



**City of Bellevue
Development Services Department
Land Use Staff Report**

Proposal Name: Martyn Residence Critical Areas Shoreline structure setback modification

Proposal Address: 75 Cascade Key

Proposal Description: The applicant requests a Critical Areas Land Use Permit to modify a shoreline structure setback to construct a pool and other landscape improvements for a new single family residence.

File Number: 13-131214-LO

Applicant: Ed Horner, Horner Design Associates

Decisions Included: Critical Areas Land Use Permit
(Process II. LUC 20.30P)

Planner: Carol L. Orr, Planner

**State Environmental Policy Act
Threshold Determination:** Exempt

Director's Decision: Approval with Conditions

Carol V. Helland

Carol V. Helland, Land Use Director
Development Services Department

Application Date: October 15, 2013
Notice of Application Publication Date: December 5, 2013
Decision Publication Date: October 23, 2014
Project Appeal Deadline: November 06, 2014

For information on how to appeal a proposal, visit the Development Services Center at City Hall or call (425) 452-6800. Appeal of the Decision must be received in the City's Clerk's Office by 5 PM on the date noted for appeal of the decision.

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1. Project Plans
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I. Proposal Description

The applicant is requesting a Critical Areas Land Use Permit approval to reduce the shoreline structure setback in order to construct an in ground pool, patio and other hardscape improvements for a new single-family residence on the subject site.

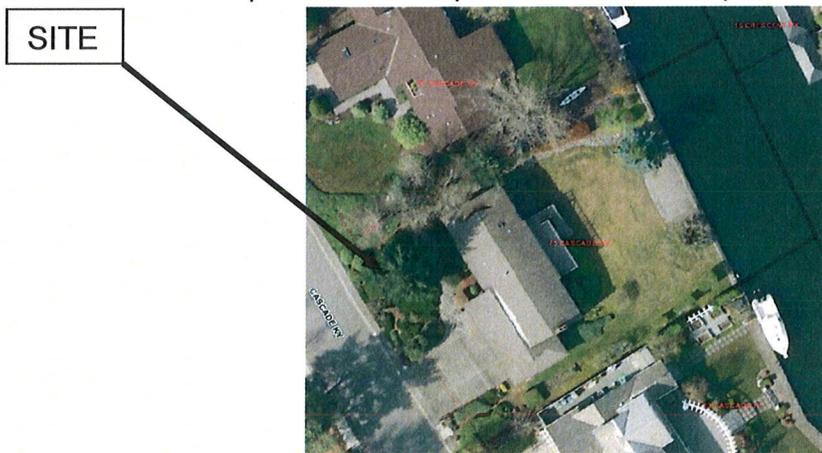
The Land Use Code (LUC) 20.25H.035 prescribes a 25-foot shoreline structure setback and a 25 foot shoreline critical area buffer. No portion of the proposed improvements on this site will occur within the shoreline critical area buffer. The Land Use Code permits modification of critical area structure setbacks using a critical areas report. The critical areas report is a mechanism by which certain LUC requirements may be modified for a specific project proposal on a site.

The critical areas report is intended to provide flexibility for sites where the expected critical areas functions and values may not be fully present due to degraded conditions. The site is currently developed with a single family residence and ancillary development which has modified much of the site. The functions intended to be provided by the setbacks are not fully functioning and are in a degraded condition. The existing habitat structure on the property is virtually non-existent. The shoreline buffer is currently planted with mostly ornamental and non-native trees and shrubs. The groundcover is predominantly grass lawn, but other areas with ivy, horsetail and other herbaceous weed species. The proposal includes the enhancement of existing functions in the shoreline critical area buffer along with the construction of a new single-family residence.

II. Site Description, Zoning, Land Use and Critical Areas

A. Site Description

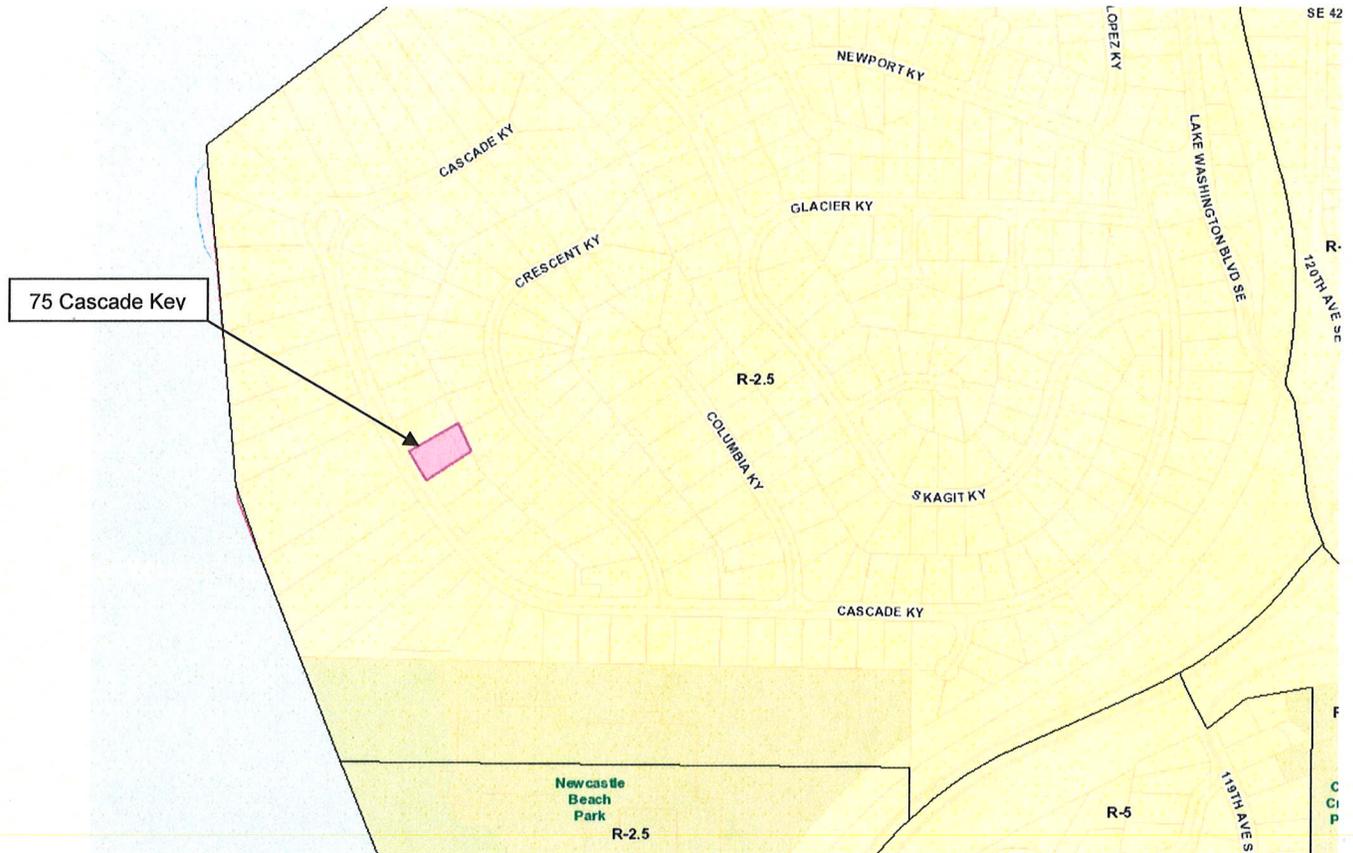
The site is generally rectangular in shape, approximately 19,189 square feet in size, with approximately 4,094 square feet of the lot under water. The lot contains a state regulated shoreline along the north eastern property line, which is developed as a canal in the Newport Shores development on Lake Washington. The slope drops downward from southwest to northeast with an approximate 8% slope. A new single-family residence is under construction on the site along with ancillary improvements including driveways, a rear deck and ornamental landscaping. An existing shoreline bulkhead from the previous development will remain in place and undisturbed.



(2012 aerial photo COB)

B. Zoning

The property is zoned R-2.5 and is within the Shoreline and Critical Areas Overlay districts.



C. Land Use Context

The site and surrounding development are characterized by single-family residential development within 100 feet of the lake shoreline. The site is accessed via public right of way connected to Lake Washington Boulevard SE.

D. Critical Areas Functions and Values

i. Shorelines

Shorelines provide a variety of functions including shade, temperature control, water purification, woody debris recruitment, channel, bank and beach erosion, sediment delivery, and terrestrial-based food supply (Gregory et al. 1991; Naiman et al. 1993; Spence et al. 1996)

Shorelines provide a variety of functions including shade, temperature control, water purification, woody debris recruitment, channel, bank and beach erosion, sediment delivery, and terrestrial-based food supply (Gregory et al. 1991; Naiman et al. 1993; Spence et al. 1996).

Shorelines provide a wide variety of functions related to aquatic and riparian habitat, flood control and water quality, economic resources, and recreation,

among others. Each function is a product of physical, chemical, and biological processes at work within the overall landscape. In lakes, these processes take place within an integrated system (ecosystem) of coupled aquatic and riparian habitats (Schindler and Scheuerell 2002). Hence, it is important to have an ecosystem approach which incorporates an understanding of shoreline functions and values. The discussion presented herein emphasizes this ecosystem approach.

III. Consistency with Land Use Code Requirements:

A. Zoning District Dimensional Requirements:

The R-2.5 zoning dimensional requirements found in LUC 20.20.010 apply to the proposal. The plans submitted generally demonstrate conformance with these standards, however conformance will be verified during building permit review.

B. Critical Areas Requirements LUC 20.25H:

The City of Bellevue Land Use Code Critical Areas Overlay District (LUC 20.25H) establishes performance standards and procedures that apply to development on any site which contains in whole or in part any portion designated as critical area, critical area buffer or structure setback from a critical area or buffer. The project area is a 25-foot shoreline structure setback and is subject to the performance standards found below.

a. Consistency with LUC 20.25H.115.C and Structure Setbacks

Structure setbacks are required in order to:

- a. Minimize long-term impacts of development adjacent to critical areas and critical area buffers; and
- b. Protect critical areas and critical area buffers from adverse impacts during construction.

Shoreline Setback: The proposal will maintain the required 25 foot buffer providing sufficient area to minimize long term impacts to the shoreline. In addition, the buffer will be enhanced from the existing condition with the proposed native plantings and with the condition that the existing concrete pad be removed from the buffer. Access to the moorage on site will be provided by an at-grade spaced deck and individual stepping stones. Mitigation plantings will surround these elements. Two non-native trees will be removed, one of which is in decline due to structural and insect damage. Three native tree species and a variety of native shrub and ground cover species will be placed in the buffer. A temporary construction fence will be required at the edge of the buffer during construction to minimize construction impacts. **See Conditions of Approval in Section X of this report.**

b. Consistency with Critical Areas Report LUC 20.25H.230.

