



City of Bellevue
Development Services Department
Land Use Staff Report

Proposal Name: Murray Residence

Proposal Address: 2239 Killarney Way

Proposal Description: The applicant requests a Critical Areas Land Use Permit to modify steep slope critical area, critical area buffers, and structure setback for the construction of a single family residence with associated retaining wall and driveway access improvements. The project also includes associated new and repaired pervious patios, pathways and steps within the steep slope critical area, buffer, structure setback and the shoreline buffer and structure setback. The project includes a habitat restoration plan to mitigate for modified critical areas, buffers, and structure setbacks.

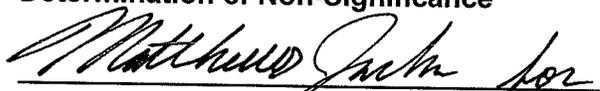
File Number: 07-112292-LO

Applicant: Ross and Katherine Murray

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

Planner: Drew Folsom, Planner

**State Environmental Policy Act
Threshold Determination:** **Determination of Non-Significance**



Carol V. Helland, Environmental Coordinator
Development Services Department

Director's Decision: **Approval with Conditions**



Carol V. Helland, Land Use Director
Development Services Department

Application Date: April 12, 2007
Notice of Application Publication Date: June 21, 2007
Decision Publication Date: November 12, 2009
Project/SEPA Appeal Deadline: November 30, 2009

For information on how to appeal a proposal, visit Development Services Center at City Hall or call (425) 452-6800. Comments on State Environmental Policy Act (SEPA) Determinations can be made with or without appealing the proposal within the noted comment period for a SEPA Determination. 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. Environmental Checklist
2. Critical Areas Report and Restoration Plan (The Berger Partnership)
3. Geotechnical Design Report (Nelson Geotechnical Associates)

I. Proposal Description

The applicant requests Critical Areas Land Use Permit to modify steep slopes and the associated critical area and structure setbacks to demolish and rebuild a single family residence, improve driveway access, and remove and rebuild an associated retaining wall. Included in the application is a proposal to remove and replace an existing path, steps, storm drainage lines, and non native vegetation within the steep slope critical area, buffer and structure setback. The proposal will also add a pervious pathway and patio area within the shoreline critical area buffer, shoreline structure setback, and the toe of steep slope structure setback. All areas of temporary disturbance will be fully restored. Permanent disturbance will be mitigated through the removal of invasive and non native vegetation and the replanting with native vegetation an approximately 4,000 square foot area within the steep slope critical areas, and an approximately 300 square foot area located within the toe of steep slope structure setback and the shoreline critical area buffer.

LUC 20.25H.095.C.2 allows for the modification of critical area, critical area buffers and structure setback through a critical areas report. The critical areas report is a mechanism by which certain LUC requirements may be modified for a specific proposal. The critical areas report is intended to provide flexibility for sites where the expected critical areas functions and values are not present due to degraded conditions. The slopes and the shoreline setback areas are degraded in function and value because they lack native vegetation and proper storm water dispersal. Therefore, the slopes and shoreline critical areas and associated buffers are not fully performing their water quality and habitat functions.

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

A. Site Description

The project site is located in southwest Bellevue and accessed from Killarney Way. The site is characterized by two steep slopes and the eastern shore of Lake Washington. The site is currently developed with a single family residence, associated driveway, pathways, and retaining walls. The single family residence is located within a relatively flat area between the steep slopes.

Vegetation within the steep slopes and shoreline buffer consists primarily of non native and invasive species (Portuguese Laurel, English Ivy, etc.). Significant trees are located near the existing single family residence and along the eastern edge of the site. No on-site significant trees are located within 100 feet of the shoreline.

Figure 1: Project Location



B. Zoning

The subject property is zoned R-1.8, Single Family Residential. The site lies within the Southwest Bellevue subarea and has a Comprehensive Plan land use designation of Single Family Low. Due to the presence of shoreline geologic hazard-steep slope critical area; the site is in the Shoreline and Critical Areas Overlay Districts governed by the regulations in LUC 20.25E and LUC 20.25H.

C. Land Use Context

The property is located in a community of single-family homes. Lake Washington borders the site to the west. To the east is Killarney Way. Single family residences are located to the north and south. Access to the lot is gained via an existing driveway within the eastern steep slope and connecting to Killarney Way.

D. Critical Areas Functions and Values

i. Geologic Hazard Areas

Geologic hazards pose a threat to the health and safety of citizens when development is inappropriately sited in areas of significant hazard. Some geologic hazards can be reduced or mitigated by engineering, design, or modified

construction practices. When technology cannot reduce risks to acceptable levels, building in geologically hazardous areas is best avoided.

Steep slopes may serve several other functions and possess other values for the City and its residents. Some of Bellevue's remaining large blocks of forest are located in steep slope areas, providing habitat for a variety of wildlife species and important linkages between habitat areas in the City. These steep slope areas also act as conduits for groundwater, which drains from hillsides to provide a water source for the City's wetlands and stream systems. Vegetated steep slopes also provide a visual amenity in the City, providing a "green" backdrop for urbanized areas enhancing property values and buffering urban development.

A topographic survey submitted in support of this application identified two regulatory geological hazard areas - steep slopes located on the eastern and western areas of the lots. The steep slopes continue off of the property to the neighboring properties to the north and south. Steep slope critical areas are afforded a 50-foot critical area buffer, measured from the top-of-slope, and a 75-foot structure setback, measured from the toe of slope.

The applicant is proposing a garage and retaining wall to be located within the base of the eastern steep slope. The applicant is also proposing to demolish the existing single family residence and replace it with a new single family residence. The existing single family residence and associated decks and pathways are located within the eastern slope's toe of slope structure setback and the western slope's critical area buffer. The new single family residence will also be located within the western slope's top of slope critical area buffer with some areas of the proposed house approximately 5-10 feet closer than the existing residence. The applicant proposes a minimum steep slope critical buffer of 3 feet from the top of the western steep slope. In addition, within the western steep slope the applicant will replace an existing pathway and small retaining walls with a new pathway and small retaining walls.

A geotechnical evaluation was prepared for the applicant by Nelson Geotechnical Associates, Inc. The geotechnical report reviewed the proposed home and all disturbances to the steep slopes and their associated buffers and structure setbacks. Nelson Geotechnical Associates, Inc. performed a review of the pertinent geological maps, conducted a site reconnaissance to observe local topographic features, and excavated three borings to delineate the site soil conditions. The geotechnical engineer states that following the recommended construction methods the steep slope critical buffer can be reduced or completely removed. The geotechnical engineer also states that "the site improvements are designed such that the hazard to the site and adjacent properties is less than or equal to that which would exist if the site was not modified."

The applicant has proposed to mitigate disturbance of the steep slope by providing

a native plant restoration for an approximately 4,000 square foot area within steep slope critical areas, and an approximately 300 square foot area the within steep slope structure setback and the shoreline critical area buffer. This plan includes new native trees, shrubs, and ground cover based on the templates in the City of Bellevue Critical Areas Handbook. See related conditions of approval in Section X.

ii. 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 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.

The submitted boundary and topographic survey illustrates that the western boundary of the property is adjacent to Lake Washington. Lake Washington is within the regulatory jurisdiction of the Shoreline Overlay District in LUC 20.25E. The Shoreline Overlay District applies to all lands extending landward for 200 feet in all directions as measured on the horizontal plane from the OHWM. The property is considered developed, and therefore the first 25 feet landward of the OHWM is afforded a critical area buffer and an additional 25-foot structure setback.

The applicant is proposing to construct a single-family residence for the owner's family's use. The applicant also proposes a pervious pathway and steps within the shoreline primary buffer and a pervious patio within the shoreline structure setback. These actions are exempt from the requirement to obtain a Shoreline Substantial Development Permit pursuant to LUC 20.25E.050.G as they are associated with the construction of a single family residence, however they still must adhere to the performance standards set forth in LUC 20.25E.080.B and 20.25E.080.Q.

The applicant has proposed to mitigate disturbance of the shoreline buffer by removing English ivy and lawn and replanting with native vegetation approximately 300 square feet within the steep slope structure setback and the shoreline critical area buffer. This plan includes new trees, shrubs, and ground cover based on the templates in the City of Bellevue Critical Areas Handbook. See related conditions of approval in Section X.

III. Consistency with Land Use Code Requirements:

A. Zoning District Dimensional Requirements:

The property is zoned R-1.8. The proposal is consistent with the underlying zoning district and applicable dimensional requirements based on the materials submitted.

