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Scott Gibson
On The Rock 98040, LLC
PO Box 956
Mercer Island, WA
98040

RE: Tree Inventory 9740 SE 35th Pl., Mercer Island, WA.

Scott:

This report is provided to address the inventory I conducted recently on the property at the address of 9740 SE 35th Pl. in Mercer Island. This report presents my findings. This revised report addresses comments of the City of Mercer Island in the notice dated March 8, 2018. The tree retention and replacement requirements for developing lots are specified in the revised section 19.10 of the Mercer Island City Code (MICC). Please see the Tree Retention Plan prepared by Terrane showing the trees I evaluated identified by number and the protection elements.

1.0 Professional Qualifications and Experience

Following is a summary of my qualifications and experience in the field of arboricultural consulting. This is how I meet the threshold qualifications for a qualified arborist in the City of Mercer Island.

Education

- Master of Science, Urban Horticulture, University of Washington, 1996.
- Bachelor of Science, Environmental Policy and Assessment, Western Washington University, 1993.

Experience

- Consulting Arborist, Self Employed, 1999 - Present.
- Wetland Biologist, Wetland Resources, Inc., 1997-1999.
- Bellevue Natural Resources, 1996-1997.
- Bellevue Botanical Garden, 1996.
- City of Everett Urban Forestry Staff, 1991-1993 (seasonal).

Certifications

- ISA Certified Arborist #PN-0909A - 1996 to present.
- Tree Risk Assessor Qualification - 2013 to present.

In summary, I have over 20 years experience in the field of ecology and horticulture and approximately 20 years experience as a consulting arborist here in the Pacific Northwest.

2.0 Site Conditions

The project site is located in north Mercer Island on Lake Washington in a neighborhood of single family residences. It's developed with a single family residence. The landscape is formal in character, including much turfgrass and ornamental species of trees and shrubs, but also includes several native trees.

3.0 Tree Inventory - Methods and Results

I conducted visual evaluations of all the trees according to ISA standards and based upon many years conducting such evaluations on trees in the Pacific Northwest. I observed trees up close to inspect conditions of the trunk and from afar to inspect conditions in the crowns. All assessments were conducted according to the methods specified in the ISA Tree Risk Assessment Manual (Dunster, Julian A., E. Thomas Smiley, Nelda Matheny, and Sharon Lily. 2013. Tree Risk Assessment Manual. Champaign, Illinois: International Society of Arboriculture) and on nearly 20 years experience conducting such evaluations.

The investigations involved the gathering of the following information:

- Tree species
- Trunk diameter
- Crown spread diameter
- Location factors
- Health and condition notes (general level of vigor, defects, disease or pest problems)

I conducted an inventory of the trees on the property and those just off-site with driplines that extend onto the property back in 2016. Using the survey, I identified each tree on the site and labeled them with numbered metal tags. These numbers shown on the Tree Inventory Plan. I also identified the trees just off-site with driplines that extend onto the project site.

The survey shows 67 trees on the property, however, 4 of these have been removed for a total of 63 trees on the property. One of the trees shown located just off-site to the west has also been removed. There are 35 trees just off-site with driplines that extend onto the project site.

I gathered information on each tree including species, dbh and performed visual assessments of each tree from up close to inspect the trunk and root collar and for the larger trees also from afar to observe conditions of the crown. The crown spread measurements were gathered during the site survey and are provided in the inventory plan. All of the information specific to each tree is provided on the accompanying Tree Evaluation Data spreadsheet.

Twelve trees on the property were found to be in poor condition and health. These trees are numbers 11, 12, 13, 21, 22, 23, 24, 37, 41, 42 and 44. The descriptions of these trees and their conditions/defects are provided in the Tree Evaluation Data spreadsheet. However, at this time these trees are not proposed to be removed as they don't conflict the proposed development.

4.0 Tree Inventory and Exceptional Status

The City of Mercer Island's tree retention, replacement and protection requirements for developing properties are provided in chapter 19.10 of the revised Mercer Island City Code. Information on the existing trees are found in the accompanying tree evaluation data spread sheet.

