Waxwing Tree Specialists
(360) 515-4225
waxwingtreespecialists@gmail.com
Waxwingtreespecialists.com

Forest Management Plan

Prepared For: Wilderness Property Owner's Association

Prepared By: Amanda Hancock, Certified Arborist TX4155AU

Date of Assessment: 4/21/2025-4/25/2025

This report was prepared in accordance with the ISA Tree Risk Assessment Best Practices by a Qualified Tree Risk Assessor and includes both tree risk and forest management planning components.

Site and Project Description

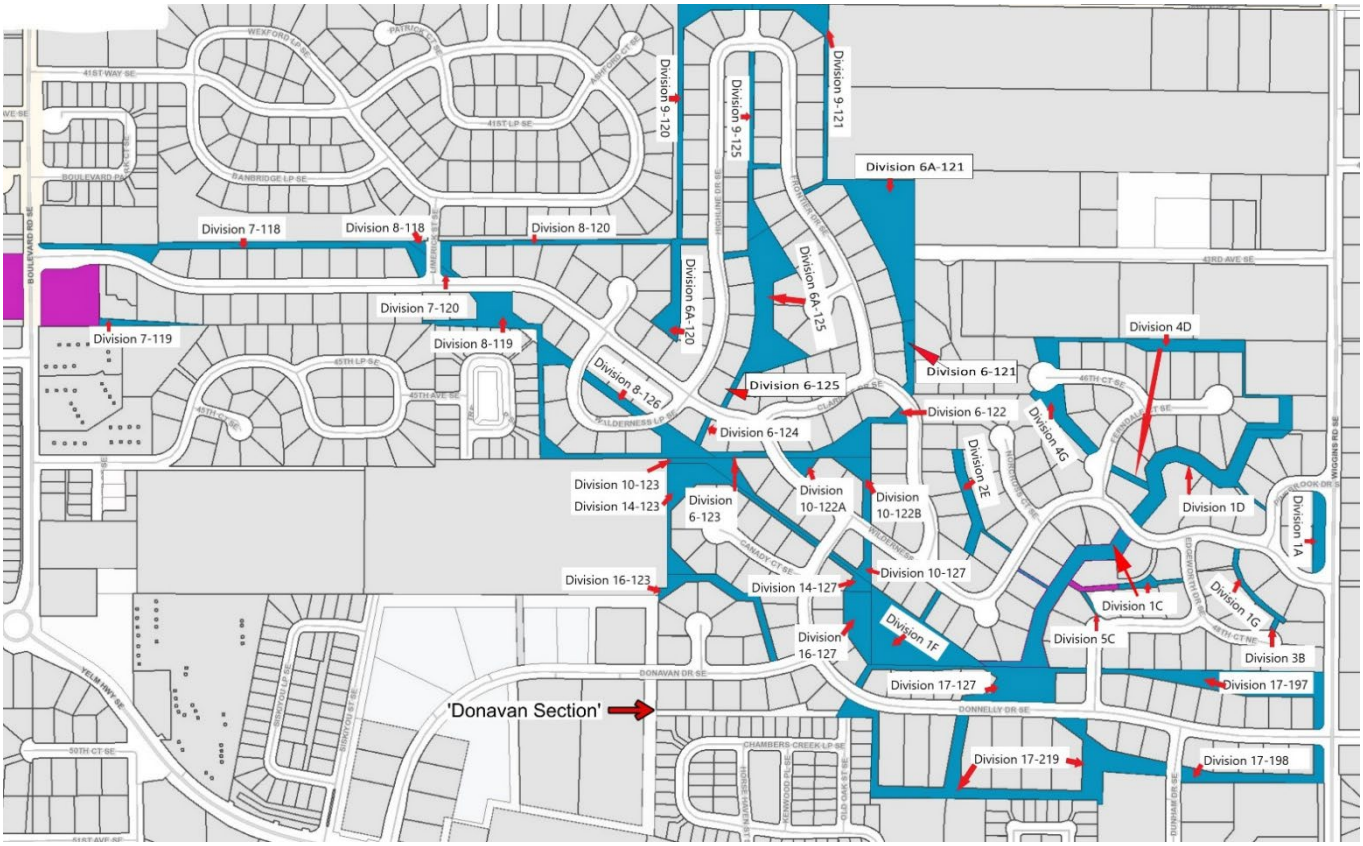
At the request of Christi McGinley, representative of the Wilderness Property Owner's Association (WPOA), a comprehensive forest management and tree risk assessment was conducted for all open space parcels within the community. The primary objectives of this assessment were to:

- Conduct a Level 1 (Limited Visual) Tree Risk Assessment across all HOA-owned tracts, with an emphasis on identifying high and extreme-risk trees requiring immediate attention.
- Evaluate overall forest health, identify disease, pest, and density issues, and recommend appropriate control methods.
- Prioritize areas for invasive species removal.
- Identify suitable planting zones and provide specific species and location recommendations.
- Develop a phased forest management plan outlining actionable goals over 1, 3, 5, and 10-year timelines.

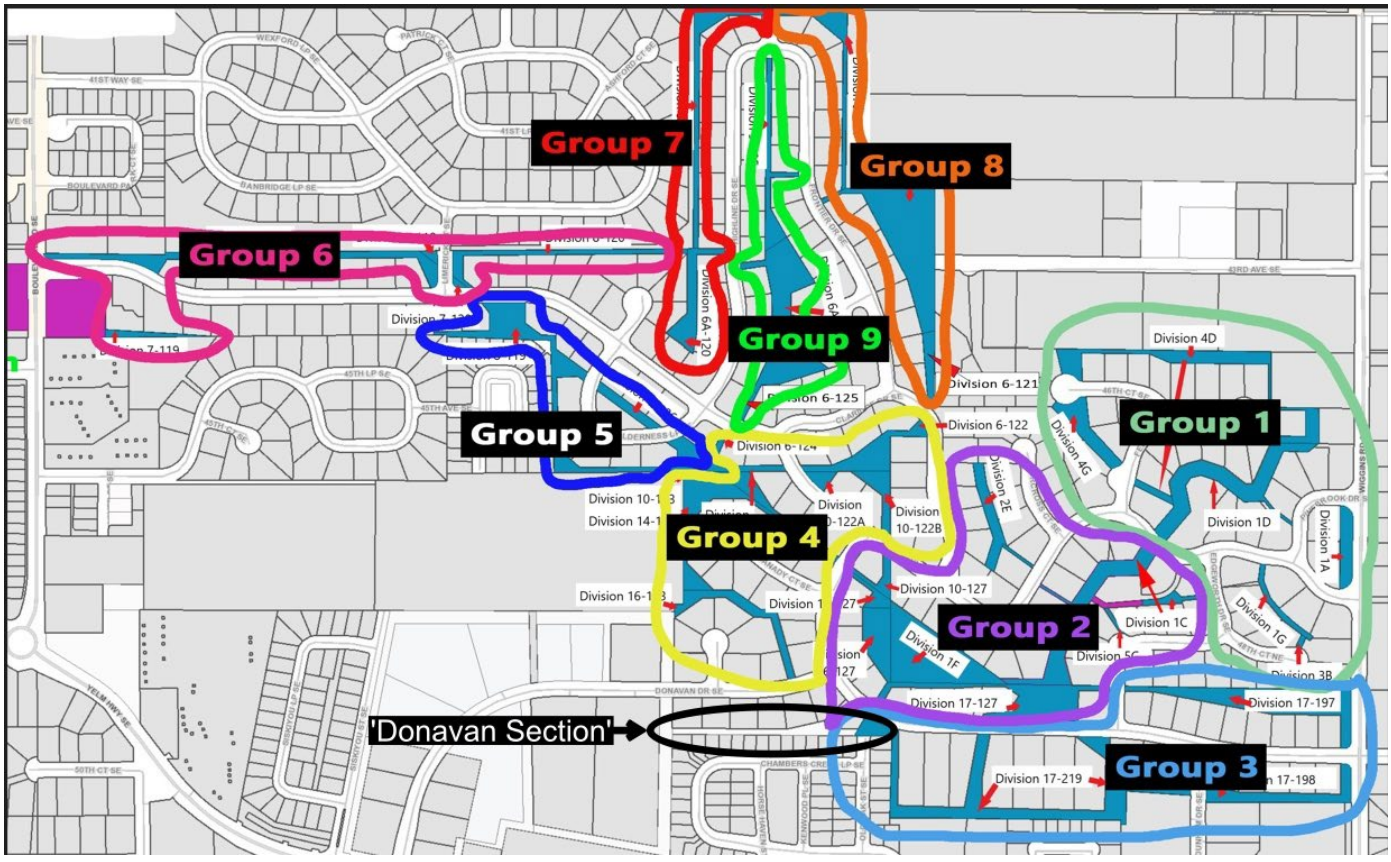
Previous assessments in the Wilderness neighborhood have been completed by South Sound Treescapes in 2018, the Thurston County Conservation District in March 2024, and the Washington Department of Natural Resources in November 2024. Efforts are also planned to coordinate with the Washington Conservation Corps to clear several areas of brush and debris to decrease ladder fuels for Firewise objectives. The South Sound Treescapes assessment was the last comprehensive tree risk assessment conducted, while the TCCD and DNR assessments focused on forest health and wildfire risk mitigation.

The Wilderness neighborhood, established in 1973 in Olympia, Washington, is under the permitting jurisdiction of Thurston County. The HOA manages approximately 40 parcels totaling 28 acres, consisting primarily of 25 to 50-foot-wide forested lots and greenbelts that run between and behind residential homes. For organizational clarity, these parcels are divided into nine groups, which will structure the findings of this report. It should be noted that property boundaries were not always clearly marked; in some instances, greenbelts were incorporated into adjacent private yards, fenced areas, parklands, or neighboring HOA properties. Any work planned near these boundaries should be preceded by confirmation of property lines.

Whole Site Map



Group Map



General Notes and Findings

The greenbelts primarily consist of mature forest stands dominated by western redcedar (*Thuja plicata*), bigleaf maple (*Acer macrophyllum*), Douglas fir (*Pseudotsuga menziesii*), western hemlock (*Tsuga heterophylla*), shore pine (*Pinus contorta*), cherry (likely *Prunus avium* and *Prunus emarginata*) and grand fir (*Abies grandis).* Wetland areas within the greenbelts support additional species such as red alder (*Alnus rubra)*, black cottonwood (*Populus trichocarpa*) and Oregon ash (*Fraxinus latifolia*). Several areas are planted with western white pine (*Pinus monticola*), Leyland cypress (*Cupressus x leylandii*), cherry laurel (*Prunus laurocerasus*), Rhododendron (*Rhododendron spp.*) and incense cedar (*Calocedrus decurrens*), primarily as hedgerow screens incorporated into private landscapes. Overall, the health of mature trees across the forested areas is generally good.

