



**Urban Forestry Services**

**BARTLETT CONSULTING**

Divisions of The F.A. Bartlett Tree Expert Company

## Arborist Report

**Title:** Mastan Redevelopment Project – Tree Protection Plan

**Prepared for:** Farzad Ghazvinian  
7683 SE 27<sup>th</sup> Street, #278  
Mercer Island, WA 98040

**Project site:** 2251 71<sup>st</sup> Avenue SE  
Mercer Island, WA 98040

**Prepared by:** Urban Forestry Services | Bartlett Consulting  
Miles Becker, Consultant  
ISA Certified Arborist® #PN-7808A  
ISA Tree Risk Assessment Qualified

**Reviewed by:** Josh Hollinger, Field Consulting Arborist  
ISA Certified Arborist® #WE-12135AU

**Date:** January 9, 2022

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## Summary

Proposed demolition and construction of a new single-family residence will be within the critical root zone of an exceptional western red cedar. The tree was in good condition and had a low likelihood of failure. Its limits of disturbance on the construction side of the tree were 12 feet. Root loss from excavation is not expected to significantly affect the health or stability of the tree. Monitoring by a certified arborist during excavation would confirm the actual root loss. Up to 15 percent of the crown may need to be pruned for clearance over the construction area. Provided the recommended tree protection measures are implemented at the start of the project, the tree is expected to recover and continue contributing to the urban forest canopy cover.

**Map 1.** The Mastan residence at 2251 71<sup>st</sup> Avenue SE has an exceptional western red cedar and a large flowering plum in the backyard. The property boundary is outlined in red. Aerial imagery from 2021 King County iMap.



## Introduction

The existing house at 2251 71<sup>st</sup> Avenue SE in Mercer Island, Washington is proposed for demolition and replacement with new construction. The project developer, Farzad Ghazvinian, was aware of at least one tree on the property that would need protection during construction. The owners are interested in retaining the tree and designing the footprint of the new building in compliance with City of Mercer Island Municipal Code (MIMC) regulations for tree protection.

For development of properties zoned R-9.6, at least 30 percent of large trees must be retained (MIMC 19.10.060). Large trees are defined as having a trunk diameter of at least 10 inches. Exceptional trees with larger trunk diameters must be retained, unless they are in decline or a hazard (MIMC 19.10.060). Exceptional trees have a minimum trunk diameter of 36 inches unless otherwise listed for a specific species. A tree inventory submitted with a building permit application must describe the species, size, condition, viability, and limits of disturbance for each large and exceptional tree on the property (MIMC 19.10.080).

I was contacted by Mr. Ghazvinian in January 2023 with a request for a tree inventory and preliminary tree protection plan. The purpose of this report is to identify the trees on the property that will be retained and recommend general protection measures, primarily the limits of disturbance. The general protection measures will help guide the design of the new construction.

## Methods

I was on-site to inspect the trees on January 5, 2023 with Josh Hollinger, field consulting arborist for Urban Forestry Services | Bartlett Consulting. We marked the two trees with a trunk diameter over 10 inches with aluminum tags numbered #641 and 642.

I inspected the trees following the protocol for an ISA Level 2 Basic Tree Risk Assessment. The Level 2 assessment involves looking at the tree for structural defects, signs and symptoms of disease or insect activity, and any other indicators related to the likelihood of failure. All sides of the tree are observed from the ground. The site is also assessed for wind exposure, location and type of targets that would be struck by a failed tree or tree part, and the potential consequences of failure. The assigned risk rating is a function of the likelihood of failure, likelihood of striking a target, and the sustained damage or injury from a tree strike. The time frame for this Level 2 assessment is five years from the date of the site visit.

Trunk diameter was measured at 4.5 feet above grade with diameter tape. I measured the dripline radius in each cardinal direction with measuring tape. Condition ratings from poor to excellent were based on the tree's health, structure, and form. The tree was considered non-viable if it showed symptoms of decline, such as very poor vigor, extensive crown dieback, or signs of advanced decay.

The limits of disturbance are intended to define the minimum area needed to maintain the health and stability of the tree. Construction mainly has the potential to impact tree health and stability by damaging roots, the trunk, or branches in the crown. A tree's resilience to root or crown loss is partly a function of its species, size, and condition, as well as soil type and other environmental factors. As a default, I used the inner critical root zone (ICRZ) to define the limits of disturbance for the trees in this report. The ICRZ is equal to 6 inches in radius from the trunk

for every 1 inch in trunk diameter. This distance was adjusted on a case-by-case basis using observations from the field as indicators of the tree's potential resilience.

## Limits of the Assignment

The tree assessment was performed from the ground for visual conditions. Care has been taken to obtain all information from reliable sources. All data has been verified insofar as possible; however, the consultant can neither guarantee nor be responsible for the accuracy of information provided by others.

