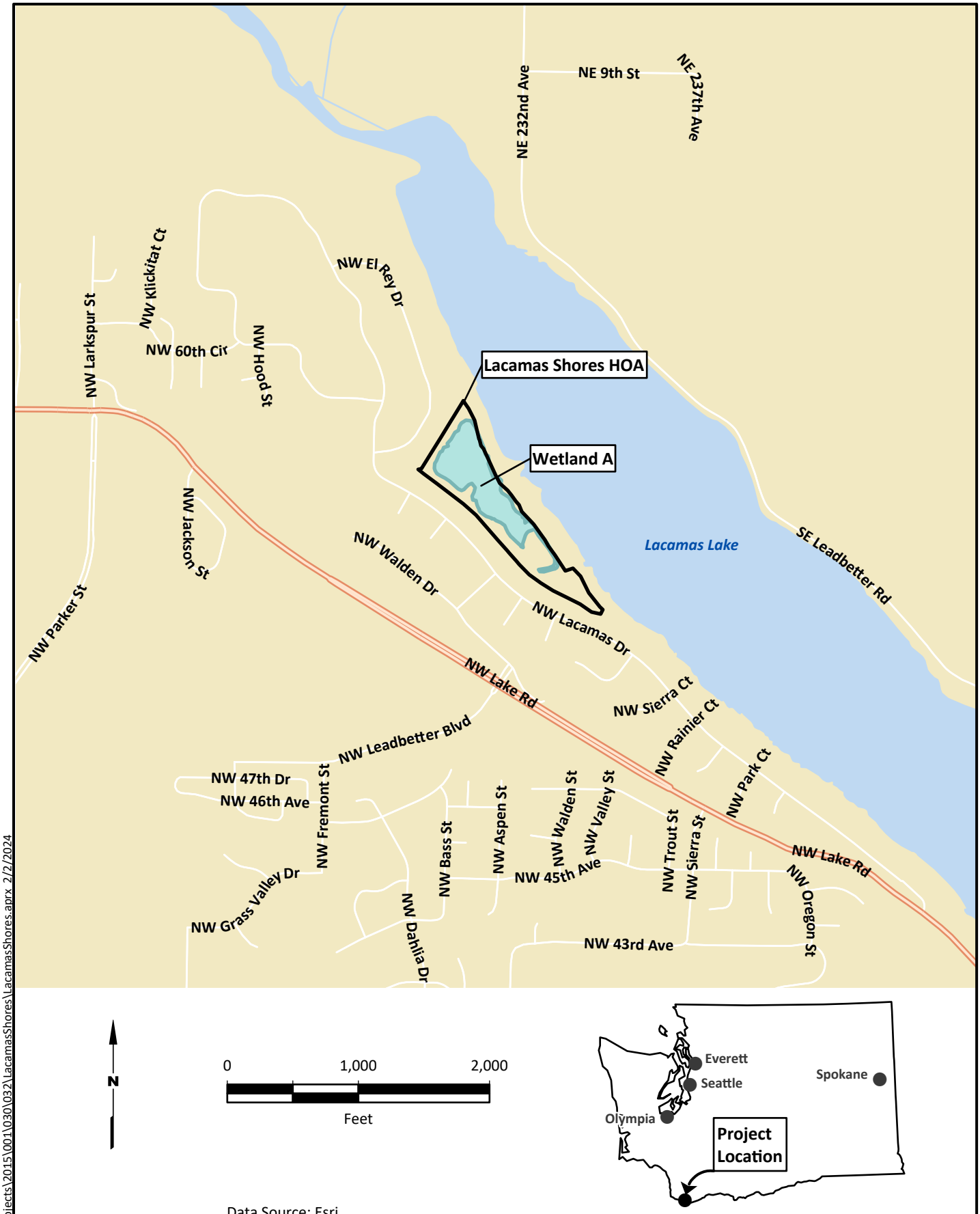
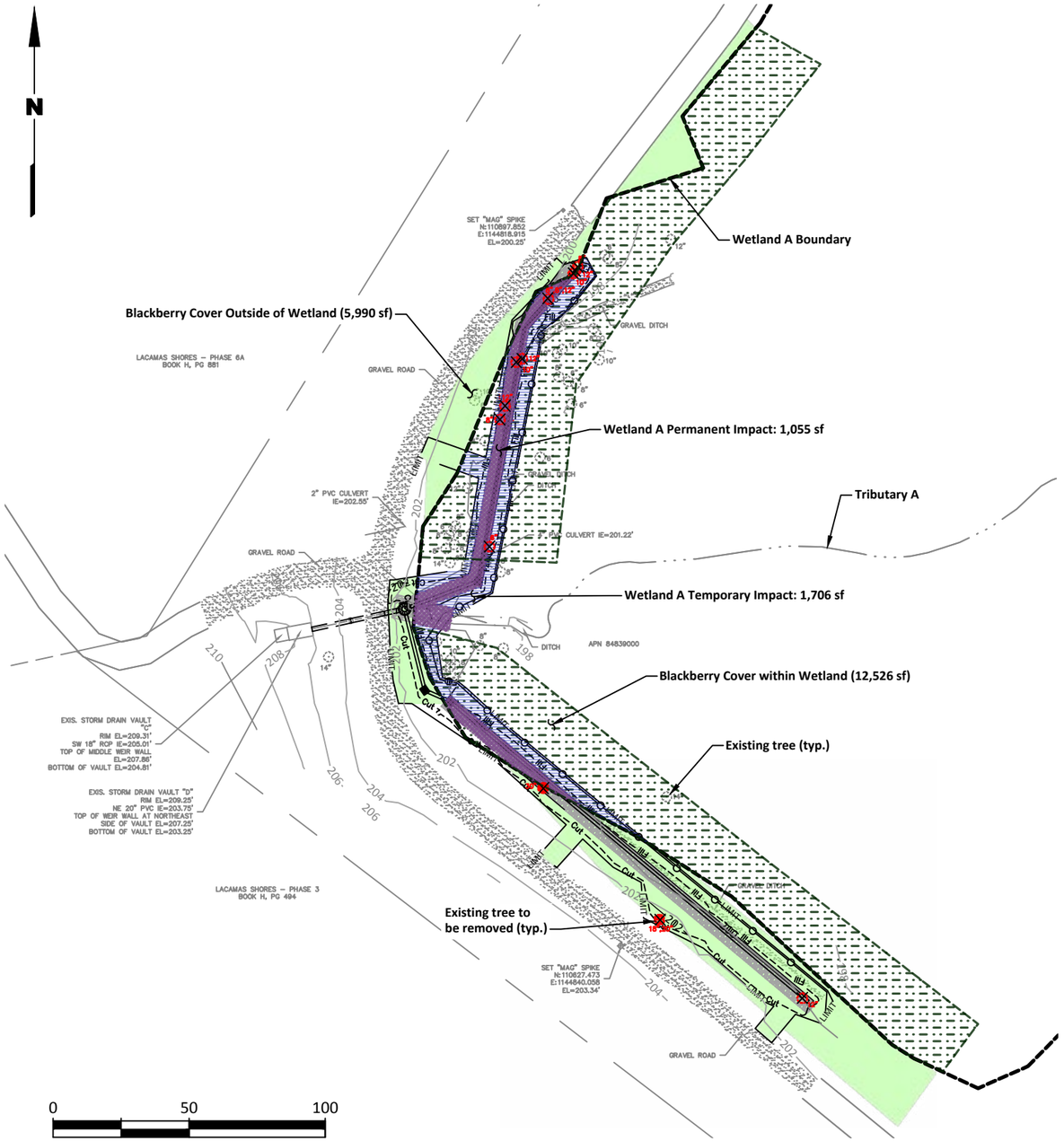


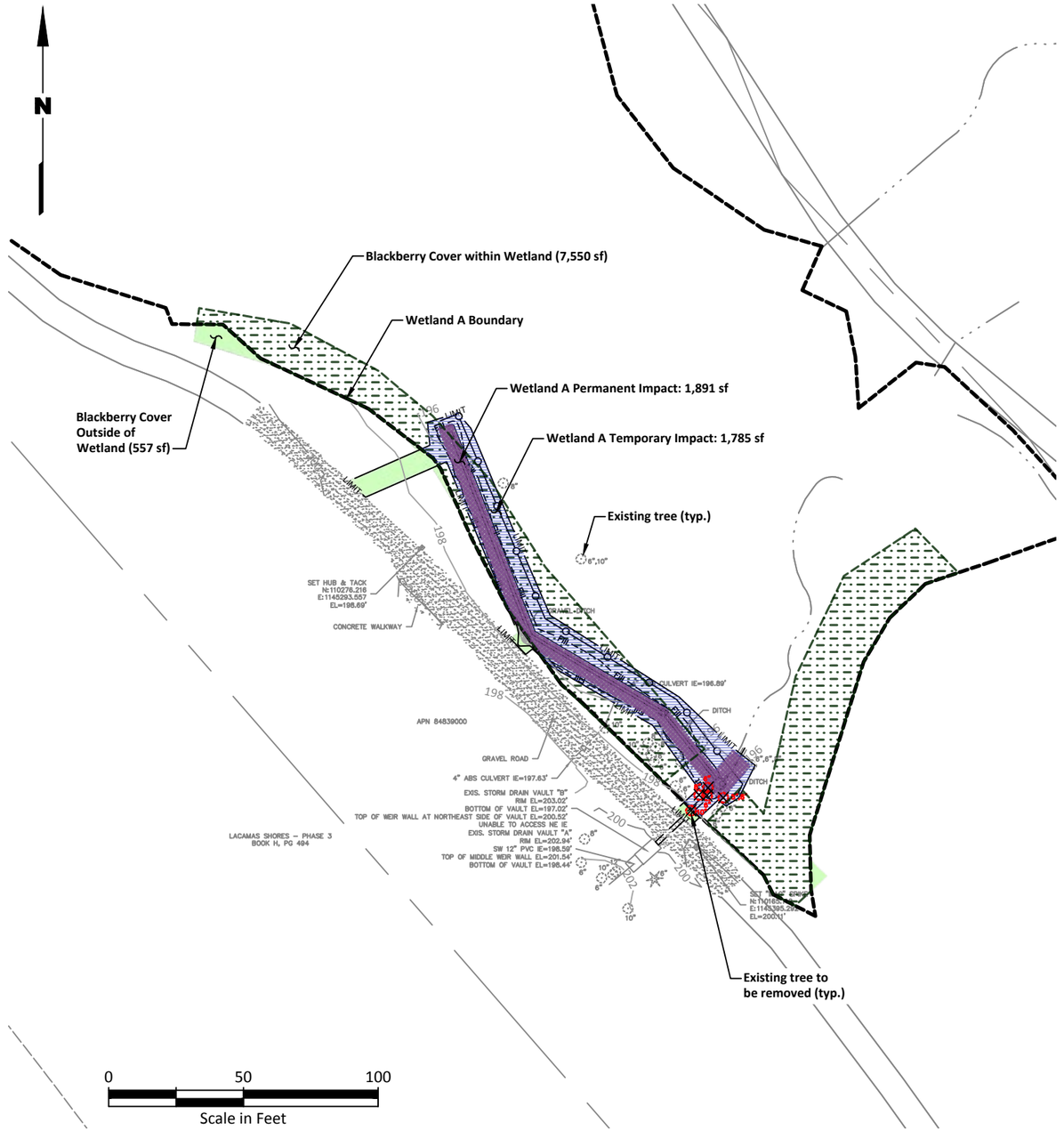
Data Source: Esri.

G:\Projects\2015\001\030\032\LacamasShores\LacamasShores.aprx 2/2/2024

Lacamas Shores Homeowners' Association Camas, Washington	**Vicinity Map**	Figure 1



Northern Wetland Impact Area



Southern Wetland Impact Area

Note

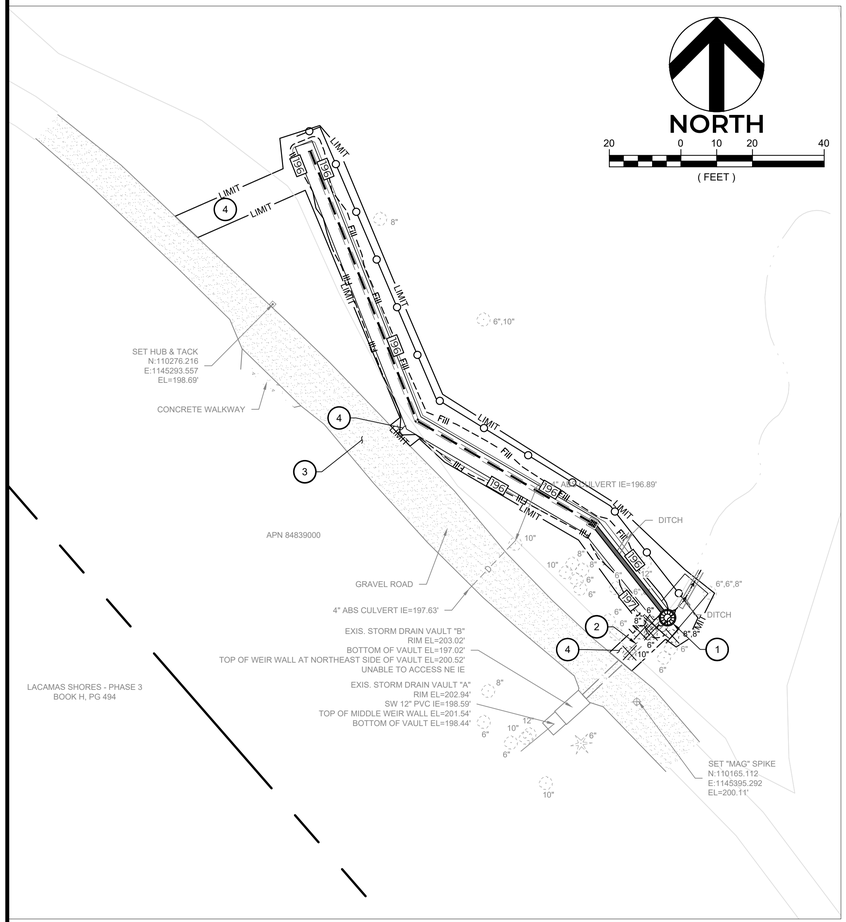
1. Black and white reproduction of this color original may reduce its effectiveness and lead to incorrect interpretation.

Source: Momentum 2024

Lacamas Shores Project Camas, Washington	**Wetland Impacts**	Figure 2

LANDAU ASSOCIATES

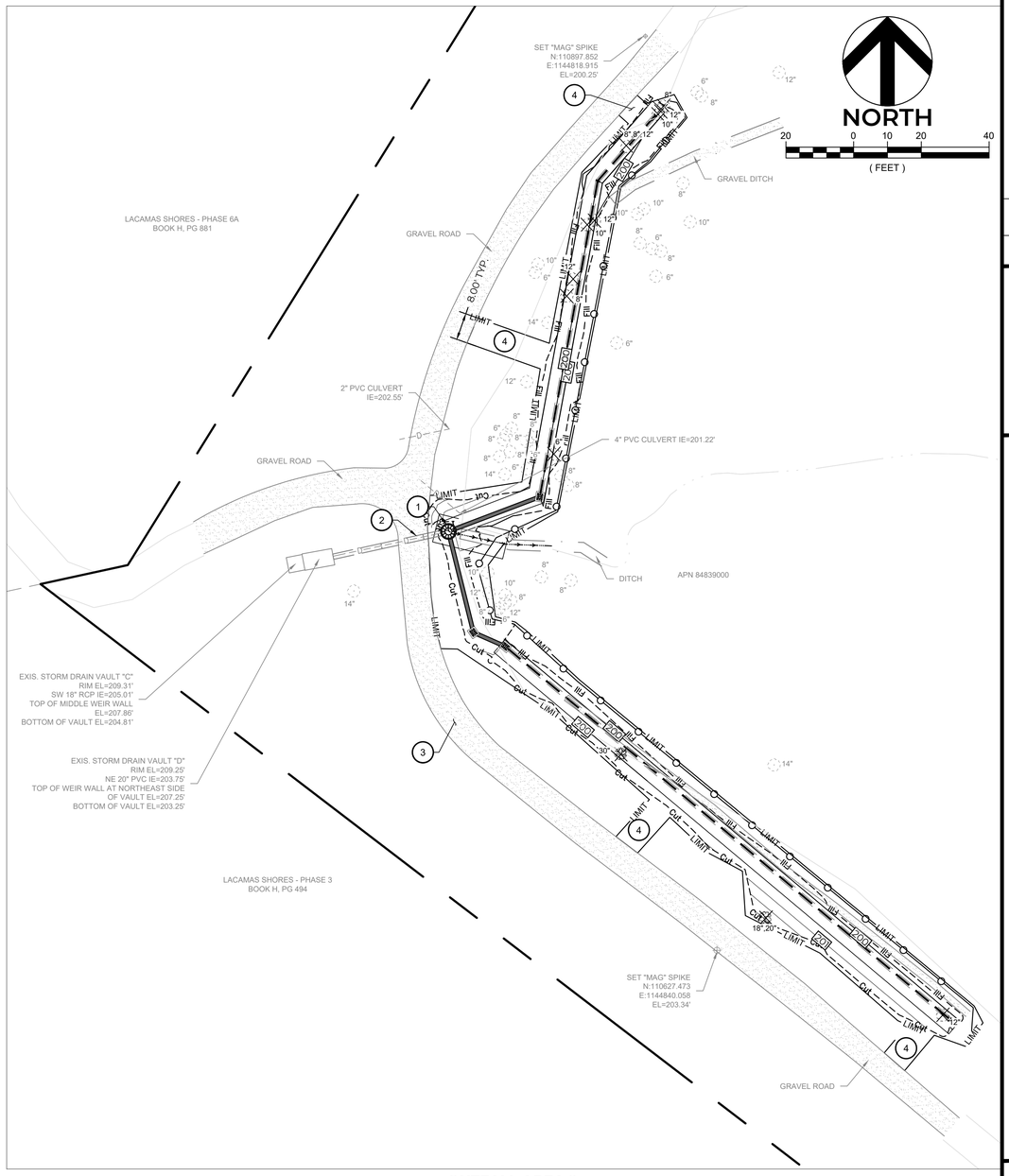
A PORTION OF THE NE 1/4 OF THE NE 1/4 OF SECTION 33, T2N, R3E, W.M. & A PORTION OF THE NW 1/4 OF THE NW 1/4 OF SECTION 34, T2N, R3E, W.M. & A PORTION OF THE SE 1/4 OF THE SE 1/4 OF THE SE 1/4 OF SECTION 28, T2N, R3E, W.M.



OUTFALL AREA 1

TESC LEGEND

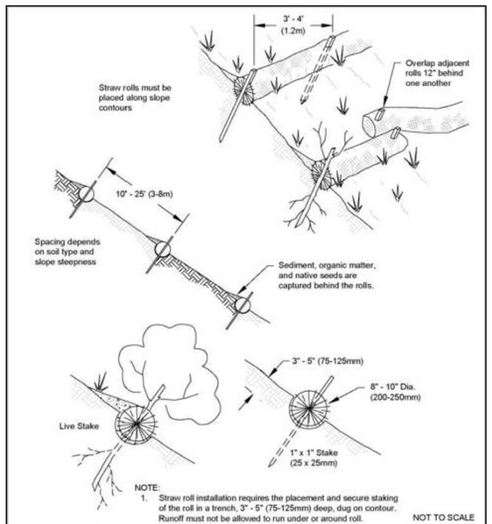
- PROPERTY LINE
- STRAW WATTLES (PER DET. 1 OF THIS SHEET)
- LIMIT — AREA OF DISTURBANCE/ WORK LIMITS (9,020± SF)
- TREE REMOVAL (21)
- 19 — EXISTING MINOR CONTOUR
- 20 — EXISTING MAJOR CONTOUR
- 19 — PROPOSED MINOR CONTOUR
- 20 — PROPOSED MAJOR CONTOUR



OUTFALL AREA 2

EROSION/SEDIMENT CONTROL NOTES (CITY OF CAMAS)

1. APPROVAL OF THIS EROSION/SEDIMENTATION CONTROL (ESC) PLAN DOES NOT CONSTITUTE AN APPROVAL OF PERMANENT ROAD OR DRAINAGE DESIGN (E.G. SIZE AND LOCATION OF ROADS, PIPES, RESTRICTORS, CHANNELS, RETENTION FACILITIES, UTILITIES, ETC.).
2. THE IMPLEMENTATION OF THESE ESC PLANS AND THE CONSTRUCTION, MAINTENANCE, REPLACEMENT, AND UPGRADING OF THESE ESC FACILITIES IS THE RESPONSIBILITY OF THE APPLICANT/CONTRACTOR UNTIL ALL CONSTRUCTION IS COMPLETED AND APPROVED AND VEGETATION/LANDSCAPING IS ESTABLISHED.
3. THE BOUNDARIES OF THE CLEARING LIMITS SHOWN ON THIS PLAN SHALL BE CLEARLY FLAGGED IN THE FIELD PRIOR TO CONSTRUCTION. DURING THE CONSTRUCTION PERIOD, NO DISTURBANCE BEYOND THE FLAGGED CLEARING LIMITS SHALL BE PERMITTED. THE FLAGGING SHALL BE MAINTAINED BY THE APPLICANT/CONTRACTOR FOR THE DURATION OF CONSTRUCTION.
4. THE ESC FACILITIES SHOWN ON THIS PLAN MUST BE CONSTRUCTED IN CONJUNCTION WILL ALL CLEARING AND GRADING ACTIVITIES, AND IN SUCH A MANNER AS TO INSURE THAT SEDIMENT AND SEDIMENT-LADEN WATER DO NOT LEAVE THE SITE.
5. THE ESC FACILITIES SHALL BE INSPECTED DAILY BY THE APPLICANT/CONTRACTOR AND MAINTAINED AS NECESSARY TO ENSURE THEIR CONTINUED FUNCTIONING.
6. THE ESC FACILITIES SHOWN ON THIS PLAN ARE MINIMUM REQUIREMENTS FOR ANTICIPATED SITE CONDITIONS. DURING THE CONSTRUCTION PERIOD, THESE ESC FACILITIES SHALL BE UPGRADED AS NEEDED FOR UNEXPECTED STORM EVENTS AND TO ENSURE THAT SEDIMENT-LADEN WATER DO NOT LEAVE THE SITE.
7. THE ESC FACILITIES ON INACTIVE SITES SHALL BE INSPECTED AND MAINTAINED A MINIMUM OF ONCE A MONTH OR WITHIN THE 48 HOURS FOLLOWING A MAJOR STORM EVENT.
8. AT NO TIME SHALL MORE THAN ONE FOOT OF SEDIMENT BE ALLOWED TO ACCUMULATE WITHIN A TRAPPED CATCH BASIN. ALL CATCH BASINS AND CONVEYANCE LINES SHALL BE CLEANED PRIOR TO PAVING. THE CLEANING OPERATION SHALL NOT FLUSH SEDIMENT LADEN WATER INTO THE DOWNSTREAM SYSTEM.
9. STABILIZED CONSTRUCTION ENTRANCES SHALL BE INSTALLED AT THE BEGINNING OF CONSTRUCTION AND MAINTAINED FOR THE DURATION OF THE PROJECT. ADDITIONAL MEASURES MAY BE REQUIRED TO INSURE THAT ALL PAVED AREAS ARE KEPT CLEAN FOR THE DURATION OF THE PROJECT.
10. **CLEAN ALL STORM SYSTEM PIPES AND STRUCTURES AFTER THIS SITE IS PERMANENTLY STABILIZED.**



CIVIL KEYNOTES

1. REPLACE EXISTING STORM STRUCTURES WITH NEW 48" DIAMETER TYPE 2 CATCH BASINS.
2. CONTRACTOR TO POTHOLE AND VERIFY EXISTING PIPE DEPTH. CONTACT ENGINEER IF CONFLICT EXISTS.
3. EXISTING WALKWAY TO REMAIN.
4. PROVIDE 8' WIDE WORK CORRIDOR.

PROTECT ALL EXISTING IMPROVEMENTS NOT DESIGNATED FOR REMOVAL THROUGHOUT CONSTRUCTION. PARTICULAR ITEMS ARE CALLED OUT FOR PROTECTION WITHIN THIS PLAN SET FOR EMPHASIS ONLY AND THE LIST IS NOT ALL-INCLUSIVE. CONTACT ENGINEER OR OWNER IF THERE IS ANY UNCERTAINTY PERTAINING TO THE LIMITS OF DEMOLITION OR EXISTING ITEMS TO REMAIN.

THIS TEMPORARY EROSION AND SEDIMENT CONTROL (T.E.S.C.) PLAN REPRESENTS A MINIMAL LEVEL OF BMPS ANTICIPATED FOR THIS SITE. THE CONTRACTOR SHALL MODIFY AND AUGMENT THIS T.E.S.C. PLAN AS NECESSARY TO FULFILL ALL THE REQUIREMENTS OF THE SITE SPECIFIC CONSTRUCTION STORM WATER PERMIT.

THE OWNER SHALL HAVE A LICENSED ARBORIST ASSESS TREES ALONG THE LIMITS OF CLEARING AND GRADING TO DETERMINE IF TREES BEYOND THE CLEARING LIMITS SHOWN WILL BE AFFECTED BY THE PROPOSED PROJECT AND IF ANY ADDITIONAL TREE REMOVAL IS NECESSARY. ALL WORK PERTAINING TO TREES SHALL BE PERFORMED IN ACCORDANCE WITH THE ARBORIST REPORT/RECOMMENDATIONS.

811 Know what's below. Call before you dig.

NO.	DATE	REVISION DESCRIPTION	BY	CK

DRAFT

PRELIMINARY

MOMENTUM CIVIL PROJECT
MOMENTUM CIVIL CLIENT

TESC PLAN

TAX PARCEL NO. 84839000
CITY OF CAMAS, WA

MOMENTUM CIVIL
1145 BROADWAY, SUITE 115
TACOMA, WA 98402
PHONE: 253.319.1504

CHECKED BY: D. HARRIS
DESIGNED BY: D. HARRIS
DRAWN BY: D. DIAZ

HORZ. DATUM: NAD83
VERT. DATUM: NGVD29

DATE: 01/25/24

PROJECT NO. LAND-0001

SHEET NO. 3 OF 6

REFERENCE NO. C2.0

Plot Date: 1/25/2024 12:18 PM By: Dave Diaz
Save Date: 1/25/2024 12:16 PM By: DaveDiaz
File P:\LAND0001-Lacamas\0400CAD\Sheets\ESC-LAND0001.dwg

LACAMAS SHORES
PO Box 751
Camas WA 98607
www.lacamasshoreshoa.org

February 22, 2017

Mr. Pete Capell
City of Camas Municipal Center
616 NE 4th Avenue
Camas, WA 98607

Re: Meadowlands Park Delineation Report

Dear Mr. Capell,

The Lacamas Shores Homeowners' Association met with you and Mr. Maul back in June of 2016. While at that meeting we were instructed to have a Wetland Biologist prepare a delineation report because the city felt that there might be Jurisdictional wetlands within the HOA property.

