PS 10 VEGETATION MANAGEMENT - VICINITY MAP
9036 N MERCER WAY

PS 10 VEGETATION MANAGEMENT - SITE PLAN
9036 N MERCER WAY

TREE INVENTORY

REMOVE:

- #172 - SCOULER'S WILLOW, 14"DBH
- #173 - BIG LEAF MAPLE, 11"DBH

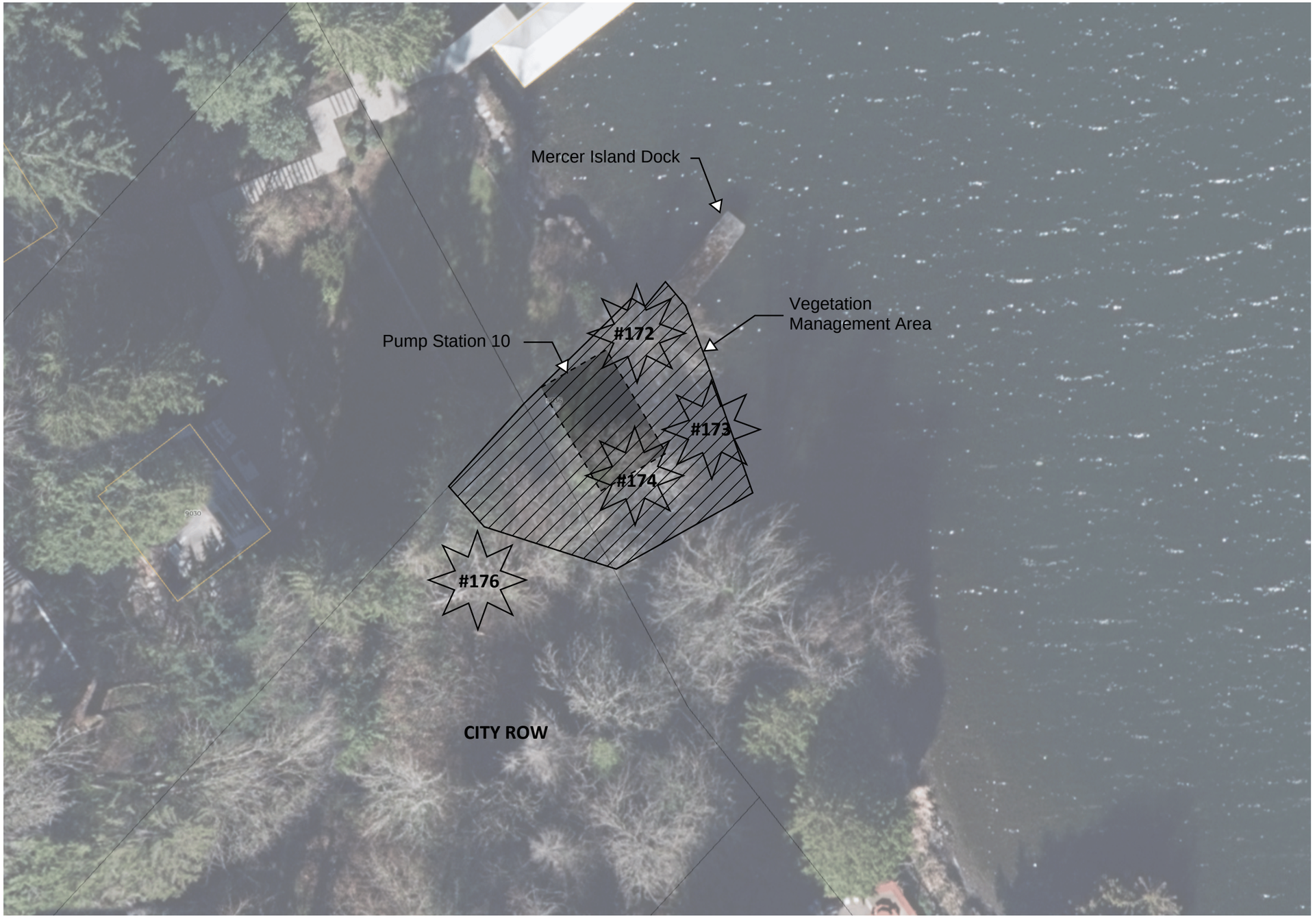
CUT_CREATE 10'TALL WILDLIFE SNAG:

- #176 - WESTERN RED CEDARY, 22"DBH

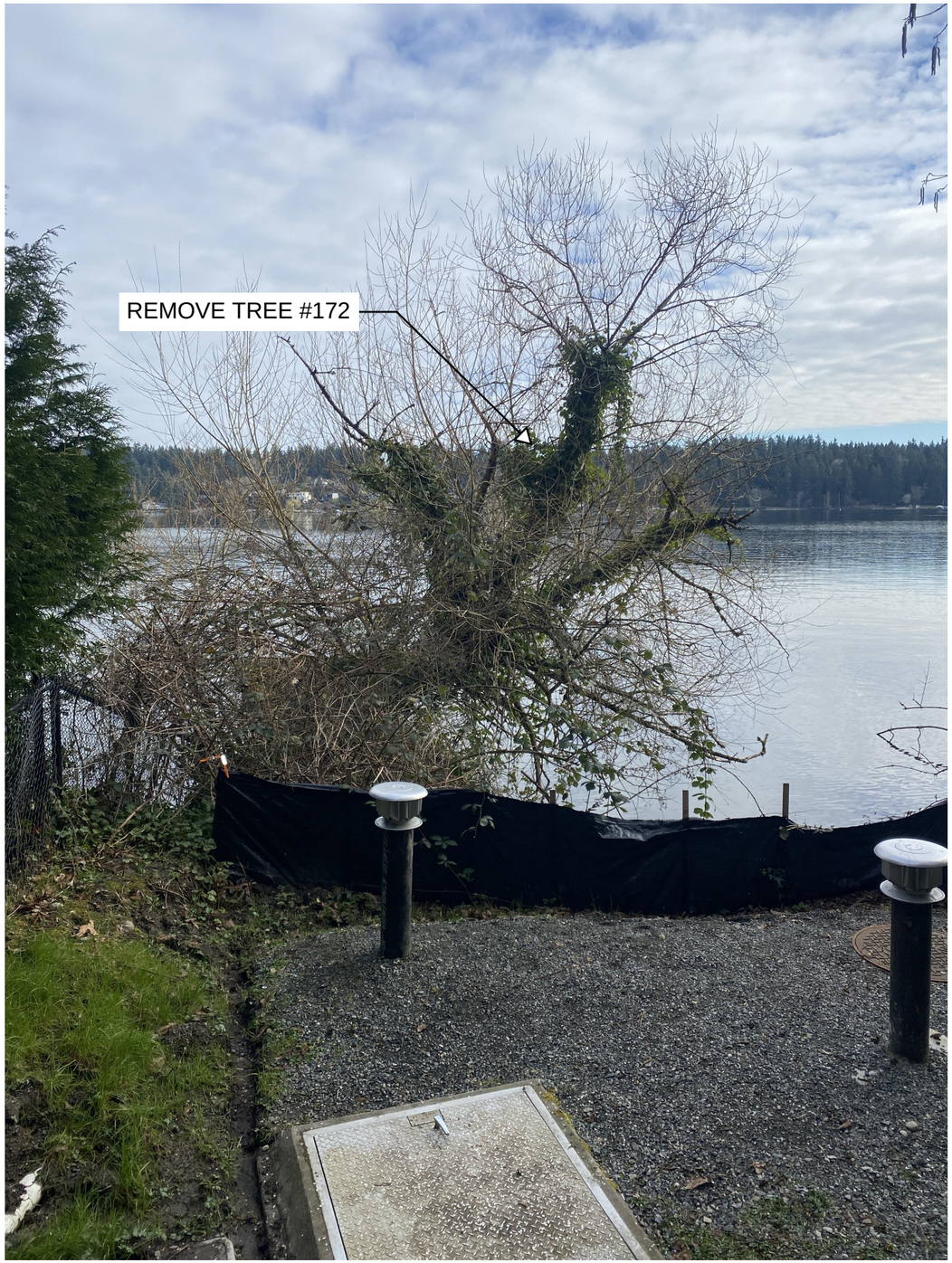
TRIM/PRUNE:

- #174 - RED ALDER, 12"DBH

- #175 - NOT USED



PS 10 VEGETATION MANAGEMENT - SITE PHOTOS
9036 N MERCER WAY



CLEAR ALL BRUSH, TREE DEBRIS, UNDESIRED GROWTH (UNDERGROWTH, SUCKERS, BLACKBERRIES, THISTLES, ETC.), UNWANTED PLANT MATERIAL, AND OTHER DEBRIS FROM THE PROJECT SITE.