The applicant supplied a complete critical areas report prepared by staff from Horner Design Associates and The Watershed Company, qualified professionals. The report met the minimum requirements in LUC 20.25H.250.

IV. Public Notice and Comment

Application Date:	October 16, 2013
Public Notice (500 feet):	December 5, 2013
Minimum Comment Period:	December 19, 2013

The Notice of Application for this project was published in the City of Bellevue Weekly Permit Bulletin on December 5, 2013. It was mailed to property owners within 500 feet of the project site. No comments have been received from the public as of the writing of this staff report.

V. Summary of Technical Reviews

Clearing and Grading:

The Clearing and Grading Division of the Development Services Department has reviewed the proposed development for compliance with Clearing and Grading codes and standards. The Clearing and Grading staff found no issues with the proposed development.

VI. State Environmental Policy Act (SEPA)

The proposed project is exempt from additional environmental review per BCC 22.02.032 Determination of categorical exemption.

VII. Changes to proposal as a result of City review

No changes to the proposed setbacks and building footprint have been required. Changes to the mitigation plan, such as the removal of non-native species from the buffer, removal of a gravel pathway, and additional native tree species were requested under the review process of the permit. These corrections were submitted and meet City of Bellevue approval. Additional mitigation measures, as conditioned in Section X are required for approval.

VIII. Decision Criteria

A. Critical Areas Report Decision Criteria- General Criteria LUC 20.25H.255

The Director may approve, or approve with modifications, the proposed modification where the applicant demonstrates:

- 1. The modifications and performance standards included in the proposal lead to levels of protection of critical area functions and values at least as protective as application of the regulations and standards of this code;**

Finding: The site contains a residential structure, currently under construction, located completely outside of the shoreline structure setback. The applicant proposed extending disturbance into the structure setback for the construction of an in-ground pool, patio, pond and fire pit. Additionally, an at-grade deck and a footpath were proposed through the critical area buffer to service the boat moorage on site.

A concrete pad is currently located within the critical area buffer, presumably to provide access to the boat moorage located on site. The presence of this structure limits the establishment of shoreline functions. In order to balance the request to reduce the shoreline structure setback and protecting the shoreline buffer and critical area, the applicant will be required to remove the pad from the buffer. A pervious at-grade deck and a small footpath of stepping stones may be permitted in the buffer to access the existing boat moorage cleats. All other areas within the critical area buffer will be replanted with native vegetation.

The applicant proposed to plant 2,541 square feet of native vegetation in the shoreline buffer and shoreline setback. The mitigation planting plans shall match those submitted to the City of Bellevue for review on August 28, 2014. The removal of the existing concrete pad in the buffer is a condition of approval. **See Conditions of Approval in Section X of this report.**

2. Adequate resources to ensure completion of any required mitigation and monitoring efforts;

Finding: The applicant will be required to provide a performance assurance device for the required mitigation measures associated with the proposed development within the structure setback and shoreline critical areas. A maintenance assurance device will be required to ensure maintenance and monitoring of the mitigation plantings occurs for 5 years. **See Conditions of Approval in Section X of this report.**

3. The modifications and performance standards included in the proposal are not detrimental to the functions and values of critical area and critical area buffers off-site; and

Finding: The functions and values of the critical areas and critical area buffers on adjacent properties will be unaffected by the actions in the proposal. As discussed in Section III of this report, the applicable performance standards of LUC Section 20.25H are being met.

4. The resulting development is compatible with other uses and development in the same land use district.

Finding: The proposed project is to construct hardscape amenities, including an in-ground pool adjacent to a single family residence. This use is compatible with the surrounding residential development permitted in the same land use district.

B. Critical Areas Land Use Permit Decision Criteria 20.30P

The Director may approve or approve with modifications an application for a critical areas land use permit if:

1. The proposal obtains all other permits required by the Land Use Code;

Finding: The proposal will be required to submit a revision to the existing single family residence building permit (13-121747-BS) for the construction of all improvements within the critical area structure setback, and all work within the critical area buffer.

See Conditions of Approval in Section X of this report.

- 2. The proposal utilizes to the maximum extent possible the best available construction, design and development techniques which result in the least impact on the critical area and critical area buffer;**

Finding: The project is being constructed only in the critical area structure setback and does not include any items that would be defined as structure. No excavation is permitted within the shoreline buffer. The only disturbance permitted within the shoreline buffer is that associated with the construction of the at grade pervious deck, removal of the existing concrete pad, placement of the individual stepping stones and installation of mitigation plantings. **See Conditions of Approval in Section X of this report.**

- 3. The proposal incorporates the performance standards of Part 20.25H to the maximum extent applicable, and ;**

Finding: The proposed structure will be located outside of any critical area or critical area buffers. As discussed in Section III of this report, the applicable performance standards of LUC Section 20.25H are being met.

- 4. The proposal will be served by adequate public facilities including street, fire protection, and utilities; and;**

Finding: The property is currently served by adequate public facilities. The proposal will not change the need for public facilities on the property.

- 5. The proposal includes a mitigation or restoration plan consistent with the requirements of LUC Section 20.25H.210.**

Finding: The mitigation planting is conditioned to include the removal of the existing concrete pad in the critical area structure setback, and the addition of 2,155 square feet of mitigation plantings in the critical area buffer and 386 square feet of mitigation plantings in the critical area structure setback. The planting plan includes the removal of two non-native trees within the buffer, to be replaced with 3 trees of a native species. The planting plans meet the parameters of the City's Critical Areas Handbook within the shoreline buffer. A bond quantity worksheet has been submitted for the labor and materials required to install the mitigation planting plan. Part of the permit inspection process will include an inspection by Land Use staff to ensure the planting is installed. **See Conditions of Approval in Section X of this report.**

- 6. The proposal complies with other applicable requirements of this code.**

Finding: As discussed in this report, the proposal complies with or can demonstrate compliance at application for a building permit with all other applicable requirements of the Land Use Code and Bellevue City Code. **See Conditions of Approval in Section X of this report.**

IX. Conclusion and Decision

After conducting the various administrative reviews associated with this proposal, including Land Use Code consistency, City Code and Standard compliance reviews, the Director of the Development Services Department does hereby **approve with conditions** the proposal to construct an in-ground pool and amenities within a shoreline critical area structure setback.

Note- Expiration of Approval: In accordance with LUC 20.30P.150 a Critical Areas Land Use Permit automatically expires and is void if the applicant fails to file for a Building Permit or other necessary development permits within one year of the effective date of the approval.

X. Conditions of Approval

The applicant shall comply with all applicable Bellevue City Codes and Ordinances including but not limited to:

<u>Applicable Ordinances</u>	<u>Contact Person</u>
Clearing and Grading Code- BCC 23.76	Janney Gwo, 425-452-6190
Land Use Code- BCC 20.25H	Carol L. Orr, 425-452-2896
Noise Control- BCC 9.18	Carol L. Orr, 425-452-2896

The following conditions are imposed under the Bellevue City Code authority referenced:

- 1. Building Permit Revision:** The applicant shall submit revised plans to the existing Building Permit (13-121747-BS) for the construction of all improvements within the critical area structure setback, and all work within the critical area buffer. These plans shall match those submitted to the Critical Areas Land Use Permit on August 28, 2014.

Authority: Land Use Code 20.25H.210
Reviewer: Carol L. Orr, Development Services Department

- 2. Limitation of Disturbance:** Disturbance within the critical area structure setback and buffer are limited to what has been approved under this permit and the associated Building Permit. Disturbance in the critical area shoreline buffer is limited to the removal of the existing concrete pad, placement of the individual stepping stones, construction of the pervious deck and the installation of the approved mitigation plantings. Disturbance within the critical area structure setback is limited to the construction of the pool and associated amenities and installation of approved mitigation plantings.

Authority: Land Use Code 20.25H.210
Reviewer: Carol L. Orr, Development Services Department

- 3. Construction Fencing:** No excavation is permitted within the shoreline buffer except for the location of necessary utilities and the removal of the existing concrete pad. All areas of temporary disturbance within the shoreline structure setback and buffer shall

be restored. An erosion control fence shall be located at the edge of the shoreline buffer to limit disturbance of the shoreline buffer during the construction of the pool and other amenities within the shoreline structure setback.

Authority: Land Use Code 20.25H.210
Reviewer: Carol L. Orr, Development Services Department

- 4. Rainy Season restrictions:** Due to the proximity to the shoreline, no clearing and grading activity may occur during the rainy season, which is defined as October 1 through April 30 without written authorization of the Development Services Department. Should approval be granted for work during the rainy season, increased erosion and sedimentation measures, representing the best available technology must be implemented prior to beginning or resuming site work.

Authority: Bellevue City Code 23.76.093.A,
Reviewer: Janney Gwo, Development Services Department

- 5. Noise Control:** Noise related to construction is exempt from the provisions of BCC 9.18 between the hours of 7 am to 6 pm Monday through Friday and 9 am to 6 pm on Saturdays, except for Federal holidays and as further defined by the Bellevue City Code. Noise emanating from construction is prohibited on Sundays or legal holidays unless expanded hours of operation are specifically authorized in advance. Requests for construction hour extension must be done in advance with submittal of a construction noise expanded exempt hours permit.

Authority: Bellevue City Code 9.18
Reviewer: Carol L. Orr, Development Services Department

- 6. Mitigation Plan:** A mitigation plan for the shoreline critical area structure setbacks and critical area buffer is included in Attachment 1. The plan shows the removal of the existing concrete pad in the buffer and the addition of a total of 2,541 square feet of native planting per the City's Critical Areas Handbook within the shoreline buffer and shoreline structure setback. This plan is required to be submitted for review and approval by the City of Bellevue prior to issuance of the Building Permit.

Authority: Land Use Code 20.25H.210
Reviewer: Carol L. Orr, Development Services Department

- 7. Performance Assurance Device** In order to ensure adequate resources are available to implement the required landscape within the shoreline critical area buffer, a performance assurance device in an amount equal to 100% of the cost of labor and materials for the landscape installation shall be held until successful installation is verified by the City of Bellevue at which time the performance assurance device will be released to the applicant.

Authority: Land Use Code 20.25H.210
Reviewer: Carol L. Orr, Development Services Department

- 8. Maintenance Assurance Device** In order to ensure the required landscape restoration successfully establishes within the shoreline critical area buffer, a

maintenance assurance device in an amount equal to 25% of the cost of labor and materials for the landscape installation shall be held for a period of five years from the date of successful installation. The maintenance assurance device will be released to the applicant upon receipt of documentation of reporting successful establishment in compliance with the performance standards.

