD	Good	SAVE
8509	PSME	18	5	H/G/LC	Good	SAVE
8510	PSME	18	5	H/G	Good	TBR
8511	ACMA	8", 4-10", 4-12", & 12"	15	CD/F/H	Fair	TBR
8512	PSME	40	16	H/T	Good	TBR
8515	PSME	46	19	H/T/F/G	Fair	SAVE
8522	ARME	10	1	L/G/T	Good	SAVE
8526	PSME	10	1	H/G/T	Good	SAVE
8529	PSME	10	1	H/G/T	Good	SAVE
8533	THPL	12	2	H/G	Good	SAVE
8534	THPL	10	1	H/G	Good	SAVE
8535	THPL	8	1	H/G	Good	SAVE
8536	ACMA	12	2	H/BT	Fair	SAVE
8546	ACMA	12	2	H/G	Good	SAVE
8550	ALRU	6	1	H	Good	SAVE
8553	PSME	8	1	H	Good	SAVE
8559	PSME	10	1	H/G	Good	SAVE
8565	PSME	10	1	H/LC	Good	SAVE
8572	PSME	12	2	H/G/T	Good	SAVE
8573	PSME	22	7	H/I/GR/LS	Fair	SAVE
8574	PSME	12	2	H/G/T	Good	TBR
8575	PSME	18	5	H/G/T	Good	SAVE
8576	PSME	16	4	H/G/T/LS	Good	SAVE
8577	PSME	6	1	H/LC/G/T/GR	Fair	SAVE
8578	PSME	2-8"	2	H/LC/G/T/CD/G/GR	Fair	SAVE
8579	PSME	12	2	H/LC/G/T/GR	Fair	SAVE
8580	PSME	12	2	H/L/LC/G/I/T/GR	Fair	SAVE
8581	PSME	12	2	H/LC/G/T/GR	Fair	SAVE
8582	PSME	14	3	H/LC/G/T/GR/LS	Fair	SAVE

Tree Number	Species	DBH	Credit	Tree Assessment Codes	General Condition	Proposed Status
8583	PSME	14	3	H/LC/G/T/LS	Fair	SAVE
8584	ACMA	14	3	H/G	Good	TBR
8585	ACMA	16	4	H/G	Good	TBR
8591	ACMA	6", 3-8"	4	CD/H/LS	Good	TBR
8619	PSME	6", 12", & 32"	15	H/G/LS/GR/CD	Good	TBR
8707	THPL	32	12	H	Good	TBR
8708	THPL	26	9	H	Good	TBR
8709	PSME	10	1	H	Good	TBR
8710	PISI	8	1	H	Good	TBR
8747	THPL	14	3	H	Good	TBR
8754	TSHE	10	1	DEAD	Poor	TBR
8798	PISI	12	2	H	Good	TBR
8799	PISI	14	3	H	Good	TBR
8800	PISI	28	10	NV/LC/T	Poor	TBR
8801	PISI	14	3	H	Good	TBR
8806	PSME	52	22	H	Good	TBR
8814	Deciduous	10	1	H	Good	TBR
8822	Deciduous	16	4	NV	Poor	TBR
8824	THPL	38	15	H/PR/G	Good	TBR
8830	THPL	26	9	H/T/G	Good	TBR
8836	Deciduous	12	2	H	Good	TBR
8838	Deciduous	8	1	H	Good	TBR
8840	PSME	30	11	H/G	Good	TBR
8841	PSME	24	8	H/G/F	Fair	TBR
8842	PSME	28	10	H/G	Good	TBR
8852	PSME	16	4	F/LS	Fair	TBR
8854	PISI	12	2	L/G/T	Fair	TBR
8856	PSME	6	1	H/G	Good	SAVE
8857	THPL	8	1	H/G	Good	SAVE
8858	Deciduous	26	9	H	Good	SAVE
8862	PSME	12	2	H	Good	SAVE
8865	PSME	12	2	H	Good	SAVE
8866	THPL	8" & 16"	5	H/G	Good	SAVE
8870	PSME	8	1	H/BT	Fair	SAVE
8877	PSME	14	3	H/G	Good	SAVE

