Altmann Oliver Associates, LLC
AOA
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Environmental Planning & Landscape Architecture

May 10, 2024

AOA-6291

Jeffrey Yee
jeffreylyee@gmail.com

SUBJECT: **Critical Areas Study for Brandon Short Plat**
Parcel 282104-9151, King County, WA (File # PREA21-0214)

Dear Jeffrey:

1.0 Background

On March 16, 2021 I conducted an initial wetland reconnaissance on the subject parcel 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: 1) confirm that the previous King County approved and surveyed wetland delineation (**Attachment A**) remained valid and 2) rate the wetlands on and adjacent to the site per the current code and rating system. Additional field investigations were conducted in February of 2023 and the surveyed delineation was confirmed.

One wetland (Wetland A) was previously identified and delineated in the central portion of the property. A second wetland (Wetland B) is located off-site to the southwest.

2.0 Existing Critical Areas

Wetland A consists of a Depressional Hydrogeomorphic (HGM) wetland located in the central portion of the site. The wetland is seasonally ponded and consisted of a forested plant community that was dominated by Oregon ash (*Fraxinus latifolia*), black cottonwood (*Populus balsamifera*.), spirea (*Spiraea douglasii*), and slough sedge (*Carex obnupta*).

Wetland A meets the criteria for a Category III wetland with 4 Habitat Points (**Attachment B**). Category III wetlands with 4 Habitat Points require a standard 80-foot buffer plus 15-foot building setback within the urban area of King County.

Wetland B was previously delineated by AOA as part of a code enforcement case on Parcel 2821049148. Wetland B consists of a shallow topographic Depressional HGM class that appears to be hydrologically supported largely from a seasonally high groundwater table.

Vegetation within Wetland B at the time of the delineation consisted of a forested and emergent plant community that included willow (*Salix* sp.), Oregon ash (*Fraxinus latifolia*), black cottonwood (*Populus balsamifera*), Himalayan blackberry (*Rubus armeniacus*), reed canarygrass (*Phalaris arundinacea*), creeping buttercup (*Ranunculus repens*), and Japanese knotweed (*Reynoutria japonica*).

Wetland B meets the criteria for a Category IV wetland (**Attachment B**) and requires a standard 50-foot buffer plus 15-foot building setback within the urban area of King County.

3.0 Proposed Project Impacts and Mitigation

The proposed project consists of a 4-lot short plat. Although the project has been designed to avoid wetland and buffer impacts to the extent feasible, the required driveway access to the western portion of the site will unavoidably impact 1,114 s.f. of Wetland A and 8,373 s.f. of wetland buffer.

3.1 Proposed Buffer Reduction

Wetland A is a Category III wetland with 4 Habitat Points and requires a standard 80-foot buffer plus 15-foot building setback within the urban area of King County. This buffer can be reduced to 60 feet if all the mitigation measures outlined in KCC 21A.24.325.C.6(2)b are implemented (see below). Wetland B requires a standard 50-foot buffer that can be reduced to 40 feet if the measures are implemented.

Disturbance	**Measures to minimize impacts**	**Proposed Project**
Lights	Direct lights away from wetland.	All lights should be low wattage and directed down – not out into wetland. Timers and metal hoods should be used as appropriate. Directional lighting with narrow angles of illumination should be utilized.
Noise	Locate activity that generates noise away from wetland. If warranted, enhance existing buffer with native vegetation plantings adjacent to noise source. For activities that generate relatively continuous, potentially disruptive noise, such as certain heavy industry or mining, establish an additional ten-foot heavily vegetated buffer strip immediately adjacent to the outer wetland buffer.	No areas that will generate excessive noise are proposed in proximity to the wetland
Toxic runoff	Route all new untreated runoff away from wetland while ensuring wetland is not dewatered. Establish covenants limiting use of pesticides within 150 feet of wetland. Apply integrated pest management.	No untreated water from pollution generating surfaces should be allowed to directly enter the wetland

Stormwater runoff	Retrofit stormwater detention and treatment for roads and existing adjacent development. Prevent channelized flow from lawns that directly enters the buffer. Use low impact intensity development techniques identified in the King County Surface Water Design Manual.	It is my understanding that a detailed stormwater management plan will be designed per King County requirements
Change in water regime	Infiltrate or treat, detain and disperse into buffer new runoff from impervious surfaces - and new lawns.	Project should be designed to treat stormwater runoff while maintaining hydrologic support to the wetland as required by King County.
Pets and human disturbance	Use privacy fencing or plant dense vegetation to delineate buffer edge and to discourage disturbance using vegetation appropriate for the ecoregion. Place wetland and its buffer in a separate tract or protect with a conservation easement.	A fence with signage should be installed along the buffer boundary to prevent pedestrian intrusion. Critical areas will be enhanced and protected in perpetuity
Dust	Use best management practices to control dust.	BMPS should be utilized to control dust.

3.2 Proposed Mitigation

Mitigation for the unavoidable wetland and buffer impacts will occur through the creation of 1,693 s.f. of new wetland along the northwest side of the wetland as well as enhancing all of the degraded wetland and buffer areas on the site. Mitigation ratios (minimum 1:1 creation and 2:1 enhancement) are intended to meet the criteria of KCC 21A.24.340.B.2.

3.3 Mitigation Sequencing

King County requires that applicants demonstrate that all reasonable efforts have been examined with the intent to avoid and minimize adverse impacts to critical areas per KCC 21A.24.125. When an alteration to a critical area is proposed, such alteration shall be avoided, minimized, or compensated for in the following sequential order of preference:

1. *Avoiding the impact or hazard by not taking a certain action;*

Access to the developable western portion of the site cannot be accomplished without crossing a small portion of the wetland.

2. *Minimizing the impact or hazard by:*
   a. *limiting the degree or magnitude of the action with appropriate technology; or*
   b. *taking affirmative steps, such as project redesign, relocation or timing;*

It is my understanding that the driveway as designed by the project civil engineer is the minimum width necessary. In addition, the driveway would be installed at the outer edge of the wetland to minimize impacts. .

3. *Rectifying the impact to critical areas by repairing, rehabilitating or restoring the affected critical area or its buffer;*

New wetland will be created for the unavoidable wetland impact and all degraded wetland and buffer areas on the site will be enhanced with a variety of native tree and shrub plantings.

4. *Minimizing or eliminating the hazard by restoring or stabilizing the hazard area through engineered or other methods;*

Per the civil engineer, wetland and buffer impacts have been minimized to the extent feasible and a rail fence will be installed along the outer edge of the buffer to prevent encroachment into the preserved wetland and buffer.

5. *Reducing or eliminating the impact or hazard over time by preservation or maintenance operations during the life of the development proposal or alteration*

The preserved wetland and buffer will be permanently protected in perpetuity.

6. *Compensating for the adverse impact by enhancing critical areas and their buffers or creating substitute critical areas and their buffers; and*

Mitigation for the wetland impact will occur on-site through creation of new wetland and enhancement of degraded wetland on the property. Mitigation for buffer impacts will occur by enhancing all degraded buffer areas on the site.

7. *Monitoring the impact, hazard or success of required mitigation and taking remedial action.*

A 5-Year monitoring and maintenance program has been prepared.

4.0 Mitigation Plan

A detailed planting plan has been prepared for all of the degraded wetland and buffer areas on the site. Enhancement will consist of the removal of invasive species and re-planting the area with a wide variety of native trees and shrubs. Enhancement will also include the installation of habitat features such as downed logs where necessary.

Implementation of the enhancement plan will significantly increase the desired plant species composition and structural diversity within the enhancement areas over current conditions. This will increase habitat quality, stormwater filtration, and will also provide increased physical and visual screening to the wetlands from the future residences.

The following maintenance and monitoring program should be implemented as part of the wetland creation and enhancement effort.

4.1 Goal, Objectives, and Performance Standards for Mitigation Area

The primary goal of the mitigation plan is to increase the habitat functions of the wetland and buffer over current conditions. 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 mitigation area.
Performance Standard: There will be 100% survival of all woody planted species throughout the enhancement area at the end of the first year of planting. For Years 2-5, 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, 20% at Year 2, 0% at Year 3, and 50% at Year 5.

Objective B: Limit the amount of invasive and exotic species within the enhancement 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 enhancement planting area.

Objective C: Provide wetland hydrology within the proposed wetland creation area.
Performance Standard: After construction and following every monitoring event for a period of at least five years, the proposed wetland creation area will meet the hydrology requirements for wetlands as outlined in the May 2010 *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region (Version 2.0).*

4.2 Construction Management

Prior to commencement of any work in the mitigation 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 mitigation 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.

4.3 Monitoring Methodology

The monitoring program will be conducted for a period of five 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 mitigation area. Review of the photos over time will provide a visual representation of the success of the mitigation plan.

4.4 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 mitigation areas shall be performed by manual means whenever feasible. Undesirable and weedy exotic plant species shall be maintained at levels below 10% total cover within the mitigation 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.

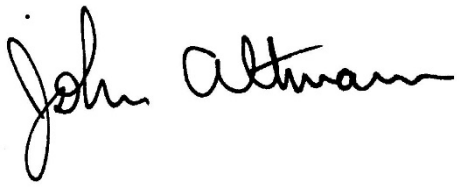
4.5 Contingency Plan
All dead plants will be replaced with the same species or an approved substitute species that meets the goal of the mitigation plan. Plant material shall meet the same specifications as originally installed material. Replanting will not occur until after the reason for failure has 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.

4.6 As-Built Plan
Following completion of construction activities, an as-built plan for the mitigation 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.