Many sites exhibit a favorable age and species structure, although several would benefit from increased age diversity through supplemental planting, and sites with past large removals and several exposed sites would benefit from large tree planting to outcompete sun-loving invasive species. These target areas are identified in the planting section of this report.

Understory vegetation observed includes a variety of native species such as vine maple (*Acer circinatum*), osoberry (*Oemleria cerasiformis*), western sword fern (*Polystichum munitum*), beaked hazelnut (*Corylus cornuta*), salmonberry (*Rubus spectabilis*), snowberry (*Symphoricarpos albus*), elderberry (*Sambucus spp*.), salal (*Gaultheria shallon*), dull Oregon grape (*Mahonia nervosa*), and trillium (*Trillium ovatum*). While many areas support a diverse and thriving understory, significant portions of the greenbelts are impacted by invasive species, which have outcompeted native understory vegetation. These areas are especially in need of targeted restoration and understory replanting.

Invasive plant species were widely observed and include ivy (*Hedera helix* and *Hedera hibernica),* Himalayan blackberry (*Rubus armeniacus*), English holly (*Ilex aquifolium*), and cherry laurel (*Prunus laurocerasus*). Additional herbaceous invaders such as herb-Robert (*Geranium robertianum*) and yellow archangel (*Lamiastrum galeobdolon*) were also noted.

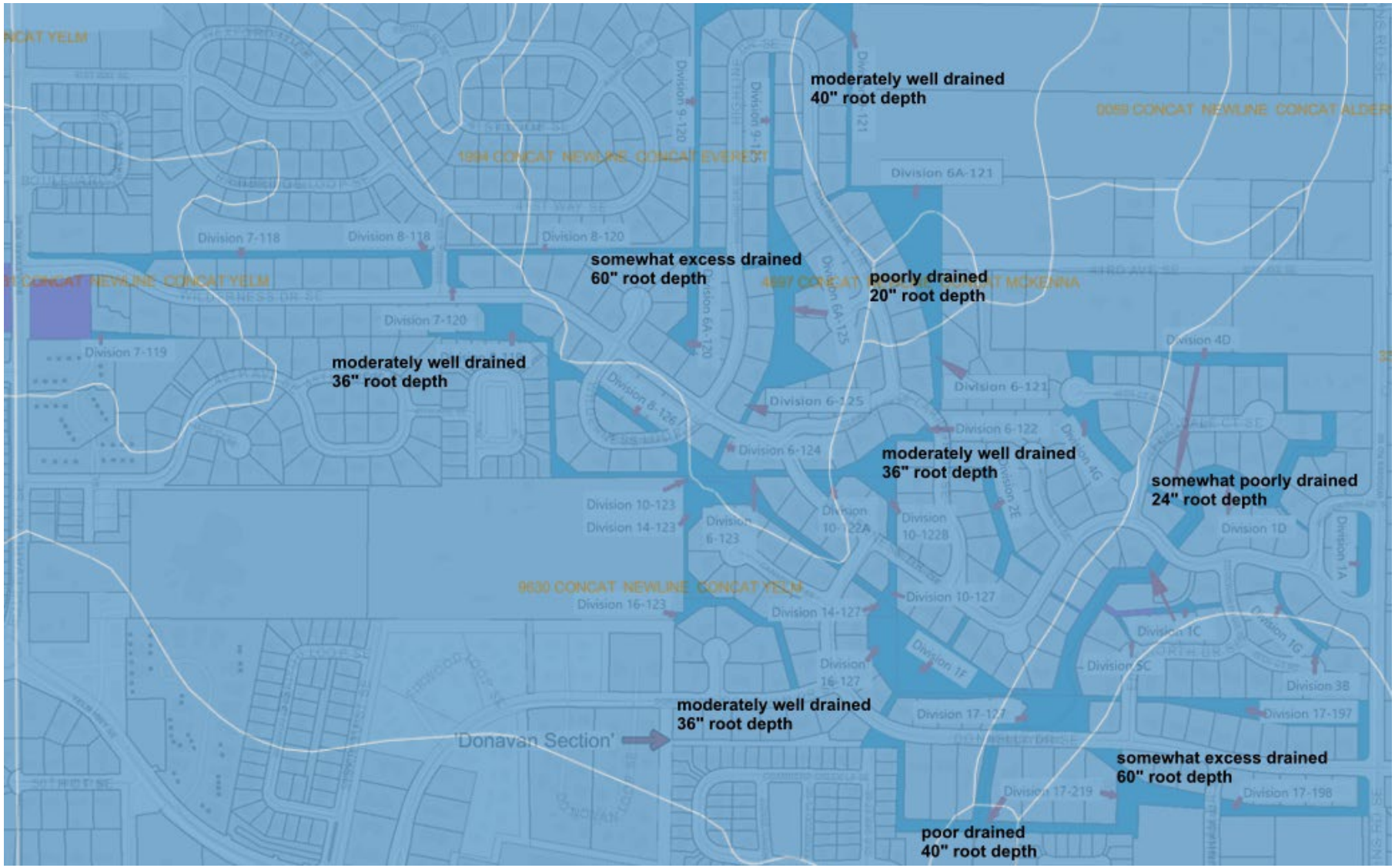
Himalayan blackberry ranges from manageable in shaded areas to severely entrenched in sunnier, open locations. The most heavily infested zones will require sustained, rigorous control efforts, and some areas with limited access may not be reasonable to focus efforts. English holly is scattered throughout all divisions; however, most plants are still small enough to be dug out or easily cut and treated. Cherry laurel, though less widespread, is becoming increasingly established in sunnier openings and poses a growing concern. Several very large cherry laurel hedges at greenbelt openings appear to be established by adjacent managed landscapes which are encroaching. These areas have not been specifically mapped in this report but may be worth considering for restoration once higher priority objectives have been achieved. Ivy is the most pervasive issue, and while great removal efforts have been made to prevent it from climbing tree trunks, ongoing removal is essential to establishing understory plantings and maintaining tree health.

Invasive species pressure is highest near greenbelt edges, past removals, and areas exposed to greater sunlight. Group 4 is particularly overtaken by large established patches of blackberry, holly, and laurel. Specific high-priority areas are identified in the accompanying maps and management schedule. Invasive species control should be addressed through intensive short-term action and followed by consistent annual maintenance.

Site Soils

The majority of the soils in WPOA are a Yelm series fine sandy loam, per the USDA soils classification system. The Washington State Department of Natural Resources Soils Map further breaks down finer detail of soil characteristics as described below.

- **Group 1** The area east of Ferndale Ct SE is a somewhat poorly drained fine sandy loam with a potential rooting depth up to 24 inches and a high windthrow potential, and the area west of Ferndale Ct SE is a moderately well drained fine sandy loam with a potential rooting depth up to 36 inches and a moderate windthrow potential.
- **Group** 2 Similarly stratified to Group 1, with the riparian divisions 1C, 5C and 17-127 comprised of poorly drained fine sandy loam with a potential rooting depth of 24 inches and a high windthrow potential, and Division 1F comprised of a somewhat poorly drained fine sandy loam with a potential rooting depth of 36 inches and a moderate windthrow potential.
- **Group 3** The eastern half is a well-drained loamy fine sand with a potential rooting depth of 60” and a low windthrow potential. The western half is mostly a moderately well drained fine sandy loam with a potential rooting depth of 36” and a moderate windthrow potential.
- **Group 4** Moderately well drained fine sandy loam with a potential rooting depth of 36” and a moderate windthrow potential, except for the northwestern area of the group near the convergence of Division 10-123, 14-123, and 6-123, which is an excessively drained gravelly sandy loam with a potential rooting depth of 60 inches and a low windthrow potential.
- **Group 5** Moderately well drained fine sandy loam with a potential rooting depth of 36” and a moderate windthrow potential
- **Group 6** West of Limerick St is a moderately well drained fine sandy loam with a potential rooting depth of 36” and a moderate windthrow potential. East of Limerick St is an excessively drained gravelly sandy loam with a potential rooting depth of 60 inches and a low windthrow potential.
- **Group 7** An excessively drained gravelly sandy loam with a potential rooting depth of 60 inches and a low windthrow potential.
- **Group 8** The northern half is a moderately well drained gravelly sandy loam with a potential rooting depth of 40 inches and a moderate windthrow potential. A wetland section just west of 43rd Ave is classified as a poorly drained gravelly silt loam with a potential rooting depth of 20 inches and a high windthrow potential. South of 43rd Ave is a moderately well drained fine sandy loam with a potential rooting depth up to 36 inches and a moderate windthrow potential.
- **Group 9** An excessively drained gravelly sandy loam with a potential rooting depth of 60 inches.
- **Donavan Section** A moderately well drained fine sandy loam with a potential rooting depth up to 36 inches and a moderate windthrow potential.


moderately well drained
40" root depth
somewhat excess drained
60" root depth
poorly drained
20" root depth
moderately well drained
36" root depth
moderately well drained
36" root depth
somewhat poorly drained
24" root depth
moderately well drained
36" root depth
'Donavan Section'
somewhat excess drained
60" root depth
poor drained
40" root depth

Invasive Species Management

The top priority across all sites is the early detection and removal of establishing English holly (*Ilex aquifolium*) and cherry laurel (*Prunus laurocerasus*). These species are randomly dispersed throughout most sites and are currently at a stage in many areas where full eradication is still feasible. Several small sections within the WPOA have very large mature cherry laurel that will likely require assistance from a professional team with felling experience to remove. These areas are typically at Division openings, tend to be incorporated into adjacent yard landscapes, and are not specifically called out in the project report, as property boundaries were often unclear and the feasibility of incorporating these areas as priority projects within the next 10 years was questionable. All available opportunities to remove dispersed seedlings and saplings should be taken, especially during routine maintenance or work in nearby areas. Attempt to walk each site every two years to remove establishing holly and laurel, and to ivy gap trees and new plantings. In addition to this widespread effort, select one or two intensive invasive removal and replant projects annually or as schedule and team constraints allow. **Most invasive species will be most easily identifiable and easy to pull from the root in the fall and winter.** This will also likely have the least impact on surrounding plants and pollinators.

All intensive removal projects should be paired with appropriate native replanting to stabilize soils, suppress re-invasion, and promote forest health. These pairings are detailed in the projects section.

Invasive Species Removal Techniques

The following recommendations include links to informational documents about treatment options. Click the underlined titles for more information about identification and treatment.

