Altmann Oliver Associates, LLC

AOA

PO Box 578 Carnation, WA 98014 Office (425) 333-4535 Fax (425) 333-4509

Environmental Planning & Landscape Architecture

May 27, 2020

AOA-6179

Zach Collins
zlukecollins@gmail.com

SUBJECT: **Critical Area Impacts and Restoration for:**
16415 – 209th Ave. NE, King County, WA
Parcel 062650-0010 (File # PREA19-0195)

Dear Zach:

On March 25, 2020 I conducted an initial wetland reconnaissance on the subject property utilizing the methodology outlined in the May 2010 *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region (Version 2.0).* The primary focus of the reconnaissance was to determine if any critical areas had been impacted by unauthorized clearing that had occurred on the property. One wetland (Wetland A) was identified in the southwest portion of the site during this field investigation and was subsequently delineated.

Wetland is part of a larger wetland that extends off-site to the west and meets the criteria for a Category II wetland with 6 Habitat Points (**Attachment A**) and therefore requires a standard 110-foot buffer and 15-foot building setback adjacent moderate intensity land uses such as low density single-family residential.

King County does not typically allow clearing of any kind within wetlands and their buffers. Since portions of the wetland and buffer have been cleared, we have prepared a restoration planting plan to re-establish a native plant community (**Figures 1 through 5**).

The following maintenance and monitoring program should be implemented as part of this restoration effort.

Goal, Objectives, and Performance Standards for Restoration Area
The primary goal of the restoration plan is to restore the habitat functions of the wetland and buffer back to an intact native system . To meet this goal, the following objectives and performance standards have been incorporated into the design of the plan:

Objective A: Increase the structural and plant species diversity within the restoration area.
Performance Standard: There will be 100% survival of all woody planted species throughout the restoration area at the end of the first year of planting. For Years 2-3, success will be based on an 80% survival rate or similar number of recolonized native woody plants. Areal coverage of plantings or native re-colonized species will be at least 10% at Year 1, 15% at Year 2, and 30% at Year 3.

Objective B: Limit the amount of invasive and exotic species within the restoration area.
Performance Standard: After construction and following every monitoring event for a period of three years, exotic and invasive plant species will be maintained at levels below 10% total cover in the planting area.

Construction Management
Prior to commencement of any work in the restoration areas, the clearing limits will be staked and all existing vegetation to be saved will be clearly marked. A pre-construction meeting will be held at the site to review and discuss all aspects of the project with the landscape contractor and the owner.

A consultant will supervise plan implementation during construction to ensure that objectives and specifications of the restoration plan are met. Any necessary significant modifications to the design that occur as a result of unforeseen site conditions will be jointly approved by King County and the consultant prior to their implementation.

Monitoring Methodology
The monitoring program will be conducted for a period of three years, with annual reports submitted to King County. Vegetation monitoring will include general appearance, health, mortality, colonization rates, percent cover, percent survival, volunteer plant species, and invasive weeds.

Photo-points will be established from which photographs will be taken throughout the monitoring period. These photographs will document general appearance and progress in plant community establishment in the restoration area. Review of the photos over time will provide a visual representation of success of the restoration plan.

Maintenance Plan
Maintenance will be conducted on a routine, year-round basis. Additional maintenance needs will be identified and addressed following periodic maintenance reviews. Routine removal and control of non-native and other invasive plants within the designated restoration areas shall be performed by manual means whenever

possible. Undesirable and weedy exotic plant species shall be maintained at levels below 10% total cover within the restoration area during the monitoring period.

Routine maintenance of planted trees and shrubs shall be performed. Measures include resetting plants to proper grades and upright positions. Tall grasses and other competitive weeds shall be weeded at the base of plants to prevent engulfment. Weed control should be performed by hand removal whenever possible.

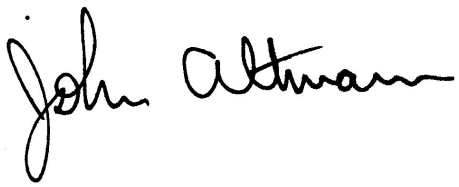
Contingency Plan
All dead plants will be replaced with the same species or an approved substitute species that meets the goal of the restoration plan. Plant material shall meet the same specifications as originally installed material. Replanting will not occur until after reason for failure has been identified (e.g., moisture regime, poor plant stock, disease, shade/sun conditions, wildlife damage, etc.). Replanting shall be completed under the direction of the consultant, King County, or the owner.

As-Built Plan
Following completion of construction activities, an as-built plan for the enhancement area will be provided to King County. The plan will identify and describe any changes in relation to the original approved plan.

If you have any questions, please give me a call.

Sincerely,

ALTMANN OLIVER ASSOCIATES, LLC



John Altmann
Ecologist

Attachments

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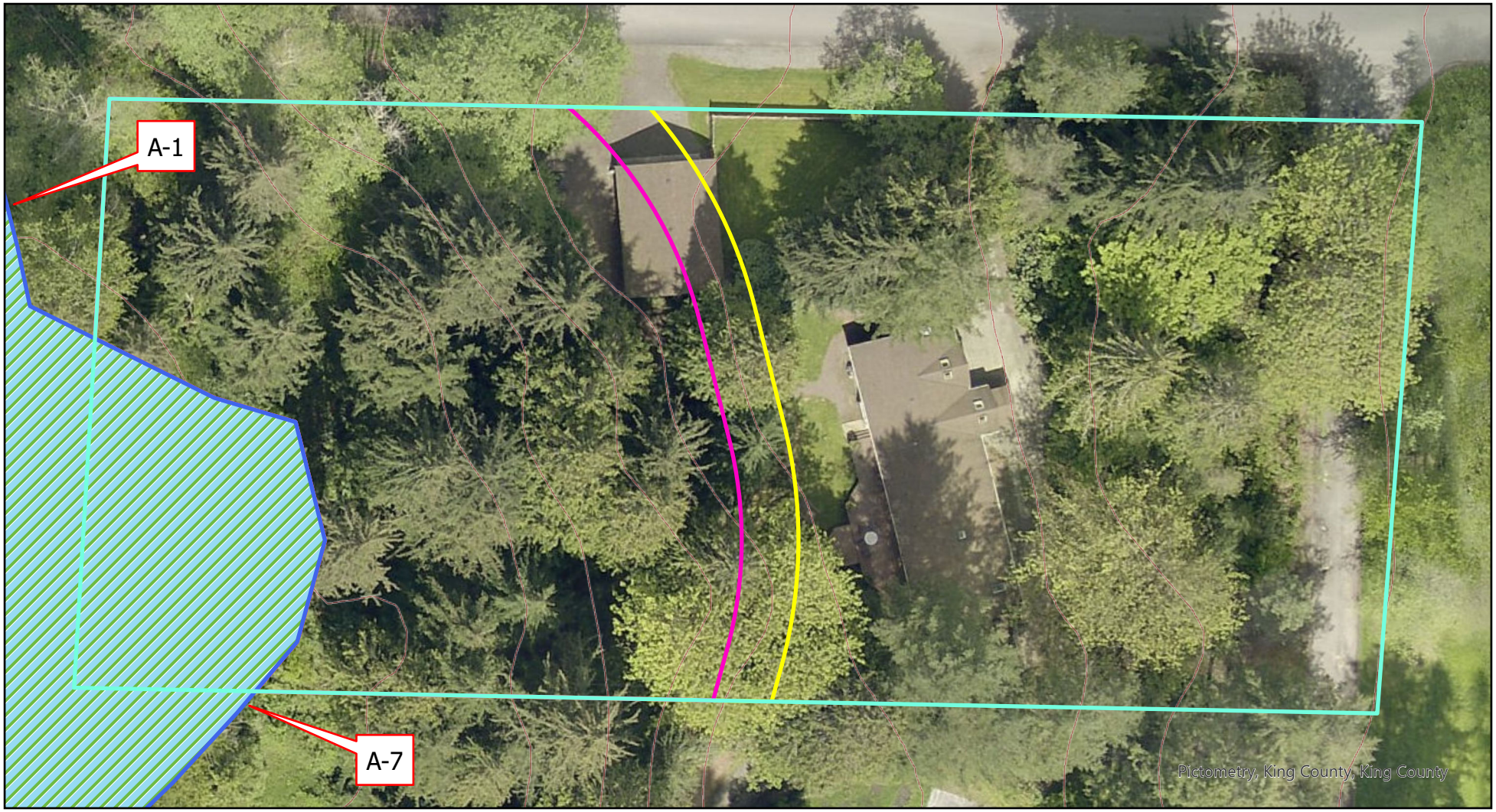
Architecture

