



DEVELOPMENT SERVICES DEPARTMENT
ENVIRONMENTAL COORDINATOR
450 110th Ave NE., P.O. BOX 90012
BELLEVUE, WA 98009-9012

OPTIONAL DETERMINATION OF NON-SIGNIFICANCE (DNS) NOTICE MATERIALS

The attached materials are being sent to you pursuant to the requirements for the Optional DNS Process (WAC 197-11-355). A DNS on the attached proposal is likely. This may be the only opportunity to comment on environmental impacts of the proposal. Mitigation measures from standard codes will apply. Project review may require mitigation regardless of whether an EIS is prepared. A copy of the subsequent threshold determination for this proposal may be obtained upon request.

File No. 16-130929

Project Name/Address: 8545 LK WA Blvd NE

Planner: Michael Paine

Phone Number: 425-452-2739

Minimum Comment Period: May 26, 2016

Materials included in this Notice:

- Blue Bulletin
- Checklist
- Vicinity Map
- Plans
- Other: Critical Areas Report

OTHERS TO RECEIVE THIS DOCUMENT:

- State Department of Fish and Wildlife / Stewart.Reinbold@dfw.gov; Christa.Heller@dfw.wa.gov;
- State Department of Ecology, Shoreline Planner N.W. Region / Jobu461@ecy.wa.gov; sepaunit@ecy.wa.gov
- Army Corps of Engineers Susan.M.Powell@nws02.usace.army.mil
- Attorney General ecyolyef@atg.wa.gov
- Muckleshoot Indian Tribe Karen.Walter@muckleshoot.nsn.us; Fisheries.fileroom@muckleshoot.nsn.us

SEPA ENVIRONMENTAL CHECKLIST

Purpose of checklist:

Governmental agencies use this checklist to help determine whether the environmental impacts of your proposal are significant. This information is also helpful to determine if available avoidance, minimization or compensatory mitigation measures will address the probable significant impacts or if an environmental impact statement will be prepared to further analyze the proposal.

Instructions for applicants:

This environmental checklist asks you to describe some basic information about your proposal. Please answer each question accurately and carefully, to the best of your knowledge. You may need to consult with an agency specialist or private consultant for some questions. You may use "not applicable" or "does not apply" only when you can explain why it does not apply and not when the answer is unknown. You may also attach or incorporate by reference additional studies reports. Complete and accurate answers to these questions often avoid delays with the SEPA process as well as later in the decision-making process.

The checklist questions apply to all parts of your proposal, even if you plan to do them over a period of time or on different parcels of land. Attach any additional information that will help describe your proposal or its environmental effects. The agency to which you submit this checklist may ask you to explain your answers or provide additional information reasonably related to determining if there may be significant adverse impact.

Instructions for Lead Agencies:

Please adjust the format of this template as needed. Additional information may be necessary to evaluate the existing environment, all interrelated aspects of the proposal and an analysis of adverse impacts. The checklist is considered the first but not necessarily the only source of information needed to make an adequate threshold determination. Once a threshold determination is made, the lead agency is responsible for the completeness and accuracy of the checklist and other supporting documents.

The help links in this checklist are intended to assist users in accessing guidance on the checklist questions. Links are provided to the specific sections of the guidance applicable to the questions. However, the links may not work correctly on all devices. If the links do not work on your device, open the guidance at www.ecy.wa.gov/programs/sea/sepa/appguide/EnvChecklistGuidance.html and navigate to the appropriate section.

Use of checklist for nonproject proposals:

For nonproject proposals (such as ordinances, regulations, plans and programs), complete the applicable parts of sections A and B plus the SUPPLEMENTAL SHEET FOR NONPROJECT ACTIONS (part D). Please completely answer all questions that apply and note that the words "project," "applicant," and "property or site" should be read as "proposal," "proponent," and "affected geographic area," respectively. The lead agency may exclude (for non-projects) questions in Part B - Environmental Elements –that do not contribute meaningfully to the analysis of the proposal.

A. Background

1. Name of proposed project, if applicable:

Gardner Landscaping Project

2. Name of applicant:

**Todd and Polly Gardner
9545 Lake Washington Blvd. NE
Bellevue, WA 98004**

3. Address and phone number of applicant and contact person:

**Sanford Levy, Levy von Beck & Associates, P.S.
Agent for Gardner Family
600 University Street, Suite 3300
Seattle, Washington 98101
(206) 626-5444**

4. Date checklist prepared:

April 21, 2016

5. Agency requesting checklist:

City of Bellevue

6. Proposed timing or schedule (including phasing, if applicable):

Landscape work was completed on the Gardner property between 2012 and 2015.

7. Do you have any plans for future additions, expansion, or further activity related to or connected with this proposal? If yes, explain.

No future additions or expansions are planned, at the time this SEPA Checklist was prepared.

8. List any environmental information you know about that has been prepared, or will be prepared, directly related to this proposal.

Geotechnical Report, Icicle Creek Engineers, April 2016

9. Do you know whether applications are pending for governmental approvals of other proposals directly affecting the property covered by your proposal? If yes, explain.

No other government approval applications are pending for other proposals on this property.

10. List any government approvals or permits that will be needed for your proposal, if known.

**City of Bellevue Clearing and Grading Permit
City of Bellevue Critical Areas Land Use Permit
Construction Stormwater Pollution Prevention Plan**

11. Give brief, complete description of your proposal, including the proposed uses and the size of the project and site. There are several questions later in this checklist that ask you to describe certain aspects of your proposal. You do not need to repeat those answers on this page. (Lead agencies may modify this form to include additional specific information on project description.)

The activity in question involved clearing of existing landscaped vegetation on the slope below the house, and installation of a variety of landscaping and retaining walls, and replanting with a variety of native and nonnative groundcovers and shrubs between 2012 and 2015. The activity covered an area approximately 5,000 square feet in size.

12. Location of the proposal. Give sufficient information for a person to understand the precise location of your proposed project, including a street address, if any, and section, township, and range, if known. If a proposal would occur over a range of area, provide the range or boundaries of the site(s). Provide a legal description, site plan, vicinity map, and topographic map, if reasonably available. While you should submit any plans required by the agency, you are not required to duplicate maps or detailed plans submitted with any permit applications related to this checklist.

The property is located at 9545 Lake Washington Boulevard (Parcel number 438920-0855), bordering Lake Washington on the southwest. The legal description of the property is "LOCHLEVEN POR SWLY OF LK WASH BLVD & SH LDS ADJ." The property is located in Section 31, Township 25N, and Range 05E. A project location map is included as Attachment A to this SEPA Checklist. Attachment B is a site plan, which includes topography.

B. ENVIRONMENTAL ELEMENTS

1. Earth

a. General description of the site:

(circle one): Flat, rolling, hilly, steep slopes, mountainous, other _____

The property slopes downward from the house toward the lake, with the steepest slopes between the house and the lawn area. The City of Bellevue has designated the property as having (1) a "very severe soil erosion hazard," (2) areas of moderate to high liquefaction hazard, and (3) areas with slopes steeper than 40 percent (see Attachment C).

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

The designated steep slope includes areas just over 40 percent grade (22 degrees).

c. What general types of soils are found on the site (for example, clay, sand, gravel, peat, muck)? If you know the classification of agricultural soils, specify them and note any agricultural

land of long-term commercial significance and whether the proposal results in removing any of these soils.

The site is underlain by glacial till. No agricultural land of long-term commercial significance exists at the site.

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

City of Bellevue Critical Hazards Maps designate the property as a "Very Severe Soil Erosion Hazard" area with localized areas of steep slopes greater than 40 percent. The area within approximately 25 feet of Lake Washington is designated as having a moderate to high liquefaction factor.

e. Describe the purpose, type, total area, and approximate quantities and total affected area of any filling, excavation, and grading proposed. Indicate source of fill.

Landscaping activities covered an area of approximately 5,000 square feet and involved manual excavation of footing areas for the walls as well as the gazebo. Approximately 81 cubic yards of imported material was used as backfill for the walls and planting areas, and approximately 10 cubic yards of soil was excavated. However, all excavated soils remained on site.

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

Localized erosion could have occurred during construction, but none was identified. Work was completed during the dry time of year.

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

No impervious surfaces were created by the project. A flagstone pathway going down the slope predated the work in question. The gazebo has no roof.

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

During construction, care was taken to minimize risk of erosion. Specific steps taken included construction during the dry season, minimizing excavation on the slope, and terracing of the slope.

2. Air

a. What types of emissions to the air would result from the proposal during construction, operation, and maintenance when the project is completed? If any, generally describe and give approximate quantities if known.

The project would have produced only minor air quality impacts, limited to exhaust of work vehicles driven to the site and dust from earth movement. The nature of the activities that

take place at the project site now that construction is completed is the same as prior to construction.

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

No off-site sources of odor or emissions exist that would have affected the project during construction or that will affect the project in the long term.

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

None

3. Water

a. Surface Water:

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 appropriate, state what stream or river it flows into.

The property abuts Meydenbauer Bay on its southwest edge. Meydenbauer Bay is part of Lake Washington, an approximately 22,000-acre lake dividing Seattle and Bellevue. The length of shoreline on the subject property is approximately 88 feet. No other wetlands, ponds, or streams exist on the property.

Lake Washington is the largest of the three major lakes in King County, and the second largest natural lake in the State of Washington. Its two major influent streams are the Cedar River at the southern end and from the north, water from Lake Sammamish via the Sammamish River. The majority of the immediate watershed is highly developed and urban in nature. The basin of Lake Washington is a deep, narrow, glacial trough with steeply sloping sides, sculpted by the Vashon ice sheet, the last continental glacier to move through the Seattle area. The lake is connected to Puget Sound via Lake Union and the lake Washington Ship Canal (source: <http://www.kingcounty.gov/services/environment/water-and-land/lakes/lakes-of-king-county/lake-washington/lake-washington-story.aspx>).

