



ARBORIST NOTES

SUBJECT: Capital Improvement Project
PS 25 Tree Evaluation
4266 E. Mercer Way

FOR: Chris Marks
Public Works Department
City of Mercer Island
9601 SE 36th Street
Mercer Island, Washington, 98040

PURPOSE: A) Evaluate anticipated impacts from planned pump station improvements on public trees next to pump station.

FROM: Urban Forestry Services | Bartlett Consulting
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DATE: March 13, 2024

Background

Improvements to PS 25 are planned as part of the upcoming scheduled projects by Public Works. Construction at the pump station will involve lifting the existing concrete lid using a crane. These activities will likely impact publicly owned trees next to the facility.

I visited PS 25 with Chris Marks from Public Works on March 6, 2024 to evaluate the anticipated impacts on one tree next to the lid, determine the feasibility of retaining the tree, and recommend any tree management actions.

Observations

The tree of concern was a red maple (*Acer rubrum*) with an 11.9-inch trunk diameter and an estimated height of 35 feet. It had three primary codominant trunks starting from 5 feet above grade. The tree had good form, structure, and health (Photo 1). All parts of the tree had an improbable likelihood of failure. I marked the tree with an aluminum tag numbered #171.

The tree was growing 2.5 feet northeast of the edge of the concrete lid (Photo 2). I saw at least one root about 3 inches in diameter over the top of the lid. The southern half of the tree's crown was overhanging the lid (Photo 1).

Discussion and Recommendations

At least one and likely more structural roots of the red maple were in the shallow soil on top of the lid. These roots would need to be cut about 2 feet from the trunk to lift the lid. This could result in a loss of 30 to 40 percent of the critical root zone. Lifting the lid up with a crane will require pruning one of the primary codominant trunks and a couple larger branches higher in the tree. I estimated that the pruning would remove about 40 to 50 percent of the crown.

I do not expect tree #171 to survive the root and crown pruning required for the improvements. Even if it did survive, the crown would be weighted to the northeast and there would be fewer structural roots supporting the side opposite the asymmetrical crown. There was a parking area northeast of the tree and a children's play area on east of the tree that was within striking range if the tree failed.

Given the lower survival and increased likelihood of failure after construction, I recommend removing the red maple.

Map 1. Tree #171, an 11.9-inch DBH red maple, was next to the concrete lid of PS 25. Map provided by Public Works.

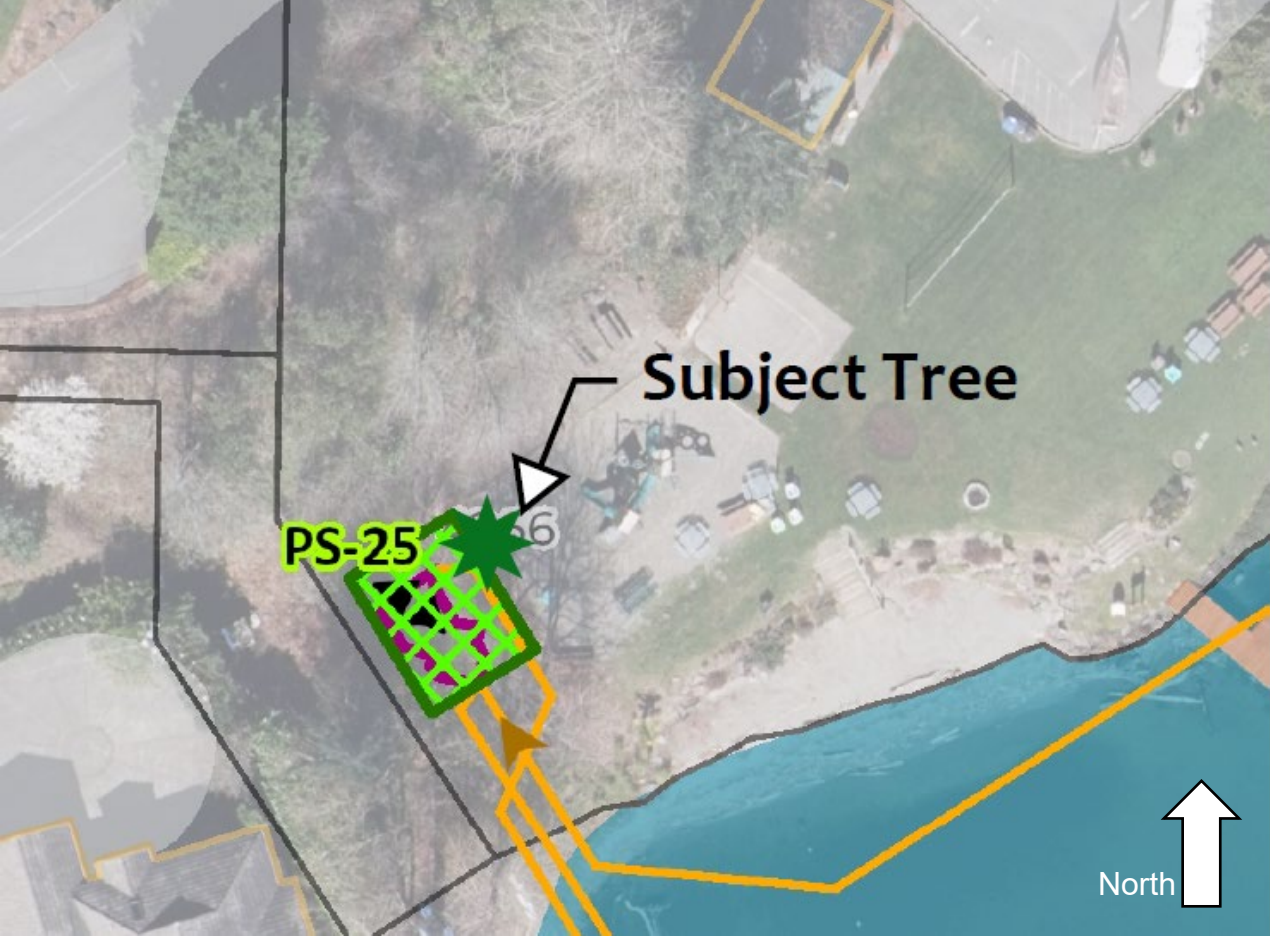


Photo 1. The red maple next to PS 25 has about half its crown overhanging the concrete lid (yellow outline) that will be lifted by an overhead crown. The viewer is looking northwest.



Photo 2. The edge of the concrete lid was less than 3 feet from the trunk of the red maple. The yellow dashed line is the approximate edge of the lid. A shallow layer of soil covered the lid. The viewer is looking southeast.