PS 10 VEGETATION MANAGEMENT - SITE PHOTOS
9036 N MERCER WAY

PS 19 VEGETATION MANAGEMENT - VICINITY MAP
7697 W MERCER WAY

NOTE:
MOBILIZATION/DEMOBILIZATION OF EQUIPMENT AND HAUL OFF OF DEBRIS AND MATERIALS AT PS 19 SITE SHALL OCCUR BY WATER (BOAT/BARGE) FROM THE CITY OWNED DOCK. LAND ACCESS TO THE SITE SHALL ONLY BE PERMITTED FOR PERSONNEL AND SMALL HAND TOOLS.

PS 19 VEGETATION MANAGEMENT - SITE PLAN
7697 W MERCER WAY

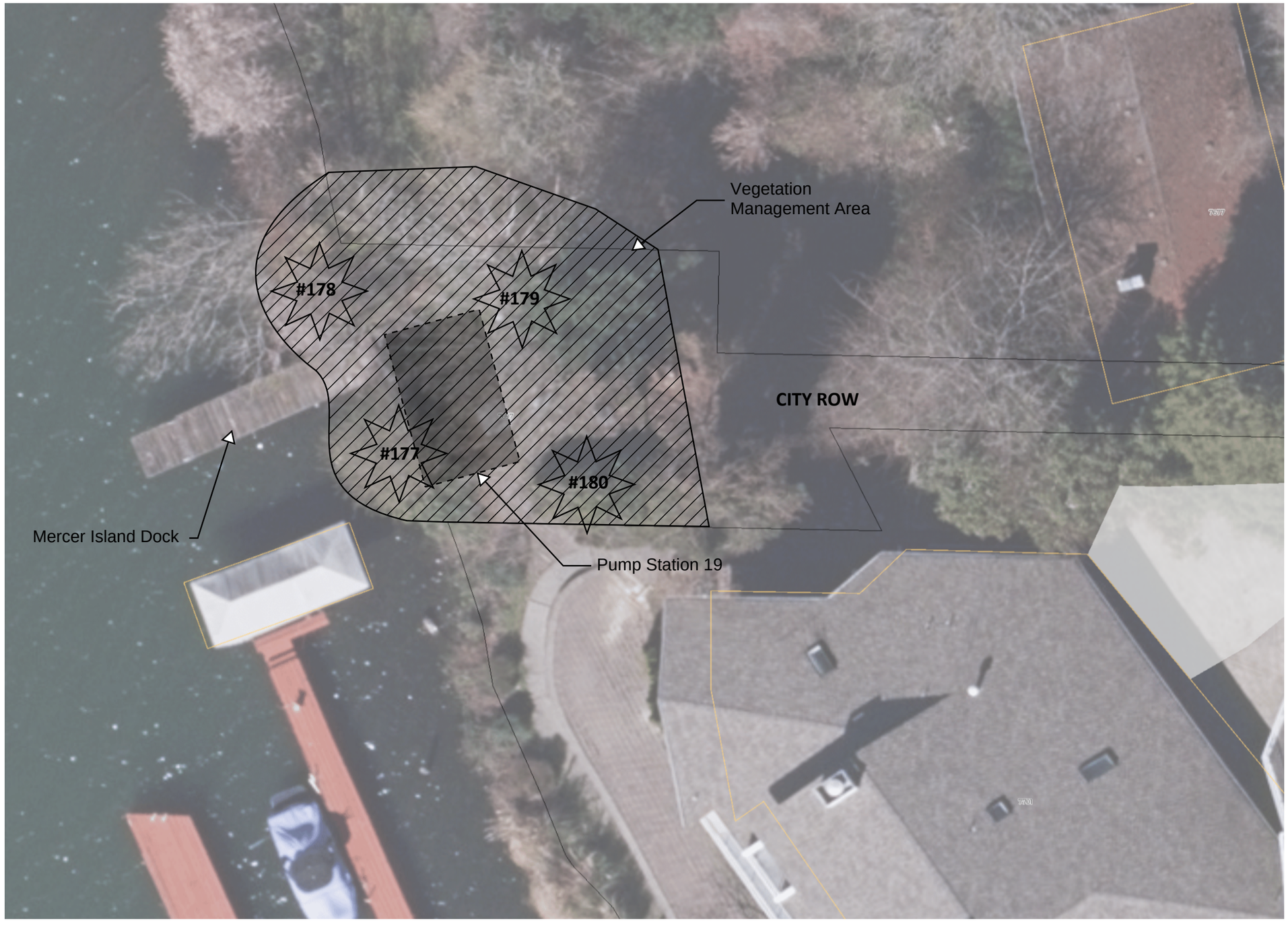
TREE INVENTORY

TRIM/PRUNE:

- #177 - HAWTHORNE, 2-5"DBH
- #178 - ASH, 10"DBH
- #179 - NORWAY MAPLE, 24.5"DBH

PROTECT IN PLACE:

- #180 - RED ALDER, 20"DBH



PS 19 VEGETATION MANAGEMENT - SITE PHOTOS
7697 W MERCER WAY

CLEAR ALL BRUSH, TREE DEBRIS, UNDESIRED GROWTH (UNDERGROWTH, SUCKERS, BLACKBERRIES, THISTLES, ETC.), UNWANTED PLANT MATERIAL, AND OTHER DEBRIS FROM THE PROJECT SITE.

PS 10 VEGETATION MANAGEMENT - SITE PHOTOS
9036 N MERCER WAY

ARBORIST NOTES

SUBJECT: Capital Improvement Project
PS 10, PS 19 Tree Evaluation
9042 N. Mercer Way, 7697 W. Mercer Way

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

PURPOSE: A) Management recommendations for trees and vegetation obstructing pump station access, and
B) Risk assessment of trees within striking range of pump station

FROM: Urban Forestry Services | Bartlett Consulting
Miles Becker, Consultant
ISA Certified Arborist® #PN-7808A
ISA Tree Risk Assessment Qualified
RCA #798

DATE: March 13, 2024

Background

Maintenance and repair of PS 10 and PS 19 will require access by either boat from their respective shorelines or by foot from inland. Both pump stations currently have docks blocked or partially obstructed by trees or other vegetation. The terrestrial portions of the facilities may also have trees or vegetation hindering access by engineers or contractors working on the stations. Some larger trees near these two pump stations may be a risk to the permanent components, vessels, or people working on the stations.