BASIC INFORMATION			
Zoning District	R-1.8		
Gross Site Area	14,232 square feet		
Critical Area or Critical Area Buffer	6,720 square feet (steep slope/shoreline)		
ITEM	REQ'D/ALLOWED	PROPOSED	COMMENT
Building Setbacks			Dimensional requirements may be modified pursuant to 20.25H.040 to avoid critical area impacts
Front Yard	30 feet	30 feet	
Rear Yard	25 feet	25 feet or greater	
Min. Side Yard	5 feet	5 feet or greater	
2 Side Yard	15 feet	15 feet or greater	
Access Easement	10-feet	10 feet or greater	

B. Consistency with Critical Areas Performance Standards LUC 20.25H:

i. Performance Standards for Landslide Hazards and Steep Slopes LUC 20.25H.125:

The structures and improvements are designed and sited to minimize any disturbance to the natural contours of the slopes. The foundation of the residence will be located within a relatively flat area between the two slopes. Most of the proposed house will be located within the previous footprint of the existing house. The structures and improvements are being sited to minimize the removal of significant desirable vegetation to the greatest extent possible. On the south side of the proposal the slope will be restored to a more natural grade.

The submitted geotechnical analysis of the proposed development finds that there shall be no greater risk or need for increased buffers on neighboring properties. The design of the structure and appurtenances minimizes the amount of impervious surface within the critical area and critical area buffer, to the greatest extent possible given the proposed footprint of the single family residence.

ii. Performance Standards for Shorelines LUC 20.25E

The property is adjacent to Lake Washington and the proposed development area of the property is within the jurisdictional areas of the Shoreline Overlay District. The project is consider exempt from the requirement to obtain a Shoreline Substantial Development Permit pursuant to LUC 20.25E.050.G. The project is required to meet the general regulations applicable to all land use districts and activities in the Shoreline Overlay District.

All federal and state water quality and effluent standards will be met through monitoring of the turbidity of the lake periodically during construction. The subsequent development proposal contains an enhancement plan that includes

removal of lawn and invasive English Ivy and replanting 300 square feet of area with native vegetation. The removal of vegetation from all critical area and critical area buffers will be mitigated and/or restored per a mitigation and restoration plan consistent with LUC 20.25H.210.

The maximum height of the proposed structure will conform to the regulations pursuant to LUC 20.20.010 and 20.25E.080. The proposal will limit the use of herbicides, pesticides and/or fertilizers and will be compatible with the City's "Environmental Best Management Practices." Adequate storm drainage and sewer facilities will be operational prior to completion of the new single-family residence. Storm drainage facilities will be separated from the sewage disposal systems. See related condition of approval in Section X.

**iii. Performance Standards for Shorelines - Residential Development
Regulations LUC 20.25E.080.Q:**

The proposed single-family structure will be located outside of the shoreline critical area and shoreline critical area buffer. No fences are proposed. As stated above, the maximum height of the proposed single-family structure shall not exceed 35 feet from average existing grade pursuant to LUC 20.25E.080 and 20.25E.071.

The subsequent development proposal will contain a plan that includes enhancement of shoreline vegetation and for control of erosion. The removal of vegetation from the critical areas and shoreline critical area buffer will be mitigated and /or restored per the mitigation and restoration plan.

**iv. Performance Standards for Habitat Improvement Projects LUC
20.25H.055.C.3.j**

The project is also classified as a habitat improvement project. It is classified as such because it has been approved by the Director in accordance with the provisions of an approved **LUC 20.25H.125** Critical Areas Report. The primary habitat improvement component of the project is the removal of non-native and invasive species and the replanting with native vegetation located within an approximately 4,000 square foot area of steep slope and a 300 square foot area of shoreline buffer and toe of steep slope buffer.

C. Consistency with Critical Areas Report LUC 20.25H.230:

The applicant supplied a complete critical areas report prepared by Berger Partnership, a qualified professional. The report meets the minimum requirements for a critical areas report per LUC 20.25H.250.

IV. Public Notice and Comment

Application Date:	April 10, 2007
Public Notice (500 feet):	June 21, 2007
Minimum Comment Period:	July 6, 2007

The Notice of Application for this project was published in the King County Journal and the City of Bellevue weekly permit bulletin on June 21, 2007. It was mailed to property owners within 500 feet of the project site. Several comments have been received from the public as of the writing of this staff report.

The comments expressed the desire for more extensive planting of the shoreline buffer with native vegetation, use of herbicides and pesticides, and construction parking and logistics.

City Response:

The mitigation plan as submitted details the removal of invasive vegetation within the steep slope areas on the site and a 300 square foot area located within the toe of slope and shoreline buffer. These areas will be replanted with 3 tiers of native vegetation including trees, shrubs and groundcover. The comment suggested removing additional area of existing lawn near the shoreline and replanting this area with native vegetation. As part of the approval process the City reviewed the submitted geotechnical and critical areas report. Based on these documents, and the proposed replanting plan, the City feels the proposed mitigation replanting plan is adequate to mitigate the disturbance of the toe of steep slope and shoreline buffers. No additional shoreline buffer mitigation planting will be required.

As a condition of approval of this permit the applicant must submit as part of the required Single Family Building Permit information regarding the use of pesticides, insecticides, and fertilizers in accordance with the City of Bellevue's "Environmental Best Management Practices".

The applicant will be required to apply for and receive a right-of-way use permit prior to the issuance of the proposed single family development. As part of this permit the applicant will detail the use of the right of way for construction parking and haul routes.

See conditions of approval in Section X.

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 environmental review indicates no probability of significant adverse environmental impacts occurring as a result of the proposal. The Environmental Checklist submitted

with the application adequately discloses expected environmental impacts associated with the project. The City codes and requirements, including the Clear and Grade Code, Utility Code, Land Use Code, Noise Ordinance, Building Code and other construction codes are expected to mitigate potential environmental impacts. Therefore, issuance of a Determination of Non-Significance (DNS) is the appropriate threshold determination under the State Environmental Policy Act (SEPA) requirements.

A. Earth and Water

A temporary erosion and sedimentation control plan is included in the project plans, and addresses all requirements for restoring the site to its current condition as well as erosion and sedimentation best management practices. Erosion and sediment control best management practices include the installation of silt fencing around the work area and covering exposed soils to prevent migration of soils to the shoreline. The applicant will also be required to submit information regarding the use of pesticides, insecticides, and fertilizers to avoid impacts to water resources. See Section X for related conditions of approval.

B. Animals

The property contains a variety of habitat types. The property is adjacent to Lake Washington and contains several large conifers. There are three bald eagle nests within one mile of the property. Nearshore habitats of Lake Washington are primary rearing and residence areas for juvenile chinook, coho, sockeye and kokanee salmon. Puget Sound Chinook are listed as threatened under the federal Endangered Species Act, while coho are candidates for listing.

Impacts from the proposed development will be minimized through the removal of as few significant trees as possible. The trees to be removed are located in areas in close proximity to the existing and proposed residence and the entrance to the driveway. The steep slopes and shoreline areas contain vegetation that is primarily invasive shrubs, lawn and English ivy. Those portions of the site that provide poor habitat will be enhanced through the removal of invasive, non-native species and the installation of desirable native plantings including trees, shrubs, and groundcover.

C. Plants

The property contains a variety of vegetation. The property is adjacent to Lake Washington and contains several large conifers. Impacts from the proposed development will be minimized through the removal of as few significant trees as possible. The trees to be removed are located in areas in close proximity to the existing and proposed residence and the entrance to the driveway. The steep slopes and shoreline areas contain vegetation that is primarily invasive shrubs, lawn and English ivy.

The vegetation of the site will be enhanced through the removal of invasive, non-native

species and the installation of desirable native plantings including trees, shrubs, and groundcover. Mitigation for temporary and permanent disturbance will be approved pursuant to an approved re-vegetation and monitoring plan. See Section X for related conditions of approval.

Mitigation for temporary and permanent disturbance will be approved pursuant to an approved re-vegetation and monitoring plan. A complete restoration plan with monitoring performance standards and contingency plan has been submitted. It will be implemented as a condition of the subsequent clearing and grading permit. See Section X for related conditions of approval.

D. Noise

The site is adjacent to single-family residences whose residents are most sensitive to disturbance from noise during evening, late night and weekend hours when they are likely to be at home. Construction noise will be limited by the City's Noise Ordinance (Chapter 9.18 BCC) which regulates noise related to construction and noise levels. See Section X for a related condition of approval.

VII. Changes to proposal as a result of City review

The City conducted a review of the applicant's proposed plan. The following is a brief summary of modifications that were made to the applicant's proposal as a result of the City's review.

