

SHOFFNER CONSULTING

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April 3, 2017

Revision #1: April 20, 2017

Revision #2: March 6, 2018

Revision #3: May 10, 2018

James Rudolf
825x West Mercer Way
Mercer Island, WA
98040

RE: Tree Inventory - 8253 West Mercer Way, Mercer Island, WA. 98040

James:

This tree inventory report is provided to address the City of Mercer Island's requirements for developing lots. This report addresses the trees on the new lot northeast of the waterfront lot at 8255 West Mercer Way and the proposed development that will affect the retention of trees. This report addresses the following elements:

- A numbering system of existing significant trees (with corresponding tags on trees);
- Measured driplines;
- Trunk size (dbh);
- Species;
- Tree health;
- Status (retained or removed);
- Special instructions for work within critical root zone (CRZ);
- Location and type of protection measures for retained trees, and
- Additional information as requested in the 4/18/2017 Intake Screening Meeting Packet. All of the related documents have been revised to address these comments and the responses to them are provided in section 5.0 of this report.
- Additional comments provided in item 45 dated May 22, 2017 are addressed in section 6.0 of this report.

1.0 Project Site Conditions and Development Plan

The project site is a long, narrow property running northeast to southwest, sloping downward to the Lake Washington waterfront. It is currently developed with a single family residence and a detached garage/cottage in the far southeastern portion of the property. The upslope portion of the property is developed with a driveway serving 8255 and is otherwise undeveloped. This area is the most wooded and is where the new house will be built. In addition to the new house, the driveway to the existing house is proposed to be relocated.

2.0 Tree Inventory

Each significant tree on the new lot has been evaluated with the survey in hand showing the numbers that were assigned to the trees during the inventory. I inventoried and evaluated 43 trees on the project site, three of which are just off-site to the east (#16, 17 and 18) and 11 are located on the existing lot downslope from the new lot. In addition to those inventoried, there are several on the site that do not meet the size threshold to be classified as significant. The species of trees inventoried are as follows:

- Bittercherry (*Prunus emarginata*)
- Black cottonwood (*Populus trichocarpa*)
- Big-leaf maple (*Acer macrophyllum*)
- Deodar cedar (*Cedrus deodara*)
- Douglas fir (*Pseudotsuga menziesii*)
- Pacific madrone (*Arbutus menziesii*)
- Red alder (*Alnus rubra*)
- Western red cedar (*Thuja plicata*)

The accompanying Tree Evaluation Data form provides information specific to each tree.

3.0 Tree Retention, Removal and Replacement Plan

Impacts associated with the development of the single family residence including installation of underground utilities and replacing the existing driveway to comply with City of Mercer Island Municipal Code requirements will require the removal of trees. These trees are identified in the spreadsheet as Remove.

In addition to the trees to be removed for the development, more trees are recommended to be removed due to condition and level of risk.

Five trees, all big-leaf maples, are in poor condition and health and therefore recommended to be removed. The conditions of these trees are described in the spreadsheet. One tree just off-site to the east (#17), a bittercherry, is dead. Even though it is off-site, it will be near the new home therefore it is recommended to be removed.

Three very large black cottonwoods with very large and unstable upper limbs (some of which are dead) are recommended to be removed. Being so exposed to winds off the water, the limbs are subject to failure during windstorms. These trees are very tall and the new house will be within target range. Black cottonwoods are not desirable trees to have near homes due to the risk they pose from failed limbs and trunks. If one of these trees were to fail during a windstorm, the likelihood of impacting a house is high and the resulting damage would be considerable. The best approach to eliminating the risks they pose is to remove them.

In total, 11 trees are recommended to be removed due to poor health and condition. These trees are numbers 1, 14, 17 (off-site), 23, 24, 25, 26, 27 33 and 34.

In order to relocate the driveway, install underground utilities, install a temporary driveway, build the new home and install a landscape to the southwest of the new home, 19 significant trees are proposed to be removed. Following are the development related reasons for the removal of these trees:

Driveway impacts - 16 significant trees on the site are to be removed due to impacts associated with installation of the driveway; either in the pathway of the driveway or will suffer considerable root damage and loss due to grading for the driveway.

House impacts - Two significant trees are in the location of the proposed house and therefore will be removed.