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.

Work did not occur within the ordinary high water mark of Lake Washington or over the lake, but did occur within approximately 75 feet of the shoreline. Attachment B, Site Plan, shows the work completed in relation to the location of the shoreline.

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.

No fill was placed in and no dredge material was removed from Lake Washington.

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

No surface water withdrawals or diversions occurred.

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

The property does not lie within a 100-year floodplain.

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 discharges of waste materials into Lake Washington occurred during construction.

b. Ground Water:

1) Will groundwater be withdrawn from a well for drinking water or other purposes? If so, give a general description of the well, proposed uses and approximate quantities withdrawn from the well. Will water be discharged to groundwater? Give general description, purpose, and approximate quantities if known.

No groundwater was withdrawn from a well. Water will not be discharged to groundwater.

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.

No waste materials were discharged to the ground.

c. Water runoff (including stormwater):

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.

The project has generated no additional stormwater runoff, although local drainage patterns have changed due to the construction of rockery walls.

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

The project generated no waste materials that entered ground or surface waters.

3) Does the proposal alter or otherwise affect drainage patterns in the vicinity of the site? If so, describe.

One of the purposes of the project was to assist with control of offsite drainage onto the subject property. Surface runoff now infiltrates behind the constructed walls.

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

Installation of pervious materials (sand, gravel, etc.) behind the constructed walls has assisted with the infiltration of local runoff.

4. Plants

a. Check the types of vegetation found on the site:

XX deciduous tree: alder, maple, aspen, other

__XX__ evergreen tree: fir, cedar, pine, other

__XX__ shrubs

__XX__ grass

___ pasture

___ crop or grain

___ Orchards, vineyards or other permanent crops.

___ wet soil plants: cattail, buttercup, bullrush, 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?

The project removed a variety of planted landscape vegetation to construct the rock walls. Specific species of plants are not known, but was likely to be mostly nonnative plants.

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

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

No vegetation in proximity of the shoreline of Lake Washington was altered as part of the project. A variety of native and ornamental plants (mostly shrubs and groundcovers) were installed above the rock walls.

e. List all noxious weeds and invasive species known to be on or near the site.

No invasive or noxious weeds are documented on the site.

5. Animals

a. List any birds and other animals which have been observed on or near the site or are known to be on or near the site.

Examples include:

birds: hawk, heron, eagle, songbirds, other:

mammals: deer, bear, elk, beaver, other:

fish: bass, salmon, trout, herring, shellfish, other _____

No wildlife was observed on the site during recent site visits. A variety of fish and wildlife species use Lake Washington adjacent to the site, including salmon, trout, bass, perch, waterfowl, and raptors.

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

Listed Chinook salmon and steelhead trout are known to occur in Lake Washington.

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

No.

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

None.

e. List any invasive animal species known to be on or near the site.

None.

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 needs? Describe whether it will be used for heating, manufacturing, etc.

During construction, electricity, gasoline, diesel fuel, and oil would have been used for construction and equipment.

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

No, this project would not have affected potential use of solar power by adjacent properties.

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

Not applicable.

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.

None identified.

1) Describe any known or possible contamination at the site from present or past uses.

No known contamination exists on the property.

2) Describe existing hazardous chemicals/conditions that might affect project development and design. This includes underground hazardous liquid and gas transmission pipelines located within the project area and in the vicinity.

No underground hazardous liquid and gas transmission pipelines are located on the property or in the vicinity.

3) Describe any toxic or hazardous chemicals that might be stored, used, or produced during the project's development or construction, or at any time during the operating life of the project.

Toxic or hazardous chemicals stored, used, or produced during construction would have included gasoline for construction equipment.

4) Describe special emergency services that might be required.

In the event of an emergency during construction, emergency response would have been required. After construction, no additional emergency services would be required other than those serving the existing property.

5) Proposed measures to reduce or control environmental health hazards, if any:
No environmental health hazards are expected on- or off-site as a result of this project.

b. Noise

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

Noises near the project are those associated with a quiet residential area on a two-lane road and are minimal.

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

Short-term noise from construction equipment would have occurred during the construction period during daytime hours (see Part 7 (b)(3)). The increased noise generated during

construction would be temporary and would last the length of the construction period. The project would not change noise levels in the long run.

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

The proposed project should have complied with Bellevue City Code (BCC) related to noise. Under BCC 9.18.040.A.4, noise emanating from construction sites is prohibited outside of the hours of 7 a.m. to 6 p.m. Monday through Friday, and 9 a.m. to 6 p.m. on Saturdays. No construction site noise is permitted on Sundays and legal holidays. After-hours sound from a construction site clearly audible across a real property boundary, or at least 75 feet from their source, is considered a noise disturbance.

For this project, construction sounds would have been heard in a residential zone, therefore, the following sounds are exempt from BCC 9.18 from 7 a.m. to 8 p.m. on weekdays and 9 a.m. to 8 p.m. on weekends: sounds relating to temporary repair, addition, or maintenance projects on existing single family homes, grounds, and appurtenances, with the exception that sounds created by heavy equipment are restricted to the general construction-site hours above.

Much of the work was completed manually without the use of power equipment, which would have kept noise levels low.

8. Land and Shoreline Use

a. What is the current use of the site and adjacent properties? Will the proposal affect current land uses on nearby or adjacent properties? If so, describe.

The current use of the site is single family residential. Adjacent properties are also single family residential use. Temporary construction noise affecting neighboring land uses would have been minimal and buffered by existing landscaping and Lake Washington Boulevard. Construction work was probably heard mostly by the two neighbors on either side of the property, and during daylight hours only.

b. Has the project site been used as working farmlands or working forest lands? If so, describe. How much agricultural or forest land of long-term commercial significance will be converted to other uses as a result of the proposal, if any? If resource lands have not been designated, how many acres in farmland or forest land tax status will be converted to nonfarm or nonforest use?

The property is not known to have been used as working farmlands or working forest lands. No agricultural or forest land of long-term commercial significance was converted to other uses as a result of this project. No land in farmland or forest land tax status was converted to nonfarm or nonforest use.

1) Will the proposal affect or be affected by surrounding working farm or forest land normal business operations, such as oversize equipment access, the application of pesticides, tilling, and harvesting? If so, how:

No working farm or forest land business operations were affected by this project.

c. Describe any structures on the site.

At the time of construction, the property included a 6,990-square-foot single family home and stone pathway down to the water.

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

No structures were demolished as part of this work.

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

The current zoning of the property is R-1.8 (Single family residential, 1.8 dwelling units per acre).

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

The Comprehensive Plan designated the property as single family residential.

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

A 200-foot-wide portion of the property abutting Lake Washington is within the City's Shoreline Master Program shoreline jurisdiction, and is designated Shoreline Residential.

h. Has any part of the site been classified as a critical area by the city or county? If so, specify.

City of Bellevue Critical Hazards Maps designates the property as a "Very Severe Soil Erosion Hazard" area. The area within approximately 25 feet of Lake Washington is designated as having a moderate to high liquefaction factor. Five areas of designated steep slopes (greater than 40 percent) exist on the property:

- **An area of approximately 400 square feet abutting Lake Washington Boulevard next to the driveway.**
- **An area of approximately 300 square feet between the sport court, the driveway, and the parking area.**
- **An area of approximately 1,900 square feet between the house and the rear lawn.**
- **An area of approximately 250 square feet at the north corner of the rear lawn.**
- **An area of approximately 50 square feet at the northwest corner of the house, near the northwest property boundary.**

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

The number of people residing or working on the property did not change after the project was constructed.

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

The completed project did not and was not expected to displace anyone.

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

No measures to avoid or reduce displacement impacts were employed because the completed project did not and was not expected to displace anyone.

l. Proposed measures to ensure the proposal is compatible with existing and projected land uses and plans, if any:

The project is compatible with surrounding uses and has enhanced the use of and offerings of the rear portion of this property by offering an improved access to the rear lawn and Lake Washington. The project is consistent with Bellevue's zoning and comprehensive land use plans.

m. Proposed measures to ensure the proposal is compatible with nearby agricultural and forest lands of long-term commercial significance, if any:

No measures were proposed because no agricultural or forest land of long-term commercial significance exists nearby.

9. Housing

a. Approximately how many units would be provided, if any? Indicate whether high, middle, or low-income housing.

No housing units were provided as part of the proposed project.

b. Approximately how many units, if any, would be eliminated? Indicate whether high, middle, or low-income housing.

No housing units were eliminated as part of the proposed project.

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

No measures were proposed because no impacts to housing occurred or were expected to occur.

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?

The gazebo is approximately 8 feet high and constructed of wood.

b. What views in the immediate vicinity would be altered or obstructed?

No views were obstructed. Some foreground and middle-ground views of the property changed due to the project.

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

No measures were employed to reduce or control aesthetic impacts because no adverse aesthetic impacts occurred or were anticipated.

11. Light and Glare

a. What type of light or glare will the proposal produce? What time of day would it mainly occur?

Not applicable.

b. Could light or glare from the finished project be a safety hazard or interfere with views?

Not applicable.

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

Sources of light and glare in the immediate project vicinity include street lights and headlights on Lake Washington Boulevard; and safety, security, and other outdoor residential lighting from neighboring properties. These light sources will not have an adverse effect on the completed project.

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

No measures were employed to reduce or control light and glare impacts because no adverse light and glare impacts occurred or were anticipated to occur.

12. Recreation

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

Private recreational activities located on the property itself include the sport court, rear lawn, and Lake Washington. The City operates Clyde Beach Park, located approximately 0.2 mile northwest of the property, also along Lake Washington Boulevard.