- Elimination of impervious surface and replacement with pervious surface within the steep slope, steep slope buffer, structure back, shoreline buffer, and structure setback.
- Reduction of the disturbance of shoreline buffer.
- Reduction of retaining wall height.

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: As demonstrated in the geotechnical report completed by Nelson Geotechnical Associates, Inc. in 2006, with addendums in 2007, and the required revegetation plan, the proposed reduction of critical area, critical area buffers, and critical area structure setbacks will lead to levels of protection of the critical area steep slope at least as protective as the application of the regulations and standards of land use code 20.25H.

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

Finding: An assurance device in the amount of 150 percent of the cost of materials and installation labor for preparing and planting the site per the revegetation plan will be required. 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: As demonstrated in the geotechnical report completed by Nelson Geotechnical Associates, Inc. in 2006, with addendums in 2007, and the required revegetation plan, the proposed reduction of critical, critical area buffers, critical area structure setbacks are not detrimental to the functions of the critical area and critical area buffers off-site.

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

Finding: The proposed development of a single family home is compatible with other uses and development in the R-1.8 zoning 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 proposed activity is required to obtain a new single family combination building permit and right-of-way use permit from the City of Bellevue.

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 proposal is designed to minimize impacts to the critical area and critical area buffer by predominately placing the proposed home within the footprint of the existing home. The driveway will be located only where necessary to gain access to the property. The pathways and patios will be impervious surface.

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

Finding: Section III above discusses how the proposal incorporates the applicable performance standards.

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

Finding: The area is adequately serviced by public facilities. The proposal will not change the need for public facilities.

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

Finding: A mitigation and restoration plan consistent with the requirement of LUC 20.25H.210 has been prepared and submitted along with the project's critical areas report. The applicant will be required to implement the site mitigation/restoration plan.

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

Finding: As discussed in Section III of this report, the proposal complies with all other applicable requirements of the Land Use Code.

IX. Conclusion and Decision

After conducting the various administrative reviews associated with this proposal, including Land Use Code consistency, SEPA, City Code and Standard compliance reviews, the Development Services Director does hereby **approve with conditions** the proposal to construct a single family residence and associated development within the steep slope and shoreline critical areas/buffers at 2239 Killarney Way.

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 Clearing and Grading 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	Tom McFarlane, 425-452-5207
Land Use Code- BCC 20.25H	Drew Folsom, 425-452-4441
Noise Control- BCC 9.18	Drew Folsom, 425-452-4441
Right of Way BCC 23.76	Tim Stever, 425-452-4294

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

1. Restoration for Areas of Temporary Disturbance: A restoration plan for all areas of temporary disturbance is required to be submitted for review and approval by the City of Bellevue prior to the issuance of the Single Family Building Permit. The plan shall include the documentation of existing site conditions and shall identify the restoration measures to return the site to its existing conditions per LUC 20.25H.220.H.

Authority: Land Use Code 20.25H.220.H
Reviewer: Drew Folsom, Development Services Department

2. Restoration for Areas of New Permanent Disturbance: A restoration plan for all areas of permanent new disturbance is required to be submitted for review and approval by the City of Bellevue prior to issuance of the Single Family Building Permit.

Authority: Land Use Code 20.25H.220H
Reviewer: Drew Folsom, Development Services Department

3. Rainy Season restrictions: Due to the proximity to Steep Slopes and Shoreline, no clearing and grading activity may occur during the rainy season, which is defined as November 1 through April 30, or as provided in the Clearing and Grading Code at construction permit application, 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: Tom McFarlane, Development Services Department

4. Pesticides, Insecticides, and Fertilizers: The applicant must submit as part of the required Single Family Building Permit information regarding the use of pesticides, insecticides, and fertilizers in accordance with the City of Bellevue's "Environmental Best Management Practices".

Authority: Land Use Code 20.25H.220.H
Reviewer: Drew Folsom, Development Services Department

5. Noise Control: The proposal will be subject to construction noise control 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. Upon written request to the Development Services Department, work hours may be extended to 10 pm if the criteria for extension of work hours as stated in BCC 9.18 can be met.

Authority: Bellevue City Code 9.18
Reviewer: Drew Folsom, Development Services Department

6. Landscape Maintenance Security: The applicant must submit a combined Landscape Installation and Maintenance Security in the amount of 150 percent of the cost of site restoration, including labor and materials. The security may be released after the vegetation has successfully been installed and maintained for a period of five years.

Authority: Land Use Code Section 20.25H.125.J and 20.25H.220.F
Reviewer: Drew Folsom, Development Services Department

7. Geotechnical Recommendations: The project geotechnical engineer or his representative must be onsite during critical earthwork operations. The engineer must submit field reports in writing to the clear and grade inspector for soils verification and construction. The development must be constructed in accordance with the recommendations presented in the geotechnical report prepared by Nelson Geotechnical Associates, Inc.

Authority: Land Use Code Section 20.25H.125
Reviewer: Drew Folsom, Development Services Department

8. Hold Harmless Agreement: Prior to building permit or clearing and grading permit approval, the applicant or property owner shall submit a hold harmless agreement releasing the City of Bellevue from any and all liability associated with the installation of slope stabilization measures. The agreement must meet city requirements and must be reviewed by the City Attorney's Office for formal approval.

Authority: Land Use Code 20.30P.170
Reviewer: Drew Folsom, Development Services Department

9. Right-of-Way Use: The proposed construction of the single family residence will likely require the use of a portion of the right-of-way adjacent to the subject property. Any temporary use of the right-of-way requires a permit from the Transportation Department, and may require a traffic control plan if any lanes will be temporarily closed.

Authority: Bellevue City Code 14.30
Reviewer: Tim Stever, Transportation Department

10. Building Permit Required: Prior to the commencement of any development activity on this site, the applicant shall submit application for single family building permit and shall include with the application for City review a copy of the proposed mitigation, restoration, maintenance, and monitoring plan, as well as the engineered retaining wall, rockeries, and foundation design. The proposed development must comply with the requirements of LUC 20.20.010 and is subject to standard single family review.

Authority: Land Use Code 20.30P.140
Reviewer: Drew Folsom, Development Services Department

ENVIRONMENTAL CHECKLIST

4/18/02

If you need assistance in completing the checklist or have any questions regarding the environmental review process, please visit or call the Permit Center (425-452-6864) between 8 a.m. and 4 p.m., Monday through Friday (Wednesday, 10 to 4). Our TTY number is 425-452-4636.

BACKGROUND INFORMATION

Property Owner: KATHERINE & ROSS MURRAY

Proponent:

Contact Person: SCOTT VAJDA @ PETER STONER ARCHITECTS
(If different from the owner. All questions and correspondence will be directed to the individual listed.)

Address: 1121 DEXTER AVE. N., SEATTLE, WA 98109.

Phone: 206.284.2205

Proposal Title: CRITICAL AREAS LAND USE PERMIT - MURRAY RESIDENCE

Proposal Location: 2239 KILLARNEY WAY (100th AVE SE)
(Street address and nearest cross street or intersection) Provide a legal description if available.

Please attach an 8 1/2" x 11" vicinity map that accurately locates the proposal site.

Give an accurate, brief description of the proposal's scope and nature:

1. General description: DEMOLISH (E) HOUSE & GARAGE, BUILD NEW HOUSE/GARAGE
REPLACE DRIVEWAY & PATHWAY
2. Acreage of site: 14,001 S.F.
3. Number of dwelling units/buildings to be demolished: (1)
4. Number of dwelling units/buildings to be constructed: (1)
5. Square footage of buildings to be demolished: 1817
6. Square footage of buildings to be constructed: 2878
7. Quantity of earth movement (in cubic yards): 240 C.Y.
8. Proposed land use: SINGLE FAMILY RES.
9. Design features, including building height, number of stories and proposed exterior materials:
30', 3 STORIES, WOOD & STUCCO SIDING, METAL ROOF
10. Other

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APR 17 2007
PERMIT PROCESSING

D.F. 4/17/07

Estimated date of completion of the proposal or timing of phasing: **LATE 2007**

Do you have any plans for future additions, expansion, or further activity related to or connected with this proposal? If yes, explain. **NO**

List any environmental information you know about that has been prepared, or will be prepared, directly related to this proposal. **NELSON GEOTECHNICAL ASSOCIATES, INC.**

- 1. GEOTECHNICAL ENGINEERING EVALUATION **MAY 23, 2006**
- 2. SUPPLEMENTAL GEOTECHNICAL LETTER **MARCH 22, 2007**

Do you know whether applications are pending for governmental approvals of other proposals directly affecting the property covered by your proposal? If yes, explain. List dates applied for and file numbers, if known.

