



DATE: January 6, 2021

TO: Stacy Connery, Vice President/Planning Manager, Pacific Community Design

FROM: Morgan Holen, Consulting Arborist

RE: Schultz Farm – Reassessment of Trees 70504, 70522 and 70523

This memorandum is provided at the request of Pacific Community Design to provide additional information to supplement the October 27, 2020 arborist report for the Schultz Farm residential planned unit development project in Woodburn, Oregon. Specifically, I was asked to reassess trees 70504, 70522 and 70523 and provide more detailed information regarding my findings and professional opinion as to whether or not these trees are suitable for preservation with the proposed development.

It is my understanding that the City Planner reviewing the project asked that these three trees be retained since they are located in an open space tract and not impacted by the proposed development. The October 27, 2020 arborist report proposed removal of these trees due to poor structure and being located along the exposed northern edge of the stand of scots pines (*Pinus sylvestris*) along the southern boundary. I revisited the site on December 28, 2020 to take a second look at the condition and structure of these trees and reviewed the proposed site plan in terms of the trees' proximity to lot lines and proposed trails. The enclosed photographs document the condition of the trees described herein.

Tree 70504

Tree 70504 is a 16-inch diameter Scouler's willow (*Salix scouleriana*) in poor condition and with poor structure including lean, multiple leaders with included bark, a history of branch failure, a low-lying scaffold branch with a sheer plane crack and a suspicious sunken area on the south side of the lower trunk face where decay or included bark is suspected.

In general, Scouler's willow is a fast-growing and short-lived species with brittle wood and is vulnerable to trunk decay with maturity. Tree 70504 is the same species and size as nearby tree 70499, which appears to have had similar structure to tree 70504 before it failed; tree 70499 split in two with codominant stems failing in opposing directions. Considering its species, size and structural defects, the likelihood of failure of tree 70504 is high, which is why it was proposed for removal in the October 27, 2020 arborist report. However, if this tree were to fail, the target potential is low. The closest rear lot line proposed to the north is just over 120-feet away and there are no paths proposed to the north. In other directions, the tree could strike other nearby trees but is not within striking distance of proposed trails to the south and west. The only potential targets are people who may occasionally wander off the paths in the open space tract.

Although tree 70504 is not considered high risk due to low target potential, the tree is expected to fail and is not a long-term amenity to the open space. Its habitat value could be replaced by more diverse new plantings. Therefore, I continue to recommend removal of this willow tree.

Trees 70522 and 70523

Trees 70522 and 70523 are black cottonwoods (*Populus trichocarpa*) located adjacent to one another. Tree 70522 is 14-inches in diameter and in poor condition with very poor structure including a crooked trunk, history of large branch failure, and an old broken top with a new off-center leader. Tree 70523 is 15-inches in diameter and has a 6-inch diameter spur leader with excessive lean to the north. This tree is in fair condition but with poor structure including a history of large branch failure and crown decay.

In general, black cottonwoods are very fast growing and relatively short-lived trees that have inherent limitations because they are notoriously weak-wooded and tend to break apart with maturity. Where black cottonwoods are growing within striking distance of potential targets, including people and property, they generally become hazardous over time since the probability for failure increases with maturity. The shallow root system of black cottonwoods also makes these trees relatively more susceptible to failure at any age during wind events, ice storms, and snow. Eight other black cottonwoods in fair to good condition are planned for retention in the open space tract. However, these two trees have more notable and severe structural defects and are exposed along the edge of the stand. These trees were proposed for removal in the October 27, 2020 arborist report because of hazard risk potential.

Trees 70522 and 70523 are approximately 60-feet in height. If either tree were to fail, the striking distance could be 1.5 times the height of the tree, or 90-feet. While the closest lot lines proposed to the north are 112-feet away, a path is proposed within 29-feet of the trees. The path could be adjusted to the north to stay 90-feet away, however the trees are only semi-mature and could continue to grow taller and more susceptible to failure. Mature black cottonwoods are commonly 125- to 150-feet in height. Even at 100-feet in height, the trees would be well within striking distance of the proposed development including buildings and people. Due to hazard risk potential, I continue to recommend removal of trees 70522 and 70523.

