BANK USE PLAN

November 6, 2018

Riverside Estates

La Center, Washington

Prepared for

ECM Riverside LLC.
340 Oswego Pointe Drive , Suite 208
Lake Oswego, Oregon 97034
(503) 454-6551

Prepared by

Ecological Land Services

1157 3rd Avenue, Suite 220A • Longview, WA 98632

(360) 578-1371 • Project Number 2776.01

SIGNATURE PAGE

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

Steffanie Taylor
Senior Biologist/Principal

TABLE OF CONTENTS

Tables

Figures

Appendices

RESPONSIBLE PARTIES

APPLICANT

ECM Riverside LLC
Attn: Rachel Page
340 Oswego Pointe Drive, Suite 208
Lake Oswego, OR 97034
(503) 454-6551

PROJECT ENGINEER

PLS Engineering
Attn: Travis Johnson, P.E.
2008 C Street
Vancouver, WA 98663
travis@plsengineering.com
(360) 944-6519

ENVIRONMENTAL CONSULTANT

Ecological Land Services, Inc.
Attn: Steffanie Taylor, Senior Biologist
1157 3rd Avenue, Suite 220A
Longview, Washington 98632
steff@eco-land.com
(360) 578-1371

INTRODUCTION

Ecological Land Services, Inc. (ELS) prepared this Bank Use Plan for ECM Riverside LLC for direct and indirect wetland impacts resulting from the proposed Riverside Estates subdivision in the City of La Center, Washington. The 43.38-acre project site is located within Section 33, Township 5 North, and Range 1 East of the Willamette Meridian 215384-000 (Figures 1 through 5). Construction is anticipated to begin in spring 2019.

The project will involve directly impacting 0.35 acres and indirectly impacting 1.62 of Category III wetlands to accommodate project design elements. Mitigation will consist of purchasing 1.16 credits from the East Fork Lewis Mitigation Bank (EFLMB) in order to:

1) Compensate for indirect and direct Category III wetland impacts and
2) Ensure no net loss of ecological wetland and buffer functions

This Bank Use Plan was prepared according to the City of La Center Municipal Code (LCMC), *Chapter 18.300.090, Critical Lands* (2018), 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)).

Critical areas data used to prepare this Bank Use Plan is a compilation of data sourced from critical areas reports prepared by Loowit Consulting Group LLC (LCG) and Ecological Land Services, Inc. (ELS). LCG's report is titled *Critical Areas Report for Riverside Estates Project La Center, Washington* and dated June 29, 2018. ELS's report is also titled *Critical Areas Report for Riverside Estates Project La Center, Washington*, dated September 11, 2018. Copies of each report are included in the Appendices A and B respectively for reference.

PROPOSED DESCRIPTION

PROJECT LOCATION

The Riverside Estates development is located at the intersection of Old Pacific Highway and Larsen Road in La Center, Washington. The project site consists of five Clark County Tax Parcels: 986028830, 258689000, 986030202, 986030201, and 986028825 that total 43.38 acres within Section 33, Township 5 North, and Range 1 East of the Willamette Meridian (Figure 1).

PROPOSED DEVELOPMENT

The applicant is proposing a multi lot residential subdivision on the property that will include clearing, grading, lot preparation, utility installation, construction of interior streets,

stormwater facilities, and fencing at the rear or side yards of lots that border critical area buffers or green spaces. Prior to construction, clearing limits will be demarcated with orange construction fencing or silt fencing. Silt fencing will be installed along the landward edge of critical area buffer boundaries. Two construction accesses will be installed, one off of Old Pacific Highway and one off Larsen Drive. Staging areas will be located in uplands outside of critical area buffers near the construction access off of Larsen Drive (Figure 3). Additional best management practices are discussed in the Avoidance and Minimization Section later in this report. Construction is anticipated to start upon receipt of permits.

Construction activities will involve directly impacting 0.35 acres of wetland through grading and indirectly impacting 1.62 acres of wetland due to insufficient buffer. There are five wetlands, one seasonal stream, and one man-made jurisdictional ditch in the study area, identified as Wetlands A, AA, BB, CC, DD, Stream 1, and Ditch 1 (Figure 2). The stream, ditch, and two largest wetlands (Wetlands A and BB) will be completely avoided; Wetland AA, Wetland CC, and Wetland DD will be filled entirely to complete the proposed development. Mitigation for project impacts will be satisfied by purchasing 1.16 credits at EFLMB.