NONE

List any government approvals or permits that will be needed for your proposal, if known. If permits have been applied for, list application date and file numbers, if known.

BUILDING PERMIT

Please provide one or more of the following exhibits, if applicable to your proposal. (Please check appropriate box(es) for exhibits submitted with your proposal):

- Land Use Reclassification (rezone) Map of existing and proposed zoning
- Preliminary Plat or Planned Unit Development
Preliminary plat map
- Clearing & Grading Permit
Plan of existing and proposed grading
Development plans
- Building Permit (or Design Review)
Site plan
Clearing & grading plan
- Shoreline Management Permit
Site plan

A. ENVIRONMENTAL ELEMENTS

1. Earth

a. General description of the site: Flat Rolling Hilly Steep slopes Mountains Other

b. What is the steepest slope on the site (approximate percent slope)? **100%**

c. What general types of soil are found on the site (for example, clay, sand, gravel, peat, and muck)? If you know the classification of agricultural soils, specify them and note any prime farmland. **SURFICIAL TOPSOIL OVER SAND, SILT, GRAVEL & BOBBLES (NATIVE OUTWASH)**

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d. Are there surface indications or history of unstable soils in the immediate vicinity? If so, describe.

COMPETENT, STABLE SOILS EXCEPT SMALL AREA OF FILL DEPOSITED BY ORIGINAL CONSTRUCTION IN 1961.

e. Describe the purpose, type, and approximate quantities of any filling or grading proposed. Indicate source of fill.

NATIVE MATERIAL USED TO RAISE ELEVATION OF PARKING AREA & RESTORE ORIGINAL GRADE AT SOUTH PROPERTY LINE

f. Could erosion occur as a result of clearing, construction, or use? If so, generally describe.

EROSION INCIDENTAL TO CONSTRUCTION TO BE CONTROLLED.

g. About what percent of the site will be covered with impervious surfaces after project construction (for example, asphalt or buildings)?

38%

h. Proposed measures to reduce or control erosion, or other impacts to the earth, if any:

MAINTAIN PORTIONS OF EXISTING FOUNDATION & GRADING TO MINIMIZE EXCAVATION. RESTORE (E) GRADES @ SOUTH TO DECREASE SLOPE. Erosion Control Further Mitigated PER BCE 23.76.090 "EROSION AND SEDIMENTATION"

2. AIR

a. What types of emissions to the air would result from the proposal (i.e. dust, automobile odors, and industrial wood smoke) during construction and when the project is completed? If any, generally describe and give approximate quantities if known.

NORMAL CONSTRUCTION TECHNIQUES

b. Are there any off-site sources of emissions or odor that may affect your proposal? If so, generally describe.

NO

c. Proposed measures to reduce or control emissions or other impacts to the air, if any:

NONE

3. WATER

a. Surface

(1) Is there any surface water body on or in the immediate vicinity of the site (including year-round and seasonal streams, saltwater, lakes, ponds, wetlands)? If yes, describe type and provide names. If

SITE IS LAKE WASHINGTON WATER FRONT 112007

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appropriate, state the stream or river it flows into.

SITE IS LAKE WASHINGTON WATERFRONT

- (2) Will the project require any work over, in, or adjacent to (within 200 feet) the described waters? If Yes, please describe and attach available plans.

YES SITE IS ALMOST ENTIRELY WITHIN 200' OF LAKE

- (3) Estimate the amount of fill and dredge material that would be placed in or removed from surface water or wetlands and indicate the area of the site that would be affected. Indicate the source of fill material.

NONE

- (4) Will the proposal require surface water withdrawals or diversions? Give general description, purpose, and approximate quantities if known.

NO

- (5) Does the proposal lie within a 100-year floodplain? If so, note location on the site plan.

NO

- (6) Does the proposal involve any discharges of waste materials to surface waters? If so, describe the type of waste and anticipated volume of discharge.

NO

b. Ground

- (1) Will ground water be withdrawn, or will water be discharged to ground water? Give general description.

NO

- (2) Describe waste material that will be discharged into the ground from septic tanks or other sources, if any (for example: Domestic sewage; industrial, containing the following chemicals...; agricultural; etc.) Describe the general size of the system, the number of such systems, the number of houses to be served (if applicable), or the number of animals or humans the system(s) are expected to serve.

NONE

D.P.
4/17/03

c. Water Runoff (Including storm water)

- (1) Describe the source of runoff (including storm water) and method of collection and disposal, if any (include quantities, if known). Where will this water flow? Will this water flow into other waters? If so, describe.

ROOF DOWNSPOUTS AND DRIVEWAY CATCH BASINS.
WATER WILL BE DIRECTED TO LAKE

- (2) Could waste materials enter ground or surface waters? If so, generally describe.

NO

- d. Proposed measures to reduce or control surface, ground, and runoff water impacts, if any:

OIL/WATER SEPARATOR, REPLANTING SLOPE w/ NATIVE VEGETATION,
REPLANT 300' ~~at~~ BASE OF SLOPE / SHOULDER w/ NATIVE VEGETATION.

4. Plants

- a. Check or circle types of vegetation found on the site:

- deciduous tree: alder, maple, aspen, other
 evergreen tree: fir, cedar, pine, other
 shrubs
 grass
 pasture
 crop or grain
 wet soil plants: cattail, buttercup, bulrush, skunk cabbage, other
 water plants: water lily, eelgrass, milfoil, other
 other types of vegetation

- b. What kind and amount of vegetation will be removed or altered?

SHRUBS, (6-8 TALL)

ADD TAPE

- c. List threatened or endangered species known to be on or near the site.

NOT KNOWN SALMON, EAGLE NEST ~~at~~ IN LAKE

- d. Proposed landscaping, use of native plants, or other measures to preserve or enhance vegetation on the site, if any:

EXTENSIVE USE OF NATIVE PLANTS REPLANTING STEEP
SLOPES: 300' S.F. OF TOP OF SLOPE / SHOULDER BUFFER.

D.J. 4/19/07
19/07

5. ANIMALS

a. Check or circle any birds and animals which have been observed on or near the site or are known to be on or near the site:

Birds: hawk, heron, eagle, songbirds, other:

Mammals: deer, bear, elk, beaver, other:

Fish: bass, salmon, trout, herring, shellfish, other:

b. List any threatened or endangered species known to be on or near the site.

NOT KNOWN

SALMON, EAGLE'S NEST w/in LAKE

c. Is the site part of a migration route? If so, explain.

NOT KNOWN

d. Proposed measures to preserve or enhance wildlife, if any:

STABILIZE STEEP SLOPES & BUFFERS.

TOP OF SLOPE
- BUFFER
REPLANT SLOPES WITH NATIVE
VEGETATION.

6. Energy and Natural Resources

a. What kinds of energy (electric, natural gas, oil, wood stove, solar) will be used to meet the completed project's energy need? Describe whether it will be used for heating, manufacturing, etc.

b. Would your project affect the potential use of solar energy by adjacent properties? If so, generally describe.

NO

c. What kinds of energy conservation features are included in the plans of the proposal? List other proposed measures to reduce or control energy impacts, if any:

STATE ENERGY CODE

7. Environmental Health

a. Are there any environmental health hazards, including exposure to toxic chemicals, risk of fire and explosion, spill, or hazardous waste, that could occur as a result of this proposal? If so, describe.

NO

(1) Describe special emergency services that might be required.

NONE

(2) Proposed measures to reduce or control environmental health hazards, if any.

NONE

Dr. G/12/07

b. Noise

- (1) What types of noise exist in the area which may affect your project (for example, traffic, equipment, operation, other)?

NONE

- (2) What types and levels of noise would be created by or associated with the project on a short-term or long-term basis (for example, traffic, construction, operation, other)? Indicate what hours noise would come from the site.

NORMAL LIGHT CONSTRUCTION DURING DAYLIGHT.

- (3) Proposed measures to reduce or control noise impacts, if any:

NONE

NOISE FURTHER MITIGATED PER
BCC 9.18 "NOISE CONTROL"

8. Land and Shoreline Use

- a. What is the current use of the site and adjacent properties?

SINGLE FAMILY RESIDENTIAL

- b. Has the site been used for agriculture? If so, describe.

NO

- c. Describe any structures on the site.

(1) HOUSE (1) DETACHED CARPORT (1) DOCK

- d. Will any structures be demolished? If so, what?

YES. HOUSE & CARPORT

- e. What is the current zoning classification of the site?

R 1.8

- f. What is the current comprehensive plan designation of the site?

SF - L

- g. If applicable, what is the current shoreline master program designation of the site?