I visited PS 10 and 19 with Chris Marks from Public Works on March 6, 2024 to determine any tree pruning or removals that may be necessary to access the stations and reduce risk from tree failure.

Observations

PS 10

Tree #172: A partially failed Scouler's willow (*Salix scouleriana*) was leaning across the dock for the station. I estimated the tree had a 14-inch diameter. Every primary stem had previously failed and the crown consisted entirely of new sprouts (Photo 1). The trunk may have been in contact with the dock and therefore partially supported by the structure. Although it had very poor form and structure,

the tree had good health and it was viable. Clearing the tree from the dock will necessitate cutting the main trunk below most of the crown.

Tree #173: A bigleaf maple (*Acer macrophyllum*) with an approximately 11-inch DBH had failed into the water southeast of the dock. Its root plate was uplifted (Photo 2), yet there were still live branches on the top side of the trunk. Even so, I do not expect the tree to be viable in the long-term. It was obstructing water access to the dock.

Tree #174: A red alder (*Alnus rubra*) with a 12-inch DBH was leaning towards the water from upland of the ordinary high water mark (OHWM). It has fair structure and health. English ivy (*Hedera helix*) was covering most of the tree (Photo 3). A couple longer branches were overhanging the dock and path to the station. If the ivy is removed, I expect the tree will be viable and a low risk to the dock and facility.

Tree #175: Not present.

Tree #176: A western red cedar (*Thuja plicata*) with a 22-inch DBH and an estimated height of 50 feet. The tree was 29 feet southwest of the pump station stacks and next to the stairs leading to the street. When struck with a mallet, the trunk sounded hollow. The top 15 feet of the tree was dead and dead heartwood was visible on the south side of the trunk (Photo 4). The tree was in decline and not viable. Failure was probable with a high likelihood of striking the station or dock and causing significant damage. The tree had a high risk rating.

