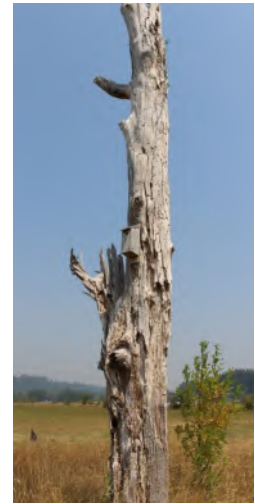




BANK USE PLAN

November 2, 2021



Lockwood Meadows Subdivision *La Center, Washington*

Prepared for

Susanna S. Hung

701 Columbia St. #414

Vancouver, Washington 98660

Prepared by

Ecological Land Services

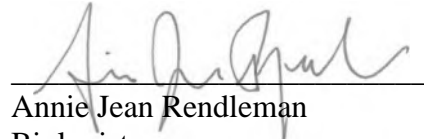
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NWS-2020-1015

SIGNATURE PAGE

The information and data in this report was compiled and prepared under the supervision and direction of the undersigned.



Annie Jean Rendleman
Biologist

TABLE OF CONTENTS

RESPONSIBLE PARTIES2
INTRODUCTION3
PROJECT DESCRIPTION3
EXISTING CONDITIONS4
AVOIDANCE AND MINIMIZATION OF IMPACTS6
UNAVOIDABLE WETLAND IMPACT ACREAGE.....6
IMPACTED WETLAND FUNCTIONS7
MITIGATION SITE SELECTION RATIONALE7
WETLAND FUNCTIONS PROVIDED AT MITIGATION BANK9
ANTICIPATED FUNCTIONAL LIFT11
WETLAND FUNCTIONS NOT MITIGATED AT MITIGATION BANK11
PROPOSED MITIGATION CREDITS11
CREDIT PURCHASE AND TRANSFER TIMING12
CONFIRMATION OF MITIGATION CREDIT AVAILABILITY12
REFERENCES13

Tables:

Table 1. Summary of Onsite Wetlands. 6
Table 2. Summary of Wetland Impacts to be Mitigated at EFLMB. 7
Table 3. Credits Recommended for Wetland and Buffer Impacts at EFMB 11
Table 4. Mitigation Bank Credits Proposed for Project Impacts. 12

Sheet Set:

Sheet 1 Vicinity Map
Sheet 2 Existing Conditions
Sheet 3 Proposed Conditions
Sheet 4 East Fork Lewis River Mitigation Bank Service Area
Sheet 5 East Fork Lewis Mitigation Bank Site Design

Appendix A

US Army Corps of Engineers Wetland Boundary Verification (March 31, 2021)

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INTRODUCTION

Ecological Land Services, Inc. (ELS) has prepared this bank use plan for the applicant, Susanna Hung, for proposed wetland impacts resulting from a residential subdivision in La Center, Washington. Construction is anticipated to begin in spring 2022 or upon permit approval.

The project will involve directly impacting 0.05 acres of a Category IV wetland. The applicant proposes purchasing 0.04 wetland credits at East Fork Lewis Mitigation Bank (EFLMB). This mitigation approach is meant to:

- 1) Compensate for direct Category IV wetland impacts and
- 2) Ensure no net loss of ecological wetland functions

This bank use plan was prepared according to:

- *La Center Municipal Code (LCMC) Title 18.300 Critical Areas (2021)*,
- *The Interagency Review Team (IRT) for Washington State's Guidance Paper, Using Credits from Wetland Mitigation Banks: Guidance to Applicants on Submittal Contents for Bank Use Plans (2009)*,
- *The Washington State Department of Ecology (Ecology) Wetland Mitigation in Washington State (2006)*, and
- *The U.S. Army Corps of Engineers' (Corps) Compensatory Mitigation for Losses of Aquatic Resources (33 C.F.R. §332 (2008))*.

PROJECT DESCRIPTION

Project Location

The site consists of Clark County Tax Parcel 209113-000 located at 2000 NE Lockwood Creek Road in La Center, Washington. NE Lockwood Creek Road abuts the southeastern portion of the site and NE 24th Avenue abuts the site to the east. The site is located in the southeast portion of Section 10, Township 3 North, Range 2 East of the Willamette Meridian (Sheet 1).

Project History

- ELS conducted a broad-scope assessment of the site March of 2020.
- ELS delineated wetlands and mapped critical areas September 8, 2020.
- During a site visit with Miranda Adams (Department of Ecology) on November 10, 2020, the Wetland A boundary was confirmed. Five additional test plots were taken near Wetland A to further support the delineation (TPs AA – AE). The pond area was also re-delineated (Wetland B), encompassing a larger area than what was originally outlined. Three additional test plots were taken to support the Wetland B delineation.
- ELS collected additional data from test plots made during the November site visit with Ecology, as well as TP-6, on February 24, 2021.
- A wetland boundary verification was issued by the Corps on March 31, 2021 (Appendix A).

Proposed Development

The proposed project is for construction of the Lockwood Meadows Subdivision, consisting of 71 residential lots. Construction of the residential development will include grading, lot preparation, utility installation, construction of interior streets, and a stormwater detention facility. Existing buildings within the site will be demolished prior to work. Impacts to critical areas have been avoided where feasible; however, 0.05 acres of Category IV wetland will be unavoidably impacted for site construction. The onsite priority habitat Oregon white oak (*Quercus garryana*) will be retained and no grading will occur within the oak's dripline (Sheet 3 shows proposed grading lines).

Stormwater

Stormwater onsite will be collected and conveyed through a storm main that will run through the proposed public roads onsite. Stormwater from impervious surfaces will be treated with media filters. The stormwater facility was designed to release stormwater at pre-development rates. A portion of the site's runoff will be released to Wetland B to ensure that it continues recharging.

Prior to construction, the clearing limits will be demarcated with orange construction fencing or silt fencing; following construction, any areas of exposed soils will be reseeded with native seed mix. Staging areas will be located within uplands outside of critical areas. Mitigation for project impacts will be satisfied by purchasing 0.04 credits at EFLMB.

EXISTING CONDITIONS

Existing and Surrounding Land Uses

The 20-acre site is zoned Single Family Residential (R1-7.5) with an Urban Holding (UH-10) zoning overlay. The site currently contains a single-family residence, barn, and well. The site is surrounded by high-density subdivision lots to the north and west, and low-density single-family parcels to the south (Sheet 2). The majority of the site consists of mowed field grasses with scattered trees, including Oregon white oaks (*Quercus garryana*). The eastern portion of the site is a decommissioned Christmas tree farm. The site contains two Category IV wetlands and one priority habitat Oregon white oak (Sheet 2). The property has been used as both a hobby and commercial farm operation for several decades which included agricultural activities such as livestock, hay, and Christmas tree production, as well as rental pasture and barn stalls for horses. The Christmas trees were grown on a third-party lease arrangement and the last selective tree harvest occurred during the winter of 2020/2021. The *Critical Areas Report for Lockwood Meadows Subdivision* (ELS 2021) discusses the site history and maintenance activity in further detail.

Landscape Position

The project site is located north of East Fork Lewis River, in the western portion of the 12-digit Hydrologic Unit Code (HUC) 170800020507 Lockwood Creek-East Fork Lewis River. The Washington State Department of Ecology's Water Quality Atlas maps the project site within the Watershed Resource Inventory Area (WRIA) 27 Lewis. A Type Ns stream is mapped onsite by the Washington Department of Natural Resources Stream Type Map. However, ELS has determined that the mapped stream does not meet stream criteria (ELS 2021).

Existing Critical Areas and Buffers

Two wetlands and one priority habitat Oregon white oak (*Quercus garryana*) were mapped onsite. The priority habitat Oregon white oak will be avoided and retained onsite. This bank use plan discusses the proposed wetland impacts and mitigation.

Wetlands

Two wetlands were delineated onsite, identified as Wetlands A and B. All onsite wetlands were rated according to the *Washington State Wetlands Rating System for Western Washington – 2014 Update* (Rating System) (Hruby 2014). The wetland ratings in the Critical Areas Report (ELS 2021) have been reviewed and confirmed by the Department of Ecology. Appendix A contains a wetland boundary verification from the Corps.

Wetland A

Wetland A is a Category IV forested, slope wetland located near the center of the decommissioned tree farm, totaling 0.05 acres (Sheet 2). Wetland A receives most of its hydrology from a seasonally high groundwater table, precipitation, and surface runoff from surrounding uplands. The wetland is saturated only and functions to recharge groundwater. According to the Rating System, Wetland A is a Category IV wetland scoring 5 points for water quality functions, 5 points for hydrologic functions, and 4 points for habitat functions with a total of 14 points. According to *LCMC 18.300.090(5)(d) Exempted Wetlands*, Wetland A is exempted from La Center buffer regulations.

Wetland B

Wetland B is a Category IV emergent and forested, depressional wetland located in the central southern portion of the site, totaling 0.08 acres (Sheet 2). The wetland receives its hydrology from groundwater and precipitation. Wetland B is permanently flooded and saturated only and functions to recharge groundwater. According to the Rating System, Wetland B is a Category IV wetland scoring 5 points for water quality functions, 6 points for hydrologic functions, and 4 points for habitat functions with a total of 15 points. The designated buffer width for a Category IV wetland with a habitat score of 4 is 50 feet, as listed in *LCMC Table 18.300.090(5)(i)(i)-1*.