The HOA hired Environmental Technology Consultants to research the subject area and prepare the study. The HOA is pleased to submit the enclosed "Lacamas Shores HOA Meadowlands Park Delineation and Vegetation Plan" to the City of Camas as requested.

Please let us know if you would like to have it emailed to you as well and contact us with any questions, comments or concerns than you have.

Thank you in advance.

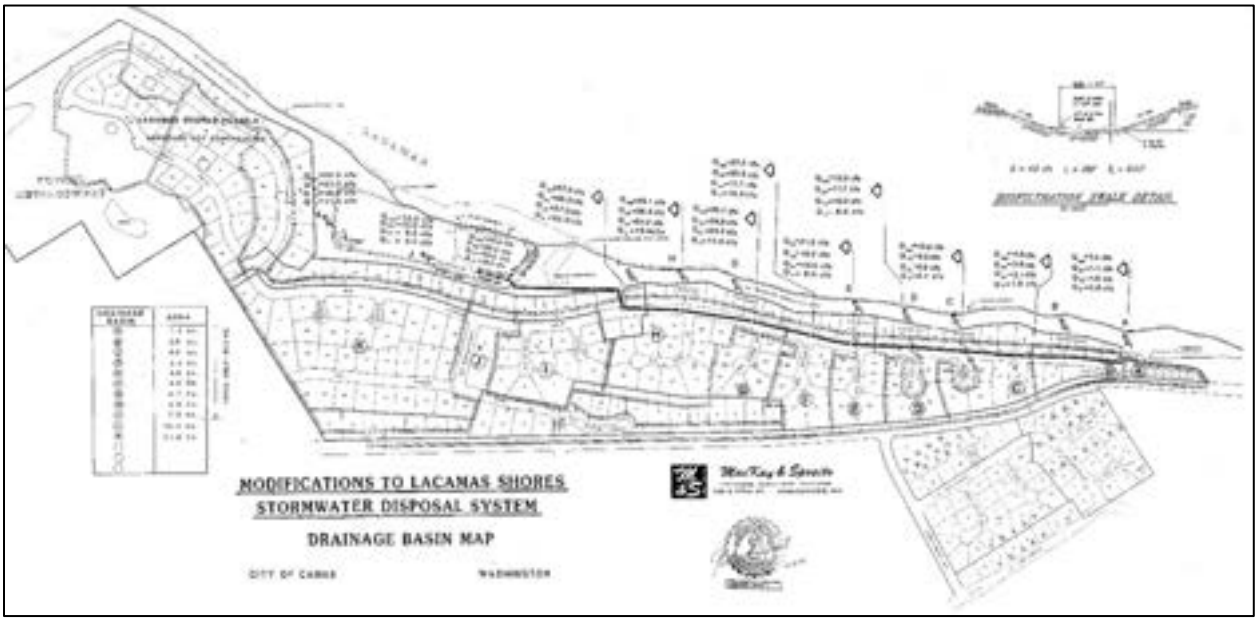
Sincerely,

Matt McCants
President, Board of Directors
Lacamas Shores Homeowners' Association
www.LacamasShoresHOA.org

Marie Tabata-Callerame
Secretary, Board of Directors
Lacamas Shores Homeowners' Association
www.LacamasShoresHOA.org

LACAMAS SHORES HOA MEADOWLANDS PARK
WETLAND DELINEATION & PROPOSED VEGETATION PLAN

Lot 84839000 in Camas, Washington
#41 SEC 33, 34 & 28 T2N R3EWM 12.27A



Evaluated by: _____
John McConnaughey, PWS

ETC Job EVA15006

February 2017

Prepared for:
Lacamas Shores HOA
Matthew McCants, President
PO Box 751, Camas WA 98607

Environmental Technology Consultants
PO Box 821185
Vancouver, WA 98662
A Division of Sisul Enterprises, Inc.
(360) 696-4403 Fax: (503) 657-5779
WA Landscape Contractors License #: ENVIRTCO23RB
Web: www.etcEnvironmental.net
Email: etc@etcEnvironmental.net

"Creating Tomorrow's Environment - Today"

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G6: Richard Sposito of MacKay and Sposito, Inc., "Modification to Lacamas Shores Stormwater Disposal System". July 9, 1996. (20 pages) 27
G7: Scientific Resources Inc., "Wetland Biofilter Monitoring Program for the Lacamas Shores Development"., February 1, 1989. (5 pages) 27
G8: Viewshed Plan Conservancy Zone Lacamas Shores. JD Walsh & Associates, Inc. June 1993. (11 pages) 27
G9: Five-Year Stormwater Runoff and Wetland Biofilter Monitoring Program for the Lacamas Shores Residential Development Camas, Washington Fifth Year Report. Mark Bautista, SRI?Shapiro, 3/11/1994. (85 pages) 27
Page left blank 28
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COVER PHOTO (page 1):

Stormwater basin contributing area: From: MacKay and Sposito, Inc., "Modification to Lacamas Shores Stormwater Disposal System". July 9, 1996. (See appendix G6).

WETLAND DELINEATION / DETERMINATION SUMMARY

☒ Applicant ☒ Owner Name, Firm and Address: Lacamas Shores Home Owners Association Matthew McCants, President PO Box 751, Camas WA 98607	Business phone # Mobile phone # 913-251-2491 FAX # E-mail:
☒ Authorized Agent for Wetland & Habitat Issues : John McConnaughey Environmental Technology Consultants 375 Portland Ave Gladstone, OR 97027	Business phone # 360-696-4403 FAX # 503 657-5779 Mobile phone # 503-580-2465 E-mail: JohnM@etcEnvironmental.net

I either own the property described below or I have legal authority to allow access to the property. I authorize the Department access the property for the purpose of confirming the information in this report.

Typed/Printed Name: _____ Signed _____ Date: _____

Special instructions regarding site access: Public access is granted using the Lacamas Lake Heritage Trail System. No special permission is required, though notification is requested.

Project Name: Meadowlands Park	Latitude: 45.6119°	Longitude: -122.4357°	
Proposed Use: Stormwater management, recreation, view space	Tax Lots # 84839000 12.27 acres		
Project Street Address (or other descriptive location):	Township T2N	Range R3E	Sec 28, 33, 34
No situs address. Between Lacamas Lake and NW Lacamas Drive	#41 SEC 33, 34 & 28 T2N R3EWM 12.27A		
City: Camas County: Clark	NWI Quad(s): CAMAS		

The information and conclusions on this form and in the attached report are true and correct to the best of my knowledge.

Consultant Signature: 

February 1, 2017

Primary Contact for report review and site access is ☒ Consultant ☐ Applicant/Owner ☐ Agent

Summary of Study Area and Wetlands Delineated

Size of parcel 84839000	534,481 SQFT (12.27 acres)
TOTAL STUDY AREA	534,481 SQFT (12.27 acres)
Wetland "A" (PF01B, PSS1B, PEM1C and POW)	257,739 SQFT = 5.92 Acres
Wetland "B" (PF01B)	2,220 SQFT = 0.05Acres
TOTAL Wetland + Waterway area	257,734 SQFT = 5.97 Acres
Wetland Areas by Cowardin Class PFO1B	228,264 SQFT = 5.34 Acres
PEM1C	7,685 SQFT = 0.18 Acres
PEM1B	18,640 SQFT = 0.43 Acres
POW	3,145 SQFT = 0.07 Acres
Any non-jurisdictional wetland areas on site?	☒ Yes ☐ No Acres: 5.92
Coastal Zone Management Area?	☐ Yes ☒ No Acres:
Shoreline Area?	☒ Yes ☐ No Acres:

INTRODUCTION

PURPOSE OF THIS REPORT:

For some years residents of the Lacamas Shores Home Owners Association, (LSHOA), have been concerned with the management of Clark County Tax Lot 84839000, otherwise known as "Meadowlands Park". Meadowlands Park is a 12.27 Acre parcel wholly owned by the Lacamas Shores Home Owners Association.

In 2014 members of the LSHOA approached the city with a request to manage the vegetation in the park. City of Camas Planning Manager Robert Maul responded:

> ...."You will want to consult a certified wetland biologist to conduct a wetland delineation and assessment. It is clear that there are wetlands on site, but the boundaries; categorization and habitat functions of those wetlands have not been assessed for many years if even at all."....(email dated 3/14/2014. See Appendix G1 for the entire email).

This report is in response to Mr. Maul's requirement. It is hoped that this report will assist the City in evaluating the LSHOA's proposed vegetation management plan.

As a note, from my own review of available documents, I conclude that:

- LSHOA owns and is responsible for the management of stormwater facilities within Meadowlands Park.
- No permits are needed for the performance of maintenance activities that are consistent with the facility's design standards.

Responsibilities are detailed in a 1988 Order of Remand. Such an order is unusual for such developments, and reflects some of the controversy that is associated with this development and others near Lacamas Lake, (see Appendix G2).

Responsibilities are also detailed in the Covenants Conditions and Restrictions which are part of the LSHOA's governing document (see Appendix G11).

The vegetation plan presented is consistent with original design and also with the, guidelines described in the Stormwater Partners guidelines: "Managing Stormwater – An introduction to maintaining stormwater facilities for private property owners and HOAs". (Appendix G3). It is not clear to me why the city needs to review the LSHOA's maintenance plans, as long as said plans are consistent with the proper functioning of the storm water facility. Camas Chapter 16.51.120.A appears to exempt the requested activity from a requirement to produce a critical area report:

I have not seen any document that would require such a submittal previously for the underlying permit.

> 16.51.120 A. Critical Area Report not Required. Activities which have been reviewed and permitted or approved by the city, or other agency with jurisdiction, for impacts to critical or sensitive areas, do not require submittal of a new critical area report or application under this chapter, unless such submittal was required previously for the underlying permit.

PROPOSED USE:

No change in use is proposed. This proposal only modifies the vegetation in a manner consistent with the CCRs and the Stormwater Partners guidelines.

DISCLAIMER:

ETC has not evaluated the current functioning of the storm water treatment facility for compliance to the permit conditions.

This report documents the investigation, best professional judgment and conclusions of the investigator. It is correct and complete to the best of my knowledge. Wetland boundaries shown in this report should be considered a Preliminary Jurisdictional Determination of wetlands and other waters and used at your own risk unless it has been reviewed and approved in writing by the Washington Department of Environmental Quality or the local planning authority.

QUALIFICATIONS OF JOHN MCCONNAUGHEY

I earned a Bachelor of Science degree from the University of Oregon in 1978 and in 1984 I earned a Masters of Fisheries Science degree from the University of Alaska at Juneau, (since renamed the University of Alaska, Southeast). The Juneau curriculum specializes in the study of Pacific salmon. I held positions with agencies tasked with salmon research and management beginning with summer jobs in 1979 in Rogue River, the Oregon Dept of Fish and Wildlife, and then with the Alaska Department of Fish and Game in Ketchikan Alaska, in 1980. I worked on salmon projects with ADF&G in Anchorage and Juneau for 5 years before moving to American Samoa to serve as a fisheries projects leader for the Department of Marine and Wildlife Resources. Upon returning stateside, I worked for the Yakama/Klickitat Fisheries Project out of Yakima Washington for 5 years leading four research projects studying aspects of salmon supplementation projects in the Yakima River.

I have been employed with Environmental Technology Consultants for the past 6 years. In 2010 I earned certification as a Professional Wetland Scientists, (PWS) from the Society of Wetlands Scientists, (SWS).

No part of my compensation is dependent on the outcome of my investigations or conclusions I may draw from the observed data.

MEADOWLANDS PARK

CURRENT USE:

The park was created in the late 1980's, and performs multiple functions. From the documents I examined, there are two required uses for the park, 1) for stormwater treatment, and 2) a trail system linking the north and south ends of the Lacamas Heritage Trail. The approximate areas and functions are shown in Table 1, (below):

The stormwater design and monitoring program are described in the July 1993 issue of Water Environment Technology, (see Appendix G5). That article does not discuss the 1992 and 1996 expansion and modification to the system. More technical documents exist that detail the stormwater facility, however Water Environment Technology article does a good job of encapsulating the thinking and design that went into the facility.

In 1992 the facility was modified to accommodate water from the South end of NW Lacamas Drive which was being developed at that time.

In 1996 another modification was made to accommodate water from the Lake Height's Phase 1 subdivison. Lake Heights is not part of the Lacamas Shores subdivision, nor do residents pay due towards the maintenance of Meadowlands Park.

Table 1. Wetlands, uses and approximate areas of Meadowlands Park.

Meadowlands Park	ACRES 12.27	DESCRIPTION
Wetland "A" Stormwater treatment	5.87	Total area used for storm water treatment, including the original 1988 design and additions and modifications in 1992 and 1996. Stormwater from the Lacamas Shores, and the Lake Heights subdivisions, and from portions of NW Lake Road are piped to this facility.
Wetland "B" Jurisdictional wetland	0.05	A small wetland area between the picnic area and boat ramp. It is not part of the storm facility, and was part of a larger wetland complex prior to being cut off and isolated by the boat ramp road. Total size is 0.11 acres, 0.05 of which is within the park boundary.
Athletic Field	1.01	A grass field in the center of the park.
Playground	0.09	Playground equipment on the SW side of the athletic field.
Paved road & parking	0.49	Road access and parking for the boat ramp and picnic areas. The boat ramp itself is offsite. There is also a 20x45' storage shed.
Picnic & Barbeque area	0.81	A recreational area for the LSHOA on the South end of the park, also contains rest rooms.

Table 1. Wetlands, uses and approximate areas of Meadowlands Park.		
Meadowlands Park	**ACRES 12.27**	**DESCRIPTION**
Trail system ~3,000 linear feet	0.69	A gravel trail system that connects with the Lacamas Lake Heritage Trail System. The LSHOA is responsible for trail maintenance within Meadowlands Park.
Open space	3.27	Other areas not included in the above.
(Areas discussed in this report include only lands within tax lot 84839000. Some of the above areas continue offsite).		

DOCUMENTS AND PERMITS ASSOCIATED WITH MEADOWLANDS PARK:

A number of documents related to the permitting of Meadowlands Park appear to have been lost with the passage of time. As most of the permit work was done prior to the formation of the LSHOA, and done without input from the LSHOA, the HOA does not have the documents.

ETC has contacted the following agencies:

Table 2. Agencies contacted for documents relating to Meadowlands Park.	
AGENCY	RESPONSE
LSHOA	Some records were located and given to ETC for review.
Scientific Resources Inc	Stan Geiger (now retired) provided a large number of photos, and a copy of his article (Appendix G5)
Vanport Manufacturing	Says that their records related to the Lacamas Shores development were discarded years ago.
MacKay and Sposito	Says that their records related to the Lacamas Shores development were discarded a couple years ago.
USACE	In response to a FOIA request they were unable to locate any records.
City of Camas	The city has given us access to examine and provided copies of the records they have.

Documents found that were determined significant to this investigation are listed on the first page of Appendix G. Documents that were not located, but were either referred to in other documents, or would be normally included in the permit process are shown in the table below:

Table 3. Documents we were not able to locate but are believed to have existed.	
Documents not found but referenced in found documents	**Referring Document**
Draft Environmental Impact Statement for the Lacamas Shores Project – The White Company 1987	Appendix G4
Final Environmental Impact Statement for the Lacamas Shores Project – The White Company 1987	Appendix G4
Substantial Development Permit (City of Camas Permit No. 2-87)	Appendix G2
Shoreline Conditional Use Permit (Camas Permit No. 590-14-7806)	Appendix G2
Dept of Ecology approval for 1992 SW revisions	Appendix G6

Documents not found but would normally be part of the permit process	Comment
Wetland delineation report	Several maps were found showing existing wetland areas in Meadowlands Park, and so it is likely a delineation study was conducted.
SEPA	Would normally be required. The SEPA is likely attached to the Shoreline Conditional Use Permit.
Mitigation plan	May not have been required. One preliminary drawing of the stormwater facility had areas shaded as "potential mitigation areas", however no other mention of mitigation was found.
Grading permit	Would normally be required.

Landscape Setting and Land Use

Study Area

Meadowlands Park, (Lot 84839000) is described as a 12.27 acre lot in Clark County GIS. Other documents examined reference much of the area as an old landslide. Photos from the 1980's show what appears to be a cleared area that is in various stages of regrowth.

JURISDICTION:

- City of Camas, Washington
- Bordering shoreline management areas, (Lacamas Lake is a Waters of the State). A buffer designated as a conservancy zone, separates the lake from Meadowlands Park. A Shoreline urban conservancy zone extends
- No mapped floodplain areas are on the parcel
- No NWI wetland areas are mapped on the property.
- Clark County GIS shows no wetland areas on the property.
- City of Camas "Camas Wetlands Map" shows a small area of the property mapped as "wetlands presence".
- Priority Habitat and Species – The Riparian buffer from Lacamas Lake extends a short distance onto the property.
- Critical Area Recharge Areas (CARA). Does not apply. (CARA does not apply unless residential property is being used for other activities that may affect the drinking water supply. CARA also does not apply to legal activities established prior to August 1, 1997, which would include using the field as a pasture area or production of hay).

LANDSCAPE SETTINGS

The property is a bench area above Lacamas Lake that slopes toward the lake. The SW property line is on a steep slope that rises up about 30ft to NW Lacamas Drive.

PREVIOUS AND CURRENT LAND USES, & SITE ALTERATIONS

The Lacamas Shores development was made on a property referred to as the "Shipler" property in some documents. The Shipler parcel extended to the Lacamas Lake shoreline. Resulting from a lawsuit a condition of development, a roughly 100ft "Conservancy Zone" was established projecting landwards from the lake's edge, and that area deeded to the city.

From aerial photography it appears the area was logged at various times.

1955, 1968, 1974. Mostly forested, a small clearing toward the NE corner.
1978 – Much of the Southern end is cleared.
1984 – Most of the lot and surrounding area appears to have been logged several years prior to the photo.
1990 – Streets and some homes of Lacamas Shores are constructed.

Wetland Delineation and Assessment

Methods

General Wetland Delineation Methodology: This investigation was carried out in accordance with the guidelines set forth in the Corps of Engineers Wetland Delineation Manual (Technical Report Y-87-1, 1987) and it's recent 2010 update, version 2.0. A paired plot methodology was used.

Site Specific Methodology: Because there is no proposed change of use, and because most of the wetlands appear to be permitted as a storm water treatment facility, the delineation employed a conservative approach to mapping the wetland extents.

Previous Studies

Several documents and maps found the City of Camas Archives showed areas mapped as "existing wetlands", portions of which were used for the storm water facility. Evidently a delineation study was done, however the report was not found. That the Department of Ecology approved the development and stormwater system suggests they also approved the wetland maps done at that time.

Maps entitled "Wetland Biofilter Monitoring Program for the Lacamas Shores Development" dated 2/1/1989, (see Appendix G7), show an area of about 58,036 SqFt of "existing wetland" on the parcel, compared to about 257,734 SqFt estimated by this study. It appears the stormwater facility has expanded the wetland areas by about 440%.

The 1989 maps do not show wetlands or streams on other parts of the Lacamas Shores development.

Mapping Method

A Topcon GRS-1 GPS with remote antenna was used to collect positional information. A Topcon BR-1 beacon was used to collect DGPS corrections. The manufacture states this provides sub-centimeter resolution, though in my experience accuracy is only ±2 ft. Several Property corners were found that bordered Meadowlands Park. These were used to for reference.

GPS data was converted to Washington State Plain South for mapping purposes.

Precipitation Data and Analysis

This wetland determinations reported here were conducted in December 2016 and January 2017. November and December 2016 showed higher than normal precipitation, and January 2017 was also above normal. Surface hydrology was abundant through the wetland areas, and served as a guide for estimating wetland hydrology, (the point at which the water table is 12" below surface).

Description of All Wetlands and Other Non-Wetland Waters

Two wetland areas were found on the property described below:

Wetland "A", 255,541 SqFt, (5.87 Acres). The HGM classification is Sloped Wetland. This wetland extends off the lot and connects to Lacamas Lake. Three small streams originating from the storm water pipes and snake through the area. Maps entitled "Wetland Biofilter Monitoring Program for the Lacamas Shores Development" dated 2/1/1989, (see Appendix G7), show an area of about 58,036 SqFt of "existing wetland" on the parcel, compared to about 257,734 SqFt estimated by this study. It appears the stormwater facility has expanded the wetland areas by about 440%.

Photos from 1989 show most of Wetland "A" as an emergent wetland. Alder, Ash and Red Osier Dogwood have colonized much of the wetland area now turning it to a mixed scrub/shrub and forested wetland. The approximate Cowardin areas of Wetland "A" are now:

> PEM1B, about 0.43 Acres. An area approximately in the middle, dominated by a Cattail and Juncus association. Most of the rest of the original stormwater area has converted to a forested or shrub area.
>
> PFO1B & PSS1B, about 5.19 Acres. These are areas where Red Osier Dogwood, Blackberries , Alder and Ash now dominate. Dense growths of shrubs and trees intermingle, it is not realistic to describe these associations as separate areas for the purpose of assigning Cowardin associations. Graminoids and groundcover plants are mostly out competed in these areas.
>
> PEM1C, about 0.18 Acres. This is the swale built in the 1992 modification, and again in the 1996 modifications. Juncus and an unidentified grass are the dominant vegetation.

There used to be a lot of cat tails in this swale, but there were dug out about 5 years ago by the City of Camas.

POW, about 0.07 Acres. This is a small settling pond also built in the 1992 Modification. It is drained by 2 storm drains connected to 24" corrugated plastic pipes that discharge into the conservancy zone.

The Western Washington Wetland Rating Form was not used to rate Wetland "A". The rating form serves to determine the buffer size, and stormwater facilities do not have buffers in the City of Camas.

Wetland "B", PFO1B, 2,220 SqFt, 0.05 Acres. HGM classification is Depressional. This is a small isolated wetland that extends a short distance offsite for a total area of 4,974 SqFt, (0.11 Acres). The construction of the boat ramp, access road, and Lacamas Lake Trail have cut off this area hydrologically by building a berm between it and the lake, creating a small depressional wetland. Portions of this area were mapped as wetland in 1987, though it was a sloped wetland prior to development. The dominant vegetation is Alder, Cedar and Blackberry.

Table 4. Wetland B areas.

WETLAND B	SqFt	Acres
Total Area	4,947	0.11
Area within taxlot	2,220	0.05
Pre development Area	960	0.02
Net wetland created	3,987	0.09
165ft buffer area	140,396	3.22
Adjusted buffer area	46,612	1.07

Wetland "B" rates as a CAT-II wetland with a habitat score of 7 on the 2014 Rating Form for Western Washington.

JURISDICTIONAL CONSIDERATIONS

At the time Meadowlands Park was created and the existing wetlands repurposed for storm water management, this practice was allowed. The USACE regulates the discharge from stormwater facility under the Clean Water Act if said discharge is into a waters of the United States. However the facilities themselves are not considered wetlands subject to regulation in the late 1980's when the facility was permitted. Wetland "A" is not a jurisdictional wetland because it is a permitted stormwater facility.

Wetland "A" is categorized as an exempted wetland per Camas Municipal Code Chapter 16:

16.53.010.C.2, Exempted Wetlands. This chapter shall not apply to the following wetlands:
b. Artificial. Wetlands created from nonwetland sites including, but not limited to, irrigation and drainage ditches, grass-lined swales, canals, detention facilities, wastewater treatment facilities, stormwater facilities, farm ponds, and landscape amenities; provided, that wetlands created as mitigation shall not be exempted;

Other applicable sections of Camas Municipal Code that apply to Wetland "A". Note that the Lacamas Shores development and the 100+ foot conservancy zone predate the Shoreline Management Program.

16.53.050 D.6. Stormwater Facilities in Shoreline Jurisdiction. Stormwater facilities shall follow the specific criteria in the [Shoreline Master] Program, Chapter 6 at Section 6.3.15, Utilities Uses.

14.02.090 - OWNERSHIP AND MAINTENANCE RESPONSIBILITY.
A. Ownership and Maintenance Responsibility. Stormwater systems and facilities which collect, convey, treat, and/or infiltrate stormwater runoff, including residential developments and nonresidential developments, such as commercial, industrial, and school sites, are ultimately the responsibility of the applicant to operate and maintain, at a minimum until the end of the two-year warranty period or until turned over to an HOA or collective homeowners.

The portions of Camas's Shorelines Management Program that applies to stormwater facilities in Shorelines Jurisdictions are found Section 6.3.15 (Utilities Uses):

FROM THE CAMAS SMP 6.3.15 Utilities Uses
6. Stormwater control facilities, limited to detention ,retention, treatment ponds, media filtration facilities, and lagoons or infiltration basins, within the shoreline jurisdiction shall only be permitted when the following provisions are met:
a. The stormwater facility is designed to mimic and resemble natural wetlands and meets the standards of CMC 14.02 Stormwater and the discharge water meets state water quality standards;
b. Low impact development approaches have been considered and implemented to the maximum extent feasible.

Wetland "B" is not part of the stormwater system, and portions of it were mapped as a wetland prior to the construction of the boat ramp and road. It is therefore considered to be a jurisdictional water.

BUFFERS PER CAMAS TITLE 16.51

It should be noted that Camas Title 16.51 was adopted in 2008, long after the Lacamas Shores development was permitted and built.

Buffers are not shown for wetland "A" as it is a permitted stormwater treatment facility, and so does not have buffers. Also the vegetation management requested by the LSHOA concerns mostly the wetland area itself, and not so much the surrounding areas.

Buffers for Wetland "B" would be for a CAT-III wetland, with a habitat score of 7, with a moderate intensity use. The presence of the access road for the boat ramp put the area into a moderate intensity use (see Table 16.53.040-4 "Land Use Intensity Matrix"). The appropriate buffer from Table 16.53.040-2 is then 165ft.

Camas Chapter 16.53.040.B.4.b, provides that buffers do not extend past pre-existing roads or structures that separate the wetland from what would otherwise be buffer areas:

Wetland "B" is functionally isolated by the roads, slopes and the paved areas and structures of the picnic area, and those structures were preexisting to the adoption of Chapter 16.53. Buffers therefore extend only to the isolating features, and not past them. The unadjusted 165' buffer is 3.22 acres, the adjusted buffer area is 1.07 acres, (see Sheet 2).

> 16.53.040.B.4.b
> Functionally Isolated Buffer Areas. Areas which are functionally separated from a wetland and do not protect the wetland from adverse impacts shall be treated as follows:
> i. Preexisting roads, structures, or vertical separation shall be excluded from buffers otherwise required by this chapter;

APPENDIX A) Figures

Sheet 1 – Meadowlands Park Wetlands and Stormwater Systems.