Illustrations, diagrams, graphs, and photographs in this report, being intended as visual aids, are not necessarily to scale and should not be construed as engineering or architectural reports nor surveys.

Information contained in this report covers only those items that were examined and reflects the condition of those items at the time of inspection. There is no warranty or guarantee, expressed or implied, that problems or deficiencies of the plans or property in question may not arise in the future.

## Observations

The property is in a residential neighborhood of north Mercer Island near Interstate 5. The existing house occupies about one third of the entire property (Map 1). The property has some landscaping, but the only significant canopy coverage is from two trees in the backyard. Neither tree is especially tall and they have moderate exposure to prevailing winds from the south.

The larger of the two trees, #641, was a western red cedar (*Thuja plicata*) with a trunk diameter of 32.3 inches (Photo 1). It was about 45 feet tall with well-developed trunk taper and a full crown at 90 percent live crown to tree height ratio (LCR). The dripline radius was 14 feet. I saw one surface root about 3.5 inches in diameter above ground out to 9 feet from the trunk (Photo 2). The tree was in good condition, healthy, and viable. It was 29 feet west of the house.

The smaller tree, #642, was a flowering plum (*Prunus cerasifera*) with three codominant trunks (Photo 3). Two of the trunks were dead and I did not include them in the measurement of trunk diameter. The one live trunk had a diameter of 14.3 inches. The tree had been pruned in the past and it was about 15 feet tall. There was some decay in the trunk but the crown had average vigor. It was growing in a planting area bordered by a short brick wall. Overall, the tree was viable but in poor condition.

## Discussion

The western red cedar is an exceptional tree in the City of Mercer Island and it must be retained during redevelopment. The flowering plum is in poor condition. It has a low preservation value and it may not be viable in the long term. Retaining the cedar tree and removing the plum tree would meet the minimum 30 percent tree retention requirement.

The western red cedar is healthy and its form is consistent with trees better at resisting wind loading and whole tree failure. Construction and disturbance will be on the east side of the tree.

Prevailing winds are typically from the south. I expect the cedar tree to remain healthy and stable even with some root loss from construction.

The ICRZ for this tree was a 16-foot radius from the trunk. I believe there would be minimal root loss and no significant impact on the tree with a limit of disturbance at 12 feet from the trunk. This requires that no construction activities, including but not limited to excavation, material storage, heavy machinery operation, scaffolding, or contractor foot access be within 12 feet of the tree on the east and south side of the tree. Some lower branches extending over the 12-foot limit of disturbance may need to be reduced in length. The exterior walls of any new structures should be a few feet set back from the tree's dripline to avoid potential conflict from branches encroaching on the building in the future.

## Recommendations

These general tree recommendations are intended to preserve the western red cedar in its current condition. I recommend removing the flowering plum and replacing it with a new tree that will perform better in the future.

Implement the following tree protection measures prior to the start of demolition:

- Erect 6-foot high chain-link tree protection fencing at a distance of 12 feet east and south of the trunk face. The tree protection fencing should be at the edge of the dripline on the other sides of the tree. The approximate location of tree protection fencing for the western red cedar is shown on the attached *Tree Protection Plan*. Alternative types of fencing may be considered provided they are relatively rigid and stay in place for the duration of the project.
- Keep all materials, grading, and contractors outside the fenced area.
- Post at least one sign on the fence that states "Tree Protection Area."
- Place a 3-inch layer of coarse wood chip mulch in the area protected by fencing. This will help the soil retain moisture and increase the availability of nutrients to compensate for any root loss. Keep the wood chips 10 to 12 inches from the trunk of the tree.
- Prune the branches overhanging the project site up to a maximum height of 18 feet above grade. The height where the branches are cut back to the trunk may be somewhat higher due to the downward curve of the branch. Limit pruning to less than 15 percent of the entire crown. All pruning shall be done by an ISA Certified Arborist® following the ANSI-A300 standards for pruning.

During demolition and construction, avoid machinery contact with the branches and trunk of the tree. Keep out of the tree protection area.

When excavating within 16 feet of the western red cedar:

- Have a certified arborist on-site to monitor the excavation.
- Document the size and quantity of roots encountered.
- If more than three roots over 4 inches in diameter need to be cut for the foundation of the new building, re-evaluate the impacts on the tree.
- Cleanly cut roots over 1 inch in diameter back to the edge of the grading limits.

For the first two years after excavation:

- Provide supplemental water to the tree from May through September. Use a soaker hose or similar slow-release system to saturate the soil to a depth of 12 inches every two weeks.