Blackberry control – Focus on manual eradication by repeated mowing, cutting, pulling, and digging where practical. Sprawling blackberry patches mixed in with forested spaces aren't ideal for herbicide treatment, as there are too many canes to individually paint and spray may impact adjacent plants, trees, and pollinators. For very large dense thickets, it may be practical to repeatedly mow and dig for several seasons before replanting. It will likely continue to require repeated follow up inspection and remediation for many years. Blackberry material should be hauled offsite and should not be composted. It can be disposed of in the Thurston County Waste and Recovery garbage dump. Take care to understand the difference between invasive Himalayan blackberry and native blackberry.

Holly control - Focus on manual eradication by pulling and digging. A weed wrench may be particularly effective for pulling holly under 1" diameter. For larger holly bushes that cannot be pulled or dug out, **do not cut without an herbicide plan**, as cutting large hollies can trigger aggressive stump sprouting. Where herbicide is needed, consider an EZ-Ject lance with Imazapyr in the fall for safest application. It may be more cost effective to work with a local licensed pesticide applicator to target specific large holly plants. Be sure to remove dead material. It can be disposed of in the Thurston County Waste and Recovery brush dump. Take care to understand the difference between holly and native Mahonia.

Cherry laurel control – Focus on manual eradication by cutting, pulling, and digging small plants. Larger plants can be repeatedly cut at the stump for several years and should eventually die. A weed wrench may be particularly effective for pulling cherry laurel under 1" diameter. Consider chemical treatment by applying cut-stump glyphosate or triclopyr treatment by hand

for larger persistent stumps. Do not leave material onsite. Cherry laurel can be disposed of in the Thurston County Waste and Recovery brush dump. Take care to understand the difference between cherry laurel and rhododendron.

Ivy Control - Focus on manual eradication by pulling, digging, and smothering, particularly around trees. The community has made great effort to remove ivy from trees, and this effort should be regularly continued. Herbicide treatment is not realistic for ivy due to waxy leaves and how pervasive it is on the forest floor. While full eradication is likely not a reasonable objective, specific areas can be somewhat effectively cleared by intensive hand removal and by laying cardboard with a thick layer of mulch in areas with little other understory where mulch can be dumped. Ivy material should be hauled offsite and should not be composted. It can be disposed of in the Thurston County Waste and Recovery garbage dump.

Broad leaved bamboo control – Bamboo can be cut and rhizomes will need to be hand dug out of the ground. Regrowth will likely need to be cut and dug out several times. Bamboo material should be hauled offsite and should not be composted. It can be disposed of in the Thurston County Waste and Recovery garbage dump.

Planting Recommendations

Replanting is prioritized in areas with a history of significant tree removal and recent or ongoing invasive species control. These sites should be densely revegetated to suppress re-invasion and accelerate forest recovery. Complete any identified invasive species removal objectives and/or hazard tree removal priorities in each area prior to planting. Cover any exposed soils with a native grass and/or wildflower mix and/or a heavy mulch layer. Exposed soil will quickly be re-populated with invasive species.

There are many plant options for these spaces. Species and count recommendations detailed below are based on soil type, sun exposure, and space to replant, but there is room for flexibility of plant numbers, species, and spacing. For each replanting project, assess each specific site and make changes as needed based on availability, budget, objectives, interests, and site access.

Additional resources for seed and plant vendors and planning: **Washington State Noxious Weed Control Board 'Full Circle' Booklet** and **King County Sample Landscaping Plans**

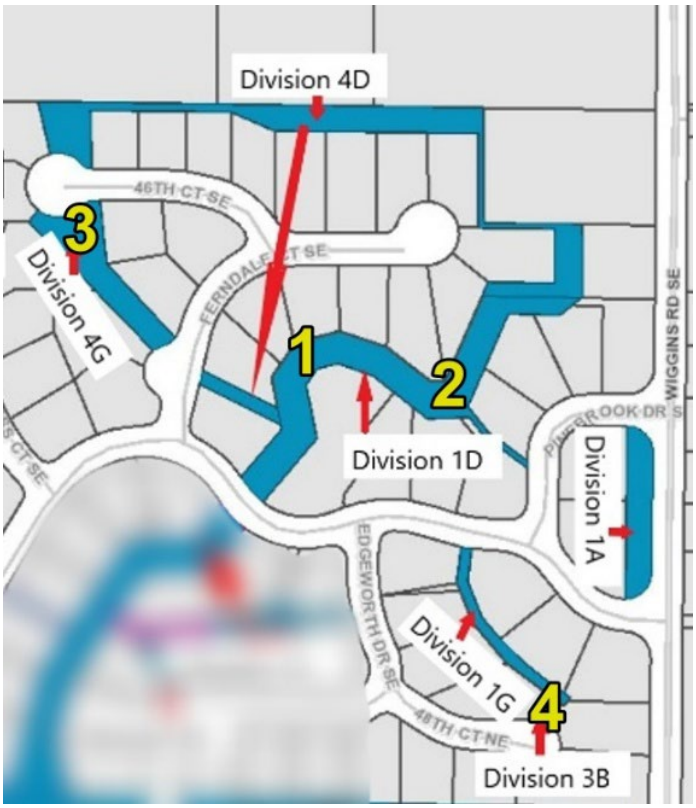
General Planting Guidelines

- **Timing**: Plant woody species in the late fall or early winter when plants are dormant and many months of rain will assist with consistent watering during establishment. Different seeds require different planting times, so refer to product details for best timing for broadcast seeds.
- **Site Prep**: Invasive species and brush piles should be cleared back from planting zones prior to installation. Small gaps can be created in large brush piles to facilitate planting areas.

- **Plant Material**: Use 5 to 10-gallon containers or smaller for overstory species. Use 1 to 2-gallon pots or smaller for understory and groundcover species. Smaller stock generally establishes more reliably and with fewer transplant stress issues.
- **Protection**: All new plantings should be protected with deer-proof netting or fencing for at least 5 years or until well-established. Apply 2-3 inches of mulch in a 2 to 3-foot radius around each planting. Consider a cardboard sheet beneath mulch to further suppress invasive regrowth. Apply gator bags for watering in the summer months in areas, where feasible, if drought stress is apparent.
- **Spacing**:
    - Overstory trees: 20–30 feet apart
    - Understory shrubs and small trees: 8–12 feet apart
    - Groundcovers: densely packed between other plantings to shade out invasives

Project List

Group 1:



1. **Plant:** Reforest declining maple stand with mixed overstory and diverse midstory/understory species. (West of Creek, ~200' span between Ferndale entrance and 4526 Ferndale Ct)

   - Overstory:
     - Western redcedar (*Thuja plicata*) × 3
     - Lodgepole pine (*Pinus contorta*) × 3 - *locate in sunniest gaps*
     - Pacific dogwood (Cornus nutallii) x 3
   - Midstory:
     - Vine maple (*Acer circinatum*) × 4
     - Cascara (*Rhamnus purshiana*) × 3
     - Serviceberry (*Amelanchier alnifolia*) × 3
     - Beaked hazelnut (*Corylus cornuta*) x 3
     - Red elderberry (*Sambucus racemosa*) × 5
   - Groundcover/Shrub Layer:
     - Thimbleberry (*Rubus parviflorus*) × 10 — *focus along edges*
     - Nootka rose *(Rosa nutkana) x 5*
     - Snowberry (*Symphoricarpos albus*) × 10

2. **Plant:** Install shade-tolerant mid and understory natives to suppress yellow archangel (Lamiastrum):

   - Osoberry (*Oemleria cerasiformis*) × 3
   - Vine maple (*Acer circinatum*) × 3
   - Evergreen huckleberry (*Vaccinium ovatum*) x3

3. **Invasive species removal:** Remove establishing blackberry.

   Plant: Re-establish overstory and midstory. Remove select coarse woody debris to create planting pockets. Groundcover planting will be limited due to log density.

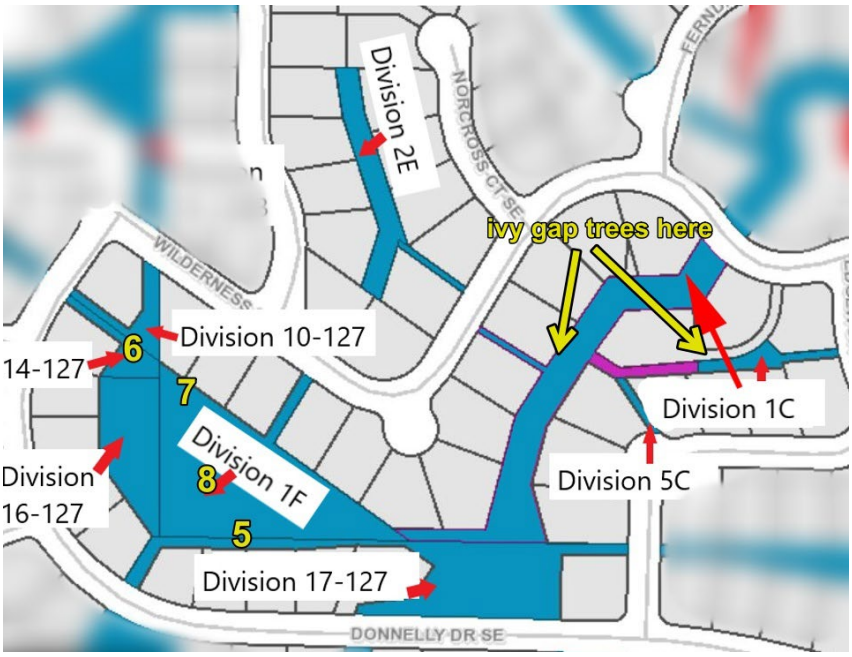
   - Overstory:
     - Consider a hardy, fast growing non-native non-invasive like giant sequoia here (*Sequoiadendron giganteum*) x2 – *place 35-40' apart.*
   - Midstory:
     - Cascara (*Rhamnus purshiana*) × 2
     - Scouler's willow (*Salix scouleriana*)× 2 (near small storm runoff area).

4. **Plant:** Clear declining bigleaf maple saplings at 48th Ct SE entrance and replant with resilient species. Additionally plant mid and understory species in this Division, particularly behind 3513 Wilderness Dr Se:

   - Overstory:
     - Grand fir (*Abies grandis*) × 1 - *ideal for partial shade location*
     - Pacific dogwood (*Cornus nutallii*) x 2
   - Midstory:
     - Vine maple (*Acer circinatum*)× 1
     - Beaked hazelnut (*Corylus cornuta*) x 1
   - Behind 3513 Wilderness Dr SE:
     - Vine maple (*Acer circinatum*) x 2
     - Beaked hazelnut (*Corylus cornuta*) x 2
     - Evergreen huckleberry (*Vaccinium ovatum*) x3

Additional Group 1 notes: The area that runs east/west that is north of 46th Ct SE is likely not a reasonable restoration area. Blackberry was observed in this area, but encroachment of fences and private landscapes made access very difficult and property boundaries very unclear. Observed declining alders adjacent to this space appear to be originating on the adjacent forested spaces to the north and do not appear to currently pose a significant risk to WPOA properties.