Authority: Land Use Code 20.25H.210
Reviewer: Carol L. Orr, Development Services Department

- 9. Land Use Inspection:** Following installation of planting the applicant shall contact Land Use staff to inspect the planting area prior to final building inspection. Staff will need to find that the plants are in a healthy and growing condition.

Authority: Land Use Code 20.30P.140
Reviewer: Carol L. Orr, Development Services Department

- 10. Mitigation Monitoring Plan:** The plan shall also include a 5-year mitigation monitoring plan. At a minimum, the monitoring plan shall include:
The following success criteria will be monitored over a 5 year period and will apply to areas that are planted with native vegetation according to the mitigation plan.

Year 1

- 100 percent survival of planted vegetation.
- 0 percent invasive plant cover within areas of planted vegetation.

Year 2

- Minimum 90 percent survival of planted vegetation.
- Greater than 40 percent cover of native vegetation within areas of planted vegetation.
- Less than 10 percent invasive plant cover within areas of planted vegetation.

Year 3

- Minimum 85 percent survival of planted vegetation.
- Establish 3 native woody species; native volunteers may count towards this standard.
- Greater than 60 percent cover of native vegetation within areas of planted vegetation.
- Less than 10 percent invasive plant cover within areas of planted vegetation.

Year 4

- Greater than 50 percent cover of native vegetation within areas of planted vegetation.
- Establish 3 native woody species; native volunteers may count towards this standard.
- Greater than 60 percent cover of native vegetation within areas of planted vegetation.
- Less than 15 percent invasive plant cover within areas of planted vegetation.

Year 5

- Greater than 70 percent cover of native vegetation within areas of planted vegetation.

- Establish 3 native woody species; native volunteers may count towards this standard.
- Less than 10 percent invasive plant cover within areas of planted vegetation.

Authority: Land Use Code 20.25H.210

Reviewer: Carol L. Orr, Development Services Department

CRITICAL AREAS REPORT

75 Cascade Key – Bellevue, WA

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Appendix A: Mitigation Plan

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Figure 4. View of the new residence under construction and the lawn which comprises the shoreline buffer and structure setback – facing north, photo taken 4/2/2014.3

Figure 5. View of the existing Colorado blue spruce tree – photo taken 4/2/2014.....4

Figure 6. View of the shoreline buffer facing south along the concrete bulkhead. Note the concrete pad and gravel areas - photo taken 4/2/2014.4

CRITICAL AREAS REPORT

75 CASCADE KEY – BELLEVUE, WA

1 INTRODUCTION

1.1 Background and Purpose

The purpose of this report is to document potential critical area, critical area buffer, and critical area structure setback impacts associated with the proposed residential project located on the shoreline of Lake Washington in the City of Bellevue, Washington (Figures 1 and 2). A residence, originally constructed in 1972, was recently demolished on the parcel and a new residence is currently being constructed upland of the buffer and structure setback.

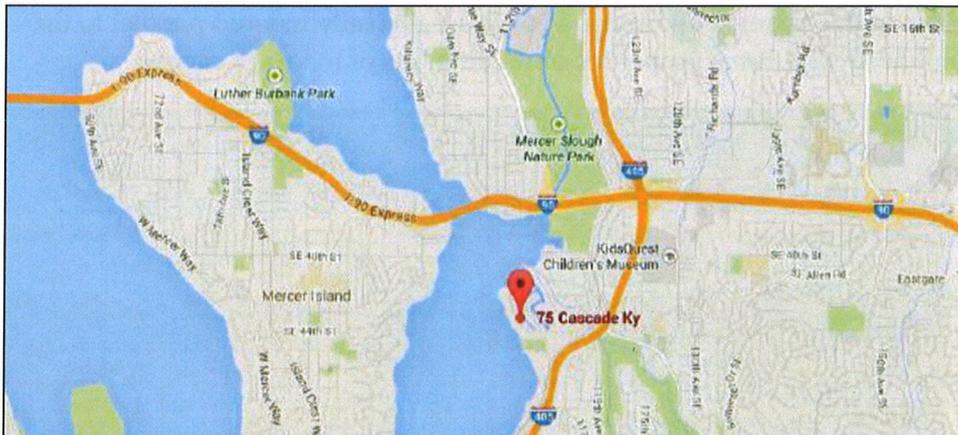


Figure 1. Vicinity Map (Google Maps).

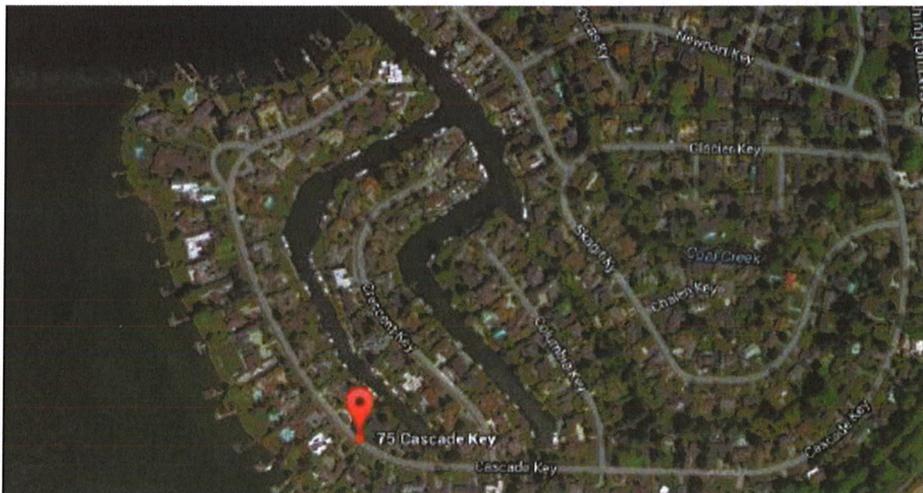


Figure 2. Project setting within the Newport Shores neighborhood (Google Maps).

Lake Washington is considered a critical area by the City of Bellevue. The applicant proposes to construct some typical residential amenities, a pool with safety fence and patio, within portions of the critical area structure setback. Bellevue Land Use Code (LUC) 20.25H.230 requires compliance with specific critical areas report criteria as part of any modification to a critical area, critical area buffer, or structure setback. This report fulfills these criteria.

1.2 Description of Project Area

The subject property is located at 75 Cascade Key (parcel 6072800215) in the Newport Shores community in the City of Bellevue. Newport Shores borders Lake Washington to the east and includes several canals, or manmade inlets. The subject parcel is located within the westernmost of the two main canals, bordering the west side of the canal. The canal is approximately 80 feet wide adjacent to the parcel and approximately 2,000 linear feet of canal separates the parcel from Lake Washington. The canals were carved from uplands during the 1950s with the first residences established in the early 1960s (Figure 3). The canals are lined on both sides with concrete bulkheads. Vessels are typically moored parallel to the bulkhead with some properties containing lifts or moorage covers.

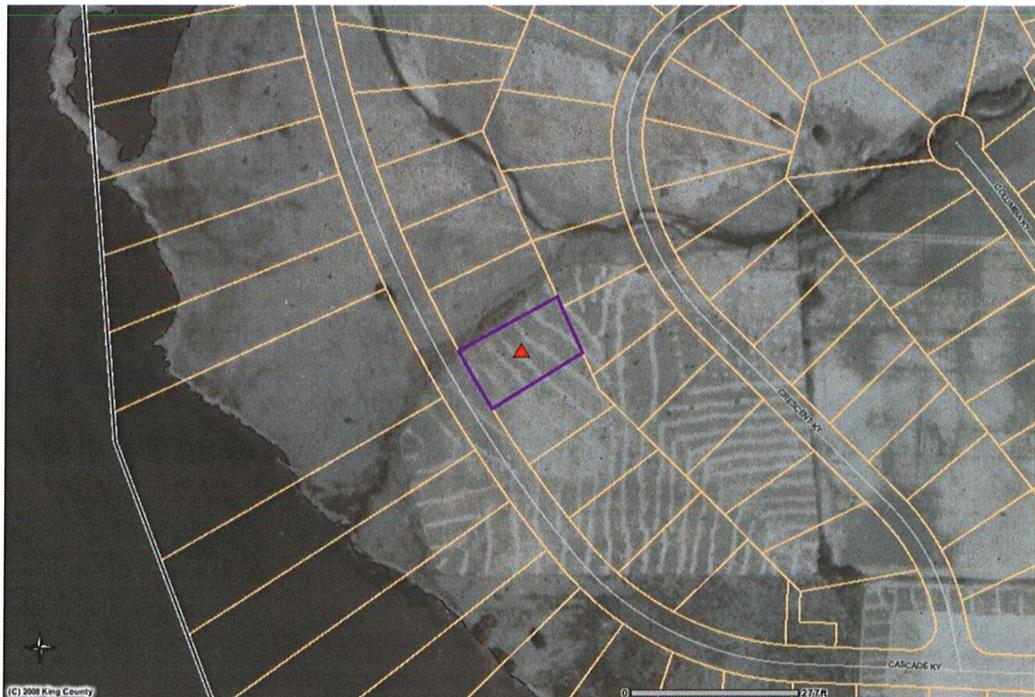


Figure 3. View of the subject site prior to excavation of the Newport canals (circa 1936 - photo courtesy of iMAP).

As mentioned, a new residence is currently being constructed on the subject parcel. The new residence, with a foundation already poured (Figure 4), is situated approximately 55 feet upland of the ordinary high water mark (OHWM).

Between the new foundation and the bulkhead is a large expanse of lawn, a 288-square-foot concrete pad (amongst a larger gravel area) next to the bulkhead near the center of the site (see Figure 6), and several trees and shrubs. Trees include a 17-inch-diameter Colorado blue spruce just upland of the OHWM on the north side of the pad and an ornamental cherry on the south side of the pad with a ring of David viburnum below its drip line. The spruce tree was recently assessed by a certified arborist and determined to have a variety of issues, including spider mites, a weak top, and a shallow water table (see Figure 5). Tamarix juniper and photinia, among other non-native shrubs, form hedges along the property lines. The groundcover is predominantly grass, but there are also areas of ivy, periwinkle, horsetail, and other herbaceous weedy species.



Figure 4. View of the new residence under construction and the lawn which comprises the shoreline buffer and structure setback – facing north, photo taken 4/2/2014.



Figure 5. View of the existing Colorado blue spruce tree – photo taken 4/2/2014.



Figure 6. View of the shoreline buffer facing south along the concrete bulkhead. Note the concrete pad and gravel areas - photo taken 4/2/2014.

No wetlands or streams were noted on the property, nor do publicly available data indicate the presence of aquatic areas aside from Lake Washington. According to the Natural Resources Conservation Service, the property contains Urban land (Ur) soils.

