ARBORIST REPORT

Date:
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Prepared for:
Ross Murray
c/o Richard Flake

Site Address:
4803 Forest Ave SE
Mercer Island, WA

Prepared by:
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NARRATIVE

Scope of Work
You have asked me to assess the trees located on the above referenced property as well as trees located off-site but with limbs overhanging the subject property. This scope of work includes preparation of documents for submittal to the city of Mercer Island.

Methodology
The methods and techniques used for this assessment are as outlined in *Tree Risk Assessment* by Julian Dunster and as adopted by the International Society of Arboriculture (ISA). Additional standards, practices and specifications are as detailed in *ANSI Standard A300 (Part 9)-2017 Tree Risk Assessment a. Tree Failure*. The end goal of most assessments is to provide the owner or manager of the tree(s) with factual information, enabling them to make decisions about the management of the tree(s). For this particular assessment, I used a Level II Assessment that includes inspection of the root collar, lower trunk, and canopy of the tree as can be seen from the ground. Basic assessment does not include climbing the tree or excavation of soils to inspect root structure or condition.

I used a wood mallet to 'sound' certain trees and field glasses to look at upper limbs and canopy. I used a metal probe to explore one or more columns of wood decay. I measured each tree for its Diameter at Breast Height (DBH), an industry standard of measuring trees at 4.5' above grade.

Findings and Observations
I visited the site several times, beginning May 7, 2019. On October 11, 2019 I met with City Arborist John Kenney and Richard Flake, on-site, to discuss assessment criteria and to assess the general condition of the trees, and to discuss potential tree protection for the trees that are planned for retention

I assessed twenty (20) trees: fifteen (15) trees on-site, five (5) trees off-site. The five off-site trees are all located on a narrow strip of City of Mercer Island Park Department property. Of the fifteen (15) on-site trees, three (3) are smaller than 10" DBH, therefore Twelve (12) trees are of consideration. You plan to retain five(5) trees, or 41.67 percent retainage, rounded to 42%.

The following trees are noteworthy.

Tree #287 is a 34.0" DBH Big leaf maple located on-site, near the lake. This tree will be retained. In order to provide additional root zone protection, a proposed pathway to the lake will be routed away from and around the root zone. This tree sits below the grade of the subject property with a small portion of its root collar buried by soils that form the mound south of the tree. An attempt will be made to remove enough soil from against the root collar as to expose

the root collar. Excavation near this tree should be undertaken with the supervision of an on-site arborist. Exposed roots should be treated as discussed below under Mitigation Measures.

Tree #288 is a very large (48"+ DBH) Big leaf maple that is growing near the lake on the Park Department property. The root protection measures for tree #287 will also provide root protection for this tree. This tree, and all of the trees located within the park property have deadwood present in their canopies. This deadwood poises some risk to park users and to the existing house located on the subject property. There may be other potential targets that were not assessed. I have provided further risk assessment and mitigation information later in this report.

Tree #292, #293, #295 through #298 are all Big leaf maple trees growing as a grove of trees that includes the Park Department trees. In the midst of this stand of trees is a large maple stump in advanced decay with Kretzmaria denusta, a wood decaying fungal pathogen that attacks Big leaf maple. It is reasonable to expect the fungus is in the root system of the entire stand of trees. This suspected condition would account for the limb dieback in many of the trees. These trees were noted for obvious decay, but no effort was made to assess their individual risk potential.

Tree # 299 is a 21" DBH Acer macrophyllum, commonly called Big leaf maple which is located off-site, possibly in a deeded easement. This tree will need to be removed in order to provide utility vault excavation and installation. This tree has a large decay column in the buttress wood. While the tree has provided good response growth to the decay, the canopy of the tree is partially defoliated with large dead limbs present.

Tree #744 is a 19" DBH Western red cedar that is located on the east property line of the subject site. This tree currently has tree protection measures in place to provide protection from a residential construction project located on the parcel east of the subject property. No additional impacts will occur within the dripline or canopy of tree #744.