Group 2



5. **Plant:** Re-establish tree removal area with direct sun tolerant species:

    - Overstory:
        - Lodgepole pine (*Pinus contorta*) × 2
        - Oregon white oak (*Quercus garryana*) × 1 - *locate in sunniest gap*
    - Midstory:
        - Cascara (*Rhamnus purshiana*) × 1
        - Beaked hazelnut (*Corylus cornuta*) x 2
    - Groundcover/Shrub Layer:
        - Thimbleberry (*Rubus parviflorus*) × 5 - *focus along edges*
        - Snowberry (*Symphoricarpos albus*) × 5
        - Tall Oregon grape (*Mahonia aquifolium*) x 5
        - Nootka rose *(Rosa nutkana) x 3*

6. **Invasive species removal:** Remove extensive laurel and holly.

    Plant: Install shade-tolerant natives to suppress holly and laurel:

    - Overstory:
        - Grand fir (*Abies grandis*) × 2 - *ideal for partial shade location*
    - Midstory:
        - Osoberry (*Oemleria cerasiformis*) × 3
        - Vine maple (*Acer circinatum*) × 2
        - Beaked hazelnut (*Corylus cornuta*) x 2
    - Groundcover/Shrub Layer:
        - Salmonberry (*Rubus spectabilis*) x2

- Evergreen huckleberry (*Vaccinium ovatum*) x3

7. **Invasive species removal:** Remove broad leaved bamboo.

   Plant: Install mid and understory natives to suppress *bamboo*:

   - Vine maple (*Acer circinatum*) × 1
   - Beaked hazelnut (*Corylus cornuta*) x 2
   - Nootka rose *(Rosa nutkana) x 3*
   - Thimbleberry (*Rubus parviflorus*) × 5 - *focus along edges*

8. **Plant:** Establish new overstory saplings resistant to H. annosum in area of failed hemlocks:

   - Douglas fir (*Pseudotsuga menziesii*) × 5
   - Western redcedar (*Thuja plicata*) x 3
   - Pacific dogwood (*Cornus nutallii*) x 3

Group 3:

9. **Plant:** Re-establish past removal area with direct sun tolerant species:

   - Overstory:
     - Incense cedar (*Calocedrus decurrens*) × 2
     - Oregon white oak (*Quercus garryana*) × 2
   - Midstory:
     - Beaked hazelnut (*Corylus cornuta*) x 2
   - Groundcover/Shrub Layer:
     - Thimbleberry (*Rubus parviflorus*) × 5 - *focus along edges*
     - Snowberry (*Symphoricarpos albus*) × 5
     - Tall Oregon grape (*Mahonia aquifolium*) x 5
     - Nootka rose *(Rosa nutkana) x 3*

10. **Invasive species removal:** Remove extensive blackberry and holly behind 3512 Donnelly Dr SE, and pull early establishing blackberry near Edgeworth entrance.

    Plant: Re-establish with direct sun tolerant species to suppress blackberry:

    - Overstory:
        - Consider a hardy fast growing non-native non-invasive like giant sequoia here (Sequoiadendron giganteum) x 2 – *place 35-40' apart.*

          or

        - Oregon white oak (*Quercus garryana*) × 1
        - Lodgepole pine (*Pinus contorta*) × 3
    - Midstory:
        - Cascara (*Rhamnus purshiana*) × 1
        - Serviceberry (*Amelanchier alnifolia*) × 2
        - Beaked hazelnut (*Corylus cornuta*) x 3
    - Groundcover/Shrub Layer:
        - Snowberry (*Symphoricarpos albus*) × 5
        - Nootka rose *(Rosa nutkana) x 5*
        - Red-flowering currant (*Ribes sangiunem*) x 3
        - Thimbleberry (*Rubus parviflorus*) × 5 - *focus along edges*

11. **Plant:** Plant large open area with direct sun tolerant species:

    - Overstory:
        - Oregon white oak (*Quercus garryana*) × 2
        - Lodgepole pine (*Pinus contorta*) × 2
    - Midstory:
        - Serviceberry (*Amelanchier alnifolia*) x 2
    - Groundcover/Shrub Layer:
        - Red-flowering currant (*Ribes sangiunem*) x 3
        - Snowberry: (*Symphoricarpos albus*) x 5
        - Tall Oregon grape (*Mahonia aquifolium*) x 5
        - Nootka rose *(Rosa nutkana) x 3*

12. **Invasive species removal:** remove very entrenched blackberry patch.

    Plant: Re-establish with direct sun tolerant species to suppress blackberry:

    - Overstory:
        - Oregon white oak (*Quercus garryana*) × 4
        - Lodgepole pine (*Pinus contorta*) × 3
    - Midstory:
        - Cascara (*Rhamnus purshiana*) × 3
        - Serviceberry (*Amelanchier alnifolia*) × 2
        - Beaked hazelnut (*Corylus cornuta*) x 3
    - Groundcover/Shrub Layer:
        - Tall oregon grape (*mahonia aquifolium*) x10
        - Snowberry (*Symphoricarpos albus*) × 10

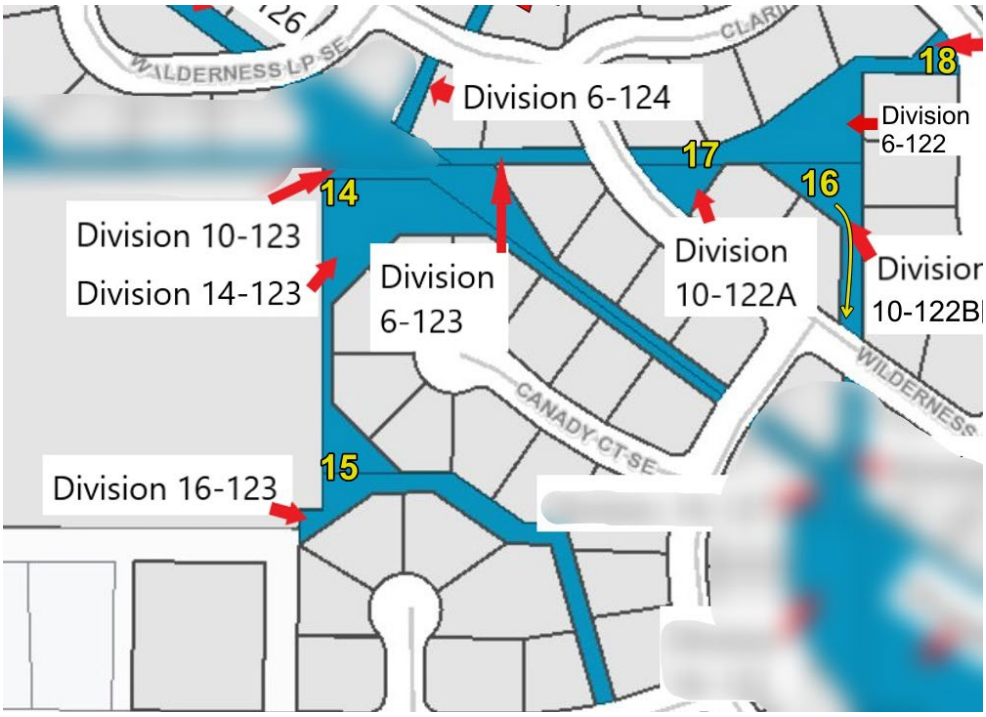
- Nootka rose *(Rosa nutkana) x 5*
- Thimbleberry (*Rubus parviflorus*) × 10 - *focus along edges*

13. Invasive species removal: Remove establishing blackberry. (Access is limited by fences.)

Plant: Plant to suppress blackberry: (challenging access due to area being incorporated into private property)

- Incense cedar (*Calocedrus decurrens*) × 2

Group 4:



14. Invasive species removal: Remove very entrenched LARGE blackberry patch.

Plant: Re-establish extensive blackberry removal area with direct sun tolerant species:

- Overstory:
  - Incense cedar (*Calocedrus decurrens*) × 2
  - Lodgepole pine (*Pinus contorta*) × 3
  - Douglas fir (*Pseudotsuga menziesii*) x3
  - Oregon white oak (*Quercus garryana*) x3
- Midstory:
  - Cascara (*Rhamnus purshiana*) × 4
  - Serviceberry (*Amelanchier alnifolia*) × 4
  - Beaked hazelnut (*Corylus cornuta*) x 3

- Groundcover/Shrub Layer:
    - Thimbleberry (*Rubus parviflorus*) × 10 - *focus along edges*
    - Snowberry (*Symphoricarpos albus*) × 10
    - Nootka rose *(Rosa nutkana) x 5*
    - Tall oregon grape (*Mahonia aquifolium*) x 10

15. **Invasive species removal:** Ivy gap trees and remove particularly dense holly grove.

    Plant: Plant to suppress holly:

    - Overstory:
        - Grand fir (*Abies grandis*) × 2 - *ideal for partial shade location*
    - Midstory:
        - Osoberry (*Oemleria cerasiformis*) × 3
        - Vine maple (*Acer circinatum*) × 2
        - Beaked hazelnut (*Corylus cornuta*) x 2
    - Groundcover/Shrub Layer:
        - Salmonberry (*Rubus spectabilis*) x 2
        - Evergreen huckleberry (*Vaccinium ovatum*) x3

16. **Invasive species removal:** Remove extensive blackberry, laurel, and holly issue. (will be partially conducted by Conservation Corps in 2025)

    Plant: Plant mid and understory to suppress blackberry:

    - Osoberry (*Oemleria cerasiformis*) × 6
    - Beaked hazelnut (*Corylus cornuta*) x 6
    - Vine maple (*Acer circinatum*) × 5
    - Salmonberry (*Rubus spectabilis*) x10
    - Evergreen huckleberry (*Vaccinium ovatum*) x10

17. **Invasive species removal:** Remove extensive blackberry, laurel, and holly issue.