Sheets 2, 3, 4 and 5. Maps required for correctly answering questions of the Washington State Wetlands Rating System:

Map of:	To answer questions:	Sheet #
Cowardin plant classes	D 1.3, H 1.1, H 1.4	2
Hydroperiods	D 1.4, H 1.2	2
Location of outlet (*can be added to map of hydroperiods)*	D 1.1, D 4.1	2
Boundary of area within 150 ft of the wetland *(can be added to*	D 2.2, D 5.2	2
Map of the contributing basin	D 4.3, D 5.3	3
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed	H 2.1, H 2.2, H 2.3	4
Screen capture of map of 303(d) listed waters in basin (from Ecology	D 3.1, D 3.2	5
Screen capture of list of TMDLs for WRIA in which unit is found (from	D 3.3	5

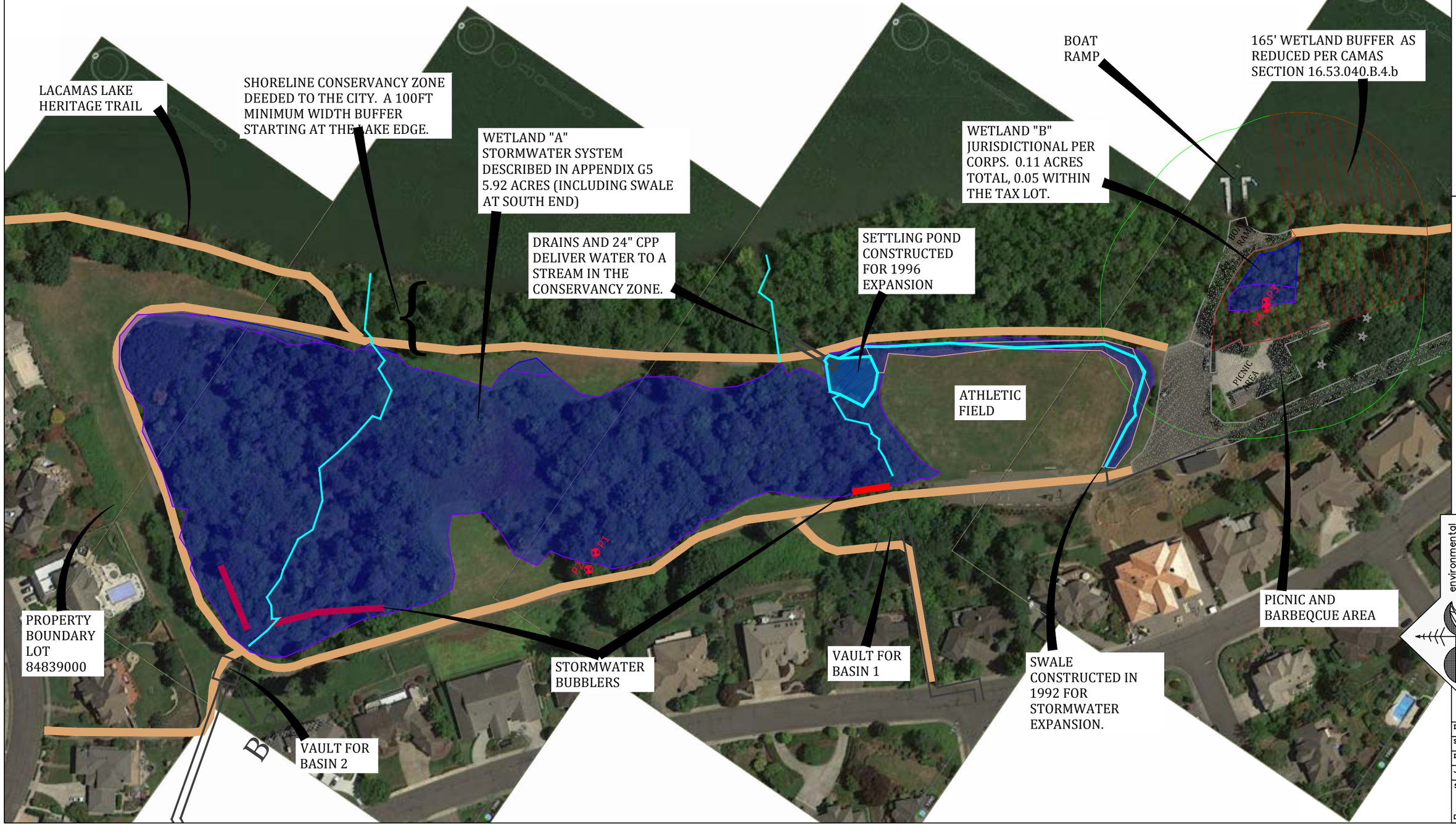
VEGETATION MAINTENANCE PLAN

LACAMAS SHORES HOME OWNERS ASSOCIATION VEGETATION PLAN MANAGES VEGETATION WITHIN MEADOWLANDS PARK. NO CHANGES TO THE STORMWATER SYSTEM ARE PROPOSED.

LACAMAS LAKE

0 120 240 480 Feet

1" = 120 Feet



REVISIONS

LACAMAS SHORES HOME OWNERS ASSN

MEADOWLANDS PARK WETLANDS AND STORMWATER SYSTEMS

environmental technology consultants

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Vancouver, WA 98682
360-696-4403

DATE DEC 2016
SCALE NOTED
DRAWN JHM
JOB EVA15006
SHEET 1
OF 5 SHEETS

WETLAND "A" 5.92 ACRES. HYDROPERIOD RANGES FROM SEASONALLY SATURATED TO SEMI-PERMENANTLY SATURATED. SMALL STREAM CHANNELS AND THE SETTLING POND CREATED IN THE 1996 MODIFICATION ARE THE EXCEPTIONS.

OUTLETS - UNDER BRIDGES CONSTRUCTED IN THE TRAIL SYSTEM.

LACAMAS LAKE

WETLAND "B", TOTAL AREA IS 0.11 ACRES, 0.05 OF WHICH IS WITHIN TAX LOT 84839000.

IT HAS A SINGLE COWARDIN PLANT CLASS OF PALUSTRINE FORESTED BROAD LEAF DECIDUOUS, (PFO1), (QUESTIONS D 1.3, H 1.1, H 1.4)

IT HAS A SINGLE HYDROPERIOD OF SEASONALLY SATURATED, (QUESTIONS D 1.4, H 1.2).

IT HAS NO OUTLET, (QUESTIONS D 1.1, D 4.1)

CONTRIBUTING BASIN, ABOUT 0.26 ACRES - (GREEN STRIPED HATCH), (QUESTIONS D 4.3, D 5.3).

150FT BOUNDARY (QUESTIONS D 2.2, D 5.2)

165FT BUFFER FOR CAT-II WETLAND AS MODIFIED BY CAMAS 16.53.040.B.4.b

SHORELINE CONSERVANCY ZONE DEEDED TO THE CITY. A 100FT MINIMUM WIDTH BUFFER STARTING AT THE LAKE EDGE.

B-2

B-1

P2 P1

NW BARLOW ST

NW ASTOR CT

NW VALLEY

OUT CT

REVISIONS

LACAMAS SHORES
HOME OWNERS ASSN

FOR ANSWERS TO RATING FORM QUESTIONS D1.1, D1.3, D2.2, D5.2, H1.1, H1.2, AND H1.4,

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DATE	DEC 2016
SCALE	1"=1000'
DRAWN	JHM
JOB	EVA15006
SHEET	2
OF	5 SHEETS

Feet
500 0 500 1000
1" = 500FT

MEADOWLANDS PARK
TAXLOT 84839000

THE CONTRIBUTING BASIN FOR WETLAND "A" IS SHOWN ON THE 1996 STORMWATER MODIFICATION MADE FOR THE CITY OF CAMAS BY MACKAY AND SPOSITO. THE MODIFICATION BROUGHT WATERS FROM THE SOUTH PORTIONS OF NW LACAMAS DRIVE, AND ALSO THE NEW SUBDIVISION LAKE HEIGHTS. LAKE HEIGHTS IS NOT PART OF THE LACAMAS SHORES HOA.

THE 1996 MODIFICATIONS INCLUDED CONSTRUCTION OF THE SETTLING POND AND ALSO RECONFIGURATION OF THE SWALE

SETTLING POND

SWALE

CONTRIBUTING BASIN FOR WETLAND "B" = 0.26 ACRES

SOUTH END OF NW LACAMAS DRIVE

WHY IS AREA "B" SHOWN TWICE?

DRAINAGE BASIN	AREA
A	1.2 Ac.
B	1.2 Ac.
C	5.8 Ac.
D	3.8 Ac.
E	9.3 Ac.
F	6.7 Ac.
G	9.8 Ac.
H	7.0 Ac.
I	10.2 Ac.
J	21.8 Ac.
K	4.4 Ac.
L	8.4 Ac.
M	1.7 Ac.
N	5.5 Ac.

TOTAL CONTRIBUTING BASIN FOR WETLAND "A" = 99.8 ACRES

LEGEND

BIO-FILTER "A"

DRAINAGE BASIN TRIBUTARY TO BIO-FILTER "A"

SHIPLER PROPERTY
BIO-FILTER BASINS MAP
CITY OF CAMAS WASHINGTON

PREPARED BY: MacKay & Sposito
110 E 11TH ST. VANCOUVER, WA

LAKE HEIGHTS SUBDIVISION - 1.2 ACRES

REVISIONS

LACAMAS SHORES HOME OWNERS ASSN

CONTRIBUTING BASIN - FOR ANSWERS TO RATING FORM QUESTIONS D4.3 AND 5.3

environmental technology consultants
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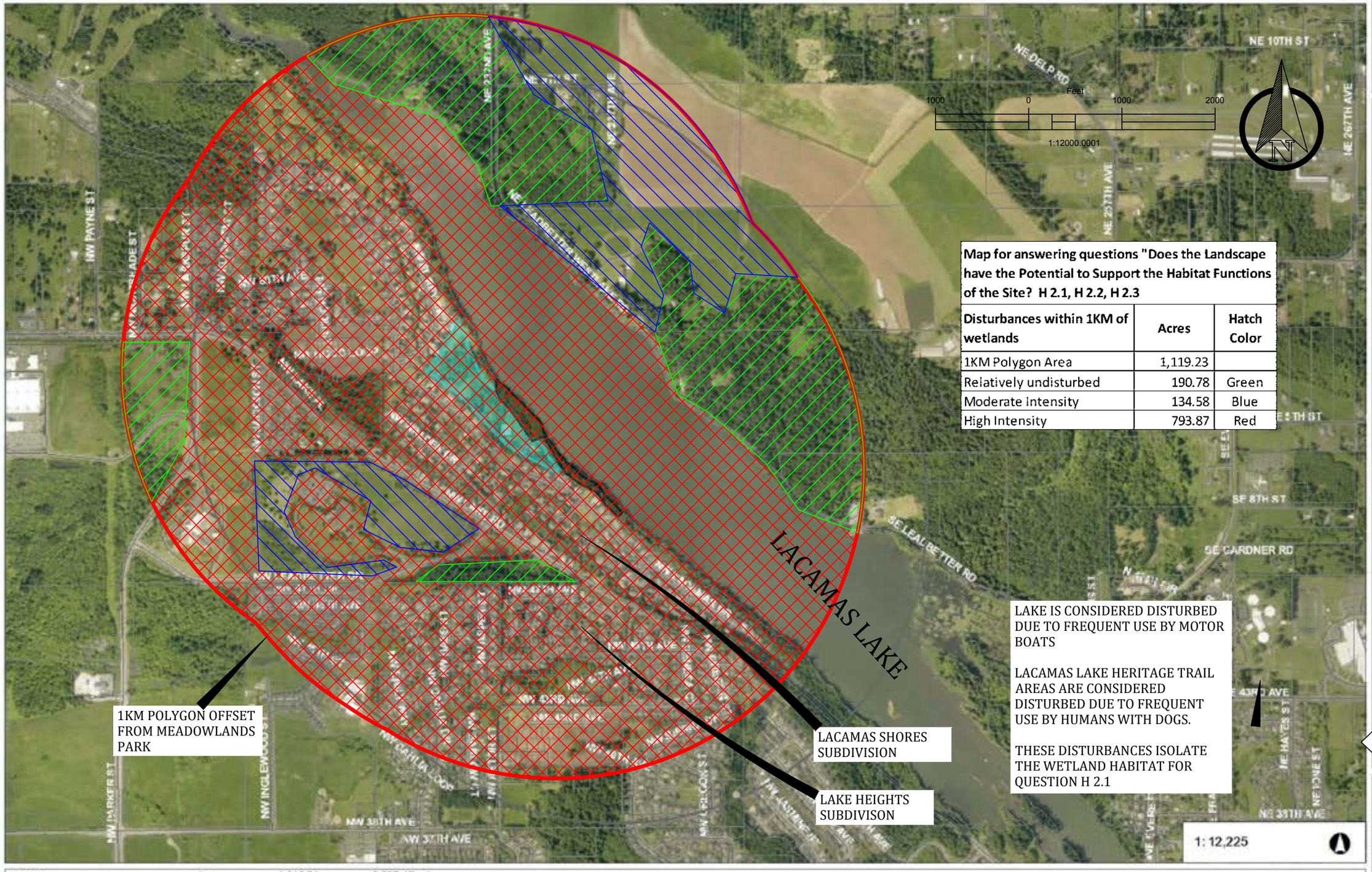
DATE DEC 2016
SCALE NOTED
DRAWN JHM
JOB EVA15006
SHEET 3
OF 5 SHEETS



Map for answering questions "Does the Landscape have the Potential to Support the Habitat Functions of the Site? H 2.1, H 2.2, H 2.3

Disturbances within 1KM of wetlands	Acres	Hatch Color
1KM Polygon Area	1,119.23	
Relatively undisturbed	190.78	Green
Moderate Intensity	134.58	Blue
High Intensity	793.87	Red

2,037.4 0 1,018.71 2,037.4 Feet

WGS_1984_Web_Mercator_Auxiliary_Sphere
Clark County, WA. GIS - http://gis.clark.wa.gov

REVISIONS

LACAMAS SHORES
HOME OWNERS ASSN

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360-696-4403

DATE DEC 2016
SCALE 1"=1000'
DRAWN JHM
JOB EVA15006
SHEET 4
OF 5 SHEETS

MAP OF 303D WATERS IN THE CAMAS WASHINGTON AREA. FROM THE WASHINGTON DEPT OF ECOLOGY.

February 13, 2017

Sources: Esri, HERE, DeLorme, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, ©

Assessed Waters/Sediment

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

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

TMDL LIST FOR CLARK COUNTY WASHINGTON.

Waterbody Name	Pollutants	Status	TMDL Lead
Burnt Bridge Creek	Multi-parameter	Under development	Brett Raunig 360-690-4660
Gibbons Creek	Fecal Coliform	EPA approved Has an implementation plan	Brett Raunig 360-690-4660
Gifford Pinchot USFS	Temperature	On hold	Tony Whitley 360-407-7241
Lacamas Creek	Dissolved Oxygen Fecal Coliform pH Temperature	Under development	Brett Raunig 360-690-4660
Lewis River, E. Fork	Fecal Coliform Temperature	Under Development	Brett Raunig 360-690-4660
Salmon Creek	Fecal Coliform Turbidity	EPA approved Has an implementation plan	Brett Raunig 360-690-4660
	Temperature	EPA approved Has an implementation plan	
Weaver Creek	Ammonia-N BOD (5-day)	EPA approved	Brett Raunig 360-690-4660

REVISIONS

LACAMAS SHORES HOME OWNERS ASSN

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DATE DEC 2016
SCALE ARBITRARY
DRAWN JHM
JOB EVA15006
SHEET 5
OF 5 SHEETS

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APPENDIX B) Data Forms

Data forms following this page:

P1 – Wetland "A" wetland pair
P2 – Wetland "A" upland pair
P3 – Wetland "B" wetland pair
P4 – Wetland "B" upland pair

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APPENDIX C – GROUND LEVEL PHOTOGRAPHS

Photo 1. Storm Water Vault "B1" and wetland as it appeared in 1992. Looking NE from behind home at 2437 NW Lacamas Drive. Stan Geiger photo 2/21/1992

Photo 2. Same view as photo 1 taken 25 years later. ETC photo 2/20/2017.

Photo 3. Settling pond and drains built as part of the 1996 Stormwater modification.

Photo 4. Data plot P1. This is in the upper portion of the wetland areas created by the stormwater filtration facility. ETC photo 2017

Photo 5. Wetland "B", a small forested wetland, mostly seasonally saturated soils. Wetland "B" historically was part of a large wetland in the shoreline of Lacamas Lake, though became isolated through construction of the boat ramp and picnic facilities. ETC photo 2017

Photo 6. Picnic area. Part of the development that functionally isolates Wetland "B" from portions of it's 165ft buffer. ETC photo 2017

APPENDIX D) Wetland Rating Forms

Western Washington Wetland Rating Form, (Version 2014 Update effective 1/1/2015).

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project Site: **Lacamas Shores HOA Meadowland Park** City/County: **Camas** Sampling Date: **12/13/2016**

Applicant/Owner: **Lacamas Shores HOA, Mathew McCants Board President** State: **WA** Sampling Point: **P1**

Investigator(s): **John McConnaughey PWS# 2009** Section, Township, Range: **T2N R3E S28, S33 & S34**

Landform (hillslope, terrace, etc.): **Hillslope - historic landslide area** Local relief (concave, convex, none): **concave (slightly)** Slope (%): **2%**

Subregion (LRR): **LRR-A** Lat: **45.61951°** Long: **-122.43580°** Datum: **NAD 1983**

Soil Map Unit Name: **HcB Hesson clay loam, 8 to 20% slopes** NWI classification: **PFO1B**

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)

Are Vegetation ☐, Soil ☐, Or Hydrology ☐, significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐

Are Vegetation ☐, Soil ☐, Or Hydrology ☐, naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes	☒	No	☐	**Is sampled area in a wetland?** **Yes** ☒ **No** ☐
Hydric Soil Present?	Yes	☒	No	☐	
Wetland Hydrology Present?	Yes	☒	No	☐	

Remarks: **A small bog in an otherwise saturated forested wetland area with dense Red Osier Dogwood, and Alder. No surface water, no flowing water at this data point. This is part of the LSHOA stormwater system that services much of the HOA and portions of NW Lake Road.**

VEGETATION – Use scientific names of plants

Tree Stratum (Plot Size: **30' semi to west**)	Absolute % Cover	Dominant Species?	Indicator Status
1. **Fraxinus latifolia**	**10*%**	**Y**	**FAC**
2. **Alnus rubra**	**90%**	**Y**	**FAC**
3.	%		
4.	%		
	%	= Total Cover	
Sapling/Shrub Stratum (Plot Size: **30' semi cir to west**)			
1. **Cornus sericea**	**40%**	**Y**	**FACW**
2.	%		
3.	%		
4.	%		
5.	%		
	%	= Total Cover	
Herb Stratum (Plot Size: **30' semi cir to west**)			
1. **Lysichiton americanum**	**5*%**	**Y**	**OBL**
2. **Equisetum arvense**	**40%**	**Y**	**FAC**
3.	%		
4.	%		
5.	%		
6.	%		
7.	%		
8.	%		
9.	%		
10.	%		
11.	%		
	%	= Total Cover	
Woody Vine Stratum (Plot Size:)			
1. **Hedera helix**	**0%**		**FACU**
2. **Clematis spp.**	**0%**		**FAC**
	0%	= Total Cover	

% Bare Ground in Herb Stratum **0%**

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	**5**	(A)
Total Number of Dominant Species Across All Strata:	**5**	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	**100%**	(A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x1 =
FACW species	x2 =
FAC species	x3 =
FACU species	x4 =
UPL species	x5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ☐ 1 - Rapid Test for Hydrophytic Vegetation
- ☒ 2 - Dominance Test is >50%
- ☐ 3 - Prevalence Index is ≤3.0[1]
- ☐ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ 5 - Wetland Non-Vascular Plants[1]
- ☐ 6 - Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes** ☒ No ☐

Remarks: **Vegetation was dormant. Skunk cabbage is probably up to 25% of the herbacious layer in summer, and Horsetail is probably 60%, and there are likely some other herbacious plants such as youth-on-age. A small ash tree marks plot center, and definately is a dominant species in other parts of the wetland, and so it is appropriate to consider it as a dominant.**

SOIL **Project Site: Lacamas Shores HOA Meadowland Park** **SAMPLING POINT P1**

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (Moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
		%		%				
0 - 2	10YR2/2	95%	5YR4/4	5%	C	M	Silty clay loam with a greesy feel.	
2 - 18	10YR2/2	100%		%				
		%		%				
		%		%				
		%		%				
		%		%				
		%		%				

[1]Type: C= Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☒ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ☐ 2 cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type:

Depth (Inches):

Hydric Soils Present? **Yes** ☒ **No** ☐

Remarks: **Soil is saturated and bog like at P1 and you can sink up to your knees in it. Elcewhere the soil surface is more solid in the wetland areas.**

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☒ High Water Table (A2)
- ☒ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☒ Sparsely Vegetated Concave Surface (B8)
- ☒ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stresses Plants (D1) **(LRR A)**
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Raised Ant Mounds (D6) **(LRR A)**
- ☐ Frost-Heave Hummocks (D7)

Field Observations: **DATE:**

Surface Water Present?	Yes	☐	No	☒	Depth (inches):			
Water Table Present?	Yes	☒	No	☐	Depth (inches):	**0"**		
Saturation Present? (includes capillary fringe)	Yes	☒	No	☐	Depth (inches):	**0"**		

Wetland Hydrology Present? **Yes** ☒ **No** ☐

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: **Soil is saturated probably year around at this particular spot.**

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project Site: **Lacamas Shores HOA Meadowland Park** City/County: **Camas** Sampling Date: **1/23/2017**

Applicant/Owner: **Lacamas Shores HOA, Mathew McCants Board President** State: **WA** Sampling Point: **P2**

Investigator(s): **John McConnaughey PWS# 2009** Section, Township, Range: **T2N R3E S28, S33 & S34**

Landform (hillslope, terrace, etc.): **Hillslope - historic landslide area** Local relief (concave, convex, none): **concave** Slope (%): **8%**

Subregion (LRR): **LRR-A** Lat: **45.61951°** Long: **-122.43580°** Datum: **NAD 1983**

Soil Map Unit Name: **Olequa Silt Clay Loam, Heavy variant 3-20% Slopes** NWI classification: **not a wetland**

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)

Are Vegetation ☐, Soil ☐, Or Hydrology ☐, significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐

Are Vegetation ☐, Soil ☐, Or Hydrology ☐, naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes	☒	No	☐	**Is sampled area in a wetland?** **Yes** ☐ **No** ☒
Hydric Soil Present?	Yes	☒	No	☐	
Wetland Hydrology Present?	Yes	☐	No	☒	

Remarks: **In a patch of small Western Red Cedar trees on the toe slope of a gravel walking trail. The absence of wetland hydrology makes this data point a non-wetland .**

VEGETATION – Use scientific names of plants

Tree Stratum (Plot Size: **20 upslope**)	Absolute % Cover	Dominant Species?	Indicator Status
1. **Thuja plicata**	**80%**	**Y**	**FAC**
2.	%		
3.	%		
4.	%		
	%	= Total Cover	
Sapling/Shrub Stratum (Plot Size: **20' upslope**)			
1. **Cornus sericea**	**10%**	**Y**	**FACW**
2. **Rubus armeniacus**	**10%**	**Y**	**FAC**
3.	%		
4.	%		
5.	%		
	%	= Total Cover	
Herb Stratum (Plot Size: **20' upslope**)			
1. **None**	%		
2.	%		
3.	%		
4.	%		
5.	%		
6.	%		
7.	%		
8.	%		
9.	%		
10.	%		
11.	%		
	0%	= Total Cover	
Woody Vine Stratum (Plot Size:)			
1. **Hedera helix**	**0%**		**FACU**
2. **Clematis spp.**	**0%**		**FAC**
	0%	= Total Cover	

% Bare Ground in Herb Stratum **0%**

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	**3**	(A)
Total Number of Dominant Species Across All Strata:	**3**	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	**100%**	(A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x1 =
FACW species	x2 =
FAC species	x3 =
FACU species	x4 =
UPL species	x5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ☐ 1 - Rapid Test for Hydrophytic Vegetation
- ☒ 2 - Dominance Test is >50%
- ☐ 3 - Prevalence Index is ≤3.0[1]
- ☐ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ 5 - Wetland Non-Vascular Plants[1]
- ☐ 6 - Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes** ☒ No ☐

Remarks: **Vegetation plots stop at trail. Herbacious layer suppressed by heavy shade.**

SOIL **Project Site: Lacamas Shores HOA Meadowland Park** **SAMPLING POINT P2**

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (Moist)	%	Type[1]	Loc[2]	Texture	Remarks
		%		%				
0 -12	10YR2/2	100%		%			Sandy Silt	
12 - 18	7.5YR4/1	98%	7.5YR4/6	2%	C	M	Sandy silt	
		%		%				
		%		%				
		%		%				
		%		%				
		%		%				

[1]Type: C= Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☒ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ☐ 2 cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type:

Depth (Inches):

Hydric Soils Present? **Yes** ☒ **No** ☐

Remarks: **The technical description for an A11 soil is for the depleted layer to start within the upper 12", here we see it start right at 12", so barely meeting criteria.**

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stresses Plants (D1) **(LRR A)**
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Raised Ant Mounds (D6) **(LRR A)**
- ☐ Frost-Heave Hummocks (D7)

Field Observations: **DATE:**

Surface Water Present?	Yes	☐	No	☒	Depth (inches):				**Wetland Hydrology Present?** **Yes** ☐ **No** ☒
Water Table Present?	Yes	☐	No	☒	Depth (inches):				
Saturation Present? (includes capillary fringe)	Yes	☐	No	☒	Depth (inches):	**>18"**			

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: **That a water table is not within 12" of the surface at this time of year, and when wetland hydrology is abundant nearby and elcewhere on the site is reasonable evidence of an absence of wetland hydrology at this location.**

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project Site: **Lacamas Shores HOA Meadowland Park** City/County: **Camas** Sampling Date: **1/23/2017**

Applicant/Owner: **Lacamas Shores HOA, Mathew McCants Board President** State: **WA** Sampling Point: **P3**

Investigator(s): **John McConnaughey PWS# 2009** Section, Township, Range: **T2N R3E S28, S33 & S34**

Landform (hillslope, terrace, etc.): **Hillslope** Local relief (concave, convex, none): **concave** Slope (%): **5%**

Subregion (LRR): **LRR-A** Lat: **45.61811°** Long: **-122.43275°** Datum: **NAD 1983**