Buffers

Wetland A is exempted from City of La Center buffer regulations. However, the landscape surrounding Wetland A consists of decommissioned Christmas tree farmland. This area is gently sloping and is dominated by black cottonwood (*Populus balsamifera*) and planted Nordmann fir (*Abies nordmanniana*) as well as sweet vernal grass (*Anthoxanthum odoratum*), velvet grass (*Holcus lanatus*), and Himalayan blackberry (*Rubus armeniacus*). The buffer functions of this area are reduced due to regular mowing and tree removal. Wetland B's buffer slopes more dramatically, especially toward the south. Wetland B's buffer is dominated by black cottonwood, Scouler's willow (*Salix scouleriana*), Himalayan blackberry, orchard grass (*Dactylis glomerata*), marsh cudweed (*Gnaphalium uliginosum*), chickweed (*Stellaria media*), garden vetch (*Vicia sativa*), and bluegrass (*Poa* sp.). The functions of Wetland B's buffer are somewhat reduced due to regular mowing; however, some trees and shrubs are established.

Table 1. Summary of Onsite Wetlands.

Critical Area	Category ¹	HGM Class ²	Cowardin Class ³	Habitat Score	Area (ac.)	Buffer ⁴ (ft.)
A	IV	Slope	Forested	4	0.05	Exempted ⁵
B	IV	Depressional	Emergent, Forested	4	0.08	50

¹ Hruby 2014

² NRCS 2008

³ Cowardin et al. 1979

⁴ LCMC Table 18.300.090(5)(i)(i)-1

⁵ LCMC 18.300.090(5)(d)

AVOIDANCE AND MINIMIZATION OF IMPACTS

The preferred mitigation sequencing of first avoidance, then minimization, and finally compensation for unavoidable impacts were taken into consideration. Other than Wetland A, all onsite critical areas will not be impacted. The following avoidance and minimization measures were applied for the project:

- The site design was modified to completely avoid impacts to Wetland B and the onsite priority Oregon white oak.
- Per *LCMC 18.300.090(5)(d) Exempted Wetlands*, Wetland A is exempt from the requirement to avoid impacts.
- The stormwater facility was placed outside of the wetlands and wetland buffers.
- The priority habitat Oregon white oak will not be impacted.
- Prior to construction, silt fencing will be installed to protect Wetland B from disturbance.
- During construction dust and/or erosion control best management practices (BMPs) will be implemented.
- Following construction, any exposed soils will be seeded with native seed mix.
- Permanent signs will be installed on metal or wood posts around the Wetland B buffer onsite. Habitat signs will be posted at 100-foot intervals reading, “*Wetland and Buffer – Please Retain in a Natural State.*”

UNAVOIDABLE WETLAND IMPACT ACREAGE

Per *LCMC 18.300.090(5)(d) Exempted Wetlands*, Wetland A is exempt from the requirement to avoid impacts. This wetland may be filled as long as the impacts are fully mitigated. Wetland A is proposed to be filled due to the topography of the site. Significant grading will be required to provide the required cross circulation to adjacent parcels and roads, as well as to provide reasonable building pads for the future construction of homes, which will necessitate the filling of Wetland A. Construction activities will involve directly impacting 0.05 acres of wetland from grading and fill for lot construction. The types of equipment used for the construction will include

dump trucks, backhoes, graders, bulldozers, and rollers. Table 2 below summarizes the proposed wetland impacts.

Table 2. Summary of Wetland Impacts to be Mitigated at EFLMB.

Wetland	Category	Impact Type	Impact Area (acres)
Wetland A	IV	Direct, Fill	0.05

IMPACTED WETLAND FUNCTIONS

A wetland function assessment was performed for Wetlands A and B based on the functions identified in the rating system (Hruby 2014). Wetland A provides moderate water quality functions due to its average slope and sediment-trapping plant community, low potential to support the water quality function of the site, and high water quality improvement provided by the site valuable to society. Wetland A provides moderate hydrologic functions due to a low potential for reducing flood erosion, low potential to support hydrologic functions of the site, and high hydrologic functions valuable to society (flooding problems down-gradient of sub-basin). Wetland A provides low habitat functions due to its lack of habitat interspersions and variety of hydroperiods, as well as a lack of nearby habitat features valuable to society. The wetland is in a somewhat disturbed condition, as much of its vegetation is non-native from the decommissioned tree farm. Wetland A will be completely filled, resulting in 0.05 acres of Category IV direct wetland impacts.

Wetland B will not be permanently impacted. However, approximately 14,795 square feet of its buffer will be temporarily impacted from grading (See grading lines on Sheet 3). This grading area is in the outermost portion of the buffer and currently contains mowed grasses. No tree removal will occur in this area as a result of the grading plan. The proposed grading activities will result in a temporary change in buffer conditions from placement of soil. The graded areas will be reseeded with a native grass mix. Soil placement will not result in negative hydrologic changes in the buffer area or adjacent wetland, as the areas will remain permeable and will not consist of any permanent structures. Additionally, placement of soil can improve hydrological flow through the buffer by the addition of organic topsoil, increasing infiltration at the soil surface and increasing water holding capacity within the soils below the soil surface. Grading through the placement of soil in the buffer will not result in a reduction of wetland acreage or function. Grading will take place in the wetland buffer only and outside of the wetland boundary. Wetland boundary/limits of grading will be marked in the field with silt fencing prior to any grading work. The surveyed wetland boundary will be offset 1 to 2 feet to provide an additional measure of protection against sedimentation encroaching into the wetland boundary. Wetland functions will not be altered as the activity will take place entirely outside of the boundaries of the wetland, and buffer vegetation will be restored to pre-project conditions. The wetland buffer functions will not be permanently altered as a result of the grading in the buffer as outlined above.

MITIGATION SITE SELECTION RATIONALE

The wetland proposed for impact is located within the EFLMB service area (Sheet 4). The impact site is approximately 6.5 miles southwest of the bank site within the central western portion of the

service area. Wetland science from Ecology, the Corps, and the U.S. Environmental Protection Agency states that they promote mitigation that is:

“...located appropriately on the landscape, addresses restoration of watershed processes, is sustainable, and has a high likelihood of ecological success. Onsite mitigation may achieve these goals in many circumstances. However, we should not risk mitigation success or bypass opportunities for improving ecological processes in a watershed by unnecessarily prioritizing onsite mitigation over more effective and sustainable offsite options (Hruby *et al.* 2009).”

Impacts to Wetland A will be mitigated at the EFLMB, which is owned by the East Fork Lewis Mitigation Partners, LLC. The general goal of the bank is to re-establish 108.20 acres of wetland, enhance 0.29 acres of wetland, and preserve 4.77 acres of associated wetland and upland forest as detailed in the *East Fork Lewis Mitigation Bank Mitigation Banking Instrument* (MBI). Post-construction, the bank site will consist of a forested, scrub-shrub, and emergent depressional flow-through wetland system that will contain a seasonal stream and a fish-bearing, perennial stream. The re-established wetlands at the bank will increase flood storage, improve water quality, help prevent downstream erosion, and recharge groundwater to supplement low summer flows in the stream. Furthermore, trees and shrubs planted along the tributary to Rock Creek (perennial, fish bearing stream) and buffer will help keep the stream temperature cooler during the hot summer months as well as establish a corridor to adjacent upland areas.

The Service Area of the bank extends to the limits of the rain-dominated mountainous hydrogeologic unit, as determined in developing the *Watershed Characterization of Clark County* (Ecology 2009). This covers the southwest portion of the Lewis River Water Resources Inventory Area (WRIA 27). This Hydrogeologic Unit was classified due to its regional climate, surficial geology, topography (landform), groundwater, and surface flow patterns in relationship to aquatic ecosystems (Stanley *et al.* 2005). Gee Creek and Allen Canyon Creek Watersheds, and the north portion of Mill Creek Sub-watershed are included in the East Fork Lewis River Service Area, and are areas of special consideration. Gee Creek and Allen Canyon Creek Watersheds are located in the Lewis River WRIA (WRIA 27), but they have similar topography and geology to other watersheds in the Salmon/Washougal WRIA (WRIA 28). Conversely, the northern portion of Mill Creek Sub-watershed is located in WRIA 28 but actually drains to the north into WRIA 27. For these reasons, these watersheds are included in the East Fork Lewis River Service Area (as described in *Watershed Characterization of Clark County*, Ecology 2009).

The bank is located in the southeast quarter of Section 23, Township 5 North, Range 2 East of the Willamette Meridian, near La Center, Washington (Sheet 4). All real property to be included within the bank site area (Clark County Tax Parcels 264409000, 264355000, 264413000, 264402000, 264412000, 264411000 and 264352000), as more completely described in the legal description attached in Exhibit A within the MBI, is owned in fee simple by three parties: Perry and Cheryl Gilmour, John Deiganes, and Warren and Sara Sarkinen.

The interagency Mitigation Bank Review Team approved the MBI in the spring of 2011. The MBI was executed by the following agencies on the following dates: Clark County (May 17, 2011), the Washington State Department of Ecology (May 9, 2011) and by the U.S. Army Corps of Engineers (June 6, 2011) that serves as the underlying agreement for the mitigation bank. The MBI defines the terms and conditions relating to the establishment, construction, maintenance and monitoring,

and operation of the bank. The MBI contains provisions relating to credit establishment, release, and use upon the bank sponsor meeting specific objective performance standards. The MBI also contains other requirements intended to secure banker's obligations to perform under the MBI. All terms and conditions must be adhered to, for the bank to generate and offer mitigation credits for use.