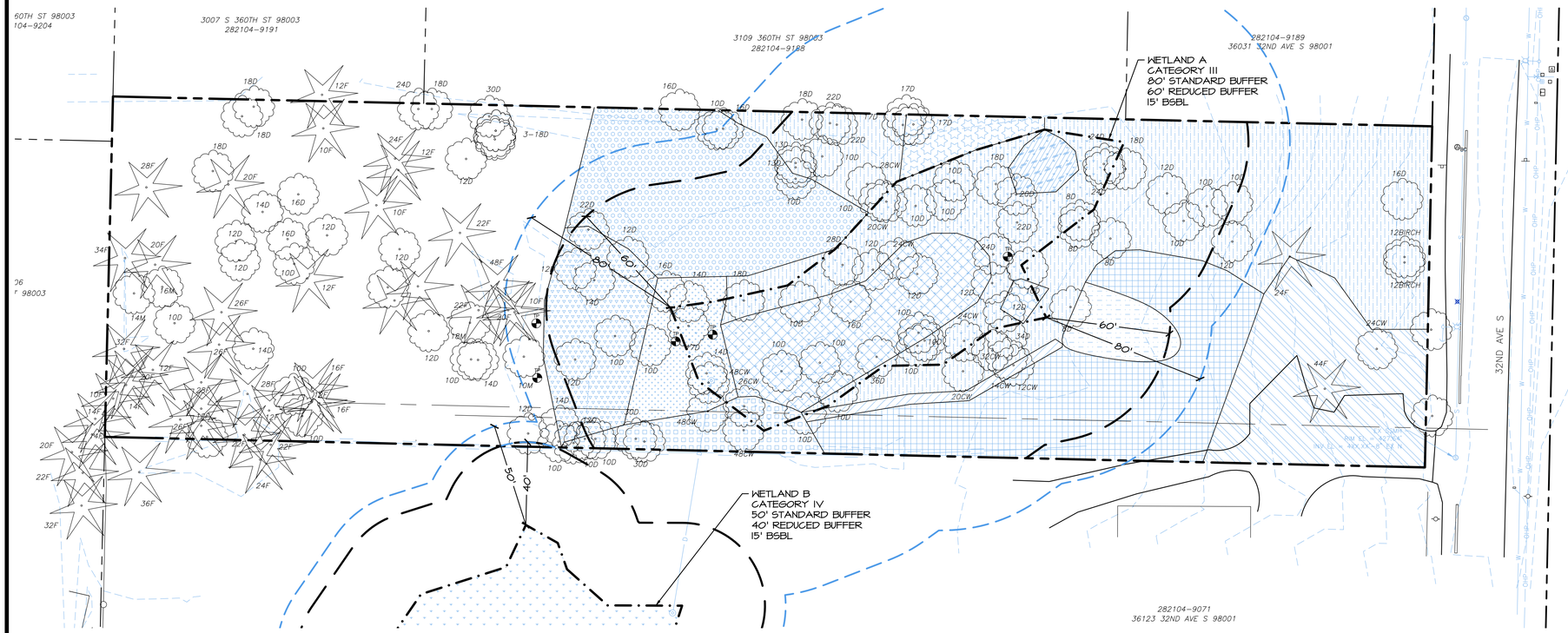
Sincerely,

ALTMANN OLIVER ASSOCIATES, LLC



John Altmann
Ecologist

Attachments



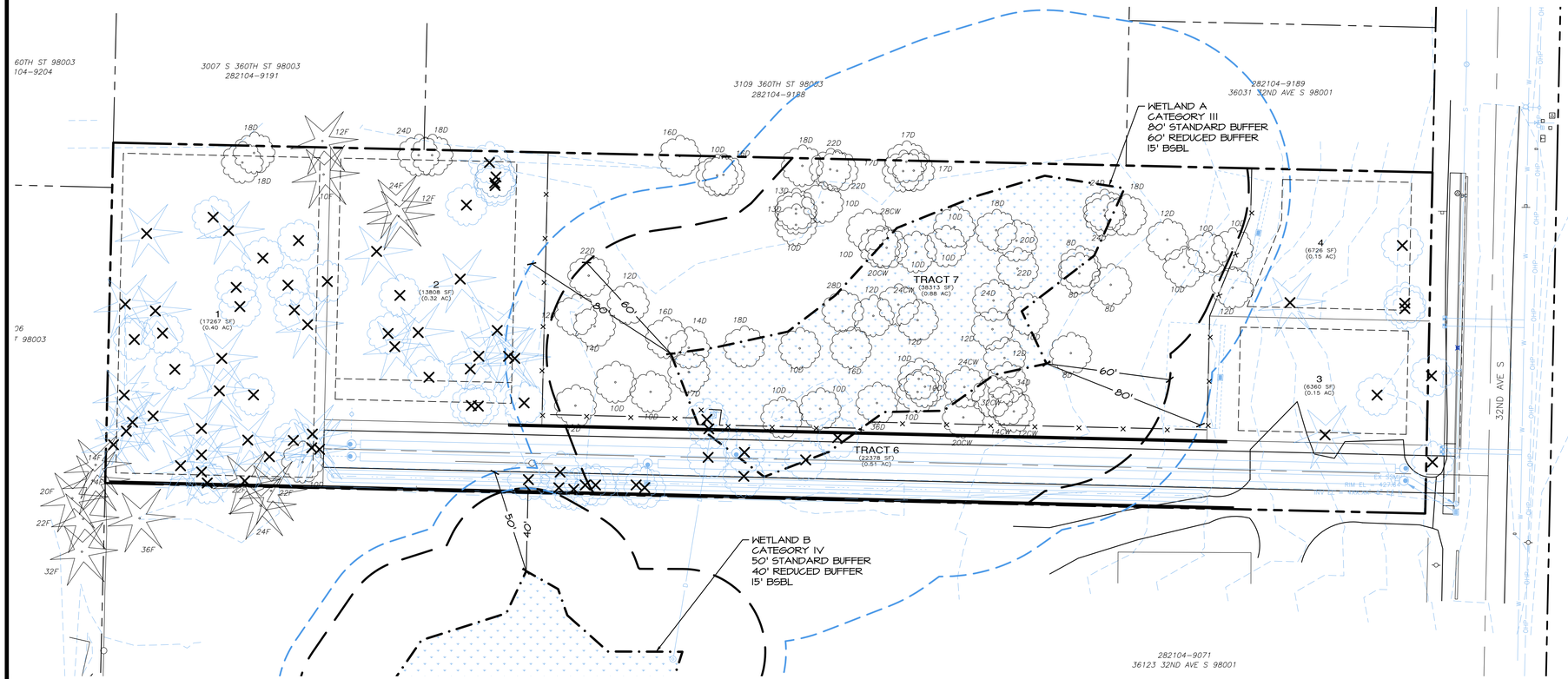
EXISTING CONDITIONS

PLAN LEGEND

- PROPERTY LINE
- WETLAND BOUNDARY
- STANDARD 80' WETLAND BUFFER
- REDUCED 60' WETLAND BUFFER
- EXISTING TREES

EXISTING VEGETATION LEGEND

OPEN UNDERSTORY WITH 100% OREGON ASH CANOPY	5,592 SF
100% SALMONBERRY	1,492 SF
100% INDIAN PLUM	656 SF
30% INDIAN PLUM, 30% PLUM, 75% OREGON ASH CANOPY, REST OPEN	2,767 SF
5% HIMALAYAN BLACKBERRY, TRACE SHRUBS, 60% OREGON ASH CANOPY	4,184 SF
100% OPEN	7,555 SF
30% HIMALYAN BLACKBERRY & SWORDFERN 50% PLUM, HOLLY, HAWTHORN, IVY, 20% INDIAN PLUM & TRAILING BLACKBERRY	8,192 SF
100% HOLLY	734 SF
100% IVY	280 SF
5% HIMALAYAN BLACKBERRY, 20% PLUM, 75% SWORDFERN, AND INDIAN PLUM	1,209 SF
75% NATIVE 25% IVY, HOLLY, PLUM, AND LAUREL	24,397 SF
100% HIMALAYAN BLACKBERRY WITH TRACE PLUM	9,855 SF
100% OREGON ASH CANOPY, 100% HIMALAYAN BLACKBERRY & IVY	2,019 SF



PLAN LEGEND

- PROPERTY LINE
- WETLAND BOUNDARY
- STANDARD WETLAND BUFFER
- REDUCED WETLAND BUFFER
- CLEARING LIMITS
- EXISTING TREES TO BE REMOVED - 79 TREES

0 15 30 45 60 90
SCALE: 1:30

TREE RETENTION PLAN

DRAWING INDEX

SHEET NUMBER	SHEET TITLE
W1	EXISTING CONDITIONS & TREE RETENTION
W2	IMPACTS & MITIGATION PLAN
W3	PLANTING PLAN & DETAILS
W4	SPECIFICATIONS

NOTES

1. BASE INFORMATION PROVIDED BY PACIFIC ENGINEERING DESIGN, LLC, 15445 53RD AVE. S., SUITE 100, SEATTLE, WA 98188, 206.431.7970.

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STATE OF WASHINGTON
REGISTERED LANDSCAPE ARCHITECT
SIMONE CATHERINE OLIVER
CERTIFICATE NO. 144
EXPIRES 6/25/2025

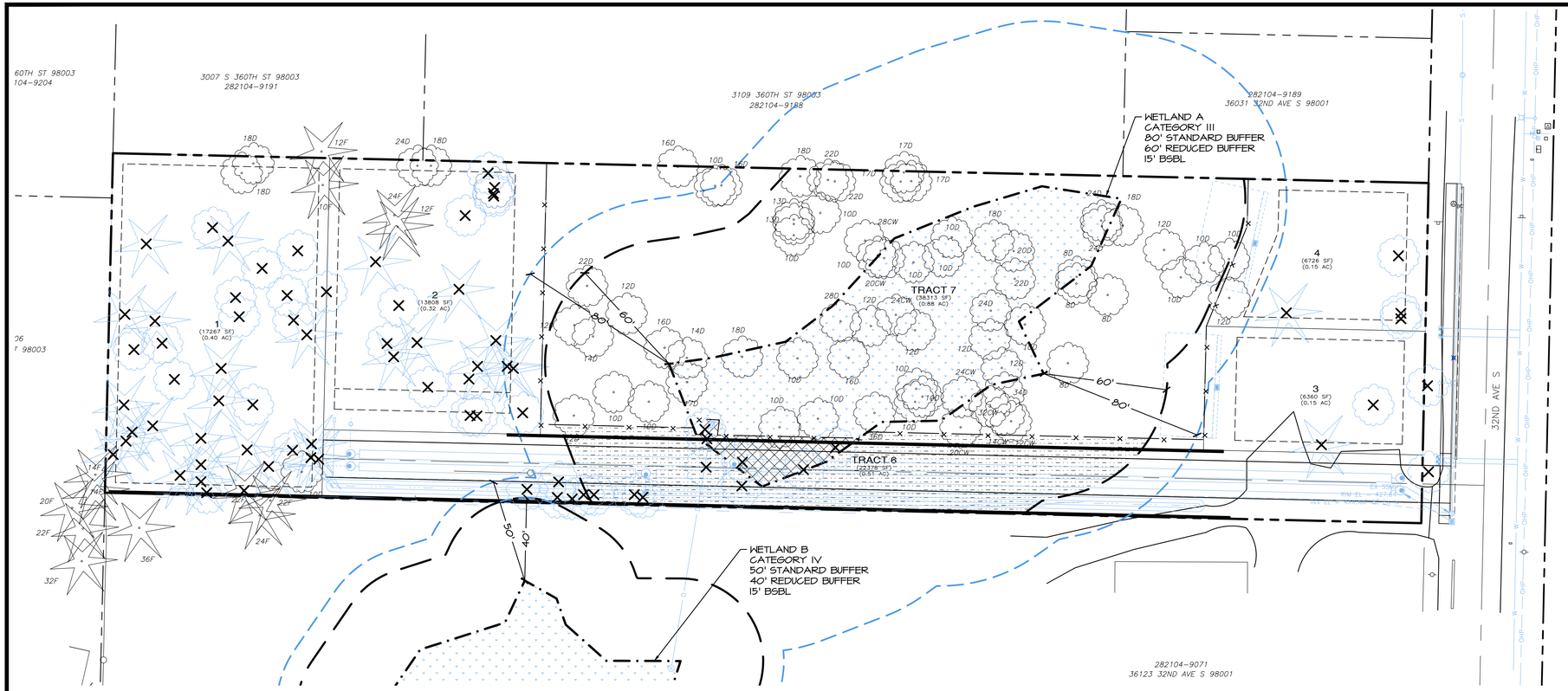
EXISTING CONDITIONS & TREE RETENTION PLAN
FINAL BUFFER MITIGATION PLAN
BRANDON SHORT PLAT
FOR CES PROPERTIES, INC.
KING COUNTY, WASHINGTON

Revisions | Date | By

Date 05.08.24
Scale AS NOTED
Project# 6291

Sheet # W1

IMPACTS PLAN



PLAN LEGEND

- PROPERTY LINE
- WETLAND BOUNDARY
- STANDARD 80' WETLAND BUFFER
- REDUCED 60' WETLAND BUFFER
- CLEARING LIMITS
- EXISTING TREES TO BE REMOVED

IMPACT LEGEND

	WETLAND FILL	1,114 SF
	BUFFER IMPACT	8,373 SF

0 15 30 45 60 90
SCALE: 1:30

N

NOTES

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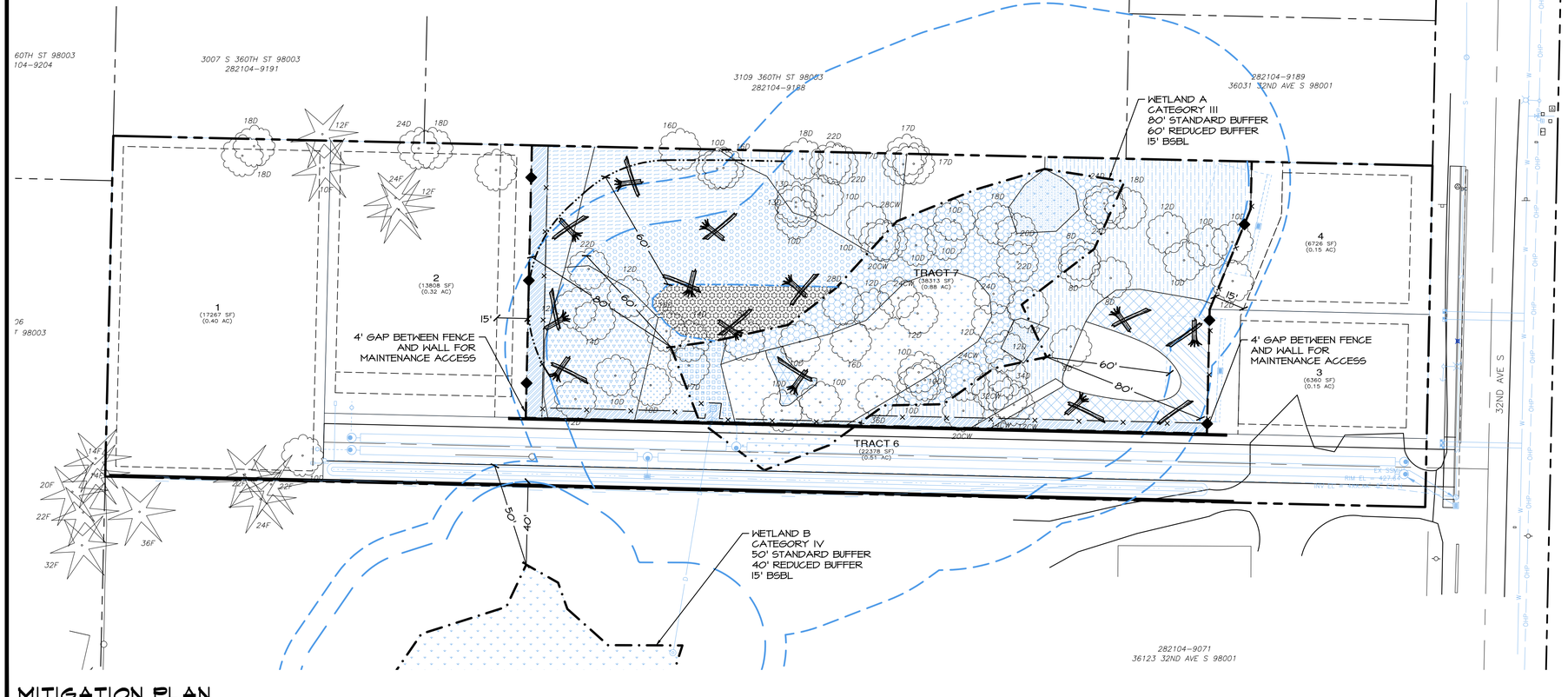
MITIGATION PLAN