PS 19

Tree #177: A hawthorn (*Crataegus* species) just south of the dock had seven stems ranging in diameter from 2 to 5.2 inches. It was about 15 feet tall and growing on the shoreline (Photo 5). The tree had fair structure and form, with good vigor. About half of its crown was overhanging the dock and shoreline access to the dock.

Tree #178 (not tagged): An ash (*Fraxinus* species) with an estimated DBH of 10 inches was leaning over the water on the north side of the dock (Photo 6). The tree had good health. One scaffolding branch overhung the dock. Removing the branch for access would reduce the crown by less than 20 percent.

Tree #179: A Norway maple (*Acer platanoides*) with a 24.5-inch DBH and approximately 35 feet tall was growing just east of the pump station (Photo 7). A branch about 8 inches in diameter had failed and was in contact with the ground while suspended from the tree. The upper third of the crown was dead and leaning towards the pump station stack. The trunk sounded solid and live branches were sprouting or on stems on the lower part of the tree. A brush pile was obscuring the base of the tree. Failure of the dead top and hanging branch was probable with a high likelihood of striking the pump station and causing significant damage. The top and branch had a high risk rating. The rest of the tree had a low risk rating, pending further investigation of the base of the tree beneath the brush pile.

Tree #180 (not tagged): A red alder upslope of the pump station on private property. English ivy covered the trunk (Photo 8) and I estimated the DBH to be 20 inches. The trunk sounded sold and other than a slight lean towards the pump station, I did not see any structural defects. The tree had very few live branches and it may not be viable, depending on what it looks like after the ivy is removed. It had a low risk rating.

Other Vegetation: The shoreline between #177 and #178 had a dense understory of mainly non-native Himalayan blackberry (*Rubus* species). A couple flowering plum and cherry (*Prunus* species) trees less than 15 feet were growing out of the blackberry understory. I was not able to count the stems or number of trees. They were likely multi-stemmed trees that would need to be partially thinned to clear out the invasive understory plants. Oregon grape (*Mahonia aquifolium*) was also growing next to the shoreline.

Discussion and Recommendations

PS 10: **Tree #172**, the Scouler's willow over the dock and **tree #173**, the bigleaf maple fallen in the water next to the dock should be removed to provide access. Both trees have limited ecological function at this point relative to a tree with better form. The leaning red alder, **tree #174**, had a low risk rating and it should be retained. The branches overhanging the dock should be pruned back to the trunk. The ivy on the tree should be controlled. **Tree #176**, the declining western red cedar, should be converted to a wildlife snag to mitigate risk. A 10-foot tall snag will provide some wildlife habitat for birds and insects.

PS 19: Tree #177, the hawthorn next to the dock, can be retained but about half its crown should be removed to allow dock access. Given the size of the tree and number of stems, I expect it will maintain its health with that amount of crown loss. **Tree #178**, the ash over the water, can be retained. Pruning the one scaffolding branch over the dock should be sufficient management to allow site access. **Tree #180**, the Norway maple, can be retained. The hanging failed branch, dead top, and any other dead branches over 2 inches in diameter should be cleaned from the crown to mitigate risk. The tree should be re-assessed for risk after the brush pile at the base of the tree is gone. **Tree #181** can be retained. The ivy on the tree should be removed to reduce the likelihood of failure and increase its health.

Photo 1. Tree #172, a Scouler's willow, blocking dock access to the pump station.

Photo 2. Tree #173, a failed bigleaf maple was on the ground with its root plate uplifted.

Photo 3. Tree #174, a red alder, was covered in English ivy.

Photo 4. Tree #176, a western red cedar, had a hollow sounding trunk and woodpecker holes exposing dead interior wood.

Photo 5. Tree #177, a hawthorn, in front of the dock for PS 19. Invasive blackberry and ivy are on the lower part of the tree.

Photo 6. Tree #178, an ash next to the dock, had one scaffold branch overhanging the dock.

Photo 7. Tree #179, a Norway maple, had a dead top and large hanging branch that should be removed to mitigate risk. The pump station stack is in the foreground of the photo.

Photo 8. Tree #180, a red alder on the neighboring property to the east, was covered in ivy.