Alternatives

The trees could be removed or retained, or a reasonable compromise could be to create snags, which are standing dead trees that provide wildlife habit. In deciding what to do with these trees, the three alternatives are described below:

1. **Remove.** The trees could be permitted for removal as originally proposed. This would alleviate risk potential and new trees could be planted in their place.
2. **Retain.** The City could require that one or more of these trees be retained and protected as is. Protection during construction is feasible, but there is increased liability associated with retaining these trees. I have documented that they are not suitable for preservation with site development. It is up to the property owner to determine the threshold of risk they are willing to accept and take necessary actions to reduce risk to acceptable levels. If the City requires that the trees be retained, the property owner will have no choice in managing the risk and liability will likely fall on the City.
3. **Snag Creation.** One or more of the trees could be delimbed and reduced in height to non-hazardous lengths to create habitat for birds, mammals, reptiles, amphibians and insects. Leaving 10- to 15-foot-tall stumps is recommended based on the proposed trail location. A skilled chainsaw operator can cut the tops jagged rather than flush to mimic a natural break. The trees will slowly decay and fall apart and eventually fall over, but the snags can provide valuable nesting, roosting, shelter, denning, and feeding site for wildlife for many years.

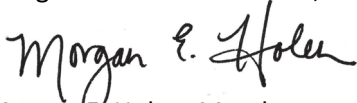
The two black cottonwoods are more suitable for snag creation than the willow because the trunks can (and should) be girdled to prevent resprouting. The willow will likely be more challenging to prevent from sprouting even if it is girdled. Sprouting can result in numerous stems originating from a decaying trunk that develop with poor mechanical strength and are even more susceptible to failure. For this reason, whole tree removal is still recommended for the willow. Large wood pieces from the trunk could remain on-site if placed in direct contact with the ground; small branches and debris should be chipped and scattered on the ground or hauled off-site.

Summary

Based on this reassessment, I continue to recommend removal of tree 70504, leaving large woody debris from the tree on-site in direct contact with the ground and replanting the general vicinity of the tree with a more diverse mix of long-lived trees, and creating snags out of trees 70522 and 70523 by reducing their heights to a maximum of 15-feet and girdling the trunks.

Please let me know if you have questions or need any additional information or further assistance.