PLAN LEGEND

- PROPERTY LINE
- WETLAND BOUNDARY
- STANDARD WETLAND BUFFER
- REDUCED WETLAND BUFFER
- PROPOSED BUFFER WITH SPLIT-RAIL FENCE AND NGPA SIGNS PER KMC 18.55.140 SOACED 50' O.C. ALONG PROPOSED BUFFER
- 15' BSBL
- CLEARING LIMITS
- EXISTING TREES TO REMAIN
- CREATED WETLAND BOUNDARY
- CREATED WETLAND 60' BUFFER
- DOWN LOGS/LARGE WOODY DEBRIS - CLEARED ONSITE TREES ON THE DEVELOPED PORTION OF THE SITE TO BE USED

MITIGATION LEGEND

	WETLAND CREATION - PLANT NATIVE TREES AND SHRUBS AT 100% DENSITY	1,693 SF 1,693 SF MC
	WETLAND RESTORATION - PLANT NATIVE TREES AND SHRUBS AT 100% DENSITY	325 SF NO CREDIT
	BUFFER RESTORATION - PLANT NATIVE TREES AND SHRUBS AT 100% DENSITY	2,416 SF NO CREDIT
	WETLAND ENHANCEMENT - REMOVE INVASIVES AND PLANT NATIVE TREES AND SHRUBS AT 100% DENSITY - MC 100%	964 SF 964 SF MC
	WETLAND ENHANCEMENT - REMOVE INVASIVES AND PLANT NATIVE TREES AT 25% AND NATIVE SHRUBS AT 75% DENSITY - MC 50%	693 SF 347 SF MC
	WETLAND ENHANCEMENT - REMOVE INVASIVES AND PLANT NATIVE TREES AND SHRUBS AT 25% - MC 25%	6,507 SF 1,627 SF MC
	BUFFER ENHANCEMENT - REMOVE INVASIVES AND PLANT NATIVE TREES AND SHRUBS AT 100% DENSITY - MC 100%	1,890 SF 1,890 SF MC
	BUFFER ENHANCEMENT - REMOVE INVASIVES AND PLANT NATIVE TREES AT 100% AND NATIVE SHRUBS AT 100% DENSITY - MC 100%	4,167 SF 4,167 SF MC
	BUFFER ENHANCEMENT - REMOVE INVASIVES AND PLANT NATIVE TREES AT 40% AND NATIVE SHRUBS AT 100% DENSITY - MC 75%	2,886 SF 2,165 SF MC
	BUFFER ENHANCEMENT - REMOVE INVASIVES AND PLANT NATIVE TREES AT 25% AND NATIVE SHRUBS AT 70% - MC 50%	751 SF 376 SF MC
	BUFFER ENHANCEMENT - REMOVE INVASIVES AND PLANT NATIVE TREES AND SHRUBS AT 25% DENSITY - MC 25%	8,701 SF 2,175 SF MC
	BUFFER REPLACEMENT WITH ENHANCEMENT - REMOVE INVASIVES AND PLANT WITH NATIVE TREES AND SHRUBS AT 100% DENSITY - MC 100%	853 SF 853 SF MC
	BUFFER REPLACEMENT WITH ENHANCEMENT - REMOVE INVASIVES AND PLANT NATIVE TREES AT 40% AND NATIVE SHRUBS AT 100% DENSITY - MC 75%	132 SF 99 SF MC
	BUFFER REPLACEMENT WITH ENHANCEMENT - REMOVE INVASIVES AND PLANT NATIVE TREES AT 100% AND NATIVE SHRUBS AT 100% DENSITY - MC 100%	4,167 SF 4,167 SF MC
	BUFFER REPLACEMENT WITH ENHANCEMENT - REMOVE INVASIVES AND PLANT NATIVE TREES AND SHRUBS AT 25% DENSITY - MC 25%	374 SF 94 SF MC
	TOTAL ENHANCEMENT	36,519 SF 20,617 SF MC

MC - MITIGATION CREDIT BASED ON TOTAL PERCENTAGE OF ENHANCABLE AREA

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IMPACTS & MITIGATION PLAN
FINAL BUFFER MITIGATION PLAN
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Revisions	Date	By

Date 05.08.24
Scale AS NOTED
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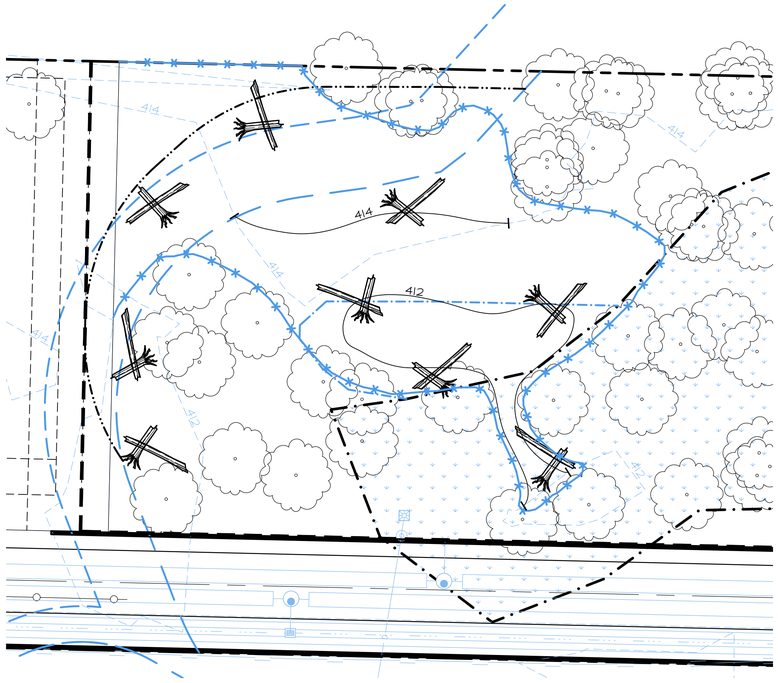
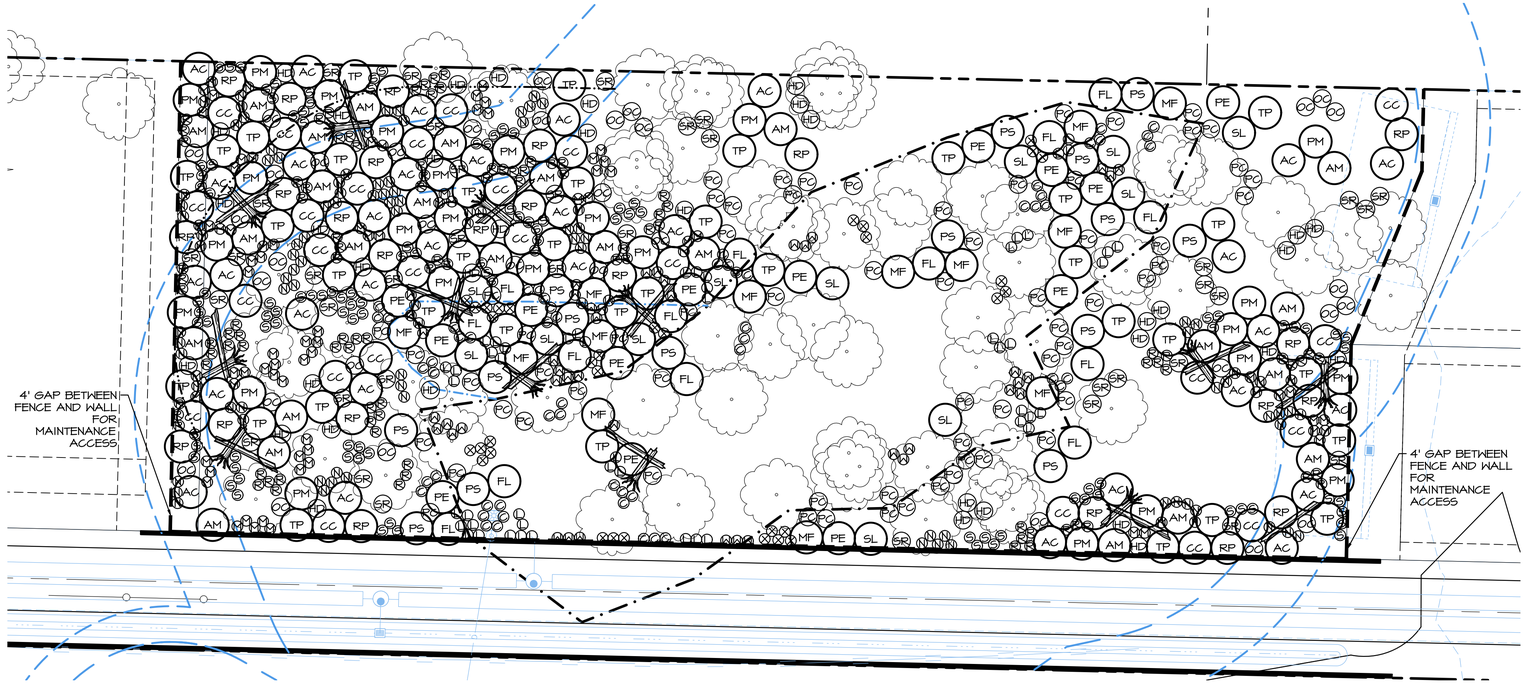
Sheet # W2



GRADING PLAN



PLANTING PLAN

PLAN LEGEND

- PROPERTY LINE
- WETLAND BOUNDARY
- STANDARD WETLAND BUFFER
- REDUCED WETLAND BUFFER
- PROPOSED BUFFER WITH SPLIT-RAIL FENCE AND NGPA SIGNS PER KMC 18.55.140 SOACED 50' O.C. ALONG PROPOSED BUFFER
- 15' BSBL
- MITIGATION CLEARING LIMITS
- 100 EXISTING CONTOUR
- 100 PROPOSED CONTOUR
- CREATED WETLAND BOUNDARY
- CREATED WETLAND 60' BUFFER
- DOWN LOGS/LARGE WOODY DEBRIS - CLEARED ONSITE TREES ON THE DEVELOPED PORTION OF THE SITE TO BE USED