Habitat

Habitat structure on the property is virtually non-existent, with no native vegetation present in the buffer or setback. Two trees, a number of ornamental shrubs, and areas of lawn are present. The lack of structural diversity and fruit-producing plants limits food and cover opportunities for most wildlife species, including songbirds and small mammals.

2 LOCAL REGULATIONS

In Bellevue, shoreline areas are governed by Critical Areas Ordinance No. 5680 and regulated specifically by LUC 20.25H.115 and 20.25E. Developed sites on Lake Washington require a 25-foot critical area buffer [LUC 20.25H.115(B)(1)(a)(ii)]. An additional shoreline structure setback, measured from the edge of the buffer is required. The standard structure setback is 25-feet. However, the setback can be modified, pursuant to LUC 20.25H.115(C)(3)(a), based upon the location of adjacent development. The setback is intended to minimize long-term impacts of development and protect the critical area from adverse impacts during construction, maintenance, and uses associated with the structure.

Shoreline buffers and shoreline setbacks can only be modified through an approved critical areas report. The applicant must demonstrate that the modifications to the buffer and/or setback, combined with any mitigation efforts, will result in equivalent or better protection of critical area functions and values than would result from adhering to the standard application of the regulations (LUC 20.25H.230). Mitigation or restoration of the critical area may involve restoring the shoreline by removing structures or impervious surfaces, removing invasive plant species, and/or planting native vegetation within the buffer and/or setback. An approved mitigation plan would require monitoring and maintenance in accordance with LUC 20.25H.220.

3 PROJECT DESCRIPTION

The proposed project is to construct additional recreational appurtenances to the single-family home currently under construction. Specifically, the shoreline structure setback will be improved with hardscape amenities including an in-ground pool with safety fence, spa, and patio area. A small fountain, iron pergola, and native plantings are also proposed in the structure setback. The patio will be constructed of mortared stone. Within the shoreline buffer, a pathway from the patio to the bulkhead will be created. The walkway will be constructed of wood decking with small spacing between each plank to allow for infiltration. A separate area of pervious pea gravel will be positioned next to bulkhead and will transition to the patio. Both existing non-native trees along the shoreline will be removed, including the existing 17-inch spruce tree. The project arborist has recommended its removal. The remainder of the shoreline buffer will be planted with native trees, shrubs, and groundcovers.

3.1 Project Purpose

The purpose of the proposed project is to provide typical private recreational amenities that are in keeping with the residential neighborhood and the lakefront setting.

3.2 Mitigation Sequencing

Pursuant to LUC 20.25H.215, attempts to avoid and minimize impacts to the on-site shoreline buffer and setback have been taken.

Avoidance: As previously mentioned, the project site includes a 25-foot shoreline buffer and an additional 25-foot structure setback. Proposed improvements in the structure setback include a pool and the required safety fence, along with a surrounding patio and spa. Other placement options for the pool were analyzed. However, the property owner objectives for pool design include privacy and a reasonable length for lap swims. Community covenants prevented the residence from being located closer to the road, which diminished the otherwise available space between the house and the upland edge of the structure setback. The greenscape requirements in the LUC, as well as necessary driveways and walkways, limited the potential for a front yard pool. The required safety fence would also have conflicted with LUC regulations for the front yard. The lot is sloping on the side yards with a limit of 30" for retaining structures, so the side yards were also rejected. These factors, in addition to privacy issues, support a rear yard location. Impacts to existing native vegetation have been avoided. Further, no impacts to the shoreline critical area are proposed.

Minimization: Minimization techniques were utilized during the design process in order to limit impacts to the shoreline buffer and setback. Minimization measures included locating the new residence entirely outside of the shoreline buffer and structure setback. Only appurtenances and hardscapes/landscaping are proposed within the buffer and setback. Further, the bulk of new impervious surfaces are limited to the setback with a single shoreline access point (constituting the only impact within the buffer).

Mitigation: Mitigation includes the removal of 288 square feet of impervious surfaces from the buffer and the enhancement of 2,224 square feet of the site through the planting of native vegetation within the buffer and portions of the setback. The planting layout incorporates a diversity of native plant species, including vine maple, Japanese maple, shore pine, big-leaf hydrangea, red flowering currant, baldhip rose, sub-alpine spirea, huckleberry, tufted hair grass, Idaho fescue, dull mahonia, coast penstemon, sand strawberry, and large leaf lupine. The mitigation plan will provide for substantially improved critical area and buffer functions relative to the existing condition. A monitoring and maintenance plan is also included in this report. Overall, a net improvement in critical area functions is proposed (see Table 2).

4 IMPACT ASSESSMENT / LIFT ANALYSIS

As mentioned, recreational residential appurtenances will be constructed within the shoreline buffer and structure setback. The proposed amenities within the setback area will total 1,830 square feet. An additional 319 square feet of will be added to the shoreline buffer. As mitigation for the increase in hardscape surfaces within both the structure setback and buffer, native plantings in the setback and buffer are proposed, along with impervious removal from the buffer. A summary of impacts and proposed mitigation is presented in the table below. For the purposes of this analysis, 'existing' shall refer to the pre-existing condition, prior to demolition of the previous residence.

Table 1. Impact Assessment

	Shoreline Buffer	Structure Setback	Total
Existing Hardscape Surfaces (Sq. Ft.)	288	0	288
Proposed Hardscape Surfaces (Sq. Ft.)	319	1,830	2,149
Existing Native Vegetation (Sq. Ft.)	0	0	0
Proposed Mitigation Plantings (Sq. Ft.)	1,838	389	2,224

As can be seen in the above table, impervious surfaces within the buffer will decrease from 288 square feet (existing concrete pad) to 25 square feet (portions of patio adjacent to pool). Impervious surfaces in the structure setback will increase. Meanwhile 2,224 square feet of native mitigation plantings will be added to the buffer and portions of the setback. Removal of the existing spruce tree, as recommended by the project arborist, will better serve buffer functions by allowing a larger area to be planted with native species. Retention of the tree would make restoration more difficult by restricting planting areas due to its shallow root system and also by outcompeting any newly installed plants for water. An analysis of the specific functions and values provided by the existing site and the post-project site is provided in Table 2.

Table 2. Functional Lift Analysis

Critical Area/ Buffer Functions	Existing Conditions	Proposed Conditions	Functional Improvement?
Water Quality	The shoreline area is devoid of significant vegetation capable of filtering stormwater before it enters the lake.	Significant new native plantings added to the shoreline buffer.	Yes; water quality will be improved. New native plantings will help to filter stormwater prior to it reaching the shoreline.
Hydrology	The shoreline area lacks vegetative structure that can slow stormwater velocities discharging into the lake from the lawn and nearby impervious areas.	Remove existing impervious surfaces and restore significant portions of the shoreline buffer by establishing native shrubs and groundcovers.	Yes; new native plantings will provide increased density and resistance to storm flows, reducing peak stormwater velocities entering the lake.
Habitat	The existing buffer and setback lack the native vegetation necessary to provide substantial forage and cover opportunities.	Enhance/restore habitat with native plantings.	Yes; new native plantings will provide a net increase in species and structural diversity. Further, new plantings may provide organic matter and other allochthonous inputs to the lake. New foraging and nesting opportunities for terrestrial wildlife, including several songbird species will also be provided.
Net Condition	Degraded buffer and setback with no native vegetation and impervious surfaces at the shoreline edge.	Significant native vegetation added to the buffer and setback.	Shoreline habitat enhanced with an increase in native vegetation; filtering of stormwater by native plantings; increased habitat structural and

			compositional complexity, and an increase in organic material to the food chain.
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The mitigation plan proposes a reduction in impervious surfaces within the buffer, which will improve hydrologic and water quality functions along the shoreline. The mitigation plan will also result in a significant increase in native plantings within the buffer and setback. The presence of these plants on the site provides greater potential for the site to develop a greater vegetative structure than exists in the area presently. The property will be more suitable overall for urban songbird, small mammal and herptile species than it is presently; the site will contain more woody vegetation and a greater structural complexity, which is more attractive to songbirds and small mammals than is lawn. As well, a mix of flowering, fruiting and seeding plants will provide forage opportunities that do not currently exist on-site. Wildlife species of the Pacific Northwest are also better adapted to forage provided by native plants than non-native and ornamental species.

5 CRITICAL AREAS REPORT CRITERIA

As previously mentioned, shoreline setbacks may be modified pursuant to LUC 20.25H.230. The Director may approve the modifications described above if it can be shown that, through mitigation, the modifications will result in equivalent or better protection of critical area functions and values. The existing project site contains areas of low-functioning shoreline, as well as a degraded shoreline buffer and setback. Non-native vegetation and impervious surfaces occupy portions of the buffer and setback.

Per the LUC, the critical areas report must meet specific decision criteria in order for the Director to approve a proposal to modify the regulated structure setback or buffer. Compliance with the relevant critical areas report criteria listed in LUC 20.25H.250(B) is addressed below.

3. *Identification of each regulation or standard of this code proposed to be modified.*

The site is adjacent to Lake Washington, a regulated shoreline that, pursuant to LUC 20.25H.115(B)(1)(a)(ii) and LUC 20.25H.115(C)(2)(b), requires a 25-foot critical area buffer and a shoreline critical area structure setback based upon the location of adjacent development. The applicant proposes to construct a pool, safety fence, spa, patio, and pathway within the structure setback and portions of the buffer as accessories to the single-family residence.

4. *An assessment of the probable cumulative impacts to critical areas resulting from development of the site and the proposed development.*

No in-water work is proposed; therefore, all impacts and offsetting mitigation will occur within the buffer and structure setback. The proposed improvements will occur almost entirely within the structure setback, over an area currently occupied by a grass lawn. Therefore, improvements are limited primarily to the setback and would impact what little water quality and hydrologic functions currently exist. The removal of impervious surfaces within the buffer coupled with proposed native plantings within the buffer and structure setback are expected to provide for an overall increase in critical area functions at the site.

5. *An analysis of the level of protection of critical area functions and values provided by the regulations or standards of this Code, compared with the level of protection provided by the proposal. The analysis shall include:*

- a. *A discussion of the functions and values currently provided by the critical area and critical area buffer on the site and their relative importance to the ecosystem in which they exist;*

The shoreline is presently armored, and the buffer is primarily lawn with limited existing vegetation, and an impervious concrete patio at the water's edge. The structure setback is entirely lawn. Therefore, water quality, hydrologic, and habitat functions are essentially absent from the shoreline. The bulkhead allows only simple habitat to exist in the nearshore area by presenting a vertical interface with the ordinary high water mark. In addition to being a physical shoreline barrier, this limits vegetation establishment and organic input and prevents the formation of quality shallow water habitat.