Tree #751 is a Big leaf maple that is Exceptional by size but not by Condition. The tree has decay in the main stem and significant deadwood in the canopy. The tree will be removed in order to provide a driveway back-around area.

Considerations

Of primary concern is protection of the off-site trees located in the Park, trees that could very likely have root system impacts from the proposed excavation associated with the new residential construction on the subject property. It may prove challenging to discern the roots of the Maple trees scheduled for removal from the roots of the retained Maple trees on the Park property. The following mitigation measures should be implemented as the process allows and as the process moves along. The following bulleted items should be included on the Tree Retention and Replanting plan sheet as well as on plan sheet pages that detail clearing and grading standards.

- Tree Protection Measures (TPM) should be 4' tall orange poly fencing, or equivalent, staked into place at the Limits of Disturbance (LOD).
- Signage shall be provided every 20' along the sections of TPM stating the fence provides a 'Tree Protection Zone' - 'No Soils, Building Materials or Equipment Allowed in Protection Zone'. These signs should be 8.5" by 11.0 "and made to be weather resistant.
- The removal of scheduled trees should be done in two phases; removal of the trunk and crown material and then the removal of stumps, as needed. If a stump can be retained and still provide for adequate construction excavation, that stump should be retained.
- Removal of stumps should be done under the supervision of a professional tree person. Any roots encountered should be cleanly cut as-if it were a root from a tree scheduled for retention.
- Root pruning, as needed, should be undertaken with care. Additional pruning standards are detailed in *ANSI Standard A300 (Part8)-2013 Root Management.*
- An assessment of the encountered roots should be undertaken to determine if any of the retained trees incur root impacts and the extent of the root impacts.
- All exposed roots should be covered with moist native soil or a commercial compost or mulch product, sufficient to cover the freshly cut roots.
- All bare soils around the retained trees should be covered with 3" of arborist wood chips or a commercial mulch material.
- The trees would benefit from additional summer-time hydration, as may be possible.

Currently, there is a considerable amount of English ivy infesting the Park Department property, consuming the common property-line fence and climbing the trees. You plan to remove the mostly broken-down fence which will require ivy removal. During an on-site visit, John Kenney suggested that the ivy be cleared back to the edge of the existing park pathway and staircase. Other invasive species, if encountered, should be removed at that time.

The existing Park Department trees have varying amounts of deadwood in their canopies. The deadwood may pose a risk to park users. The on-site trees currently provide some protection to the subject property in-so-much as their canopies might catch fallen limbs from the Park Department property trees, if such a limb failure were to occur. Once the Maple trees are removed from the subject property, the likelihood of a fallen limb from the Park Department trees striking the new construction will be increased. This potential increase in risk could be mitigated by crown cleaning the Park Department trees. Crown cleaning is defined as removal of dead and dying or poorly structured limbs from the canopy. Poorly structured limbs would include over-reaching limbs or limbs with extra-ordinary loads.

City of Mercer Island code provides for re-planting trees to mitigate for trees removed. I have completed a City of Mercer Island 'Tree Inventory & Replacement Submittal Information' work-sheet. You will be required to re-plant eighteen (18) trees as mitigation for the trees removed. The re-planting can be done on-site if there is sufficient room to accommodate that number of

trees. If there is insufficient room on-site, the code provides for payment in lieu of planting, an option that provides for planting off-site.

Conclusions

Sufficient trees will be retained to meet the City Code with 42% retainage. Of the retained trees, one is considered in Excellent condition, the remainder are in Fair condition. Protection of the root zones of the Park Department property trees will be challenging. As the tree and stump removals are undertaken, further assessment will provide the necessary information needed if there are concerns about the retained Park Department trees as a result of the on-site development work. The Park Department trees currently are assessed as Fair or Good, but decay that is visible now and a history of root decay in the area will require frequent and periodic risk assessments going forward.

This report was prepared by Thomas Quigley, ISA certified arborist PN-655A. Tree Risk Assessment Qualified (TRAQ) by the International Society of Arboriculture (ISA).