Thank you,
Morgan Holen & Associates, LLC

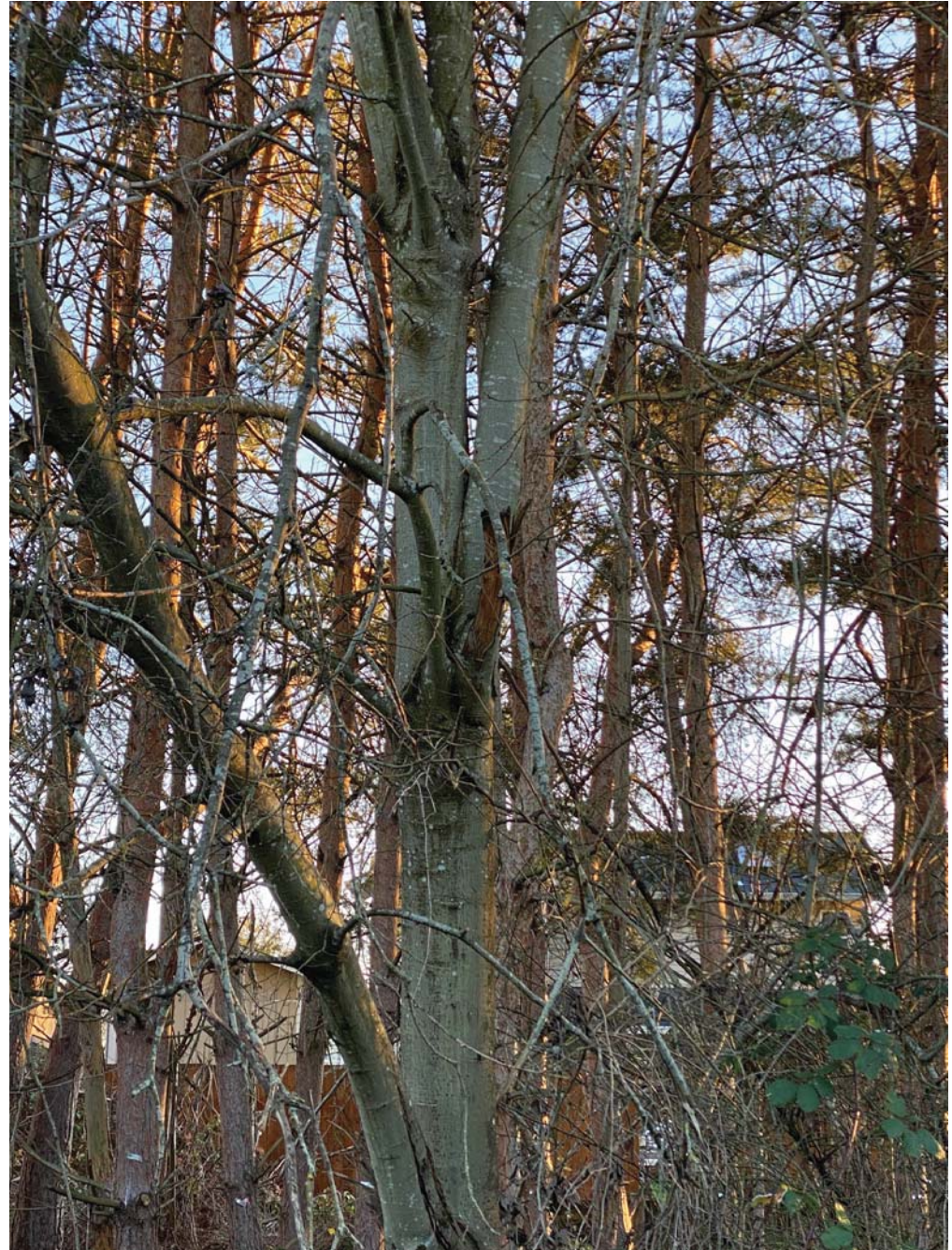
A handwritten signature in black ink that reads "Morgan E. Holen". The signature is written in a cursive, flowing style.

Morgan E. Holen, Member
ISA Board Certified Master Arborist, PN-6145B
ISA Tree Risk Assessment Qualified
Forest Biologist