Soil Map Unit Name: **HcB Hesson clay loam, 8 to 20% slopes** NWI classification: **PFO1B**

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)

Are Vegetation ☐, Soil ☐, Or Hydrology ☐, significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐

Are Vegetation ☐, Soil ☐, Or Hydrology ☐, naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes	☒	No	☐	**Is sampled area in a wetland?** **Yes** ☒ **No** ☐
Hydric Soil Present?	Yes	☒	No	☐	
Wetland Hydrology Present?	Yes	☒	No	☐	

Remarks: **This area was mapped as a wetland prior to the construction of the boat ramp, trail and road. Prior to development it would have been a slope wetland emerging at the toe of a steep slope. The road and trail now make it a depressional wetland. It is not part of the storm water system, and so is a jurisdictional wetland.**

VEGETATION – Use scientific names of plants

Tree Stratum (Plot Size: **30' downslope**)	Absolute % Cover	Dominant Species?	Indicator Status
1. **Thuja plicata**	**5%**	**N**	**FAC**
2. **Alnus rubra**	**90%**	**Y**	**FAC**
3.	%		
4.	%		
	%	= Total Cover	
Sapling/Shrub Stratum (Plot Size: **20' upslope**)			
1. **Rubus spectabilis**	**10%**	**Y**	**FACW**
2. **Rubus armeniacus**	**40%**	**Y**	**FAC**
3.	%		
4.	%		
5.	%		
	%	= Total Cover	
Herb Stratum (Plot Size: **20' downslope**)			
1. **None**	%		
2.	%		
3.	%		
4.	%		
5.	%		
6.	%		
7.	%		
8.	%		
9.	%		
10.	%		
11.	%		
	0%	= Total Cover	
Woody Vine Stratum (Plot Size:)			
1. **Hedera helix**	**0%**		**FACU**
2. **Clematis spp.**	**0%**		**FAC**
	0%	= Total Cover	

% Bare Ground in Herb Stratum **100%**

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	**3**	(A)
Total Number of Dominant Species Across All Strata:	**3**	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	**100%**	(A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x1 =
FACW species	x2 =
FAC species	x3 =
FACU species	x4 =
UPL species	x5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ☐ 1 - Rapid Test for Hydrophytic Vegetation
- ☒ 2 - Dominance Test is >50%
- ☐ 3 - Prevalence Index is ≤3.0[1]
- ☐ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ 5 - Wetland Non-Vascular Plants[1]
- ☐ 6 - Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes** ☒ No ☐

Remarks: **Herbacious and shrub stratums are suppressed by dense shade from trees. Cedars are dominant just outside of the wetland area, but appear to be doing poorly in the wetland. There are several small dead cedar in the wetland, but they appear healthy on the margin and upslope. Accordingly I consider them not to be a dominant in the wetland.**

SOIL **Project Site: Lacamas Shores HOA Meadowland Park** **SAMPLING POINT P3**

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (Moist)	%	Type[1]	Loc[2]	Texture	Remarks
		%		%				
0 - 6	7.5YR2.5/1	100%		%			silt loam	
		%		%				
6 - 10	7.5YR4/1	90%	7.5YR5/6	10%	C	M	Sandy silt clay	
		%		%				
10 - 18	7.5YR4/1	60%	7.5YR5/6	40%	C	M	Sandy silt clay	
		%		%				
		%		%				

[1]Type: C= Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☒ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ☐ 2 cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type:

Depth (Inches):

Hydric Soils Present? **Yes** ☒ **No** ☐

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stresses Plants (D1) **(LRR A)**
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Raised Ant Mounds (D6) **(LRR A)**
- ☐ Frost-Heave Hummocks (D7)

Field Observations: **DATE:**

Surface Water Present?	Yes	☐	No	☒	Depth (inches):			**Wetland Hydrology Present?** **Yes** ☒ **No** ☐
Water Table Present?	Yes	☒	No	☐	Depth (inches):	**6"**		
Saturation Present? (includes capillary fringe)	Yes	☒	No	☐	Depth (inches):	**4"**		

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project Site: **Lacamas Shores HOA Meadowland Park** City/County: **Camas** Sampling Date: **1/23/2017**

Applicant/Owner: **Lacamas Shores HOA, Mathew McCants Board President** State: **WA** Sampling Point: **P4**

Investigator(s): **John McConnaughey PWS# 2009** Section, Township, Range: **T2N R3E S28, S33 & S34**

Landform (hillslope, terrace, etc.): **Hillslope -** Local relief (concave, convex, none): **concave** Slope (%): **10%**

Subregion (LRR): **LRR-A** Lat: **45.61811°** Long: **-122.43275°** Datum: **NAD 1983**

Soil Map Unit Name: **HcB Hesson clay loam, 8 to 20% slopes** NWI classification: **Not a wetland**

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)

Are Vegetation ☐, Soil ☐, Or Hydrology ☐, significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐

Are Vegetation ☐, Soil ☐, Or Hydrology ☐, naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes	☒	No	☐	**Is sampled area in a wetland?** **Yes** ☐ **No** ☒
Hydric Soil Present?	Yes	☐	No	☒	
Wetland Hydrology Present?	Yes	☐	No	☒	

Remarks: **Upslope from P3, just beyond area of wetland hydrology, in a cluster of small Western Red Cedar.**

VEGETATION – Use scientific names of plants

Tree Stratum (Plot Size: **30' upslope**)	Absolute % Cover	Dominant Species?	Indicator Status
1. **Thuja plicata**	**10%**	**Y**	**FAC**
2. **Alnus rubra**	**80%**	**Y**	**FAC**
3.	%		
4.	%		
	%	= Total Cover	
Sapling/Shrub Stratum (Plot Size: **30' upslope**)			
1. **Rubus spectabilis**	**5%**	**Y**	**FACW**
2. **Rubus armeniacus**	**70%**	**Y**	**FAC**
3.	%		
4.	%		
5.	%		
	%	= Total Cover	
Herb Stratum (Plot Size: **10' upslope**)			
1. **None**	%		
2.	%		
3.	%		
4.	%		
5.	%		
6.	%		
7.	%		
8.	%		
9.	%		
10.	%		
11.	%		
	0%	= Total Cover	
Woody Vine Stratum (Plot Size:)			
1. **Hedera helix**	**0%**		**FACU**
2. **Clematis spp.**	**0%**		**FAC**
	0%	= Total Cover	

% Bare Ground in Herb Stratum **100%**

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	**4**	(A)
Total Number of Dominant Species Across All Strata:	**4**	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	**100%**	(A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x1 =
FACW species	x2 =
FAC species	x3 =
FACU species	x4 =
UPL species	x5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ☐ 1 - Rapid Test for Hydrophytic Vegetation
- ☒ 2 - Dominance Test is >50%
- ☐ 3 - Prevalence Index is ≤3.0[1]
- ☐ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ 5 - Wetland Non-Vascular Plants[1]
- ☐ 6 - Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes** ☒ No ☐

Remarks: **Herbacious and shrub stratums are suppressed by dense shade from trees and shrubs. Although plot center is in a small cluster of small Western Red Cedar, the dominant tall trees are Alder.**

SOIL **Project Site: Lacamas Shores HOA Meadowland Park** **SAMPLING POINT P4**

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (Moist)	%	Type[1]	Loc[2]	Texture	Remarks
		%		%				
0 - 13	**7.5YR3/3**	**100%**		%			**silt loam**	
		%		%				
13 - 18	**7.5YR4/1**	**80%**	**7.5YR5/6**	**20%**	**C**	**M**	**Silt clay loam**	
		%		%				
		%		%				
		%		%				
		%		%				

[1]Type: C= Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ☐ 2 cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type:

Depth (Inches):

Hydric Soils Present? **Yes** ☐ **No** ☒

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stresses Plants (D1) **(LRR A)**
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Raised Ant Mounds (D6) **(LRR A)**
- ☐ Frost-Heave Hummocks (D7)

Field Observations: **DATE:**

Surface Water Present?	Yes	☐	No	☒	Depth (inches):				**Wetland Hydrology Present?** **Yes** ☐ **No** ☒
Water Table Present?	Yes	☒	No	☐	Depth (inches):	**13"**			
Saturation Present? (includes capillary fringe)	Yes	☒	No	☐	Depth (inches):	**13"**			

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

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APPENDIX F) Proposed Revegetation Plan

The proposed revegetation plan is consistent with the original design and specifications for the facility described in Appendix G9, and also with the Stormwater Partners publication copied here as Appendix G3.

ETC generally disfavors using tall grasses, particularly those that become highly flammable in the late summer unless kept mowed to a relatively short height. As such we generally recommend not using many of the seed mixes commonly sold for used for bioswales, as they often contain high percentages of grass seed. Grass seed is generally less expensive and therefore more often used. Instead we recommend seed mixes with a predominance of wildflowers, sedges and rushes, with some shorter grasses.

However should the agencies require regular mowing and removal of mowed material, then use a grass seed mix designed for bioswales. There are several on the market, select ones that use native species.

Consult with a native plant seed vendor for recommended application rates, availability and pricing.

Table 5. ETC recommendations for native seed mix for water quality and storm water facilities that are not regularly mowed, where the goal is for low maintenance vegetation that will remain relatively short. This list derived from catalogues from Sunmark Seed International, Inc.			
Sunmark Native Pacific Northwest Flower Mix			
Scientific Name	**Common Name**	**Type**	**Color**
Cheiranthus allionii	Wallflower	B/P	Orange
Clarkia amoena	Dwarf Godetia	A	Pink/White
Clarkia unguiculata	Clarkia	A	Pink/Lavender
Eschscholzia californica	California Poppy	TP	Yellow/Orange
Gilia capitata	Globe Gilia	A	Blue
Gilia tricolor	Bird's Eyes	A	Lavender/White
Layia platyglossa	Tidy-Tips	A	Yellow/White
Linanthus grandiflorus	Mountain Phlox	A	White/Lavender
Linum grandiflorum rubrum	Scarlet Flax	A	Scarlet
Linum perenne lewisii	Blue Flax	P	Blue
Lobularia maritime	Sweet Alyssum	TP	White
Lupinus densiflorus aureus	Yellow Lupine	A	Yellow
Lupinus polyphyllis	Many Leaved Lupine	P	Mixed
Nemophila maculate	Five-Spot	A	White/Purple
Nemophila menziesii	Baby Blue-Eyes	A	Blue
Papaver rhoeas	Corn Poppy	A	White/Pink/Red
Sisyrinchium bellum	Blue-Eyed Grass	P	Purple
ETC recommendations for additions to wildflower mix for use in stormwater facilities.			
Carex obnupta	Slough Sedge		
Festuca rubra rubra	Native Red Fescue		
Glyceria occidentallis	Western Mannagrass		
Glyceria elata	Fowl Mannagrass		
Agrostis exerata	Spike Bentgrass		
Spirea douglasii	Douglas Spirea		
Alopecurus genicaultius	Water Foxtail		
Beckmannia syziganche	American Sloughgrass		
Alisma subcordatum	American Water Plantain		
Carex densa	Dense sedge		
Juncus effusus	Common (Soft) rush		
Schoenoplectus tabernaemontani (Scirpus validus)	Softstem Bulrush		
Scirpus microcarpus	Small fruited Bulrush		

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DEPARTMENT OF THE ARMY
U.S. ARMY CORPS OF ENGINEERS, SEATTLE DISTRICT
4735 EAST MARGINAL WAY SOUTH, BLDG 1202
SEATTLE, WA 98134-2388

Regulatory Branch January 19, 2024

Lacamas Shores Homeowners Association
C/O Invest West Management
12503 Mill Plain Blvd., Ste 260
Vancouver, Washington 98684

Reference: NWS-2018-304
Lacamas Shores
Homeowners
Association

Dear Lacamas Shores HOA:

The U.S. Army Corps of Engineers (Corps) received your request for an Approved Jurisdictional Determination (AJD) of the aquatic resources within the review area on the property with no site address located north and west of 2637 NW Lacamas Drive in Camas, Clark County, Washington as shown on the enclosed drawings dated January 3, 2024. This determination applies only to the review area. Other aquatic resources, including wetlands, ditches, or other ponds, that may occur on this property or on adjacent properties outside the review area are not the subject of this determination.

The U.S. Army Corps of Engineers has determined that Wetland A, Tributary A, and Tributary B are waters of the U.S. The enclosed *Approved Jurisdictional Determination Memorandum for Record* provides the rationale for jurisdiction for all aquatic resources within the review area.

Other state and local regulations may still apply to these waters. For example, the Washington State Department of Ecology (Ecology) may regulate these features. For information on how to obtain State approval for your project, you should contact Ecology's Federal Permit Coordinator at ecyrefedpermits@ecy.wa.gov or at (360) 407-6068. Information regarding State permitting requirements can also be found at the following website: https://ecology.wa.gov/Water-Shorelines/Wetlands/Regulations. We are sending a copy of this letter to Ecology and to the Environmental Protection Agency's Aquatic Resources Unit.

This approved jurisdictional determination is valid for a period of five years from the date of this letter unless new information warrants revisions of the determination. If you object to the enclosed AJD, you may request an administrative appeal under 33 CFR Part 331 as described in the enclosed *Notification of Administrative Appeal Options* and *Process and Request for Appeal* (RFA) form. To appeal this AJD, you must submit a completed RFA form to the Corps' Northwestern Division (NWD) office at the address listed on the form. In order for the request for appeal to be accepted, the Corps must determine that the form is complete, that the request meets the criteria for appeal under 33 CFR § 331.5, and the form must be received by the NWD office within 60 days from the date on the form. It is not necessary to submit the form to the NWD office if you do not object to this AJD.

A copy of this letter with drawings will be furnished to Ms. Jennifer Wynkoop, JWynkoop@landauinc.com. If you propose to do any work in the areas identified to be waters of the U.S., you should contact our office prior to commencing work to determine permit requirements. If you have any questions, please contact Mr. J. Ari Sindel at Joshua.a.sindel@usace.army.mil or at (360) 741-4701.

Sincerely,

Brad Johnson

Brad Johnson, Project Manager
Regulatory Branch

cc:
Washington State Department of Ecology (ecyrefedpermits@ecy.wa.gov)

DEPARTMENT OF THE ARMY
U.S. ARMY CORPS OF ENGINEERS, SEATTLE DISTRICT
4735 EAST MARGINAL WAY, SOUTH BLDG 1202
SEATTLE, WA 98134-2388

CENWS-Seattle District January 19, 2024

MEMORANDUM FOR RECORD

SUBJECT: US Army Corps of Engineers (Corps) Approved Jurisdictional Determination (JD) in accordance with the "Revised Definition of 'Waters of the United States'"; (88 FR 3004 (January 18, 2023) as amended by the "Revised Definition of 'Waters of the United States'; Conforming" (8 September 2023) ,[1] NWS-2018-304

BACKGROUND. An Approved Jurisdictional Determination (AJD) is a Corps document stating the presence or absence of waters of the United States on a parcel or a written statement and map identifying the limits of waters of the United States on a parcel. AJDs are clearly designated appealable actions and will include a basis of JD with the document.[2] AJDs are case-specific and are typically made in response to a request. AJDs are valid for a period of five years unless new information warrants revision of the determination before the expiration date or a District Engineer has identified, after public notice and comment, that specific geographic areas with rapidly changing environmental conditions merit re-verification on a more frequent basis.[3]

On January 18, 2023, the Environmental Protection Agency (EPA) and the Department of the Army ("the agencies") published the "Revised Definition of 'Waters of the United States,'" 88 FR 3004 (January 18, 2023) ("2023 Rule"). On September 8, 2023, the agencies published the "Revised Definition of 'Waters of the United States'; Conforming", which amended the 2023 Rule to conform to the 2023 Supreme Court decision in *Sackett v. EPA*, 598 U.S., 143 S. Ct. 1322 (2023) ("*Sackett*").

This Memorandum for Record (MFR) constitutes the basis of jurisdiction for a Corps AJD as defined in 33 CFR §331.2. For the purposes of this AJD, we have relied on Section 10 of the Rivers and Harbors Act of 1899 (RHA),[4] the 2023 Rule as amended, as well as other applicable guidance, relevant case law, and longstanding practice in evaluating jurisdiction.

1. SUMMARY OF CONCLUSIONS.

[1] While the Revised Definition of "Waters of the United States"; Conforming had no effect on some categories of waters covered under the Clean Water Act (CWA), and no effect on any waters covered under the Rivers and Harbors Act (RHA), all categories are included in this Memorandum for Record for efficiency.
[2] 33 CFR 331.2.
[3] Regulatory Guidance Letter 05-02.
[4] The Corps has authority under both Section 9 and Section 10 of the Rivers and Harbors Act of 1899 but for convenience, in this MFR, jurisdiction under RHA will be referred to as Section 10.

a. List of each individual feature within the review area and the jurisdictional status of each one.

i. Wetland A is a jurisdictional water
ii. Tributary A is a jurisdictional water
iii. Tributary B is a jurisdictional water

2. REFERENCES.

a. "Revised Definition of 'Waters of the United States,'" 88 FR 3004 (January 18, 2023) ("2023 Rule")

b. "Revised Definition of 'Waters of the United States'; Conforming" 88 FR 61964 (September 8, 2023))

c. *Sackett v. EPA*, 598 U.S. _, 143 S. Ct. 1322 (2023)

3. REVIEW AREA. The Review Area is located at Lacamas Shores near Camas, Clark County, Washington at Latitude / Longitude: 45.6199, -122.4357. Exact Review Area is shown in the AJD Review Figures.

4. NEAREST TRADITIONAL NAVIGABLE WATER (TNW), THE TERRITORIAL SEAS, OR INTERSTATE WATER TO WHICH THE AQUATIC RESOURCE IS CONNECTED. The nearest TNW is the Washougal River. The Washougal River is listed on the Navigable Waters of the United States in Washington State dated December 31, 2008[5]

5. FLOWPATH FROM THE SUBJECT AQUATIC RESOURCES TO A TNW, THE TERRITORIAL SEAS, OR INTERSTATE WATER. Wetland A contains two drainages, Tributary A and Tributary B. Tributaries A and B flow to Lacamas Lake, which flows into Lacamas Creek which flows to the Washougal River, a TNW. The

[5] This MFR should not be used to complete a new stand-alone TNW determination. A stand-alone TNW determination for a water that is not subject to Section 9 or 10 of the Rivers and Harbors Act of 1899 (RHA) is completed independently of a request for an AJD. A stand-alone TNW determination is conducted for a specific segment of river or stream or other type of waterbody, such as a lake, where upstream or downstream limits or lake borders are established.

Washougal River is approximately 3 miles from Wetland A, Tributary A, and Tributary B [6].

6. SECTION 10 JURISDICTIONAL WATERS[7]: None.

7. SECTION 404 JURISDICTIONAL WATERS:

   a. Traditional Navigable Waters (a)(1)(i): N/A

   b. The Territorial Seas (a)(1)(ii): N/A

   c. Interstate Waters (a)(1)(iii): N/A

   d. Impoundments (a)(2): N/A

   e. Tributaries (a)(3): Tributary A and Tributary B

Tributary A and Tributary B both flow from within Wetland A to Lacamas Lake. Within the review area, Tributary A is 2,314.1 square feet and Tributary B is 7,462.2 square feet. Within the review area, Tributary A and Tributary B emerge from bubblers B-1 and B-2 respectively and flow through Wetland A with defined bed and banks and defined ordinary high water marks indicated by changes in slope, plant abundance, and plant community. Additional seeps and springs flow into the tributaries along their flow path. Tributary A is located on the western portion of the review area and, after emerging from bubbler B-1, outflows through a culvert passing underneath the lakeside pedestrian trail. Tributary B includes a settling pond constructed in 1996 and is also fed by a swale constructed in 1992 that flows into the pond from the western side of Wetland A. The settling pond was constructed from wetlands, and Tributary B flows in and out of the settling pond which the Corps is considering a part of Tributary B. During an October 17, 2023 site visit, both tributaries had active surface water flow. The Corps used the Antecedent Precipitation Tool and determined that normal conditions were

[6] This MFR should not be used to complete a new stand-alone TNW determination. A stand-alone TNW determination for a water that is not subject to Section 9 or 10 of the Rivers and Harbors Act of 1899 (RHA) is completed independently of a request for an AJD. A stand-alone TNW determination is conducted for a specific segment of river or stream or other type of waterbody, such as a lake, where upstream or downstream limits or lake borders are established.
[7] 33 CFR 329.9(a) A waterbody which was navigable in its natural or improved state, or which was susceptible of reasonable improvement (as discussed in § 329.8(b) of this part) retains its character as "navigable in law" even though it is not presently used for commerce or is presently incapable of such use because of changed conditions or the presence of obstructions.

present during the site visit and there was no recorded rainfall for that day. Based on the above information, Tributaries A and B are relatively permanent waters and connect downstream to a TNW. Tributaries A and B are waters of the United States.

f. Adjacent Wetlands (a)(4): Wetland A

Wetland A is a 5.92 acres palustrine forested wetland with a hydroperiod that ranges from seasonally saturated to semi-permanently saturated. As documented in the delineation report titled "Lacamas Shores HOA Meadowlands Park Wetland Delineation & Proposed Vegetation Plan" dated February 22, 2017, Wetland A abuts Tributaries A and B, which were documented as waters of the U.S. above. The Corps has determined that Wetland A has a continuous surface water connection downstream to a jurisdictional tributary and is a water of the United States.

g. Additional Waters (a)(5): N/A

8. NON-JURISDICTIONAL AQUATIC RESOURCES AND FEATURES

a. Describe aquatic resources and other features within the review area identified in the 2023 Rule as amended as not "waters of the United States" even where they otherwise meet the terms of paragraphs (a)(2) through (5). Include the type of excluded aquatic resource or feature, the size of the aquatic resource or feature within the review area and describe how it was determined to meet one of the exclusions listed in 33 CFR 328.3(b). N/A

b. Describe aquatic resources and other features within the review area identified in the 2023 Rule as amended as not "waters of the United States" even where they otherwise meet the terms of paragraphs (a)(2) through (5). Include the type of excluded aquatic resource or feature, the size of was determined to meet one of the exclusions listed in 33 CFR 328.3(b). N/A

c. Describe aquatic resources and features within the review area that were determined to be non-jurisdictional because they do not meet one or more categories of waters of the United States under the 2023 Rule as amended (e.g., tributaries that are non-relatively permanent waters; non-tidal wetlands that do not have a continuous surface connection to a jurisdictional water).
N/A

9. DATA SOURCES.

a. October 17, 2023, the Corps conducted a site visit.

b. Lacamas Shores Homeowners Association Wetland Figures updated January 3, 2024.

c. Lacamas Shores HOA Meadowlands Park Wetland Delineation & Proposed Vegetation Plan dated February 22, 2017.

d. Lacamas Shores Homeowners Association Approved Jurisdictional Determination dated October 9, 2019.

10. OTHER SUPPORTING INFORMATION. N/A

11. NOTE: The structure and format of this MFR were developed in coordination with the EPA and Department of the Army. The MFR’s structure and format may be subject to future modification or may be rescinded as needed to implement additional guidance from the agencies; however, the approved jurisdictional determination described herein is a final agency action.

Technical Memorandum

TO: Donald Trost, President, Lacamas Shores Homeowners' Association

FROM: Jennifer Wynkoop

DATE: February 3, 2023

RE: **Wetland Evaluation**
Lacamas Shores Community
Camas, Washington
Landau Project No. 2015001.020

Introduction

At the request of the Lacamas Shores Homeowners' Association, Landau Associates, Inc. (Landau) conducted an evaluation of wetland functions, performance, and jurisdiction of the wetland biofilter (also referred to as Wetland A) at the Lacamas Shores community located in Camas, Washington (Figure 2-1 in Attachment 2).

To evaluate the current wetland functions and performance of Wetland A, Landau investigated the existing conditions and evaluated the wetland using the Washington State Wetland Rating System for Western Washington (rating system; Ecology 2014). This rating system categorizes wetlands based on several criteria including rarity, sensitivity, and function and is the current tool used for gathering information on wetland functions in Washington State. The rating system evaluates functions related to water quality improvement, hydrologic function, and habitat functions of wetlands at the site-scale and the landscape-scale, and takes into consideration the value placed on those functions by society. Landau also reviewed current wetland boundaries and historical information to evaluate Wetland A's jurisdictional status. This technical memorandum provides an overview of the functional assessment and evaluation of wetland jurisdiction.

A site visit was conducted on October 26, 2021 by Landau staff experienced with wetland delineation and trained by the Washington State Department of Ecology (Ecology) in employing the wetland rating system. The wetland rating was completed using information gathered during the site visit and from an additional desktop information review. The rating summary form is provided as Attachment 1, and the maps required as part of the wetland rating are provided as Attachment 2. At the time of the site visit, Landau staff also reviewed the wetland boundary documented in a 2017 wetland delineation to determine if the wetland characteristics and wetland extent identified in 2017 were still present.

Background Information Reviewed

As part of the evaluation, Landau reviewed available background information related to Wetland A that included previous reports, correspondence with agency officials, drainage maps, public databases and maps, and other publicly available information sources.

Previous Correspondence and Reports

- 2016 City of Camas Correspondence: In 2016, the City of Camas (City) sent an email to the Lacamas Shores Homeowners' Association stating that the entirety of the wetland is jurisdictional and is regulated under the City's Shoreline Master Program and Critical Areas Code (Attachment 3).
- 2017 Wetland Delineation: In 2017, Environmental Technology Consultants conducted a delineation of Wetland A, which was identified as a 5.9-acre wetland dominated by scrub-shrub and forest vegetation classes with small areas of emergent vegetation (Attachment 4).
- 2018 Washington State Department of Ecology Letter: In 2018, Ecology sent a letter to the City in response to a proposal by the Lacamas Shores Homeowners' Association to remove trees from the wetland. The letter indicated that City and state wetland and shoreline regulations apply to Wetland A as it currently exists and that removal of native vegetation to manipulate the wetland was not allowed (Attachment 5).
- 2019 US Army Corps of Engineers Jurisdictional Determination: In April 2018, the US Army Corps of Engineers (USACE) conducted a site visit to verify the jurisdictional limits of Wetland A. The USACE send a follow-up letter and jurisdictional determination indicating that Wetland A, as it currently exists, is a Water of the US in its entirety (Attachment 6).

Other Documents

- 1992 Storm Drainage System Synopsis (Vanport Manufacturing 1992)
- 1994 Fifth-Year stormwater runoff and wetland biofilter monitoring program report (SRI/Shapiro 1994).

Public Resources

- Ecology's Water Quality Atlas (Ecology; accessed March 30, 2022)
- The Washington Department of Fish and Wildlife Priority Species and Habitats Map (Attachment 2)
- The Washington Department of Natural Resources Wetlands of High Conservation Value Map (Attachment 2).