Mercer Island prioritizes tree retention based upon the following criteria (a summary of the requirements):

- A minimum of 30% of trees 10 inches diameter and greater are required to be retained through development.
- The development proposal shall be designed to further minimize the removal of large trees and maximize large tree retention.
- Exceptional trees (24" greater dbh) are to be prioritized for retention.
- Trees that are healthy and have a greater likelihood of longevity.
- Trees that are part of a healthy grove (8 or more trees 10" dbh or greater that form a continuous canopy).

There is a total of 63 trees on the property and a total of 11 trees that meet the exceptional status based upon trunk diameter. These trees are numbers 3, 4, 7, 8, 22, 23, 37, 44, 47, 56 and 60.

Based upon the grove designation that eight or more trees with trunk diameters of 8" or greater, the following trees are within groves, some with trees that extend off-site, and therefore are classified as exceptional:

- Trees 11-24
- Trees 25 - 36
- Trees 46-63

4.1 Tree Evaluation Data

The attached Tree Evaluation Data spreadsheet provides a complete description of each trees diameter, species, critical root zone, limits of allowable disturbance, health condition and viability," as required by the City of Mercer Island.

4.0 Proposed Development and Tree Removal/Retention

The proposed development is to develop lots 1 and 2 with single family residences.

Developing the lots will require the removal of exceptional trees numbers 33, 34, 35, 36, 49 50, 51, 52, 53, 54, 55, 56, 57 and 59. In addition, exceptional trees #11, 12, 13, 21, 22, 23, 24, 37, 44 and significant trees #41 and 42 are to be removed due to poor condition and/or health. Following are the descriptive reasons for these removals:

- #11 - Exceptional. This tree has been topped and is in very bad condition and is recommended to be removed.
- #12 - Exceptional. This tree has been topped and is in very bad condition and is recommended to be removed.
- #13 - Exceptional. This tree has been topped and is in very bad condition and is recommended to be removed.
- #21 - Exceptional. This tree has been topped and is in very bad condition and is recommended to be removed.
- #22 - Exceptional. This tree has been topped and is in very bad condition and is recommended to be removed.
- #23 - Exceptional. This tree has been topped and is in very bad condition and is recommended to be removed.
- #24 - Exceptional. This tree has been topped and is in very bad condition and is recommended to be removed.
- #33 - Exceptional. This tree is located within the new lot and will be impacted by site grading so it is to be removed as the impacts for the lot will displace it. Per MICC 19.10.060(A)(3)(C), retention of this tree will prevent creation of a residential lot through a subdivision or short subdivision that is otherwise allowed by MICC 19.10.
- #34 - Exceptional. This tree is located within the new lot and will be impacted by site grading so it is to be removed as the impacts for the lot will displace it. Per MICC 19.10.060(A)(3)(C), retention of this tree will prevent creation of a residential lot through a subdivision or short subdivision that is otherwise allowed by MICC 19.10.
- #35 - Exceptional. This tree is located within the new lot and will be impacted by site grading so it is to be removed as the impacts for the lot will displace it. Per MICC 19.10.060(A)(3)(C), retention of this tree will prevent creation of a residential lot through a subdivision or short subdivision that is otherwise allowed by MICC 19.10.
- #36 - Exceptional. This tree is located within the new lot and will be impacted by site grading so it is to be removed as the impacts for the lot will displace it. Per MICC 19.10.060(A)(3)(C), retention of this tree will prevent creation of a residential lot through a subdivision or short subdivision that is otherwise allowed by MICC 19.10.
- #37 - Exceptional. This tree is dying and will not survive much longer therefore it is recommended to be removed.
- #41 - Exceptional. This tree has been topped and is in very bad condition and is recommended to be removed.