    Plant: Plant canopy opening to suppress blackberry and laurel:

    - Overstory:
        - Incense cedar (*Calocedrus decurrens*) × 2
    - midstory
        - Cascara (*Rhamnus purshiana*) × 1
        - Serviceberry (*Amelanchier alnifolia*) × 2
    - Groundcover/Shrub Layer
        - Tall oregon grape (mahonia aquifolium) x5
        - Snowberry (*Symphoricarpos albus*) × 5
        - Thimbleberry (*Rubus parviflorus*) × 5 - *focus along edges*

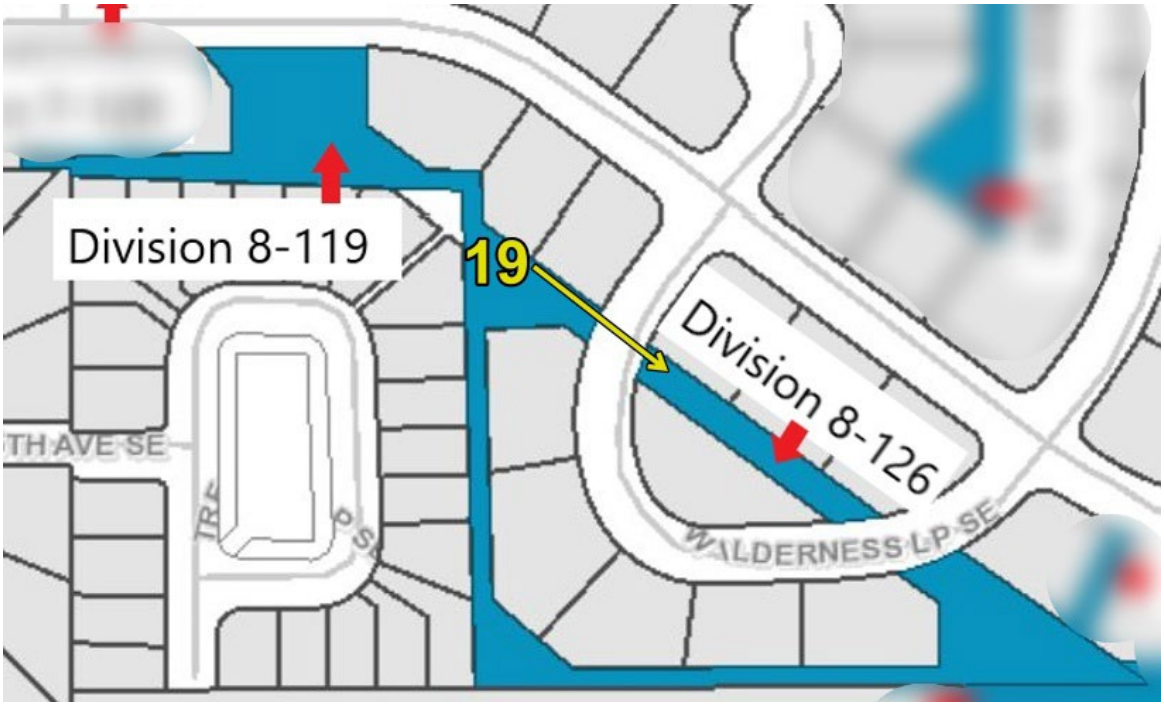
18. **Invasive species removal:** Remove extensive blackberry, laurel, and holly issue.

    Plant: mid and understory to suppress blackberry:

- Osoberry (*Oemleria cerasiformis*) × 5
- Beaked hazelnut (*Corylus cornuta*) x 5
- Vine maple (*Acer circinatum*) × 3
- Salmonberry (*Rubus spectabilis*) x5
- Evergreen huckleberry (*Vaccinium ovatum*) x5

Additional Group 4 Notes: This group is very entrenched with invasive species and often abuts non WPOA managed spaces that are also heavily covered with invasives. Additionally, many areas have unclear property boundaries and have been incorporated into private landscapes, often with private cherry laurel hedgerows that are growing into the WPOA space. This may make invasive species eradication and replanting particularly challenging.

Group 5:

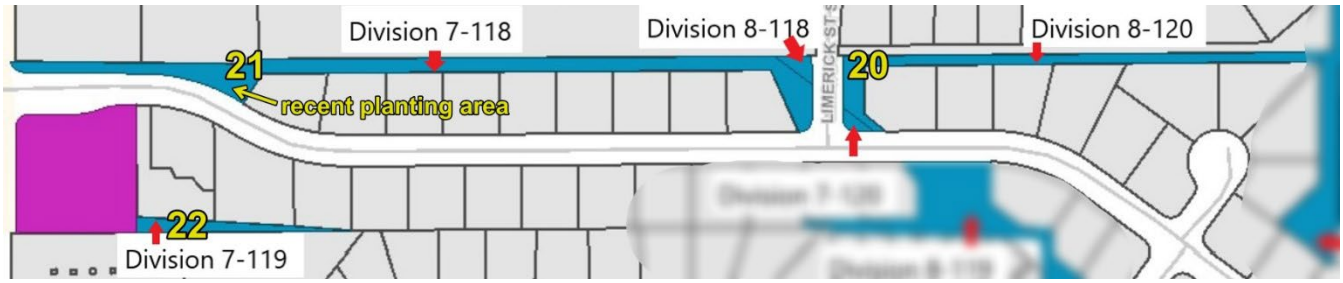


19. Invasive species removal: Very entrenched blackberry patch lining trail – remove

Plant: plant along trail to suppress blackberry. Consider options that encourage community interaction and involvement such as: native wildflowers, native and non-invasive edible landscape options like currant, strawberry patches, elderberries, blueberries, fruit trees. This could be a great pollinator/edible native landscape area.

Additional Group 5 Notes: The area behind 3031 Wilderness Lp SE (The southern border of Division 8-126) is very hard to access and is entrenched in blackberry. It abuts an adjacent property to the south that is not WPOA owned and is also heavily entrenched in invasives. This might not be a realistic invasive species control area.

Group 6:



20. **Invasive species removal:** Very entrenched blackberry patch in large open space – remove. Adjacent to non WPOA owned property that is also heavily covered in blackberry. This may not be a realistic invasive species management area unless it can be comanaged with the adjacent HOA.

    Plant: If invasive species management can occur, re-establish extensive blackberry removal area with direct sun tolerant species:

    - Overstory:
        - Incense cedar (*Calocedrus decurrens*) × 2
        - Lodgepole pine (*Pinus contorta*) × 4
        - Douglas fir (*Pseudotsuga menziesii*) x3
        - Oregon white oak (*Quercus garryana*) x3
    - Midstory:
        - Cascara (*Rhamnus purshiana*) × 4
        - Serviceberry (*Amelanchier alnifolia*) × 4
        - Beaked hazelnut (*Corylus cornuta*) x 3
    - Groundcover/Shrub Layer:
        - Thimbleberry (*Rubus parviflorus*) × 10 - *focus along edges*
        - Snowberry (*Symphoricarpos albus*) × 10
        - Tall oregon grape (*Mahonia aquifolium*) x 10
        - Nootka rose *(Rosa nutkana) x 5*

21. **Invasive species removal:** Remove establishing blackberry and holly.

    Plant: Replant for recent large removal and plant mid and understory to suppress blackberry:

    - Overstory:
        - Douglas fir (*Pseudotsuga menziesii*) x 1
        - Incense cedar (*Calocedrus decurrens*) x 1
    - Midstory:
        - Osoberry (*Oemleria cerasiformis*) × 3
        - Beaked hazelnut (*Corylus cornuta*) x 2
        - Vine maple (*Acer circinatum*) × 2
    - Groundcover/shrub layer:
        - Salmonberry (*Rubus spectabilis*) x5

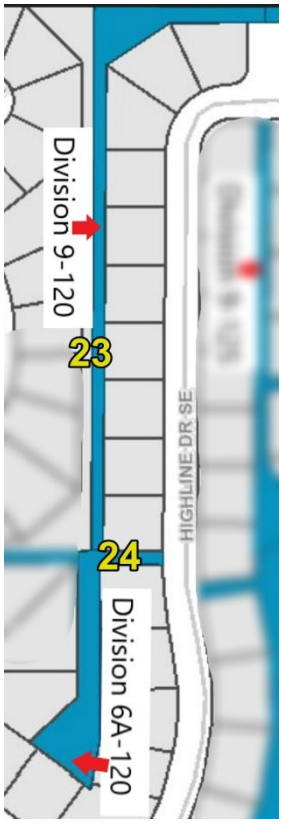
- Evergreen huckleberry (*Vaccinium ovatum*) x5

22. **Invasive species removal:** Remove very entrenched blackberry patch. (challenging access)

    Plant: Plant to suppress blackberry (challenging access)

- Overstory:
  - Douglas fir (*Pseudotsuga menziesii*) x2
  - Incense cedar (*Calocedrus decurrens*) x 1
- Midstory:
  - Vine maple (*Acer circinatum*) × 2
  - Beaked hazelnut (*Corylus cornuta*) x 3

Group 7



23. **Plant:** Plant to replace past bigleaf maple removal – extensive brush on the ground will limit planting space.

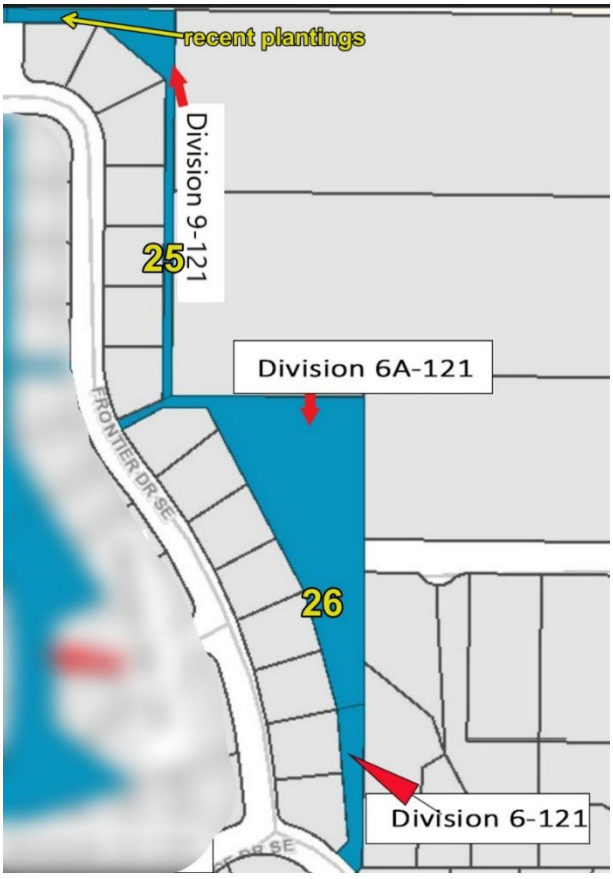
- Overstory:
  - Incense cedar (*Calocedrus decurrens*) x 1
  - Oregon white oak (*Quercus garryana*) x2
- Midstory:

- Cascara (*Rhamnus purshiana*) × 1

24. Plant: Replant for planned removal and past Douglas fir removals. Potential root disease center – (avoid Douglas fir, grand fir, and hemlock):

- Overstory:
  - Western redcedar (*Thuja plicata*) x 3
- Midstory:
  - Osoberry (*Oemleria cerasiformis*) × 2
  - Beaked hazelnut (*Corylus cornuta*) x 2
  - Vine maple (*Acer circinatum*) × 2
- Groundcover/shrub layer:
  - Red-flowering currant (*Ribes sangiunem*) x 3
  - Snowberry: (*Symphoricarpos albus*) x 5

Group 8:



25. Invasive species removal: Remove encroaching blackberry near past removal.

Plant: Plant to replace past removal – extensive brush on the ground will limit planting space.