Tree Number	Species	DBH	Credit	Tree Assessment Codes	General Condition	Proposed Status
8878	PSME	16	4	H/G	Good	SAVE
8879	PSME	8	1	H/G	Good	SAVE
8880	PSME	16	4	H/G	Good	SAVE
8883	PSME	14	3	H/G	Good	SAVE
8969	Deciduous	8	1	H	Fair	S(NGPA)
8970	Deciduous	2-12" & 14"	7	H/L/CD	Fair	TBR
8973	Deciduous	10	1	L/G/T	Good	S(NGPA)
8976	Deciduous	12	2	H/G/H	Good	S(NGPA)
8990	Deciduous	8", 10" & 2-12"	6	H	Good	S(NGPA)
8991	Deciduous	6", 2-10" & 2-12"	7	H	Good	S(NGPA)
8992	Deciduous	8	1	H	Good	S(NGPA)
8993	Deciduous	12	2	H	Good	S(NGPA)
8996	Deciduous	8	1	H	Good	S(NGPA)
8998	Deciduous	8	1	H	Good	S(NGPA)
8999	Deciduous	8	1	H	Good	S(NGPA)
9000	Deciduous	2-8" & 10"	3	H	Good	S(NGPA)
9001	Deciduous	8" & 10"	2	H	Good	S(NGPA)
9002	Deciduous	8" & 2-10"	3	H	Good	S(NGPA)
9003	Deciduous	6	1	H	Good	S(NGPA)
9004	Deciduous	8	1	H	Good	S(NGPA)
9005	Deciduous	6	1	H	Good	S(NGPA)
9007	Deciduous	10	1	H	Good	S(NGPA)
9009	Deciduous	10	1	H	Good	S(NGPA)
9010	Deciduous	6", 3-8" & 3-10"	7	H	Good	S(NGPA)
9011	Deciduous	2-10"	2	H	Good	S(NGPA)
9012	Deciduous	8" & 2-12"	5	H	Good	S(NGPA)
9013	Deciduous	2-12"	4	H	Good	S(NGPA)
9014	Deciduous	8	1	H	Good	S(NGPA)
9015	Deciduous	6", 8", & 10"	3	H	Good	S(NGPA)
9016	Deciduous	8	1	H	Good	S(NGPA)
9018	Deciduous	6" & 8"	2	H	Good	S(NGPA)
9019	Deciduous	2-8", 10" & 2-12"	7	H/CD	Good	S(NGPA)
9020	Deciduous	6" & 10"	2	H	Good	SAVE
9021	Deciduous	3-8" & 2-6"	5	H	Good	S(NGPA)
9022	Deciduous	18	5	H	Good	S(NGPA)

Tree Number	Species	DBH	Credit	Tree Assessment Codes	General Condition	Proposed Status
9024	Deciduous	10	1	H	Good	S(NGPA)
9030	Deciduous	12	2	H/G	Good	S(NGPA)
9031	Deciduous	6" & 8"	2	H/G	Good	S(NGPA)
9032	Deciduous	20	6	H/G	Good	S(NGPA)
9033	Deciduous	36	14	OW/T/S	Fair	S(NGPA)
9034	Deciduous	14", 20", & 22"	16	CD/NV	Poor	TBR
9041	Deciduous	8" & 10"	2	H/G	Good	TBR
9046	Deciduous	8" & 10"	2	H/G/IV	Fair	S(NGPA)
9057	Deciduous	3-6"	3	H/IV	Fair	S(NGPA)
9074	Deciduous	6", 2-8" & 10"	4	H/CD	Good	S(NGPA)
9083	ILAQ	14	3	H	Good	TBR
9084	PSME	34	13	H/G/IV	Good	S(NGPA)
9088	ACMA	24	8	H/G/IV	Good	S(NGPA)
9089	PSME	30	11	H/G/IV	Good	TBR
9090	PSME	36	14	H/G/IV	Good	S(NGPA)
9092	Deciduous	16	4	L/IV	Fair	TBR
9097	Deciduous	12	2	H/IV	Good	TBR
9100	PSME	30	11	H/IV	Good	TBR
9103	Deciduous	22	7	IV/L/S	Fair	TBR
9104	Deciduous	10	1	S/IV/	Fair	TBR
9105	ACMA	30	11	H/G/S	Fair	TBR
9106	Deciduous	12	2	H/IV	Fair	TBR
9107	Deciduous	10	1	H/G	Good	TBR
9108	POBA	26	9	H/IV	Good	S(NGPA)
9134	Deciduous	8	1	H/G	Good	TBR
9135	Deciduous	10	1	H/G	Good	TBR
9136	Deciduous	8" & 10"	2	H/G	Good	TBR
9137	PSME	20	6	H/G	Good	TBR
9154	Deciduous	6" & 8"	2	H	Good	TBR
9183	ACMA	12" & 24"	10	H/G/IV	Good	TBR
9184	ACMA	26	9	H/G	Good	TBR
9191	THPL	2-8"	2	H/G	Good	TBR
9242	PSME	12	2	H/G	Good	SAVE
9243	PSME	14	3	H/G	Good	SAVE
9244	PSME	26	9	H/G/ GROWING INTO FOUND.	Good	TBR