PLANT SCHEDULE

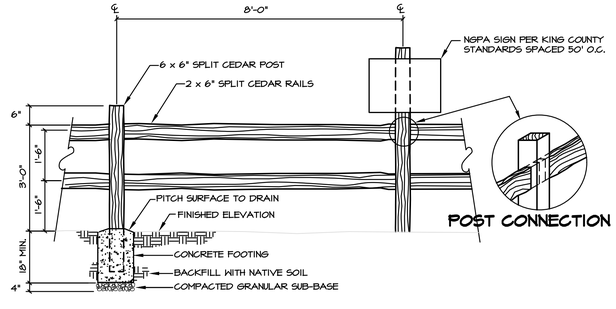
TREES

KEY	SCIENTIFIC NAME	COMMON NAME	SPACING	QTY	SIZE (MIN.)	NOTES
AC	ACER CIRCINATUM	VINE MAPLE	9' O.C.	32	2 GAL.	MULTI-STEM (3 MIN.)
AM	ACER MACROPHYLLUM	BIG LEAF MAPLE	9' O.C.	25	2 GAL.	SINGLE TRUNK, WELL BRANCHED
CC	CORYLUS CORNUTA	WESTERN HAZELNUT	9' O.C.	25	2 GAL.	MULTI-STEM (3 MIN.)
FL	FRAXINUS LATIFOLIA	OREGON ASH	9' O.C.	14	2 GAL.	SINGLE TRUNK, WELL BRANCHED
MF	MALUS FUSCA	WESTERN CRABAPPLE	9' O.C.	13	2 GAL.	SINGLE TRUNK, WELL BRANCHED
PS	PICEA SITCHENSIS	SITKA SPRUCE	9' O.C.	15	2 GAL.	FULL & BUSHY
PE	PRUNUS EMARGINATA	BITTERCHERRY	9' O.C.	14	2 GAL.	SINGLE TRUNK, WELL BRANCHED
PM	PSEUDOTSUGA MENZIESII	DOUGLAS FIR	9' O.C.	26	2 GAL.	FULL & BUSHY
SL	SALIX LASIANDRA	PACIFIC WILLOW	9' O.C.	*36	4' CUTTING	1/2" DIA. MIN., BARK INTACT
RP	RHAMNUS PURSHIANA	CASCARA	9' O.C.	24	2 GAL.	SINGLE TRUNK, WELL BRANCHED
TP	THUJA PLICATA	WESTERN RED CEDAR	9' O.C.	36	2 GAL.	FULL & BUSHY

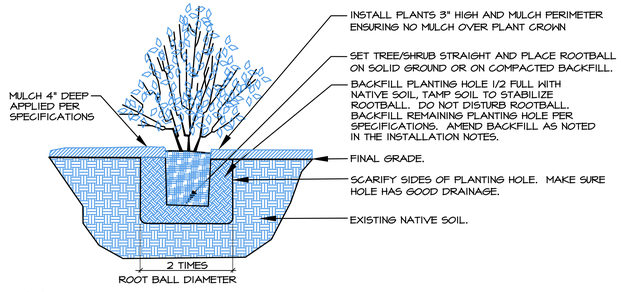
SHRUBS

KEY	SCIENTIFIC NAME	COMMON NAME	SPACING	QTY	SIZE (MIN.)	NOTES
C	CORNUS SERICEA	RED-OSIER DOGWOOD	3' O.C.	56	1 GAL.	MULTI-STEM (3 MIN.)
HD	HOLODISCUS DISCOLOR	OCEAN SPRAY	5' O.C.	36	1 GAL.	MULTI-STEM (3 MIN.)
L	LONICERA INVOLUCRATA	BLACK TWIN-BERRY	3' O.C.	50	1 GAL.	MULTI-STEM (3 MIN.)
M	MAHONIA AQUIFOLIUM	TALL OREGON GRAPE	3' O.C.	87	1 GAL.	FULL & BUSHY
OC	OEMLERIA CERASIFORMIS	INDIAN PLUM	5' O.C.	34	1 GAL.	MULTI-STEM (3 MIN.)
PC	PHYSOCARPUS CAPITATUS	PACIFIC NINEBARK	5' O.C.	63	1 GAL.	MULTI-STEM (3 MIN.)
N	ROSA NUTKANA	NOOTKA ROSE	3' O.C.	89	1 GAL.	MULTI-STEM (3 MIN.)
R	ROSA PISOCARPA	CLUSTERED ROSE	3' O.C.	97	1 GAL.	MULTI-STEM (3 MIN.)
W	SALIX SCOULERIANA	SCOULER WILLOW	3' O.C.	*141	4' CUTTING	1/2" DIA. MIN., BARK INTACT
X	SALIX SITCHENSIS	SITKA WILLOW	3' O.C.	*99	4' CUTTING	1/2" DIA. MIN., BARK INTACT
SR	SAMBUCUS RACEMOSA	RED ELDERBERRY	5' O.C.	37	1 GAL.	MULTI-STEM (3 MIN.)
S	SYMPHORICARPOS ALBUS	SNOWBERRY	3' O.C.	106	1 GAL.	MULTI-STEM (3 MIN.)

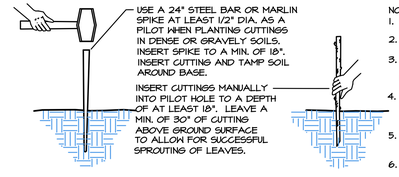
*3 CUTTINGS PER SYMBOL



1 SPLIT-RAIL FENCE WITH NGPA SIGNS
SCALE: NTS

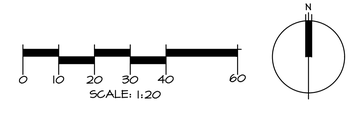


2 CONTAINER TREE/SHRUB PLANTING (TYP.)
SCALE: NTS



NOTES:
1. CUTTINGS SHALL BE SPECIES AS NOTED IN THE PLANT SCHEDULE.
2. CUTTINGS SHALL BE AT LEAST 1/2" DIA. AND 4' (min.) IN LENGTH.
3. CUTTINGS MUST BE ALIVE WITH SIDE BRANCHES CLEARLY REMOVED AND BARK INTACT. CUTTINGS SHALL BE PLANTED WITHIN 24 HOURS OF CUTTING.
4. THE BUTT ENDS SHOULD BE CLEANLY CUT AT AN ANGLE FOR EASY INSERTION INTO THE SOIL. THE TOP SHOULD BE CUT SQUARE OR BLUNT.
5. CUTTINGS MUST BE FRESH AND KEPT MOIST AFTER CUTTING. THEY SHOULD BE PRUNED AND INSTALLED THE SAME DAY.
6. DIP BOTTOM OF CUTTING IN A PLANT ROOTING HORMONE PRIOR TO INSERTION INTO THE SOIL.

3 CUTTING INSTALLATION (TYP.)
SCALE: NTS



NOTES

1. BASE INFORMATION PROVIDED BY PACIFIC ENGINEERING DESIGN, LLC, 15445 53RD AVE. S., SUITE 100, SEATTLE, WA 98188, 206.431.7970.

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A0A
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STATE OF WASHINGTON
REGISTERED LANDSCAPE ARCHITECT
SIMONE CATHERINE OLIVER
CERTIFICATE NO. 144
EXPIRES 6/25/2025

GRADING & PLANTING PLAN & DETAILS
FINAL BUFFER MITIGATION PLAN
BRANDON SHORT PLAT
FOR CES PROPERTIES, INC.
KING COUNTY, WASHINGTON

By	Date	Revisions

Date 05.08.24
Scale AS NOTED
Project# 6291

Sheet # W3

SPECIFICATIONS & MAINTENANCE PLAN

PART 1 - GENERAL SITE CONDITIONS

GENERAL SITE CONDITIONS

Contractor shall give AOA a minimum of ten (10) days notice prior to intention to proceed with construction.

No construction work shall commence until there is a meeting between the client, AOA, General, Clearing, and/or Earthwork Contractors, and participating Contractor. The approved plans and specifications shall be reviewed to allow parties involved to understand the intent and the specific details related to the construction documents, specifications, and site constraints.

Locations of existing utilities have been established by field survey or obtained from available records and should be considered approximate only and not necessarily complete. It is the sole responsibility of the Contractor to: (1) independently verify the accuracy of utility locations and (2) discover and avoid any utilities within the mitigation area(s) not shown, which may be affected by implementation of this plan. Such area(s) are to be clearly marked in the field. AOA shall resolve any conflicts with the approved plan prior to start of construction.

A copy of the approved plans must be on site whenever construction is in progress and shall remain on site until project completion.

Construction must be performed in accordance with King County standards, codes, permit conditions, and other applicable ordinances and policies.

The applicant is responsible for obtaining any other related or required permits prior to the start of construction.

A qualified wetland consultant shall be on site, as necessary, to monitor construction and approve minor revisions to the plan.

SURVEY/STAKE/FLAG LIMITS OF CLEARING

Prior to any construction, a licensed surveyor shall survey, stake, and flag the clearing limits and the proposed buffer boundary. AOA shall review and approve staking prior to any vegetation removal.

Contractor shall be responsible for avoiding disturbance to any significant trees and native shrubs. No removal of any native vegetation shall occur without prior approval by AOA. Contractor shall exercise care to protect from injury to trunk, roots, or branches, of any trees or shrubs that are to remain. Any living woody plant that is damaged during construction shall be treated within 24-hours of occurrence. AOA shall be notified immediately of incident. Wound shaping treatment shall be done. Wound shaping includes, but is not limited to: evenly cutting broken branches, exposed roots and damaged tree bark immediately after damage occurs. Injured plants shall be thoroughly watered and additional measures shall be taken, as appropriate, to aid in plant survival.

EROSION CONTROL MEASURES

Contractor shall install filter fabric fence at clearing limits per King County standards, along with any additional erosion control measures depicted on the civil engineer's TESC plan, prior to any construction activity. Contractor shall maintain erosion control facilities until completion of construction. AOA to verify locations of erosion control measures prior to site clearing.

No soil disturbing activities can occur except during the dry season (approximately March 1 through October 31), unless otherwise approved by King County.

Contractor shall maintain erosion control measures during implementation of the mitigation plan. These measures shall remain in place until authorization is given by AOA for removal or location adjustment. It is the responsibility of the Contractor to remove all erosion control measures adjacent to sensitive areas when authorized by AOA.

As construction progresses and seasonal conditions dictate, erosion control facilities shall be maintained and/or altered as required by AOA to ensure continued erosion/sedimentation control.

Where possible, natural ground cover vegetation shall be maintained for silt control.

Contractor shall ensure that adjacent roads are maintained and clear of soil and/or other debris at all times during construction. Contractor shall comply with King County codes regarding street maintenance/cleaning during construction.

HABITAT FEATURES

Habitat features.

FLAG VEGETATION & WOODY MATERIAL FOR FUTURE USE AS HABITAT FEATURES

AOA shall flag existing vegetation and woody material (snags, stumps, down logs, and boulders) to be relocated by the Contractor from within the development footprint for use as habitat features in the wetland mitigation area. Whenever possible, habitat features shall be moved directly to permanent locations. If necessary, habitat features shall be placed in stockpile areas as near to permanent locations as possible. AOA shall designate stockpile areas. Habitat features shall be moved no more than twice: to stockpile location and to plan location.

Contractor shall exercise care when moving habitat features to avoid breaking branches, scuffing bark, or breaking roots. It is the responsibility of the contractor to break pieces into usable sizes (see Part 2 - PLACE HABITAT FEATURES).

If habitat features are not available from any portion of the development footprint, then features shall be imported.

MULCH

Remaining onsite branches and non-merchantable timber shall be mulched to 2" max. Wood chips and stockpiled for use as mulch in the mitigation area. Do not mulch invasive plum, hawthorn or laurel as these will reseed in the mitigation area.

ITEM	MIN. SIZE	DIAMETER	COMMENTS
Down Logs	20' length, with or without roots	18" dia. min.	Bark intact
Stumps	10' trunk with roots	20" dia. min.	Well decayed, if possible
Boulders	1 or 2-man	12" dia. min.	If available on-site

* 20" Dia. at ground level required after installation

PLACE HABITAT FEATURES

Place habitat features upon completion of topsoil/compost placement as depicted on Sheet W2. All habitat features shall be broken into pieces (as defined below) prior to placement in the mitigation area. AOA shall approve locations prior to placement.

To cut/break down logs, first score the log at the desired length, by mechanical means; snap the log at the scored location to create a natural look to the break. Twist broken ends to disguise saw cuts. Cut ends of habitat features shall have no blunt ends.

Down logs shall be a minimum of 20 feet in length and 18" diameter, with or without rootwads. Stumps to be either well-decayed relocated stumps, or cut live rootwads with a minimum of 10 feet of trunk and 20" diameter. Additional habitat features can be located within the mitigation area that are under specified size.

Boulders, if available, shall be placed in piles of at least 2 rocks deep (5-rock min. pile), in a manner that provides both physical stability and large internal voids.

AOA shall be notified 48 hrs prior to installation of the habitat features. AOA shall review habitat features during placement and any features deemed unsatisfactory by AOA (due to damage during relocation or installation) shall be replaced with imported material at Contractor's expense.