Site Visit Observations

Wetland A is located at the base of a steep slope adjacent to the shoreline of Lacamas Lake. The slope and terrace adjacent to the wetland are developed with residential structures. A pedestrian trail encircles the wetland. Maintained lawn areas abut the wetland on its northwestern, eastern, and southeastern sides, as well as a portion of the western side of the wetland.

Wetland A hydrology sources include stormwater from 32 acres of residential development within the Lacamas Shores community, groundwater seeps from the adjacent hillside slope,[1] drain lines from

[1] The groundwater seeps discharge to the wetland via a series of small culverts under the pedestrian trail.

adjacent homes, and direct precipitation inputs. Stormwater enters the wetland via two stormwater sedimentation vaults, which discharge to two bubbler dispersion systems (perforated underground pipes) on the west side of the wetland. The bubblers are designed to disperse flow across the surface of the wetland thereby increasing the potential for water quality treatment. Some water flow within the wetland becomes channelized in small water courses that meander through the wetland. Surface water discharges from Wetland A to Lacamas Lake via a series of culverts on the east side of the wetland.

Most of Wetland A is forested wetland, with some areas of scrub-shrub habitat (areas dominated by shrubs rather than trees), and emergent habitat (those areas dominated by herbaceous species such as cattail and sedges rather than woody vegetation). Figure 2-2 in Attachment 2 identifies the areas within the wetland where these various vegetation types (i.e., Cowardin vegetation classes), were observed.

A diverse mix of native species were observed within the wetland. Native tree species observed included big-leaf maple, red alder, black cottonwood, western red-cedar, and bitter cherry. Native shrubs observed included several different species of willows, red-osier dogwood, black twinberry, Douglas spirea, common snowberry, and salmonberry. Native herbaceous species included common cattail, water parsley, fringecup, lady fern, sword fern, common horsetail, slough sedge, common rush, skunk cabbage, and bulrush. The swale portion of the wetland, located along the perimeter of the athletic field (Figure 2-2), was dominated by water parsley and other herbaceous species. In general, invasive species cover was minimal, and limited to areas at the perimeter of the wetland (Himalayan blackberry) and scattered patches within the wetland interior (reed canarygrass).

Heavy rain fell on and off at the time of the site visit, and several small water courses were observed through the wetland, trending in a generally west-to-east direction and flowing toward Lacamas Lake. The more northern of the two courses contained the most flow and a portion of the flow appeared to be from the northwest bubbler (bubbler No. 2, Figure 2-3). The northern water course flows out to Lacamas Lake via a culvert outflow on the east side of Wetland A (northern outlet). A smaller water course exits Wetland A via a culvert to the south (southern outlet); the water course at the southern outlet had minimal flow and did not appear to transect the wetland. The source of the flow could not be discerned during the site visit due to dense brush, but it was not connected to the water courses bisecting Wetland A. A settling pond was observed on the wetland's southeastern side. The water level in the pond was relatively high at the time of the site visit, and water was discharging from the pond to the shoreline of Lacamas Lake via a series of culverts. Water entered the pond via a water course from the west side of Wetland A and from a constructed stormwater swale bordering the adjacent athletic field. The water course from the west formed just downgradient of the bubbler. A portion of the stormwater from bubbler No. 1 was also discharging from around the bubbler manhole and ponding in a small area. Water also discharges from the wetland to Lacamas Lake via a southern outlet that is separate from the pond outlet.

A range of hydrologic regimes (hydroperiods, presence of water) were observed within the wetland at the time of the site visit. Some areas were saturated to the ground surface but without standing water (saturated); some areas contained standing water (1 to 6 inches); the two channels contained flowing water; and two areas of ponded water were identified (the southeastern stormwater pond and an area in the northeast corner of the wetland. The settling pond was approximately 1.5 feet deep in the area near its outlet; the depth of the center of the pond could not be estimated at the time of the site visit, but appeared to be deeper than 14 inches. Ponding depth in the northeastern corner of the wetland also could not be estimated at the time of the site visit due to dense brush and trees, but the ponded area appeared to have no outlet. Figure 2-3 in Attachment 2 shows the various hydrologic regimes within the wetland.

Landau observed that Wetland A meets the definition of a wetland , and the 2017 delineation appears to accurately reflect the boundaries of Wetland A. Since the original installation of the site stormwater system, Wetland A has expanded to the west and now encompasses both bubbler No. 1 and bubbler No. 2, meaning the stormwater discharge points now lie within Wetland A. Selected site photographs from the October 26, 2021 site visit are provided in Attachment 7.

Wetland Function Evaluation

Wetland function depends on the hydrologic, habitat, and geomorphic conditions within a wetland. The rating system divides wetlands based on hydrogeomorphic (HGM) class and an assessment of functions is completed according to the appropriate HGM class. The Lacamas Shores wetland is classified as a depressional wetland using the HGM classification system (Attachment 1). The rating system scores wetlands for water quality function, hydrologic function, and habitat function. Each functional category is scored for its function potential at the site level (how well the wetland performs the function within its boundary) and at the landscape level (how the wetland position within the surrounding landscape contributes to its ability to provide the function), and its value to society. Numeric ratings are translated to scores of high, medium, and low for each function. The high, medium, and low scores are then translated to an overall numeric score and combined to determine an overall wetland category.

Summary of Water Quality Functions

The Lacamas Shores Wetland A was rated “medium” for its potential to provide water quality functions at the site scale and landscape scale and “high” for its value. Overall, the wetland scored 7 out of 9 possible points for water quality function.

At the site level, the outlets from the wetland prevent it from scoring the highest possible number of points in this category, as did the amount of seasonal ponding observed. For the wetland to score highest in this category, it would need to have no surface water outlets and be ponded over half of its

total area[2] for at least 2 months of the year. While ponding was observed in the wetland during the site visit, the extent of ponding did not cover more than half the wetland area and multiple outlets from the wetland are present.

Points were also lost for soil type. The wetland rating system allows extra points if wetland soils are true clay or true organic at 2 inches below the surface, as these soil types are particularly good at removing pollutants (Ecology 2014). Based on the soil maps for the area and additional observations from the wetland delineation plan (Attachment 4), soils within the wetland consist of silty clay loam, silt loam, and sandy silt within the top 2 inches below ground surface. Organic material will accumulate in wetland soils over time, particularly from deciduous trees and shrubs (Kolka and Thompson 2006). Potential organic soil was observed at one of the sampling points at the time of the prior wetland delineation (Attachment 4), indicating that organic material build-up is occurring in the wetland soils; however, true organic soil did not cover enough of the wetland to score points for this function.

The wetland scored the highest possible number of water quality points for its dense native vegetation growth, with persistent, ungrazed plants present in more than 95 percent of the wetland. Persistent plants of all vegetation classes help filter sediment and pollutants from water as water flows through a wetland (Ecology 2014). The complex structure provided by multiple overlapping vegetation classes provide the best opportunity for water quality treatment for several reasons. Overlapping vegetation classes provide a high input of organic matter to build organic and biologically active soil over time. High diversity in the plant community provides more opportunity for plant uptake of excess nutrients. Shade created by forested and scrub-shrub vegetation structure minimizes potential for invasive species such as Himalayan blackberry and reed canarygrass to gain a foothold and create monocultures over large sections of the wetland.

The Lacamas Shores wetland was determined to have moderate landscape potential to improve water quality functions because it receives stormwater discharges and more than 10 percent of the areas within 150 feet of the wetland contain land uses that generate pollutants. Additional points would have been possible if septic systems or other sources of pollution existed near the wetland.

The Lacamas Shores wetland scored high for value to society for the water quality improvements it provides as it discharges water directly to Lacamas Lake, which is listed as having impaired water quality ("303(d)-listed"). In addition, the City is developing a Lacamas Lake Management Plan, indicating that improvement of the lake's water quality is a priority for the community and that the Lacamas Shores wetland, and similar wetlands generally, will be identified as important to maintaining and improving the lake's water quality.

[2] As the total size of the wetland is 5.9 acres, approximately 3 acres or more would need to be ponded.

Summary of Hydrologic Functions

The Lacamas Shores wetland was rated “medium” for its potential to provide hydrologic functions at the site level, “high” for its potential to provide hydrologic function at the landscape level, and "low” for value (Attachment 1). Overall, the wetland scored 6 out of 9 possible points for hydrologic function.

Site potential for hydrologic functions would have scored higher if it had no surface water outlet, or if deeper, more persistent ponding occurred within the wetland. However, the wetland did score high points for the ratio of its contributing basin to the size of the wetland itself, as the resulting ratio indicates that the wetland has a relatively high potential to reduce peak flows from the basin.

The wetland was determined to have high landscape potential to provide hydrologic functions/flow control as it receives stormwater discharges from a developed drainage basin. It scored low for the value to society for the hydrologic functions it provides because there have been no documented flooding problems downstream of the wetland (likely due in large part to the fact that Lacamas Lake is dam-controlled).

Summary of Habitat Functions

The Lacamas Shores wetland was rated “high” for its site potential to provide habitat functions, “medium” for its potential to provide habitat functions at the landscape level, and “low” for value (Attachment 1). Overall, the wetland scored 6 out of 9 possible points for habitat function.

Site potential to provide habitat scored high because of its diverse plant community and structure, number of hydroperiods, presence of additional habitat features (e.g., large woody debris, standing snags), and low cover by invasive plant species. The wetland received a moderate score for landscape potential to provide habitat functions, primarily due to land uses and habitat disturbances in areas surrounding the wetland.[3] The wetland received a low score for the value to society for the habitat functions it provides simply because it has not been mapped by WDFW or WDNR as providing documented priority habitat or habitat for threatened or endangered species, or otherwise identified in a local or regional comprehensive plan or planning document as providing important habitat.

Overall Rating and Recommendations for Improving Wetland Functions

The overall wetland rating for the Lacamas Shores Wetland A (when combining the scores for water quality, hydrologic, and habitat functions) resulted in a Category III rating. The scoring range for a Category III wetland is 16 – 19 points; the Lacamas Shores Wetland A received a score of 19 points. With slight improvements to one or more of its functions, it would be classified as a Category II

[3] In this portion of the rating form, land use within 1 kilometer of the wetland boundary is evaluated.

wetland.[4] High scores were related to the diverse vegetation and vegetative structure of the wetland. Maintaining this diversity is important to maintaining the health and function of the wetland for both water quality and habitat. High scores were also related to the wetland's position in the landscape and its ability to provide water quality function. However, the wetland scored only moderate for its site potential to provide water quality function because of the surface water outlets.

Reducing surface water outflow from the wetland and increasing retention time and ponding within the wetland could improve both the water quality and hydrologic functions of the Lacamas Shores Wetland A. This could be achieved through structural modifications that would improve the retention time of water in the wetland. Such modifications could include better distribution of stormwater entering the wetland, limiting or increasing the elevation of the outflow structures, and natural barriers, such as logs and large branches, to slow down water flow within the wetland.

Wetland A Boundary and Jurisdictional Assessment

Landau reviewed the 2017 delineation of Wetland A and conducted field observations of the wetland boundary during the October 26, 2021 site visit. Landau observed that Wetland A satisfies the three mandatory wetland parameters,[5] and the 2017 delineation appears to accurately reflect the boundaries of Wetland A. Wetland A also has multiple direct surface water connections to Lacamas Lake. Correspondence from the following agencies indicate respective jurisdiction of Wetland A:

- USACE – Wetland A has a direct surface water connection to Lacamas Lake and therefore meets the definition of Adjacent Waters, which are Waters of the United States, and Wetland A is regulated under the federal Clean Water Act.
- Ecology – Wetland A is adjacent and within 200 feet of Lake Lacamas (a shoreline of statewide significance) and is a critical area within shoreline jurisdiction subject to the City's Shoreline Master Program and the State Shoreline Management Act. "If a portion of a wetland is within shoreline jurisdiction, the entire wetland is within shoreline jurisdiction." "… regulations apply to the wetland as it exists currently, not its original boundaries."
- City – Wetland A is adjacent and within 200 feet of Lake Lacamas (a shoreline of statewide significance) and is a critical area within shoreline jurisdiction subject to the City's Shoreline Master Program and associated critical areas regulations. Although the wetland has expanded since the original development, the entire wetland is considered a jurisdictional wetland.

[4] Category III wetlands are considered to have a moderate level of functions and are often located within developed landscapes that isolate them from other natural resources (Ecology 2014). Category II wetlands are considered to provide a high level of function and to be difficult to replace through mitigation.

[5] Wetland parameters include criteria for meeting prevalence of hydrophytic vegetation, presence of hydric soils, and hydrology (USACE 1987).

Although Wetland A has expanded over time, the entire wetland, encompassed by the current wetland boundary, now falls within federal, state, and local regulatory jurisdiction. Any alteration to Wetland A would require federal, state, and local permits.

Use of This Technical Memorandum

This wetland function evaluation has been prepared under the direction of wetland scientists trained in wetland delineation and in applying the Washington State Wetland Rating System for Western Washington. The information herein is intended to provide an assessment of the wetland's function and value within the current landscape and an understanding of the jurisdictional status of the wetland. Wetlands are dynamic systems that change over time and this assessment should not be relied upon for a period greater than 5 years or if significant structural or vegetative changes to the wetland occur.

This technical memorandum has been prepared for the exclusive use of the Lacamas Shores Homeowners' Association for specific application to the wetland evaluation project. No other party is entitled to rely on the information, conclusions, and recommendations included in this document without the express written consent of Landau. Further, the reuse of information, conclusions, and recommendations provided herein for extensions of the project or for any other project, without review and authorization by Landau, shall be at the user's sole risk. Landau warrants that within the limitations of scope, schedule, and budget, our services have been provided in a manner consistent with that level of care and skill ordinarily exercised by members of the profession currently practicing in the same locality under similar conditions as this project. Landau makes no other warranty, either express or implied.

Please contact Landau if you have any questions or need additional information for your review. Questions can be directed to Jennifer Wynkoop at 253.284.4879 or jwynkoop@landauinc.com.

LANDAU ASSOCIATES, INC.

Jennifer Wynkoop
Principal Environmental Scientist

JBL/JWW/SJQ/ccy
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Attachments

Attachment 1: Wetland Rating Form
Attachment 2: Maps and Figures
Attachment 3: 2016 City of Camas Correspondence
Attachment 4: 2017 Environmental Technology Consultants' Wetland Delineation and Proposed Vegetation Plan
Attachment 5: 2018 Washington State Department of Ecology Letter
Attachment 6: 2019 US Army Corps of Engineers Jurisdictional Determination and Follow-Up Letter
Attachment 7: Selected Site Photographs

ATTACHMENT 1

Wetland Rating Form

Wetland name or number __A__

RATING SUMMARY – Western Washington

Name of wetland (or ID #): __Wetland A_____ Date of site visit: 10/25/21

Rated by__JBL/SMR_____ Trained by Ecology?_X Yes ___No Date of training_3/21_

HGM Class used for rating__Depressional____ Wetland has multiple HGM classes?___Y _X__N

NOTE: **Form is not complete without the figures requested** *(figures can be combined)*.

Source of base aerial photo/map ____ESRI World Imagery_____

OVERALL WETLAND CATEGORY __III__ (based on functions_X_ 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	
	Circle the appropriate ratings			
Site Potential	H [M] L	H [M] L	[H] M L	
Landscape Potential	H [M] L	[H] M L	H [M] L	
Value	[H] M L	H M [L]	H M [L]	**TOTAL**
Score Based on Ratings	7	6	6	19

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	**I II**
Wetland of High Conservation Value	**I**
Bog	**I**
Mature Forest	**I**
Old Growth Forest	**I**
Coastal Lagoon	**I II**
Interdunal	**I II III IV**
None of the above	X

Wetland name or number A

Maps and figures required to answer questions correctly for Western Washington

Depressional Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	D 1.3, H 1.1, H 1.4	2-2
Hydroperiods	D 1.4, H 1.2	2-3
Location of outlet (*can be added to map of hydroperiods)*	D 1.1, D 4.1	2-3
Boundary of area within 150 ft of the wetland *(can be added to another figure)*	D 2.2, D 5.2	2-4
Map of the contributing basin	D 4.3, D 5.3	2-5
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	2-6, 2-7
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	D 3.1, D 3.2	2-8
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	D 3.3	2-8

Riverine Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	H 1.1, H 1.4	
Hydroperiods	H 1.2	
Ponded depressions	R 1.1	
Boundary of area within 150 ft of the wetland *(can be added to another figure)*	R 2.4	
Plant cover of trees, shrubs, and herbaceous plants	R 1.2, R 4.2	
Width of unit vs. width of stream *(can be added to another figure)*	R 4.1	
Map of the contributing basin	R 2.2, R 2.3, R 5.2	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	R 3.1	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	R 3.2, R 3.3	

Lake Fringe Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	L 1.1, L 4.1, H 1.1, H 1.4	
Plant cover of trees, shrubs, and herbaceous plants	L 1.2	
Boundary of area within 150 ft of the wetland *(can be added to another figure)*	L 2.2	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	L 3.1, L 3.2	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	L 3.3	

Slope Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	H 1.1, H 1.4	
Hydroperiods	H 1.2	
Plant cover of **dense** trees, shrubs, and herbaceous plants	S 1.3	
Plant cover of **dense, rigid** trees, shrubs, and herbaceous plants (*can be added to figure above)*	S 4.1	
Boundary of 150 ft buffer (can be added to another figure)	S 2.1, S 5.1	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	S 3.1, S 3.2	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	S 3.3	

Wetland name or number __A__

HGM Classification of Wetlands in Western Washington

For questions 1-7, the criteria described must apply to the entire unit being rated.

If the hydrologic criteria listed in each question do not apply to the entire unit being rated, you probably have a unit with multiple HGM classes. In this case, identify which hydrologic criteria in questions 1-7 apply, and go to Question 8.

1. Are the water levels in the entire unit usually controlled by tides except during floods?

NO – go to 2 **YES** – the wetland class is **Tidal Fringe** – go to 1.1

1.1 Is the salinity of the water during periods of annual low flow below 0.5 ppt (parts per thousand)?

NO – Saltwater Tidal Fringe (Estuarine) **YES – Freshwater Tidal Fringe**
*If your wetland can be classified as a Freshwater Tidal Fringe use the forms for **Riverine** wetlands. If it is Saltwater Tidal Fringe it is an **Estuarine** wetland and is not scored. This method **cannot** be used to score functions for estuarine wetlands.*

2. The entire wetland unit is flat and precipitation is the only source (>90%) of water to it. Groundwater and surface water runoff are NOT sources of water to the unit.

NO – go to 3 **YES** – The wetland class is **Flats**
*If your wetland can be classified as a Flats wetland, use the form for **Depressional** wetlands.*

3. Does the entire wetland unit **meet all** of the following criteria?
___The vegetated part of the wetland is on the shores of a body of permanent open water (without any plants on the surface at any time of the year) at least 20 ac (8 ha) in size;
___At least 30% of the open water area is deeper than 6.6 ft (2 m).

NO – go to 4 **YES –** The wetland class is **Lake Fringe** (Lacustrine Fringe)

4. Does the entire wetland unit **meet all** of the following criteria?
___The wetland is on a slope (*slope can be very gradual*),
___The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks,
___The water leaves the wetland **without being impounded**.

NO – go to 5 **YES –** The wetland class is **Slope**

NOTE: Surface water does not pond in these type of wetlands except occasionally in very small and shallow depressions or behind hummocks (depressions are usually <3 ft diameter and less than 1 ft deep).

5. Does the entire wetland unit **meet all** of the following criteria?
___The unit is in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river,
___The overbank flooding occurs at least once every 2 years.

Wetland name or number __A__

NO – go to 6 **YES** – The wetland class is **Riverine**

NOTE: The Riverine unit can contain depressions that are filled with water when the river is not flooding

6. Is the entire wetland unit in a topographic depression in which water ponds, or is saturated to the surface, at some time during the year? *This means that any outlet, if present, is higher than the interior of the wetland.*

NO – go to 7 **YES** – The wetland class is **Depressional**

7. Is the entire wetland unit located in a very flat area with no obvious depression and no overbank flooding? The unit does not pond surface water more than a few inches. The unit seems to be maintained by high groundwater in the area. The wetland may be ditched, but has no obvious natural outlet.

NO – go to 8 **YES** – The wetland class is **Depressional**

8. Your wetland unit seems to be difficult to classify and probably contains several different HGM classes. For example, seeps at the base of a slope may grade into a riverine floodplain, or a small stream within a Depressional wetland has a zone of flooding along its sides. GO BACK AND IDENTIFY WHICH OF THE HYDROLOGIC REGIMES DESCRIBED IN QUESTIONS 1-7 APPLY TO DIFFERENT AREAS IN THE UNIT (make a rough sketch to help you decide). Use the following table to identify the appropriate class to use for the rating system if you have several HGM classes present within the wetland unit being scored.

NOTE: Use this table only if the class that is recommended in the second column represents 10% or more of the total area of the wetland unit being rated. If the area of the HGM class listed in column 2 is less than 10% of the unit; classify the wetland using the class that represents more than 90% of the total area.

HGM classes within the wetland unit being rated	HGM class to use in rating
Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake Fringe	Lake Fringe
Depressional + Riverine along stream within boundary of depression	Depressional
Depressional + Lake Fringe	Depressional
Riverine + Lake Fringe	Riverine
Salt Water Tidal Fringe and any other class of freshwater wetland	Treat as ESTUARINE

*If you are still unable to determine which of the above criteria apply to your wetland, or if you have **more than 2 HGM classes** within a wetland boundary, classify the wetland as Depressional for the rating.*

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	2
Total for D 1 Add the points in the boxes above	9

Rating of Site Potential If score is: ___ **12-16 = H** _X_ **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	1
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	2

Rating of Landscape Potential If score is: ___ **3 or 4 = H** _X_ **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	2
Total for D 3 Add the points in the boxes above	4

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

Wetland name or number A

DEPRESSIONAL AND FLATS WETLANDS

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

D 4.0. Does the site have the potential to reduce flooding and erosion?	
D 4.1. Characteristics of surface water outflows from the wetland: Wetland is a depression or flat depression with no surface water leaving it (no outlet) points = 4 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	2
D 4.2. Depth of storage during wet periods: *Estimate the height of ponding above the bottom of the outlet. For wetlands with no outlet, measure from the surface of permanent water or if dry, the deepest part.* Marks of ponding are 3 ft or more above the surface or bottom of outlet points = 7 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	3
D 4.3. Contribution of the wetland to storage in the watershed: *Estimate the ratio of the area of upstream basin contributing surface water to the wetland to the area of the wetland unit itself.* The area of the basin is less than 10 times the area of the unit points = 5 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	5
Total for D 4 Add the points in the boxes above	10

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

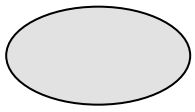
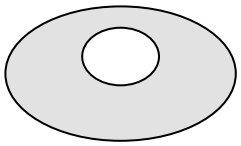
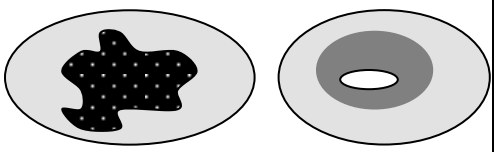
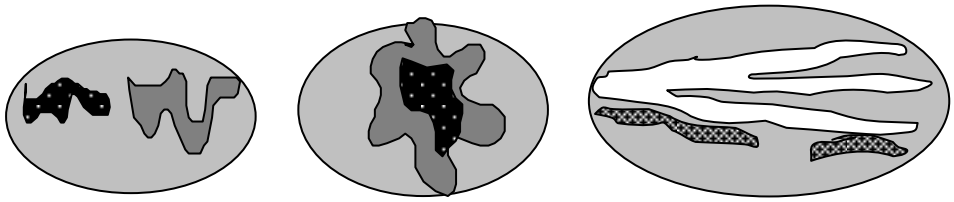
D 5.0. Does the landscape have the potential to support hydrologic functions of the site?	
D 5.1. Does the wetland receive stormwater discharges? Yes = 1 No = 0	1
D 5.2. Is >10% of the area within 150 ft of the wetland in land uses that generate excess runoff? Yes = 1 No = 0	1
D 5.3. Is more than 25% 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	3

Rating of Landscape Potential If score is: _X_ **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): • 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	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** _X_ **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 ____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	4
H 1.2. Hydroperiods Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland or ¼ ac to count (*see text for descriptions of hydroperiods*). ____Permanently flooded or inundated — 4 or more types present: points = 3 ____Seasonally flooded or inundated — 3 types present: points = 2 ____Occasionally flooded or inundated — 2 types present: points = 1 ____Saturated only — 1 type 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**	3
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	2
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** = 3points 	2

Wetland name or number __A__

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.