NOT KNOWN

- h. Has any part of the site been classified as an "environmentally sensitive" area? If so, specify.

YES STEEP SLOPE, SHORELINE BUFFER

- i. Approximately how many people would reside or work in the completed project?

(1)

- j. Approximately how many people would the completed project displace?

0

- k. Proposed measures to avoid or reduce displacement impacts, if any:

NONE

D.S. 6/19/07
10/26/07

- i. Proposed measures to ensure the proposal is compatible with existing and projected land uses and plans, if any: **CRITICAL AREA COMPLIANCE**

9. Housing

- a. Approximately how many units would be provided, if any? Indicate whether high, middle, or low-income housing. **(1) HIGH-INCOME**
- b. Approximately how many units, if any, would be eliminated? Indicate whether high, middle, or low-income housing. **0**
- c. Proposed measures to reduce or control housing impacts, if any: **NONE**

10. Aesthetics

- a. What is the tallest height of any proposed structure(s), not including antennas; what is the principal exterior building material(s) proposed? **30' WOOD, CONCRETE, GLASS, STONE, METAL**
- b. What views in the immediate vicinity would be altered or obstructed? **NONE**
- c. Proposed measures to reduce or control aesthetic impacts, if any: **NA**

11. Light and Glare

- a. What type of light or glare will the proposal produce? What time of day would it mainly occur? **NORMAL RESIDENTIAL**
- b. Could light or glare from the finished project be a safety hazard or interfere with views? **NO**

D.S.
4/18/03

c. What existing off-site sources of light or glare may affect your proposal?

NONE

d. Proposed measures to reduce or control light or glare impacts, if any:

NONE

12. Recreation

a. What designated and informal recreational opportunities are in the immediate vicinity?

NA

b. Would the proposed project displace any existing recreational uses? If so, describe.

NO

c. Proposed measures to reduce or control impacts on recreation, including recreation opportunities to be provided by the project or applicant, if any:

NONE

13. Historic and Cultural Preservation

a. Are there any places or objects listed on, or proposed for, national, state, or local preservation registers known to be on or next to the site? If so, generally describe.

NO

b. Generally describe any landmarks or evidence of historic, archeological, scientific, or cultural importance known to be on or next to the site.

NONE KNOWN

c. Proposed measures to reduce or control impacts, if any:

NONE

14. Transportation

a. Identify public streets and highways serving the site, and describe proposed access to the existing street system. Show on site plans, if any.

KILLARNEY WAY (100th AVE SE)

b. Is site currently served by public transit? If not, what is the approximate distance to the nearest transit stop?

c. How many parking spaces would be completed project have? How many would the project eliminate?

3 NONE ELIMINATED

d. Will the proposal require any new roads or streets, or improvements to existing roads or streets, not including driveways? If so, generally describe (indicate whether public or private).

NO

e. Will the project use (or occur in the immediate vicinity of) water, rail, or air transportation? If so, generally describe.

NO

D.A. 6/19/09

f. How many vehicular trips per day would be generated by the completed project? If known, indicate when peak volumes would occur.

NOT KNOWN

g. Proposed measures to reduce or control transportation impacts, if any:

NONE

15. Public Services

a. Would the project result in an increased need for the public services (for example: fire protection, police protection, health care, schools, other)? If so, generally describe.

NO

b. Proposed measures to reduce or control direct impacts on public services, if any.

NONE

16. Utilities

a. Circle utilities currently available at the site: electricity, natural gas, water, refuse service, telephone, sanitary sewer, septic system, other.

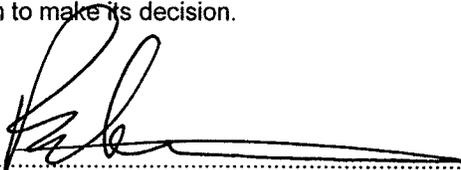
b. Describe the utilities that are proposed for the project, the utility providing the service, and the general construction activities on the site or in the immediate vicinity which might be needed.

SAME AS ABOVE EXISTING

Signature

The above answers are true and complete to the best of my knowledge. I understand that the lead agency is relying on them to make its decision.

Signature.....



Date Submitted.....

4.11.07

2/19/07
2/19/07

Murray Residence- Critical Areas Report



The Berger Partnership PS
Landscape Architecture

This report is based on the proposed re-development of a single family residence on the site. Determination of the critical slopes was performed by Hugh G Goldsmith and Associates and is incorporated in the proposed site plan. The critical areas found on site are comprised of (1) critical slope specifically characterized as slopes exceeding 40% slope and with a vertical change exceeding ten feet, and (2) approximately 44 linear feet of lake Washington shoreline.¹

Habitat Assessment (As per LUC 20.25H.165)

I. Existing Vegetation - Overview

The existing vegetation found within the critical areas and critical area buffers, both on site² and adjacent to the site³ is comprised of predominantly non-native species of trees and shrubs. The current function of the critical areas and buffers was evaluated as it relates to ecological benefit, specifically habitat associated with species of local importance, and erosion control.⁴

II. Critical Slope Evaluation

The primary vegetative cover on the majority of the critical slopes is comprised of *Prunus lusitanica* (Portugal Laurel). The laurel plantings were likely planted by the previous owner and are likely between thirty to fifty years in age. The stand has been repeatedly topped throughout its life to maintain views from the residence to the lake. The ecological benefit of the stand is primarily limited cover and forage for smaller birds. It provides limited protection of existing soils due to the density of the canopy preventing development of any understory cover. There are valuable native tree species on both adjacent properties, including several maples to the north and a Pacific Dogwood. The soils on site are characterized as well-drained sandy loam, typical to the region and will facilitate the proposed planting.

III. Shoreline Evaluation

The shoreline is comprised of turf and a limited section of Himalayan blackberry and English ivy adjacent to the shoreline. The turf edge provides some protection for sediment entering Lake Washington, but represents a potential negative ecological impact dependent upon the methods used to maintain it. The potential for non-point pollution of the water body from use of fertilizer, pesticides, and herbicides is high because a buffer does not exist between the turf and the top of the bulkhead.

Recommendations

I. Critical slope areas.

The goal for the critical slopes is to provide ecological benefit through a mixed species planting of native materials that will provide habitat, erosion control and biodiversity consistent with the native plant palette for the Lake Washington shoreline and consistent with the goals of the critical areas

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¹ Critical Area Site Plan, Murray Residence, The Berger Partnership

² Exhibit A, Critical Area Existing Vegetation, Murray Residence, The Berger Partnership

³ Exhibit B, Critical Area - Adjacent Property, Murray Residence, The Berger Partnership

⁴ Existing Site Survey, L 3.1, Murray Residence, The Berger Partnership.

Murray Residence- Critical Areas Report



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ordinance and Washington Dept. of Fish & Wildlife.⁵ Existing stands of mature trees & snags should be retained to encourage priority habitat of noted Washington species, such as Bald Eagle, Osprey, Pileated Woodpecker, Purple Martin & Vaux's Swift. Additional management strategies include tree plantings of Pacific Madrone, Big Leaf Maple, Douglas Fir and Dogwood to create a food supply and nesting place for Band-Tailed Pigeon and Western Big Eared Bat. The proposed plan will include emergent plantings along the shore⁶ (*Deschampsia caespitosa*, *Cornus stolonifera*, and *Juncus ensifolius*) to promote food and cover for band-tailed pigeon, grouse, wood duck, grosbeak, robin, thrush, cedar waxwing, and a variety of small mammals.⁷

The presence of invasive non-native plants is one of the biggest threats to native ecosystems, second only to habitat conversion.⁸ Therefore removal of non-native species, including invasive species is recommended. Plant material should be removed carefully with soil disturbance kept to a minimum. Stumps of larger woody species should be cut flush to grade and left intact to maintain current level of soil retention that the existing root systems provide. Additionally, sedimentation control measures should be in place before any clearing occurs. Placement of woody debris at or near the shoreline will provide priority habitat for noted Washington species, such as Harlequin duck, Bull trout and Chinook Salmon.

Site Development Impacts & Analysis

I. Impacts

As currently proposed, the planned improvements to the critical areas will include removal and replacement of vegetation. The cumulative impacts of this disturbance may cause some near-surface fill soils to erode. To mitigate this impact, maintaining adequate ground cover will provide the greatest reduction to the potential generation of turbid runoff and sediment transport. Significant vegetative stumps and root systems will be retained as well as the application of ground cover measures, such as erosion control matting. If construction activities commence during the local wet season (October 31st through March 31st), exposed soils should not remain uncovered for more than 2 days unless it is actively being worked.