CLEAR AND GRUB

In the entire proposed critical area and buffer, contractor shall remove State-listed Class A and B noxious weeds, Himalayan blackberry, evergreen blackberry, Canadian and bull thistle, English ivy, holly, hedge bindweed, creeping and deadly nightshade, trefoil, Scot's broom, stinky bob, reed canarygrass, knotweed, poison hemlock, cherry and Portugal laurel, non-native plum and English hawthorn by a small bobcat located outside of tree driplines and by hand inside tree driplines, with minimal disturbance to the existing vegetation. In areas mixed with native vegetation, weeds shall be removed by hand. Japnese knotweed shall be left alone and injected in late July prior to site work, per King County standards until fully killed. Roots shall then be removed with a small bobcat. Cleared and grubbed vegetation shall be exported from the site. Particular care must be given to ensure complete removal of tops and roots of invasive/exotic plant species. All existing grasses and other herbaceous vegetation shall be stripped prior to planting.

GRADING OF CREATED WETLAND AREA

Created wetland boundary shall be surveyed and grade staked by project surveyor in 10' grid. AOA shall be onsite to review grading as it occurs. Created wetland shall be over-excavated 6" for placement of 6" of Carpinito Brothers premium 3-way topsoil and shall be lightly tilled into the top 6" of subgrade. Project geotechnical engineer shall review subgrade prior to placement of topsoil to determine if a bentonite clay shall be mixed with topsoil. If needed, geotech shall specify quantity to include in backfill mix prior to placement.

SOIL STABILIZATION

If there is a delay in construction for any reason, Contractor, unless otherwise stated in writing, shall be responsible for maintenance of erosion control measures and drainage during construction delay period.

Disturbed land areas in which construction activities would be suspended for 30 days or more shall be immediately strawed with straw mulch to a minimum depth of 1" over all exposed ground.

WARRANTY

Contractor shall ensure that construction related activities do not damage off-site features or adjacent vegetation. AOA shall be notified immediately if accidental damage occurs.

Contractor shall ensure that adjacent roads are maintained and clear of soil and/or other debris at all times during construction. Contractor shall comply with King County codes regarding street maintenance/cleaning during construction.

Any changes or modifications to this plan must receive prior approval from AOA.

PART 2 - PLANTING

GENERAL CONDITIONS

Contractor shall verify that plant installation conditions are suitable within the mitigation area. Any unsatisfactory conditions shall be corrected prior to start of work. When conditions detrimental to plant growth are encountered, such as rubble fill, adverse drainage conditions, significant vegetation, or obstructions, Contractor shall notify AOA prior to planting. Beginning of work constitutes acceptance of conditions as satisfactory.

Plants installed in undisturbed areas shall be integrated with existing native vegetation, and planted in a random, naturalistic pattern.

CONTRACTOR TO VERIFY PLANT SCHEDULE WITH PLAN

Contractor is responsible to verify plant locations and quantities of plants on the Plant Schedule with those represented on the plan.

Actual plant quantities shown on plans are to prevail over quantities shown on the Plant Schedule in the event of a discrepancy.

LOCATE/STAKE/VERIFY PLANTING AREAS

Contractor shall field locate, stake, and verify planting areas and configurations prior to planting. AOA shall review and approve locations prior to planting.

Proposed locations of trees and shrubs shall be staked and identified with an approved coding system or by placement of the actual plant material. For large groupings of a single species of shrub, Contractor may stake the planting boundaries. AOA shall review and approve locations of all plants and plant groupings prior to planting.

APPROVE PLANTING LOCATIONS AND SPACING

Planting locations shown on planting plans are approximate, based on anticipated site conditions. Actual planting locations may vary from those shown due to final site conditions and locations of existing vegetation. Nevertheless, any variations from the planting plan will require prior approval by AOA.

Plant spacing for species listed is to be random (naturalistic), and not in a regular grid pattern. On-center spacing called out on plant list indicates an average spacing dimension. For example, when the plan calls for 36" O.C., spacing shall vary from 30"-42" O.C., with an average spacing of 36 inches.

AOA shall review planting locations and spacing prior to plant installation.

PART 3 - PLANT MATERIAL STANDARDS

PLANT MATERIALS

AOA shall examine plant material prior to planting. Any material not meeting the required specifications shall be immediately removed from the site and replaced with like material that meets the required standards. Plant material shall meet the requirements of State and Federal laws with respect to plant disease and infestations. Inspection certificates, required by law, shall accompany each and every shipment and shall be submitted to AOA upon Contractor's receipt of plant material.

Plant materials shall be locally grown (western WA, western OR, or western BC), healthy, bushy, in vigorous growing condition, and be guaranteed true to size, name, and variety. If replacement of plant material is necessary due to construction damage or plant failure within one year of installation, the sizes, species, and quantities shall be equal to specified plants, as indicated on the plans.

Plants shall be nursery grown, well-rooted, of normal growth and habit, and free from disease or infestation. AOA reserves the right to require replacement or substitution of any plants deemed unsuitable.

Trees shall have uniform branching, single straight trunks, (unless specified as multi-stemmed), and the central leader intact and undamaged. Balled and burlapped stock shall have been root-pruned at least once within the previous two years, and the plant stock shall have been grown in a container for at least one full growing season. Container stock shall be fully rooted but not root-bound. Plant material with damaged root zones or broken root balls will not be accepted.

Coniferous trees shall be nursery grown, full and bushy, and with uniform branching and a natural non-sheared form. Original central leader must be healthy and undamaged. Maximum gap between branching shall not exceed 9", and length of top leader shall not exceed 9".

Shrubs shall have a minimum of three stems and shall be a minimum height of 18 inches.

Contractor shall submit documentation that specified plant materials have been ordered and secured. A list of supplier names, addresses, phone numbers and the storage/growing location of the materials shall be submitted to AOA within 30 days of contract award.

Native plant cuttings shall be grown and collected in the maritime Pacific Northwest. Cuttings shall be of one- to two-year-old wood, 1/2" dia. minimum. Cuttings shall be a minimum of 4' in length with 4 lateral buds exposed above ground after planting. The top of each cutting shall be a minimum of 1" above a leaf bud, the bottom cut 2" below a bud. The basal ends of the cuttings shall be cut at a 45 degree angle and marked clearly so that the rooting end is planted in the soil. Cuttings must be kept covered and moist during storage and transport, and no cuttings shall be stored more than three days from date of cutting. Cuttings shall only be used if planting occurs between December 1st and April 1st. For planting between April 1st and December 1st, rooted cuttings or saplings shall be used.

Contractor shall submit documentation that specified plant materials have been ordered and secured. A list of supplier names, addresses, phone numbers and the storage/growing location of the materials shall be submitted to AOA within 30 days of contract award.

SUBSTITUTIONS

Substitutions of specified plant species, size, or condition will be allowed only if prior written approval is obtained by AOA prior to ordering material.

VERIFY NURSERY STOCK CONDITION

AOA shall inspect plant material at the job site, including previously tagged trees, for compliance with required standards for plant size and quality prior to planting. This includes, but is not limited to, size and condition of rootballs and rootsystems, presence of insects, latent injuries and defects. Trees must be untied and separated for inspections. AOA reserves the right to refuse any/all plant material any time prior to final acceptance if it is determined that such material does not meet the specifications as described herein. Rejected material shall be immediately removed from project site.

VERIFY STORAGE SITE AND METHOD

Plants shall be stored in a manner necessary to support their horticultural requirements. Plant material stored on-site shall be protected from weather damage, construction activity and the public. Balled and burlapped material which cannot be installed immediately shall be "heeled-in" to prevent desiccation prior to planting. Rootballs shall be protected by covering with moist soil, wood chip mulch and watered as necessary.

Plant specimens shall be kept moist and shaded until the actual time of plant installation. Immediately after planting, soils in the planting area shall be saturated to prevent capillary stress.

PART 4 - PLANT INSTALLATION

SOIL PREPARATION/AMENDMENTS

Prior to installation of plantings, all construction debris and any other non-native material shall be removed from the enhancement area. Trees and shrubs shall be pit planted as shown in details on Drawing W3.

MULCH

A 3" layer of stockpiled wood chips shall be placed continuously in the entire mitigation area for erosion, weed control, and moisture retention.

STAKING

Trees shall be staked with at least one stake and attached at a height of approximately 3/4 the height of the tree if deemed necessary by the Contractor and AOA. Contractor shall remove stakes at the end of the one-year guarantee period, unless otherwise directed by AOA.

TEMPORARY DRIP IRRIGATION SYSTEM

Contractor shall design build an above ground temporary drip or low flow spray (MP3 rotor heads) irrigation system capable of providing 1/2" of flow to each newly installed plant.

Client shall provide water and electricity for the system. Irrigation is required within the mitigation area for at least three growing seasons following planting to ensure adequate establishment of plant material.

The Maintenance Contractor shall be responsible to activate, winterize, maintain, and to continually verify adequate operation of the temporary drip irrigation system. System function (including electronic valve and controller function) shall be inspected for operation and full coverage of all planted areas during each maintenance visit. The system shall be repaired immediately if found to be damaged or malfunctioning.

The system shall be activated by June 15 and winterized by October 15. If hot dry weather occurs either before or after these dates, the irrigation system shall be activated earlier in the season or remain active later into the fall. During the first year after installation, the irrigation system shall be programmed to provide ½" of water every three days. Irrigation rates may be increased as necessary during prolonged periods of hot, dry weather to prevent plant mortality. During the second year after installation, irrigation shall be programmed to provide ½" of water once a week. However, if more than 10% of plant replacement occurs, watering rates will be maintained at a rate of ½" of water every three days for the duration of the maintenance period.

A chart describing the location of all installed or open zones and corresponding controller numbers shall be placed inside the controller and given to the Owner's representative.

The irrigation bid shall include a one-year warranty against defects in materials and workmanship from the date of final project acceptance. The warranty shall include system activation and winterization for the first year and immediate repair of the system if it is observed to be malfunctioning.

PART 5 - CLEAN UP

RESTORE EXISTING NATURAL OR LANDSCAPED AREAS

Existing natural or landscaped areas that are damaged during construction shall be restored to their original condition, unless improvements or modifications are specified for those areas.

CLEAN-UP

Contractor shall be responsible for the removal of construction materials and debris on the site following installation of plant materials.

PART 6 - FINAL ACCEPTANCE

PLANT WARRANTY

Contractor's warranty shall include replacement of plants (same size and species shown on the drawings) that prove either to be mislocated or unsuitable as to plant material standards. Except for loss due to excessively severe climatological conditions (substantiated by 10-year recorded weather charts), installed plant materials are required to be guaranteed for one year against defects and unsatisfactory growth, except for cases of neglect by Owner or abuse/damage by others. Plants replaced shall be reinitiated under plant guarantee conditions.

Any changes or modifications to this plan must receive prior approval from AOA.

FINAL ACCEPTANCE

Upon completion of planting, the Contractor shall provide AOA with a set of clearly marked prints designating the actual locations of plantings within the mitigation area. Contractor shall keep a complete set of prints at the job site during construction for the purpose of "red-lining" changes or modifications to the approved plans and shall update said information on a daily basis.

AOA shall approve planting locations. If items are to be corrected, a punch list shall be prepared by AOA and submitted to the Contractor for completion. After punch list items have been completed, AOA shall review the project for final acceptance of plan implementation.

The date of final acceptance shall constitute the beginning of the one-year plant guarantee period.

MAINTENANCE

Contractor shall review landscape maintenance recommendations with a qualified wetland biologist from AOA who is familiar with the stated goals and objectives of the mitigation plan.

Contractor shall maintain trees and shrubs, as needed, for a period of one year from final acceptance, to maintain healthy growth and habitat diversity, including a) tighten and repair tree stakes, b) reset plants to proper grades and upright positions, and c) correct drainage problems as required.

Contractor shall be responsible for watering plants immediately upon installation, and again over the entire planting area upon completion of landscape installation. Watering may be necessary for at least three growing seasons following planting to ensure adequate plant establishment.

Contractor shall remove tree stakes and guy wires two years after installation unless receiving written permission from AOA to remove stakes and guy wires one year after installation.

Contractor shall correct erosion and drainage problems as required.

Contractor shall remove silt fencing upon receiving written permission to do so by AOA. Restore the area with straw mulch to a minimum depth of 1" over all exposed ground.