X **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 __A__

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

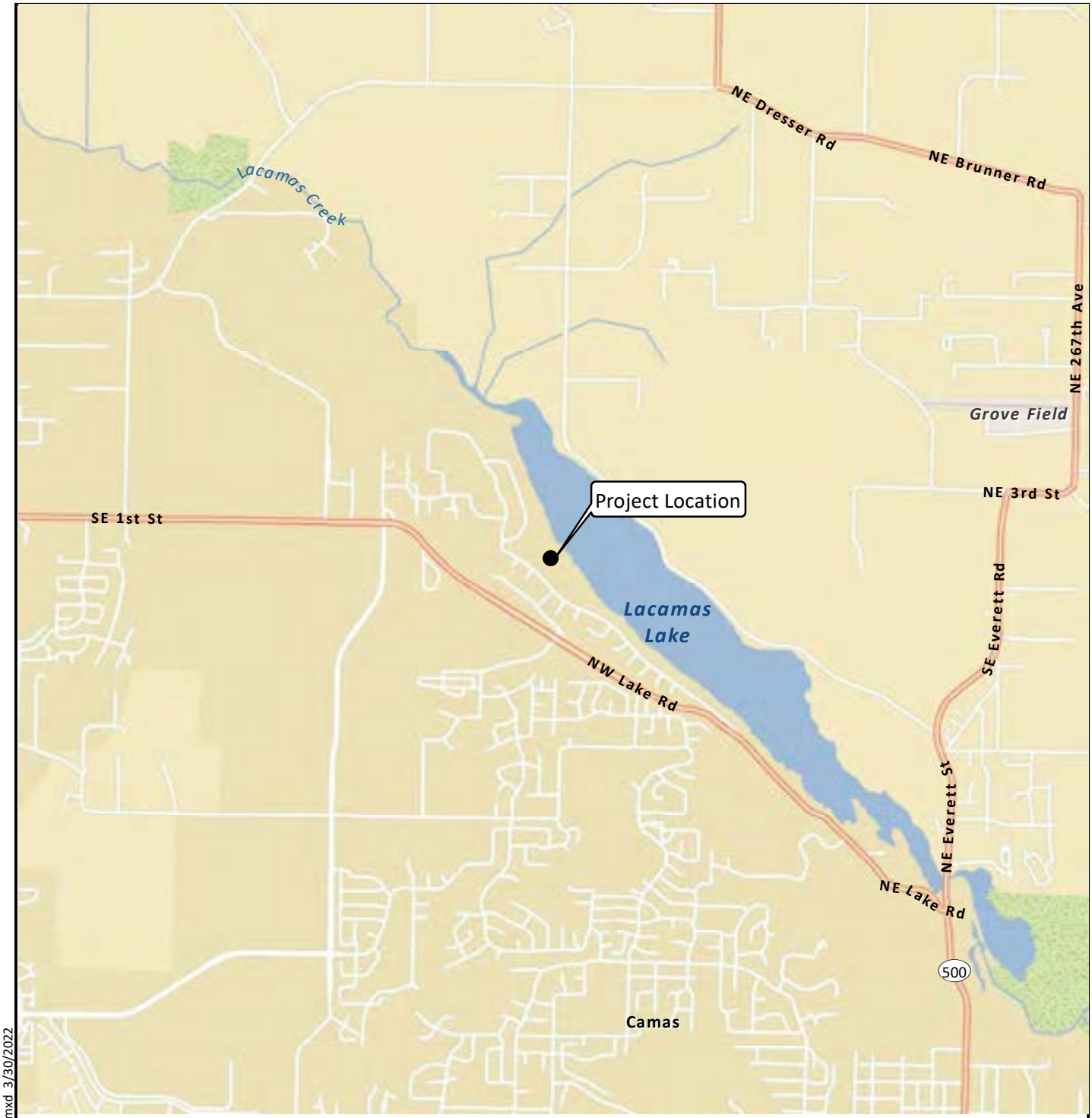
Wetland Type *Check off any criteria that apply to the wetland. Circle the category when the appropriate criteria are met.*	**Category**
SC 1.0. Estuarine wetlands Does the wetland meet the following criteria for Estuarine wetlands? — The dominant water regime is tidal, — Vegetated, and — With a salinity greater than 0.5 ppt Yes –Go to **SC 1.1** No= **Not an estuarine wetland**	
SC 1.1. Is the wetland within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151? Yes = **Category I** No - Go to **SC 1.2**	**Cat. I**
SC 1.2. Is the wetland unit at least 1 ac in size and meets at least two of the following three conditions? — The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and has less than 10% cover of non-native plant species. (If non-native species are *Spartina*, see page 25) — At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland. — The wetland has at least two of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands. Yes = **Category I** No = **Category II**	**Cat. I** **Cat. II**
SC 2.0. Wetlands of High Conservation Value (WHCV) SC 2.1. Has the WA Department of Natural Resources updated their website to include the list of Wetlands of High Conservation Value? Yes **–** Go to **SC 2.2** No **–** Go to **SC 2.3** SC 2.2. Is the wetland listed on the WDNR database as a Wetland of High Conservation Value? Yes **= Category I** No **= Not a WHCV** SC 2.3. Is the wetland in a Section/Township/Range that contains a Natural Heritage wetland? http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf Yes **– Contact WNHP/WDNR and go to SC 2.4** No **= Not a WHCV** SC 2.4. Has WDNR identified the wetland within the S/T/R as a Wetland of High Conservation Value and listed it on their website? Yes **= Category I** No **= Not a WHCV**	**Cat. I**
SC 3.0. Bogs Does the wetland (or any part of the unit) meet both the criteria for soils and vegetation in bogs? *Use the key below.* ***If you answer YES you will still need to rate the wetland based on its functions.*** SC 3.1. Does an area within the wetland unit have organic soil horizons, either peats or mucks, that compose 16 in or more of the first 32 in of the soil profile? Yes – Go to **SC 3.3** No – Go to **SC 3.2** SC 3.2. Does an area within the wetland unit have organic soils, either peats or mucks, that are less than 16 in deep over bedrock, or an impermeable hardpan such as clay or volcanic ash, or that are floating on top of a lake or pond? Yes – Go to **SC 3.3** No = **Is not a bog** SC 3.3. Does an area with peats or mucks have more than 70% cover of mosses at ground level, AND at least a 30% cover of plant species listed in Table 4? Yes = **Is a Category I bog** No – Go to **SC 3.4** **NOTE:** If you are uncertain about the extent of mosses in the understory, you may substitute that criterion by measuring the pH of the water that seeps into a hole dug at least 16 in deep. If the pH is less than 5.0 and the plant species in Table 4 are present, the wetland is a bog. SC 3.4. Is an area with peats or mucks forested (> 30% cover) with Sitka spruce, subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Engelmann spruce, or western white pine, AND any of the species (or combination of species) listed in Table 4 provide more than 30% of the cover under the canopy? Yes = **Is a Category I bog** No **= Is not a bog**	**Cat. I**

Wetland name or number __A__

SC 4.0. Forested Wetlands Does the wetland have at least 1 contiguous acre of forest that meets one of these criteria for the WA Department of Fish and Wildlife's forests as priority habitats? ***If you answer YES you will still need to rate the wetland based on its functions.*** — **Old-growth forests** (west of Cascade crest): Stands of at least two tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) that are at least 200 years of age OR have a diameter at breast height (dbh) of 32 in (81 cm) or more. — **Mature forests** (west of the Cascade Crest): Stands where the largest trees are 80- 200 years old OR the species that make up the canopy have an average diameter (dbh) exceeding 21 in (53 cm). Yes = **Category I** No = **Not a forested wetland for this section**	**Cat. I**
SC 5.0. Wetlands in Coastal Lagoons Does the wetland meet all of the following criteria of a wetland in a coastal lagoon? — The wetland lies in a depression adjacent to marine waters that is wholly or partially separated from marine waters by sandbanks, gravel banks, shingle, or, less frequently, rocks — The lagoon in which the wetland is located contains ponded water that is saline or brackish (> 0.5 ppt) during most of the year in at least a portion of the lagoon *(needs to be measured near the bottom)* Yes – Go to **SC 5.1** No = **Not a wetland in a coastal lagoon**	**Cat. I**
SC 5.1. Does the wetland meet all of the following three conditions? — The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing), and has less than 20% cover of aggressive, opportunistic plant species (see list of species on p. 100). — At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland. — The wetland is larger than $^{1}/_{10}$ ac (4350 ft^2) Yes = **Category I** No = **Category II**	**Cat. II**
SC 6.0. Interdunal Wetlands Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or WBUO)? ***If you answer yes you will still need to rate the wetland based on its habitat functions.*** In practical terms that means the following geographic areas: — Long Beach Peninsula: Lands west of SR 103 — Grayland-Westport: Lands west of SR 105 — Ocean Shores-Copalis: Lands west of SR 115 and SR 109 Yes – Go to **SC 6.1** No = **not an interdunal wetland for rating**	**Cat I**
SC 6.1. Is the wetland 1 ac or larger and scores an 8 or 9 for the habitat functions on the form (rates H,H,H or H,H,M for the three aspects of function)? Yes = **Category I** No – Go to **SC 6.2**	**Cat. II**
SC 6.2. Is the wetland 1 ac or larger, or is it in a mosaic of wetlands that is 1 ac or larger? Yes = **Category II** No – Go to **SC 6.3**	**Cat. III**
SC 6.3. Is the unit between 0.1 and 1 ac, or is it in a mosaic of wetlands that is between 0.1 and 1 ac? Yes = **Category III** No = **Category IV**	**Cat. IV**
Category of wetland based on Special Characteristics If you answered No for all types, enter "Not Applicable" on Summary Form	

ATTACHMENT 2

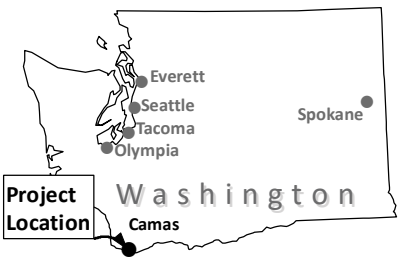
Maps and Figures



N

0 0.5 1

Miles



Data Source: Esri.

G:\Projects\2015\001\010\011\F01 VicinityMap.mxd 3/30/2022

LANDAU ASSOCIATES

Lacamas Shores Homeowners' Association Camas, Washington	**Vicinity Map**	Figure 2-1

N

Lacamas Lake Heritage Trail

Shoreline Conservancy Zone deeded to the City. A 100ft minimum width buffer starting at the Lake Edge

Wetland "A" Stormwater System 5.92 Acres (Including Swale at South End)

Drains and 24" CPP deliver water to a stream in the Conservancy Zone

Settling Pond Constructed for 1996 Expansion

Athletic Field

Bubbler #1 (B-1)

Swale constructed in 1992 for stormwater expansion

Vault for Basin 1

Property Boundary Lot 84839000

Bubbler #2 (B-2)

Vault for Basin 2

G:\Projects\2015\001\010\012\F02-2 CowardinClassPolys.mxd 2/2/2023 | abarton

Legend

- Culvert
- Cleanout
- Perforated Pipe
- Solid Pipe
- Manhole
- Surface Water Course
- Vault
- Open Water
- Wetland A Boundary
- Emergent
- Forested
- Mowed Grass
- Scrub-Shrub

0 100 200

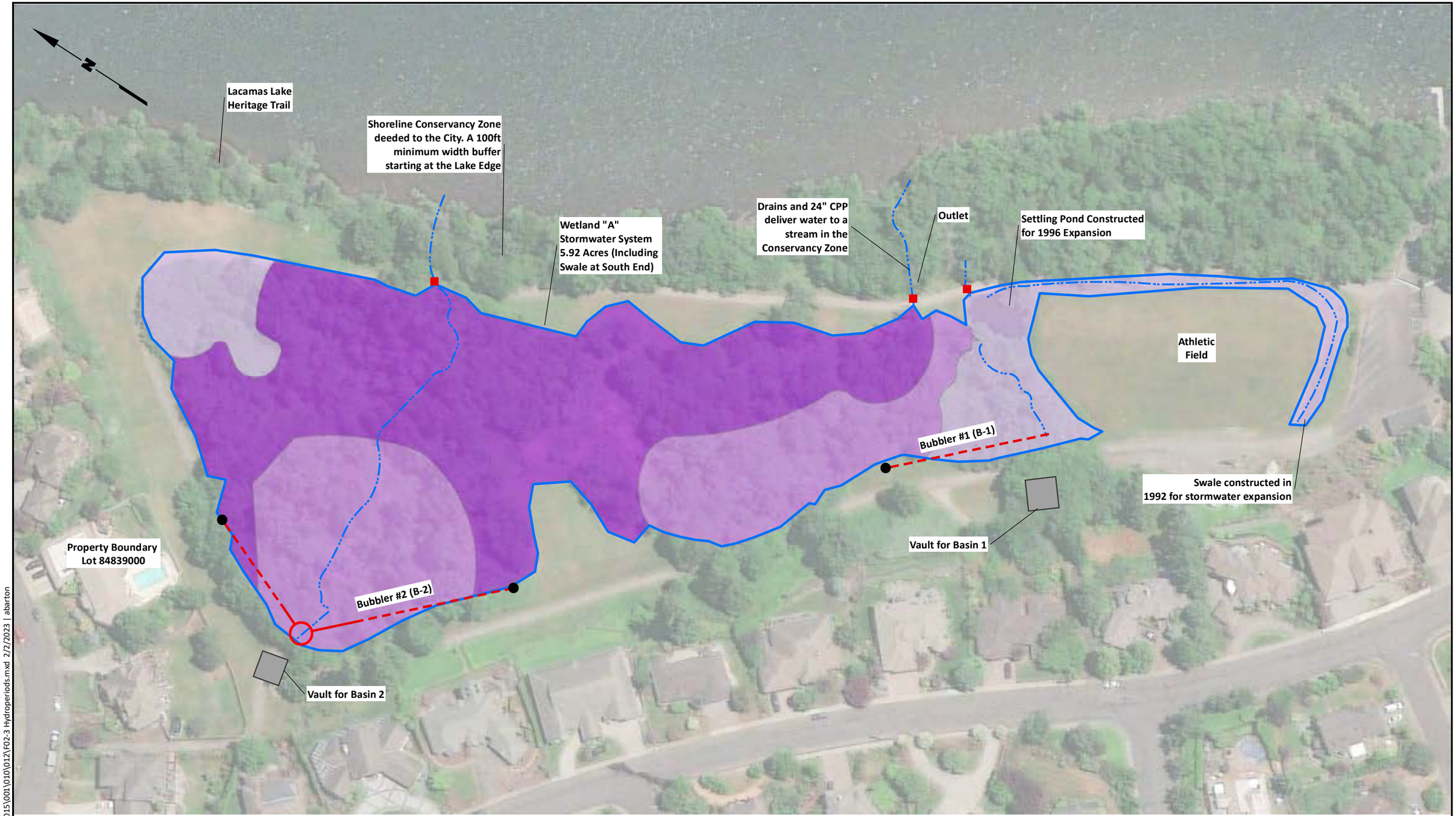
Scale in Feet

Note

1. Black and white reproduction of this color original may reduce its effectiveness and lead to incorrect interpretation.

Data Source: Environmental Technology Consultants, 2016
Base Map Source: Esri World Imagery, 2022

Lackamas Shores Homeowners Association Camas Washington	**Cowardin Classes**	Figure 2-2



G:\Projects\2015\001\010\012\F02-3 Hydroperiods.mxd 2/2/2023 | aharton

Legend

- Culvert
- Cleanout
- Vault
- Wetland A Boundary
- Perforated Pipe
- Solid Pipe
- Manhole
- Surface Water Course
- Saturated
- Occasionally Inundated
- Seasonally Inundated

0 100 200

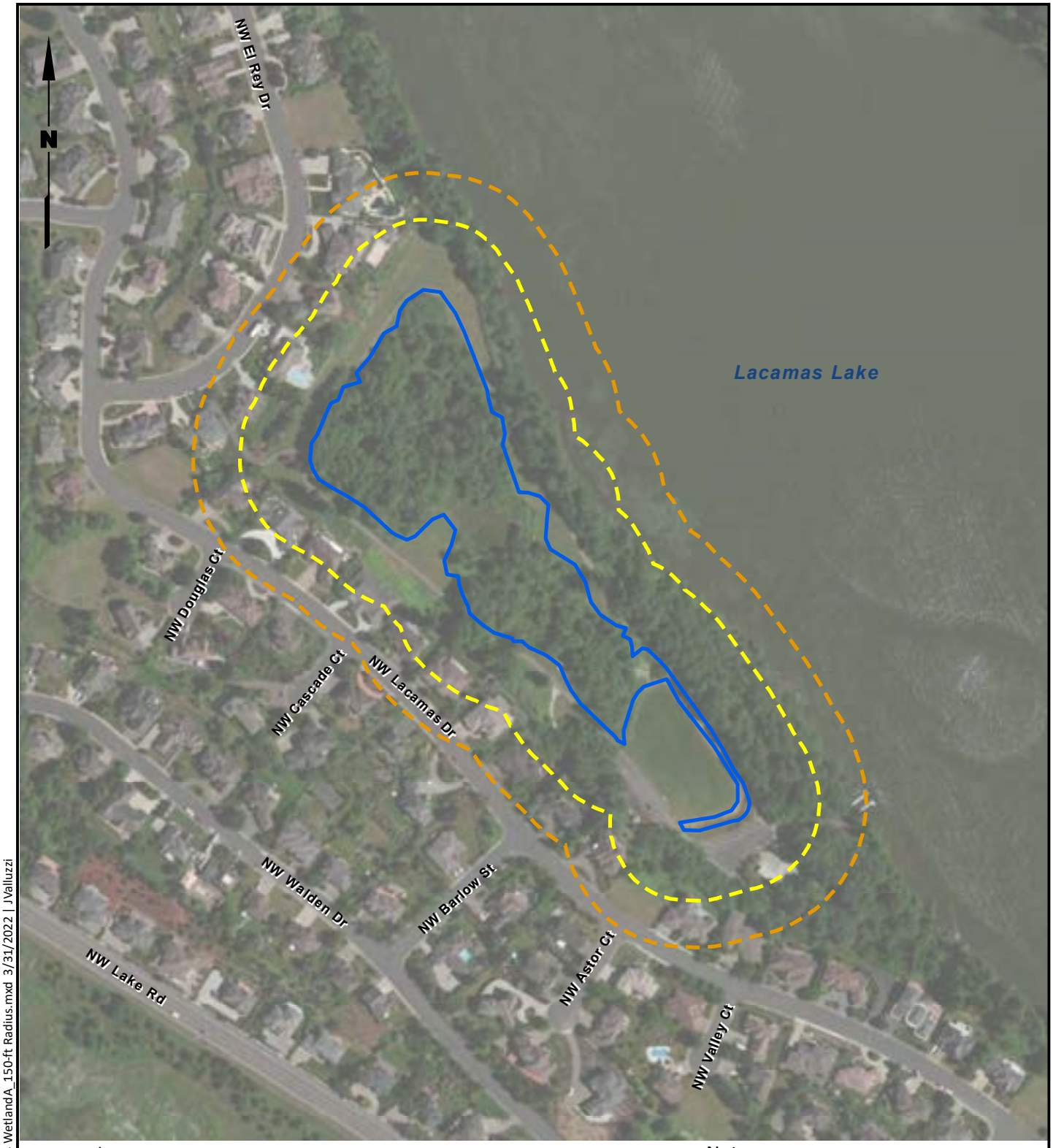
Scale in Feet

Note

1. Black and white reproduction of this color original may reduce its effectiveness and lead to incorrect interpretation.

Data Source: Environmental Technology Consultants, 2016
Base Map Source: Esri World Imagery, 2022

Lacamas Shores Homeowners Association Camas Washington	**Hydroperiods**	Figure 2-3



Legend

- Wetland A
- Wetland A 150-ft Radius
- Wetland A 250-ft Radius

Note

1. Black and white reproduction of this color original may reduce its effectiveness and lead to incorrect interpretation.

0 300 600

Scale in Feet

Data Source: Esri World Imagery.

G:\Projects\2015\001\010\012\F04 WetlandA_150-ft Radius.mxd 3/31/2022 | JValluzzi

LANDAU ASSOCIATES

Lacamas Shores Homeowners' Association Camas, Washington	**Wetland A 150-ft and 250-ft Radius**	Figure 2-4

DRAINAGE BASIN	AREA
A	1.2 Ac.
B	1.2 Ac.
C	5.8 Ac.
D	3.8 Ac.
E	9.3 Ac.

Drainage Basin

Wetland A

0 500 1,000

Scale in Feet

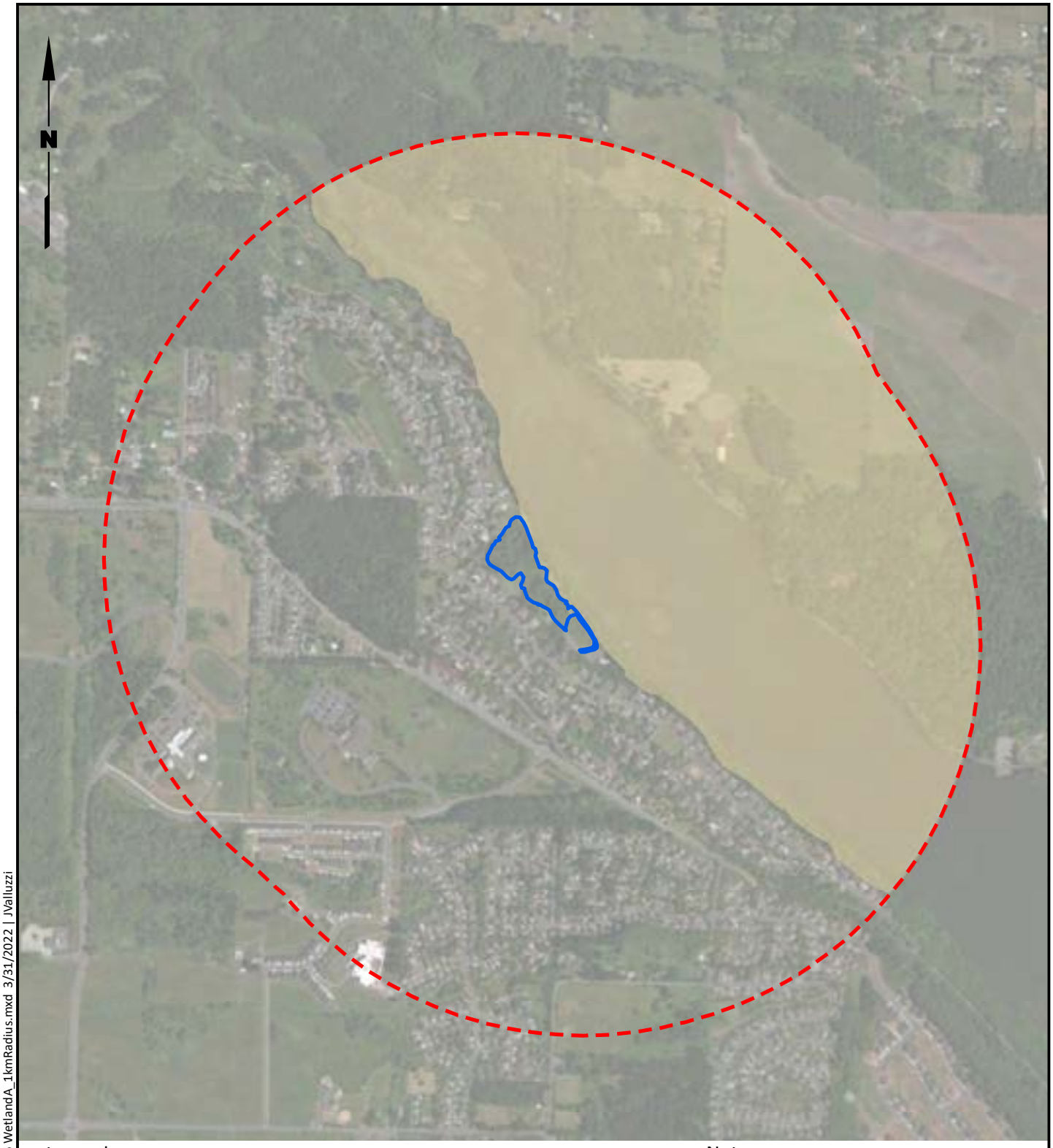
Notes

1. Basins I and J drain to wetland, as well as approximately 3 acres of additional hill-slope and back yard areas. In total, the drainage basin is approximately 35 acres.
2. Black and white reproduction of this color original may reduce its effectiveness and lead to incorrect interpretation.

LANDAU ASSOCIATES

Lacamas Shores Homeowners' Association Camas, Washington	**Contributing Drainage Basins**	Figure 2-5

G:\Projects\2015\001\010\012\F05 ContributingDrainageBasins.mxd 3/31/2022 | JValluzzi



Legend

- Wetland A
- Wetland A 1-km Radius
- Accessible Habitat - Moderate to Low Intensity Land Use

Note

1. Black and white reproduction of this color original may reduce its effectiveness and lead to incorrect interpretation.

0 1,200 2,400

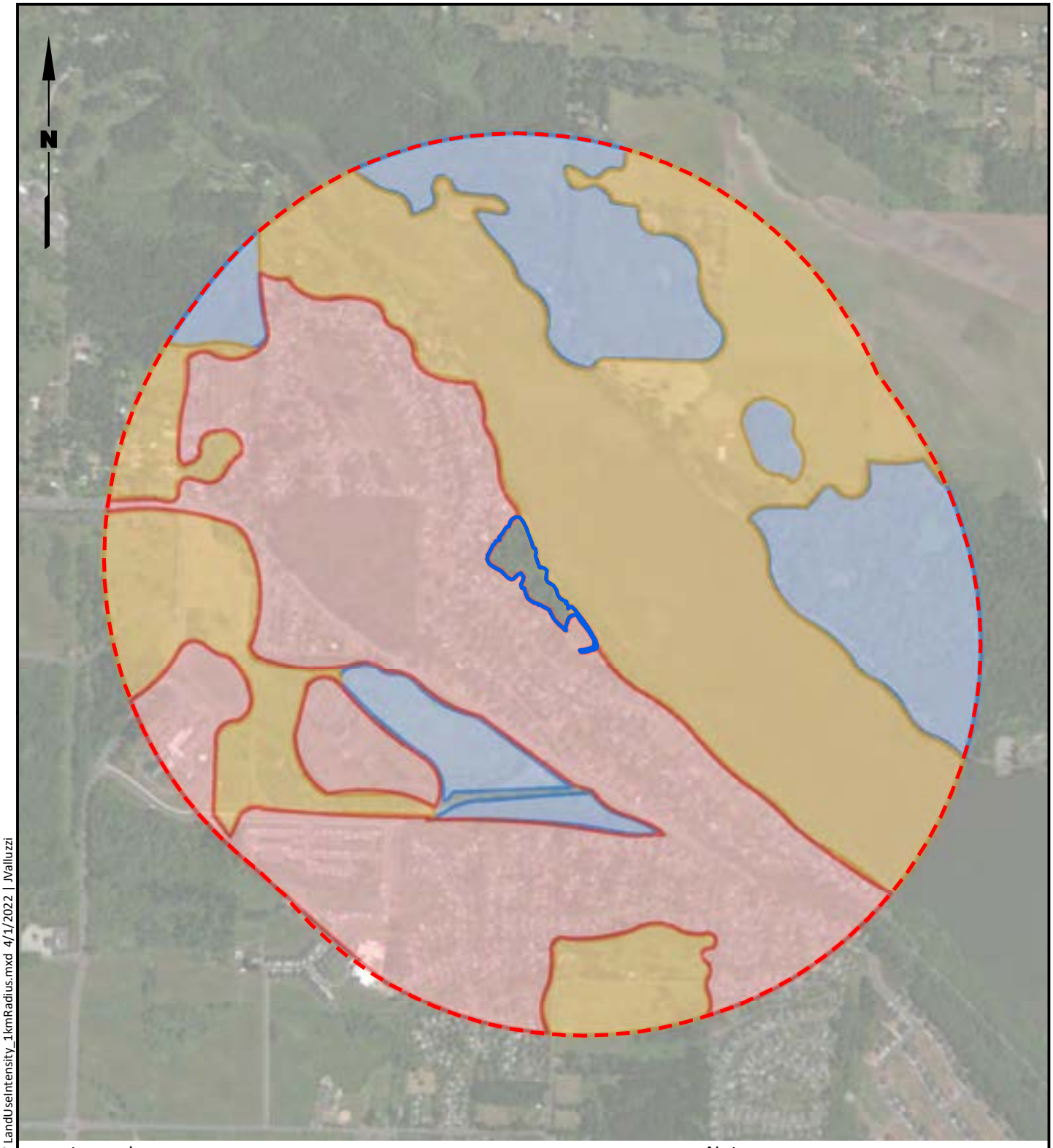
Scale in Feet

Data Source: Esri World Imagery.