II. Analysis

The level of protection and mitigation of the proposal is in alignment with the regulations and standards (20.25H.215 & 20.25H.210). The proposal minimizes impacts by incorporating appropriate TESC technology, and by field adjusting appropriate mitigation elements, such as retention of significant root mass in slopes, during construction (best management practices). It also takes affirmative steps, such as efficient site planning and restorative planting, to avoid or reduce impacts.⁹

⁵ Management Recommendations for Washington's Priority Habitats and Species Roderick, E. and R. Milner, eds. 1991. Washington Department of Wildlife, Olympia

⁶ Planting Plan, L5.0, Murray Residence, The Berger Partnership.

⁷ Restoring Wetlands in Washington, Publication #93-17, Department of Ecology

⁸ 2007 Washington Native Plant Society.

⁹ Planting Details, L 5.1, Murray Residence, The Berger Partnership.

Murray Residence- Critical Areas Report



The Berger Partnership PS
Landscape Architecture

The site plan proposes not only to repair and mitigate temporary disturbance activities, but to rehabilitate the existing condition, providing suitable habitat for the locally important species. It will reduce the impact over time of the current condition, of unstable soils and non-native invasive plantings by preservation and maintenance of the proposed native planting plan. The actions of the project will re-establish historic functions and processes in an area that was recently converted by humans to non-native planting. Experience has shown that chances of success are greatly increased by restoring degraded areas instead of creating new habitat.¹⁰

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III. Functions and Values

Both hydrologic and ecological processes on the site are strongly influenced by the current and future activities. The proposed plan implements a compatible land use activity and establishes a habitat diversity that will effectively restore critical habitat for desired wildlife species from the shoreline to the upland. Proposed features of the plan include emergent, shrub and forested canopy layers for birds, and buffers to protect native plants.

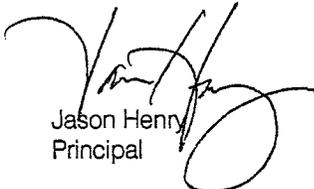
Proposed water quality improvements include slowing of water movement over the critical area slopes, via a vegetated swale and pervious paving in the driveway, reducing sedimentation and their associated pollutants to settle within the wetland substrate. The surfaces of leaves, stems and litter from proposed dense herbaceous and woody vegetation will catch and filter suspended sediments. Vegetation will also provide extensive attachment surfaces for bacteria, which are primary mechanisms for nutrient (nitrogen and phosphorous) reduction.¹¹

IV. Ongoing Management

The management of the restored site begins during the construction phase, controlling erosion and sedimentation, supervising the planting to ensure correct installation, and creating surface water runoff strategies that filter contaminants before arriving into the outfall water body, Lake Washington.

Additionally, following construction activities, the owner will employ a self-monitoring maintenance plan including replacement of deceased plants, and periodic removal of encroaching invasive species.

Prepared by:
The Berger Partnership P.S.


Jason Henry
Principal


Jan Satterthwaite
Associate Project Manager

¹⁰ Wetland Creation and Restoration: The Status of the Science, Kusler, J.A. and Kentula, M.E. (1989.)

¹¹ Stormwater Management Manual for Puget Sound Basin, Publication #91-75, Dept. of Ecology.



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March 22, 2007

Mrs. Katherine Murray
2239 Killarney Way
Bellevue, Washington 98004

Supplemental Geotechnical Letter
Murray Residential Addition/Improvements
Bellevue, Washington
NGA File No. 739906

Dear Mrs. Murray:

This letter presents our opinions regarding some recent changes to the layout for your planned residential addition project located at 2239 Killarney Way in Bellevue, Washington.

INTRODUCTION

We have previously prepared a geotechnical engineering report for the project dated May 23, 2006. We understand that there have been some changes to the layout for the project since our geotechnical report was issued. For our use in evaluating how the changes in layout might affect our recommendations, we have been provided with preliminary project plan sheets A1 and A2 titled "Murray Residence," dated January 29, 2007, prepared by Peter Stoner Architects, LLC. We have also met with Mr. Stoner and discussed specific details of the new plans, including a critical area submittal package.

Project Description

Our May 2006 report generally addressed the development of a new deck situated at the top of a steep western-facing slope, and a residential addition along the southern side of the site, set back roughly 30 feet from the top of slope. The new plans indicate the majority of the existing structure will be removed. The new plans indicate that the existing deck area will be rebuilt with improved foundation support, with a larger addition to the southern side of the residence, and smaller additions to the north and east sides of the residence. The existing carport will also be replaced with a larger carport, extending to the south and east. Additionally, we have been informed that most of the concrete footings and basement retaining

walls of the existing residence were found to be unreinforced, and thus will be replaced as a part of the site improvements. The existing eastern basement wall will be left in place to serve as temporary shoring for the construction of the new basement walls and footings.

Additional improvements to the site will include raising the driveway grade by approximately two feet, filling in a patio area along the southern side of the residence, currently supported by deteriorating concrete rubble walls, removing the short deteriorating concrete rubble retaining wall from the east side of the parking area and replacing it with new walls, and improving the vegetation and drainage conditions on the existing slopes.

CONCLUSIONS AND RECOMMENDATIONS

General

Based on the preliminary plans, it is our opinion from a geotechnical standpoint that the proposed site improvements are feasible, and should generally induce a net benefit for the geological hazard areas on the site. The recommendations provided in our original report should be used in conjunction with the supplemental recommendations provided in this letter. Also, we should review the final house design, including site grading and drainage, and provide additional recommendations if needed.

Our explorations indicated that a layer of loose fill underlies the western portion of the planned footprint, with competent native soil deposits at depth. The western portion and deck are to be constructed in close proximity to a steep slope. Based on our previous explorations, the core of this slope is composed of competent glacial deposits, and we consider the slope to be stable with respect to deep-seated failures. However, the upper undocumented fill found on the slope is more prone to sliding and sloughing in severe conditions. This fill should be addressed during house construction.

To protect the proposed development against potential failures on the slope, we recommend that the western footing line be supported on drilled piers, with a minimum 20-foot embedment depth. The 10 most western feet of the southern and northern footing lines should also be supported on drilled piers with a minimum 20-foot embedment depth. This should include any replacement footings for the existing residence, if applicable. The piers should extend at least five feet into the competent native soils, and extend deep enough to provide a horizontal effective setback distance of 30 feet between the bottom of

the piers and the face of the slope, as indicated by the detail in Figure 1. All other footing lines should be placed on native competent soil, as approved in the field by us. The piers should consist of a minimum of 16-inch diameter cast-in place reinforced concrete. Recommendations for design and installation of the piers are presented in the **Drilled Piers** subsection of this report.

Deck supports could consist of 12-inch diameter drilled piers installed in accordance with the recommendations of this letter. We recommend that the deck supports satisfy the 30-foot effective setback criteria outlined in this letter.

To improve the stability of the top of the slope area, it would be best to remove the existing fill and replace it with competent material such as rock spalls. However, this may prove impractical. In this case, the fill face should be compacted using a heavy hoepack and then covered with erosion control material. The homeowner should periodically monitor the conditions on the slope, especially after severe rainstorms. Depending on slope performance, emergency repairs might need to be employed, should fill movement be experienced. Future fill movement should not impact the addition or deck if supported on drilled piers. Compared to the existing conditions where the house and deck are not supported on deep foundations, the proposed improvements will create safer slope conditions, especially with respect to the existing fill.

Slabs on grade should not be supported on the undocumented fill encountered near the top of the slope. If the fill cannot be removed, we recommend that the western portion of the slab be supported on drilled piers.

Footings located in the central and eastern portion of the development could be conventional shallow spread foundations designed and constructed in accordance with our original report.

Specific geotechnical recommendations for site improvements not specifically related to the structure have also been included in this letter. These improvements are discussed in detail in the remainder of this letter.

The near surface soils are considered to be moisture-sensitive and will disturb easily when wet. We recommend that construction take place during the drier summer months if possible. However, if construction takes place during the wet season, additional expenses and delays should be expected due to the wet conditions. Additional expenses could include the need for placing a blanket of rock spalls on exposed subgrades, construction traffic areas, and paved areas prior to placing structural fill. The successful use of native on-site soils as structural fill will depend on the moisture content of the soil at the time of construction.

Structure Setbacks and Slope Protection

Uncertainties related to building along the top of steep slopes are typically addressed by the use of building setbacks. The purpose of the setback is to establish a "buffer zone" between the structure and the top of the slope so that ample room is allowed for normal slope recession during a reasonable life span of the structure. In a general sense, the greater the setback, the lower the risk of slope failures to impact the structure. From a geological standpoint, the setback dimension is based on the slope's physical characteristics, such as slope height, slope gradient, soil type, and groundwater conditions. Other factors such as historical slope activity, rate of regression, and the type and desired life span of the development are important considerations as well.