- b. *A discussion of the functions and values likely to be provided by the critical area and critical area buffer on the site through application of the regulations and standards of this Code over the anticipated life of the proposed development;*

The strict application of the regulations and standards of LUC 20.25H would prevent the proposed improvements from being constructed in the structure setback and buffer, and thus the required compensation would not be implemented. Therefore, the shoreline buffer would remain in its existing impaired condition, as described in the response above.

- c. *A discussion of the functions and values likely to be provided by the critical area and critical area buffer on the site through the modifications and performance*

standards included in the proposal over the anticipated life of the proposed development; and

By requesting a critical area modification pursuant to LUC 20.25H.230, the applicant is provided the opportunity to restore and enhance portions of the on-site shoreline critical area buffer and structure setback. A mitigation plan has been prepared (see Appendix A) that details the area proposed for mitigation. Mitigation will involve the enhancement of 2,224 square feet of the shoreline buffer and structure setback through the planting of native vegetation. The planting layout incorporates a diversity of native plant species. A monitoring and maintenance plan for the proposed mitigation area is also included in this report. Overall, a net gain in critical area functions is proposed. Therefore, modification of the on-site structure setback and buffer, and subsequent mitigation, will provide a substantially higher level of protection than provided through the application of the regulations of LUC 20.25H.

- 7. A discussion of the mitigation requirements applicable to the proposal pursuant to LUC 20.25H.210, and a recommendation for additional or modified mitigation, if any.*

The proposed mitigation plan has been developed in accordance with the standards of LUC 20.25H.210 through 20.25H.225. The project applicant proceeded through the design of the proposed project by first attempting to avoid impacts to the on-site structure setback. However, because strict application of LUC 20.25H would result in the applicant being unable to fulfill the project purpose (private lap swimming with privacy), the applicant proceeded with a design that minimized modifications and impacts to the greatest extent possible. Included as part of the plan is a proposal to restore significant portions of the buffer and structure setback with native species. The mitigation plan will improve the critical area functions and values relative to the existing condition. A monitoring and maintenance plan for the proposed mitigation area has also been prepared and is included in this report. The plan includes the components required by LUC 20.25H.220.

To allow a shoreline structure setback and buffer modification through an approved critical areas report, the Director must also find compliance with the decision criteria established in LUC 20.25H.255(A). Compliance with the relevant sections listed in LUC 20.25H.255(A) is addressed below.

1. *The modifications and performance standards included in the proposal lead to levels of protection of critical area functions and values at least as protective as application of the regulations and standards of this code.*

See response 5 in the preceding discussion.

2. *Adequate resources to ensure completion of any required mitigation and monitoring efforts.*

A comprehensive five-year maintenance and monitoring plan is included in this report (Section 6). The plan specifies appropriate species for planting and planting techniques, describes proper maintenance activities, and sets forth performance standards to be met yearly during monitoring. This will ensure that mitigation plantings will be maintained, monitored, and successfully established within the first five years following implementation. Furthermore, to ensure that the proposed plantings are installed and that the five-year maintenance and monitoring plan is implemented, the applicant will post an Installation Assurance Device and a Maintenance Assurance Device prior to building permit issuance.

3. *The modifications and performance standards included in the proposal are not detrimental to the functions and values of critical area and critical area buffers off-site.*

The on-site critical area (Lake Washington – Newport Shores canal) continues off-site to the northwest and southeast. An encroachment into the shoreline structure setback and buffer will not have a detrimental impact on off-site critical areas and buffers. As mentioned previously, the immediately adjacent critical area is artificial, having been constructed as part of the development of the Newport Shores canal system in the 1950s. The existing condition of the immediate area surrounding the project site is entirely developed, with many nearby lots having structures within the setback and hardscape improvements within the buffer. This built-out environment will therefore not suffer a detrimental impact as a result of the proposal. In fact, on-site improvements (impervious surface removal within the buffer and mitigation plantings in the setback and buffer) will have a beneficial affect on the subject property and a small cumulative improvement to the overall habitat function of the resource.

4. *The resulting development is compatible with other uses and development in the same land use district.*

The proposed single-family residence will remain compatible with adjacent properties and surrounding development within the same land use district (Single Family R-2.5). Adjacent properties also contain single-family land uses, all of a similar size and character, and many with a greater degree of alteration in the buffer and setback.

Modification of a shoreline structure setback or buffer requires the applicant to apply for and receive a Critical Areas Land Use Permit. Before issuing a Critical Areas Land Use Permit, the Director must find that the project meets specific decision criteria. Compliance with the applicable Critical Areas Land Use Permit decision criteria listed in LUC 20.30P.140 is addressed below.

- A. *The proposal obtains all other permits required by the Land Use Code.*

The project applicant has applied for a Critical Areas Land Use Permit (LO) to modify the on-site shoreline structure setback. No other City of Bellevue land use permits will be required of the project at this time.

- B. *The proposal utilizes to the maximum extent possible the best available construction, design and development techniques, which result in the least impact on the critical area and critical area buffer.*

No direct impacts to the critical area are proposed. Temporary construction access will occur within the buffer; however, this can be accomplished over areas of existing concrete or lawn. Permanent and beneficial modifications to the buffer include impervious surface removal and replacement with native plantings.

- D. *The proposal will be served by adequate public facilities including streets, fire protection, and utilities.*

The proposed project will be served by adequate public facilities. No new streets will be needed to serve the site and the project site will utilize existing utilities available to the site. Additionally, fire and police protection are currently available at the site.

- E. *The proposal includes a mitigation or restoration plan consistent with the requirements of LUC 20.25H.210; except that a proposal to modify or remove vegetation pursuant to an approved Vegetation Management Plan under LUC 20.25H.055.C.3.i shall not require a mitigation or restoration plan.*

A mitigation plan has been prepared in accordance with the requirements of LUC 20.25H.210. See Section 6 and Appendix A.

- F. *The proposal complies with other applicable requirements of this code.*

The proposed project complies with all other applicable City of Bellevue Land Use Codes.

6 MITIGATION PLAN

6.1 Overview

The proposed mitigation plan fulfills the requirements of LUC 20.25H.220(B). The plan seeks to restore and enhance portions of the Lake Washington shoreline buffer and setback. To achieve this, the plan calls for the enhancement of 2,224 square feet of the buffer and portions of the setback through the planting of native trees, shrubs, and groundcover. Species include vine maple, Japanese maple, shore pine, big-leaf hydrangea, red flowering currant, baldhip rose, sub-alpine spirea, huckleberry, tufted hair grass, Idaho fescue, dull mahonia, coast penstemon, sand strawberry, and large leaf lupine.

6.2 Maintenance and Monitoring Plan

A five-year maintenance and monitoring plan is proposed to ensure and document the plan meets performance standards.

Goals

- 1) Within the proposed mitigation areas, establish dense native vegetation that is appropriate to the eco-region and site.
- 2) Where indicated on the plan, planted mitigation areas will remain substantially vegetated with a preponderance of native plants and will contain little invasive or noxious weed cover.
- 3) Increase habitat cover, refuge and food resources for herptiles, small mammals, and invertebrates. In addition to cover and food resources, provide perching habitat for native birds.

Performance Standards

The standards listed below will be used to judge the success of the installation over time. If performance standards are met at the end of Year 5, the site will then be deemed successful and the performance security bond will be eligible for release by the City of Bellevue.

- 1) Survival: Achieve 100% survival of installed plants by the end of Year 1. This standard can be met through plant establishment or through replanting as necessary to achieve the required numbers.

- 2) Species diversity: Establish at least three native woody species by Year 3 and maintain this diversity through Year 5. Native volunteer species may count towards this standard.
- 3) Native cover:
 - a. Within tree and shrub- planted areas, achieve 40% cover of native trees and shrubs by Year 2. Native volunteer species may count towards this cover standard.
 - b. Within tree and shrub planted areas, achieve 60% cover of native trees and shrubs by Year 3. Native volunteer species may count towards this cover standard.
- 4) Invasive cover: Aerial cover for all non-native, invasive and noxious weeds will not exceed 10% at any year during the monitoring period. Invasive plants include Himalayan blackberry (*Rubus armeniacus*), cut leaf blackberry (*Rubus laciniatus*), cherry (hedge) laurel (*Prunus laurocerasus*), purple loosestrife (*Lythrum salicaria*), yellow-flag iris (*Iris pseudacorus*), reed canarygrass (*Phalaris arundinacea*), morning glory/bindweed (*Convolvulus arvensis*), English holly (*Ilex aquifolium*), and ivy species (*Hedera* spp.).

Monitoring Methods

This monitoring program is designed to track the success of the mitigation site over time and to measure the degree to which it is meeting the performance standards outlined in the preceding section.

An as-built plan will be prepared by the **restoration professional** (Watershed Company [(425) 822-5242] personnel, or other persons qualified to evaluate environmental restoration projects) prior to the beginning of the monitoring period. The as-built plan will be a mark-up of the planting plans included in this plan set. The as-built plan will document any departures in plant placement or other components from the proposed plan.

Monitoring will take place once annually in the fall for five years. Year 1 monitoring will commence in the first fall subsequent to successful installation as documented in the as-built plan.

The formal monitoring visit shall record and report the following in an annual report submitted to the City of Bellevue:

- 1) Visual assessment of the overall site.
- 2) Year 1 counts of live and dead woody plants by species. Year 2 through Year 5 counts of established woody plants by species.

- 3) Counts of dead plants where mortality is significant in any monitoring year.
- 4) Estimate of native woody species cover.
- 5) Estimate of non-native, invasive weed cover.
- 6) Tabulation of established native species, including both planted and volunteer species.
- 7) Photographic documentation from at least three fixed reference points.
- 8) Any intrusions into or clearing of the planting areas, vandalism, or other actions that impair the intended functions of the mitigation area.
- 9) Recommendations for maintenance or repair of any portion of the mitigation area.

Construction Notes and Specifications

Note: specifications for items in **bold** can be found below under "Material Specifications and Definitions."

Note: The Watershed Company [(425) 822-5242] personnel, or other persons qualified to evaluate environmental restoration projects, will monitor:

- 1) All site preparation
 - a) Soil preparation.
 - b) Mulch placement.
- 2) Plant material inspection
 - a) Plant material delivery inspection.
 - b) 100% plant installation inspection.

General Work Sequence

- 1) All plant installation is to take place during the dormant season (October 15th – December 15th) for best survival.
- 2) For all areas to be planted, install a four inch depth of fine vegetable compost, Cedar Grove or approved equal. Rototill into soil to a depth of 12 inches.
- 3) Prepare a planting pit for each plant and install per the planting details.
- 4) Mulch the entire planted area with **wood chip mulch**, four inches thick.
- 5) Install a temporary or permanent **irrigation system** to provide full coverage to all plants within the restoration area for a minimum of the first two years.