G:\Projects\2015\001\010\012\F06 WetlandA_1kmRadius.mxd 3/31/2022 | JValluzzi

LANDAU ASSOCIATES

Lacamas Shores Homeowners' Association Camas, Washington	**Wetland A 1-km Radius**	Figure 2-6



Legend

- Wetland A
- Wetland A 1-km Radius
- Disturbed
- Moderately Disturbed
- Relatively Undisturbed

Note

1. Black and white reproduction of this color original may reduce its effectiveness and lead to incorrect interpretation.

0 1,200 2,400

Scale in Feet

Data Source: Esri World Imagery.

G:\Projects\2015\001\010\012\F07 LandUseIntensity_1kmRadius.mxd 4/1/2022 | JValluzzi

LANDAU ASSOCIATES

Lacamas Shores Homeowners' Association Camas, Washington	**Land Use Intensity 1-km Radius**	Figure 2-7

October 28, 2021

MAP OF 303(d) LISTED WATERS CAMAS WASHINGTON

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

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

DEPARTMENT OF ECOLOGY State of Washington

Lacamas Shores Homeowners' Association Camas, Washington	**303(d) Impaired Waters**	Figure 2-8

Priority Habitats and Species on the Web

Report Date: 03/30/2022

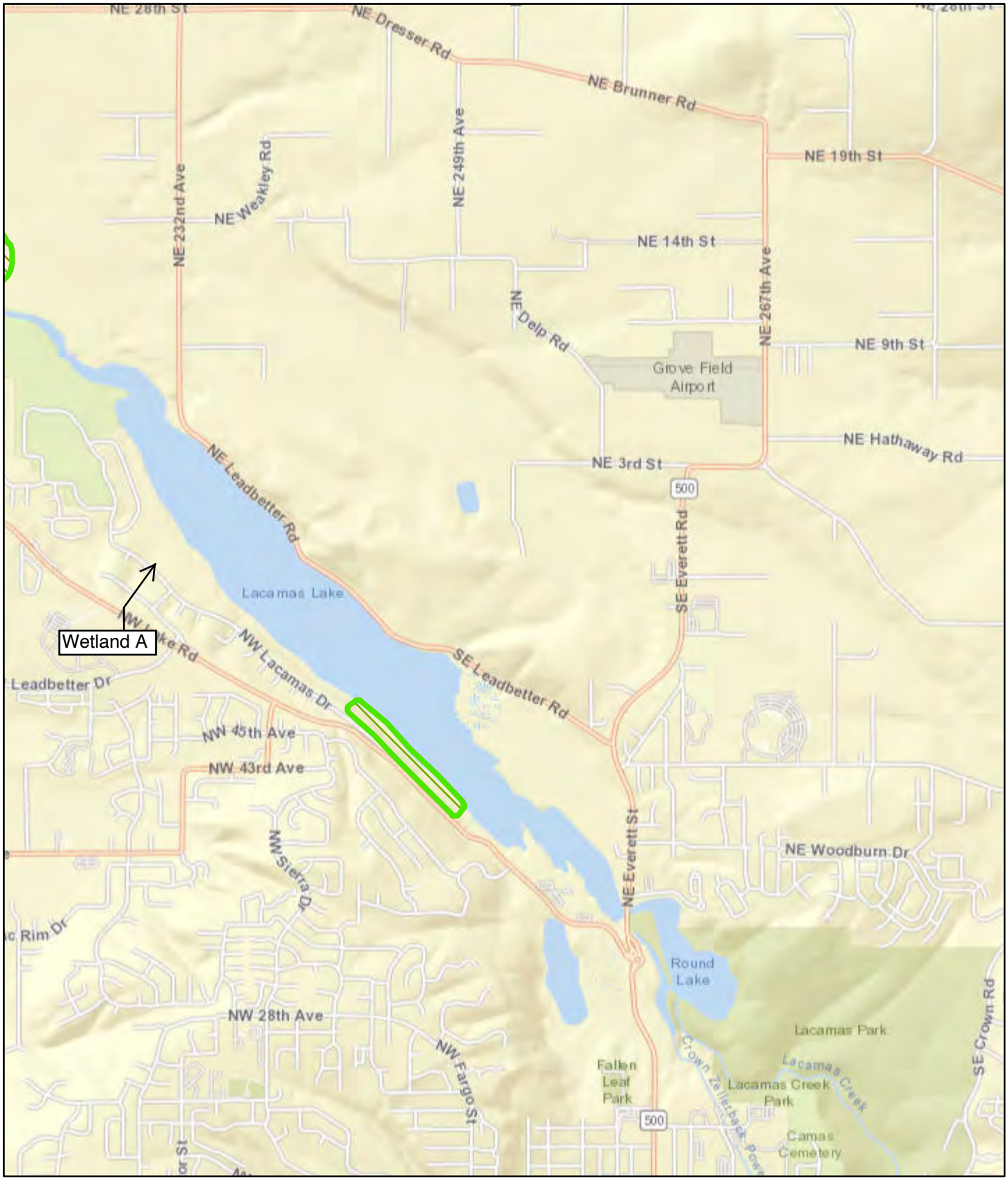
PHS Species/Habitats Overview:

Occurence Name	Federal Status	State Status	Sensitive Location
Caves Or Cave-rich Areas	N/A	N/A	Yes

PHS Species/Habitats Details:

Caves Or Cave-rich Areas	
Notes	This polygon mask represents one or more records of the above species or habitat occurrence. Contact PHS Data Release (360-902-2543) for obtaining information about masked sensitive species and habitats.
Federal Status	N/A
State Status	N/A
PHS Listing Status	PHS Listed Occurrence
Sensitive	Y
SGCN	N
Display Resolution	TOWNSHIP

Wetlands of High Conservation Value



3/30/2022, 2:26:30 PM

1:36,112

0 0.2 0.4 0.8 mi

0 0.33 0.65 1.3 km

Known Rare Plants and Nonvascular Species of High Conservation Value

Counties

Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community

Washington Natural Heritage Program

County of Clark, Oregon Metro, Bureau of Land Management, State of Oregon GEO, State of Oregon, Esri, HERE, Garmin, GeoTechnologies, Inc., NGA, USGS, U.S. Forest Service | Washington

ATTACHMENT 3

2016 City of Camas Correspondence

Ron Boyce

From: Peter Capell <PCapell@cityofcamas.us>
Sent: Friday, August 12, 2016 3:05 PM
To: Ron Boyce
Subject: RE: Follow-up to our meeting of August 4, 2016

Thanks Ron

From: Ron Boyce [mailto:ron@boycefinancialgroup.com]
Sent: Friday, August 12, 2016 2:54 PM
To: Peter Capell
Subject: Re: Follow-up to our meeting of August 4, 2016

Pete,

I appreciate your reply and I am not trying to cause any more bickering but the opposite. I am being approached by members asking for proof and your email will help me when trying to explain the situation. The homeowners have a lot at stake with the decreased values on what was once view property and they want there views back (I am one of those).

Getting the information requested will help the committee when building a maintenance plan for our common area.

I definitely want to keep a good relationship with you and Anita as you are the pathway to helping us get things resolved for everyone.

I value you friendship and I have always thought of you as a great administrator.

Regards,

Ron

Sent from my iPhone

On Aug 12, 2016, at 12:22 PM, Peter Capell <PCapell@cityofcamas.us> wrote:

> Ron,
>
> I was very disappointed by the tone of your email in response to our meeting. You stated in the meeting that you wanted to end the bickering that has occurred putting the city between two factions of Lacamas Shores homeowners. The fact that you and other members feel it is not a wetland, does not matter. The records have shown that it is a wetland and was recently reconfirmed by a site visit from ecology. The documentation has been provided in the past, and we will pull it out and provide it again. Currently Anita is busy with two projects. She will go to our archives and retrieve the information, but it will be late next week.
>
> The original application for the Lacamas Shores subdivision does have wetland delineations that do place wetlands in what is now the common area. The developer worked to consolidate stormwater facilities with the wetlands to have an on-site bio-filtration type facility for the area. Wetlands can change over time, so even if there was land that was once dry, but has become wet it can now be

consider a jurisdictional wetland. It is also important to note that given the proximity of the shoreline the wetland complex on site is also under shoreline jurisdiction as well.

In terms of burden of proof, the burden absolutely lies with the applicant in this case, which is the HOA. Camas Municipal Code Chapters 16.51 and 18.55 clearly outline applicable criteria for proposed actions and require that the burden of proof lies with the applicant. If clearing of the wetland area commences without permits and approvals from the City of Camas, or any other required jurisdiction then full code enforcement proceedings can and will take place including possible criminal charges for knowingly and willfully working without approvals.

Wetlands are regulated by the City of Camas, Washington State Department of Ecology, and the US Army Corps of Engineers. The scope of work will dictate what type of permits you will need before commencing any work. The very first step in this process is to prepare a proposal and have a pre-application meeting with City staff so they can advise on permit specifics and invite other applicable agencies. At a minimum a full and detailed wetland delineation will be required and a proposal for any mitigation based on the work proposed. Simply clear cutting trees and vegetation is not an option. As we discussed, removal of blackberries and other invasive species is allowed, but heavy equipment cannot enter the wetland area to remove blackberries, as they will damage the wetlands vegetation.

We will make best effort to get the original documentation from the development files before your meeting on the 22nd. As discussed above the connection of the wetlands that were present at the time of development to the stormwater facility has caused the wetlands to increase in size, so a wetlands delineation is going to be necessary, if you choose to do more work than removing blackberries.

Pete

Peter Capell
City Administrator
<image003.jpg>
616 NE 4th Avenue
Camas, WA 98607
360.834.6864
pcapell@cityofcamas.us

From: Ron Boyce [mailto:ron@boycefinancialgroup.com]
Sent: Tuesday, August 09, 2016 10:52 AM
To: Peter Capell
Subject: Follow-up to our meeting of August 4, 2016

Pete,

Thanks for the meeting it was very helpful in getting an idea what has been transpiring regarding our HOA.

You will find I have attached a brief memo regarding issues, questions, concerns and a request for more information.

Ronald C. Boyce, CFP
Boyce Financial Group, LLC.
President/CEO

15597 SE Mill Plain Blvd
Vancouver, WA 98684
office: (360) 695-0981
fax: (360) 695-1329
email: ron@boycefinancialgroup.com
web: www.boycefinancialgroup.com

Pete,

Thank you again for meeting with me last week and it was very nice to meet Anita Ashton also.

There are some issues, questions and concerns I have that were raised at the meeting that I would like clarification on.

The classification of the land in question (open space west of the parking lot encompassing the soccer field, South of the gravel path on the North side and North of the gravel path on the South side) as a "wetland" is a very important description or characterization in determining the type and scope of maintenance that can be done by the Lacamas Shores HOA on this property.

That said, **I challenge the classification** of this common space that you and Anita seem to share as a "wetland" classification. In fact, Anita stated in the meeting that it has always been a wet land and if it was not originally a wetland and is a man-made wetland it makes no difference as she said "it is still a wetland".

When I shared with you the City of Camas maps (wetland map and open space map) that clearly shows the area in question is not considered a "wetland" but homeowners "open space" it was said that a wetland map that shows the area as a "wetland" was given to Steve Bang and Steve Marrinan. I have talked to both of them and they do not have such a map.

From my research (City maps, study performed in 1988 for The White Company, and our own CC&R's) I find the area in question to be part of our HOA common area and not a "wetland".

Since the Steve's do not have the map that illustrates that the area in question is a "wetland" and always has been a "wetland", it would be appreciated if you would send me a copy (or tell me how I might get a copy) of such proof that this area in fact has been classified as a "wetland" before the next board meeting held Monday August 22nd.

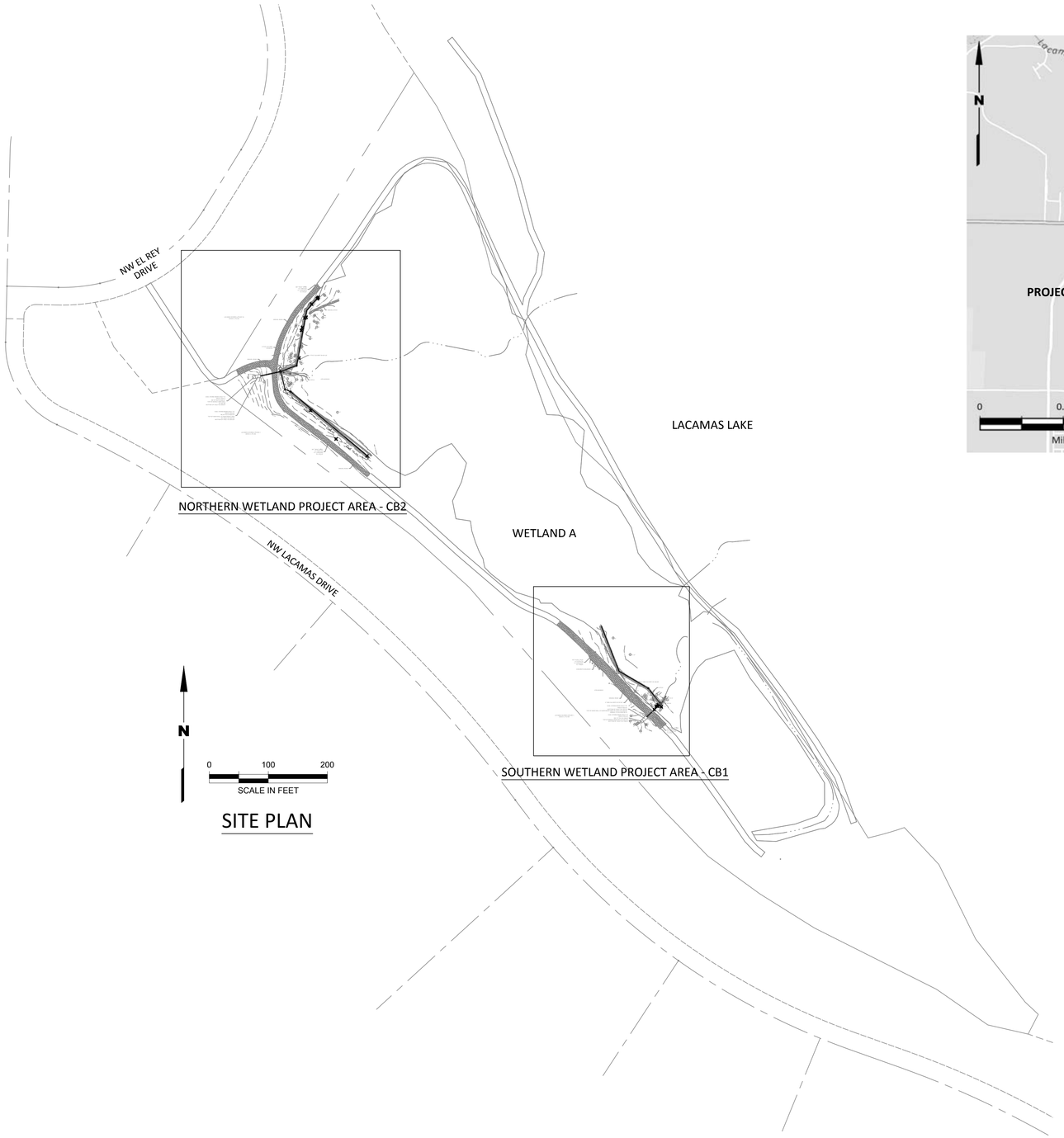
Unless the City of Camas can prove that the area in question (not heresy) is a "Wetland" *my recommendation to our board will be to go ahead and develop a common area maintenance plan for this area that may involve cutting down trees and using heavy equipment.* It is our duty as homeowners to maintain these common areas per CC & R's to maintain and enhance the value our property.

The burden of proof is on the city to prove to our HOA that the area in question is a "wetland" through maps or documentation (no more Heresy) as our maps and documents show otherwise. I expect to receive this information before our next board meeting mentioned above.

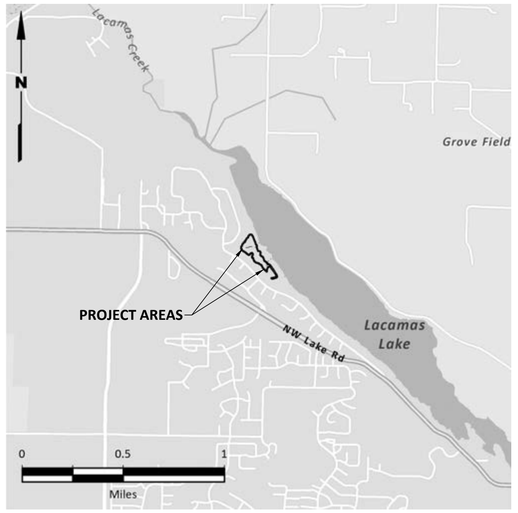
I would like to put the controversy to rest regarding this issue and factual documentation is the only way this will happen.

A PORTION OF THE NE 1/4 OF THE NE 1/4 OF SECTION 33, T2N, R3E, W.M. & A
PORTION OF THE NW 1/4 OF THE NW 1/4 OF SECTION 34, T2N, R3E, W.M. & A
PORTION OF THE SE 1/4 OF THE SE 1/4 OF THE SE 1/4 OF SECTION 28, T2N, R3E, W.M.

LACAMAS SHORES MITIGATION PLAN SET



SITE PLAN



VICINITY MAP
SCALE: 1"=2,000'

SHEET INDEX

REFERENCE NUMBER	SHEET NUMBER	SHEET TITLE
MIT-1	1 OF 5	COVER SHEET
MIT-2	2 OF 5	SITE PLAN
MIT-3	3 OF 5	IMPACT PLAN
MIT-4	4 OF 5	ENHANCEMENT PLAN
MIT-5	5 OF 5	STREAM ENHANCEMENT

NO.	DATE	REVISION DESCRIPTION	BY	CK
△				

DRAFT

PRELIMINARY

MOMENTUM CIVIL PROJECT
MOMENTUM CIVIL CLIENT
COVER SHEET
TAX PARCEL NO. 84839000
CITY OF CAMAS, WA

LANDAU ASSOCIATES
155 NE 100TH STREET, STE 302
SEATTLE, WA 98125
PHONE: 206.631.8680

CHECKED BY: **X. LAST NAME**
DESIGNED BY: **X. LAST NAME**
DRAWN BY: **X. LAST NAME**

HORZ. DATUM: **NAD83**
VERT. DATUM: **NGVD29**

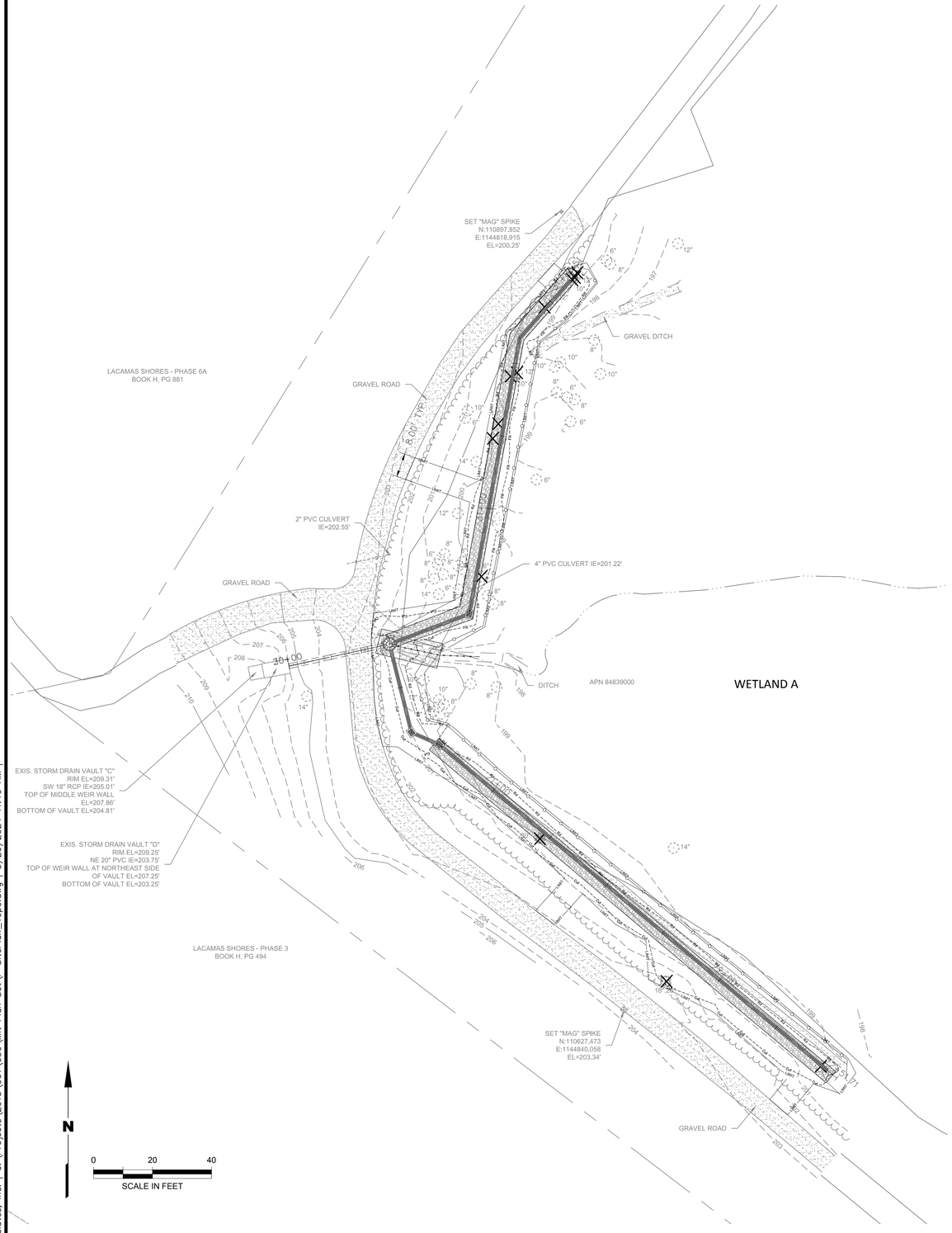
DATE: **02/28/24**

PROJECT NO. **2015001.030**

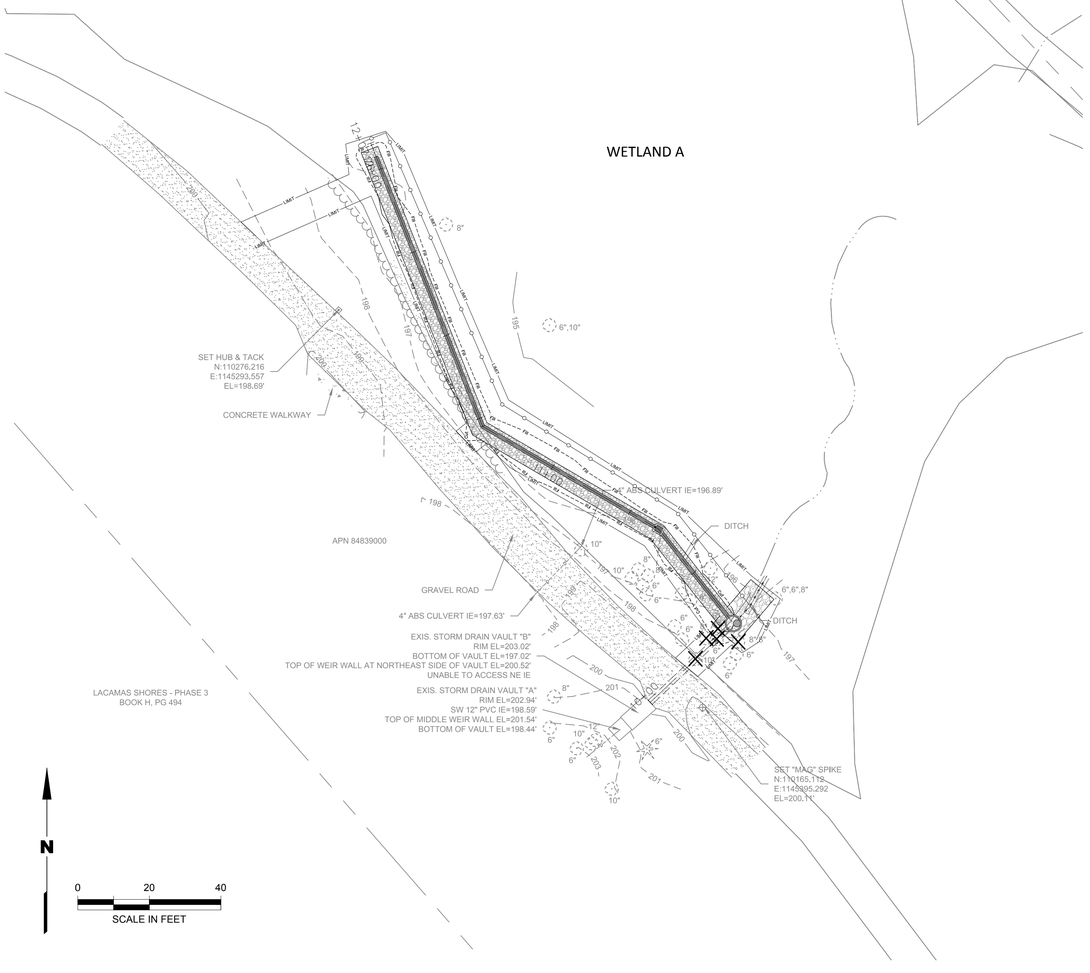
SHEET NO. **1** OF **5**

REFERENCE NO. **MIT-1**

A PORTION OF THE NE 1/4 OF THE NE 1/4 OF SECTION 33, T2N, R3E, W.M. & A PORTION OF THE NW 1/4 OF THE NW 1/4 OF SECTION 34, T2N, R3E, W.M. & A PORTION OF THE SE 1/4 OF THE SE 1/4 OF THE SE 1/4 OF SECTION 28, T2N, R3E, W.M.