King County
Parcel: 062650-0010

Critical Areas Map

AOA - 6179



Subject Property Parcel: 062650-0010
Approximate Wetland A Rating Unit
Approximate 110' Buffer for Wetland A
Approximate 15' Building Setback

0 15 30 60 90 120 US Feet

N

Wetland name or number A

Attachment A

RATING SUMMARY – Western Washington

Name of wetland (or ID #): Parcel 062650-0010 Date of site visit: 3/25/2020

Rated by Altmann Trained by Ecology? ☑ Yes ☐ No Date of training 03/08 & 03/15

HGM Class used for rating Depressional & Flats Wetland has multiple HGM classes? ☑ Yes ☐ No

NOTE: Form is not complete with out the figures requested (*figures can be combined*).
Source of base aerial photo/map King County iMAP

OVERALL WETLAND CATEGORY II (based on functions ☑ or special characteristics ☐)

1. Category of wetland based on FUNCTIONS

_____ **Category I** - Total score = 23 - 27
X **Category II** - Total score = 20 - 22
_____ **Category III** - Total score = 16 - 19
_____ **Category IV** - Total score = 9 - 15

FUNCTION	Improving Water Quality	Hydrologic	Habitat	
	List appropriate rating (H, M, L)			
Site Potential	H	L	M	
Landscape Potential	M	M	M	
Value	H	H	M	**Total**
Score Based on Ratings	8	6	6	**20**

Score for each function based on three ratings (*order of ratings is not important*)

9 = H, H, H
8 = H, H, M
7 = H, H, L
7 = H, M, M
6 = H, M, L
6 = M, M, M
5 = H, L, L
5 = M, M, L
4 = M, L, L
3 = L, L, L

2. Category based on SPECIAL CHARACTERISTICS of wetland

CHARACTERISTIC	Category
Estuarine	
Wetland of High Conservation Value	
Bog	
Mature Forest	
Old Growth Forest	
Coastal Lagoon	
Interdunal	
None of the above	**X**

Wetland name or number ___A____

DEPRESSIONAL AND FLATS WETLANDS

Water Quality Functions - Indicators that the site functions to improve water quality

D 1.0. Does the site have the potential to improve water quality?		
D 1.1. Characteristics of surface water outflows from the wetland:		1
Wetland is a depression or flat depression (QUESTION 7 on key) with no surface water leaving it (no outlet).	points = 3	
Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outlet.	points = 2	
☐ Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing	points = 1	
☐ Wetland is a flat depression (QUESTION 7 on key), whose outlet is a permanently flowing ditch.	points = 1	
D 1.2. The soil 2 in below the surface (or duff layer) is true clay or true organic (*use NRCS definitions*).	Yes = 4 No = 0	4
D 1.3. Characteristics and distribution of persistent plants (Emergent, Scrub-shrub, and/or Forested Cowardin classes):		5
Wetland has persistent, ungrazed, plants > 95% of area	points = 5	
Wetland has persistent, ungrazed, plants > ½ of area	points = 3	
Wetland has persistent, ungrazed plants > $^1/_{10}$ of area	points = 1	
Wetland has persistent, ungrazed plants < $^1/_{10}$ of area	points = 0	
D 1.4. Characteristics of seasonal ponding or inundation:		4
This is the area that is ponded for at least 2 months. See description in manual.		
Area seasonally ponded is > ½ total area of wetland	points = 4	
Area seasonally ponded is > ¼ total area of wetland	points = 2	
Area seasonally ponded is < ¼ total area of wetland	points = 0	
Total for D 1	Add the points in the boxes above	**14**

Rating of Site Potential If score is: ☑ **12 - 16 = H** ☐ **6 - 11 = M** ☐ **0 - 5 = L** *Record the rating on the first page*

D 2.0. Does the landscape have the potential to support the water quality function of the site?		
D 2.1. Does the wetland unit receive stormwater discharges?	Yes = 1 No = 0	
D 2.2. Is > 10% of the area within 150 ft of the wetland in land uses that generate pollutants?	Yes = 1 No = 0	1
D 2.3. Are there septic systems within 250 ft of the wetland?	Yes = 1 No = 0	1
D 2.4. Are there other sources of pollutants coming into the wetland that are not listed in questions D 2.1 - D 2.3?		0
Source	Yes = 1 No = 0	
Total for D 2	Add the points in the boxes above	**2**

Rating of Landscape Potential If score is: ☐ **3 or 4 = H** ☑ **1 or 2 = M** ☐ **0 = L** *Record the rating on the first page*

D 3.0. Is the water quality improvement provided by the site valuable to society?		
D 3.1. Does the wetland discharge directly (i.e., within 1 mi) to a stream, river, lake, or marine water that is on the 303(d) list?	Yes = 1 No = 0	0
D 3.2. Is the wetland in a basin or sub-basin where an aquatic resource is on the 303(d) list?	Yes = 1 No = 0	0
D 3.3. Has the site been identified in a watershed or local plan as important for maintaining water quality (*answer YES if there is a TMDL for the basin in which the unit is found*)?	Yes = 2 No = 0	2
Total for D 3	Add the points in the boxes above	**2**

Rating of Value If score is: ☑ **2 - 4 = H** ☐ **1 = M** ☐ **0 = L** *Record the rating on the first page*

Wetland name or number ___A____

DEPRESSIONAL AND FLATS WETLANDS

Hydrologic Functions - Indicators that the site functions to reduce flooding and stream degradation

D 4.0. Does the site have the potential to reduce flooding and erosion?		
D 4.1. Characteristics of surface water outflows from the wetland:		
Wetland is a depression or flat depression with no surface water leaving it (no outlet)	points = 4	0
Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outlet	points = 2	
Wetland is a flat depression (QUESTION 7 on key), whose outlet is a permanently flowing ditch	points = 1	
Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing	points = 0	
D 4.2. Depth of storage during wet periods: *Estimate the height of ponding above the bottom of the outlet. For wetlands with no outlet, measure from the surface of permanent water or if dry, the deepest part.*		
Marks of ponding are 3 ft or more above the surface or bottom of outlet	points = 7	3
Marks of ponding between 2 ft to < 3 ft from surface or bottom of outlet	points = 5	
□ Marks are at least 0.5 ft to < 2 ft from surface or bottom of outlet	points = 3	
□ The wetland is a "headwater" wetland	points = 3	
Wetland is flat but has small depressions on the surface that trap water	points = 1	
Marks of ponding less than 0.5 ft (6 in)	points = 0	
D 4.3. Contribution of the wetland to storage in the watershed: *Estimate the ratio of the area of upstream basin contributing surface water to the wetland to the area of the wetland unit itself.*		
□ The area of the basin is less than 10 times the area of the unit	points = 5	0
The area of the basin is 10 to 100 times the area of the unit	points = 3	
The area of the basin is more than 100 times the area of the unit	points = 0	
□ Entire wetland is in the Flats class	points = 5	
Total for D 4	Add the points in the boxes above	**3**

Rating of Site Potential If score is: □ **12 - 16 = H** □ **6 - 11 = M** ☑ **0 - 5 = L** *Record the rating on the first page*

D 5.0. Does the landscape have the potential to support hydrologic function of the site?		
D 5.1. Does the wetland unit receive stormwater discharges?	Yes = 1 No = 0	0
D 5.2. Is > 10% of the area within 150 ft of the wetland in land uses that generate excess runoff?	Yes = 1 No = 0	1
D 5.3. Is more than 25% of the contributing basin of the wetland covered with intensive human land uses (residential at >1 residence/ac, urban, commercial, agriculture, etc.)?	Yes = 1 No = 0	0
Total for D 5	Add the points in the boxes above	**1**

Rating of Landscape Potential If score is: □ **3 = H** ☑ **1 or 2 = M** □ **0 = L** *Record the rating on the first page*

D 6.0. Are the hydrologic functions provided by the site valuable to society?		
D 6.1. The unit is in a landscape that has flooding problems. *Choose the description that best matches conditions around the wetland unit being rated. Do not add points. Choose the highest score if more than one condition is met.*		
The wetland captures surface water that would otherwise flow down-gradient into areas where flooding has damaged human or natural resources (e.g., houses or salmon redds):		2
• Flooding occurs in a sub-basin that is immediately down-gradient of unit.	points = 2	
□ • Surface flooding problems are in a sub-basin farther down-gradient.	points = 1	
□ Flooding from groundwater is an issue in the sub-basin.	points = 1	
□ The existing or potential outflow from the wetland is so constrained by human or natural conditions that the water stored by the wetland cannot reach areas that flood. Explain why	points = 0	
□ There are no problems with flooding downstream of the wetland.	points = 0	
D 6.2. Has the site been identified as important for flood storage or flood conveyance in a regional flood control plan?	Yes = 2 No = 0	0
Total for D 6	Add the points in the boxes above	**2**

Rating of Value If score is: ☑ **2 - 4 = H** □ **1 = M** □ **0 = L** *Record the rating on the first page*

Wetland name or number ___A____

These questions apply to wetlands of all HGM classes.