- Midstory:
  - Bitter cherry (*Prunus emarginata*) x1
  - Pacific willow (*Salix lasiandra*) x 1
- Understory:
  - Scouler's willow (*Salix scouleriana*) x 2
  - Red elderberry (*Sambucus racemosa*) x 2

26. Invasive species removal: Remove encroaching blackberry and laurel near past removal.

Plant: Plant to replace past removal – extensive brush on the ground will limit planting space

- Overstory:
  - black cottonwood (*Populus trichocarpa*) x 1
- Midstory:
  - Bitter cherry (*Prunus emarginata*) x1
  - Pacific willow (*Salix lasiandra*) x 1
- Understory:
  - Scouler's willow (*Salix scouleriana*) x2
  - Red elderberry (*Sambucus racemosa*) x 2

Group 9:

27. **Invasive species removal:** remove establishing blackberry, holly, and small debris pile near Claridge Drive entrance.

    Plant: Plant to replace planned removals, establish stand age diversity, and increase understory species around southern half of Division.

    - Overstory:
        - Douglas fir (*Pseudotsuga menziesii*) x 3
        - Western redcedar (*Thuja plicata)* x 3
        - Grand fir (*Abies grandis*) x 3
    - Midstory:
        - Osoberry (*Oemleria cerasiformis*) × 6
        - Beaked hazelnut (*Corylus cornuta*) x 6
        - Vine maple (*Acer circinatum*) × 5
    - Understory:
        - Salmonberry (*Rubus spectabilis*) x10
        - Evergreen huckleberry (*Vaccinium ovatum*) x10

28. **Invasive species removal:** remove extensive blackberry, laurel, and holly. This location is challenging to access.

    Plant: Plant to suppress blackberry.

    - Overstory:
        - Douglas fir (*Pseudotsuga menziesii*) x2
        - Incense cedar (*Calocedrus decurrens*) x 1
    - Midstory:
        - Vine maple (*Acer circinatum*) × 2
        - Beaked hazelnut (*Corylus cornuta*) x 3

‘Donavan Section’:

29. **Invasive species removal:** remove blackberry and ivy gap trees. This section is very challenging to access and may not be a realistic project area.

    Plant: plant midstory species to suppress blackberry.

    - Midstory:
        - Vine maple (*Acer circinatum*) × 4
        - Beaked hazelnut (*Corylus cornuta*) x 6
        - Evergreen huckleberry (*Vaccinium ovatum*) x6

Tree Risk Assessment and Recommendations

The risk assessment component of this report evaluated the likelihood of tree failure and the potential consequences within the coming year. Given the large number of trees assessed and the multiple objectives of the fieldwork, a Level 1 (Limited Visual) Risk Assessment was conducted. This method involves evaluating trees from a single or limited vantage point without detailed inspection tools. When a tree showed clear signs of structural defects, health decline, or posed a potential hazard to nearby property, a closer inspection was performed to inform mitigation recommendations.

No trees were identified as imminently failing or classified as high or extreme risk. A high-risk tree is defined as one with a probable or greater likelihood of failure within the next year, combined with a high likelihood of impacting a target and causing significant to severe consequences. Mitigation of all moderate-risk concerns is recommended; however, if budget or time constraints limit the scope of work, Trees #2, #3, #11, #14, and #19 should be considered the highest priorities due to their greater potential consequences of failure and increased likelihood of further decline. Trees #9 and #15 may be located on adjacent properties and should be confirmed before any mitigation work is undertaken.

All trees recommended for mitigation were marked in the field with a numbered aluminum tag corresponding to the map and table below. Trees recommended for removal were also flagged with pink tape.

In addition, several areas were noted as potential root disease centers, based on observed patterns of past windthrow and the condition of nearby standing trees. This is of particular concern for Douglas fir trees, which may be affected by laminated root rot. Mature Douglas firs near past removals and windthrow that are exhibiting symptoms such as basal swelling, resinosis, or crown thinning should be prioritized for Level 3 Assessment using a Resistograph or similar tool within the next year. These concerns are concentrated in Division 9-120 (Group 7) and Division 6A-125 (Group 9). The presence of pathogens such as *Phellinus weirii* or *Armillaria ostoyae* in these areas may significantly increase windthrow risk.

Two trees were recommended for cabling. These western redcedar trees have large codominant stems with inclusions (tight branch unions). While they did not appear to be actively separating, inclusions can be structural weak points on trees, particularly in very severe weather. Cabling is a proactive solution that can be considered to reduce the likelihood of large branch failure but should only be considered if cables can be inspected every 3-5 years and replaced every 8-10 years, or sooner if issues are found during inspections. If this is not a reasonable expectation for the community, retain these trees and monitor them during tree risk assessments.

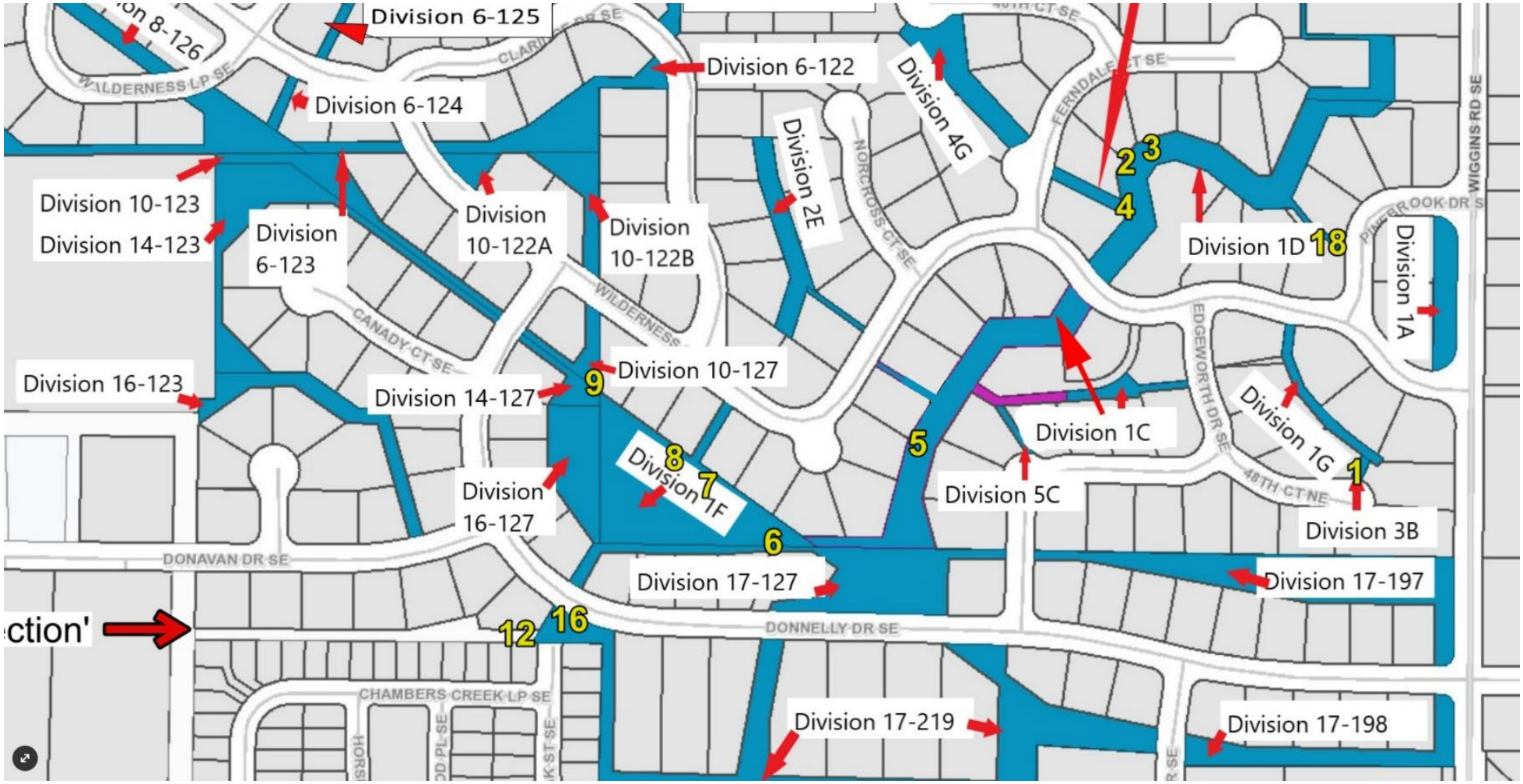
I recommend follow up tree risk assessments every 5 years, after unusually severe weather, or if any declining trees are observed prior to the 5 year inspection interval.

