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. 15-118375-LO

Project Name/Address: Lin Vegetation Management at 14226 SE 44th St.

Planner: Reilly Pittman

Phone Number: 425-452-4350

Minimum Comment Period: August 13, 2015

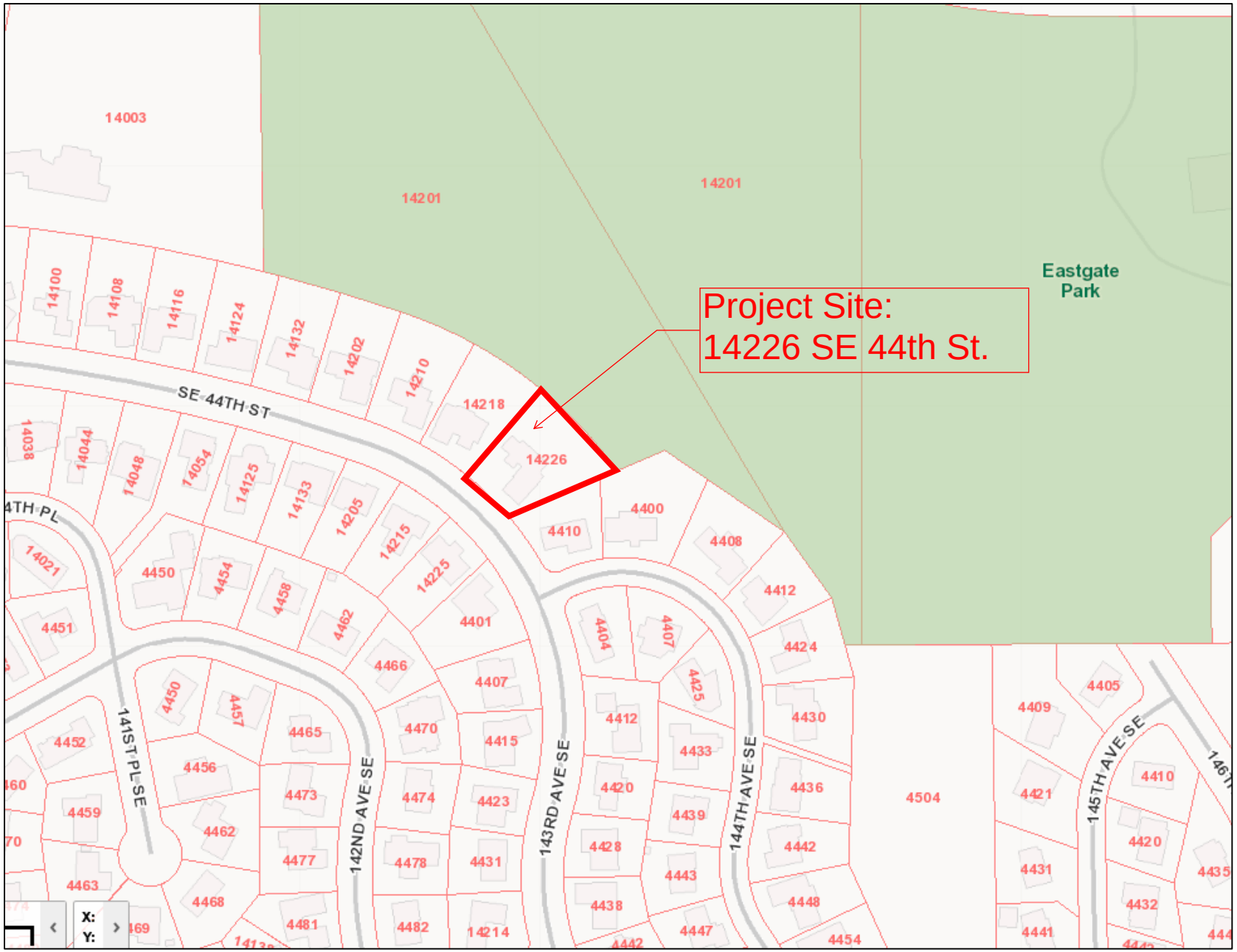
Materials included in this Notice:

- ☒ Blue Bulletin
- ☒ Checklist
- ☒ Vicinity Map
- ☒ Plans
- ☐ Other:

OTHERS TO RECEIVE THIS DOCUMENT:

- ☐ State Department of Fish and Wildlife / Sterwart.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

Lin Vegetation Management Vicinity Map



Site Plan

14226 SE 44th St. Bellevue, WA 98006

Critical Areas Land Use

N

10 20 40

Approximate Scale in Feet

Significant Tree Inventory

ID Number	Symbol	Species	Size (DBH)	Health
1507		Douglas Fir, Pseudotsuga menziesii	45"	Excellent
1508		Douglas Fir, Pseudotsuga menziesii	42"	Excellent

Planting Schedule

Symbol	Species	Size (Container)	Quantity
	Western Red Cedar, Thuja plicata	1 Gallon	21
	Salal, Gaultheria shallon	1 Gallon	40

Notes:

SALISH RESTORATION ASSOCIATES
23606 101ST AVE W EDMONDS, WA
206.817.7661

Prepared by: Benjamin Mark | Date: 6/25/2015

Significant Trees Removed

ID	Symbol	Species	Size
1509		Alnus rub.	27"
1510		Acer mac.	10"
1511		Acer mac.	42"
1512		Acer mac.	36"
1513		Acer mac.	24"
1514		Alnus rub.	24"

SEPA Checklist reviewed by Reilly Pittman on 7/28/15

City of Bellevue Submittal Requirements	27

ENVIRONMENTAL CHECKLIST

10/9/2009

Thank you in advance for your cooperation and adherence to these procedures. If you need assistance in completing the checklist or have any questions regarding the environmental review process, please visit or call Development Services (425-452-6800) between 8 a.m. and 4 p.m., Monday through Friday (Wednesday, 10 to 4). Assistance for the hearing impaired: Dial 711 (Telecommunications Relay Service).

INTRODUCTION
Purpose of the Checklist:

The State Environmental Policy Act (SEPA), Chapter 43.21c RCW, requires all governmental agencies to consider the environmental impacts of a proposal before making decisions. An environmental impact statement (EIS) must be prepared for all proposals with probable significant adverse impacts on the quality of the environment. The purpose of this checklist is to provide information to help you and the City of Bellevue identify impacts from your proposal (and to reduce or avoid impacts from the proposal, if it can be done) and to help the City decide whether an EIS is required.

Instructions for Applicants:

This environmental checklist asks you to describe some basic information about your proposal. Answer the questions briefly, with the most precise information known, or give the best description you can. You must answer each question accurately and carefully, to the best of your knowledge. In most cases, you should be able to answer the questions from your own observations or project plans without the need to hire experts. If you really do not know the answer or if a question does not apply to your proposal, write "do not know" or "does not apply." Giving complete answers to the questions now may avoid unnecessary delays later.

Some questions ask about governmental regulations such as zoning, shoreline, and landmark designations. Answer these questions if you can. If you have problems, the Planner in the Permit Center can assist you.

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. Include reference to any reports on studies that you are aware of which are relevant to the answers you provide. The City may ask you to explain your answers or provide additional information reasonably related to determining if there may be significant adverse impacts.

Use of a Checklist for Nonproject Proposals: *A nonproject proposal includes plans, policies, and programs where actions are different or broader than a single site-specific proposal.*

For nonproject proposals, complete the Environmental Checklist even though you may answer "does not apply" to most questions. In addition, complete the Supplemental Sheet for Nonproject Actions available from Permit Processing.

For nonproject actions, the references in the checklist to the words *project*, *applicant*, and *property* or *site* should be read as *proposal*, *proposer*, and *affected geographic area*, respectively.

Attach an 8 ½" x 11 vicinity map which accurately locates the proposed site.

RP

BACKGROUND INFORMATION

Property Owner: LIN DANNY AND DUJIAWEN

Proponent: YAOFU LIN

Contact Person: BENJAMIN MARK
(If different from the owner. All questions and correspondence will be directed to the individual listed.)