Based upon the conditions described above, it is our opinion that during severe weather conditions, the potential for shallow sloughing-type failures exists in the fill near the top of the slope. The planned residence and deck will have a setback of less than 10 feet from the top of the steep west-facing slope in certain areas. To reduce the risk of potential slope failures affecting the structure, the structure and deck should be supported on foundations extending deep enough to provide a 30-foot effective setback from the face of the slope to the bottom of the footings. As a result of this setback requirement, the western footing line as well as portions of the northern and southern footing lines will need to be supported on drilled piers.

Site drainage and erosion control, as well as improved slope vegetation, should be performed in accordance with the requirements of the City of Bellevue. We recommend that vegetation improvements on the slope below the residence include native plant species and erosion control matting staked to the

slope surface. We should be retained to review slope vegetation improvements/erosion control plans prior to construction.

Additionally, we understand that project plans now include bringing all stormwater lines, including footings drains, downspouts, potential yard drains if needed, and driveway runoff to the bottom of the slope. We recommend that the discharge location(s) for the stormwater lines extend at least 10 feet beyond the base of the slope, and be armored with rock spalls. We do not recommend reusing any existing stormwater pipes that may exist on the slope. Such pipes should be researched then abandoned/replaced.

Reiterating our original report, excavation spoils should not be stockpiled near the slope during construction. It is prudent that the contractor develop a plan for the immediate removal of the drilled cuttings from the slope during construction, and a way of catching excavated debris before heading downslope. Runoff generated within the site should be collected and routed into a permanent discharge system and not be allowed to flow over the slope. Future vegetation management on the slope should be the subject of a specific evaluation and a plan approved by the City of Bellevue. Lawn clippings and any other debris should not be cast over the slope.

Foundation Support

Drilled Piers: We recommend that the western foundation footing line and the 10 most-western feet of the northern and southern footing lines be supported on 16-inch diameter reinforced concrete piers, extending a minimum of five feet into the medium dense or better native soils, while satisfying the recommended 30-foot effective setback from the face of the slope. Also, drilled piers should extend a minimum of 20 feet below the ground surface to develop sufficient axial capacity. The remainder of the foundations could be constructed using shallow spread footings extending into the competent native soil. We understand drilled piers will also be used for deck support. Twelve-inch drilled piers should be adequate for deck supports.

Based on the loose fill encountered in our explorations, and the limited depth of our explorations due to only having access for a light-weight drill on the site, an open hole drilling method should not be assumed. Caving conditions should be anticipated, and pile casing will likely be required. The holes

should be cleaned of any slough or water prior to pouring concrete. We recommend that the concrete be readily available on site at the time of drilling. The holes should not be left open for any extended period of time, as sloughing debris and/or groundwater seepage into the excavations may hamper pier installation.

For a 20-foot deep drilled pier installed successfully as described above, we recommend using design axial compression capacities of 15 tons and 8 tons for 16-inch and 12-inch piers, respectively. We should be consulted if higher capacities are needed. Lateral resistance on the piers could be calculated based on an equivalent fluid density of 100 pounds per cubic foot (pcf) applied to two pile diameters. The upper ten feet should be neglected for the purpose of calculating the lateral resistance due to the existence of loose fill. A qualified structural engineer licensed in the State of Washington should design the piers and subsequent supportive grade beams. We should be retained to review the design.

South Side Residence Fill

In order to facilitate extending the new driveway to the south, as well as removing two deteriorating hazardous concrete rubble retaining walls, the area along the southern side of the residence will be filled. We understand that this fill will be buttressed by the new southern basement retaining wall and will in turn support the existing concrete rubble walls to the south and east. The fill section will taper down to the west concurrently with the neighboring (original) site grades.

It is our opinion that this fill operation is feasible from a geotechnical standpoint, provided that the recommendations provided herein are followed, and that the location of the fill area is set back sufficiently as not to affect slope stability conditions along the steep western slope. We recommend that the fill be placed as structural fill in accordance with our original report. The fill surface to the west of the extended driveway should be no steeper than 2H:1V and should be covered with erosion control matting and new vegetation. The driveway extension should have a curb and subsequent catch basin that prevents driveway runoff from flowing down the slope.

Driveway Wall Removal

An existing deteriorating concrete rubble wall will be removed along the eastern side of the existing driveway and will be replaced by the eastern wall of the new garage, and likely a small shoring wall for

the driveway turn-around area. The far southern end of the existing concrete rubble wall will likely be erased by the new driveway grades. It is our opinion that removing the failing/deteriorating wall from the base of this critical slope, while replacing it with improved, engineered walls, will be beneficial to the stability of the slope. We do not recommend temporary cuts of over four feet in height at the base of this slope, or temporarily cutting back the soil above a four foot cut due to vegetation and erosion control concerns. Walls up to four feet in height along the driveway could be designed in accordance with the **Retaining Walls** subsection of our original report.

If walls in excess of four feet are needed, we will provide additional recommendations for small soldier pile walls during the final plan review stage. We understand this is a distinct possibility in the proposed driveway turn-around area. It is our opinion that the methods used to install a small soldier pile wall should generally not present a risk to the critical slope to the east of the driveway, provided that the wall is designed by a qualified structural engineer licensed in the State of Washington, and that sufficient wall drainage elements are included.

Driveway Grading

The existing driveway grades will be raised by approximately two feet along the east side of the residence in order to better accommodate parking/access issues. In our opinion, raising the driveway grade will be beneficial to the site conditions, especially with respect to the critical slope located to the east of the driveway. Higher driveway grades will result in shorter retaining walls to the east, thus less disturbance of the critical slope.

Basement Temporary Shoring

Temporary shoring for the construction of the new daylight basement will be achieved by leaving the existing basement walls in place, and constructing the new basement footprint to the inside of the existing walls. The area between the two walls should be backfilled with free draining material, and a wall drain should be incorporated into the project plans in accordance with the **Retaining Walls** subsection of our original report. Once the existing structure is demolished and the basement walls are exposed, we should be contacted to visit the site and evaluate the need for additional shoring above the basement walls. Temporary shoring will be readdressed during our review of the final grading plans, as needed.

MINIMUM RISK STATEMENT

Based on the preliminary proposed design, and provided that the final project plans and construction methods are in accordance with the recommendations provided in our original report and in this letter, it is our opinion that the site improvements are designed such that the hazard to the site and adjacent properties is less than or equal to that which would exist if the site was not modified. We should reiterate this statement at the final plan review stage of the project.

USE OF THIS REPORT

NGA has prepared this letter for Mrs. Katherine Murray and her agents for use in the planning and design of the development planned on this site only. The scope of our work does not include services related to construction safety precautions and our recommendations are not intended to direct the contractors' methods, techniques, sequences, or procedures, except as specifically described in our report for consideration in design. There are possible variations in subsurface conditions between the explorations and also with time. This letter, conclusions, and interpretations should not be construed as a warranty of subsurface conditions. A contingency for unanticipated conditions should be included in the budget and schedule.

We recommend that NGA be retained to review final project plans and provide consultation regarding structure placement, drilled pier capacities, setback distances, and foundation support. We also recommend that NGA be retained to provide monitoring and consultation services during construction to confirm that the conditions encountered are consistent with those indicated by the explorations, to provide recommendations for design changes should the conditions revealed during the work differ from those anticipated, and to evaluate whether or not earthwork and foundation installation activities comply with contract plans and specifications. We should be contacted a minimum of one week prior to construction activities and could attend pre-construction meetings if requested.

All people who own or occupy homes on hillsides should realize that landslide movements are always a possibility. The landowner should periodically inspect the slope, especially after a winter storm. If distress is evident, a geotechnical engineer should be contacted for advice on remedial/preventative measures. The probability that landsliding will occur is substantially reduced by the proper maintenance

Supplemental Geotechnical Letter
Murray Residential Addition/Improvements
Bellevue, Washington
March 22, 2007
NGA File No. 739906
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of drainage control measures at the site (the runoff from the roofs should be led to an approved discharge point). Therefore, the homeowner should take responsibility for performing such maintenance. Consequently, we recommend that a copy of our report be provided to any future homeowners of the property if the home is sold.

Within the limitations of scope, schedule, and budget, our services have been performed in accordance with generally accepted geotechnical engineering practices in effect in this area at the time this letter was prepared. No other warranty, expressed or implied, is made. Our observations, findings, and opinions are a means to identify and reduce the inherent risks to the owner.