The East Fork Lewis Mitigation Bank has re-established approximately 100 acres of wetland area and function within the project site. The bank was recently awarded 31.50 mitigation credits for the achievement of performance standards relating to wetland hydrology re-establishment and native wetland habitat community re-establishment (emergent, shrub and forested wetlands) during monitoring Years 1, 3 and 5. The bank has been highly successful in re-establishing both forested and scrub-shrub wetland habitat communities, as well as a diverse native mixture of wet meadow and native emergent wetland habitat communities that are largely free of invasive species. The bank has completed Year 5 of its monitoring program and wetland hydrology and plant communities have been fully established, eliminating the risk of temporal loss or mitigation failure associated with many permittee-responsible mitigation projects. Additionally, because the majority of the bank is primarily wetland re-establishment, the net-loss of wetland area that might occur through permittee responsible mitigation actions such as wetland enhancement, preservation or rehabilitation is eliminated.

Additionally, the 2008 *Compensatory Mitigation for Losses of Aquatic Resources, Final Rule* recommends purchasing mitigation bank credits for ecological considerations (lower risk of failure and lower temporal loss of resources and services) and to avoid the maintenance and contingency issues and outright failures that often accompany permittee-responsible mitigation sites. Use of the Bank substantially lowers the risk of failure and temporal loss of resource. Mitigating the impacts offsite at EFLMB will be more meaningful and beneficial to the overall watershed as the goals and objectives for the establishment and success of EFLMB directly address watershed concerns and priorities and correspond in-kind with the mitigation needs of the proposed project. ELS therefore selected to mitigate offsite at EFLMB. As described below, the functional lift anticipated by the Bank will adequately compensate for wetland functions impacted by the proposed project.

WETLAND FUNCTIONS PROVIDED AT MITIGATION BANK

The following is excerpted or paraphrased from the East Fork Lewis Mitigation Banking Instrument (MBI):

Prior to establishment of the bank, the site consisted of intensely farmed agricultural fields bisected by a series of ditches with groundwater was controlled by an extensive ditch and drain tile system. A Type F stream (tributary to Rock Creek) was historically diverted across (east) the northern portion of the bank site, then turns to flow south along the eastern boundary. The onsite ditches and stream were considered Category IV, riverine flow-through wetlands. A Category III, slope/depressional forested wetland is also located within the narrow strip of land along the western bank boundary that continues offsite to the west.

The primary ecological goals of the East Fork Lewis Wetland Mitigation Bank are as follows:

- Restore wetland hydrology by disabling the extensive ditch and drain tile system currently used to convey water off of the site.
- Establish a variety of native wetland habitat types, comparable to pre-agricultural conditions and in accordance with targeted hydrologic regimes and elevations across the site.
- Control invasive species, including but not limited to, reed canarygrass (*Phalaris arundinacea*) and Himalayan blackberry (*Rubus armeniacus*) across the site.
- Create and enhance wildlife habitat, structure and function of the site.

Grading activities and installation of large woody material and other habitat features at the bank were completed in 2013 and 2014, and plant installation was completed in March 2014.

Water Quality (Removing nutrients, sediment, metals, and toxic organic compounds)

The bank's contributing basin includes rural residences and paved roads that contribute untreated stormwater runoff to the bank site. Because the contributing basin is largely undeveloped, it is expected that future land use in the surrounding area will only increase the level of sediments, nutrients, and toxics that could potentially enter the site. Post-construction wetland functions related to water quality, such as removing sediments, nutrients, metals, and toxic organic substances will significantly increase as vegetation establishes. Specifically, the wetland will store water seasonally and during flood events, slowing and reducing sediment transport, and multiple vegetative classes will filter metals and toxic organic substances and remove nutrients in the increased aerobic conditions. Furthermore, trees and shrubs planted along the tributary to Rock Creek will help keep the stream temperature cooler during the hot summer months.

Hydrology (Reducing peak flows, downstream erosion, and recharging groundwater)

Prior to bank construction, groundwater, runoff, and flood water from the tributary to Rock Creek entering the bank site was quickly and effectively conveyed downstream through the extensive drain tile and ditch system. Disabling drain tiles and plugging ditches allow the site to saturate, creating new wetland area (108+ acres), which significantly increase flood water storage within the watershed. This reduces peak flows downstream of the bank, decreases downstream erosion, and provides groundwater recharge that helps to alleviate low flows downstream of the bank site during the dry season.

Wildlife Habitat (General, invertebrates, amphibians, fish, birds, mammals)

Overall habitat suitability for invertebrates, amphibians, wetland-associated birds, and wetland-associated mammals have improved tremendously over existing conditions of the bank site, specifically because of the increase in wetland area containing a variety of hydroperiods (permanent, seasonal, and occasional inundation and/or saturation), vegetative species richness, habitat interspersions, the habitat features (large woody debris and bird nesting boxes), eventual canopy closure of forested wetland areas, and corridors to adjacent upland areas. Although the site has been designed to exclude resident and anadromous fish to prevent stranding, fish habitat in the onsite ditches and downstream is enhanced because plantings along the tributary to Rock Creek provide temperature regulation and leaf litter. The wetlands also increase groundwater recharge

that will supplement low flows during the dry season, and the wetland vegetation improves water quality entering the stream.

ANTICIPATED FUNCTIONAL LIFT

The goal of the bank site is to re-establish high quality wetland and associated wildlife habitat providing for significant overall functional lift. The bank site location within the landscape and its overall design will provide a significant ecological benefit to not only the immediate surrounding area, but throughout a large portion of the watershed. The bank is currently in the establishment period having been planted in spring of 2014. The post-construction bank site will consist of a forested, scrub-shrub, and emergent depressional flow-through wetland system that will contain a seasonal stream and a fish-bearing, perennial stream. A variety of water regimes, vegetation interspersions, and habitat features will provide diverse habitat opportunity for wildlife. The re-established wetlands will also increase flood storage, improve water quality, help prevent downstream erosion, recharge groundwater to supplement low summer flows and keep summer water temperatures cooler, similar to pre-agricultural conditions. The anticipated functional lift post-construction of the bank consists of an overall increase in functions related to habitat, water quality and water quantity.

WETLAND FUNCTIONS NOT MITIGATED AT MITIGATION BANK

Onsite stormwater detention and treatment will mitigate Wetland A’s impacted water quality and water quantity functions. Runoff generated from the new impervious surfaces will be collected and conveyed to stormwater facilities for detention and treatment, which will help to recharge groundwater and will provide water quality treatment. All other impacted functions will be compensated at the mitigation bank.

PROPOSED MITIGATION CREDITS

Table 3 below is taken from the East Fork Lewis MBI and lists the recommended credit ratios for purchasing credits based on the impacted resource category.

Table 3. Credits Recommended for Wetland and Buffer Impacts at EFMB

Resource Impact	Bank Credits:Impact Area
Category I Wetland	Case-by-case
Category II Wetland	1.2:1
Category III Wetland	1:1
Category IV Wetland	0.85:1
Critical Area Buffer	Case-by-case

Construction activities will involve directly impacting 0.05 acres of Category IV wetland. Bank credits will be purchased from EFLMB at a 0.85:1 ratio, per Table 3 above. The purchasing of 0.04 credits at the bank will fully compensate for the quality of habitat lost and ensure there is no net loss of ecological function. Table 4 below details the mitigation ratios used to calculate the total number of bank credits needed to compensate for the project impacts.

Table 4. Mitigation Bank Credits Proposed for Project Impacts.

Impact Area	Wetland Category	Impact Amount (ac.)	Mitigation Ratio	Proposed Credit Purchase
Wetland A	IV	0.05	0.85:1	0.0425
Total				0.04 (rounded)

CREDIT PURCHASE AND TRANSFER TIMING

The applicant will enter into a Buy/Sell Agreement with East Fork Lewis Mitigation Partners for purchasing mitigation credits as specified in Table 4 above to appropriately mitigate for the proposed project impacts. The actual purchase of credits will occur following permit issuance, and prior to project impacts from the development. In no case shall credits be applied (e.g. debited from the bank) to a receiving (impact) project unless and until permits have been issued for the underlying activity by the agencies with jurisdiction. Nothing in the mitigation credit Purchase Agreement shall be interpreted or construed to permit any activity that otherwise requires a federal, state, and/or local permit.

CONFIRMATION OF MITIGATION CREDIT AVAILABILITY

East Fork Lewis Mitigation Partners, LLC, the Bank Sponsor, has met all the required terms and conditions for the release of mitigation credits from the East Fork Lewis Mitigation Bank. Proof of the current number of available mitigation credits at the East Fork Lewis Mitigation Bank site can be confirmed by approving agency(s) through the Interagency Review Team.