HABITAT FUNCTIONS - Indicators that site functions to provide important habitat

H 1.0. Does the site have the potential to provide habitat?

H 1.1. Structure of plant community: *Indicators are Cowardin classes and strata within the Forested class.* Check the Cowardin plant classes in the wetland. *Up to 10 patches may be combined for each class to meet the threshold of ¼ ac or more than 10% of the unit if it is smaller than 2.5 ac. Add the number of structures checked.*

- ☐ Aquatic bed
- ☑ Emergent
- ☑ Scrub-shrub (areas where shrubs have > 30% cover)
- ☑ Forested (areas where trees have > 30% cover)

4 structures or more: points = 4
3 structures: points = 2
2 structures: points - 1
1 structure: points = 0

If the unit has a Forested class, check if:

- ☑ The Forested class has 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover) that each cover 20% within the Forested polygon

4

H 1.2. Hydroperiods

Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland or ¼ ac to count (*see text for descriptions of hydroperiods*).

- ☐ Permanently flooded or inundated
- ☑ Seasonally flooded or inundated
- ☐ Occasionally flooded or inundated
- ☐ Saturated only

4 or more types present: points = 3
3 types present: points = 2
2 types present: points = 1
1 types present: points = 0

- ☐ Permanently flowing stream or river in, or adjacent to, the wetland
- ☐ Seasonally flowing stream in, or adjacent to, the wetland
- ☐ **Lake Fringe wetland** **2 points**
- ☐ **Freshwater tidal wetland** **2 points**

0

H 1.3. Richness of plant species

Count the number of plant species in the wetland that cover at least 10 ft^2.
Different patches of the same species can be combined to meet the size threshold and you do not have to name the species. ***Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, Canadian thistle***

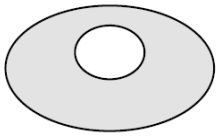
If you counted:
> 19 species — points = 2
5 - 19 species — points = 1
< 5 species — points = 0

1

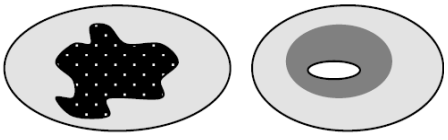
H 1.4. Interspersion of habitats

Decide from the diagrams below whether interspersion among Cowardin plants classes (described in H 1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, moderate, low, or none. *If you have four or more plant classes or three classes and open water, the rating is always high.*

None = 0 points

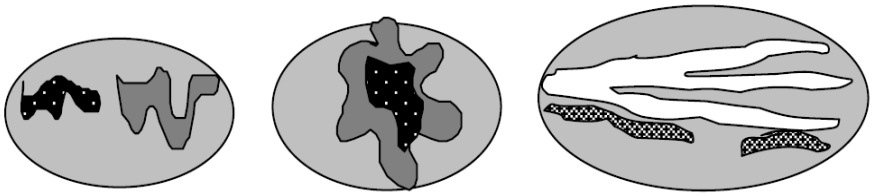


Low = 1 point



Moderate = 2 points

All three diagrams in this row are **HIGH** = 3 points



2

H 1.5. Special habitat features: Check the habitat features that are present in the wetland. *The number of checks is the number of points.* ☑ Large, downed, woody debris within the wetland (> 4 in diameter and 6 ft long) ☑ Standing snags (dbh > 4 in) within the wetland ☑ Undercut banks are present for at least 6.6 ft (2 m) **and/or** overhanging plants extends at least 3.3 ft (1 m) over a stream (or ditch) in, or contiguous with the wetland, for at least 33 ft (10 m) ☐ Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 30 degree slope) OR signs of recent beaver activity are present (*cut shrubs or trees that have not yet weathered where wood is exposed*) ☐ At least ¼ ac of thin-stemmed persistent plants or woody branches are present in areas that are permanently or seasonally inundated (*structures for egg-laying by amphibians*) ☐ Invasive plants cover less than 25% of the wetland area in every stratum of plants (*see H 1.1 for list of strata*)	3
Total for H 1 — Add the points in the boxes above	**10**

Rating of Site Potential If Score is: ☐ **15 - 18 = H** ☑ **7 - 14 = M** ☐ **0 - 6 = L** *Record the rating on the first page*

H 2.0. Does the landscape have the potential to support the habitat function of the site?	
H 2.1 Accessible habitat (include *only habitat that directly abuts wetland unit*). *Calculate:* 15.9 % undisturbed habitat + (0 % moderate & low intensity land uses / 2) = 15.9% If total accessible habitat is: > 1/3 (33.3%) of 1 km Polygon — points = 3 20 - 33% of 1 km Polygon — points = 2 10 - 19% of 1 km Polygon — points = 1 < 10 % of 1 km Polygon — points = 0	1
H 2.2. Undisturbed habitat in 1 km Polygon around the wetland. *Calculate:* 29 % undisturbed habitat + (10.6 % moderate & low intensity land uses / 2) = 34.3% Undisturbed habitat > 50% of Polygon — points = 3 Undisturbed habitat 10 - 50% and in 1-3 patches — points = 2 Undisturbed habitat 10 - 50% and > 3 patches — points = 1 Undisturbed habitat < 10% of 1 km Polygon — points = 0	2
H 2.3 Land use intensity in 1 km Polygon: If > 50% of 1 km Polygon is high intensity land use — points = (-2) ≤ 50% of 1km Polygon is high intensity — points = 0	-2
Total for H 2 — Add the points in the boxes above	**1**

Rating of Landscape Potential If Score is: ☐ **4 - 6 = H** ☑ **1 - 3 = M** ☐ **< 1 = L** *Record the rating on the first page*

H 3.0. Is the habitat provided by the site valuable to society?	
H 3.1. Does the site provide habitat for species valued in laws, regulations, or policies? *Choose only the highest score that applies to the wetland being rated*. Site meets ANY of the following criteria: — points = 2 ☐ It has 3 or more priority habitats within 100 m (see next page) ☐ It provides habitat for Threatened or Endangered species (any plant or animal on the state or federal lists) ☐ It is mapped as a location for an individual WDFW priority species ☐ It is a Wetland of High Conservation Value as determined by the Department of Natural Resources ☐ It has been categorized as an important habitat site in a local or regional comprehensive plan, in a Shoreline Master Plan, or in a watershed plan Site has 1 or 2 priority habitats (listed on next page) with in 100m — points = 1 Site does not meet any of the criteria above — points = 0	1

Rating of Value If Score is: ☐ **2 = H** ☑ **1 = M** ☐ **0 = L** *Record the rating on the first page*

WDFW Priority Habitats

Priority habitats listed by WDFW (see complete descriptions of WDFW priority habitats, and the counties in which they can be found, in: Washington Department of Fish and Wildlife. 2008. Priority Habitat and Species List. Olympia, Washington. 177 pp.
http://wdfw.wa.gov/publications/00165/wdfw00165.pdf or access the list from here:
http://wdfw.wa.gov/conservation/phs/list/

Count how many of the following priority habitats are within 330 ft (100 m) of the wetland unit: ***NOTE**: This question is independent of the land use between the wetland unit and the priority habitat.*