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

The project did not displace any existing recreational uses.

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

No measures were employed to reduce or control recreation or recreational opportunities impacts because no adverse impacts occurred or were anticipated to occur.

13. Historic and cultural preservation

a. Are there any buildings, structures, or sites, located on or near the site that are over 45 years old listed in or eligible for listing in national, state, or local preservation registers located on or near the site? If so, specifically describe.

No, there are no buildings, structures, or sites, located on or near the site that are over 45 years old listed in or eligible for listing in national, state, or local preservation registers. The single family house was built in 1995.

b. Are there any landmarks, features, or other evidence of Indian or historic use or occupation? This may include human burials or old cemeteries. Are there any material evidence, artifacts, or areas of cultural importance on or near the site? Please list any professional studies conducted at the site to identify such resources.

There are no landmarks, features, or other evidence of Indian or historic use or occupation on the property, nor are there material evidence, artifacts, or areas of cultural importance on or near the site.

c. Describe the methods used to assess the potential impacts to cultural and historic resources on or near the project site. Examples include consultation with tribes and the department of archaeology and historic preservation, archaeological surveys, historic maps, GIS data, etc.

No cultural evaluation was conducted prior to construction. According to the Washington Information System for Architectural and Archaeological Records Data (WISAARD) (queried on 4/21/16), no cultural and historic resources are documented at the site.

d. Proposed measures to avoid, minimize, or compensate for loss, changes to, and disturbance to resources. Please include plans for the above and any permits that may be required.

No measures were employed to avoid, minimize, or compensate for loss, changes to, and disturbance to cultural resources.

14. Transportation

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

One street access to the property exists, from Lake Washington Boulevard NE. Lake Washington Boulevard NE is a two-lane road, classified as a Collector Arterial the City, that provides access to downtown Bellevue and nearby freeways (Interstate 405, Interstate 90, and State Route [SR] 520).

b. Is the site or affected geographic area currently served by public transit? If so, generally describe. If not, what is the approximate distance to the nearest transit stop?

No transit routes exist on Lake Washington Boulevard NE. Several Metro Transit and South Transit bus routes travel and stop within 0.5 mile of the property on NE Eighth Street, NE Fourth Street, Bellevue Way, and 108th Avenue SE. A small (less than 250 spaces) park and

ride lot is located at Grace Lutheran Church, approximately 0.3 mile north of the subject property. Transit provides access to SR 520, the Clyde Hill and Medina neighborhoods, and downtown Bellevue.

c. How many additional parking spaces would the completed project or non-project proposal have? How many would the project or proposal eliminate?

The project did not add or eliminate any parking spaces.

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

The project did not require any new improvements to existing roads, streets, pedestrian, bicycle, or state transportation facilities.

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

The project did not use or occur near water, rail, or air transportation.

f. How many vehicular trips per day would be generated by the completed project or proposal? If known, indicate when peak volumes would occur and what percentage of the volume would be trucks (such as commercial and nonpassenger vehicles). What data or transportation models were used to make these estimates?

The completed project does not generate any additional vehicular trips per day. Construction resulted in a temporary minimal increase to vehicular volumes on Lake Washington Boulevard and surrounding streets.

g. Will the proposal interfere with, affect or be affected by the movement of agricultural and forest products on roads or streets in the area? If so, generally describe.

The completed project does not affect and is not affected by movement of agricultural and forest projects on area roads or streets.

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

No measures were employed to reduce or control transportation impacts because impacts would not occur.

15. Public Services

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

No, the project would not result in an increased need for public services.

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

No measures were employed to reduce or control direct impacts on public services because impacts would not occur.

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.

Utilities provided to the property did not change after the project was built.

C. 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: Gray Romd

Name of signee Gray Romd

Position and Agency/Organization Associate, David Evans & Associates, Inc.

Date Submitted: 4/22/16

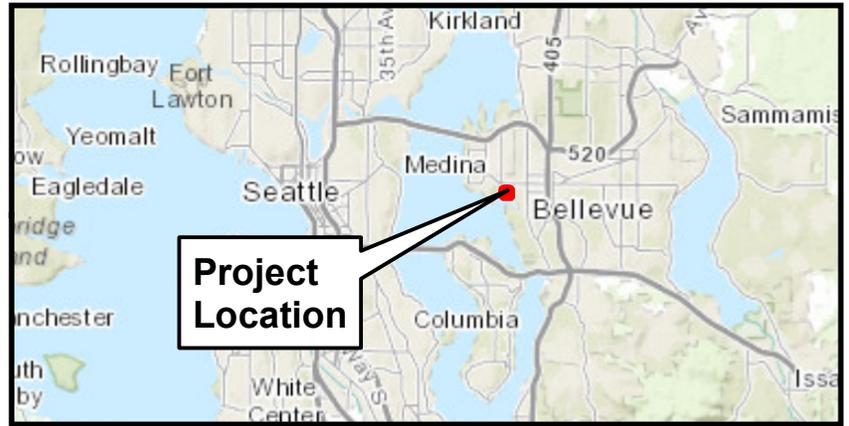
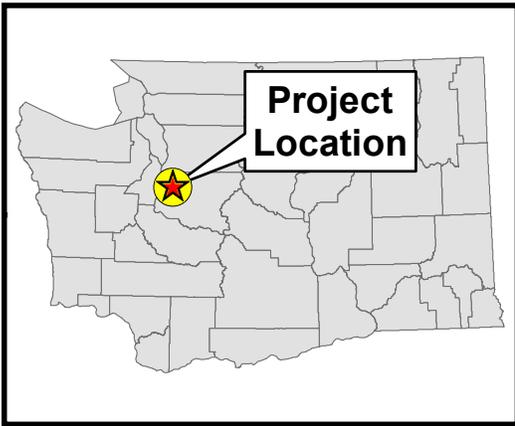
Attachments

Attachment A Project Location

Attachment B Site Plan

Attachment C Critical Hazards

Attachment A
Project Location



Project Location Map		 DAVID EVANS AND ASSOCIATES INC.
<i>Gardner Landscaping Project</i>		
LEVY0000-0001	Attachment A	
April 2016		



Backgrounds: ESRI Basemaps (World_Street_Map, World_Topo_Map)

This map was created by David Evans and Associates, Inc. (DEA). Accuracy and currency depend upon the source data at the time it is acquired. DEA makes no representation or warranty as to the correctness of the information depicted on this map. It is intended for limited planning purposes as agreed to between DEA and its client and is not suitable for design, survey, construction, or other uses or for other projects. It is strictly forbidden to modify, sell, distribute or reproduce this map for any reason without the written consent of DEA.

Path: \\BLVFS1\Project\LEVY00000001\06\00\F-OG-S\Maps\AUA_Project_Location_Map.mxd

Attachment B
Site Plan

Attachment C
Critical Hazards

Legend

-  9545 Lake Washington Blvd NE
-  Liquefaction Hazard: Moderate to High
-  Very Severe Soil Erosion Hazard



Lake Washington

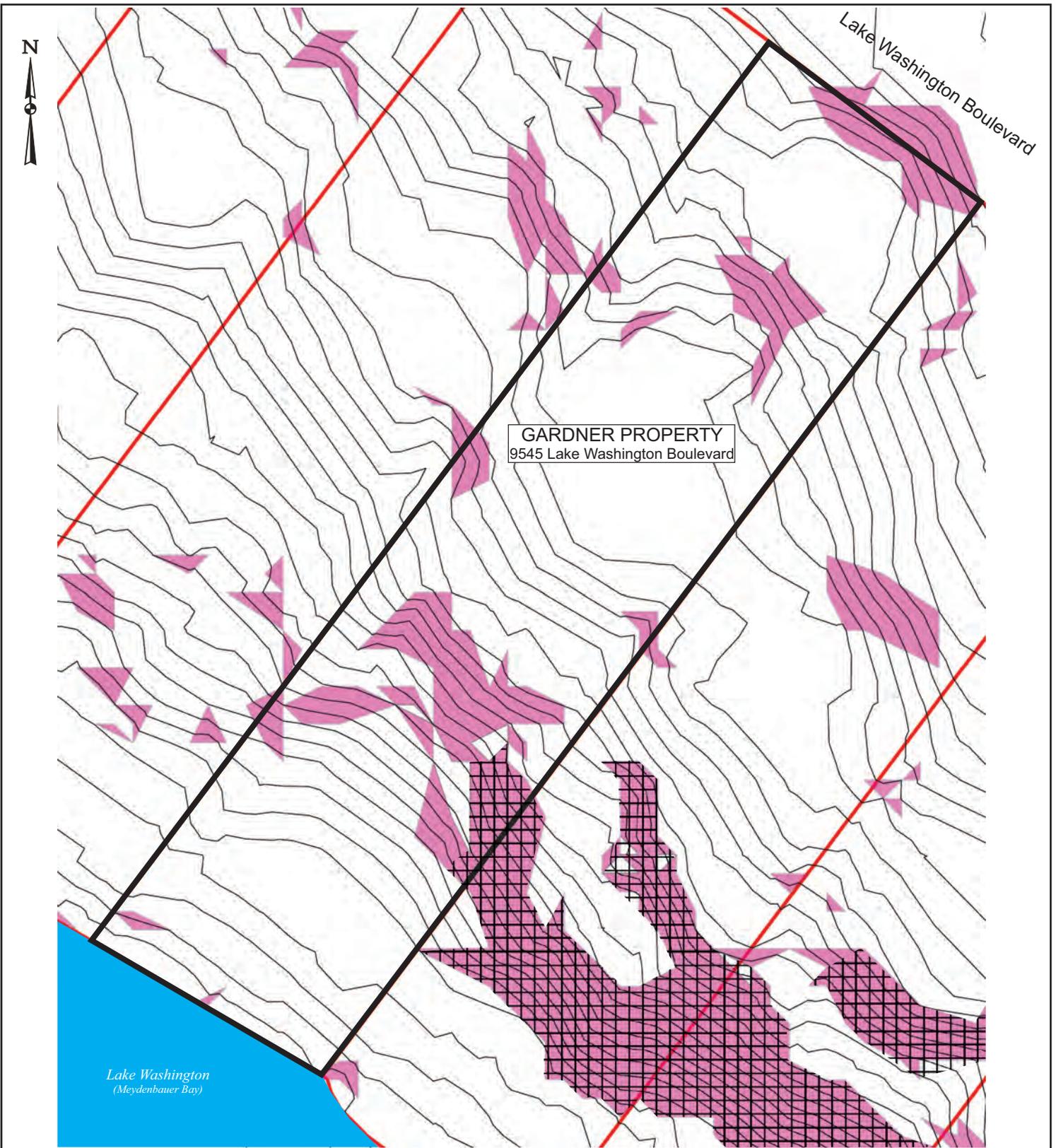


Critical Hazards Map		
<i>Gardner Landscaping Project</i>		 <small>DAVID EVANS AND ASSOCIATES INC.</small>
LEVY0000-0001	Attachment C	
April 2016		