- #42 Exceptional. This tree is dying and will not survive much longer therefore it is recommended to be removed.
- #44 Exceptional. This tree is dying and will not survive much longer therefore it is recommended to be removed.
- #49 - Exceptional. This tree is located within the new lot and will be impacted by site grading so it is to be removed as the impacts for the lot will displace it. Per MICC 19.10.060(A)(3)(C), retention of this tree will prevent creation of a residential lot through a subdivision or short subdivision that is otherwise allowed by MICC 19.10.
- #50 - Exceptional. This tree is located within the new lot and will be impacted by site grading so it is to be removed as the impacts for the lot will displace it. Per MICC 19.10.060(A)(3)(C), retention of this tree will prevent creation of a residential lot through a subdivision or short subdivision that is otherwise allowed by MICC 19.10.
- #51 - Exceptional. This tree is located within the new lot and will be impacted by site grading so it is to be removed as the impacts for the lot will displace it. Per MICC 19.10.060(A)(3)(C), retention of this tree will prevent creation of a residential lot through a subdivision or short subdivision that is otherwise allowed by MICC 19.10.
- #52 - Exceptional. This tree is located within the new lot and will be impacted by site grading so it is to be removed as the impacts for the lot will displace it. Per MICC 19.10.060(A)(3)(C), retention of this tree will prevent creation of a residential lot through a subdivision or short subdivision that is otherwise allowed by MICC 19.10.
- #53 - Exceptional. This tree is located within the new lot and will be impacted by site grading so it is to be removed as the impacts for the lot will displace it. Per MICC 19.10.060(A)(3)(C), retention of this tree will prevent creation of a residential lot through a subdivision or short subdivision that is otherwise allowed by MICC 19.10.
- #54 - Exceptional. This tree is located within the new lot and will be impacted by site grading so it is to be removed as the impacts for the lot will displace it. Per MICC 19.10.060(A)(3)(C), retention of this tree will prevent creation of a residential lot through a subdivision or short subdivision that is otherwise allowed by MICC 19.10.
- #55 - Exceptional. This tree is located within the new lot and will be impacted by site grading so it is to be removed as the impacts for the lot will displace it. Per MICC 19.10.060(A)(3)(C), retention of this tree will prevent creation of a residential lot through a subdivision or short subdivision that is otherwise allowed by MICC 19.10.
- #56 - Exceptional. This tree is located within the new lot and will be impacted by site grading so it is to be removed as the impacts for the lot will displace it. Per MICC 19.10.060(A)(3)(C), retention of this tree will prevent creation of a residential lot through a subdivision or short subdivision that is otherwise allowed by MICC 19.10.

- #57 - Exceptional. This tree is located within the new lot and will be impacted by site grading so it is to be removed as the impacts for the lot will displace it. Per MICC 19.10.060(A)(3)(C), retention of this tree will prevent creation of a residential lot through a subdivision or short subdivision that is otherwise allowed by MICC 19.10.
- #59 - Exceptional. This tree is located within the new lot and will be impacted by site grading so it is to be removed as the impacts for the lot will displace it. Per MICC 19.10.060(A)(3)(C), retention of this tree will prevent creation of a residential lot through a subdivision or short subdivision that is otherwise allowed by MICC 19.10.

Removing these 25 trees on site leaves 30 healthy trees 10" diameter and greater retained for a retention percentage of 47.6. Using the formula on the accompanying form, the retained percentage is shown as 0.0016. Dividing the number of retained trees (30) by the total number of trees on site (63) gives the retained percentage at 47.6.

5.0 Description of Trees Not Viable for Retention

In a recent comment letter, the City of Mercer Island specified a requirement for a description of trees not viable for retention. This information is provided on the accompanying Tree Evaluation Data Spreadsheet under the column Reason for Removal. See the Tree Evaluation Data Spreadsheet for this information.

6.0 Methods of Limits of Development Specifications

In a recent comment letter, the City of Mercer Island specified a requirement for a description of Limits of Disturbance specifications. The limits of disturbance for each tree is provided on the accompanying Tree Evaluation Data Spreadsheet.

As a general rule, all of the limits of disturbance radial distances are specified to be just beyond the drip line edge of any retained trees as a measure of protecting the crowns and roots and root plates of the retained trees.