- ☐ **Aspen Stands**: Pure or mixed stands of aspen greater than 1 ac (0.4 ha).
- ☐ **Biodiversity Areas and Corridors**: Areas of habitat that are relatively important to various species of native fish and wildlife (*full descriptions in WDFW PHS report*).
- ☐ **Herbaceous Balds**: Variable size patches of grass and forbs on shallow soils over bedrock.
- ☐ **Old-growth/Mature forests**: Old-growth west of Cascade crest – Stands of at least 2 tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) > 32 in (81 cm) dbh or > 200 years of age. Mature forests – Stands with average diameters exceeding 21 in (53 cm) dbh; crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80-200 years old west of the Cascade crest.
- ☐ **Oregon White Oak**: Woodland stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (*full descriptions in WDFW PHS report p. 158 – see web link above*).
- ☑ **Riparian**: The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.
- ☐ **Westside Prairies**: Herbaceous, non-forested plant communities that can either take the form of a dry prairie or a wet prairie (*full descriptions in WDFW PHS report p. 161 – see web link above*).
- ☑ **Instream**: The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources.
- ☐ **Nearshore**: Relatively undisturbed nearshore habitats. These include Coastal Nearshore, Open Coast Nearshore, and Puget Sound Nearshore. (*full descriptions of habitats and the definition of relatively undisturbed are in WDFW report – see web link on previous page*).
- ☐ **Caves**: A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils, rock, ice, or other geological formations and is large enough to contain a human.
- ☐ **Cliffs**: Greater than 25 ft (7.6 m) high and occurring below 5000 ft elevation.
- ☐ **Talus**: Homogenous areas of rock rubble ranging in average size 0.5 - 6.5 ft (0.15 - 2.0 m), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.
- ☐ **Snags and Logs**: Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 20 in (51 cm) in western Washington and are > 6.5 ft (2 m) in height. Priority logs are > 12 in (30 cm) in diameter at the largest end, and > 20 ft (6 m) long.

Note: All vegetated wetlands are by definition a priority habitat but are not included in this list because they are addressed elsewhere.

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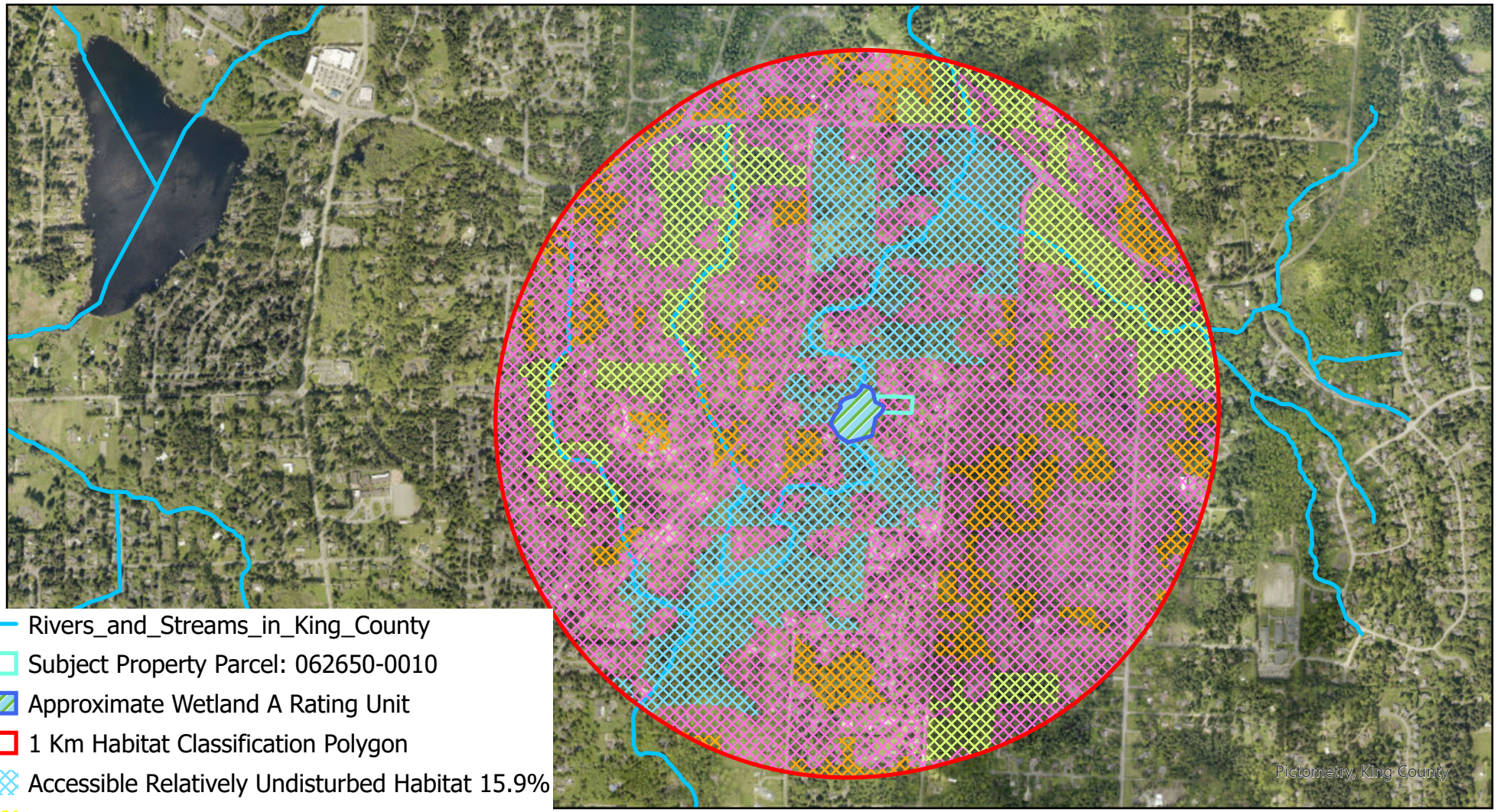
Figure A

AOA - 6179



- Rivers_and_Streams_in_King_County
- Subject Property Parcel: 062650-0010
- Approximate Wetland A Rating Unit
- 1 Km Habitat Classification Polygon
- Accessible Relatively Undisturbed Habitat 15.9%
- Accessible Low_Moderate Intensity 0%
- Relatively Undisturbed Habitat 13.1%
- Low_Moderate Intensity Habitat 10.6%
- High Intensity Habitat 60.4%

0 5001,000 2,000 3,000 4,000 US Feet

N

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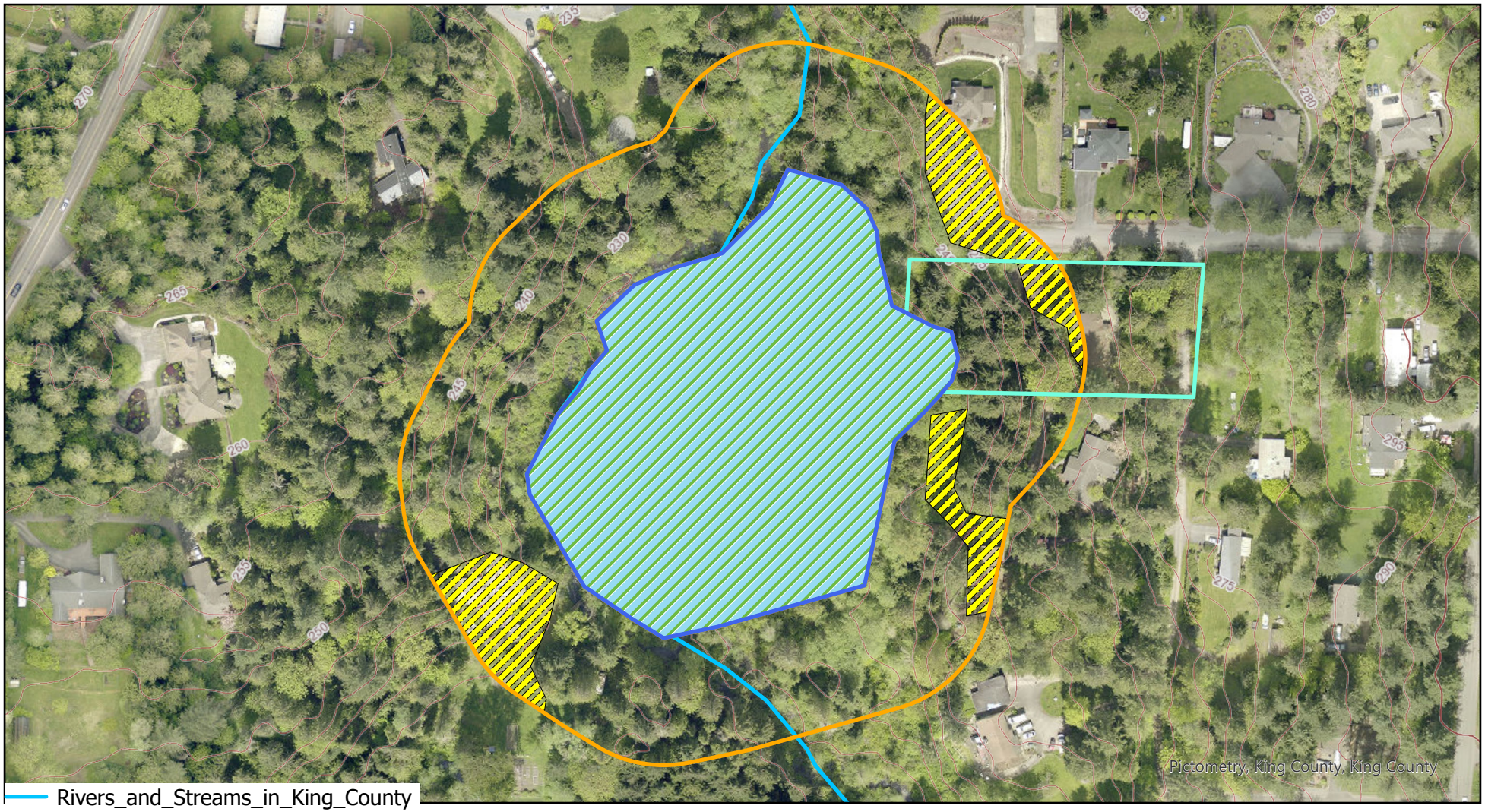
Figure B