Tree Number	Species	DBH	Credit	Tree Assessment Codes	General Condition	Proposed Status
9245	PSME	12	2	H/G	Good	SAVE
9246	PSME	10	1	H/L	Good	TBR
9247	Deciduous	10" & 12"	3	H/CD/G	Good	SAVE
9248	PSME	20	6	H	Good	SAVE
9249	Deciduous	10	1	H	Good	TBR
9250	PSME	10" & 12"	3	CD/NV/G	Poor	SAVE
9251	Deciduous	10	1	H	Good	TBR
9252	Deciduous	8	1	H	Good	TBR
9253	PSME	16	4	H/G	Good	SAVE
9254	PSME	8	1	G	Poor	TBR
9255	PSME	14	3	GI/G/H	Fair	TBR
9257	PSME	12	2	H/G	Good	TBR
9258	PSME	16	4	H	Good	SAVE
9261	PSME	6	1	H	Good	SAVE
9263	PSME	10	1	H/G	Good	SAVE
9264	PSME	14	3	H/G	Good	SAVE
9265	PSME	14	3	L/G/T	Poor	SAVE
9266	PSME	16	4	H/G	Good	SAVE
9269	PSME	12	2	H/G/CD	Good	SAVE
9279	THPL	40	16	H/IV	Fair	TBR
9312	PSME	6" C, 12", 14", & 16"	10	H/G/CD/	Good	S(NGPA)
9313	PSME	16	4	H/G	Good	S(NGPA)
9314	PSME	28	10	H	Good	TBR
9326	PSME	18	5	H/G/IV	Good	TBR
9327	ALRU	14" & 22"	10	IV/CD/H	Fair	S(NGPA)
9328	PSME	16	4	H/G	Good	TBR
9329	ALRU	2-20"	12	CD/G/H	Good	S(NGPA)
9330	POBA	36	14	H	Good	S(NGPA)
9332	POBA	28	10	H/IV	Good	S(NGPA)
9333	POBA	18	5	H	Good	S(NGPA)
9334	POBA	26	9	H/IV	Good	S(NGPA)
9340	PSME	40	16	H/G	Good	S(NGPA)
9342	Deciduous	16	4	H/G	Good	S(NGPA)
9343	Deciduous	10" & 18"	6	H/CD	Good	S(NGPA)
9344	ALRU	2-6", 2-8" & 12"	6	H	Good	S(NGPA)

Tree Number	Species	DBH	Credit	Tree Assessment Codes	General Condition	Proposed Status
9347	Deciduous	12	2	H	Good	S(NGPA)
9349	POBA	14	3	H/G	Good	S(NGPA)
9371	Deciduous	12	2	H	Good	S(NGPA)
9373	Deciduous	12	2	H	Good	S(NGPA)
9374	ALRU	6	1	H	Good	S(NGPA)
9375	Deciduous	6	1	H	Good	S(NGPA)
9376	ALRU	6" & 8"	2	H/CD	Good	S(NGPA)
9377	Deciduous	8	1	H	Good	S(NGPA)
9378	ALRU	8	1	H	Good	S(NGPA)
9379	ALRU	2-6"	2	H	Good	SAVE
9380	Deciduous	6	1	H	Good	S(NGPA)
9382	Deciduous	14	3	H	Good	S(NGPA)
9384	THPL	24	8	H	Good	S(NGPA)
9395	Deciduous	24	8	IV/NV	Poor	TBR
9396	ALRU	14	3	IV/NV	Poor	TBR
9399	THPL	28	10	H	Good	TBR
9400	THPL	28	10	H	Good	TBR
9407	ILAQ	3-8"	3	H	Good	SAVE
9414	POBA	16" & 40"	20	BT	Fair	TBR
9484	POBA	26	9	H/G	Good	SAVE
9488	POBA	28	10	H/G	Good	SAVE
9495	Deciduous	8	1	H	Good	SAVE
9496	THPL	20	6	CD/F/H	Fair	SAVE
9497	ALRU	10	1	H	Good	S(NGPA)
9498	ALRU	8	1	H	Good	S(NGPA)
9499	Deciduous	3-6" & 12"	5	H/D	Good	S(NGPA)
9505	ALRU	2-6"	2	CD	Fair	S(NGPA)
9506	ALRU	6" & 8"	2	CC	Fair	S(NGPA)
9507	ALRU	2-6"	2	BT	Fair	S(NGPA)
9715	ALRU	12	2	H	Good	S(NGPA)
9716	Deciduous	8	1	H	Good	S(NGPA)
9719	ALRU	12	2	H	Good	S(NGPA)
9723	ALRU	16	4	H	Good	S(NGPA)
9729	PSME	16	4	BT	Fair	S(NGPA)
9777	ALRU	8	1	H	Good	S(NGPA)