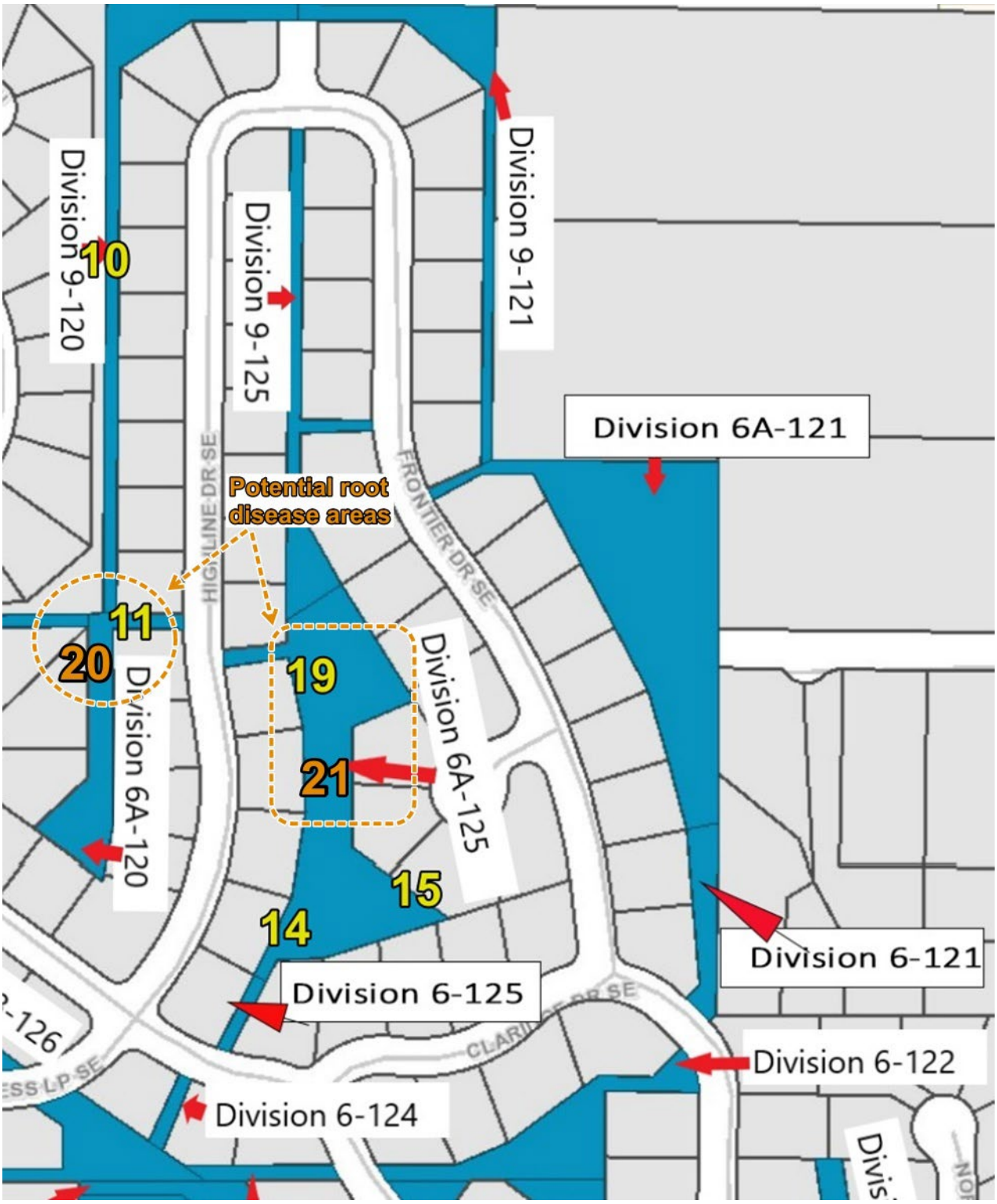
One small section in Division 9-125 that contains western white pine was inaccessible due to encroachment of private fences into the WPOA managed property. Repeated attempts to knock on surrounding doors for access were not answered, so these trees were assessed as possible from the road using binoculars. Their canopies appear healthy and no obvious structural issues were observed.

Tree ID #	Species	Diameter at Breast Height (in)	Height (ft)	Condition	Conditions of concern	Risk/Priority	targets	Recommendations
1	Red alder	14	60	Dead	Dead tree	Moderate	Adjacent property	Remove
2	Bigleaf maple	15+13	65	Poor	Extensive basal decay (K. deusta)	Moderate	Adjacent property	Remove
3	Oregon ash	27	90	Poor	Extensive basal and trunk decay	Moderate	Adjacent property	Remove
4	Bigleaf maple	Large multi	90	Poor	Extensive basal and trunk decay (K. deusta)	Moderate	Multiple adjacent properties	Reduce 26” and 22” stems to habitat snags
5	Bigleaf maple	45+18+20	75	Poor	Extensive basal decay (K. deusta)	Moderate	shed	Remove stem growing over shed. The remainder of the tree is not in striking distance/direction of a concerning target
6	Western redcedar	Large multi	75	Good	Codominant stems with inclusions	Low	Residence	Consider 8T dynamic Cobra cable installation in south facing stem overhanging private property
7	Bigleaf maple	45	90	Fair	Some basal decay present (K. deusta)	Low	Residences	Consider Level 3 Resistograph reading to determine extent of basal decay
8	Bigleaf maple	56	90	Fair	Some basal decay present (K. deusta)	Low	Residences	Structurally prune to reduce weight on W/NW side of canopy. Consider Level 3 Resistograph reading to determine extent of basal decay
9	Bigleaf maple	25	75	Poor	Extensive basal decay (K. deusta)	Moderate	Residence	Remove – possibly on adjacent property
10	Douglas fir	28	90	Fair	Defect/wound on trunk	Moderate	Residence	Perform climbing inspection of defect to determine extent of decay. Retain and monitor or remove based on findings.

11	Douglas fir	28	90	Poor	Declining canopy/basal decay.	Moderate	Residences	Remove – increment borer sample indicates basal decay.
12	Western redcedar	40	130	Fair	Codominant stem with inclusion	Low	Residences	Consider 8T dynamic Cobra cable installation
~~**13**~~	~~Lodgepole pine~~	~~12~~	~~45~~	~~Dead~~	~~Dead tree~~	~~Low~~	~~Street~~	~~Remove (May be removed by Conservation corps 2025)~~
14	Western hemlock	33	75	Very poor	Declining canopy	Moderate	Residence	Remove
15	Western hemlock	23	65	Dead	Dead tree	Moderate	Multiple Residences	Remove – (possibly on private property)
16	Red alder	24	60	Poor	Declining (phytophthora on trunk)	Moderate	Street and residence	Remove
~~**17**~~	~~Western redcedar~~	~~30~~		~~Good~~	~~clearance issue~~	~~Low~~	~~Residence~~	~~Canopy encroaching on roof of adjacent residence – consider clearance pruning~~
18	Western hemlock	15	60	Dead	Dead tree	Moderate	Multiple Residences	remove
19	Douglas fir	29	130	Poor	Declining canopy, possible root disease issue.	Moderate	Multiple Residences	Remove
20	Douglas fir	Multiple			Declining canopies			Perform Level 3 (Advanced) Tree Risk Assessment on mature Douglas-fir trees located near tree #11. Use Resistograph testing or equivalent methods to evaluate internal decay.
21	Douglas fir	Multiple			Declining canopies			Perform Level 3 (Advanced) Tree Risk Assessment on mature Douglas-fir trees located behind 4501 Frontier Ct SE and near tree #19 in section 6A-125. Use Resistograph testing or equivalent methods to evaluate internal decay.

Maps of Trees Recommended for Mitigation




Division 9-120
Division 9-125
Division 9-121
10
Division 6A-121
HIGHLINE DR SE
FRONTIER DR SE
Potential root disease areas
11
20
19
Division 6A-120
Division 6A-125
21
15
14
Division 6-121
Division 6-125
CLARIDGE DR SE
Division 6-122
Division 6-124

Other Management Considerations

Trail maintenance – Most existing trails located in Divisions 8-119, 8-126, 1F, and 17-127 are informal dirt paths that appear to be in generally good condition and maintained through regular use and occasional mowing. To improve year-round accessibility and minimize erosion, these trails could be upgraded with mulch or gravel surfacing. In Division 8-119/8-126, parts of the trail are heavily encroached by blackberry, and an adjacent large mowed grassy area presents an opportunity for ecological enhancement. This space could be improved with pollinator-friendly seeding and potentially the creation of a small edible landscape. As pedestrians and dog walkers frequently use these trails, the addition of dog waste bag dispensers would support cleaner and more user-friendly trails.

LBA trailhead – This area has recently undergone an intensive volunteer led overhaul to remove blackberry and other invasives, and plant natives. An interpretive board is planned for installation to include neighborhood information and a trail map. This area should receive ongoing care of supplemental watering, if possible, as well as ongoing invasive removal. Seeding of native grasses, wildflowers, and sedges, and/or mulching should be considered, as currently planted saplings are very small and a lot of bare soil is exposed, which will encourage invasive regrowth.

Habitat – These forested areas provide habitat for deer, owls, and a wide variety of other native birds. Ongoing removal of invasive species and reintroduction of native forage species will support overall habitat health. Installing bat boxes on select south-facing tree trunks could further enhance ecological diversity. Targeted removal of dense patches of cherry laurel and blackberry will help open wildlife corridors and improve movement and nesting opportunities for native species. Avoid tree removal and great habitat disturbance during the spring, when many birds are nesting.

Maintenance Schedule

Ongoing / Annual Tasks

- Alternate annual sweeps of Groups 1–4 and 5–9 to:
    - Remove holly and laurel (fall/winter) using weed wrenches where feasible.
    - Ivy-gap trees and recent plantings.
- Select and implement one or two large invasive removal and replanting projects per year, based on feasibility and team availability, and plant as many identified open planting areas as possible. Prioritize planting near large removals and recent disturbance areas to suppress invasive regrowth. (Prioritize planting projects 1, 3, 5, 6, 8, 9, 11, 23, 24, 25, 26 during the first 3 years, as these are recently disturbed open spaces that will be filled with invasive species if not addressed soon. Many of these projects can be batched and paired with an adjacent larger invasive removal and replant project.)
- Monitor and maintain past plantings; provide supplemental watering or mulch as needed

Year	Practice
2025 (year 0 fall/winter)	- Plan tree removal recommendations over next 3 years based on priority. - Complete Level 3 tree risk assessment objectives - Walk accessible areas of groups 1-4 to ivy gap trees, remove holly and laurel that can be easily accessed and dug or pulled with weed wrench. (fall/winter) - Complete projects 1, 2, and 3 - Seed recent invasive removal and replant project open area near LBA park with native grass/flower/sedge mix. (timing dependent on seed mix.)
2026 (year 1)	- Walk accessible areas of groups 5-9 to ivy gap trees, remove holly and laurel that can be dug or pulled with weed wrench. (fall/winter) - Division 1F focus: complete projects 5, 6, 7, and 8, seed open field in 1F with native wildflower/pollinator mix, lay mulch or gravel on walking path for erosion control.
2027 (year 2)	- Walk accessible areas of groups 1-4 to ivy gap trees, remove holly and laurel that can be dug or pulled with weed wrench. (fall/winter) - Complete projects 23, 24, 25, 26 - Inspect past plantings and provide supplemental water or mulch as needed.
2028 (year 3)	- Walk accessible areas of groups 5-9 to ivy gap trees, remove holly and laurel that can be dug or pulled with weed wrench. (fall/winter) - Complete projects 9, 10, 11 - Plan overhaul of Division 8-119 trail for coming years. (Project 19). Plan improved use of space as flower meadow, edible native landscape, lay mulch or gravel on trail. - Plan annual ongoing invasive removal and planting projects. Prioritize higher use and easily accessible areas for improvement. (4, 12-22,27-29 remain) - Inspect past plantings and provide supplemental water or mulch as needed.
2030 (year 5)	- Tree Risk Assessment - Continue alternating groups 1-4 and 5-9 sweeps for laurel and holly. Incorporate pulling ivy from planting areas and select greenbelt openings - Follow up on past plantings. Spot re-plant and pull invasives as needed. - Plan annual ongoing invasive removal and planting projects.