AOA - 6179



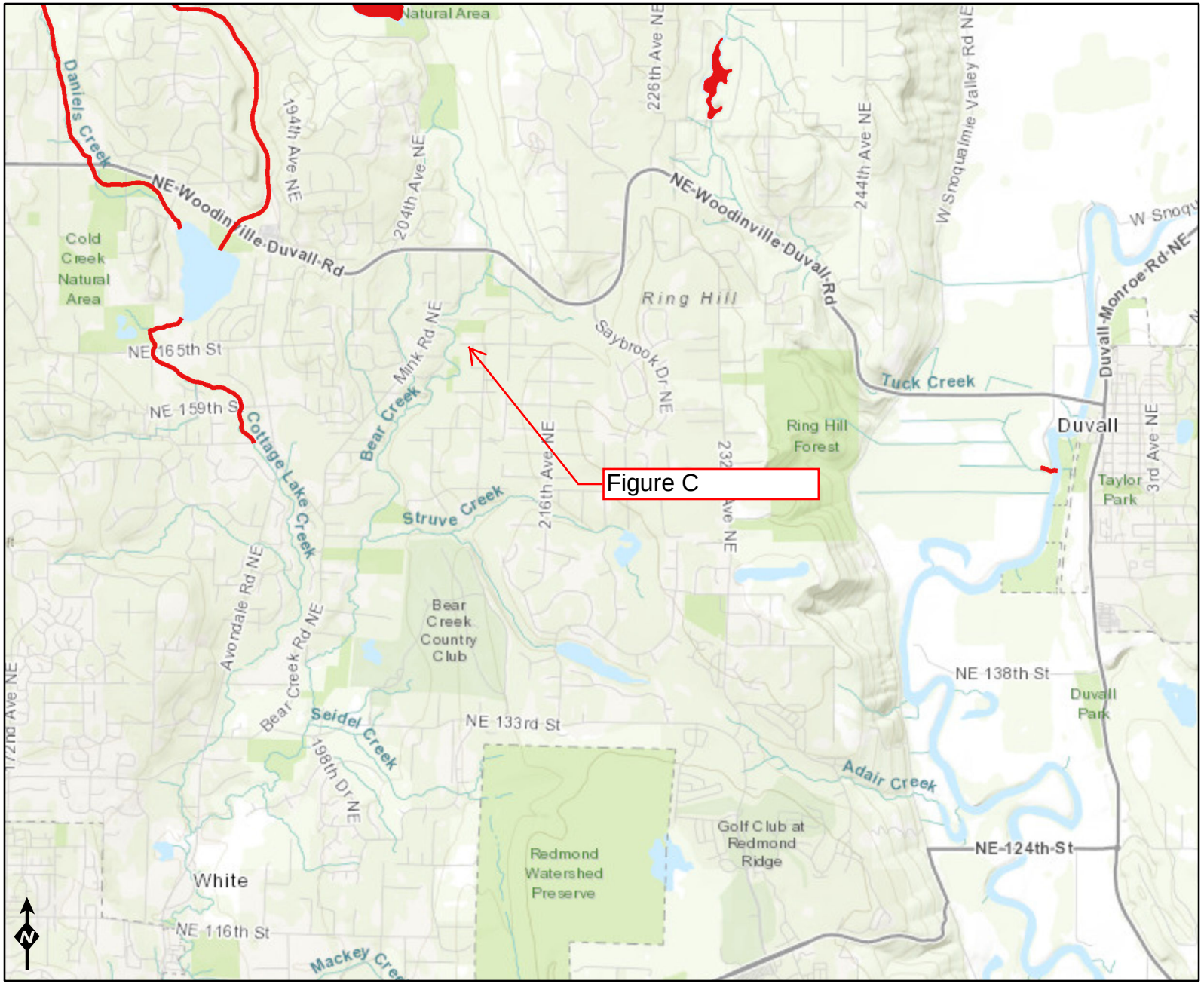
Rivers_and_Streams_in_King_County
Subject Property Parcel: 062650-0010
Approximate Wetland A Rating Unit
150' Pollution Assessment Polygon
Pollution Generating Surfaces 13.3%

0 65 130 260 390 520
US Feet

N

April 9, 2020

Figure C



Assessed Waters/Sediment

Water
- Category 5 - 303d
- Category 4C
- Category 4B
- Category 4A
- Category 2
- Category 1

Sediment
- Category 5 - 303d
- Category 4C
- Category 4B
- Category 4A
- Category 2
- Category 1

Miles
0 0.5 1 2

Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and

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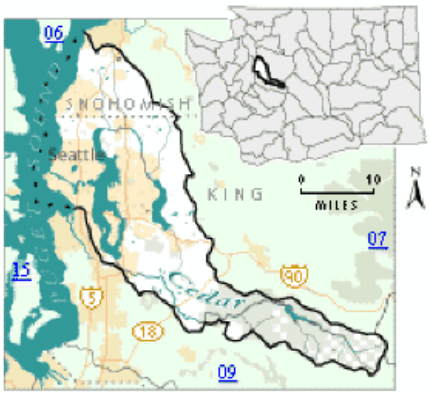
Figure D

Water Quality Improvement Projects (TMDLs)

WRIA 8: Cedar-Sammamish

The following table lists overview information for water quality improvement projects (including total maximum daily loads, or TMDLs) for this water resource inventory area (WRIA). Please use links (where available) for more information on a project.



Counties

- King
- Snohomish

Waterbody Name	Pollutants	Status**	TMDL Lead
Ballinger Lake	Total Phosphorus	Approved by EPA	Tricia Shoblom 425-649-7288
Bear-Evans Creek Basin	Fecal Coliform	Approved by EPA	Joan Nolan 425-649-4425
	Dissolved Oxygen Temperature	Approved by EPA	
Cottage Lake	Total Phosphorus	Approved by EPA Has an implementation plan	Tricia Shoblom 425-649-7288
Issaquah Creek Basin	Fecal Coliform	Approved by EPA	Joan Nolan 425-649-4425
Little Bear Creek Tributaries: Trout Stream Great Dane Creek Cutthroat Creek	Fecal Coliform	Approved by EPA	Ralph Svrjcek 425-649-7036
North Creek	Fecal Coliform	Approved by EPA Has an implementation plan	Ralph Svrjcek 425-649-7036
Pipers Creek	Fecal Coliform	Approved by EPA	Joan Nolan 425-649-4425
Sammamish River	Dissolved Oxygen Temperature	Field work starts summer 2015	Ralph Svrjcek 425-649-7036
Swamp Creek	Fecal Coliform	Approved by EPA Has an implementation plan	Ralph Svrjcek 425-649-7036

*** Status** *will be listed as one of the following: Approved by EPA, Under Development or Implementation*

For more information about WRIA 8:

- Waterbodies in WRIA 8 - using the Water Quality Assessment Query Tool
- Watershed Information for WRIA 8

* The Department of Ecology and other state resource agencies frequently use a system of 62 "Water Resource Inventory Areas" or "WRIAs" to refer to the state's major watershed basins.