Material Specifications and Definitions

- 1) **Fertilizer:** Slow release, granular PHOSPHOROUS-FREE fertilizer. Follow manufacturer's instructions for application. Keep fertilizer in a weather-tight container while on site. Note that fertilizer is to be applied only in Years 2 through 5 and not in the first year.
- 2) **Irrigation system:** Automated system capable of delivering at least one inch of water per week from June 1 through September 30 for a minimum of the first two years following installation.
- 3) **Restoration Professional:** The Watershed Company [(425) 822-5242] personnel, or other persons qualified to evaluate environmental restoration projects.
- 4) **Wood chip mulch:** Arborist chips (chipped woody material) approximately 1 inch minimum to 3 inches in maximum dimension (not sawdust or coarse hog fuel). This material is commonly available in large quantities from arborists or tree-pruning companies. This material is sold as "Animal Friendly Hog Fuel" at Pacific Topsoils [(800) 884-7645]. Mulch must not contain appreciable quantities of garbage, plastic, metal, soil, and dimensional lumber or construction/demolition debris.

Contingencies

If there is a significant problem with the mitigation areas meeting performance standards, a contingency plan will be developed and implemented. Contingency plans can include, but are not limited to: soil amendment; additional plant installation; and plant substitutions of type, size, quantity and location.

Maintenance

The site will be maintained in accordance with the following instructions for three years following completion of the construction.

- 1) Follow the recommendations noted in the previous monitoring site visit.
- 2) General weeding for all planted areas:
 - a. At least twice yearly, remove all competing weeds and weed roots from beneath each installed plant and any desirable volunteer vegetation to a distance of 18 inches from the main plant stem. Weeding should occur at least twice during the spring and summer. Frequent weeding will result in lower mortality, lower plant replacement costs, and increased likelihood that the plan meets performance standards by Year 5.
 - b. More frequent weeding may be necessary depending on weed conditions that develop after plan installation.

- c. Do not weed the area near the plant bases with string trimmer (weed whacker/weed eater). Native plants are easily damaged or killed, and weeds easily recover after trimming.
 - d. Selective applications of herbicide may be needed to control invasive weeds, especially when intermixed with native species. Herbicide application, when necessary, shall be conducted only by a state-licensed applicator. Use only herbicide formulations approved for aquatic areas.
- 3) Apply slow release granular fertilizer to each installed plant annually in the spring (by June 1) of Years 2 through 5. Do not apply fertilizer to inundated or ponded areas or lakeshore areas that may become inundated.
- 4) Replace mulch as necessary to maintain a 4-inch-thick layer, retain soil moisture, and limit weeds.
- 5) Replace each plant found dead in the summer monitoring visits during the upcoming fall dormant season (October 15th – December 15th).
- 6) The homeowner will ensure that water is provided for the entire planted area with a minimum of 1 inch of water provided per week from June 1 through September 30 for the first two years following installation through the operation of a temporary irrigation system. Less water is needed during March, April, May and October.

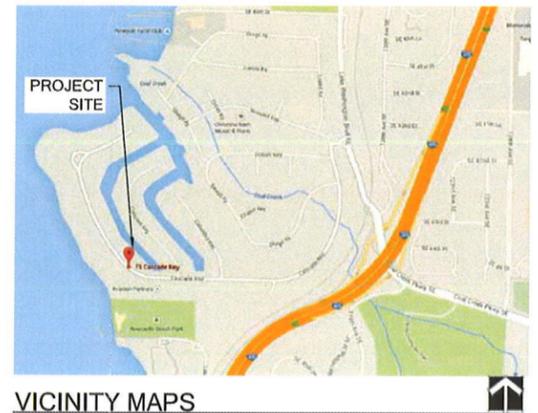
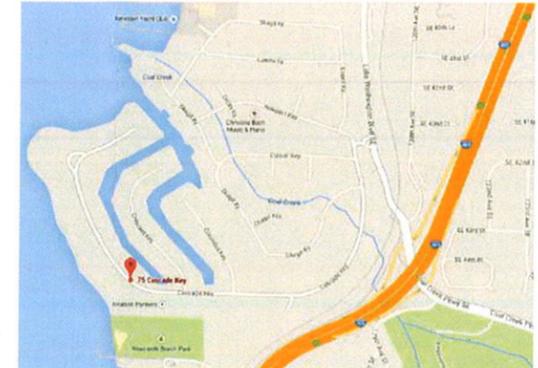
7 SUMMARY

The proposed residential alterations will occur within the shoreline structure setback and shoreline buffer. A total of 1,830 square feet of new hardscape surfaces are proposed within the setback, while buffer impacts will total 319 square feet. To offset the proposed encroachments, a mitigation plan is proposed. Improvements will result in the addition of 2,224 square feet of native plantings within the buffer and structure setback. Species include vine maple, Japanese maple, shore pine, big-leaf hydrangea, red flowering currant, baldhip rose, sub-alpine spirea, huckleberry, tufted hair grass, Idaho fescue, dull mahonia, coast penstemon, sand strawberry, and large leaf lupine.

The planting layout incorporates a diversity of native plant species. The mitigation plan, coupled with a decrease in impervious surface in the buffer, will provide significantly better protection of those critical area functions and values than would be provided by the standard application of the critical area regulations. Therefore, an overall net gain in critical area buffer functions and values is proposed.

APPENDIX A

Mitigation Plan



VICINITY MAPS

**75 CASCADE KEY RESIDENCE
SHORELINE MITIGATION PLAN
PREPARED FOR: HORNER
DESIGN ASSOCIATES
SITE ADDRESS: 75 CASCADE KEY
BELLEVUE, WA 98006**

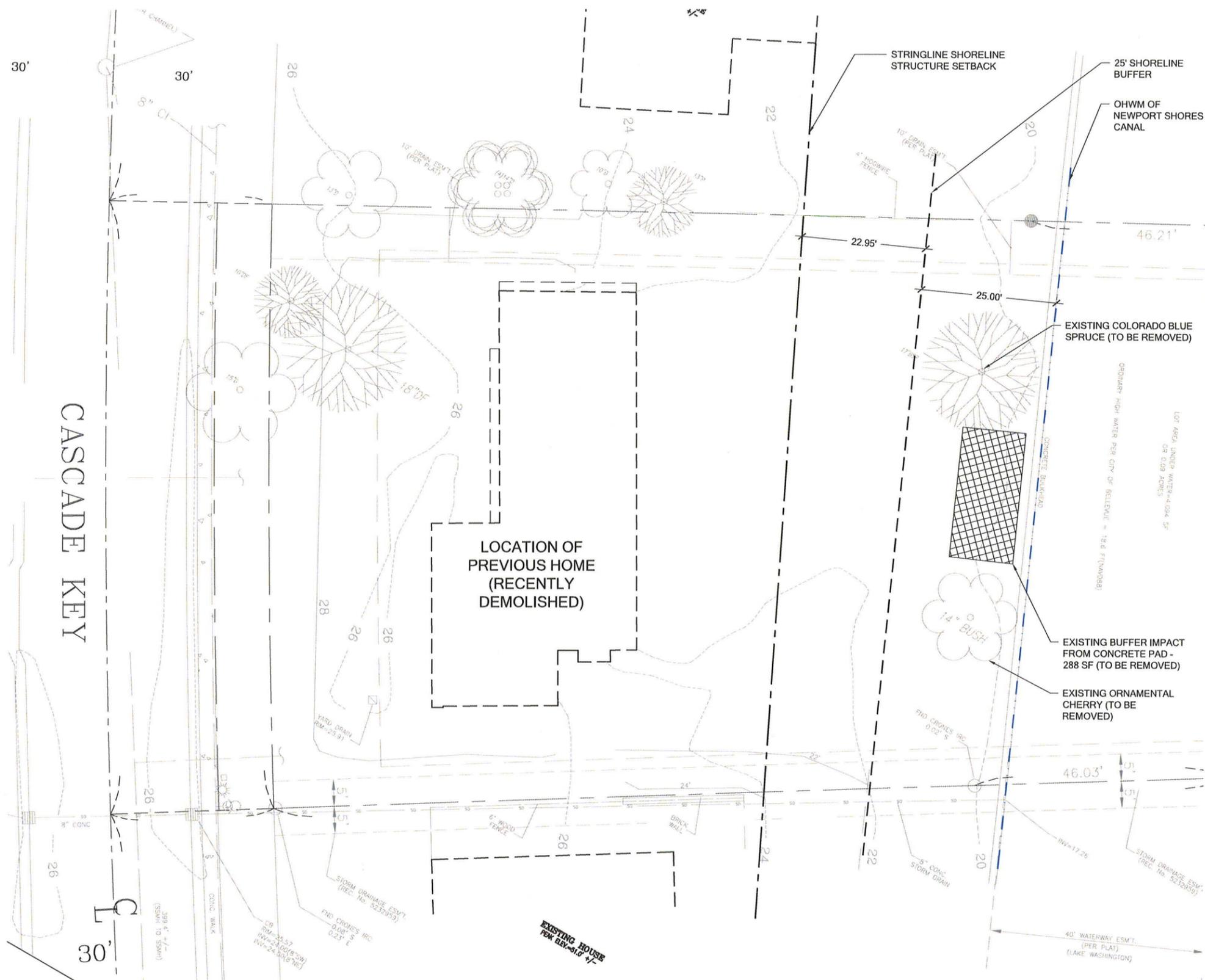
SUBMITTALS & REVISIONS		BY	DATE	DESCRIPTION
1	CLIENT REVIEW SET	CL	5-1-14	
2	PERMIT SET	CL	5-8-14	
3	REVISED SITE PLAN	ARCL	5-27-14	

SHEET SIZE:
ORIGINAL PLAN IS 22" x 34".
SCALE ACCORDINGLY.