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REFERENCES

- Castelle, A.J., C. Conolkly, M. Emers, E.D. Metz, S. Meyer, M. Witter, S. Mauermann, T. Erickson, and S.S. Cooke. 1992. *Wetland Buffers: Use and Effectiveness*. Publ. 92-10. Adolphson Assoc., for Shorelands and Coastal Zone Manage. Program, Washington Department of Ecology, Olympia, WA.
- City of La Center. 2021. *La Center Municipal Code 18.300 Critical Areas*. La Center, Washington. April 28, 2021.
- Cowardin, L.M., C. Carter, F.C. Golet, and E.T. LaRoe. 1979. *Classification of Wetlands and Deepwater Habitats of the United States*. FWS/OBS-78/31. U.S. Department of the Interior, Fish and Wildlife Service, Office of Biological Services, Washington D.C.
- East Fork Lewis Mitigation Partners, LLC & Ecological Land Services, Inc. March 2011. *East Fork Lewis Mitigation Bank Mitigation Banking Instrument*, Available at <http://www.ecy.wa.gov/programs/sea/wetlands/mitigation/banking/pdf/MBI/eastforklewis.pdf>. Accessed August 2021.
- Ecological Land Services, Inc. (ELS). 2021. *Critical Areas Report for Lockwood Meadows Subdivision*, La Center, Washington. March 24, 2021.
- Hruby, T. 2014. *Washington State Wetland Rating System for Western Washington – 2014 update*. Washington State Department of Ecology Publication #14-06-029. Olympia, Washington.
- The Interagency Review Team for Washington State. February 2, 2009. *Using Credits from Wetland Mitigation Banks: Guidance to Applicants on Submittal Contents for Bank Use Plans*.
- Stanley, S., J. Brown, and S. Grigsby. 2005. *Protecting Aquatic Ecosystems: A Guide for Puget Sound Planners to Understand Watershed Processes*. Washington State Department of Ecology. Publication #05-06-027. Olympia, WA
- U.S. Army Corps of Engineers (Corps). 2008. *Compensatory Mitigation for Losses of Aquatic Resources*. Corps and Environmental Protection Agency (EPA). Available at: http://www.usace.army.mil/Portals/2/docs/civilworks/regulatory/final_mitig_rule.pdf. Accessed September 2020.
- Washington Department of Ecology (Ecology), U.S. Army Corps of Engineers Seattle District, and U.S. Environmental Protection Agency Region 10. March 2006. *Wetland Mitigation in Washington State - Parts 1 & 2*. Washington Department of Ecology Publications #06-06-011a and #06-06-011b. Olympia, Washington.
- Washington State Department of Ecology, Shorelands and Environmental Assistance Program. 2009. *Watershed Characterization and analysis of Clark County*. Washington State Department of Ecology Publication # 09-06-019. Olympia, Washington.

SHEET SET

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WASHINGTON

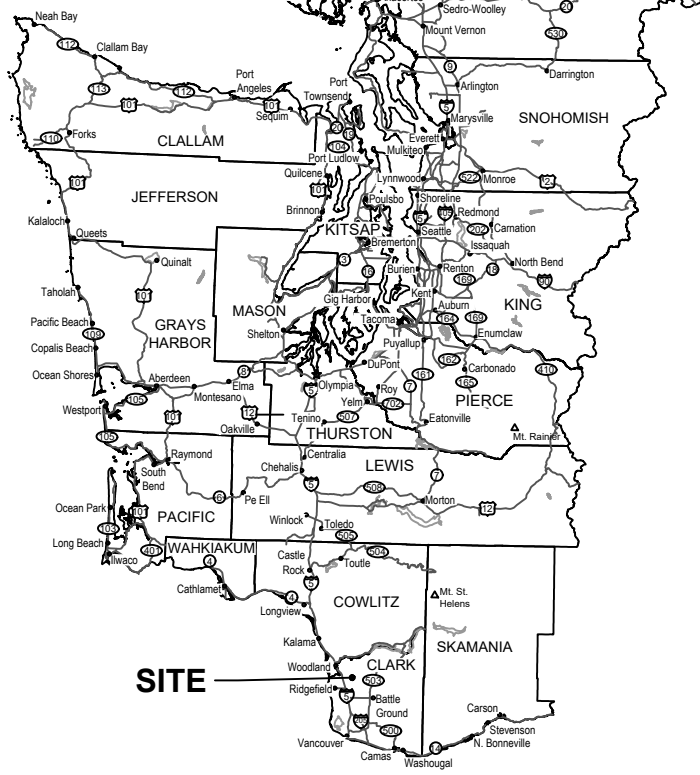


Latitude: 45.8620°
Longitude: -122.6487°

LOCATION MAP

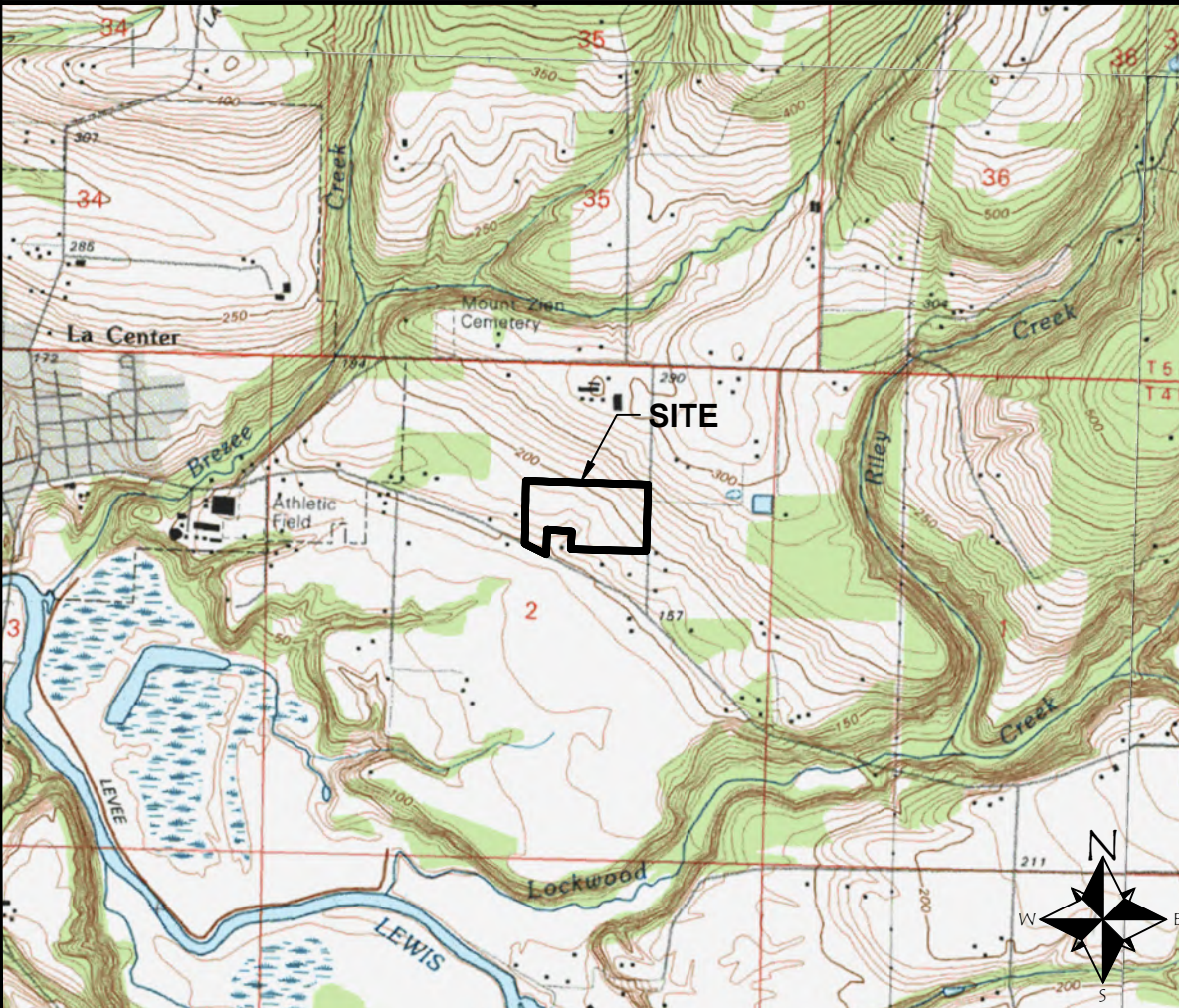
		R 1 E	
	6	2	1
T 4 N			
	31		36

PROJECT VICINITY MAP



NOTE:

Quadrangle topographic map from USGS.