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Architecture

King County
Parcel: 062650-0010

Figure E

AOA - 6179

Rivers_and_Streams_in_King_County
Subject Property Parcel: 062650-0010
Approximate Wetland A Rating Unit
PSS
PFO
PEM

0 40 80 160 240 320
US Feet

N

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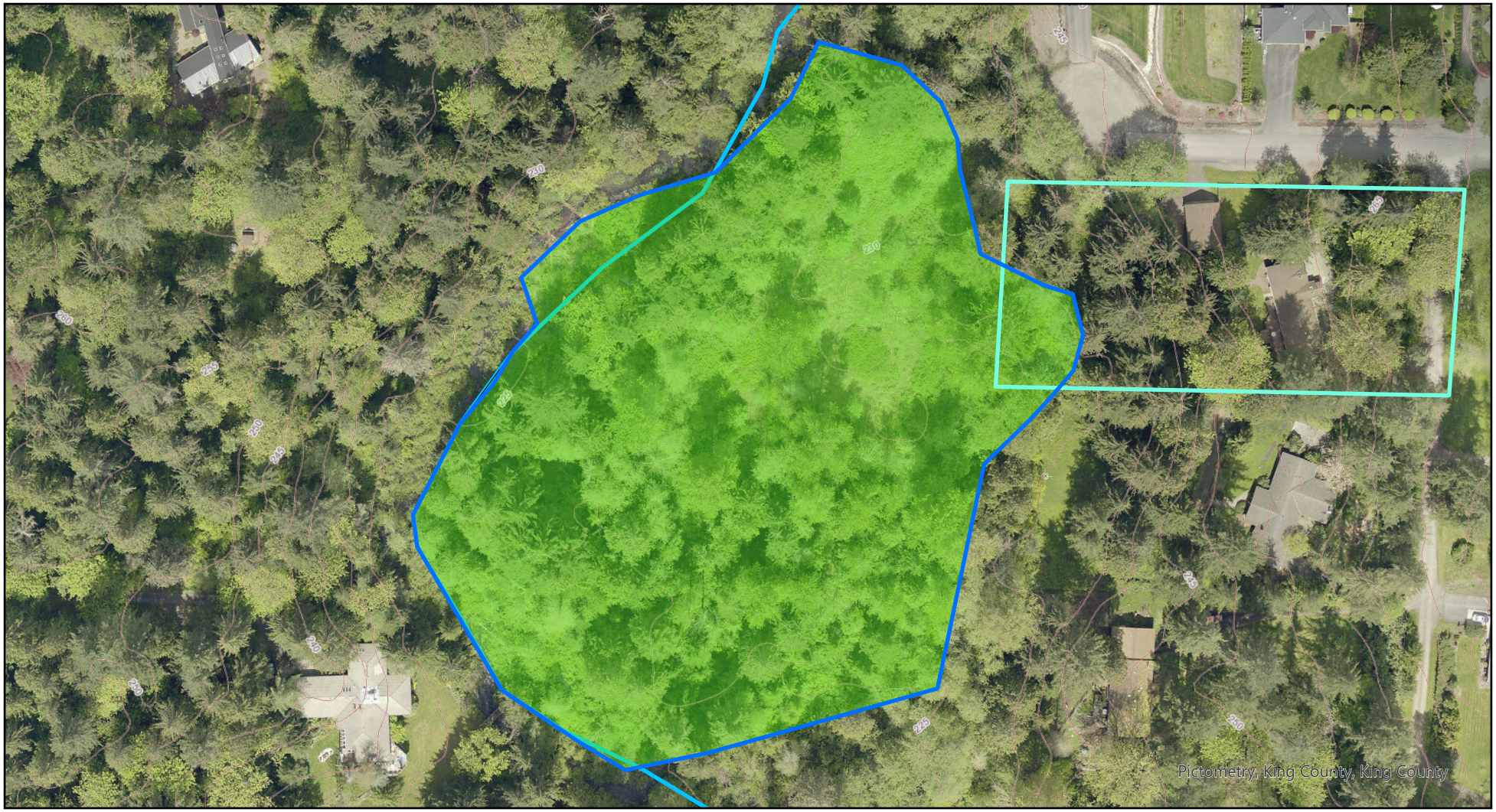
King County
Parcel: 062650-0010

Figure F

AOA - 6179



Rivers_and_Streams_in_King_County
Subject Property Parcel: 062650-0010
Approximate Wetland A Rating Unit
Seasonally Ponded

0 40 80 160 240 320
US Feet

N

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King County
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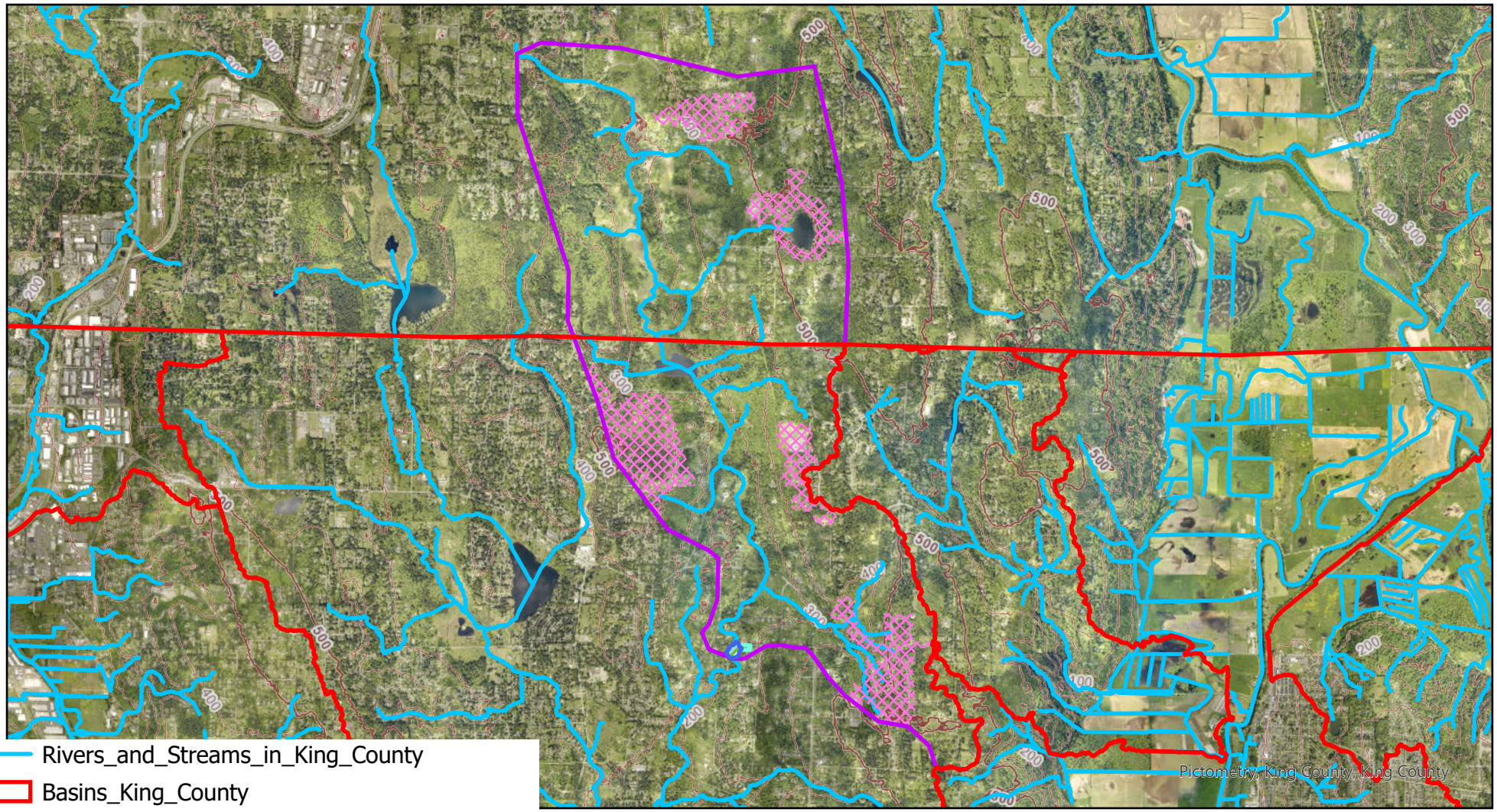
Figure G