Background: ESRI World Imagery
 Data Sources: City of Bellevue GIS, King County, USGS

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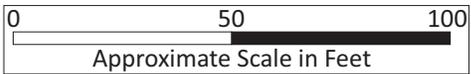
Path: P:\LEVY000000001\0600\INFO\GIS\Maps\AHC_Critical Hazards Map.mxd



GARDNER PROPERTY
9545 Lake Washington Boulevard

Lake Washington
(Meydenbauer Bay)

Lake Washington Boulevard



EXPLANATION	
	Slope Exceeds 40 Percent Grade (from LiDAR based contour data)
	Steep Slope Critical Area (Bellevue City Code 20.25H.120)
	Gardner Property (approximate)

Topography is based on ICE processing of 2005 LiDAR data obtained from the Puget Sound LiDAR Consortium <http://pugetsoundlidar.ess.washington.edu/>

2002 SLOPE MAP (PRE-LANDSCAPE) RE-LANDSCAPING EVALUATION GARDNER PROPERTY, 9545 LAKE WASHINGTON BOULEVARD, BELLEVUE, WASHINGTON	 ICICLE CREEK ENGINEERS 29335 NE 20th Street Carnation, Washington 98014 (425) 333-0093	SCALE: AS SHOWN	ICE FILE NO.
		DESIGNED: ---	1202-001
		DRAWN: BRB	Figure
		CHECKED: KSK	4
		DATE: 04/19/16	

**Report
Geotechnical Consultation
Steep Slope Critical Area
Re-Landscaping Evaluation
Gardner Property
9545 Lake Washington Boulevard
Bellevue, Washington**

**April 21, 2016
ICE File No. 1202-001**

**Prepared For:
Polly Gardner**

**Prepared By:
Icicle Creek Engineers, Inc.**

ICICLE CREEK ENGINEERS

Geotechnical, Geologic and Environmental Services

April 21, 2016

Polly Gardner
9545 Lake Washington Boulevard
Bellevue, Washington 98004

Report
Geotechnical Consultation
Steep Slope Critical Area
Re-Landscaping Evaluation
Gardner Property
9545 Lake Washington Boulevard
Bellevue, Washington
ICE File No. 1202-001

1.0 INTRODUCTION

This report presents the results of Icicle Creek Engineers' (ICE's) geotechnical consultation regarding the modification of a Steep Slope Critical Area as a result of the re-landscaping of a slope west of the house located at 9545 Lake Washington Boulevard (Gardner property) in Bellevue, Washington. The location of the Gardner property relative to regional features is shown on the Vicinity Map, Figure 2. The slope area and features subject to this report are shown on the Site Plan, Figure 2.

Gray Rand of David Evans & Associates requested ICE's services to supplement the permitting process for the landscaping activities. Our services were completed in general accordance with our Confirming Agreement dated March 18, 2016 and were authorized in writing by Sanford Levy of Levy von Beck & Associates, PS, the attorney representing Polly Gardner, the property owner.

2.0 BACKGROUND INFORMATION

Mr. Rand provided ICE with a letter from the City of Bellevue (City) dated March 3, 2016, prepared by Michael Paine, Environmental Planning Manager. Based on our review of the letter, a portion of the re-landscaping that was completed occurred within a Steep Slope Critical Area. The City has required the property owner to submit a permit application for review. A geotechnical evaluation (subject to this report) is required to supplement the permit application. The permit application is being prepared by Mr. Rand.

3.0 SCOPE OF SERVICES

The purpose of ICE's services was to provide a geotechnical evaluation specific to the stability of the Steep Slope Critical Area considering the existing landscaped conditions which include a section of landscape wall and rockery that exceed 48 inches in height. Specifically, our services included the following:

- Review available information regarding the geological and geotechnical conditions of the Gardner property, along with relevant City of Bellevue City Code (primarily BCC 20.25H).
- Complete two site visits to observe and evaluate the current condition of the re-landscaped area.

- Provide a summary of the geologic and geomorphic conditions based on the reviewed available information and our site visits.
- Interview Jon Crouch of English Landscapes Group, Co., the company that installed the landscape walls and is knowledgeable of the landscaping (rockeries) completed by others, regarding the method of grading, construction of walls and available photographic documentation obtained during the re-landscaping effort.
- Evaluate the current condition of the re-landscaped hillside area with respect to regional/local slope stability and erosion.
- Provide our opinion as to the present condition and expected long-term performance from a slope stability and erosion perspective.
- Based on the information regarding wall construction, provide our opinion as to the suitability of the as-built construction of the walls that exceed 48 inches in height.
- Provide recommendations for mitigation, as appropriate.

4.0 GARDNER PROPERTY DESCRIPTION

4.1 GENERAL

Brian Beaman, PE, LEG, LHG of ICE completed site visits on April 7 and 12, 2016 to observe the existing conditions at the Gardner property with emphasis in the west part of the property where re-landscaping of a slope was completed. At the time of our site visits, we met with Ms. Gardner, Mr. Crouch, Mr. Rand and Mr. Levy.

4.2 HISTORY SUMMARY OF GARDNER PROPERTY DEVELOPMENT

The Gardner house was constructed in 1995 according to the King County Department of Assessments Property Detail. The Gardner house was constructed in generally the same location as the house that formerly occupied the property (Pacific Testing Laboratories, February 8, 1994); this was additionally supported by comparing the 1936 aerial photograph available on King County iMAP to the 2015 aerial photograph (Google Earth).

Based on our review of historical aerial photographs from Google Earth (1990, 2003, 2005, 2007, 2009, 2012, 2014 and 2015) we observed the following sequence of Gardner property area changes, including the recent landscape walls, rockeries and gazebo addition. Selected photographs are shown on the Historical Aerial Photographs, Figure 3.

1990 and 2003 Aerial Photographs – The slope west of the house in the 1990 and 2003 aerial photographs appears vegetated with mature landscaping.

2005 Aerial Photograph – By 2005 it appears that some of the mature landscaping has been removed and replaced with new shrubs; the primary path that traverses and switches back down to the lower yard area appears to be grass covered.

2007 Aerial Photograph – The 2007 aerial photograph is similar to the 2005 aerial photograph. Mature trees along the south property line bordering the lower yard area appear to have been removed.

2009 Aerial Photograph – The 2009 aerial photograph shows that the primary path to the lower yard has been improved with a surface of rock flagstone, likely the same surface as which presently exists.

2012 Aerial Photograph – The 2012 aerial photograph shows that the landscaping on the slope is maturing.

2014 Aerial Photograph – The 2014 aerial photograph shows that the lower tiered landscape walls (below the primary path) are constructed and the gazebo area is under construction. A mature tree or trees in the slope area along the south property line appear to have been removed.

2015 Aerial Photograph – The 2015 aerial photograph shows that the tiered rockeries above the primary path have been constructed. The gazebo area and rockery (below the primary path) are visible.

It is apparent from review of the historical aerial photographs and oblique photographs during construction of the landscape walls and rockeries (obtained from Mr. Levy), that the primary path (shown on Figure 2) that descends the slope during the 2014/2015 landscaping, was not modified. Grading (cuts and fills) to create the landscape walls and rockery tiers appears to be less than 1 foot to establish a foundation base for these landscape features.

4.3 TOPOGRAPHIC CONDITIONS

ICE used LiDAR data dated 2005 obtained from the Puget Sound LiDAR Consortium to develop ground surface contours that represent the topographic conditions of the slope prior to the 2014/2015 re-landscaping. The results of the processing of this data by ICE are shown on the Slope Map, Figure 4. Based on the Slope Map, the re-landscaped area contained some moderate slopes of just over 40 percent grade (22 degrees) and may be interpreted as Steep Slope Critical Areas (BCC 20.25H.120 2.) in the area of the gazebo and upper part of the landscape walls. No Steep Slope Critical Areas exist in the rockery areas with the exception of the overheight rockery located uphill from the gazebo.

4.4 LANDSCAPE WALLS

We understand that the lower area (below the primary path) landscape walls were constructed by English Landscapes Group, Co. in 2014. The current landscape wall system includes four concrete (textured to appear as granite) semi-parallel walls that connect at the south end by a transverse wall paralleling the south property line as shown on Figure 2. These landscape walls are less than 48-inches high with an average height of about 30 inches. A fifth landscape wall is at the base of the slope along the south property line, and is shaped like a box (referred to as the “box wall” as shown on Figure 2) with the front face (parallel to slope) about 11½-feet long and over 48 inches in height.