Address: 14266 SE 44TH ST BELLEVUE, WA

Phone: 206-617-7661

Proposal Title: LIN VO

Proposal Location: SOMERSET RIDGE, SE 44TH ST
(Street address and nearest cross street or intersection) Provide a legal description if available.

Please attach an 8 ½" 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: MITIGATION FOR TREE REMOVAL IN A CRITICAL AREA.
2. Acreage of site: .43
3. Number of dwelling units/buildings to be demolished: 0
4. Number of dwelling units/buildings to be constructed: 0
5. Square footage of buildings to be demolished: 0
6. Square footage of buildings to be constructed: 0
7. Quantity of earth movement (in cubic yards): VNKNOWN
8. Proposed land use: RESEDENTIAL
9. Design features, including building height, number of stories and proposed exterior materials: N/A
10. Other

Estimated date of completion of the proposal or timing of phasing:

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

RP

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

GEOTECHNICAL REPORT

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.

NO

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.

Critical Areas Land Use Permit

N/A

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)? ***40% slope or greater***

UNKNOWN DUE TO RECENT DISTURBANCE

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.

CUT AND FILL ON TOP OF GLACIAL TILL

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

YES, FAILING RETAINING WALL ***Retaining wall partially constructed without permit.***

RP

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

REMOVAL OF RECENTLY PLACED FILL *and retaining wall*

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

NO

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

0

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

- SILT FENCING
- GRADING WORK DONE IN DRY CONDITIONS
- REPLANTING WITH NATIVE SPECIES

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.

NO

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:

N/A

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 appropriate, state what stream or river it flows into.

NO

(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.

N/A

RP

(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.

Ø

(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.

N/A

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.

- NO NEW IMPERVIOUS SURFACES
- AREA WILL BE MULCHED @ 4"

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

NO

RP

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

MULCHING

4. Plants

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

- [X] deciduous tree: alder, maple, aspen, other
- [X] evergreen tree: fir, cedar, pine, other
- [ ] shrubs
- [X] 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?

NO ADDITIONAL TREE REMOVAL, WEEDS WILL BE CUT BACK

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

UNKNOWN

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

YES, SEE SITE PLAN

Cleared areas will be restored with native vegetation

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:

RP

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

UNKNOWN

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

UNKNOWN

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

N/A

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.

N/A

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

N/A

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:

N/A

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.

N/A

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

N/A

RP

b. Noise

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

N/A

(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.

EXCAVATOR

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

Noise regulated by BCC 9.18

N/A

8. Land and Shoreline Use

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

RESIDENTIAL, GREENBELT

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

NO

c. Describe any structures on the site.

2920 SF RESIDENCE

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

NO

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

R-3.5

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

SF-M, Single Family Medium Density

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

N/A

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

YES, STEEP SLOPE BUFFER ***Steep slope critical area***

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

4

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

0

RP

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

N/A

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

N/A

9. Housing

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

1

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

Ø

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

N/A

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?

NO NEW STRUCTURES

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

NEW TREES MAY IMPACT VIEWS IN 20 YEARS

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

SELECTIVE PRUNING

RP

11. Light and Glare

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

NEW TREES WILL BLOCK LIGHT FROM HOUSE

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

NO

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:

N/A

12. Recreation

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

N/A

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:

N/A

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.

N/A

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

N/A

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.

SE 44TH ST

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

UNKNOWN

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

UNKNOWN

RP

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

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

UNCHANGED

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

N/A

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:

N/A

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.

N/A

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.....7/6/2015.....

RP

Vegetation Management Plan

Prepared for:

Yaofu Lin
14266 SE 44th St Bellevue, WA 98006

For property located:

14266 SE 44th St Bellevue, WA 98006

Prepared by:

Benjamin Mark
ISA Certified Arborist #PN-6976A
PNW- ISA Certified Tree Risk Assessor #861

Prepared on:

June 24, 2015

SALISH RESTORATION ASSOCIATES

Summary

Objective

To prepare a planting and tree protection plan to offset evapotranspiration capacity and slope stability lost in removal of trees in a critical area buffer (steep slope) pursuant to guidelines laid out in the City of Bellevue Land Use Code 20.10-20.50.