Upon completion of the one year maintenance, an inspection by AOA shall be conducted to confirm that the mitigation area was properly maintained. If items are to be corrected, a punch list shall be prepared by and submitted to the Contractor for correction. Upon correction of the punch list items, the project shall be reviewed by AOA for final closeout of plan implementation.

Maintenance Plan

Maintenance will be conducted on a routine, year round basis in March, May, July and October of each year. Additional maintenance needs will be identified and addressed following a twice-yearly maintenance review. Contingency measures and remedial action on the site shall be implemented on an as-needed basis at the direction of the wetland consultant or the owner.

Weed Control

Routine removal and control of non-native and other invasive plants (e.g., Scot's broom, reed canarygrass, Himalayan and evergreen blackberry, Japanese knotweed, English ivy, morning glory, thistle and creeping nightshade) shall be performed by manual means whenever possible. Chemical means (Rodeo or Roundup) will only be used if necessary and never adjacent the stream. Undesirable and weedy exotic plant species shall be maintained at levels below 10% total cover within any given stratum at any time during the three-year maintenance period.

General Maintenance Items

Maintenance of Trees

Routine maintenance of planted trees shall be performed. Measures include resetting plants to proper grades and upright positions. Tall grasses shall be weeded at the base of plants to prevent engulfment. Weed control should be performed by hand removal or selective weed-whacking. If weed-whacking is performed, great care shall be taken to prevent damage to desired native species either planted or re-colonized.

Contingency Plan

All dead plants will be replaced with the same species or an approved substitute species that meets the goal of the mitigation 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 wetland consultant, King County, or the owner.

As-Built Plan

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

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STATE OF WASHINGTON
REGISTERED LANDSCAPE ARCHITECT
SIMONE CATHERINE OLIVER
CERTIFICATE NO. 744
EXPIRES 6/25/2025

SPECIFICATIONS
FINAL BUFFER MITIGATION PLAN
BRANDON SHORT PLAT
FOR CES PROPERTIES, INC.
KING COUNTY, WASHINGTON

Revisions	Date	By

Date 05.08.24
Scale AS NOTED
Project# 6291

Sheet # W4

Comments from King County Pertaining to Sewell Wetland Consultring, Inc. Delineation

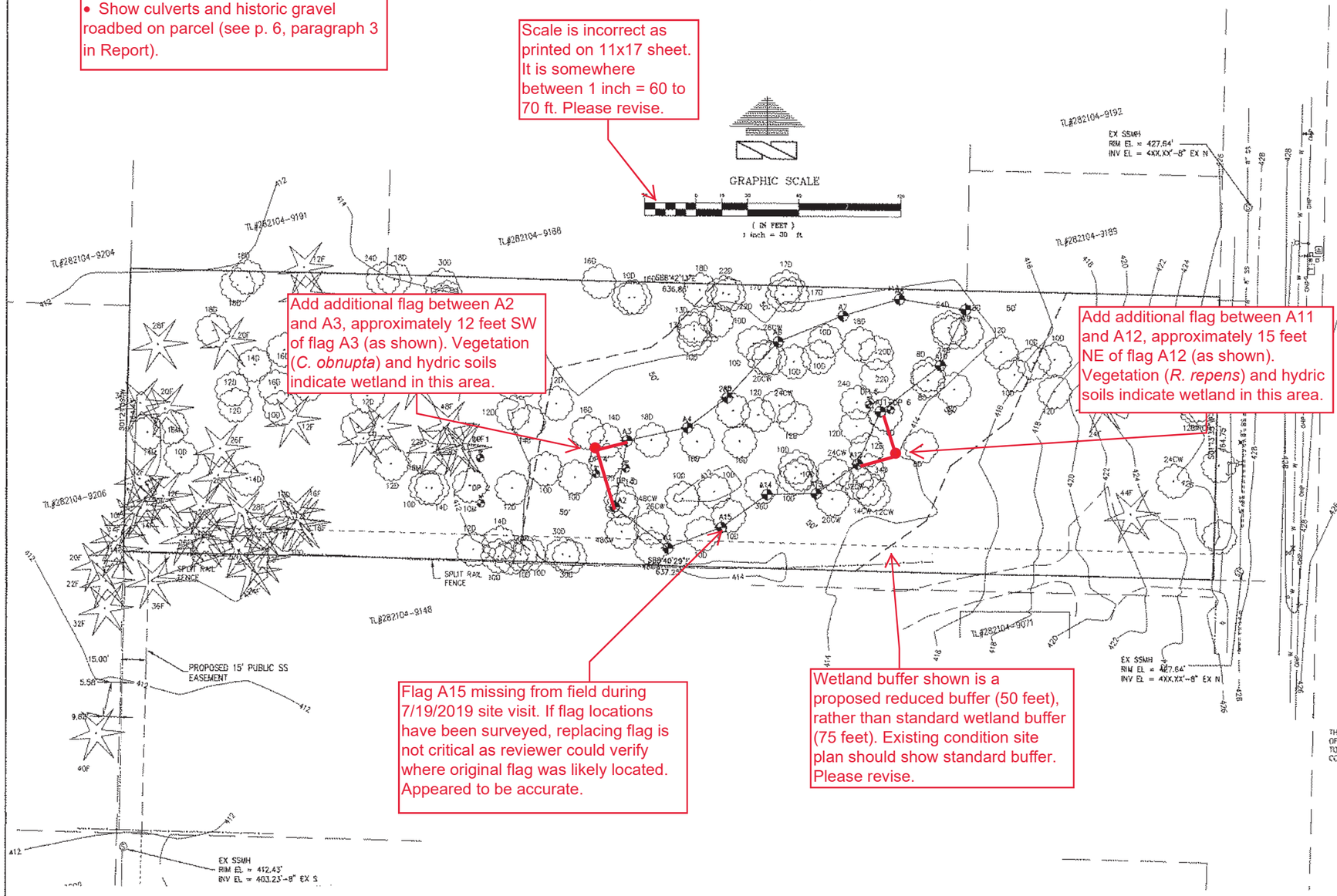
Attachment A

PORTION OF THE SW 1/4 OF THE NE 1/4 SW 1/4 OF SECTION 3, TWN. 22 N., R. 5 E., W.M.

ADDITIONAL NOTES

- Add 15-foot building setback line.
- Include "Category III wetland" label for wetland.
- Revise wetland flags as noted below.
- Show culverts and historic gravel roadbed on parcel (see p. 6, paragraph 3 in Report).

Scale is incorrect as printed on 11x17 sheet. It is somewhere between 1 inch = 60 to 70 ft. Please revise.

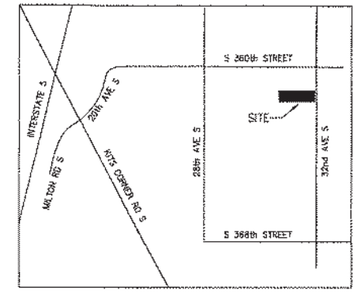


Add additional flag between A2 and A3, approximately 12 feet SW of flag A3 (as shown). Vegetation (*C. obnupta*) and hydric soils indicate wetland in this area.

Add additional flag between A11 and A12, approximately 15 feet NE of flag A12 (as shown). Vegetation (*R. repens*) and hydric soils indicate wetland in this area.

Flag A15 missing from field during 7/19/2019 site visit. If flag locations have been surveyed, replacing flag is not critical as reviewer could verify where original flag was likely located. Appeared to be accurate.

Wetland buffer shown is a proposed reduced buffer (50 feet), rather than standard wetland buffer (75 feet). Existing condition site plan should show standard buffer. Please revise.



VICINITY MAP
NTS

SURVEY MON.
INSTRUMENT: FOCUS 35 TOTAL STATION & SP 80 GPS
METHOD USED: FIELD TRAVERSE WITH ACTUAL FIELD MEASUREMENTS AND ANGLES WAC 332-130-100
DATE OF SURVEY: OCTOBER 2016
BASIS OF BEARING: THE EAST LINE OF SE 1/4 OF SECTION 28, TWN 21 N, RG 4 E, W.M. 32nd AVE SE (N01°53'35"E)
BENCHMARK: TOP OF CONC MONUMENT IN CASE AT THE INTERSECTION OF 32ND AVE SE AND SE 360 STREET. EL=428.48

TOTAL AREA OF PROPERTY = 2.41 ACRES
NO. OF LOTS = 9 LOTS
TRACT "A" DRAINAGE TR. =
EXISTING ZONING = R-4
RIGHT OF WAY AREA = 0.55 ACRES
SOIL TYP = ALDERWOOD -AgC
VEGETATION = FOREST AND GRASS
WATER/SEWER SUPPLY - LAKEHAVEN DISTRICT
SCHOOL DISTRICT - FEDERAL SCHOOL DISTRICT
FIRE DISTRICT - FEDERAL WAY
POWER - PUGET SOUND ENERGY
TAX PARCEL NO. 282104-9151

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TOUMA ENGINEERS & LAND SURVEYORS
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RENTON, WASHINGTON 98057
425-.251-0665

THE NORTH HALF OF THE THE SOUTH HALF, OF THE NORTHEAST QUARTER OF THE NORTHEAST QUARTER OF THE SOUTHEAST QUARTER OF SECTION 28, TOWNSHIP 21 NORTH, RANGE 4 EAST, W.M., LESS COUNTY ROAD, IN KING COUNTY, WASHINGTON;

(Note to Engineer: This approval signature block not required for cover page.

KING COUNTY DDES APPROVAL

Review Engineer	Date
Senior Engineer	Date
Wally Annukaitis, P.E. DEVELOPMENT ENGINEER	Date

TOUMA ENGINEERS AND LAND SURVEYORS, PLLC
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Project Coordinator — Phone

PRELIMINARY SHORT PLAT
BRANDON PRE
360XX 32ND AVE SE
FEDERAL WAY, WA

DDES FILE NUMBERS:
Activity Number:
Project Number:
Development No:

License/Seal

Sheet

ATTACHMENT B
WETLAND RATING

RATING SUMMARY – Western Washington

Name of wetland (or ID #): Parcel 282104-9151 Date of site visit: 3/16/2021

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 III (based on functions ☑ or special characteristics ☐)

1. Category of wetland based on FUNCTIONS

_____ **Category I** - Total score = 23 - 27
_____ **Category II** - Total score = 20 - 22
X **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	M	M	L	
Landscape Potential	M	M	L	
Value	H	M	M	**Total**
Score Based on Ratings	7	6	4	**17**

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: 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		2
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	0
D 1.3. Characteristics and distribution of persistent plants (Emergent, Scrub-shrub, and/or Forested Cowardin classes): 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		5
D 1.4. Characteristics of seasonal ponding or inundation: *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		4
Total for D 1	Add the points in the boxes above	**11**

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	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	0
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? Source	Yes = 1 No = 0	0
Total for D 2	Add the points in the boxes above	**1**

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	1
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	1
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	0
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:		2
Wetland is a depression or flat depression with no surface water leaving it (no outlet)	points = 4	
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.*		3
Marks of ponding are 3 ft or more above the surface or bottom of outlet	points = 7	
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.*		3
☐ The area of the basin is less than 10 times the area of the unit	points = 5	
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	**8**

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	1
Total for D 5	Add the points in the boxes above	**2**

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.*		1
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):		
● 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	**1**

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	4 structures or more: points = 4	1
☐ Emergent	3 structures: points = 2	
☐ Scrub-shrub (areas where shrubs have > 30% cover)	2 structures: points - 1	
☑ Forested (areas where trees have > 30% cover)	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		

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	4 or more types present: points = 3	
☑ Seasonally flooded or inundated	3 types present: points = 2	0
☐ Occasionally flooded or inundated	2 types present: points = 1	
☐ Saturated only	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**	

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***

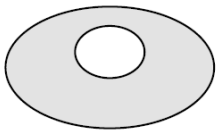
1

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

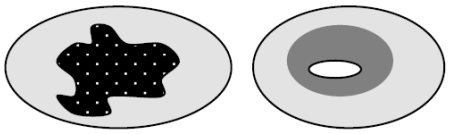
H 1.4. Interspersion of habitats

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



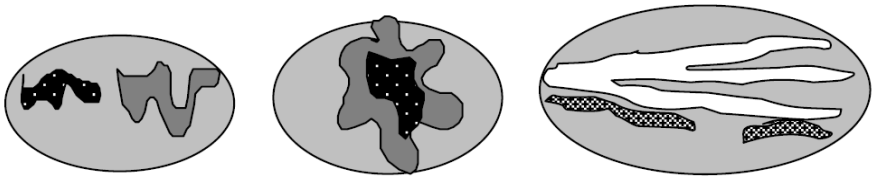
Low = 1 point



Moderate = 2 points

0

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



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	**5**

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:* 1 % undisturbed habitat + (0.6 % moderate & low intensity land uses / 2) = 1.3% 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	0
H 2.2. Undisturbed habitat in 1 km Polygon around the wetland. *Calculate:* 13 % undisturbed habitat + (14.1 % moderate & low intensity land uses / 2) = 20.05% 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	1
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.