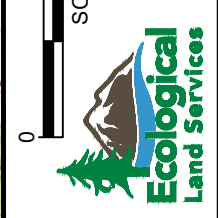


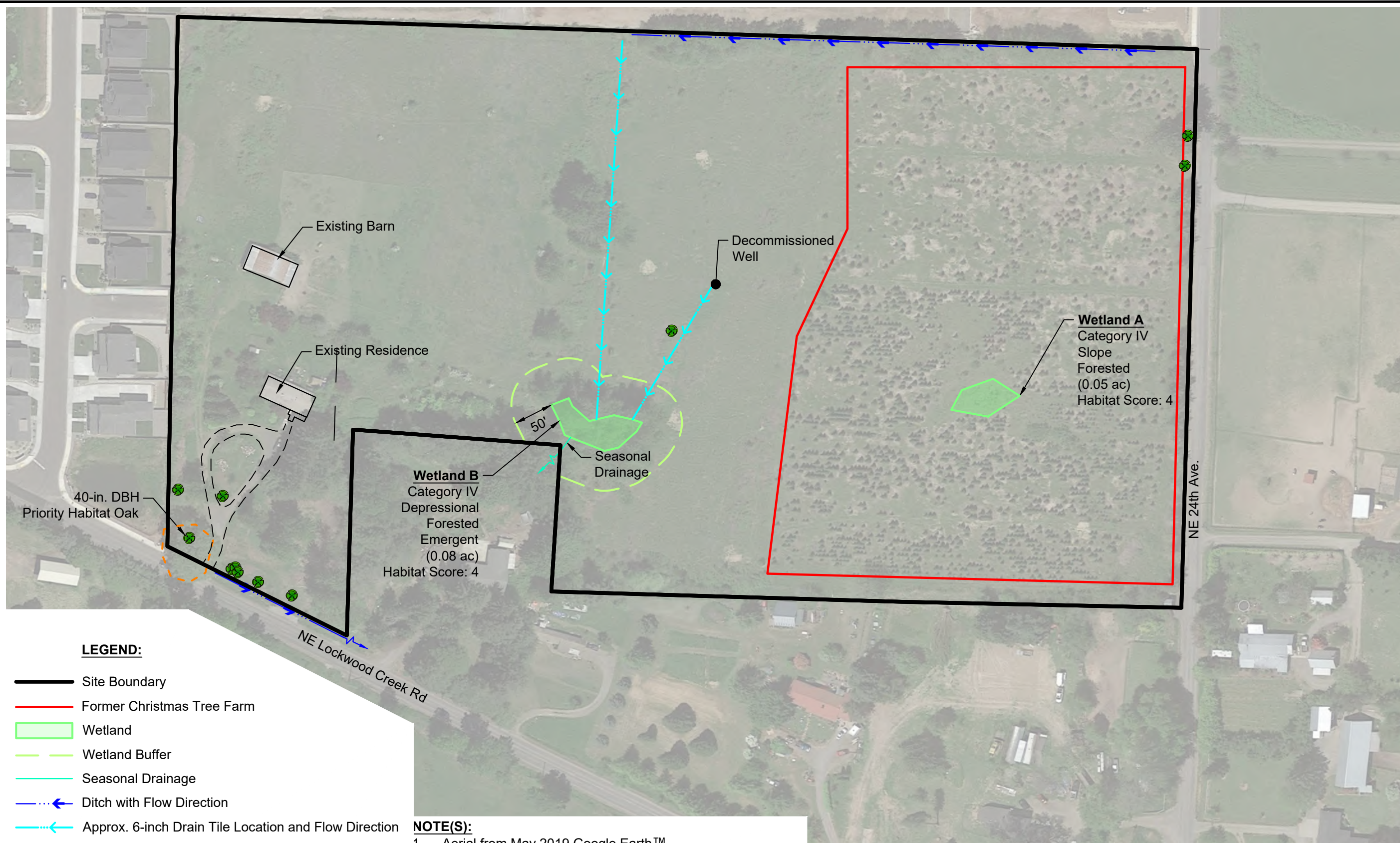
PROPOSED: Residential subdivision
IN Wetland
NEAR: La Center
COUNTY: Clark
STATE: WA
SHEET 1 OF 5
DATE: 11/2/21

VICINITY MAP
APPLICANT: PLS Engineering
PROJECT NAME: Lockwood Meadows Subdivision
REFERENCE #: NWS-2020-1015
SITE LOCATION ADDRESS:
2000 NE Lockwood Creek Road,
La Center WA 98629

PURPOSE: Wetland Fill
DATUM: NAD83
ADJACENT PROPERTY OWNERS:
Sec JARPA

1157 3rd Ave., Suite 220A
Longview, WA 98632
Phone: (360) 578-1371



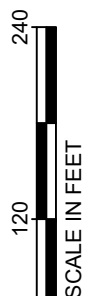
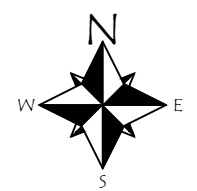


LEGEND:

- Site Boundary
- Former Christmas Tree Farm
- Wetland
- Wetland Buffer
- Seasonal Drainage
- Ditch with Flow Direction
- Approx. 6-inch Drain Tile Location and Flow Direction
- Pavement/Gravel
- Oak Tree
- Oak Tree Dripline (0.10 ac)
- TP-1 ● Test Plot Location
- Continues Offsite

NOTE(S):

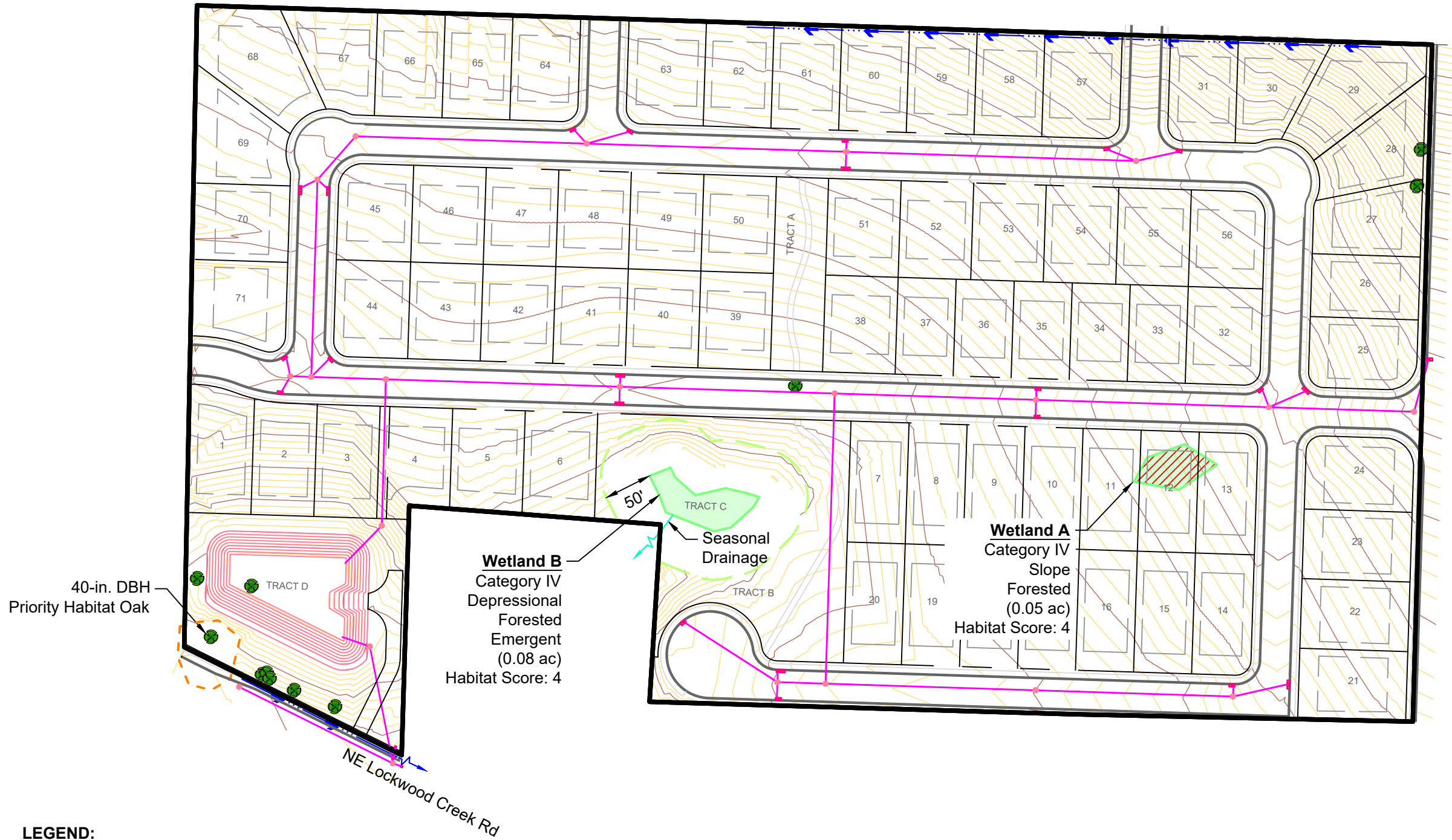
1. Aerial from May 2019 Google Earth™.
2. Wetlands, test plots, and oak trees were mapped by an ELS Biologist using a hand-held GPS unit with submeter accuracy.
3. Wetland A is exempted from La Center buffers per LCMC 18.300.090(5)(d) Exempted Wetlands.



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 Longview, WA 98632
 Phone: (360) 578-1371



<p>PURPOSE: Wetland Fill</p> <p>DATUM: NAD83</p> <p>ADJACENT PROPERTY OWNERS: See JARPA</p>	<p>EXISTING CONDITIONS</p> <p>APPLICANT: PLS Engineering</p> <p>PROJECT NAME: Lockwood Meadows Subdivision</p> <p>REFERENCE #: NWS-2020-1015</p> <p>SITE LOCATION ADDRESS: 2000 NE Lockwood Creek Road, La Center WA 98629</p>	<p>PROPOSED: Residential subdivision</p> <p>IN Wetland</p> <p>NEAR: La Center</p> <p>COUNTY: Clark</p> <p>STATE: WA</p> <p>SHEET 2 OF 5</p> <p>DATE: 11/2/21</p>
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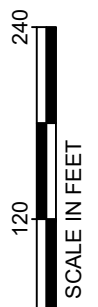


LEGEND:

- Site Boundary
- Wetland
- Wetland Buffer
- Seasonal Drainage
- Ditch with Flow Direction
- Oak Tree
- Oak Tree Dripline (0.10 ac)
- Continues Offsite
- Proposed Edge of Asphalt
- Proposed Property Boundary
- Proposed Building Envelope
- Proposed Stormwater Pond
- Proposed Storm Pipe
- Proposed Wetland Impacts (0.05 ac.)
- Proposed 1' Contours
- Proposed 5' Contours

NOTE(S):

1. Wetlands, test plots, and oak trees were mapped by an ELS Biologist using a hand-held GPS unit with submeter accuracy.
2. Wetland A is exempted from La Center buffers per LCMC 18.300.090(5)(d) Exempted Wetlands.
3. Site plan provided by PLS Engineering.