2035 (year 10)	- Tree Risk Assessment - Re-evaluate forest health, identify areas for improvement, and re-establish new objectives based on remaining issues. Where are you now based on where you were in 2025? What are new issues not faced before, and how is the existing forest climate change resiliency?
Ongoing/annual	- Continue groups 1-4 and 5-9 sweeps for holly and laurel - Check on plantings and spot-plant as needed. - Consider gator bags or supplemental watering if plantings are struggling to establish. - Plant trees and pick one or more areas for invasive removal.

Tree Risk Assessment Methodology

The methodology used for this report was developed by the International Society of Arboriculture as described in the publication "Tree Risk Assessment Best Management Practices, 2nd Edition" (ISA, 2017) and its companion guide, The American National Standards Institute A300, Part 9.

The ANSI A300 – Part 9 standard for risk assessment and ISA's Best Management Practices: Tree Risk Assessment (ISA, 2017) defines three levels of tree risk assessment:

- Level 1: Limited visual
- Level 2: Basic
- Level 3: Advanced

Level 1 assessment involves a visual assessment of an individual tree or populations of trees near specified targets, conducted from a specified perspective in order to identify certain obvious defects or specified conditions. A limited visual assessment typically focuses on identifying trees with imminent and/ or probable likelihood of failure.

A Level 2 or basic assessment is the standard assessment performed by arborists in response to most private client requests for tree risk assessments. It consists of a detailed visual inspection of a tree and its surrounding site, and a synthesis of the information collected. A basic assessment requires walking completely around the tree – looking at the site, buttress roots, trunk and branches, and observing the tree from some distance away, as well as close up, to consider crown shape and surroundings.

Level 3 is an advanced assessment and is performed to provide detailed information about specific tree parts, defects, targets, or site conditions. It may be in conjunction with or after a basic assessment if additional information is needed and the client approves the additional service. Specialized equipment, data collection and analysis, and/or expertise are usually required for advanced assessments. These assessments are, therefore, generally more time intensive and more expensive.

After determining the likelihood of failure and the likelihood of impacting a target, the combined likelihood of a failure impacting a target can be categorized. Matrix 1 can be used as a guide in relating these likelihood factors within a given time frame. The resulting terms (unlikely, somewhat likely, likely, very likely) are defined by their use within the table and are used to represent this combination of occurrences in Matrix 2.

Matrix 1. Likelihood of Failure

Likelihood of Failure	**Likelihood of Impacting Target**			
	Very Low	**Low**	**Medium**	**High**
Imminent	Unlikely	Unlikely	Likely	Very likely
Probable	Unlikely	Unlikely	Somewhat likely	Likely
Possible	Unlikely	Unlikely	Unlikely	Somewhat likely
Improbable	Unlikely	Unlikely	Unlikely	Unlikely

Matrix 2. Risk Rating

Likelihood of Failure and Impact	Consequences of Failure			
	Negligible	**Minor**	**Significant**	**Severe**
Very likely	Low	Moderate	High	Extreme
Likely	Low	Moderate	High	High
Somewhat likely	Low	Low	Moderate	Moderate
Unlikely	Low	Low	Low	Low

This report also utilizes components of the tree appraisal guidelines described by Purdue University Extension in their article "Tree Appraisal and the Value of Trees" (2019) to determine a tree condition rating. A tree condition rating is a subjective rating that can be helpful in summarizing the overall health, stability, form, and vigor of an assessed tree to provide context to management recommendations. Tree condition ratings are decided by assessing the full tree and choosing a condition rating based on the lowest rating observed when reviewing structure, health, and form. Other conditions may factor into this rating.

.

Condition Rating	Tree Structure *Consider root condition/formation, trunk condition, and branch assembly and arrangement.*	Tree Health *Consider crown indicators — including vigor, density, leaf size, quality, and stem shoot extensions.*	Tree Form *Consider the general shape and overall form.*
Excellent	Root plate undisturbed and clear of any obstructions. Trunk flare has normal development. No visible trunk defects or cavities. Branch spacing/structure and attachments are free of any defects.	Perfect specimen with excellent form and vigor, along with a well-balanced crown. Trunk is sound and solid. No apparent pest problems. Normal to exceeding shoot length on new growth. Normal leaf size and color. Exceptional life expectancy for the species.	Ideal tree for that species, including shape and canopy symmetry, health, and density. Outstanding function on the site or location.
Good	Root plate appears normal, with only minor damage. Possible signs of root dysfunction around trunk flare. Minor trunk defects from previous injury, with good closure and less than 25% of bark section missing. Good branch habit; minor dieback with some signs of previous pruning. Co-dominant stem formation may be present, requiring minor corrections.	Imperfect canopy density in 10% or less of the tree. Lacks natural symmetry. Less than half the normal growth rate and minor deficiency in leaf development. Few pest issues or damage, and controllable if present. Normal branch and stem development with healthy growth. Typical life expectancy for the species.	Nearly ideal tree for that species, including shape and canopy symmetry, health, and density. Functions well on the site or location.
Fair	Root plate reveals previous damage or disturbance. Dysfunctional roots may be visible around the main stem. Evidence of trunk damage or cavities, with decay or defects present and less than 30% of bark sections missing on trunk. Co-dominant stems are present. Branching habit and attachments indicate poor pruning or damage, which requires moderate corrections.	Crown decline and dieback up to 30% of the canopy. Poor overall symmetry. Leaf size smaller and color somewhat chlorotic. Shoot extensions indicate some stunting and stressed growing conditions. Obvious signs of pest problems contribute to a lesser condition. Some decay areas found in the main stem and branches. Below-average life expectancy for the species.	Acceptable tree for that species. Tree shape and symmetry are adequate, with some substantial asymmetry in shape and canopy form. May have considerable concerns for its use and function on the site or location.
Poor	Root plate disturbance and defects indicate major damage, with girdling roots around the trunk flare. Trunk reveals more than 50% of bark section missing. Branch structure has poor attachments, with several structurally important branches dead or broken. Canopy reveals signs of damage or previous topping or lion-tailing, with major corrective action required.	Lacking a full crown, with more than 50% decline and dieback that especially affects larger branches. Stunting obvious, with little evidence of growth on smaller stems. Leaf size and color reveals overall stress in the plant. Insect or disease infestation may be severe. Extensive decay or hollow characteristics. Low life expectancy for the species.	Poor tree for that species. Highly irregular canopy shape and undesirable form make it unattractive and dysfunctional on the site or location.
Very Poor	Severe damage within the root plate and root collar exhibits major defects that could lead to tree death or failure. A majority of the bark or trunk is affected, either decayed or missing. Branching is extremely poor or severely topped, with severe dieback in canopy. Little or no opportunity for mitigation of any tree parts.	More than 70% of the canopy is in severe decline or dead. Canopy density is extremely low, with chlorotic and necrotic tissue dominating the canopy. Severe decay in the trunk and major branches. Root plate damage with a majority of roots damaged, diseased or missing. Very low life expectancy for the species.	Disagreeable tree for that species, with highly diminished function and aesthetic appeal on the site or location.
Dead			

References

- International Society of Arboriculture. (2017). *Tree Risk Assessment Best Management Practices* (2nd ed.). Champaign, IL: ISA.
- King County Department of Natural Resources and Parks. *Sample Landscaping Plans*. Retrieved from King County resources.
- Pacific Northwest Plant Disease Management Handbook. *Fir, true (Abies spp.) – Heterobasidion Root Disease*. Retrieved from https://pnwhandbooks.org/plantdisease/host-disease/fir-true-abies-spp-heterobasidion-root-disease
- Purdue University Extension. *Tree Appraisal and the Value of Trees*. Retrieved from https://www.extension.purdue.edu
- Washington State Department of Natural Resources. *Soils Map*. Retrieved from DNR GIS data resources.
- Washington State Noxious Weed Control Board. *Full Circle: A Guide to Managing Invasive Plants in Natural Areas*. Retrieved from state publication archive.

Please don't hesitate to contact me if you have any questions.

Amanda Hancock
Certified Arborist, TX4155AU, Qualified Tree Risk Assessor
Waxwing Tree Specialists, LLC
360-515-4225

Assumptions and Limitations

Arborists are tree specialists who use their education, knowledge, training, experience, and research to examine trees and woodlands. Arborists recommend measures to enhance the beauty and health of trees and forests, while attempting to reduce the risk of living near them. Clients may choose to accept or disregard the recommendations of the Arborist or seek additional advice.

Arborists cannot detect every condition that could possibly lead to the structural failure of a tree. Trees are living organisms subject to attack by disease, insects, fungi and other forces of nature. There are some inherent risks with trees that cannot be predicted with any degree of certainty, even by a skilled and experienced Arborist. Arborists cannot predict acts of nature including, without limitation, storms of sufficient strength, which can cause even a healthy tree to fail.

Arborists cannot guarantee that a tree will be healthy or safe under all circumstances, or for a specified period of time. Likewise remedial treatments, like medical care, cannot be guaranteed 100%.

Treatment, pruning, and removal of trees may involve considerations beyond the scope of the Arborist's services, such as property boundaries, property ownership, disputes between neighbors and other issues. Arborists cannot take such considerations into account unless complete and accurate information is disclosed to the Arborist by the client. An Arborist should then be expected to reasonably rely upon the completeness and accuracy of the information provided.

Waxwing Tree Specialists has not assumed any responsibility for liability associated with the trees on or adjacent to this project site, their future demise and/or any damage, which may result therefrom. To live near trees is to accept some degree of risk.

Data provided by Waxwing Tree Specialists are based on observations made at the time of inspection and considers only known targets and visible/detectable conditions of the tree and site consistent with the necessary and agreed upon Level of Assessment (1,2, or 3) per ANSI A300 (part 9) standards, the ISA Best Management Practices (Tree Risk Assessment). Only those trees specified in the scope of work were assessed, and assessments performed within the limitations specified. Waxwing Tree Specialists shall not be required to give testimony or to attend court by reason of this report. Loss or alteration of any part of this report invalidates the entire report.

Waxwing Tree Specialists, LLC is not responsible for discovery or identification of hidden or otherwise non-observable hazards. Observations do not include individual testing or analysis and do not include aerial or sub-soil inspection. Any reference to time frame is not a guarantee for tree stability. Records may not remain accurate after inspection due to variable deterioration of inventoried material. Extreme weather or unforeseeable events may cause tree failure. Waxwing Tree Specialists provides no warranty with respect to the fitness and health of your trees or of the urban forest for any use or purpose whatsoever.