Wetland name or number B

RATING SUMMARY – Western Washington

Name of wetland (or ID #): Parcel 282104-9151 Date of site visit: 6/19/2018

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 IV (based on functions ☑ or special characteristics ☐)

1. Category of wetland based on FUNCTIONS

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

FUNCTION	Improving Water Quality	Hydrologic	Habitat	
	List appropriate rating (H, M, L)			
Site Potential	L	L	L	
Landscape Potential	M	M	L	
Value	H	L	M	**Total**
Score Based on Ratings	6	4	4	**14**

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 B

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: 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	2
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	0
D 1.3. Characteristics and distribution of persistent plants (Emergent, Scrub-shrub, and/or Forested Cowardin classes): 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	3
D 1.4. Characteristics of seasonal ponding or inundation: *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	0
Total for D 1 Add the points in the boxes above	**5**

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	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	0
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? Source Yes = 1 No = 0	0
Total for D 2 Add the points in the boxes above	**1**

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	1
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	1
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	0
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 B

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	2
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.*		0
Marks of ponding are 3 ft or more above the surface or bottom of outlet	points = 7	
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.*		3
☐ The area of the basin is less than 10 times the area of the unit	points = 5	
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	**5**

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	1
Total for D 5	Add the points in the boxes above	**2**

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):		0
● 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	**0**

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

Wetland name or number B

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

2

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
- ☐ 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**

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

1

H 1.3. Richness of plant species

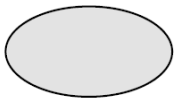
Count the number of plant species in the wetland that cover at least 10 ft^2.
Different patches of the same species can be combined to meet the size threshold and you do not have to name the species. ***Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, Canadian thistle***

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

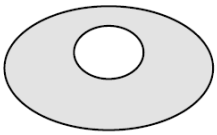
1

H 1.4. Interspersion of habitats

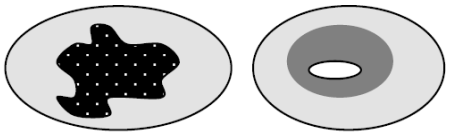
Decide from the diagrams below whether interspersion among Cowardin plants classes (described in H 1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, moderate, low, or none. *If you have four or more plant classes or three classes and open water, the rating is always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



None = 0 points

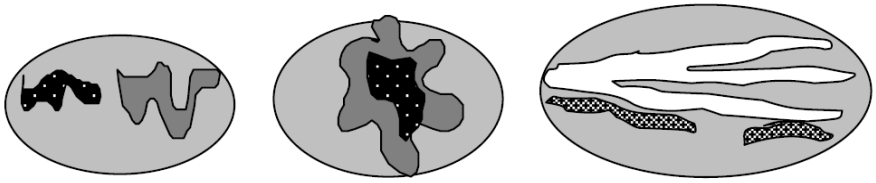


Low = 1 point



Moderate = 2 points

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



1

Wetland name or number B

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*)	1
Total for H 1 — Add the points in the boxes above	**6**

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:* 0.4 % undisturbed habitat + (1.1 % moderate & low intensity land uses / 2) = 0.95% 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	0
H 2.2. Undisturbed habitat in 1 km Polygon around the wetland. *Calculate:* 12.2 % undisturbed habitat + (19.5 % moderate & low intensity land uses / 2) = 21.95% 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	1
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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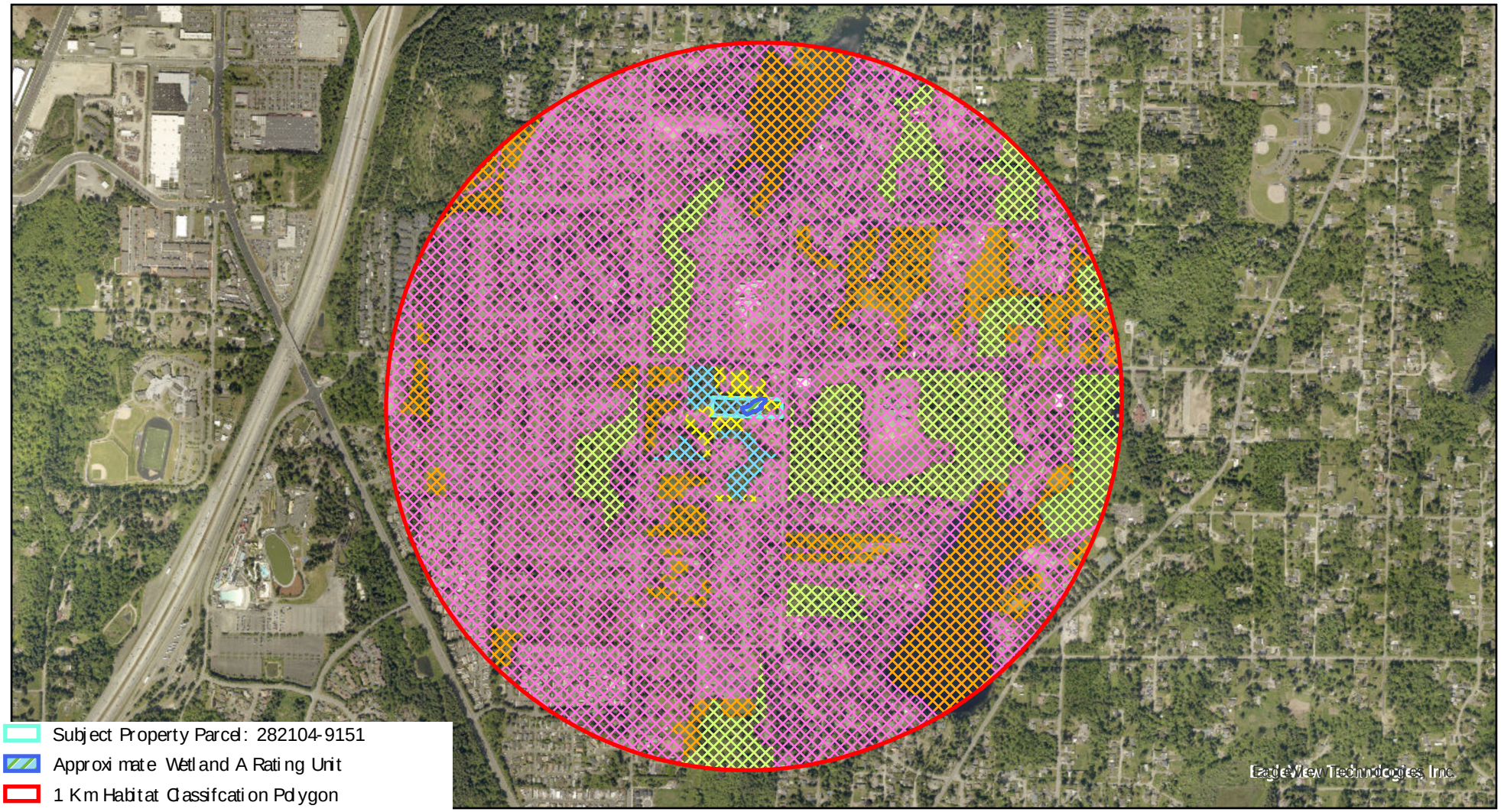
King County
Parcel 282104-9151

Figure A

AOA - 6291



Subject Property Parcel: 282104-9151
Approximate Wetland A Rating Unit
1 Km Habitat Classifcation Polygon
Accessible Relatively Undisturbed Habitat 1.0 %
Accessible Low_Moderate Intensity Habitat 0.6 %
Relatively Undisturbed Habitat 12.0 %
Low_Moderate Intensity Habitat 13.5 %
High Intensity Habitat 72.9 %

0 500 1,000 2,000 3,000 4,000 US Feet

N

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Figure B

AOA - 6291

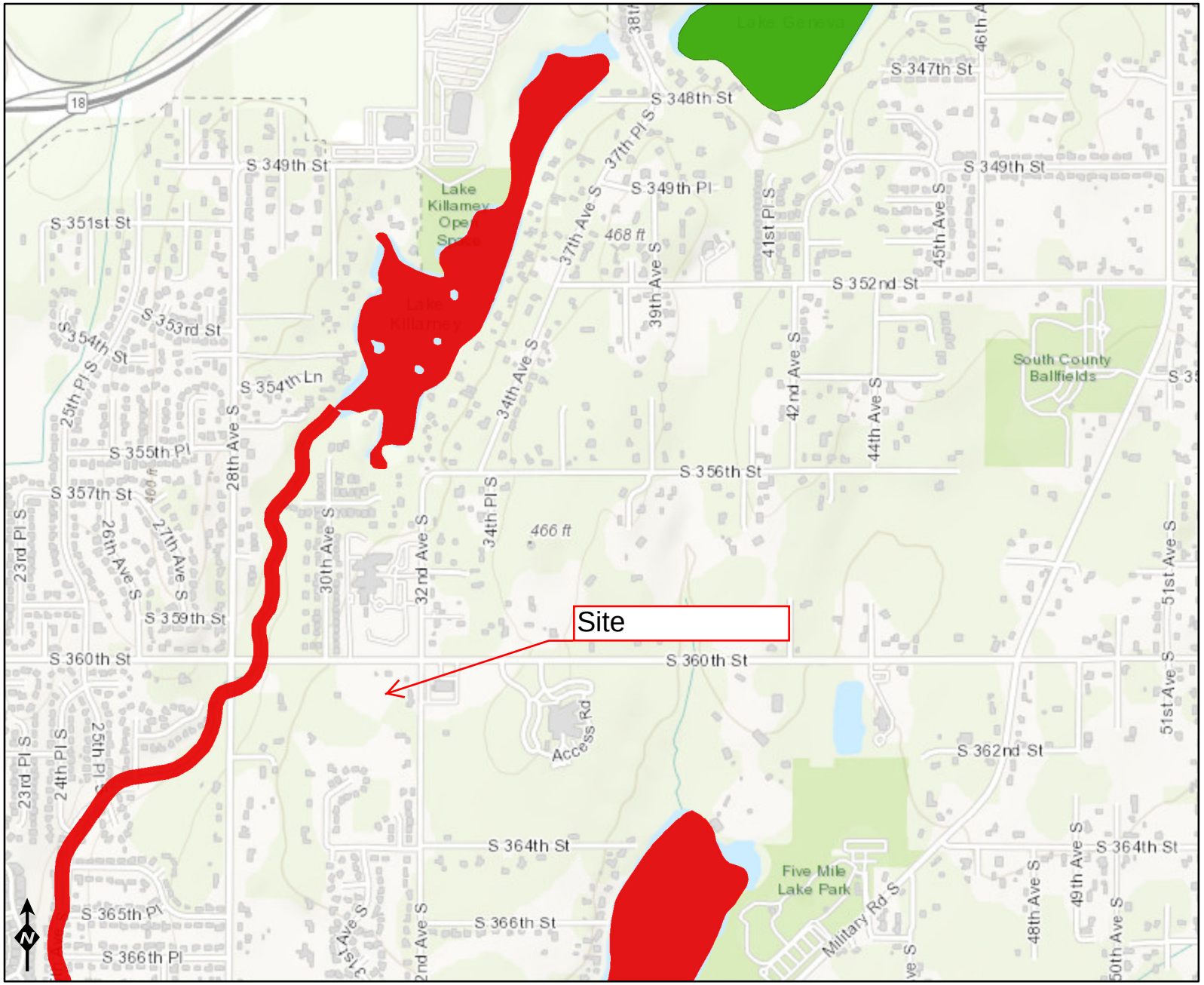
Subject Property Parcel: 282104-9151
Approximate Wetland A Rating Unit
150' Pollution Assessment Polygon
Pollution Generating Surfaces 50.8 %

0 35 70 140 210 280
US Feet

N

May 24, 2021

Figure C



Assessed Water/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 0.125 0.25 0.5