PROJECT MANAGER: KB
DESIGNED: BS/CL
DRAFTED: CL
CHECKED: CL
JOB NUMBER:

140309
SHEET NUMBER:

W1 OF 4



EXISTING CONDITIONS

SCALE 1"=10'

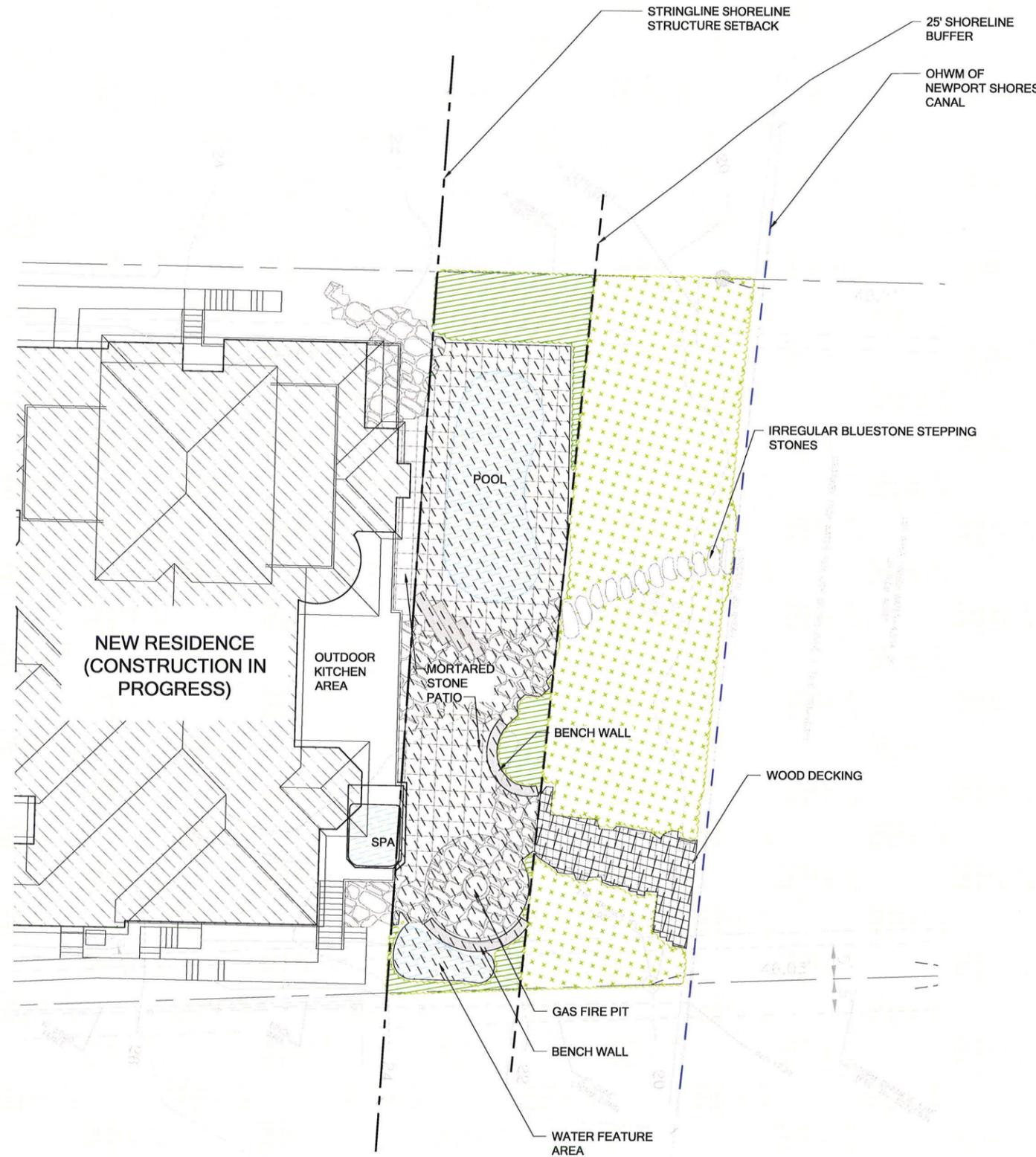


SHEET INDEX

- W1 EXISTING CONDITIONS
- W2 PROPOSED SITE PLAN, IMPACTS AND MITIGATION PLAN
- W3 PLANTING PLAN
- W4 MITIGATION PLAN NOTES

IMPACTS AND MITIGATION LEGEND

	SHORELINE STRUCTURE SETBACK IMPACTS (NEW)	1,830 SF
	SHORELINE BUFFER IMPACTS (NEW)	210 SF
	EXISTING IMPERVIOUS IN BUFFER TO BE REMOVED (SEE SHEET W1 FOR LOCATION)	-288 SF
	NET NEW IMPACT	1,752 SF
	SHORELINE STRUCTURE SETBACK MITIGATION PLANTINGS	386 SF
	SHORELINE BUFFER MITIGATION PLANTINGS	2,155 SF
	TOTAL MITIGATION	2,541 SF
	NET INCREASE IN MITIGATION (1.42:1)	789 SF



PROPOSED SITE PLAN, IMPACTS AND MITIGATION PLAN
SCALE 1"=10'



Received
AUG 28 2014
Permit Processing

75 CASCADE KEY RESIDENCE
SHORELINE MITIGATION PLAN
PREPARED FOR: HORNER
DESIGN ASSOCIATES
SITE ADDRESS: 75 CASCADE KEY
BELLEVUE, WA 98006

SUBMITTALS & REVISIONS

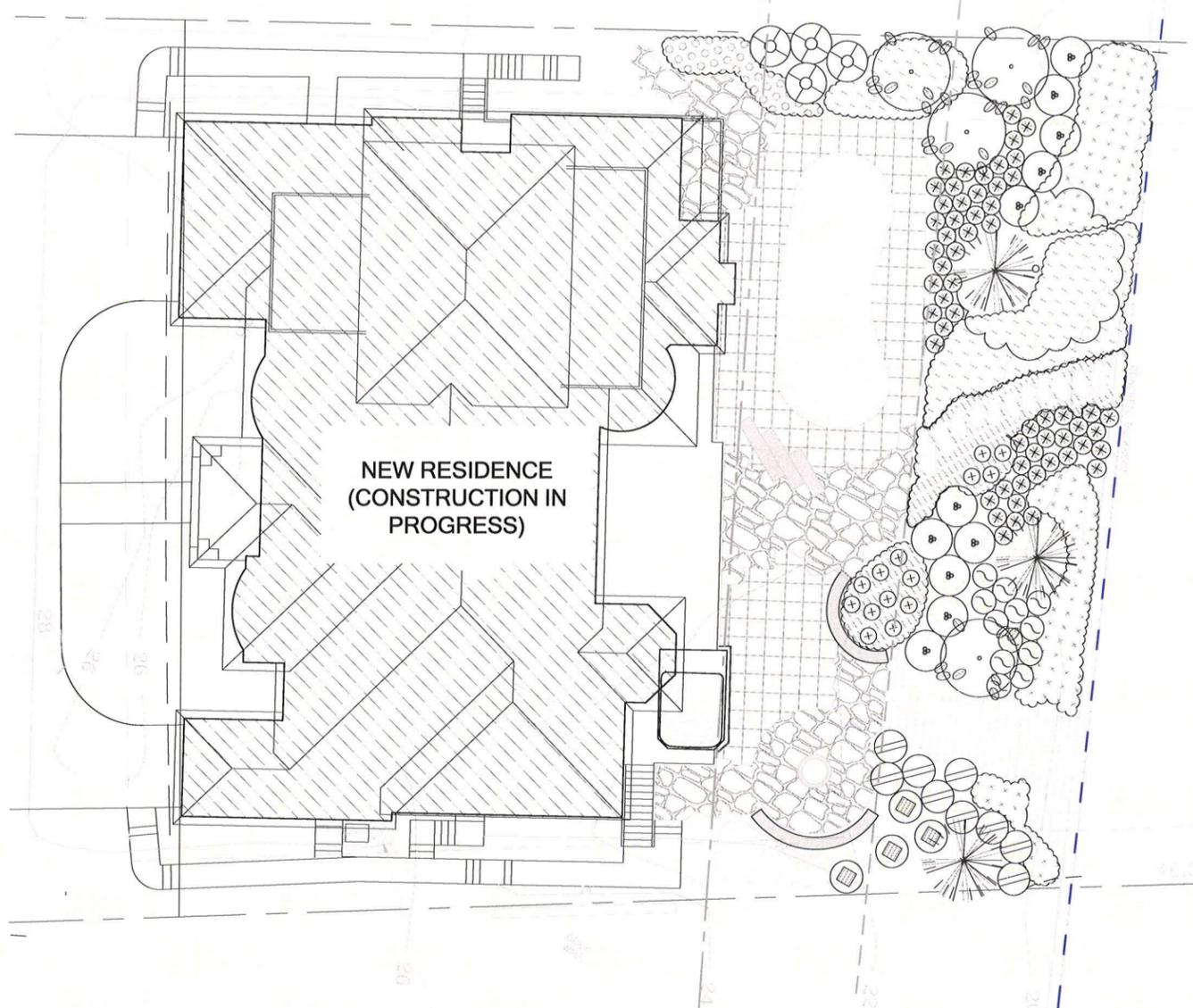
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1	5-1-14	CLIENT REVIEW SET	CL	
2	5-8-14	PERMIT SET	CL	
3	5-27-14	REVISED SITE PLAN	AP/CL	
4	7-16-14	REVISED PLANTING LAYOUT	MD	
5	8-25-14	REPLACING GRAVEL WITH STEPPING STONES	MD	

SHEET SIZE:
ORIGINAL PLAN IS 22" x 34".
SCALE ACCORDINGLY.

PROJECT MANAGER: KB
DESIGNED: BS/CL
DRAFTED: CL
CHECKED: CL

JOB NUMBER:
140309

SHEET NUMBER:
W2 OF 4



PLANTING PLAN
SCALE 1"=10'



PLANT SCHEDULE

TREES	LATIN NAME/COMMON NAME	QTY	SIZE	REMARKS
	PINUS CONTORTA / SHORE PINE	3	5 GAL.	
SHRUBS				
	ACER CIRCINATUM / VINE MAPLE	4	5 GAL.	MULTI-STEM
	RIBES SANGUINEUM / RED FLOWERING CURRANT	4	5 GAL.	
	ROSA GYMNOCARPA / BALDHIP ROSE	11	5 GAL.	
	SPIRAEA DENSIFLORA / SUBALPINE SPIREA	9	2 GAL.	
	VACCINIUM OVATUM / EVERGREEN HUCKLEBERRY	4	2 GAL.	
PERENNIALS & GROUND COVER				
	DESCHAMPSIA CAESPITOSA / TUFTED HAIR GRASS	58	1 GAL.	
	FESTUCA IDAHOENSIS / IDAHO FESCUE	131	1 GAL.	24" ON CENTER
	FRAGARIA CHILOENSIS / SAND STRAWBERRY	130	1 GAL.	18" ON CENTER
	MAHONIA NERVOSEA / DULL MAHONIA	214	1 GAL.	18" ON CENTER
	OXALIS OREGANA / WOOD SORREL	40	1 GAL.	18" ON CENTER
	PENSTEMON SERRULATUS / COAST PENSTEMON	12	1 GAL.	
	LUPINUS POLYPHYLLUS / LARGE LEAF LUPINE	14	1 GAL.	