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Supplemental Geotechnical Letter
Murray Residential Addition/Improvements
Bellevue, Washington
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Page 10

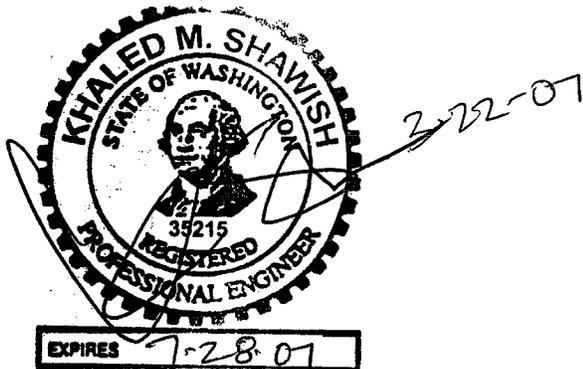
We appreciate the opportunity to provide service to you on this project. Please contact us if you have any questions regarding this letter or require further information.

Sincerely,

NELSON GEOTECHNICAL ASSOCIATES, INC.



Calvin A. McCaughan, EIT
Senior Staff Engineer



Khaled M. Shawish, PE
Principal

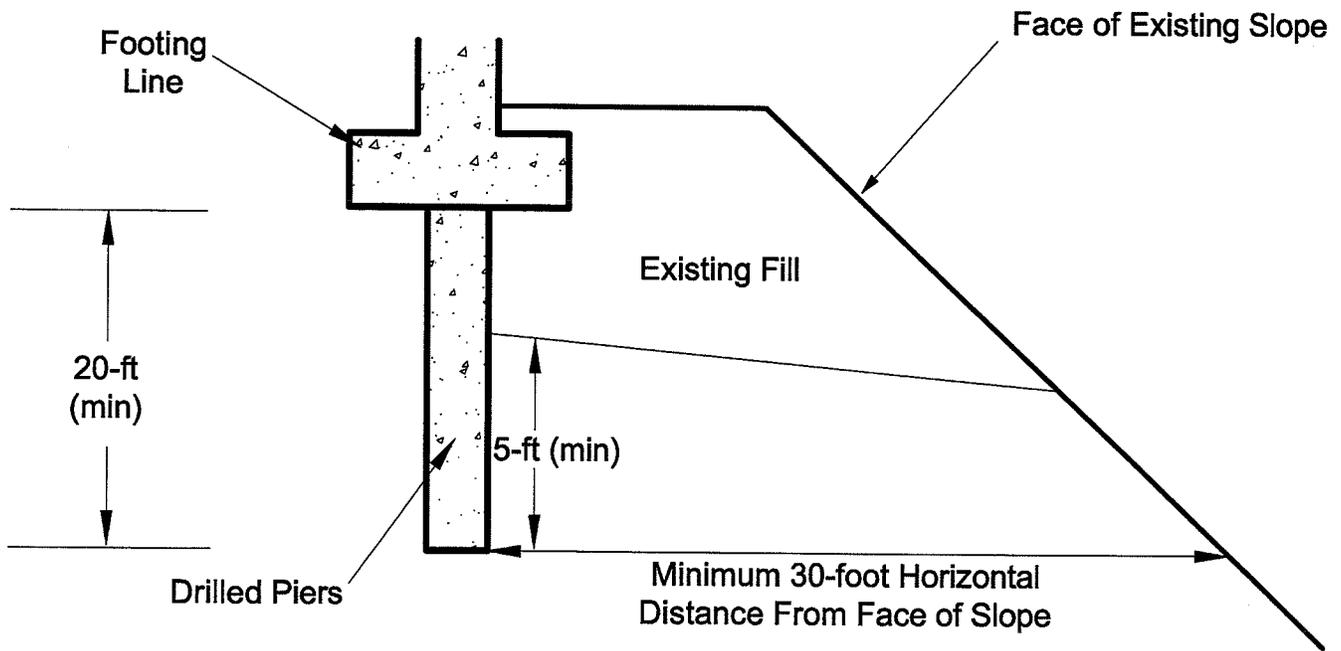
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One Figure Attached
Two Copies Submitted

cc: Peter Stoner Architects (Two Copies)

Effective Setback Detail

Not To Scale



Project Number
739906

Katherine Murray
Supplemental Letter
Effective Setback Detail

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No.	Date	Revision	By	CK
1	3/22/07	Original	JRW	CAM



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November 16, 2007

Mrs. Katherine Murray
2239 Killarney Way
Bellevue, Washington 98004

Geotechnical Response Letter
Murray Residential Addition/Improvements Residence
Bellevue, Washington
NGA File No. 739906

Dear Mrs. Murray:

This letter presents our response to the geotechnical concerns raised by the City of Bellevue during their review process for the planned residential addition project located at 2239 Killarney Way in Bellevue, Washington.

INTRODUCTION

We have previously prepared a geotechnical engineering report for the project site titled "Geotechnical Engineering Evaluation – Murray Residential Addition – Bellevue, Washington," dated May 23, 2006, and a supplemental geotechnical letter dated March 22, 2007. For the purpose of this letter we have been provided with plan sheets L1.0, L3.0 and L5.0 titled "Murray Residence," prepared by The Berger Partnership PS, dated March 30, 2006 and September 14, 2007, and an undated Critical Areas Report prepared by The Berger Partnership PS.

We have also been provided with a letter by the City of Bellevue dated August 29, 2007. This letter identifies two areas of geotechnical concern, and requested our response to each of the issues.

GEOTECHNICAL RESPONSE

City Comment 1:

Changes in existing grade outside the building footprint shall be minimized. Excavation shall not exceed 10 feet. Fill shall not exceed five feet subject to the following provisions: all fill in excess of four feet shall be

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engineered; and engineered fill may be approved in exceptional circumstances to exceed five feet to a maximum of eight feet. Exceptional circumstances are: (1) instances where driveway access would exceed 15 percent slope if additional fill retained by the building foundation is not permitted; or (2) where the five-foot fill maximum generally is observed but limited additional fill is necessary to accommodate localized variations in topography.

The critical areas report must specifically address this issue and provide geotechnical evidence that an increase in fill above 5 feet will provide increased slope stability.

Response:

We have previously discussed the fill that is to be placed along the south side of the residence in our previous letter. In our opinion, fill greater than five feet to be placed in this area should provide additional support for the existing concrete rubble walls and in turn enhance to the stability of the slope. Our recommendations in our previous report and letter regarding fill placement and compaction, and final slope configuration should be followed.

City Comment 4.E

A description of the net gain in functions by the restoration actions in the reduced regulated buffer area and the proposal, compared to the functions that would be preserved under standard buffer provisions of the CAO without restoration.

Response:

We understand that vegetation management plans will include maintaining existing mature vegetation, removal of invasive non-native plants, and planting additional native species vegetation to aid in improving the habitat, erosion control, and slope stability of the site. Based on our review of the critical areas report and slope restoration plans, in our opinion, the proposed improvements in the reduced regulated buffer area should provide an overall net gain to the erosion control capabilities and stability of the site slopes compared to the standard buffer provisions.

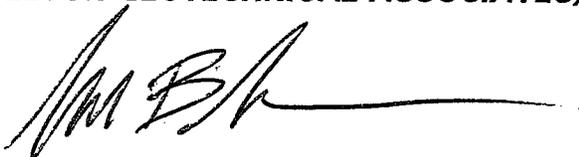
CLOSURE

We recommend that NGA be retained to provide monitoring and consultation services during construction to confirm that the conditions encountered are consistent with those indicated by the explorations, to provide recommendations for design changes should the conditions revealed during the work differ from those anticipated, and to evaluate whether or not earthwork activities comply with contract plans and specifications.

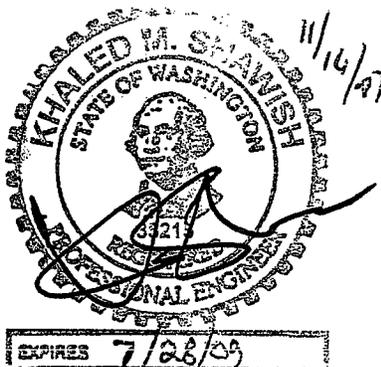
We appreciate the opportunity to provide service to you on this project. Please contact us if you have any questions regarding this letter or require further information.

Sincerely,

NELSON GEOTECHNICAL ASSOCIATES, INC.



Lee S. Bellah



Khaled M. Shawish, PE
Principal

LSB:KMS:pkw

NELSON GEOTECHNICAL ASSOCIATES, INC.