NORTHERN WETLAND PROJECT AREA - CB2



SOUTHERN WETLAND PROJECT AREA - CB1

NO.	DATE	REVISION DESCRIPTION	BY
1			

DRAFT

PRELIMINARY

MOMENTUM CIVIL PROJECT
MOMENTUM CIVIL CLIENT

SITE PLAN

TAX PARCEL NO. 84839000
CITY OF CAMAS, WA

LANDAU ASSOCIATES
155 NE 100TH STREET, STE 302
SEATTLE, WA 98125
PHONE: 206.631.8680

CHECKED BY: **X. LAST NAME**
DESIGNED BY: **X. LAST NAME**
DRAWN BY: **X. LAST NAME**

HORZ. DATUM: **NAD83**
VERT. DATUM: **NGVD29**

DATE: **02/28/24**

PROJECT NO. **2015001.030**

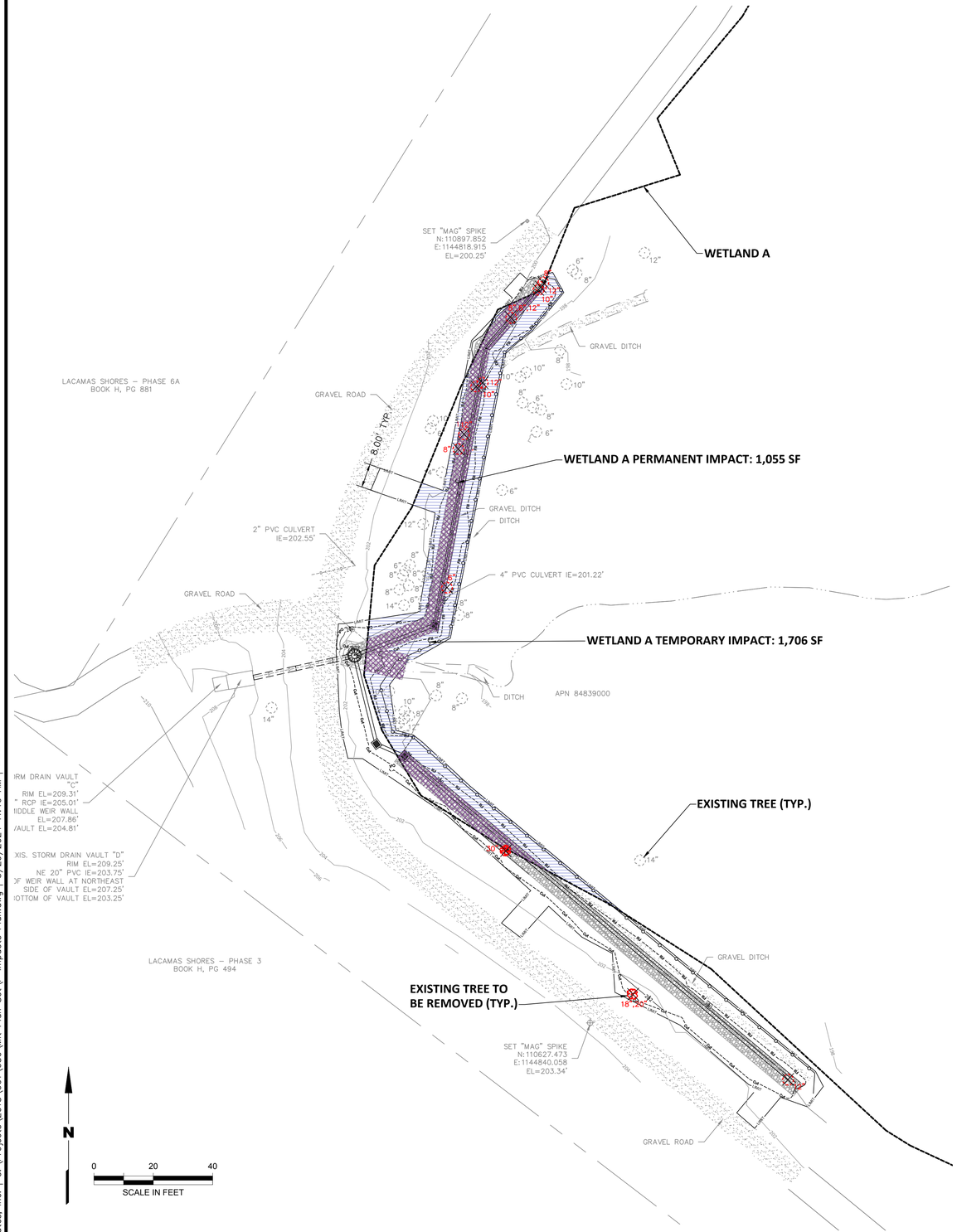
SHEET NO. **2** OF **5**

REFERENCE NO. **MIT-2**

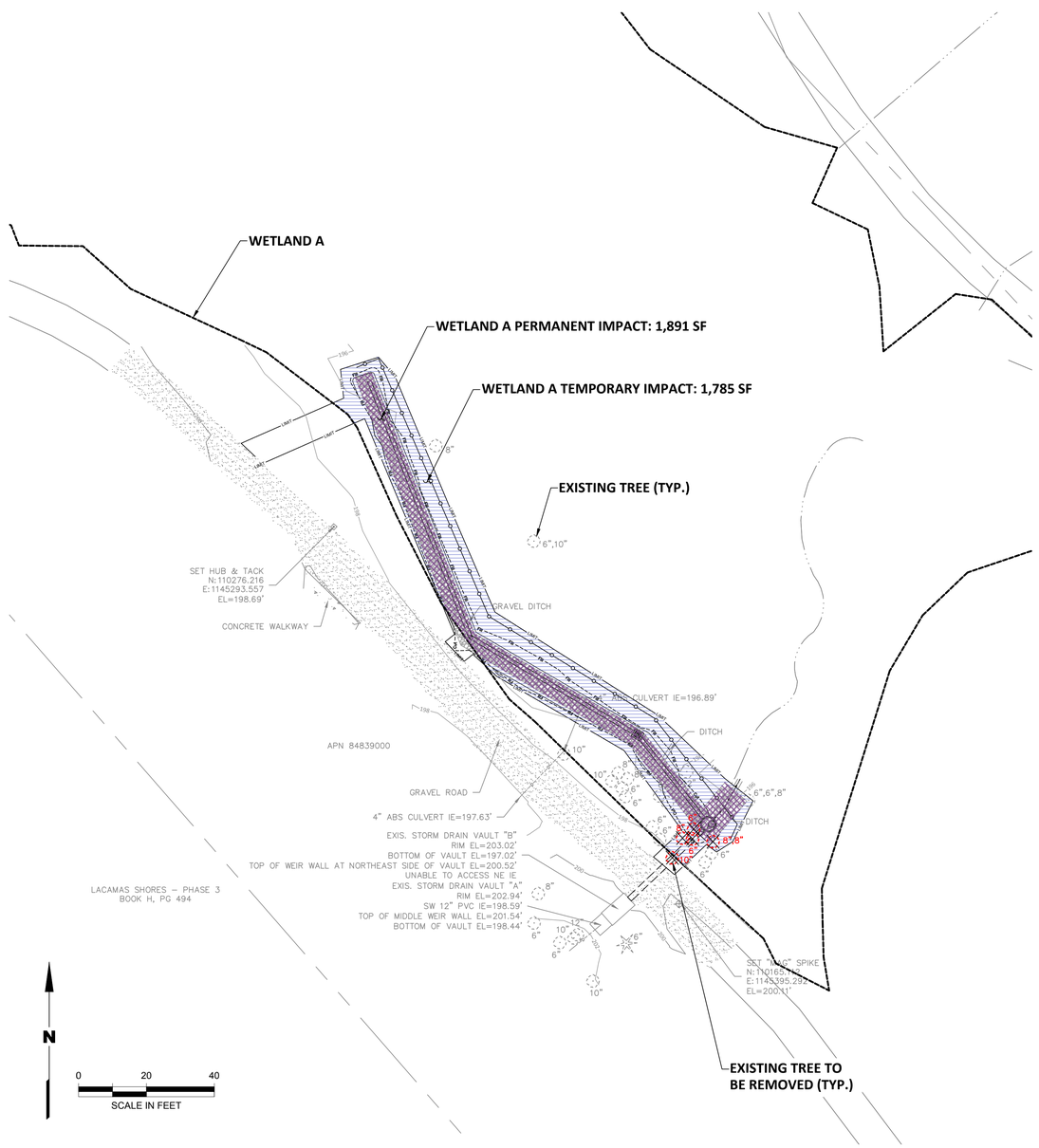
A PORTION OF THE NE 1/4 OF THE NE 1/4 OF SECTION 33, T2N, R3E, W.M. & A PORTION OF THE NW 1/4 OF THE NW 1/4 OF SECTION 34, T2N, R3E, W.M. & A PORTION OF THE SE 1/4 OF THE SE 1/4 OF THE SE 1/4 OF SECTION 28, T2N, R3E, W.M.

WETLAND REHABILITATION TABLE

	COMMON NAME	SCIENTIFIC NAME	INDICATOR CODE	SIZE	SPACING	QUANTITY
	WETLAND REHABILITATION (3,491 SF)					
GROUNDCOVER	SLOUGH SEDGE	CAREX OBNUPTA	OBL	4" PLUG	INTERSPERSE GROUNDCOVER SO THAT OVERALL SPACING ON CENTER = 2 FT	388
	SAWBEAK SEDGE	CAREX STIPATA	OBL	4" PLUG		388
SHRUBS	WESTERN LADY FERN	ATHYRIUM CYCLOSORUM	FAC	1 GAL	INTERSPERSE SHRUBS SO THAT OVERALL SPACING ON CENTER = 6 FT	97



NORTHERN WETLAND IMPACT AREA - CB2



SOUTHERN WETLAND IMPACT AREA - CB1

NO.	DATE	REVISION DESCRIPTION	BY	CK

DRAFT

PRELIMINARY

MOMENTUM CIVIL PROJECT
MOMENTUM CIVIL CLIENT

IMPACT PLAN

TAX PARCEL NO. 84839000
CITY OF CAMAS, WA

LANDAU ASSOCIATES
155 NE 100TH STREET, STE 302
SEATTLE, WA 98125
PHONE: 206.631.8680

CHECKED BY: **X. LAST NAME**
DESIGNED BY: **X. LAST NAME**
DRAWN BY: **X. LAST NAME**

HORZ. DATUM: **NAD83**
VERT. DATUM: **NGVD29**

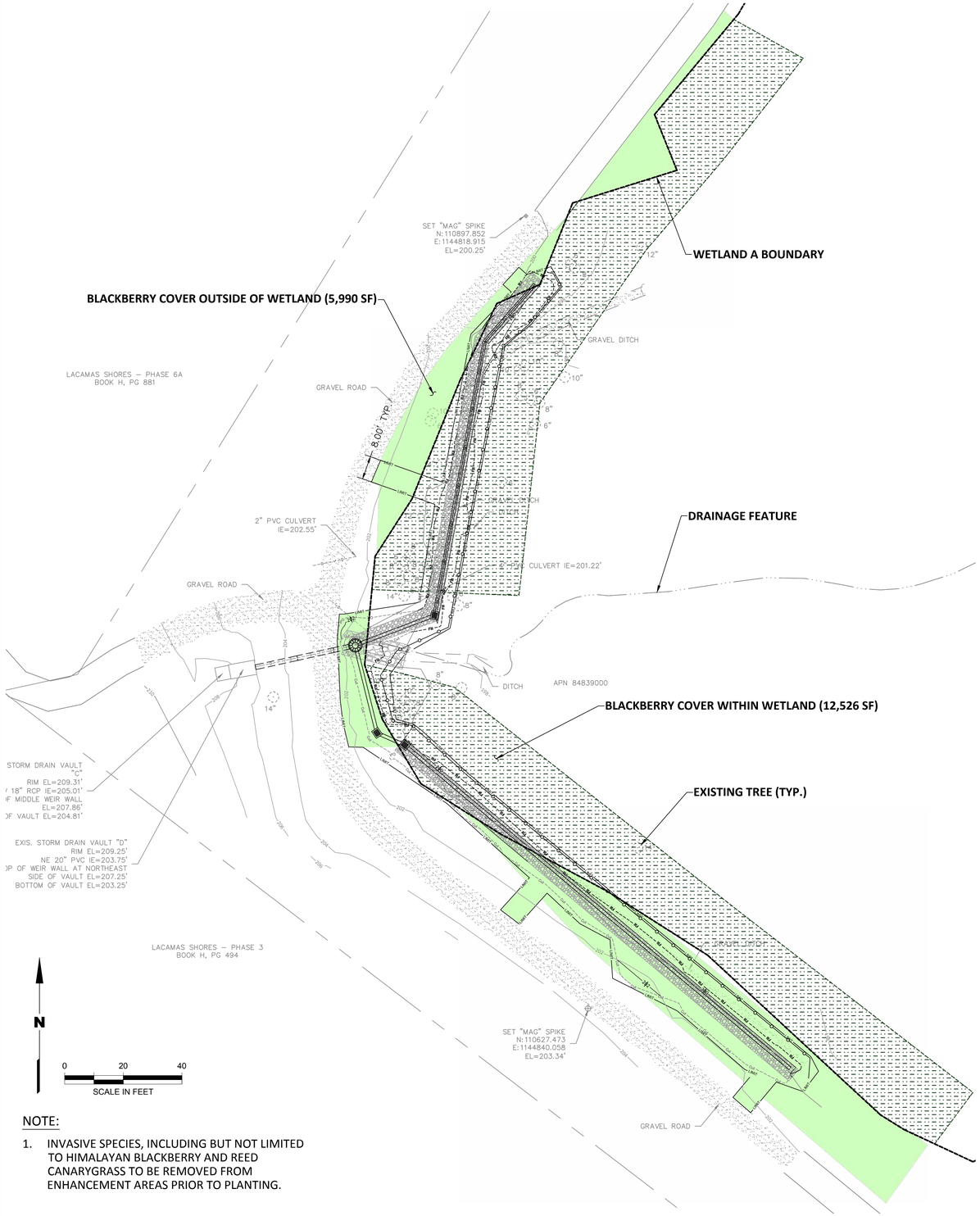
DATE: **02/28/24**

PROJECT NO. **2015001.030**

SHEET NO. **3** OF **5**

REFERENCE NO. **MIT-3**

A PORTION OF THE NE 1/4 OF THE NE 1/4 OF SECTION 33, T2N, R3E, W.M. & A PORTION OF THE NW 1/4 OF THE NW 1/4 OF SECTION 34, T2N, R3E, W.M. & A PORTION OF THE SE 1/4 OF THE SE 1/4 OF THE SE 1/4 OF SECTION 28, T2N, R3E, W.M.



NOTE:

1. INVASIVE SPECIES, INCLUDING BUT NOT LIMITED TO HIMALAYAN BLACKBERRY AND REED CANARYGRASS TO BE REMOVED FROM ENHANCEMENT AREAS PRIOR TO PLANTING.

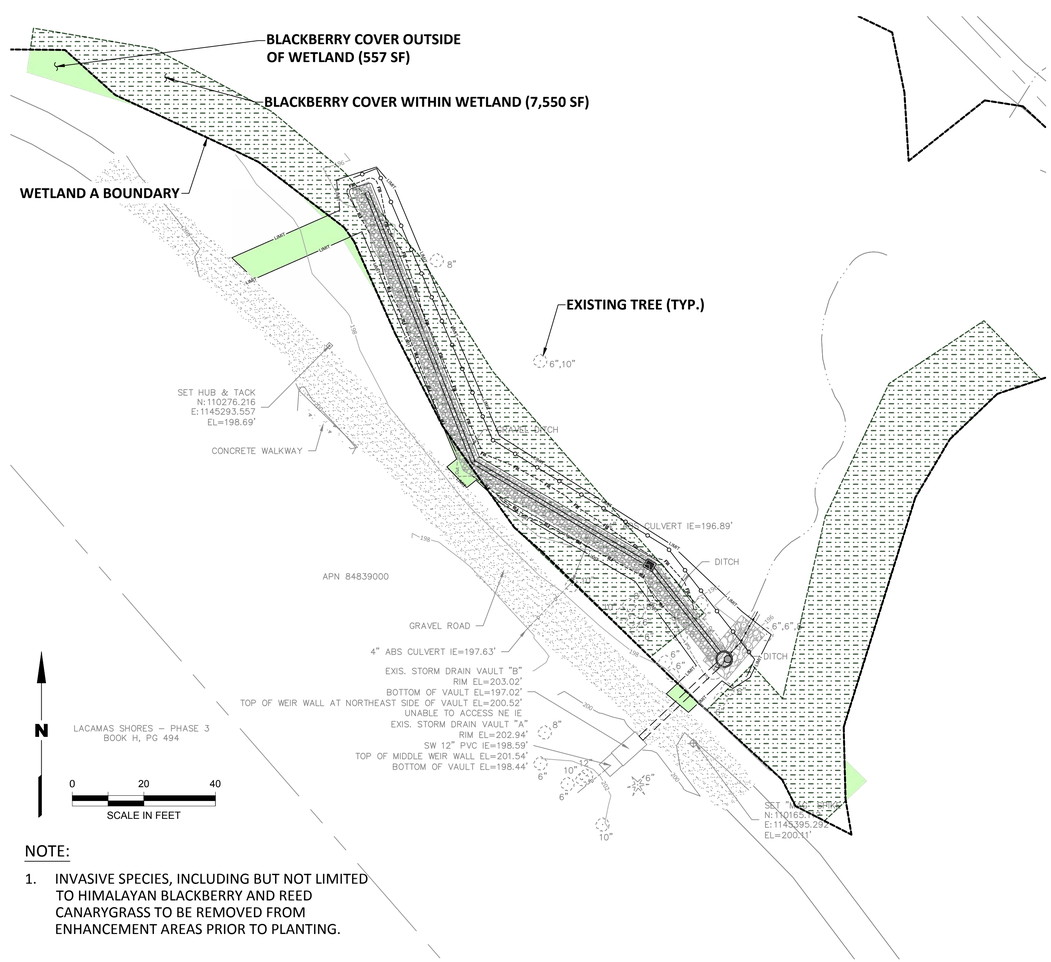
NORTHERN WETLAND ENHANCEMENT AREA - CB2

WETLAND ENHANCEMENT PLANTING TABLE

	COMMON NAME	SCIENTIFIC NAME	INDICATOR CODE	SIZE	SPACING	QUANTITY
	WETLAND ENHANCEMENT – INVASIVE REMOVAL AREA (20,749 SF)					
GROUNDCOVER	SLOUGH SEDGE	CAREX OBNUPTA	OBL	4" PLUG	INTERSPERSE GROUNDCOVER SO THAT OVERALL SPACING ON CENTER = 2 FT	1,673
	JOINTED RUSH	JUNCUS ARTICULATUS	OBL			1,673
	SAWBEAK SEDGE	CAREX STIPATA	OBL			1,673
	COMMON NAME	SCIENTIFIC NAME	INDICATOR CODE	SIZE	SPACING	QUANTITY
TREES	TREE REMOVAL MITIGATION PLANTINGS					
	WESTERN RED CEDAR	THUJA PLICATA	FAC	1 GAL	INTERSPERSE SO THAT TREES ARE RANDOMLY AND EVENLY SPACED	2
	PAPER BIRCH	BETULA PAPYRIFERA	FAC			6
	CASCARA	FRANGULA PURSHIANA	FAC			6
	OREGON ASH	FRAXINUS LATIFOLIA	FACW			16
	PACIFIC WILLOW	SALIX LASIANDRA	FACW	LIVE STAKES– CLUSTER OF 3		18
	GREYER WILLOW	SALIX GEYERIANA	FACW			18

BUFFER ENHANCEMENT TABLE

	COMMON NAME	SCIENTIFIC NAME	INDICATOR CODE	SIZE	SPACING	QUANTITY
	BUFFER ENHANCEMENT AREA (6,547 SF)					
TREES	BITTER CHERRY	PRUNUS EMARGINATA	FACU	1 GAL	INTERSPERSE TREES SO THAT OVERALL SPACING ON CENTER = 15 FT	15
	OREGON ASH	FRAXINUS LATIFOLIA	FACW			15
SHRUBS	SNOWBERRY	SYMPHORICARPOS ALBUS	FACU	1 GAL	INTERSPERSE SHRUBS SO THAT OVERALL SPACING ON CENTER = 6 FT	38
	TALL OREGON GRAPE	MAHONIA AQUIFOLIUM	FACU			38
	BEAKED HAZELNUT	CORYLUS CORNUTA	FACU			38
	INDIAN PLUM	OEMLERIA CERASIFORMIS	FACU			38



NOTE:

1. INVASIVE SPECIES, INCLUDING BUT NOT LIMITED TO HIMALAYAN BLACKBERRY AND REED CANARYGRASS TO BE REMOVED FROM ENHANCEMENT AREAS PRIOR TO PLANTING.

SOUTHERN WETLAND ENHANCEMENT AREA - CB1

NO.	DATE	REVISION DESCRIPTION	BY	CK

DRAFT

PRELIMINARY

MOMENTUM CIVIL PROJECT
MOMENTUM CIVIL CLIENT

ENHANCEMENT PLAN

TAX PARCEL NO. 84839000
CITY OF CAMAS, WA

LANDAU ASSOCIATES
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SEATTLE, WA 98125
PHONE: 206.631.8680

CHECKED BY: X. LAST NAME
DESIGNED BY: X. LAST NAME
DRAWN BY: X. LAST NAME

HORZ. DATUM: NAD83
VERT. DATUM: NGVD29

DATE: 02/28/24

PROJECT NO. 2015001.030

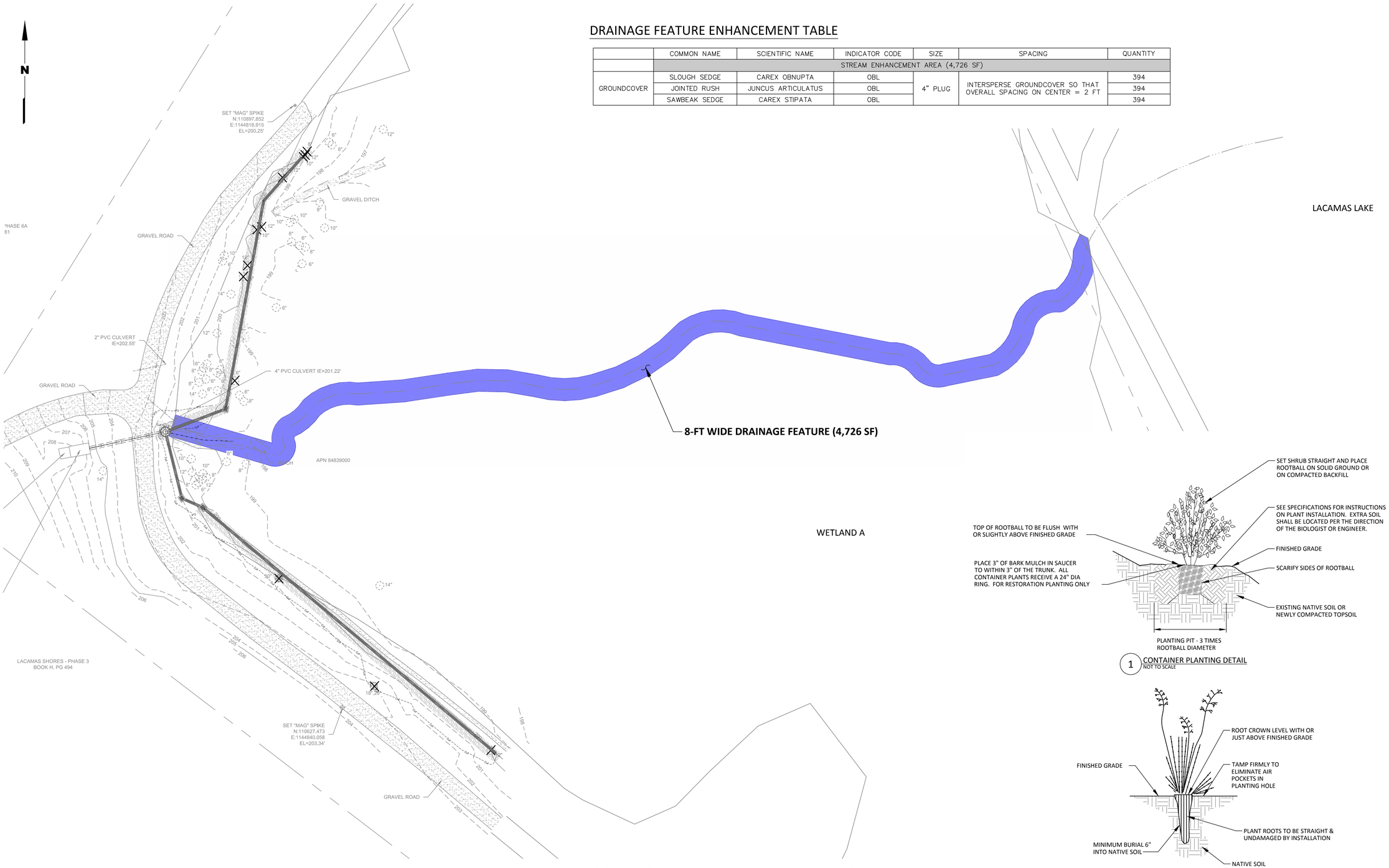
SHEET NO. 4 OF 5

REFERENCE NO. MIT-4

A PORTION OF THE NE 1/4 OF THE NE 1/4 OF SECTION 33, T2N, R3E, W.M. & A PORTION OF THE NW 1/4 OF THE NW 1/4 OF SECTION 34, T2N, R3E, W.M. & A PORTION OF THE SE 1/4 OF THE SE 1/4 OF THE SE 1/4 OF SECTION 28, T2N, R3E, W.M.

DRAINAGE FEATURE ENHANCEMENT TABLE

	COMMON NAME	SCIENTIFIC NAME	INDICATOR CODE	SIZE	SPACING	QUANTITY
	STREAM ENHANCEMENT AREA (4,726 SF)					
GROUNDCOVER	SLOUGH SEDGE	CAREX OBNUPTA	OBL	4" PLUG	INTERSPERSE GROUNDCOVER SO THAT OVERALL SPACING ON CENTER = 2 FT	394
	JOINTED RUSH	JUNCUS ARTICULATUS	OBL			394
	SAWBEAK SEDGE	CAREX STIPATA	OBL			394



DRAINAGE FEATURE ENHANCEMENT PLAN

0 20 40
SCALE IN FEET

1 CONTAINER PLANTING DETAIL
NOT TO SCALE

NOTES

1. LEAVES & ROOT CROWN TO REMAIN UNDAMAGED DURING PLANTING.
2. CREATE PLANTING HOLE BY DRIVING STEEL SPIKE INTO SOIL & WORKING SPIKE TO WIDEN SOIL.
3. PLANT AFTER FALL RAINS HAVE DAMPENED SOIL UNLESS DIRECTED OTHERWISE.

2 PLUG PLANTING DETAIL
NOT TO SCALE

NO.	DATE	REVISION DESCRIPTION	BY	CK

DRAFT

PRELIMINARY

MOMENTUM CIVIL PROJECT

MOMENTUM CIVIL CLIENT

STREAM ENHANCEMENT

TAX PARCEL NO. 84839000

CITY OF CAMAS, WA

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DATE: 02/28/24

PROJECT NO. 2015001.030

SHEET NO. 5 OF 5

REFERENCE NO. MIT-5