AOA - 6179



Rivers_and_Streams_in_King_County
Basins_King_County
Subject Property Parcel: 062650-0010
Approximate Wetland A Rating Unit ~ 3.9 Acres
Approximate Contributing Basin ~ 4,263.6 Acres
Contributing High Intensity Habitat 14%

0 1,500 3,000 6,000 9,000 12,000
US Feet

N

PLAN LEGEND

- PROPERTY LINE
- APPROXIMATE WETLAND A
- APPROXIMATE 110' WETLAND BUFFER
- APPROXIMATE 15' BUILDING SETBACK
- APPROXIMATE EDGE OF CLEARING
- DRIPLINE OF TREES
- REMAINING TREES
- REMOVED TREES - 20
- 20% SALMONBERRY STARTS

GRAPHIC SCALE
(IN FEET)

0 20 40 60 80 120

SCALE: 1:40

N

FIGURE 1: EXTENT OF CLEARING MAP
RESTORATION PLAN
COLLINS PROPERTY - PERMIT XXXX
16415 209TH AVE NE WOODINVILLE, WA 98077
PARCEL #062650-0010

PROJECT 6179
DRAWN SO
SCALE AS NOTED
DATE 06-10-20
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EXISITNG GRAVEL TO REMAIN

PLAN LEGEND

- PROPERTY LINE
- APPROXIMATE WETLAND A
- APPROXIMATE 110' WETLAND BUFFER
- APPROXIMATE 15' BUILDING SETBACK
- APPROXIMATE EDGE OF CLEARING
- REMAINING TREES
- REMOVED TREES

MITIGATION LEGEND

- WETLAND RESTORATION AT 100% PLANTING DENSITY 3,737 SF
- BUFFER RESTORATION AT 100% PLANTING DENSITY -12,983 SF
- BUFFER RESTORATION AT 80% PLANTING DENSITY 2,226 SF

EXISITNG YARD

GRAPHIC SCALE
(IN FEET)

0 10 20 30 40 60

SCALE: 1:20

N

FIGURE 2: SITE PLAN IMPACTS & MITIGATION
RESTORATION PLAN
COLLINS PROPERTY - PERMIT XXXX
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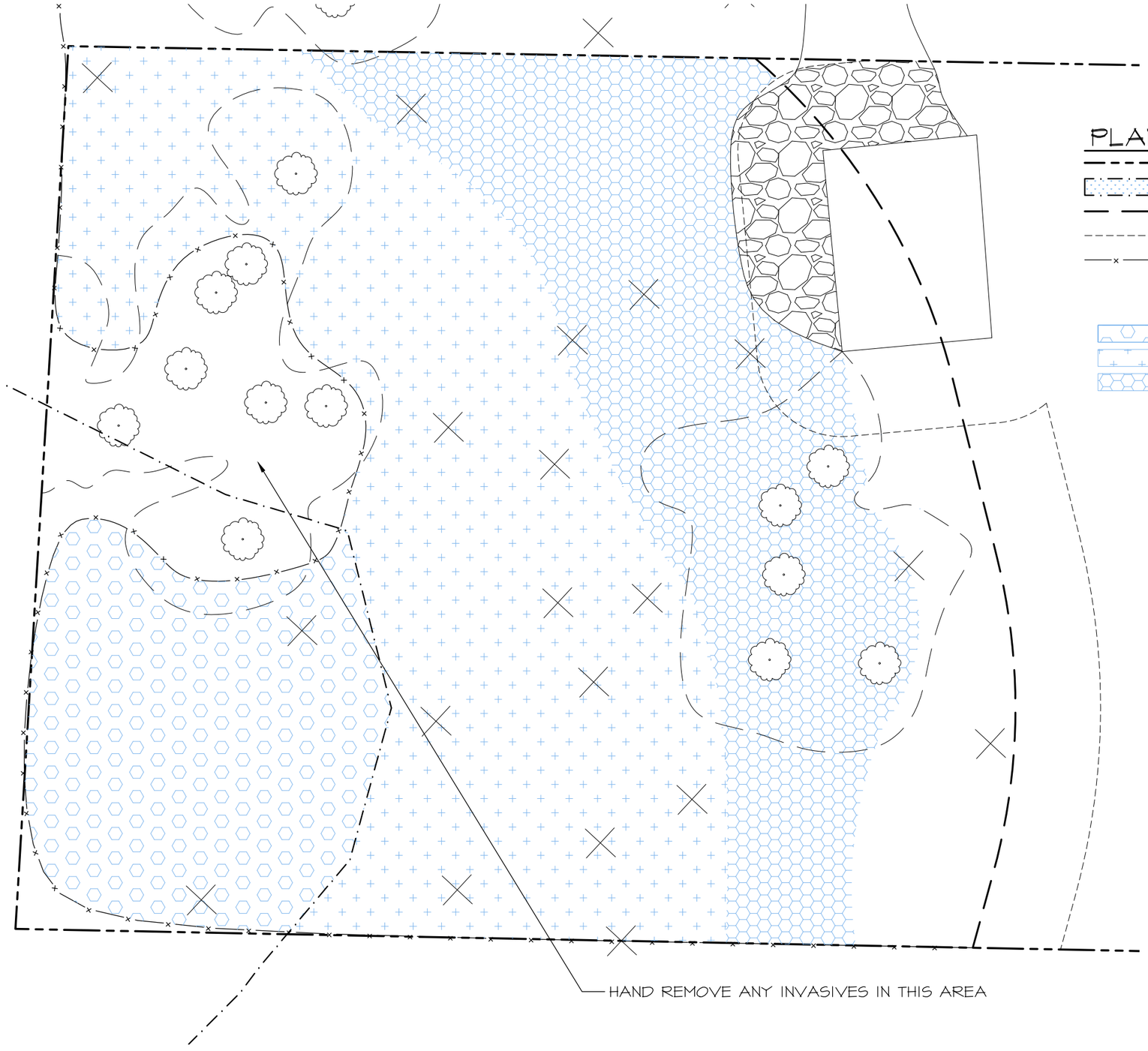

PLAN LEGEND

- PROPERTY LINE
- APPROXIMATE WETLAND A
- APPROXIMATE 110' WETLAND BUFFER
- APPROXIMATE 15' BUILDING SETBACK
- APPROXIMATE EDGE OF CLEARING
- REMAINING TREES
- REMOVED TREES
- AREA 1
- AREA 2
- AREA 3

GRAPHIC SCALE
(IN FEET)

0 10 20 30 40 60

SCALE: 1:20

N

FIGURE 3: PLANTING PLAN
RESTORATION PLAN
COLLINS PROPERTY - PERMIT XXXX
16415 209TH AVE NE WOODINVILLE, WA 98077
PARCEL #062650-0010

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WETLAND/BUFFER PLANT SCHEDULE

TREES (ASSUMES 3:1 REPLACEMENT FOR EACH TREE REMOVED)

KEY	SCIENTIFIC NAME	COMMON NAME	DENSITY	AREA 1 QTY.	AREA 2 QTY.	AREA 3 QTY.	SIZE (MIN.)	NOTES
PS	PICEA SITCHENSIS	SITKA SPRUCE	9 O.C.	6		7	2 GAL.	FULL & BUSHY
TP	THUJA PLICATA	WESTERN RED CEDAR	9' O.C.		33	14	2 GAL.	FULL & BUSHY

SHRUBS (ASSUMES 25% RE-ESTABLISHMENT RATE OF NATIVE UNDERSTORY WOODY VEGETATION)

KEY	SCIENTIFIC NAME	COMMON NAME	DENSITY	AREA 1 QTY.	AREA 2 QTY.	AREA 3 QTY.	SIZE (MIN.)	NOTES
A	ACER CIRCINATUM	VINE MAPLE	6' O.C.		94		1 GAL.	MULTI-STEM (3 MIN.)
C	CORNUS SERICEA	RED-OSIER DOGWOOD	6' O.C.	16			1 GAL.	MULTI-STEM (3 MIN.)
CC	CORYLUS CORNUTA	BEAKED HAZELNUT	6' O.C.			25	1 GAL.	MULTI-STEM (3 MIN.)
H	HOLODISCUS DISCOLOR	OCEANSPRAY	6' O.C.			25	1 GAL.	MULTI-STEM (3 MIN.)
L	LONICERA INVOLUCRATA	BLACK TWIN-BERRY	6' O.C.	16			1 GAL.	MULTI-STEM (3 MIN.)
O	OEMLERIA CERASIFORMIS	OSOBERRY	6' O.C.			25	1 GAL.	MULTI-STEM (3 MIN.)
PC	PHYSOCARPUS CAPITATUS	PACIFIC NINEBARK	6' O.C.	15			1 GAL.	MULTI-STEM (3 MIN.)
N	ROSA NUTKANA	NOOTKA ROSE	6' O.C.			24	1 GAL.	MULTI-STEM (3 MIN.)
R	ROSA PISOCARPA	CLUSTERED ROSE	6' O.C.	16			1 GAL.	MULTI-STEM (3 MIN.)
SR	SAMBUCUS RACEMOSA	RED ELDERBERRY	6' O.C.		93		1 GAL.	MULTI-STEM (3 MIN.)
S	SYMPHORICARPOS ALBUS	SNOWBERRY	6' O.C.			24	1 GAL.	MULTI-STEM)3 MIN.)
W	SALIX SCOULERIANA	SCOULER WILLOW	6' O.C.	16			1 GAL.	MULTI-STEM (3 MIN.)