EXISTING CONDITIONS

EXISTING AND SURROUNDING LAND USES

The project site is bordered to the northeast by Old Pacific Highway, Larson Drive extends along the eastern property boundary, and properties to the south, west, and east are currently developed with single family residences. Historically, the property has been used for farming and livestock and is currently vacant. Approximately 0.25 acres within Wetland A is an existing conservation area established as mitigation for an earlier project. There are no proposed impacts to this area. The property is zoned Medium Density Residential (MDR-16): single-family dwellings with associated shared driveways, stormwater facilities, utility installation, and road improvements.

LANDSCAPE POSITION

The project site is located on a high terrace above the East Fork Lewis River, approximately 1.5 miles from its confluence with the mainstem Lewis River. The Washington State Department of Ecology's Water Quality Atlas maps the project site within lower portion of Watershed Resource Inventory Area (WRIA) 27 – Lewis Watershed, and is within the 12-digit Hydrologic Unit Code (HUC): 17080002507. The Stream 1 is a tributary of the East Fork Lewis River.

CRITICAL AREAS DESCRIPTIONS

ELS completed a critical areas assessment for parcels 986028825, 986030202, and 986030201 on August 8 and 19, 2018 delineating Wetland A and Ditch 1. LCG completed the critical areas assessment for parcels 986028830 and 258689000 on June 29, 2018 delineating Wetlands AA, BB, CC, DD, Stream 1, and Ditch 1). The critical area reports prepared by LCG and ELS each contain detailed information regarding delineation methodology, wetland characteristics, and

wetland ratings. There are a total of five Category III wetlands, one jurisdictional ditch, and a portion of one seasonal stream on the project site addressed in this bank use plan (Figure 2). Wetland rating scores were revised following correspondence with Rebecca Rothwell, Department of Ecology in September 2018. Critical areas are summarized in text below and in Table 1.

Wetland A

Wetland A is a Category III emergent, scrub-shrub, slope and depressional wetland totaling 2.18 acres onsite and is located in the northwestern portion of the site. The majority of the wetland consists of a slope that was bordered by an obvious change in vegetation and hydrology. A man-made farm pond comprises the depressional portion of the wetland which was bordered by a berm along the southern edge that was approximately five feet high. Scrub-shrub vegetation within the wetland consists primarily of black hawthorn (*Crataegus douglasii*), red-osier dogwood (*Cornus sericea*), and willow (*Salix spp.*). Emergent areas were dominated by reed canarygrass (*Phalaris arundinacea*) and tall fescue (*Schedonorus arundinaceus*) and experience annual mowing. Wetland hydrology likely comes from upslope runoff, a seasonally high groundwater table, and precipitation. Hydroperiods of Wetland A include permanently flooded, seasonally flooded, and saturated only. The wetland functions to slow surface flow and to recharge groundwater. The farm pond comprises at least ten percent of the total wetland area and therefore the depressional hydrogeomorphic (HGM) class was used for rating. According to the *Washington State Wetland Rating System for Western Washington: 2014 Update* (Rating System), Wetland A is a Category III depressional wetland scoring a total of 18 points: 6 points for water quality functions, 5 points for hydrologic functions, and 7 points for habitat functions (Hruby 2014). According to *Table 18.300.090(6)(h)(i)-2* of the LCMC, designated buffer widths for a Category III wetland with a moderate habitat function and a high intensity land use is 150 feet.

Wetland AA

Wetland AA is a Category III emergent, depressional wetland located near the intersection of Old Pacific Highway and Larsen Drive totaling 0.16 acres onsite. Vegetation in Wetland AA is dominated by annually mowed red fescue (*Festuca rubra*) with minor coverage of meadow foxtail (*Alopecurus pratensis*), velvetgrass (*Holcus lanatus*), creeping buttercup (*Ranunculus repens*), and perennial rye (*Lolium perenne*). The wetland receives hydrology from the roadside ditch along Old Pacific Highway and from direct precipitation creating occasionally flooded and saturated only hydroperiods. No outlet was observed. The main functions of the wetland include flood storage, groundwater recharge, and water quality improvement. Based on the Rating System, Wetland AA is a Category III depressional wetland scoring a total of 18 points: 7 points for water quality functions, 6 points for hydrologic functions, and 5 points for habitat functions (Hruby 2014). According to *Table 18.300.090(6)(h)(i)-2* of the LCMC, designated buffer widths for a Category III wetland with a moderate habitat function and a high intensity land use is 150 feet.