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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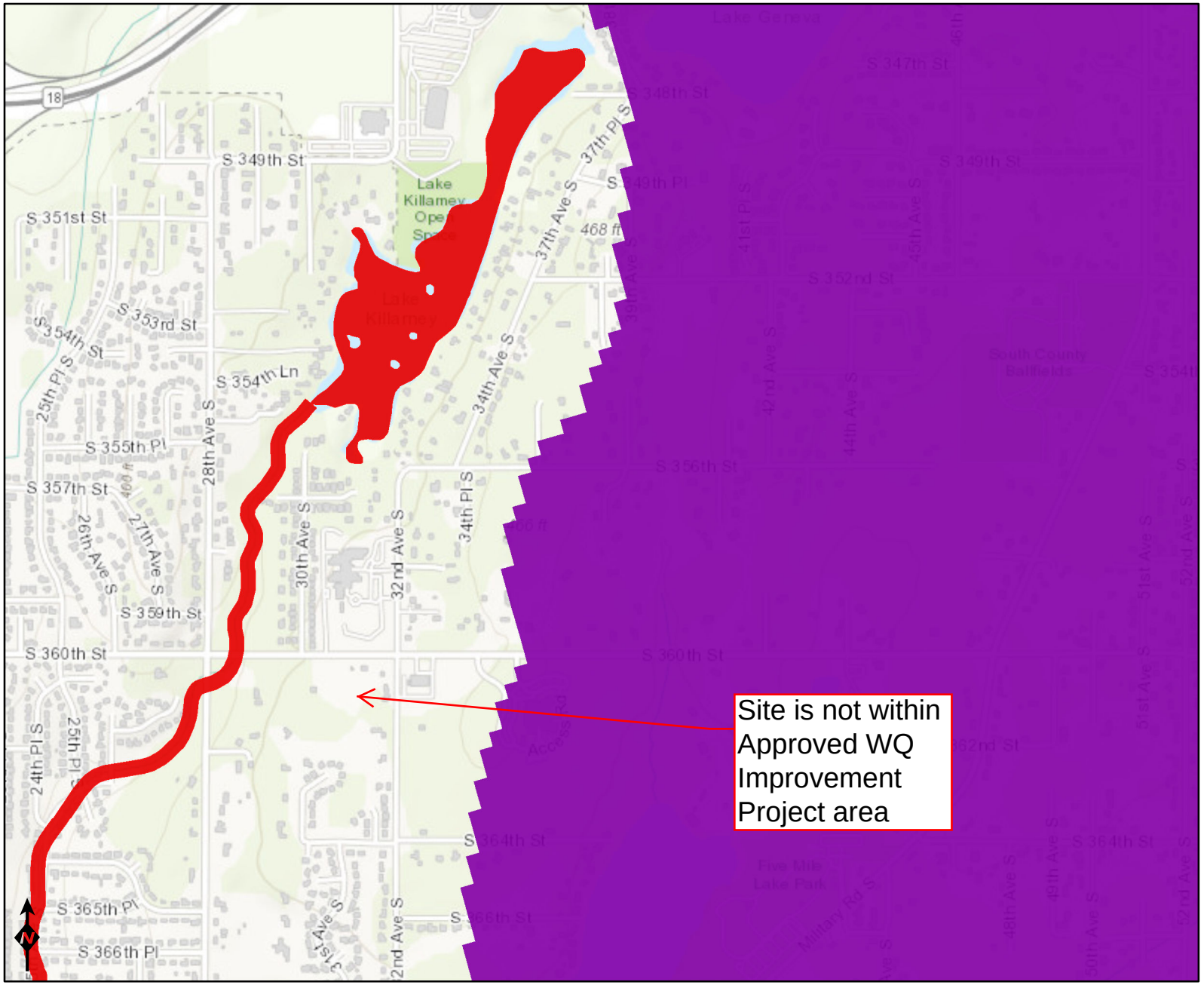
State of Washington

May 24, 2021

Figure D



Assessed Water/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

WQ Improvement Projects

- Approved
- In Development

Miles
0 0.125 0.25 0.5

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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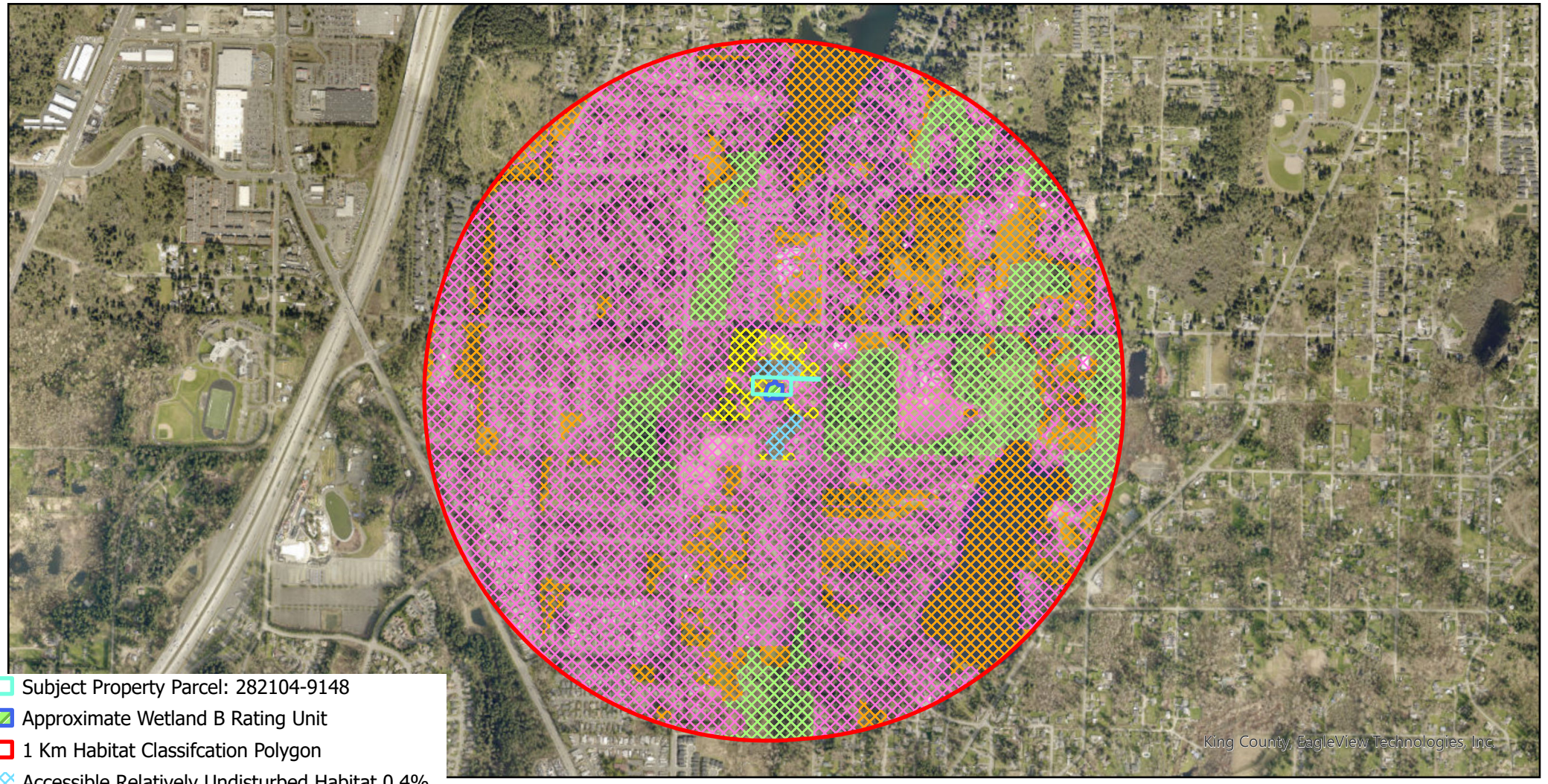
King County
Parcel: 282104-9148

Figure A

AOA - 5719



Subject Property Parcel: 282104-9148
Approximate Wetland B Rating Unit
1 Km Habitat Classifcation Polygon
Accessible Relatively Undisturbed Habitat 0.4%
Accessible Low_Moderate Intensity Habitat 1.1%
Relatively Undisturbed Habitat 11.8%
Low_Moderate Intensity Habitat 18.4%
High Intensity Habitat 68.3%

0 500 1,000 2,000 3,000 4,000
US Feet

N

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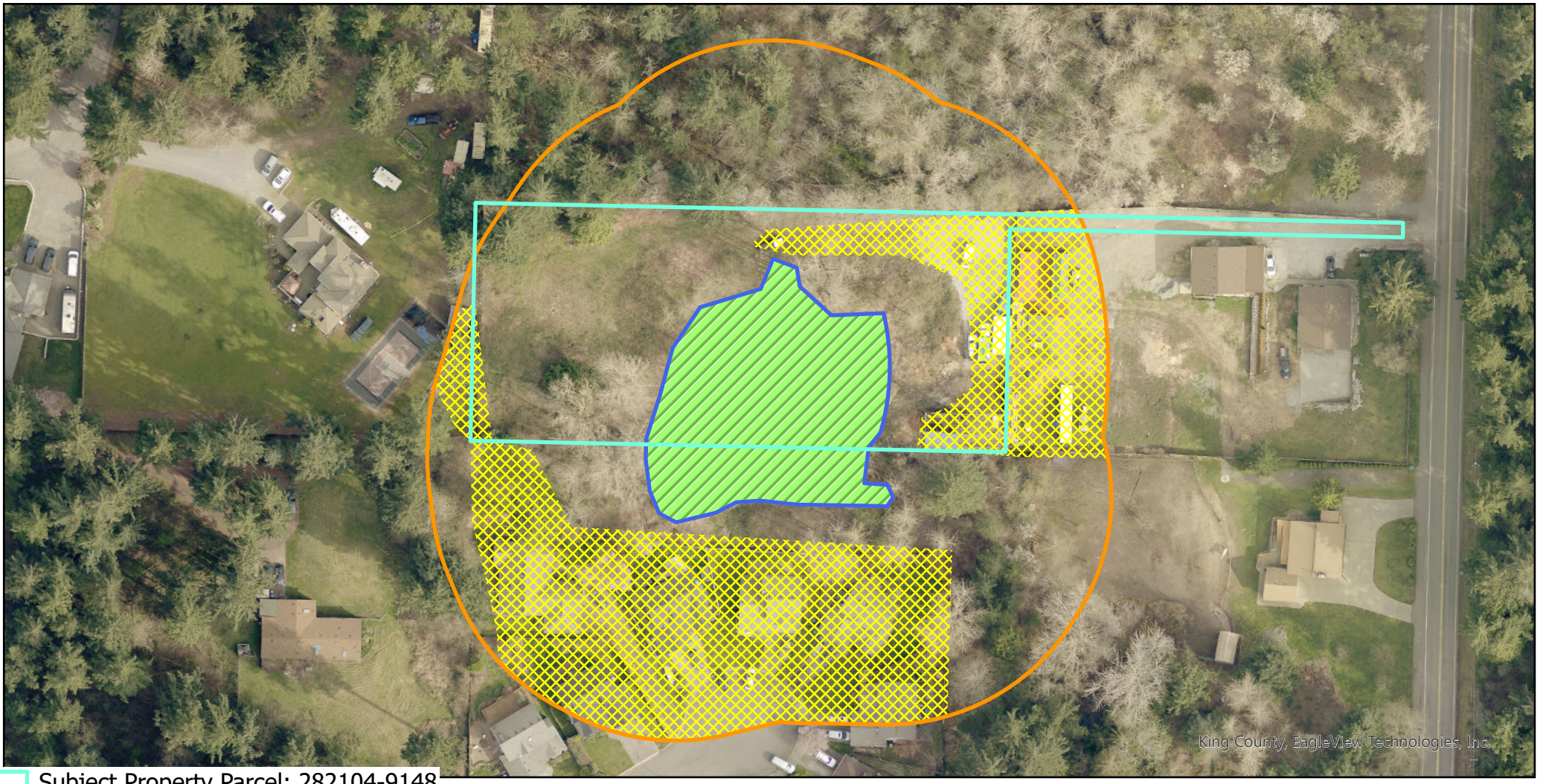
Figure B

AOA - 5719



Subject Property Parcel: 282104-9148
Approximate Wetland B Rating Unit
150' Pollution Assessment Polygon
Pollution Generating Surfaces 40.9%

0 37.5 75 150 225 300
US Feet

N