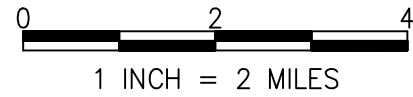


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Longview, WA 98632
Phone: (360) 578-1371



<p>PURPOSE: Wetland Fill</p> <p>DATUM: NAD83</p> <p>ADJACENT PROPERTY OWNERS: See JARPA</p>	<p>PROPOSED CONDITIONS</p> <p>APPLICANT: PLS Engineering</p> <p>PROJECT NAME: Lockwood Meadows Subdivision</p> <p>REFERENCE #: NWS-2020-1015</p> <p>SITE LOCATION ADDRESS: 2000 NE Lockwood Creek Road, La Center WA 98629</p>	<p>PROPOSED: Residential subdivision</p> <p>IN Wetland</p> <p>NEAR: La Center</p> <p>COUNTY: Clark</p> <p>STATE: WA</p> <p>SHEET 3 OF 5</p> <p>DATE: 11/2/21</p>
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COWLITZ COUNTY

Mitigation Site (Fargher Lake Site)

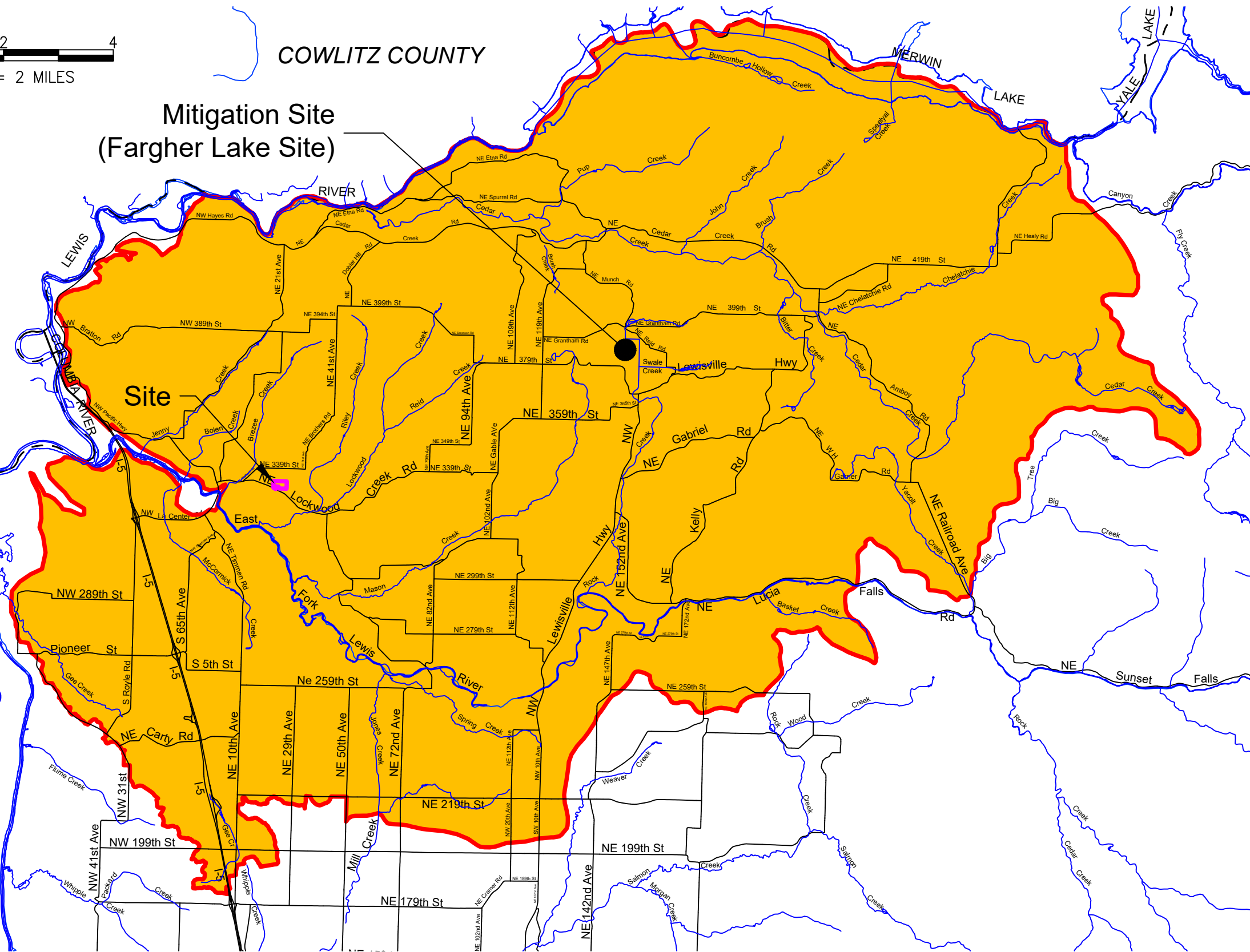
Site

LEGEND:

-  SERVICE AREA
-  COUNTY AND STATE BOUNDARY
-  MAJOR ROADS
-  MAJOR RIVERS AND STREAMS

NOTES:

1. STATE, COUNTY, ROADS, RIVERS AND STREAM BOUNDARIES FROM ECOLOGY WEBSITE:
<http://www.wsdot.wa.gov/mapsdata/geodatacatalog/default.htm>
2. SERVICE AREA BOUNDARY BASED ON MAP PREPARED BY STEPHEN STANLEY WETLAND RESTORATION BIOLOGIST WASHINGTON DEPARTMENT OF ECOLOGY SEA PROGRAM.
3. MAP PREPARED BY ECOLOGICAL LAND SERVICES, INC., DECEMBER, 2007 AND JANUARY, 2010.



PURPOSE: Wetland Fill

PROPOSED: Residential subdivision

APPLICANT: PLS Engineering

PROJECT NAME: Lockwood Meadows Subdivision

REFERENCE #: NWS-2020-1015

SITE LOCATION ADDRESS:
2000 NE Lockwood Creek Road,
La Center WA 98629


DATE: 11/2/21

DATUM: NAD83

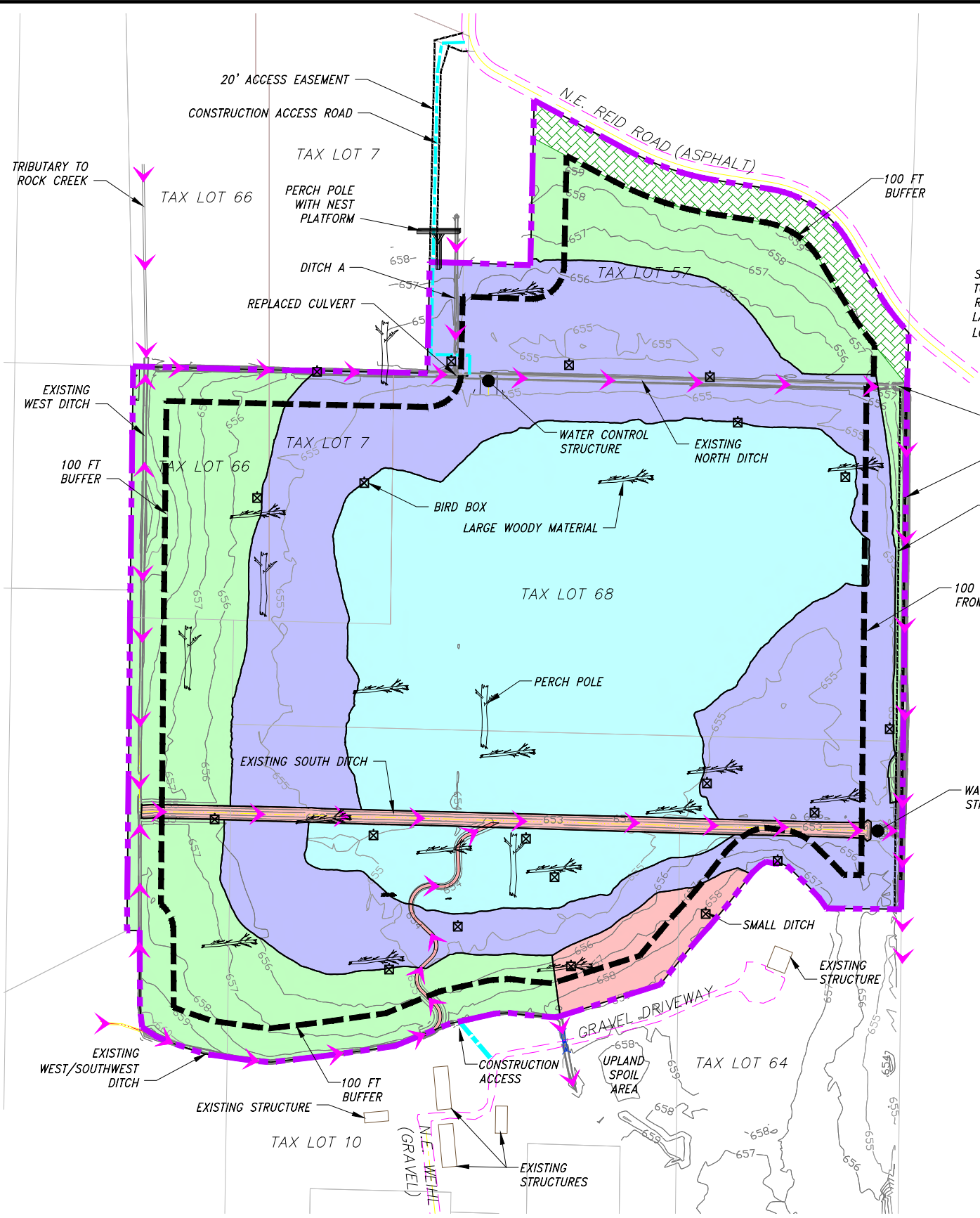
ADJACENT PROPERTY OWNERS:

IN Wetland
NEAR: La Center
COUNTY: Clark
STATE: WA
SHEET 4 OF 5

ECOLOGICAL LAND SERVICES, INC.
1157 3rd Avenue, Suite 220
Longview, WA 98632



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SECTIONS: 23
TOWNSHIP: T5N
RANGE: R2E
LAT = 45° 54' 4.62"N
LONG = 122° 31' 9.61"W

LEGEND

	PALUSTRINE FORESTED WETLAND (27.93 AC) (10.15 AC IN BANK BUFFER)
	PALUSTRINE SCRUB-SHRUB WETLAND (39.23 AC) (6.59 AC IN BANK BUFFER)
	PALUSTRINE EMERGENT WETLAND VARIANT (4.61 AC) (1.66 AC IN BANK BUFFER)
	PALUSTRINE EMERGENT WETLAND REESTABLISHMENT (38.32 AC) (0.00 AC IN BANK BUFFER)
	FORESTED UPLAND (3.63 AC) (3.63 AC IN BANK BUFFER)

	SITE BOUNDARY (113.26 AC)
	LOT BOUNDARY
	BUFFER (20.95 AC)
	EXISTING CULVERTS
	DESIGN WATER SURFACE ELEVATION = 654.8
	MAJOR CONTOURS
	MINOR CONTOURS
	FLOW ARROWS
	SWALE

- NOTES:**
1. Base map prepared by Ducks Unlimited.
 2. Planting area boundaries mapped with a hand-held GPS unit with ≥ 3-foot accuracy.
 3. Plants were installed in Spring 2014 by Tree Management Plus.

Habitat Features

Type	Amount
Large woody material assemblage/root wad/downed log/perch pole	15
Standard nest box/nest platform/wood duck nest box/purple martin next house/bat box	21

Existing Conditions	Mitigation Bank Site Total (acres)	Area in Bank Buffer (acres)	Creditable Area (acres)
Upland Ag	107.96	16.65	--
Forested Upland	3.63	3.63	--
Palustrine Forested Wetland	0.39	0.39	--
Palustrine Emergent Wetland (includes all existing ditches on site)	1.28	0.28	--
Total Existing Conditions	113.26	20.95	--
Proposed Conditions	Mitigation Bank Site Total (acres)	Area in Bank Buffer (acres)	Creditable Area (acres)
Palustrine Forested Wetland (reestablishment)	27.80	10.09	17.71
Palustrine Scrub-Shrub Wetland (reestablishment)	17.86	2.70	15.16
Palustrine Scrub Shrub/Emergent Transition Wetland (reestablishment)	22.55	1.89	20.66
Palustrine Emergent Wetland Variant (reestablishment)	3.09	1.57	1.52
Palustrine Emergent Wetland (reestablishment)	36.90	0.81	36.09
South Ditch Palustrine Emergent Wetland (enhancement)	0.29	0	0.29
North Ditch Non-Creditable Area	0.43	0.26	0
East Ditch/Maintenance Access Non-Creditable Area	0.71	0	0
Upland Forest	3.63	3.63	0
Total Bank Site Area	113.26	20.95*	91.43**

*Does not include 0.71 acres of East Ditch/maintenance access which is considered non-creditable and not part of the buffer.
**Does not include 0.17 acres of the North Ditch which is considered non-creditable.

PURPOSE: Wetland Fill

APPLICANT: PLS Engineering

PROJECT NAME: Lockwood Meadows Subdivision

REFERENCE #: NWS-2020-1015

SITE LOCATION ADDRESS: 2000 NE Lockwood Creek Road, La Center WA 98629

DATUM: NAD83

ADJACENT PROPERTY OWNERS: See JARPA

PROPOSED: Residential subdivision

IN Wetland NEAR: La Center

COUNTY: Clark

STATE: WA

SHEET 5 OF 5

DATE: 11/2/21

800
400
0
SCALE IN FEET

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Longview, WA 98632
Phone: (360) 578-1371

**APPENDIX A: US ARMY CORPS OF ENGINEERS WETLAND BOUNDARY
VERIFICATION (MARCH 31, 2021)**



DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS, SEATTLE DISTRICT
P.O. BOX 3755
SEATTLE, WASHINGTON 98124-3755

Regulatory Branch

March 31, 2021

Ms. Susanna Hung
701 Columbia Street, Unit 414
Vancouver, Washington 98660

Reference: NWS-2020-1015
Hung, Susanna
(Wetland Boundary
Verification)

Dear Ms. Hung:

On November 10, 2020, Ms. Miranda Adams of Washington Department of Ecology (Ecology) inspected the property at 2000 Northeast Lockwood Creek Road, La Center, Clark County, Washington, in response to your request for verification of wetland boundaries in the review area. The U.S. Army Corps of Engineers (Corps) has reviewed the findings by Ecology and have determined the wetland boundaries shown on the enclosed drawings dated March 24, 2021, accurately identify the extent of wetlands in the review area. This verification of wetland boundaries only applies to the wetland boundary and does not apply jurisdiction status of the wetland. Other waters and wetlands that may occur on this property outside the review area are not the subject of this review. This confirmation of wetland boundaries is valid for a period of five years from the date of this letter unless new information warrants revisions of the determination.

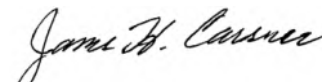
To document the extent of the Corps jurisdiction over the project and if you request, we can proceed with an approved jurisdictional determination (AJD), which is an official determination regarding the presence or absence of waters of the U.S. If one is requested, please be aware that I may require the submittal of additional information. Depending on our determination, we may have to coordinate with the U.S. Environmental Protection Agency on our findings before making an official determination. An AJD is appealable and is most often requested when a project proponent questions the Corps' jurisdiction or the extent (boundaries) of jurisdictional waters. I will not be able to process a permit request until the AJD determination is final.

You can request a preliminary jurisdictional determination (PJD), which is a written indication that waters on the property may be waters of the United States. Such waters will be treated as jurisdictional waters of the U.S. for purposes of evaluating a permit request. While a preliminary JD is not appealable, the property owner can, at any time, request an approved JD

for the site. The PJD is most often used in instances where a project proponent just wants to move ahead with the permit process without further delay.

A copy of this letter with drawings will be furnished to Ms. Annie Jean Rendleman, Ecological Land Services, Incorporated at anniejean@eco-land.com. If you propose to do any work in the areas identified to be wetlands, you should contact our office prior to commencing work to determine permit requirements. If you have any questions, please contact me at james.h.carsner@usace.army.mil or (206) 316-3047.