Based on our discussion with Mr. Crouch, the walls were constructed by cutting a shallow footing (less than 1-foot deep) using hand tools into the slope. As an added measure to reduce the risk of differential settlement, the landscape walls are supported on 2-inch diameter “pin piles.” Pin piles are steel pipes that are driven vertically into the ground to refusal. Refusal is defined as penetration during driving as less than 1 inch in 1 minute using a 140-pound hammer. The pin piles were driven at 28 locations to a depth ranging from 5.25 to 10.5 feet (McDowell NW Pile King, Inc.). In oblique photographs provided by Mr. Levy that were obtained by others during construction of the landscape walls, it appears that the footings for the landscape walls were formed and steel reinforcement was used. Photographs (undated) obtained during construction of the landscape walls area shown on Figure 5.

All walls were backfilled with imported soil for the purpose of maximizing vegetation growth (based on our discussion with Mr. Crouch) and are well-drained for this reason. We observed the imported soil to consist of fine to medium sand with a trace of silt and coarse sand consistent with a well-drained soil product. Backfilling of each landscape wall had the effect of covering the upper landscape wall foundation base.

The oblique photographs show a black fabric covered pipe crossing between the landscape wall tiers. We attempted to obtain a better understanding of the connectiveness of the drainage system by injecting water from a hose into the upper wall area at the time of our April 12, 2016 site visit. The end of an outfall pipe of similar material was located below the box wall. However, this outfall pipe remained dry so the

drainage test was inconclusive; it is possible that another discharge point exists that we were not able to locate, or that the drainage system has been damaged (crushed or broken). Irrigation has been installed in the planter areas of the tiered landscape and rockeries.

Based on our site observations, the landscape wall area is dry (no visible seepage areas) despite a relatively wet period preceding our site visits and recent use of irrigation. Photographs of the completed landscape wall area are shown on Figure 6.

We did not observe evidence of adverse erosion or instability of the landscape walls within or outside of the Steep Slope Critical Area. The planter area within each tier of the landscape walls has been planted with shrubs and the vegetation appears to be healthy.

4.5 ROCKERIES

We understand that the upper area (above the primary path and adjacent to the gazebo) landscape walls were constructed by Maintco, Inc. in 2015. The current rockery system includes four tiered rockeries (less than 48-inches high, average of about 24- to 30-inches high) above the primary path as shown on Figure 2. A gazebo, located below the primary path as shown on Figure 2, is bordered on the uphill side by a 48- to 60-inch high rockery that curves in an arch behind the gazebo a lateral distance of about 16 feet. No oblique photographs of the rockeries during construction were available. Photographs of the completed rockeries are shown on Figure 7.

Based on our site observations, the rockeries are constructed of 10- to 16-inch diameter, subangular granite boulders. We understand that the boulders for the rockeries were placed by hand. The 24- to 30-inch high rockeries above the primary path were apparently backfilled with 5/8-inch-minus crushed rock "chinking" immediately behind the rockeries (we observed this material in the field in open spaces between the rocks), then backfilled with imported soil (same as described for the landscape walls). However, the higher rockery bordering the gazebo was backfilled with 3- to 5-inch diameter rock spalls in a 2-foot area immediately behind the rockery. Photographs of the gazebo area rockeries are shown in Figure 8. We understand that no drainage pipe was installed behind the rockeries. Based on our site observations, the rockery areas are dry (no visible seepage areas) despite a relatively wet period preceding our site visits.

5.0 REGULATORY CONSIDERATIONS

Based on our review of the BCC, retaining walls are defined as a "*wall designed to resist the lateral displacement of soil or other materials*" (BCC 23.76.030). We assume that at least 48 inches in height is also part of the "structure" definition for retaining walls, but we were not able to specifically locate that definition other than for Modular Block Walls under BCC 23.76.086. Based on this definition, only the box wall at the base of the slope should be considered a retaining wall.

The regulatory description of "rockeries" is well-defined in City of Bellevue Handout L-5 Rockeries (October 2010). In summary, rockeries that are less than 48-inches high may be used to protect cut and fill slopes; no drain is required, and no Clearing and Grading Permit or Engineering are required. Based on this definition, only the rockery uphill from the gazebo should be considered a regulated rockery requiring Clearing and Grading Permit and Engineering.

Steep Slopes Critical Areas are described by BCC 20.25H.120 A.2. as "Slopes of 40 percent or more that have a rise of at least 10 feet and exceed 1,000 square feet in area." For this purpose, based on our

analysis of LiDAR processed contours using 2005 King County data (Puget Sound LiDAR Consortium), Steep Slope Critical Areas are confined to the area of the gazebo and the lower area landscape walls, including the overheight rockery located uphill from the gazebo. No other rockeries are within Steep Slope Critical Areas. The lower box wall is not within the Steep Slope Critical Area.

BCC 20.25H.125 states that development within a Steep Slope Critical Area shall incorporate “*performance standards*” as appropriate in the design. BCC 20.25H.140 states that any proposal to modify a Steep Slope Critical Area shall include a Critical Areas Report (CAR) to include an “*Assessment of Geological Characteristics*” and an “*Analysis of Proposal*” to evaluate how the proposed improvements may impact the Steep Slope Critical Area within and adjacent to the subject property. The approval of Steep Slope Critical Area Modification is then based on the consideration of seven criteria listed in BCC 20.25H.145; these seven criteria are further discussed in Section 10.0 of this report.

6.0 GEOLOGIC SETTING

Based on regional geologic mapping by the USGS (1962), the Gardner property is underlain by Glacial Till. Glacial Till typically consists of an unsorted mixture of silt, sand, gravel, cobbles and occasional boulders deposited at the base of the most recent glaciation (Fraser Glaciation) which reached the Seattle area (Bellevue area included) about 17,400 years ago and had retreated from this area by about 16,400 years ago. At its maximum, the ice was about 3,000-feet thick in the Seattle/Bellevue area (GSA, 2008 and 2003) which compacted the Glacial Till to a compressive strength similar to unreinforced concrete.

No regionally-mapped landslides have been mapped by the USGS (1962) within 1,000 feet of the Gardner property.

This regional geologic mapping by the USGS (1962) of Glacial Till as the soil type that underlies the Gardner property is consistent with our site observations and geotechnical studies by others within the Gardner property (Pacific Testing Laboratories, February 8, 1994) and adjacent properties (Earth Consultants, Inc., March 16, 2006; Associated Earth Sciences, Inc., June 11, 2002; Terra Associates, Inc., 2000 and 2001; GeoTech Consultants, Inc., December 17, 1998 and GeoSource Engineering, Inc., August 8, 1997).

Glacial Till is considered a very high strength geologic material with an angle of internal friction of over 35 to 45 degrees with cohesion ranging from 1,000 to 4,000 pounds per square foot (psf) and can maintain safe cut slopes ranging from 50 to 100 percent grade (27 to 45 degrees) (DNR, 1989).

Based on our review of the pin pile records (McDowell NW Pile King, Inc.), 28 piles were driven to a depth ranging from 5.25 to 10.5 feet in the area of the landscape walls. A penetration depth of 5.25 feet is consistent with shallow, unweathered Glacial Till being near surface. A penetration depth of up to 10.5 feet suggests that some fill is likely present. However, the overall thickness of looser soils is relatively thin in the landscape wall area.

7.0 GEOMORPHIC SETTING

As previously described, the last glacier melted from the area about 16,400 years ago (GSA, 2003 and 2008) which resulted in glacial scouring and deposition of Glacial Till at the base of the glacier. Glacial growth and recession (melt) cause scouring of the ground surface resulting in north-northwest elongated trending hills and intervening valleys. Lake Washington (and Lake Sammamish to the east) are examples of the deeper scoured valleys.

Other than the development of the weathered soil layer, the ground surface, up until about 100 years ago, is unchanged, based on our review of LiDAR images (Puget Sound LiDAR Consortium) as the glacial sculpting of the ground surface is clearly visible.

The first major change in the Gardner property area occurred about 100 years ago in 1916 when Lake Washington was lowered by about 9 feet; the purpose of the lake lowering was to be at the same level as Lake Union related to the construction of the Ship Canal (HistoryLink.org). The wide bench (yard) at the base of the landscaped slope area is likely the former shoreline of the historically higher Lake Washington.

Based on the topographical trend, the re-landscaped slope appears to be a natural hillside extending north and south of the Gardner property, though locally modified by previous grading by oversteepening or flattened the slope in adjacent property areas. The re-landscaped slope within the Gardner property does not appear to be modified by major grading as it generally provides a smooth transition into adjacent properties.

Based on our review of historic aerial photographs, the Gardner property and adjacent properties have been used for residential purposes since 1936 (King County iMAP, 1936 aerial photograph). In 1936 a structure (likely residential) is visible within the same general footprint area as the existing Gardner house.

Based on our review of the February 8, 1994 Pacific Testing Laboratories report (1994 PTL report) prepared for the Gardner's as part of their application for building permit on this property, it shows that the Gardner house was to be constructed in the same general area as an existing house (the existing house was removed). The report states that *"Below the house to the southwest there are a series of terraces down to the edge of the water. It is these sloping areas between the terraces which constitute the areas of greater than 40% slope."* The 1994 PTL report states further that there are *"several fruit trees... below the house on the terraces... The condition of the older trees indicate that the slope is stable."* The 1994 PTL report concludes that *"the site appears to be in a stable condition."*

8.0 CONCLUSIONS

8.1 STEEP SLOPE CRITICAL AREA

Based on the definition provided in BCC 20.25H.120 A.2., part of the slope area (landscape wall area, excluding the box wall) where the re-landscaping occurred is within a Steep Slope Critical Area as shown on Figure 4. The rockeries are not within Steep Slope Critical Areas with the exception of the overheight rockery located uphill from the gazebo.