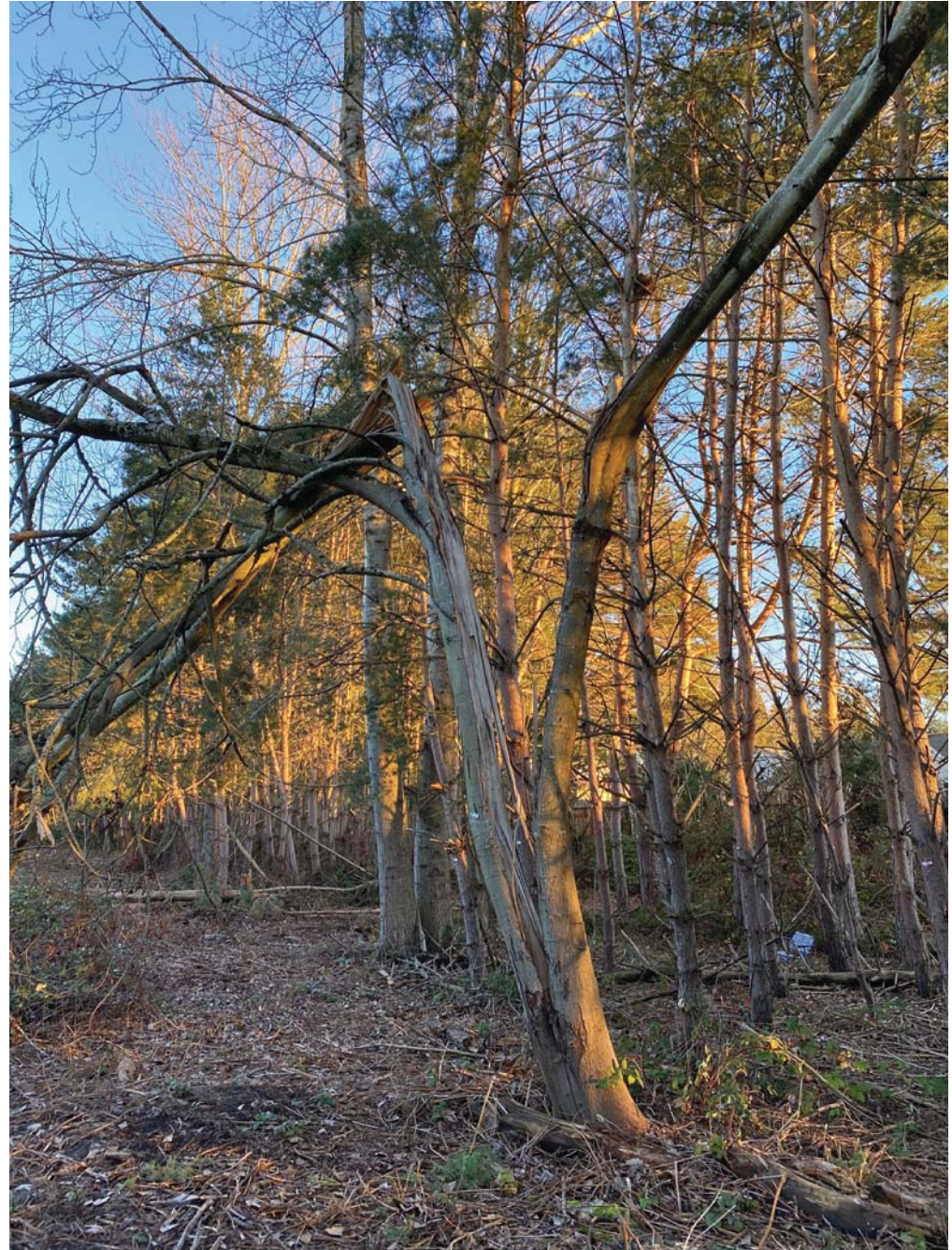
Enclosure: MHA20038 Schultz Farm – Tree Photographs 12-28-2020