75 CASCADE KEY RESIDENCE
SHORELINE MITIGATION PLAN
PREPARED FOR: HORNER
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BELLEVUE, WA 98006

SUBMITTALS & REVISIONS		BY
NO.	DATE	DESCRIPTION
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Received
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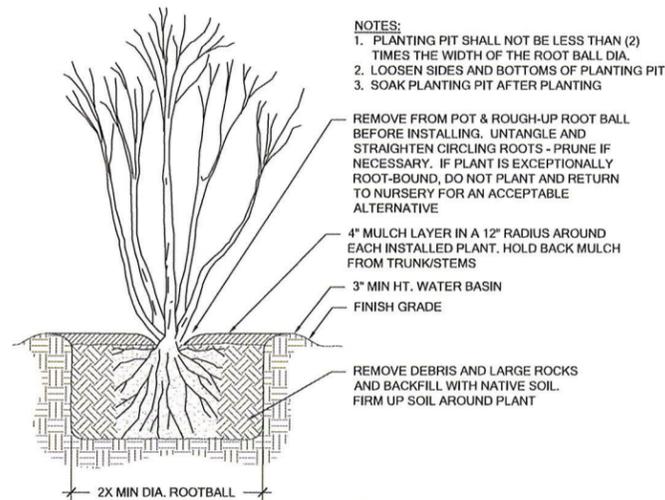
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CHECKED: CL

JOB NUMBER:
140309

SHEET NUMBER:
W3 OF 4

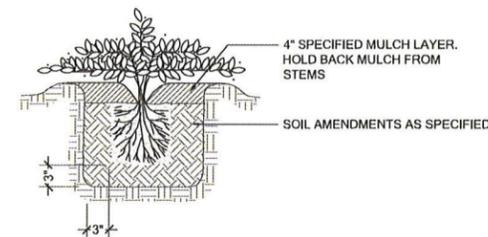
DATE: 8/28/2014
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FILENAME: 140309 MARTYN SHORELINE MITT PLAN_2014-05-27.DWG



1 TREE AND SHRUB PLANTING

Scale: NTS

- NOTES:
1. PLANT GROUNDCOVER AT SPECIFIED DISTANCE ON-CENTER (O.C.) USING TRIANGULAR SPACING, TYP.
2. LOOSEN SIDES AND BOTTOM OF PLANTING PIT AND REMOVE DEBRIS
3. LOOSEN ROOTBOUND PLANTS BEFORE INSTALLING
4. SOAK PIT BEFORE AND AFTER INSTALLING PLANT



2 GROUNDCOVER PLANTING

Scale: NTS

Overview

The proposed mitigation plan fulfills the requirements of LUC 20.25H.220(B). The plan seeks to restore and enhance portions of the Lake Washington shoreline buffer and setback. To achieve this, the plan calls for the enhancement of 2,224 square feet of the buffer and portions of the setback through the planting of native trees, shrubs, and groundcover. Species include vine maple, shore pine, red flowering currant, baldhip rose, sub-alpine spirea, evergreen huckleberry, tufted hair grass, Idaho fescue, dull mahonia, coast penstemon, sand strawberry, wood sorrel, and large leaf lupine.

Maintenance and Monitoring Plan

A five-year maintenance and monitoring plan is proposed to ensure and document the plan meets performance standards.

Goals

- 1) Within the proposed mitigation areas, establish dense native vegetation that is appropriate to the eco-region and site.
- 2) Where indicated on the plan, planted mitigation areas will remain substantially vegetated with a preponderance of native plants and will contain little invasive or noxious weed cover.
- 3) Increase habitat cover, refuge and food resources for herptiles, small mammals, and invertebrates. In addition to cover and food resources, provide perching habitat for native birds.

Performance Standards

The standards listed below will be used to judge the success of the installation over time. If performance standards are met at the end of Year 5, the site will then be deemed successful and the performance security bond will be eligible for release by the City of Bellevue.

- 1) Survival: Achieve 100% survival of installed plants by the end of Year 1. This standard can be met through plant establishment or through replanting as necessary to achieve the required numbers.
- 2) Species diversity: Establish at least three native woody species by Year 3 and maintain this diversity through Year 5. Native volunteer species may count towards this standard.
- 3) Native cover:
 - a. Within tree and shrub- planted areas, achieve 40% cover of native trees and shrubs by Year 2. Native volunteer species may count towards this cover standard.
 - b. Within tree and shrub planted areas, achieve 60% cover of native trees and shrubs by Year 3. Native volunteer species may count towards this cover standard.
- 4) Invasive cover: Aerial cover for all non-native, invasive and noxious weeds will not exceed 10% at any year during the monitoring period. Invasive plants include Himalayan blackberry (*Rubus armeniacus*), cut leaf blackberry (*Rubus laciniatus*), cherry (hedge) laurel (*Prunus laurocerasus*), purple loosestrife (*Lythrum salicaria*), yellow-flag iris (*Iris pseudacorus*), reed canarygrass (*Phalaris arundinacea*), morning glory/bindweed (*Convolvulus arvensis*), English holly (*Ilex aquifolium*), and ivy species (*Hedera* spp.).

Monitoring Methods

This monitoring program is designed to track the success of the mitigation site over time and to measure the degree to which it is meeting the performance standards outlined in the preceding section.

An as-built plan will be prepared by the restoration professional (Watershed Company [(425) 822-5242] personnel, or other persons qualified to evaluate environmental restoration projects) prior to the beginning of the monitoring period. The as-built plan will be a mark-up of the planting plans included in this plan set. The as-built plan will document any departures in plant placement or other components from the proposed plan.

Monitoring will take place once annually in the fall for five years. Year 1 monitoring will commence in the first fall subsequent to successful installation as documented in the as-built plan.

The formal monitoring visit shall record and report the following in an annual report submitted to the City of Bellevue:

- 1) Visual assessment of the overall site.
- 2) Year 1 counts of live and dead woody plants by species. Year 2 through Year 5 counts of established woody plants by species.
- 3) Counts of dead plants where mortality is significant in any monitoring year.
- 4) Estimate of native woody species cover.
- 5) Estimate of non-native, invasive weed cover.
- 6) Tabulation of established native species, including both planted and volunteer species.
- 7) Photographic documentation from at least three fixed reference points.
- 8) Any intrusions into or clearing of the planting areas, vandalism, or other actions that impair the intended functions of the mitigation area.
- 9) Recommendations for maintenance or repair of any portion of the mitigation area.

Construction Notes and Specifications

Note: specifications for items in bold can be found below under "Material Specifications and Definitions."

Note: The Watershed Company [(425) 822-5242] personnel, or other persons qualified to evaluate environmental restoration projects, will monitor:

- 1) All site preparation
 - a) Soil preparation.
 - b) Mulch placement.
- 2) Plant material inspection
 - a) Plant material delivery inspection.
 - b) 100% plant installation inspection.

General Work Sequence

- 1) All plant installation is to take place during the dormant season (October 15th - December 15th) for best survival.
- 2) For all areas to be planted, install a four inch depth of fine vegetable compost, Cedar Grove or approved equal. Rototill into soil to a depth of 12 inches.
- 3) Prepare a planting pit for each plant and install per the planting details (see this sheet).
- 4) Mulch the entire planted area with wood chip mulch, four inches thick.
- 5) Install a temporary or permanent irrigation system to provide full coverage to all plants within the restoration area.

Material Specifications and Definitions

- 1) **Fertilizer:** Slow release, granular PHOSPHOROUS-FREE fertilizer. Follow manufacturer's instructions for application. Keep fertilizer in a weather-tight container while on site. Note that fertilizer is to be applied only in Years 2 through 5 and not in the first year.
- 2) **Irrigation system:** Automated system capable of delivering at least one inch of water per week from June 1 through September 30 for a minimum of the first two years following installation.
- 3) **Restoration Professional:** The Watershed Company [(425) 822-5242] personnel, or other persons qualified to evaluate environmental restoration projects.
- 4) **Wood chip mulch:** Arborist chips (chipped woody material) approximately 1 inch minimum to 3 inches in maximum dimension (not sawdust or coarse hog fuel). This material is commonly available in large quantities from arborists or tree-pruning companies. This material is sold as "Animal Friendly Hog Fuel" at Pacific Topsoils [(800) 884-7645]. Mulch must not contain appreciable quantities of garbage, plastic, metal, soil, and dimensional lumber or construction/demolition debris.

Contingencies

If there is a significant problem with the mitigation areas meeting performance standards, a contingency plan will be developed and implemented. Contingency plans can include, but are not limited to: soil amendment; additional plant installation; and plant substitutions of type, size, quantity and location.

Maintenance

The site will be maintained in accordance with the following instructions for three years following completion of the construction.

- 1) Follow the recommendations noted in the previous monitoring site visit.
- 2) General weeding for all planted areas:
 - a. At least twice yearly, remove all competing weeds and weed roots from beneath each installed plant and any desirable volunteer vegetation to a distance of 18 inches from the main plant stem. Weeding should occur at least twice during the spring and summer. Frequent weeding will result in lower mortality, lower plant replacement costs, and increased likelihood that the plan meets performance standards by Year 5.
 - b. More frequent weeding may be necessary depending on weed conditions that develop after plan installation.
 - c. Do not weed the area near the plant bases with string trimmer (weed whacker/weed eater). Native plants are easily damaged or killed, and weeds easily recover after trimming.
 - d. Selective applications of herbicide may be needed to control invasive weeds, especially when intermixed with native species. Herbicide application, when necessary, shall be conducted only by a state-licensed applicator. Use only herbicide formulations approved for aquatic areas.
- 3) Apply slow release granular fertilizer to each installed plant annually in the spring (by June 1) of Years 2 through 5. Do not apply fertilizer to inundated or ponded areas or lakeshore areas that may become inundated.
- 4) Replace mulch as necessary to maintain a 4-inch-thick layer, retain soil moisture, and limit weeds.
- 5) Replace each plant found dead in the summer monitoring visits during the upcoming fall dormant season (October 15th - December 15th).
- 6) The homeowner will ensure that water is provided for the entire planted area with a minimum of 1 inch of water provided per week from June 1 through September 30 for the first two years following installation through the operation of a temporary irrigation system. Less water is needed during March, April, May and October.

75 CASCADE KEY RESIDENCE
SHORELINE MITIGATION PLAN
PREPARED FOR: HORNER
DESIGN ASSOCIATES
SITE ADDRESS: 75 CASCADE KEY
BELLEVUE, WA 98006

NO.	DATE	DESCRIPTION	BY		
			CL	CL	ARCL
1	5-1-14	CLIENT REVIEW SET			
2	5-8-14	PERMIT SET			
3	5-27-14	REVISED SITE PLAN			

SHEET SIZE:
ORIGINAL PLAN IS 22" x 34".
SCALE ACCORDINGLY.

PROJECT MANAGER: KB
DESIGNED: BS/CL
DRAFTED: CL
CHECKED: CL
JOB NUMBER:

140309
SHEET NUMBER:

W4 OF4