Based on our review of available information including geologic conditions of the slope area from regional geologic mapping (USGS, 1962), subsurface exploration within the Gardner property (PTL, February 8, 1994) and adjacent properties (Earth Consultants, Inc., March 16, 2006; Associated Earth Sciences, Inc., June 11, 2002; Terra Associates, Inc., 2000 and 2001; GeoTech Consultants, Inc., December 17, 1998 and GeoSource Engineering, Inc., August 8, 1997) and our experience in this geographic area, it is our opinion that the Steep Slope Critical Area is underlain by Glacial Till with a thin layer (up to 5-feet thick) of fill in local areas.

As previously described, Glacial Till is in a dense condition as a result of being overridden by at least 3,000 feet of glacial ice (GSA, 2003 and 2008). Glacial Till is not sensitive to landsliding, especially considering the site conditions (moderate slopes of just over 40 percent grade (22 degrees). As previously described, Glacial Till is considered a very high strength geologic material with an angle of internal friction of over 35

to 45 degrees with cohesion ranging from 1,000 to 4,000 psf and can maintain safe cut slopes ranging from 50 to 100 percent grade (27 to 45 degrees) (DNR, 1989). The Steep Slope Critical Area that was re-landscaped at the Gardner property is well under these slope inclination conditions (22 degrees) and should be considered safe with respect to slope failure under the landscape walls. In addition, the landscape walls are supported by 28 pin piles. While pin piles are not known for lateral strength, a group of pin piles, as constructed, will certainly improve the stability of the slope. Global stability of the landscape wall and rockeries is adequate, in our opinion.

The landscape walls and rockeries could be susceptible to shallow, localized failure considering the site conditions. However, this would most likely occur if the walls were poorly drained or if shallow groundwater was present. Based on our site observations, the landscape walls and rockeries are reasonably well-drained. The rockeries are constructed as an open-work face, therefore good drainage is implied. The landscape walls could restrict groundwater movement, especially considering that the installed drainage system could not be "proven" to be effective by the water flow test. However, the backfill materials are reasonably well-drained and no evidence of seepage was observed in the areas around or under the walls.

8.2 OVERHEIGHT LANDSCAPE WALLS AND ROCKERIES

8.2.1 Landscape Wall (Box Wall)

The box wall at the base of the slope was not built within the Steep Slope Critical Area. A drain pipe physically extends from under the base of the box wall so it should be adequately drained. The position of the box wall at the base of the slope is a favorable condition and provides a buttressing effect to the uphill area. The box-like shape (three-sided rectangle) is also a favorable geometry for maintaining slope stability. From a geotechnical perspective, the box wall appears to be satisfactorily constructed provided that the appropriate lateral soil pressures were used in the design (35 pounds per cubic foot (pcf) for active soil pressure (level backslope), 250 pcf for passive pressure (level to slightly sloping foreslope) and 0.35 for friction), and that the wall is drained.

8.2.2 Rockery

The rockeries that was constructed on the uphill side of the gazebo are not within a Steep Slope Critical Area with the exception of the rockery located uphill (east) of the gazebo. Also, the gazebo wall is over 48 inches in height, so structure standards apply as described in City of Bellevue, October 2010, Handout L-5. It appears that the rockery was constructed with the backfill consisting of 3- to 5-inch diameter rock spalls which improves the stability of the backfill and provides drainage. The rockery is also arch-shaped in plan over a relatively short distance which provides some additional lateral support. In our opinion, the rockery is adequately stable as constructed.

9.0 RECOMMENDATIONS

9.1 GENERAL

We recommend no further action. In our opinion, the terracing of the slope, as completed, would have been our recommendation for surficial soil stabilization should that have been a problem. Because of the geologic conditions of the Gardner property, an open slope with dense ground cover (the original landscape condition) or the current tiered slope with plantings are appropriate methods for stabilizing the slope area west of the Gardner house.

9.2 OVERHEIGHT LANDSCAPE WALL (BOX WALL)

The structural integrity of the box wall should be evaluated by a structural engineer. Alternatively, the base of the landscape wall could be buttressed by installing a lower wall backfilled with rock spalls to reduce the exposed face of the landscape wall to less than 48 inches and also to provide additional lateral support, if needed.

9.3 OVERHEIGHT ROCKERY

We have no recommendations for modification of this rockery on the uphill side of the gazebo. If regulatory requirements override engineering design, then the top course of rocks should be removed to reduce the height to less than 48 inches.

10.0 RESPONSE TO BCC 20.25H.145 CRITICAL AREAS REPORT – APPROVAL OF MODIFICATION

The following section includes ICE's response to BCC 20.25H.145. The regulatory statements are presented in bold followed by ICE's response.

- A. **Will not increase the threat of the geological hazard to adjacent properties over conditions that would exist if the provisions of this part were not modified.** Based on our site review it is our opinion that the modifications to the Steep Slope Critical Area were completed in such a manner that the stability of the Steep Slope Critical Area has been enhanced from the previously landscaped slope condition by terracing of the slope which reduces the risk of erosion. Terracing of slopes is a suggested mitigation as described in BCC 20.25H.125 A. *"Structures and improvements should shall minimize alterations to the natural contour of the slope"* (which is consistent with our observations), *"and foundations shall be tiered where possible to conform to existing topography"* (also consistent with our observations).
- B. **Will not adversely impact other critical areas.** In our opinion, the Steep Slope Critical Area has been stabilized by the "tiering" of the slope with respect to erosion, and a gently sloping yard area extends west from the toe of the Steep Slope Critical Area to provide a buffer from the Lake Washington shoreline.
- C. **Is designed so that the hazard to the project is eliminated or mitigated to a level equal to or less than would exist if the provisions of this part were not modified.** We would have recommended tiering the slope, as completed, to reduce the risk of erosion for this slope. This slope is known to be underlain by Glacial Till which is not susceptible to landsliding under these moderate slope conditions (just over 40 percent grade – Glacial Till has a nature angle of repose ranging from 70 to 100 percent grade).
- D. **Is certified as safe as designed and under anticipated conditions by a qualified engineer or geologist, licensed in the state of Washington.** Based on our site review by the undersigned, the Steep Slope Critical Area is safe as constructed considering the geologic conditions and standards of engineering and geological practice in this area that this review was completed. It should be understood that any slope modification, or even natural slopes, are subject to natural erosional processes. This site is no different than any of the other adjacent properties which are fully modified.
- E. **The applicant provides a geotechnical report prepared by a qualified professional demonstrating that modification of the critical area or critical area buffer will have no adverse impacts on stability of any adjacent slopes, and will not impact stability of any existing structures. Geotechnical reporting standards shall comply with requirements developed by the Director in City of Bellevue Submittal Requirements Sheet 25, Geotechnical Report and Stability Analysis Requirements, now or as hereafter amended.** The intent of this report is to satisfy this requirement.

- F. **Any modification complies with recommendations of the geotechnical support with respect to best management practices, construction techniques or other recommendations.** Based on our site review, the result of the landscaping, including tiering of the slope (a recommended Best Management Practice by the City of Bellevue) has been completed consistent with standard recommendations for landscape walls and rockeries that are less than 48-inches high. The two areas where this maximum height has been exceeded (the box wall at the base of the slope and the rockery uphill from the gazebo) have been mitigated by the rectangular shape of the box wall and the curved (arch) shape along with quarry spall backfill of the gazebo rockery.
- G. **The proposed modification to the critical area or critical area buffer with any associated mitigation does not significantly impact habitat associated with species of local importance, or such habitat that could reasonably be expected to exist during the anticipated life of the development proposal if the area were regulated under this part. (Ord. 5680, 6-26-06, § 3).** Based on our site observations, the Steep Slope Critical Area was already modified with ornamental plant species planted on a cleared slope prior to the tiering of the slope with the landscape walls and rockeries.

11.0 SELECTED REFERENCES

ICE reviewed the following documents for this evaluation.

- Associated Earth Sciences, Inc., June 11, 2002, *Subsurface Exploration, Geologic Hazard and Preliminary Geotechnical Engineering Report, Shaw Property, Bellevue, Washington*, 18 pages and attachments including 4 test boring logs, obtained from the DNR Geologic Information Portal (<http://www.dnr.wa.gov/geologyportal>).
- City of Bellevue Development Services, October 2010, *Rockeries*, Handout L-52 pages.
- City of Bellevue, Bellevue City Code (BCC), Chapter 20.25.
- Earth Consultants, Inc., March 16, 2006, *Geotechnical Engineering Study, Proposed Single-Family Residence, 9535 Northeast Lake Washington Boulevard, Bellevue, Washington*, prepared for STF Construction, 14 pages and attachments including 3 test boring logs, obtained from the Washington State DNR Geologic Information Portal (<http://www.dnr.wa.gov/geologyportal>).
- Geologic Society of America (GSA), Goetz-Troost, Kathy and Booth, Derek B., 2008, *Geology of Seattle and the Seattle Area*, Geological Survey of America, Reviews in Engineering Geology.
- GSA, Goetz-Troost, Kathy, Booth, D.B. and Laprade, W.T., 2003, *Quaternary Geology of Seattle*, Geological Survey of America, Field Guide 4.
- GeoSource Engineering, Inc., August 8, 1997, *Subsurface Exploration, Geologic Hazard and Geotechnical Engineering Report, prepared for Bender-Chaffey Corporation*, 2 pages (excerpts) and attachments including 3 test holes, obtained from the DNR Geologic Information Portal (<http://www.dnr.wa.gov/geologyportal>).
- GeoTech Consultants, Inc., December 17, 1998, *Geotechnical Engineering Study, Proposed Residence, 9567 Northeast Lake Washington Boulevard, Bellevue, Washington*, prepared for Michael Suignard, 2 pages (excerpts) and attachments including 3 test boring logs, obtained from the DNR Geologic Information Portal (<http://www.dnr.wa.gov/geologyportal>).
- Google Earth, aerial photographs dated 1990, 2002, 2003, 2005, 2007, 2009, 2012, 2014 and 2015.
- HistoryLink.org, the free online encyclopedia of Washington State History, undated, [Due to Construction of Lake Washington Ship Canal, Lake Washington is Lowered 8.8 feet beginning August 26, 1916 and the Black River Disappears](#), in HistoryLink.org Essay 686.
- Levy von Beck and Associates, PS, 13 undated oblique photographs of the landscape wall construction provided by Sanford Levy.
- McDowell NW Pile King, Inc., August 13, 2013, *English Landscapes, 9545 Lake Washington Boulevard*, pin pile installation records, 2 pages.