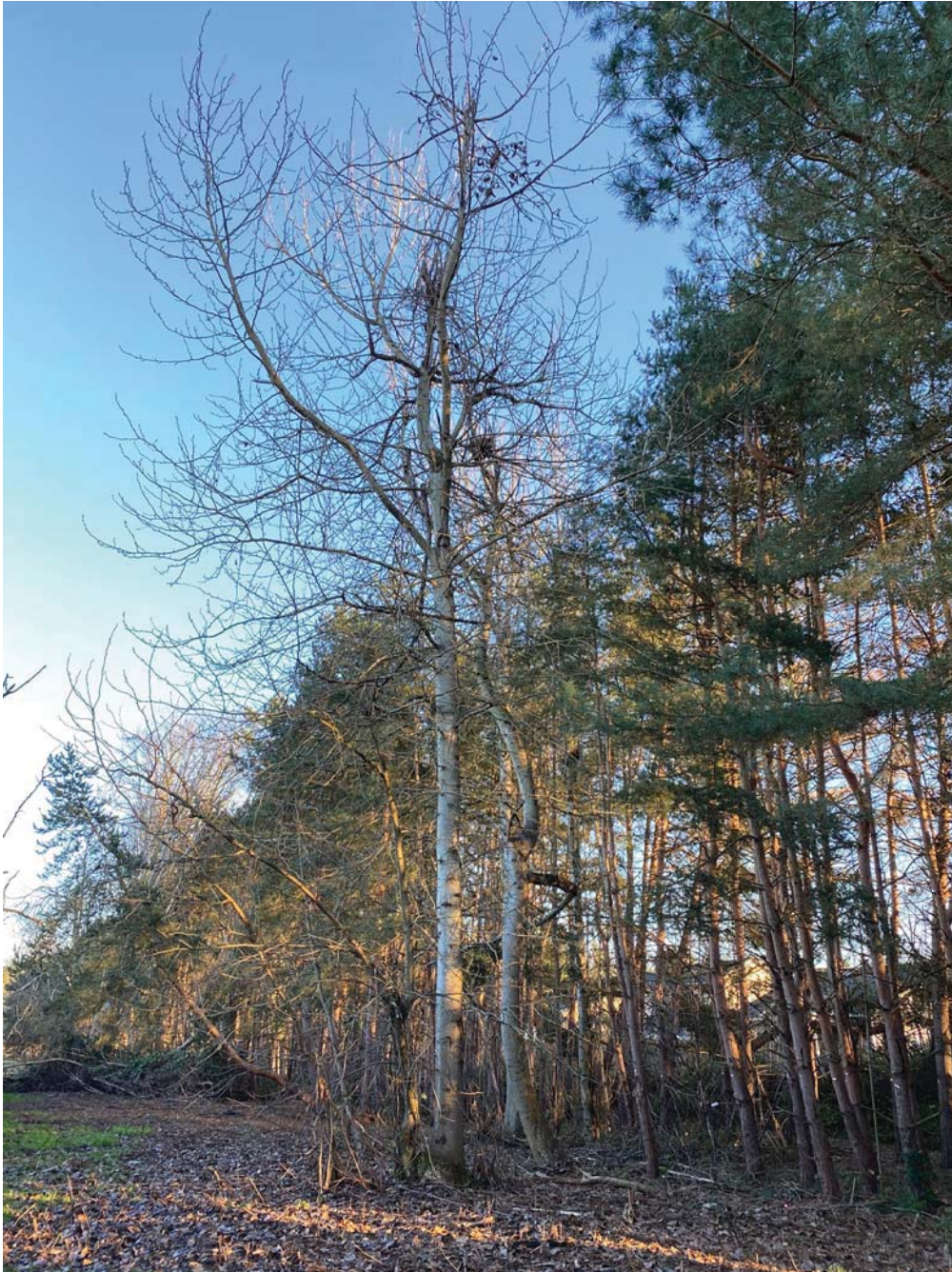
Photos 1 and 2. Tree 70504 - A 16" diameter Scouler's willow in poor condition located on the north edge of the scots pine stand with poor structure including lean, multiple leaders with included bark, and a scaffold branch with a sheer plane crack.



Photos 3 and 4. Tree 70504 - A closer look at the 16" diameter Scouler's willow showing the south side of the lower trunk with a suspicious sunken area where decay or included bark is suspected (left) and multiple leaders with included bark and a history of branch failure (right).



Photos 5 and 6. Tree 70499 - A dead 16" diameter Scouler's willow located east of tree 70504 shown as an example of what is expected to happen to tree 70504. Both trees are the same species and size and with similar structure. Tree 70499 has already failed by splitting in two. The likelihood of failure in tree 70504 is high.



Photos 7 and 8. Trees 70522 and 70523 - In both photos, tree 70522 is right of tree 70523, looking east. Both trees are black cottonwoods located on the north edge of the scots pine stand. Tree 70522 is 14" diameter and in poor condition with very poor structure including a crooked trunk, history of large branch failure, and an old broken top with a new off-center leader. Tree 70523 has codominant stems 6" and 15" diameter each in fair condition but with poor structure including a history of large branch failure and crown decay.



Photos 9 and 10. Trees 70522 and 70523 - In both photos, tree 70522 is left of tree 70523, looking southwest. These photos provide a closer look at off-center leader originating from an old broken top at tree 70522, which also has poor lateral branch distribution due to a history of branch failure. Photo 9 (left) shows the 6" diameter leader with excessive lean near the base of the main stem. Photo 10 (right) shows the upper crown of the 15" diameter main stem of tree 70523 with poor lateral branch distribution due to a history of branch failure.



Photos 11 and 12. Trees 70522 and 70523 - Another view of the crowns of both trees showing poor structure and a history of branch and leader failure.