Methodology

Rainwater interception and evapotranspiration rates are calculated based on the research in:

- Gash, J.H.C. and Shuttleworth, W.J., 2007. Benchmark Papers in Hydrology: Evaporation. IAHS Press, Wallingford
- Liu and Liu., 2008. A Rainfall Interception Model for Inhomogeneous Forest Canopy. **Frontiers of Forestry in China** Volume 3, Number 1, 50-57
- Hinman, 2005., Low Impact Development Technical Guidance Manual, WSU

In addition to the above research, I used my 15 years of professional experience in the field of arboriculture and my formal education in restoration horticulture, Puget Sound ecology, and urban forestry to interpret data and make the following recommendations.

Observations

The property is on SE 44th St and is bordered to the northeast by Eastgate Park in South East Bellevue. The homeowner recently removed two Red Alders *Alnus rubra* and four Big Leaf Maples *Acer macrophylla* near a steep slope within a critical areas buffer zone. Pursuant to a request for voluntary compliance issued on April 21, 2015 by the City of Bellevue (14-125706-EA) the homeowner contacted me to help secure the permits needed.

The upper end of estimates for interception of rain water in the canopy of this type of forest is 50-60%. The rest reaches the ground by stem flow and through fall. Water that is able to be absorbed by the roots of plants is stored in their tissues or vaporized into the atmosphere through transpiration. To offset the loss of storm water management provided by this canopy cover, a strategy of protecting trees and soil structure as well as planting a mix of native trees and shrubs on the hillside should be implemented.

(8) Short- and long-term management prescriptions, including characterization of trees and vegetation to be removed, and restoration and revegetation plans with native species, including native species with a lower growth habit. Such restoration and revegetation plans shall demonstrate that the proposed Vegetation Management Plan will not significantly diminish the functions and values of the critical area or alter the forest and habitat characteristics of the site over time.

Planting should be done in the cool autumn months for best retention rates. Irrigation to establish the plants will be most efficient If planting is done in October. Cutting down competing Himalayan Blackberry around the planting area should continue until the installed plants are mature.

The deciduous canopy cover lost with these trees removed was approximately 3500 sf. No evergreen or coniferous trees were removed. Replanting with the proposed landscape plan should replace canopy coverage lost in the next several seasons. Western Red Cedars are recommended due to their relatively fast bushy growth and lower mature height. Also, by virtue of their dense evergreen coniferous canopies, Cedars are able to hold much more water in their canopies during the rainy winter season. Salal planted at the top of the slope will help maintain slope stability and provide cover to crowd out invasive plant species.

The canopy area should be increased by planting 21x 1 gallon Western Red Cedars along the north east property line on 10 foot centers. Given an 80% viability rate after ten years, these juvenile cedars will provide approximately 1700 additional sq. ft. of evergreen cover.

Careful selection and installation of plant material can add benefits of erosion control, reduced subsurface flow, and nutrient cycling at the root level which will reduce the volume of rainwater reaching the local waterways. Planting 45 Salal in the restoration area will provide a dense network of roots and given 80% viability in five years, should be able to outcompete invasive plant species. In addition to planting, on going removal of Himalayan Blackberry and trimming down grasses and perennials is recommended to prevent them from over taking the newly planted material.

SALISH RESTORATION ASSOCIATES

Conclusions and Recommendations

The canopy cover lost with these trees removed was approximately 3500 sf. of deciduous cover. Replanting with the proposed landscape plan should replace canopy coverage lost in the next several seasons. Cedars are recommended due to their relatively fast bushy growth and lower mature height. Because they are evergreen, Cedars are able to hold much more water in their canopies during the rainy winter season than the previous deciduous canopy. Salal planted on the slope will help maintain slope stability and provide cover to crowd out invasive plant species.