Please let me know if you have any questions on my field observations or the recommendations provided in this document. I can be reached at:

Phone: 360-503-9654

Email: [mbecker@bartlett.com](mailto:mbecker@bartlett.com)



## Photographs

**Photo 1.** The exceptional western red cedar is the largest tree on the property. The viewer is looking north.





**Photo 2.** One surface root was visible out to a distance of 9 feet east of the western red cedar. The viewer is looking west.

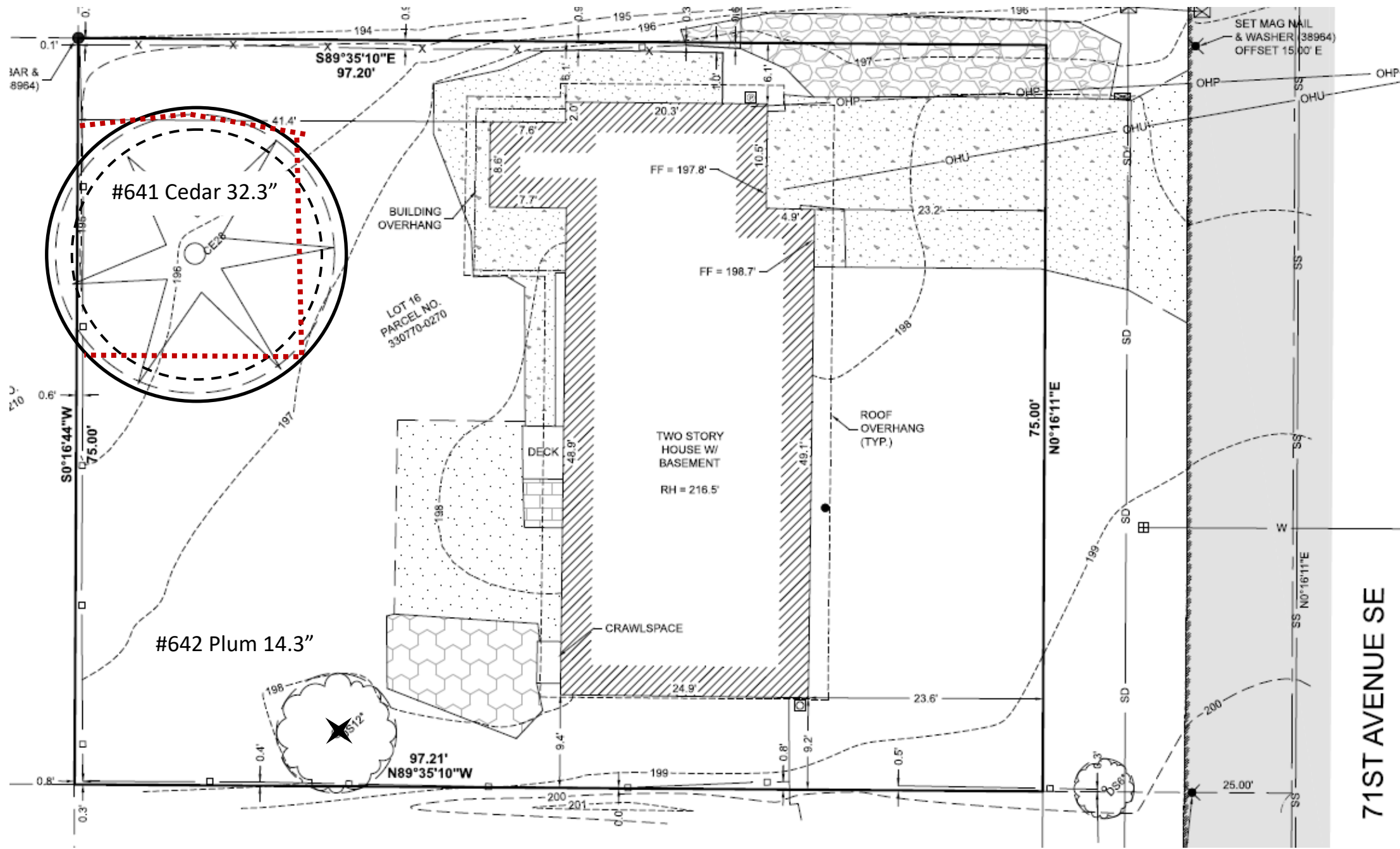




**Photo 3.** The backyard flowering plum was in poor condition with two of the three codominant stems dead. The viewer is looking south.



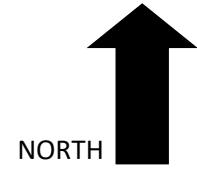




**ARBORIST MAP SYMBOL KEY:**

- #255 TREE NUMBER
- CENTER OF TREE
- ICRZ
- DRIPLINE
- TREE PROTECTION FENCING
- ✱ REMOVE TREE

Base Image Source: Site Survey Inc



**Tree Protection Plan**  
**Mastan Residence Redevelopment Project**

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