7.0 Tree Protection Measures

The retained trees are to be protected throughout construction on the lot from removal of the existing residence until the new residence is complete. The following protection measures are to be instituted:

- Tree protection fencing is to be installed around the trees to be retained prior to beginning any work on the property. The fencing is to be located at the dripline edge. However, so long as the excavation areas are kept to a minimum within the driplines of the trees, the protection zones could be reduced to allow more room for construction. Fencing is to remain in place throughout construction and only to be removed upon approval of the city.

- The tree protection areas are to be areas of no encroachment, no construction, no dumping and no storage of materials.
- The fencing is to be left in place throughout construction and only removed upon completion of the project.
- The stump of any trees that are removed within the dripline of retained trees are to be ground down to below the soil surface as opposed to pulled out or excavated.

8.0 Special Instructions for Work within the LOD

The following measures are to be instituted for any work proposed within the LODs of retained in the situations specified:

- For impacts not requiring significant ground excavation (below 1 foot) the only special instruction is to raise the crowns of the trees to a sufficient height to provide clearance. All pruning work is to be done by a qualified arborist per ANSI A300 pruning standards.
- For impacts requiring ground excavation below 2 feet for features such as foundations, the area of impacts is to be air-spaded before excavating to determine root status. Hand digging may be necessary to limit the extent of root damage. Any damaged roots are to be hand cut just prior to backfilling the trenches.
- For impacts requiring ground excavation below 2 feet for features such as utility lines, tunneling or air or water spading is to be employed to limit root damage and loss.
- Any stumps of removed trees within the LODs of retained trees are to be graded instead of excavated.

9.0 Impact on Remaining trees From Tree Removal

In a recent comment letter, the City of Mercer Island specified a requirement for an assessment of the impact of tree removal upon the remaining retained trees.

Only 14 trees are being removed for the development. These trees are all in the southeast corner of the property. Provided no mechanical damage results to the retained trees from removal of these, I don't anticipate the removal to pose a significant impact. The prevailing winds blow from the southwest and the site slopes downward to the north so removal of these 14 trees will not result in a significant increase in exposure of retained trees. An additional 11 trees are recommended to be removed due to their poor condition and health. Trees 11, 12, 13, 21, 22, 23, 24 are all located in a single row along the eastern property boundary and therefore are not in a location where removal of them will impact the remaining retained trees. Trees 37, 44, 41 and 42 are also in locations inside the property (such as standing singles - not in stands with other trees and not providing sufficient buffering for other trees) where removal of them will not impact the remaining retained trees

10.0 Tree Replacement

The City of Mercer Island is requiring suggested locations and species of replacement trees. As the accompanying Tree Inventory & Replacement Submittal Information form shows, all tree being removed are exceptional requiring replacement at 6 trees for all 25 being removed, equaling 150 trees required to be planted as replacement for the removed trees.

I recommend that all of the replacement trees are planted on lot 3. As for species, the trees to be removed are half Douglas fir and half western red cedar, therefore, I recommend replacement with half (75) Douglas fir and half (75) western red cedar. All trees are required to be 6' tall.

In my opinion, there is not room for 150 trees on lot 3 or even on all three lots for all of these trees to have enough space to grow and thrive and for the landscapes to be usable. I would recommend keeping the replacement tree numbers to no more than 30.

11.0 Use of This Report and Limitations

This report is provided to On The Rock 98040, LLC as a means of reporting on the trees on the existing lot at 9740 SE 35th Pl. in the City of Mercer Island, WA, for the Blue Short Plat and to and to provide City of Mercer Island tree protection and replacement measures. Trees are dynamic and their conditions can change drastically and quickly, particularly following changes to the surrounding environment, such as in the case of development, therefore, the evaluations provided in this report only apply to the trees at the time of the assessments. While the impact assessments have found those to the trees recommended to be acceptable for retention, it is impossible to determine the affect of impacts upon trees or a tree's response to impacts, therefore Shoffner Consulting and Tony Shoffner is not responsible for the failure of retained trees and cannot be held liable for damage resulting from the failure of trees recommended to be retained.

Cordially,



Tony Shoffner
ISA Certified Arborist #PN-0909A
TRAQ