Sincerely,



James H. Carsner.
Senior Project Manager
Regulatory Branch

Enclosures

WASHINGTON

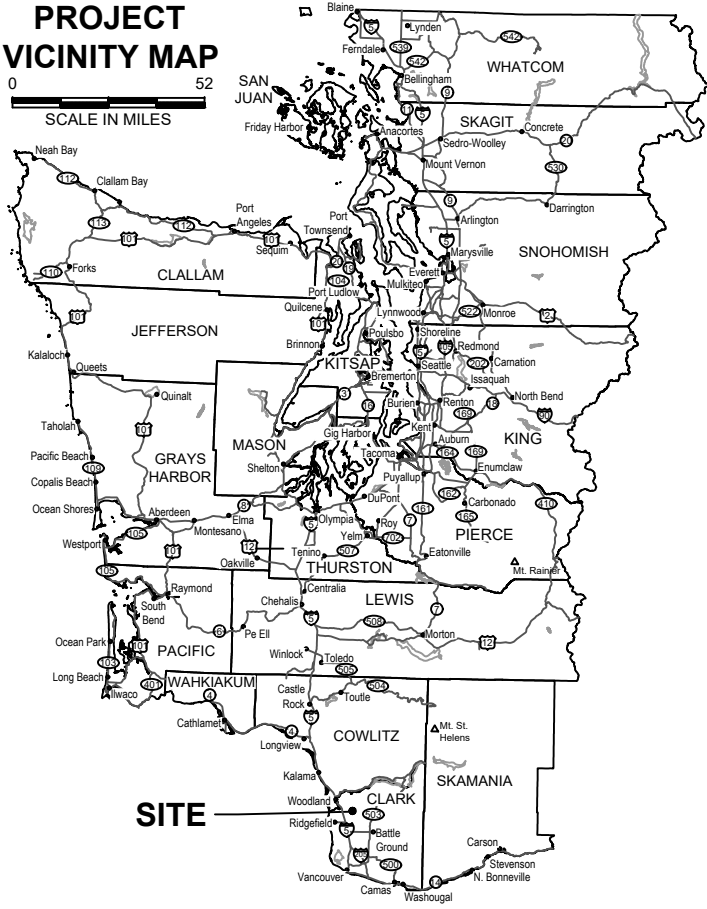


Latitude: 45.8620°
Longitude: -122.6487°

LOCATION MAP

	R 1 E		
	6	2	1
T			
4			
N			
	31		36

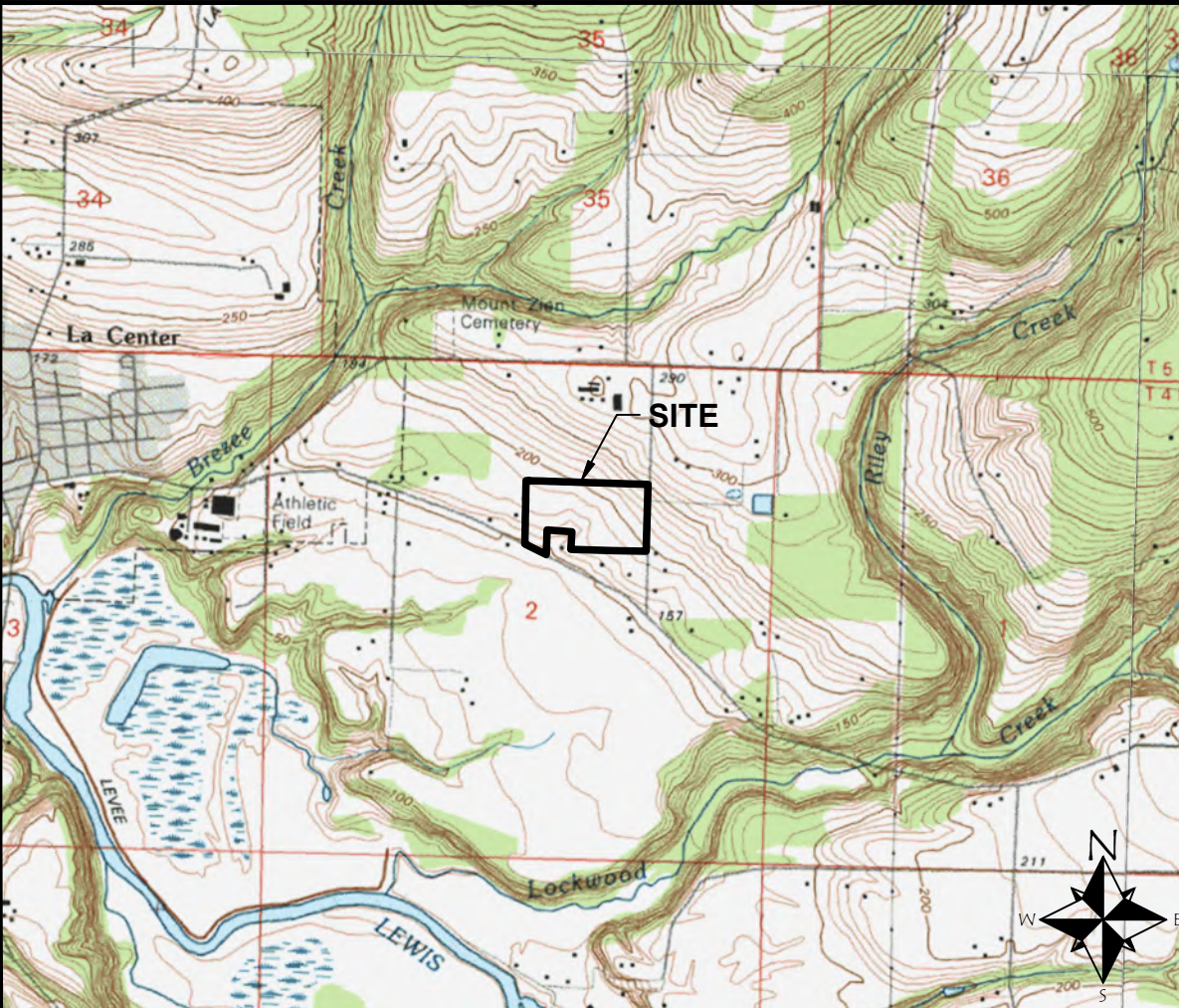
PROJECT VICINITY MAP



SITE

NOTE:

Quadrangle topographic map from USGS.



SITE

PROPOSED: Residential subdivision
IN Wetland
NEAR: La Center
COUNTY: Clark
SHEET 1 OF 2
STATE: WA
DATE: 3/24/21

VICINITY MAP
APPLICANT: PLS Engineering
PROJECT NAME: Lockwood Meadows Subdivision
REFERENCE #: NWS-2020-1015
SITE LOCATION ADDRESS:
 2000 NE Lockwood Creek Road,
 La Center WA 98629

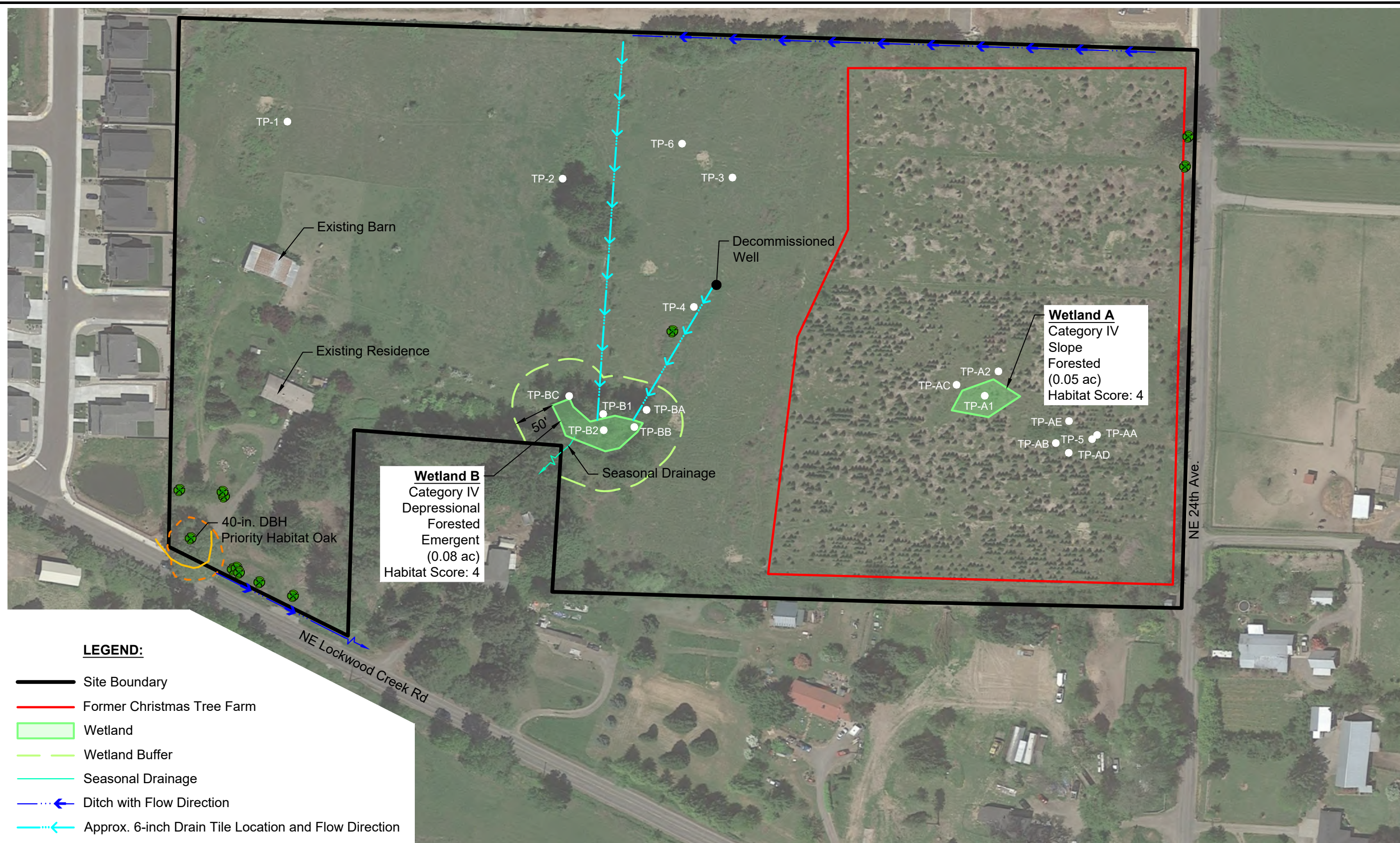
PURPOSE: Wetland Fill
DATUM: NAD83
ADJACENT PROPERTY OWNERS:
 Sec JARPA

1157 3rd Ave., Suite 220A
 Longview, WA 98632
 Phone: (360) 578-1371

Ecological Land Services

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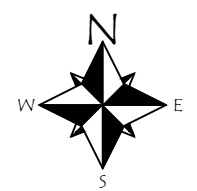


LEGEND:

- Site Boundary
- Former Christmas Tree Farm
- Wetland
- Wetland Buffer
- Seasonal Drainage
- Ditch with Flow Direction
- Approx. 6-inch Drain Tile Location and Flow Direction
- Pavement/Gravel
- Oak Tree
- Oak Tree Dripline (0.10 ac)
- TP-1 ● Test Plot Location
- Continues Offsite

NOTE(S):

1. Aerial from May 2019 Google Earth™.
2. Wetlands, test plots, and oak trees were mapped by an ELS Biologist using a hand-held GPS unit with submeter accuracy.
3. Wetland A is exempted from La Center buffers per LCMC 18.300.090(5)(d) Exempted Wetlands.



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 Longview, WA 98632
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PURPOSE: Wetland Fill	SITE MAP	PROPOSED: Residential subdivision
ADJACENT PROPERTY OWNERS:	APPLICANT: PLS Engineering	IN Wetland
DATUM: NAD83	PROJECT NAME: Lockwood Meadows Subdivision	NEAR: La Center
See JARPA	REFERENCE #: NWS-2020-1015	COUNTY: Clark
	SITE LOCATION ADDRESS:	STATE: WA
	2000 NE Lockwood Creek Road,	SHEET 2 OF 2
	La Center WA 98629	DATE: 3/24/21