This area should be increased by planting 21x 1 gallon Western Red Cedars along the north east property line on 10 foot centers. Given an 80% viability rate after ten years, these juvenile cedars will provide approximately 1700 additional sq. ft. of year round cover.

Careful selection and installation of plant material can add benefits of erosion control, reduced subsurface flow, and nutrient cycling at the root level which will reduce the volume of rainwater reaching the local waterways. Planting 45 Salal in the restoration area will provide a dense network of roots and given 80% viability in five years, should be able to outcompete invasive plant species. In addition to planting, on going removal of Himalayan Blackberry and trimming down grasses and perennials is recommended to prevent them from over taking the newly planted material.

Waiver of Liability

Although some trees without defects fail in major storms, the presence of any defect will increase the chances of failure. Each species has its own profile of defects. Some factors that must be considered include the species' growth habit, tree condition, branch attachments, resistance to decay, condition of anchoring roots, cultural or maintenance history, and previous damage. In addition, the severity of any defects found should be considered. Other factors related to the site such as intensity of use, soil condition, and prevailing winds must be considered in conjunction with the defects present when assessing the potential for failure. Any individual factor can directly impact tree safety (or, more often, multiple factors impact the tree's failure potential). The size of the tree or tree part that may fail is also important. Usually, the tallest, most exposed tree and tree parts are of greatest concern.

Assessment data provided by Salish Restoration Associates (SRA) is based on data recorded at the time of inspection. SRA is not responsible for discovery or identification of risks observed or recorded after field data was collected. Records may not remain accurate after assessment due to variable deterioration of assessment material. SRA provides no warranty with respect to the fitness of the urban forest for any use or purpose whatsoever.

SALISH RESTORATION ASSOCIATES

Vegetation management plan supplemental narrative to satisfy LUC 20.25H.055.C.3.i.v

(1) A description of existing site conditions, including existing critical area functions and values;

The Lin residence is located off of SE 44th St in the Somerset neighborhood and is near Eastgate Park. The house is located at the top of a steep slope. Two Red Alders Alnus rubra and four Big Leaf Maples Acer macrophylla were recently removed from the critical area buffer established to maintain slope stability.

(2) A site history;

This has been an occupied single family residence since 1977. Recent grading and landscaping has been done on this property for a parking area.

(3) A discussion of the plan objectives;

This VMP is designed to restore and improve environmental services lost when the trees were removed.

(4) A description of all sensitive features;

The north east side of the property slopes down to a ravine in Eastgate Park. Recent grade changes have been made and a failing retaining wall is present at the crest of the slope. The

(5) Identification of soils, existing vegetation, and habitat associated with species of local importance present on the site;

The soils on this slope are a typical glacial till structure below a layer of deposited organic matter.
A greenbelt of approximately 40 acres borders the NE edge of this property.

(6) Allowed work windows;
Ideally all planting would be done in October to allow plants to establish roots in the rainy season.

(7) A clear delineation of the area within which clearing and other vegetation management practices are allowed under the plan;

See site plan

Aspect CONSULTING

July 2, 2015

Yaofu Lin Residence
14426 SE 44th Street
Bellevue, Washington 98006

Re: Geotechnical Engineering Assessment
Project No. 150146

Dear Mr. Lin:

As requested, Aspect Consulting LLC (Aspect) conducted a geotechnical engineering reconnaissance and slope assessment of the above-subject property. The undersigned geotechnical engineer made a site reconnaissance visit on June 10, 2015. This letter provides a summary of our observations, conclusions, and recommendations.

Site Description and Observations

The subject parcel is situated in the north side of SE 44th Street at the crest of a north-facing steep slope. North and downslope from the subject parcel, there is undeveloped wooded land which we understand to be owned by City of Bellevue. The slope is designated by City of Bellevue as a Steep Slope and Erosion Hazard Area. Geologic mapping of this part of Somerset Hill indicates very dense/hard soil (continental glacial drift and till), underlain by bedrock (tertiary sedimentary bedrock) at varying depths. From a slope stability perspective, where undisturbed and not overlain by fill, steep slopes are stable with respect to deep-seated landslides.