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FIGURE 4: PLANT SCHEDULE
RESTORATION PLAN
COLLINS PROPERTY - PERMIT XXXX
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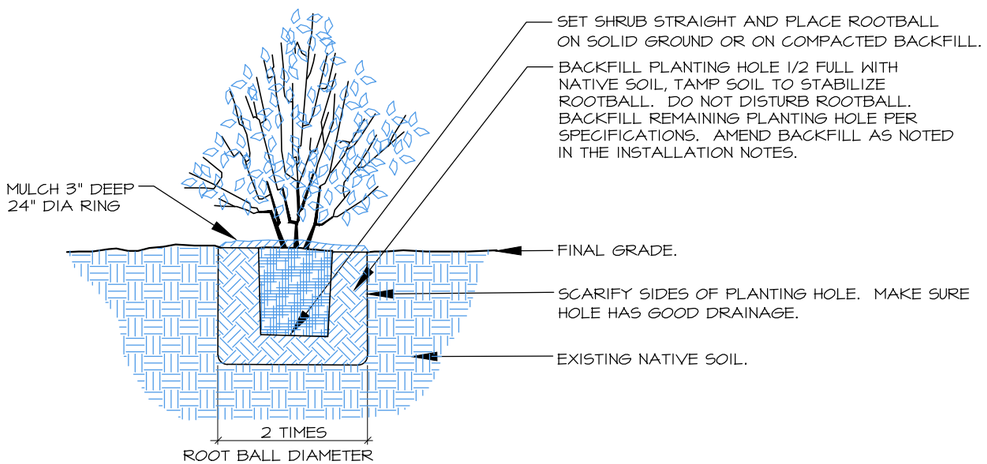
SPECIFICATIONS

1. PRIOR TO PLANTING ALL EXISTING DEBRIS PILES (STUMPS AND LOGS) SHALL BE SCATTERED THROUGHOUT THE RESTORATION AREA AS LARGE WOODY DEBRIS HABITAT FEATURES.
2. ALL PLANTS SHALL BE PIT-PLANTED IN PLANTING PITS EXCAVATED 2X THE DIAMETER OF THE PLANT AND ENSURE THAT PLANTS ARE INSTALLED IN UNDERLYING NATIVE FOREST SOILS, NOT RECENTLY PLACED CHIPS.
3. PITS SHALL BE AMENDED WITH A HYDRATED SOIL POLYMER (INSTALLED AT RATES PER MANUFACTURER'S SPECIFICATION).
4. PLANTS SHALL BE INSTALLED 2" HIGH AND SURFACED MULCHED TO A DEPTH OF 2" WITH ONSITE STOCKPILED CHIPS FROM CLEARING PLACED CONTINUOUSLY THROUGHOUT THE PLANTING BEDS.
5. ALL PLANTS SHALL BE NURSERY GROWN (IN W. WA OR OR.) FOR AT LEAST 1 YEAR FROM PURCHASE DATE, FREE FROM DISEASE OR PESTS, WELL-ROOTED, BUT NOT ROOT-BOUND AND TRUE TO SPECIES.
6. PLANT LAYOUT SHALL BE APPROVED BY AOA PRIOR TO INSTALLATION AND APPROVED UPON COMPLETION OF PLANTING.
7. UPON COMPLETION OF PLANTING, ALL PLANTS SHALL BE THOROUGHLY WATERED.
8. A TEMPORARY IRRIGATION SYSTEM SHALL BE INSTALLED TO PROVIDE 1/2" OF FLOW TWICE WEEKLY BETWEEN JULY 1 AND OCTOBER 31 THE FIRST TWO YEARS AFTER PLANTING TO ALL PLANTED PLANTS. SYSTEM CAN BE REMOVED AT THE DIRECTION OF AOA AFTER THE SECOND OR THIRD GROWING SEASON.
9. APPLY DEER SCRAM PER MANUFACTURER'S RECOMMENDATIONS IMMEDIATELY UPON INSTALLATION OF MATERIAL.
10. KING COUNTY TO REVIEW INSTALLATION OF MITIGATION PLAN UPON APPROVAL BY AOA AND UPON COMPLETION OF MONITORING.



1 CONTAINER PLANTING DETAIL (TYP.)
SCALE: NTS

MAINTENANCE & MONITORING

1. PERFORMANCE STANDARDS INCLUDE:
   1) YEAR 1 - THERE WILL BE 100% SURVIVAL OF ALL PLANTED SPECIES. FOLLOWING YEARS 2-3, THERE WILL BE 80% SURVIVAL RATE OF ALL PLANTED SPECIES OR EQUIVALENT REPLACEMENT OF A COMBINATION OF PLANTED AND RE-COLONIZED NATIVE SPECIES.
   2) FOLLOWING THE FIRST YEAR AFTER PLANTING, A COMBINATION OF NATIVE OR NATURALIZED WOODY VEGETATION WILL COVER AT LEAST 10% OF THE MITIGATION AREA. THE AREAL COVERAGE WILL INCREASE TO AT LEAST 15% FOLLOWING THE SECOND YEAR AFTER PLANTING,AND 30% FOLLOWING THE THIRD YEAR AFTER PLANTING.
   3) AFTER CONSTRUCTION AND FOLLOWING EVERY MONITORING EVENT FOR A PERIOD OF AT LEAST 3 YEARS, EXOTIC AND INVASIVE PLANT SPECIES WILL BE MAINTAINED AT LEVELS BELOW 10% TOTAL COVERAGE IN ALL PLANTED AREAS. THESE SPECIES INCLUDE BUT ARE NOT LIMITED TO; HIMALAYAN AND EVERGREEN BLACKBERRY, REED CANARYGRASS, MORNING GLORY, JAPANESE KNOTWEED, ENGLISH IVY, THISTLE, PERIWINKLE, AND CREEPING NIGHTSHADE.
2. ANNUAL MONITORING REPORTS WILL BE PREPARED AND SUBMITTED TO KING COUNTY IN THE FALL OF EACH OF THE 3 YEARS OF THE 3-YEAR MONITORING PERIOD. THE REPORTS WILL DETAIL IF THE SITE IS MEETING THE PERFORMANCE STANDARDS AND PROVIDE PHOTOS FROM ESTABLISHED PHOTO POINTS.
3. UPON APPROVAL OF PLANTING INSTALLATION BY AOA, KING COUNTY WILL BE NOTIFIED TO CONDUCT A SITE REVIEW FOR FINAL APPROVAL OF CONSTRUCTION.
4. MAINTENANCE SHALL BE IMPLEMENTED IN MARCH, MAY, JULY AND OCTOBER FOR THE DURATION OF THE MONITORING PERIOD ACCORDING TO THE SCHEDULE BELOW.

ANNUAL MAINTENANCE SCHEDULE

MAINTENANCE ITEM	J	F	M	A	M	J	J	A	S	O	N	D
WEED CONTROL			1		1		1			1		
GENERAL MAINT.			1		1		1			1		
WATERING - YEAR 1						4-6	6-8	6-8	6-8			
WATERING - YEAR 2							4-8	4-8	2-4			
WATERING - YEAR 3							4	4	2			

1-8 = NUMBER OF TIMES TASK SHALL BE PERFORMED PER MONTH.

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FIGURE 5: SPECIFICATIONS, MONITORING, & DETAIL
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COLLINS PROPERTY
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