Retaining Wall/Fill impacts - Installation of the retaining wall to contain the fill downslope of the new house will impact one tree.

Three significant trees are proposed to be retained on the new lot and 11 are being retained on the existing lot for a total of 14 trees retained out of a total of 33 trees for a 42% tree retention.

3.1 Tree Replacement

The City of Mercer Island requires replacement for trees removed on a sliding scale of 0:1 up to 4:1, depending upon the criteria in the following priority order:

1. Percentage of slope, slope stability, topography and general soil conditions;
2. Trunk size and canopy of tree to be cut and trunk size and canopy of replacement tree;
3. Size and shape of lot and area available to be replanted; and
4. Proximity to any critical tree area and/or the existence and retention of vegetative cover in any critical tree area.

Eleven of the trees to be removed are in poor condition and health, or otherwise not recommended to be retained are proposed to not require replacement. Most of the trees to be removed are large and all are on a slope. Following development, there will not be considerable planting area available to replace at the maximum retention rate. Therefore, I recommend replacement at a ratio of 1:1 for a total of 19 trees to be planted. All replacement trees are to be 6 feet in height.

4.0 Tree Protection Measures

The retained trees 22, 43 and 44 are to be protected throughout construction on the lot. Tree protection is to be at the dripline of the retained trees. Tree

protection fencing location is shown for the trees proposed to be retained. No impacts are allowed within the protection area and no impacts are proposed.

5.0 Additional Information

The City of Mercer Island has requested additional information be provided regarding the existing trees and tree plan related documents. The following revisions have been requested by the City of Mercer Island and are addressed in full. We expect that all requirements regarding the tree plan have now been met.

Comment:

- Tree numbers on plans for easy identification of individual trees to be saved and/or removed.

Response:

- All tree numbers were shown on the Tree Retention Plan at the last submittal and are currently shown on the revised plan.

Comment:

- Show driplines of regulated trees to scale.

Response:

- All driplines of regulated trees, both to be retained and to be removed, are provided on the Tree Retention Plan.

Comment:

- Show protection plan for work proposed within dripline of protected (retained) tree (#43).

Response:

- The Tree Retention Plan shows the location of the tree protection fencing at the dripline of the retained trees. No impacts are allowed within the tree protection area and no impacts are proposed.

Comment:

- Attempt to use best building practices to retain trees 20 and 22 (grading and retaining walls are in conflict).

Response:

- Retaining walls and extensive fill upwards of 10 feet deep are proposed in around trees #20 and #22 for the creation of a level front yard. Installation of the retaining walls will require excavation through the root zone of tree #20 resulting in considerable root damage and loss. Placement of 10 feet of fill over the root zones will greatly diminish the availability of air and water for these trees affecting their health. There are no building practices that will allow for the retention of these trees.

Comment:

- Tree next to tree #1 not numbered.

Response:

- The tree next to #1 has been numbered on the Tree Retention Plan and information on this tree has been provided in the Tree Evaluation Data spreadsheet.

Comment:

- Confirm all significant trees even if not on survey are included on plans.

Response:

- All significant trees on the new lot that were identified during my initial inventory and evaluation for the original submittal of this report and plan are shown on the Tree Retention Plan.

6.0 Additional Information Item 45, May 22, 2017

Comments:

- Show tree protection for tree 44.
- As stated in my intake comments use best building practices to retain trees 20 and 22. Remove new grading from within saved trees dripline.
- Show tree protection for trees 16-18.

Response:

- Protection fencing is shown for trees 16, 17, 18 and 44 on the updated plan.
- As informed by the project engineer, the proposed development will not allow for retention of trees 20 and 22.

7.0 Additional Tree Retention, May 10, 2018

Tree #22 is now being retained and is shown without impacts within its dripline.

8.0 Use of This Report and Limitations

This report is provided to James and Jessica Rudolf to address the City of Mercer Island requirements for trees on developing lots. Natural decline and failure of trees is not predictable, therefore, Shoffner Consulting and Tony Shoffner cannot be held liable for retained trees that die or fail prior to or following development of the property. The removal of surrounding forest cover, particularly in the direction of prevailing winds, in this case the south and southwest, exposes trees to environmental factors to which many are not adapted.

Cordially,



Tony Shoffner
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