- King County Department of Assessments, on-line property detail in King County iMAP.
- Pacific Testing Laboratories, February 8, 1994, *Geotechnical Evaluation and Subsurface Analysis for the Lot Located at 9545 Lake Washington Blvd, NE, Bellevue, Washington*, prepared for Mr. Todd Gardner, 9 pages and attachments including two test pit logs and two test hole logs, obtained from the Washington State Department of Natural Resources (DNR) Geologic Information Portal (<http://www.dnr.wa.gov/geologyportal>).
- Puget Sound LiDAR Consortium (PSLC), LiDAR (Light Detection and Ranging) raw data; ARCGIS topographic contour and slope mapping.
- Terra Associates, Inc., August 3, 2001, *Schrempf Residence, 9627 NE Lake Washington Boulevard, Bellevue, Washington*, prepared for Demetriou and Associates, Kirkland, Washington, 8 pages and attachments including six test pits and two test borings, obtained from the DNR Geologic Information Portal (<http://www.dnr.wa.gov/geologyportal>).
- Terra Associates, Inc., May 9, 2000, *Sikma Property, 9621 NE Lake Washington Boulevard, Bellevue, Washington*, prepared for Jack Sikma, 8 pages and attachments including 5 test pit logs and 2 test boring logs, obtained from the DNR Geologic Information Portal (<http://www.dnr.wa.gov/geologyportal>).
- US Geological Survey (USGS), Waldron, H.H., et al, 1962, *Preliminary Geologic Map of Seattle and Vicinity, Washington*, Miscellaneous Geologic Investigations Map I-354.
- Washington State Department of Natural Resources (DNR), Division of Geology and Earth Resources, 1989, *Geotechnical Properties of Geologic Materials*, in Engineering Geology in Washington, Volume I, pages 18 to 26.

12.0 USE OF THIS REPORT

We have prepared this report for use by Polly Gardner; this report is not applicable to other locations or for other purposes. Our report, conclusions and interpretations should not be construed as a warranty of the subsurface conditions.

Within the limitations of scope, schedule and budget, our services have been executed in accordance with generally accepted practices in this area at the time this report was prepared. No warranty, express or implied, should be understood.

We appreciate the opportunity to be of service to you on this project. If there are any questions concerning this report or if we can provide additional services, please call.



KATHRYN S. KILLMAN



BRIAN R. BEAMAN

Yours very truly,
Icicle Creek Engineers, Inc.

Kathy S. Killman, LEG
Principal Engineering Geologist

Brian R. Beaman, PE, LEG, LHG
Principal Engineer/Geologist/Hydrogeologist



Document ID: 1202001.Rep

Submitted via email and surface mail (one original copy)

cc: Gray Rand, David Evans and Associates (email and five original copies)
Sanford Levy, Levy von Beck and Associates, PS (email)

- Attachments:
- Vicinity Map – Figure 1
 - Site Plan – Figure 2
 - Historical Aerial Photographs – Figure 3
 - Slope Map – Figure 4
 - Photographs – Landscape Wall Construction – Figure 5
 - Photographs – Landscape Walls – Figure 6
 - Photographs – Rockeries – Figures 7 and 8

FIGURES



VICINITY MAP

RE-LANDSCAPING EVALUATION

GARDNER PROPERTY, 9545 LAKE WASHINGTON BOULEVARD, BELLEVUE, WASHINGTON

ICICLE CREEK ENGINEERS
 29335 NE 20th Street
 Carnation, Washington 98014
 (425) 333-0093

SCALE: None	ICE FILE NO.
DESIGNED: ---	1202-001
DRAWN: BRB	Figure
CHECKED: KSK	1
DATE: 04/21/16	



SITE PLAN

RE-LANDSCAPING EVALUATION

GARDNER PROPERTY, 9545 LAKE WASHINGTON BOULEVARD, BELLEVUE, WASHINGTON

ICICLECREEK ENGINEERS
 29335 NE 20th Street
 Carnation, Washington 98014
 (425) 333-0093

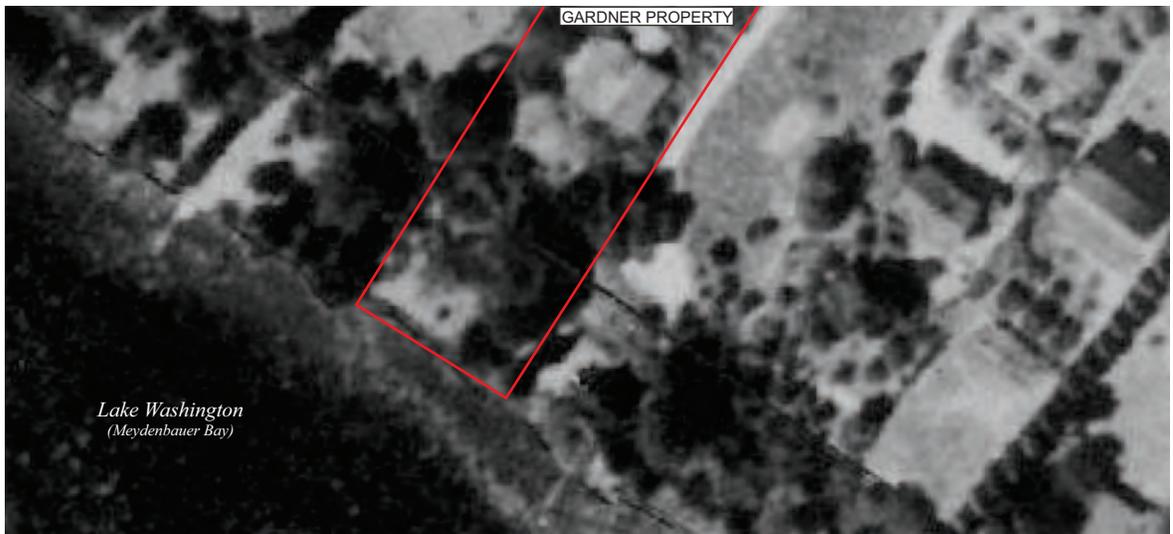
SCALE: As Shown	ICE FILE NO.
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DRAWN: BRB	Figure
CHECKED: KSK	2
DATE: 04/21/16	



2015
(from Google Earth)



2009
(from Google Earth)



1936
(from King County iMAP)