SAVE HARMLESS AGREEMENT - WETLAND

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

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

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

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

NATURAL GREENBELT PROTECTIVE EASEMENT

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

Grantee: The City of Kirkland, a municipal corporation.

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

No tree trimming, tree topping, tree cutting, tree removal, shrub or brush-cutting or removal of native vegetation, application of pesticides, herbicides, or fertilizers; construction; clearing; or alteration activities shall occur within the Easement Area without prior written approval from the City of Kirkland. Application for such written approval to be made to the Kirkland Department of Planning and Community Development who may require inspection of the premises before issuance of the written approval and following completion of the activities. Any person conducting or authorizing such activity in violation of this paragraph or the terms of any written approval issued pursuant hereto, shall be subject to the enforcement provisions of Chapter 170, Ordinance 3719, the Kirkland Zoning Code. In such event, the Kirkland Department of Planning and Community Development may also require within the immediate vicinity of any damaged or fallen vegetation, restoration of the affected area by planting replacement trees and other vegetation as required in applicable sections of the Kirkland Zoning Code. The Department also may require that the damaged or fallen vegetation be removed.

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

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

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

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

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

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

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

(Sign in blue ink)

(Individuals Only)

OWNER(S) OF REAL PROPERTY (INCLUDING SPOUSE)

(Individuals Only)

STATE OF WASHINGTON)

) SS.

County of King)

On this _____ day of _____, _____, before me, the undersigned, a Notary Public in and for the State of Washington, duly commissioned and sworn, personally appeared _____ and _____

_____ to me known to be the individual(s) described herein and who executed the Natural Greenbelt Protective Easement and acknowledged that _____ signed the same as _____ free and voluntary act and deed, for the uses and purposes therein mentioned.

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

Notary's Signature

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



GEOLOGICALLY HAZARDOUS AREAS COVENANT

<i>File No.:</i>	
<i>Parcel Number:</i>	
<i>Project Name:</i>	
<i>Project Address:</i>	

Declarant _____ hereby declares and agrees as follows:

1. Declarant is the owner of the real property described below and incorporated herein by reference, which is the "property" referred to herein.
2. Declarant agrees to defend, indemnify, and hold the City of Kirkland harmless from all loss, including claim made therefor, which the City may incur as a result of any landslide or seismic activity occurring on the property and for any loss including any claim made therefor resulting from soil disturbance on the "property" in connection with the construction of improvements, including but not limited to storm water retention and foundations. "Loss" as used herein means loss including claim made therefor from injury or damage incurred on or off the "property," together with reasonable expenses including attorneys fees for investigation and defense of such claim.
3. This hold harmless is a perpetual covenant running with the "property" and is binding upon the Declarant's successor and assigns.
4. The real property subject to this Agreement is situated in Kirkland, King County, Washington, and described as follows:

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



exceptional specimen tree, typical

grove, typical

- Key**
- Best Trees On-site To Save
 - Better Trees On-site To Save
 - Good Trees On-site To Save

116TH AVENUE

CONCEPTUAL BRIDLE TRAILS
 SITE PLAN W/ AMENITY FEATURES
 KLV CONSTRUCTION, INC.



REVISION DATE
 1 JANUARY 27, 2014

DESIGN
 Ben Giddings
 Patrick McJunkin

PROJECT NUMBER

SHEET NUMBER

1 of 1