It is our understanding that Mr. Lin recently purchased the property and subsequently removed trees from the slope to the north of the house, and constructed a landscaping retaining wall and placed fill over the steep slope without proper permits from the City of Bellevue.

Based on our observations and discussions with Mr. Lin, the recent work included the construction of a fill retaining wall and placement of fill in the back yard along the crest of the slope. The retaining wall is constructed with pre-cast concrete modular blocks. The retaining wall is failing, as evidenced by pronounced settlement, rotation, and gaps between individual blocks.

Fill that was placed in the area appears to have been derived from minor cuts on the south side of the property. However, there are angular pieces of weathered sandstone bedrock along the face of the steep slope that appear to have been imported. The thickness of the fill was not determined during our reconnaissance but it appears to be as much as about four feet thick.

Conclusions and Recommendations

Based on our observations and geotechnical engineering judgement, we conclude that the recently retaining wall and fill are unstable both locally and globally. The wedge of fill -- which may have been placed directly over the formerly vegetated sloping ground surface -- is weak in comparison with the underlying native glacially over-consolidated materials. The inclined surface between the recently-placed fill and the native slope is a potential slide plane. If vegetation and topsoil were buried along this contact (which is not uncommon in such situations) the organic-rich layer will

decompose and lose shear strength over time. If nothing is done, the fill and wall will likely slide. Typically such failures will occur during or immediately after an extended period of rainfall. Surface runoff and direct rainfall will seep into the more pervious and less dense undocumented fill, and seep downward to the contact with the native and essentially impervious soil, and then seep along this contact and emerge on the slope face. This water increases the weight and driving forced tending toward sliding while concurrently reducing the shear strength that would tend to resist sliding. Eventually the driving forces exceed the resisting forces, and a slide occurs.

From our review of Bellevue Development Code and subsequent telephone conversations with Tom McFarlan and Heidi Bedwell of the City of Bellevue, it is evident that the retaining wall and fill were constructed and placed in violation of City code.

Whereas it would be possible to design, permit, and construct a structural retaining wall system that would allow the fill to remain in place, we understand that Mr. Lin does not propose this course of action. Therefore we recommend that the modular block retaining wall and the recently-placed fill be removed and the slope re-graded to is approximate original condition.

The removals should be done using a track-mounted excavator. The depth and extent of the fill removal should be determined in the field using an observational approach. A geotechnical engineer or geologist should be on site to observe and evaluate the fill removal and to confirm that the native slope soils have been exposed and the slope restored.

The fill removal should be focused on the crest of the slope (near the house) where an excavator can safely operate. There may be some fill that was dumped onto the surface of the slope that cannot be reached/removed with the excavator. In our opinion, this fill should remain in place because removing it will be more hazardous than keeping it in place.

We recommend that the slope soils be stabilized with erosion-resistant ground cover such as Salal, Sword Fern, or Kinnikinnick. An arborist who specializes in restoration of steep slopes should develop the restoration and planting plans.

Conditions and Limitations

Work for this project was performed for Yaofu Lin (Client), and this letter was prepared in accordance with generally accepted professional practices for the nature and conditions of work completed in the same or similar localities, at the time the work was performed. This letter does not represent a legal opinion. No other warranty, expressed or implied, is made.

All reports prepared by Aspect Consulting for the Client apply only to the services described in the Agreement(s) with the Client. Any use or reuse by any party other than the Client is at the sole risk of that party, and without liability to Aspect Consulting. Aspect Consulting's original files/reports shall govern in the event of any dispute regarding the content of electronic documents furnished to others.

Closure

We appreciated the opportunity to provide geotechnical engineering services. If you have any questions about the foregoing, or if you would like to discuss geotechnical construction support services, please contact the undersigned at 425.772.4705.

Sincerely,

Aspect consulting, LLC

July 2 2015

Erik O. Andersen, PE
Senior Associate Geotechnical Engineer
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