HISTORICAL AERIAL PHOTOGRAPHS

RE-LANDSCAPING EVALUATION

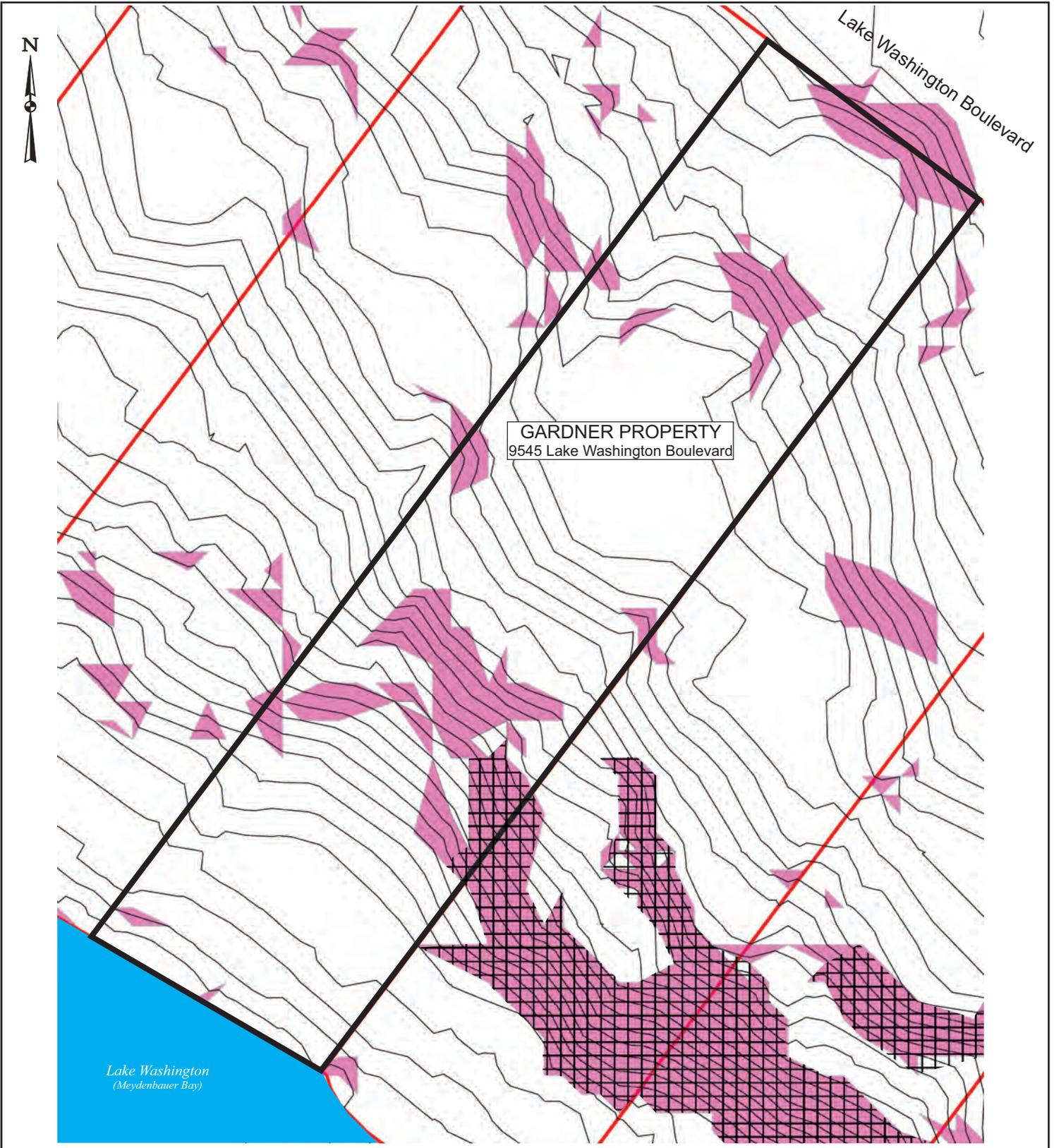
GARDNER PROPERTY, 9545 LAKE WASHINGTON BOULEVARD, BELLEVUE, WASHINGTON



29335 NE 20th Street
Carnation, Washington 98014
(425) 333-0093

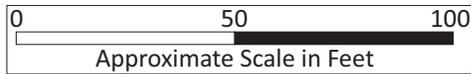
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DATE: 04/21/16

ICE FILE NO.
1202-001
Figure
3



GARDNER PROPERTY
9545 Lake Washington Boulevard

Lake Washington
(Meydenbauer Bay)



EXPLANATION	
	Slope Exceeds 40 Percent Grade (from LiDAR based contour data)
	Steep Slope Critical Area (Bellevue City Code 20.25H.120)
	Gardner Property (approximate)

Topography is based on ICE processing of 2005 LiDAR data obtained from the Puget Sound LiDAR Consortium <http://pugetsoundlidar.ess.washington.edu/>

2005 SLOPE MAP (PRE-LANDSCAPE) RE-LANDSCAPING EVALUATION GARDNER PROPERTY, 9545 LAKE WASHINGTON BOULEVARD, BELLEVUE, WASHINGTON	 29335 NE 20th Street Carnation, Washington 98014 (425) 333-0093	SCALE: As Shown	ICE FILE NO.
		DESIGNED: ---	1202-001
		DRAWN: BRB	Figure
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		DATE: 04/21/16	



Views of the lower landscape wall area prior to construction showing the cleared "steep slope" area.



View to the northwest of the steep slope area that was terraced for landscape wall foundation preparation. A black colored drain pipe is visible crossing at a right angle to the foundation lines.



View to the south within the steep slope area that is terraced along with forms and reinforced steel/mesh for landscape wall construction. Note that the large wall at the base of the slope resulted in a block buttress for the slope.

Note: Photographs provided by Sanford Levy of Levy von Beck and Associates, PS, undated.

PHOTOGRAPHS - LANDSCAPE WALL CONSTRUCTION

RE-LANDSCAPING EVALUATION
 GARDNER PROPERTY, 9545 LAKE WASHINGTON BOULEVARD, BELLEVUE, WASHINGTON

ICICLECREEK ENGINEERS
 29335 NE 20th Street
 Carnation, Washington 98014
 (425) 333-0093

SCALE: None
 DESIGNED: ---
 DRAWN: BRB
 CHECKED: KSK
 DATE: 04/21/16

ICE FILE NO.
1202-001
 Figure
5



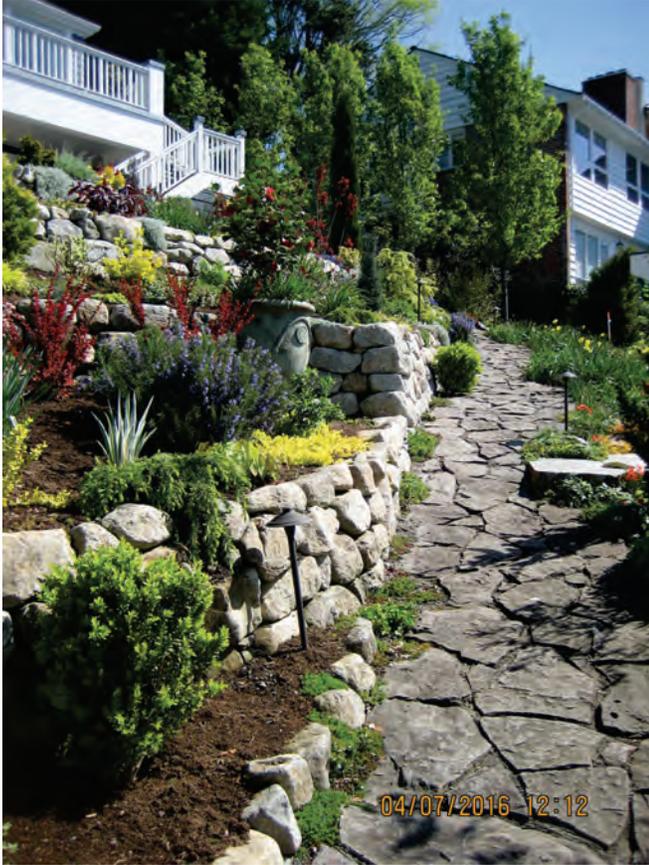
View to the northeast at the terraced slope using landscape walls that are less than 48-inches high.



View to the east of the landscape wall that is more than 48-inches high that forms a three-sided "box" at the base of the steep slope area (referred to as the "box wall" in the report).

PHOTOGRAPHS - LANDSCAPE WALLS RE-LANDSCAPING EVALUATION GARDNER PROPERTY, 9545 LAKE WASHINGTON BOULEVARD, BELLEVUE, WASHINGTON	 29335 NE 20th Street Carnation, Washington 98014 (425) 333-0093	SCALE: None	ICE FILE NO.
		DESIGNED: ---	1202-001
		DRAWN: BRB	Figure
		CHECKED: KSK	6
		DATE: 04/21/16	

View to the northwest of the foot path and rockeries.



View to the northeast of rockery walls and the foot path that traverses below the rockeries.



View to the east of rockery walls and the foot path that traverses below the rockeries.

PHOTOGRAPHS - ROCKERIES

RE-LANDSCAPING EVALUATION

GARDNER PROPERTY, 9545 LAKE WASHINGTON BOULEVARD, BELLEVUE, WASHINGTON



29335 NE 20th Street
Carnation, Washington 98014
(425) 333-0093

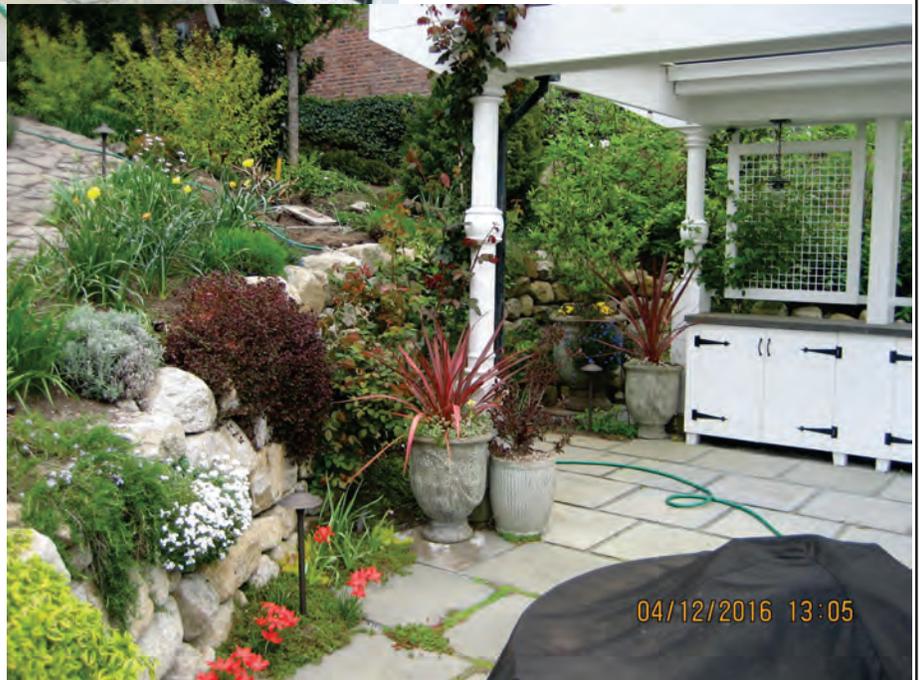
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DATE: 04/19/16

ICE FILE NO.
1202-001
Figure
7



View northeast at the rockery that is more than 48-inches high.

View southeast along the (curved) top of the rockery that is more than 48-inches high.



View of the 3- to 6-inch diameter quarry spalls that were used to backfill an approximate 2-foot wide area behind the rockery that is more than 48-inches high.

PHOTOGRAPHS - ROCKERIES

RE-LANDSCAPING EVALUATION

GARDNER PROPERTY, 9545 LAKE WASHINGTON BOULEVARD, BELLEVUE, WASHINGTON



29335 NE 20th Street
Carnation, Washington 98014
(425) 333-0093

SCALE: None
DESIGNED: ---
DRAWN: BRB
CHECKED: KSK
DATE: 04/21/16

ICE FILE NO.
1202-001
Figure
8