Wetland BB

Wetland BB is a Category III emergent, depressional wetland located along Old Pacific Highway in the northern portion of the site totaling 0.33 acres onsite. Vegetation is dominated by annually mowed grasses and forbs including velvetgrass and creeping buttercup with minor coverage of meadow foxtail, and bird's foot trefoil (*Lotus corniculatus*). The wetland receives hydrology from the roadside ditch along Old Pacific Highway and from direct precipitation creating occasionally flooded and saturated only hydroperiods. The wetland outlets to Ditch 1. The main functions of the wetland include flood storage, groundwater recharge, and water quality improvement. Based on the Rating System, Wetland BB is a Category III depressional wetland scoring a total of 16 points: 6 points for water quality functions, 4 points for hydrologic functions, and 6 points for habitat functions (Hruby 2014). According to *Table 18.300.090(6)(h)(i)-2* of the LCMC, designated buffer widths for a Category III wetland with a moderate habitat function and a high intensity land use is 150 feet.

Wetland CC

Wetland CC is a Category III emergent, depressional wetland located in the north central portion of the site totaling 0.10 acres onsite. Vegetation is dominated by annually mowed grasses and forbs including velvetgrass and creeping buttercup with minor coverage of meadow foxtail, and bird's foot trefoil. The main source of hydrology is likely direct precipitation and runoff from surrounding uplands creating occasionally flooded and saturated only hydroperiods. The main functions of the wetland include flood storage, groundwater recharge, and water quality improvement. No inlet or outlet was observed on the wetland. Based on the Rating System, Wetland CC is a Category III depressional wetland scoring a total of 17 points: 7 points for water quality functions, 5 points for hydrologic functions, and 5 points for habitat functions (Hruby 2014). According to LCMC *18.300.090(6)(C)(i)*, Wetland CC may be exempt from buffer requirements if it is determined to be isolated; however, an isolated determination is not being sought. Wetland CC therefore has a buffer of 150 feet because it is a Category III wetland with a moderate habitat function and a high intensity land use.

Wetland DD

Wetland DD is a Category III emergent, depressional wetland located in a shallow swale in the north central portion of the site totaling 0.08 acres onsite. Vegetation is dominated by annually mowed grasses and forbs as described in Wetland CC above. The main source of hydrology is likely direct precipitation and runoff from surrounding uplands creating occasionally flooded and saturated only hydroperiods. The main functions of the wetland include flood storage, groundwater recharge, and water quality improvement. No inlet or outlet was observed on the wetland. Based on the Rating System, Wetland DD is a Category III depressional wetland scoring a total of 17 points: 7 points for water quality functions, 5 points for hydrologic functions, and 5 points for habitat functions (Hruby 2014). According to LCMC *18.300.090(6)(C)(i)*, Wetland DD may be exempt from buffer requirements if it is determined to be isolated; however, an isolated determination is not being sought. Wetland DD therefore has a buffer of 150 feet because it is a Category III wetland with a moderate habitat function and a high intensity land use.

Wetland Buffers

Wetland buffers and uplands on the project site are actively mowed and consist of pasture grasses and forbs including hairy cat's ear, sweet vernal grass (*Anthoxanthum odoratum*), sheep sorrel (*Rumex acetosella*), velvetgrass, red fescue, and bentgrass providing limited refuge, screening, and habitat opportunity functions. The buffers do allow wildlife movement (although not under cover) and provide forage. Those portions of the buffers uphill from the wetlands provide sediment trapping, nutrient uptake, and slow runoff, although these functions are also limited because of annual mowing.

Ditch 1

Ditch 1 is a man-made, jurisdictional ditch that flows west along the southern boundary of Wetlands A and BB within the northern portion of the property. The ditch continues offsite in a southwesterly direction to a farm pond adjacent to the north side of NW Hunter Lane. A stream appears to form South of NW Hunter Lane based on topography. This stream flows into the East Fork of the Lewis River and is mapped as a Type N stream by the Department of Natural Resources (DNR) Forest Practices Application Mapping Tool (2018). The ditch is exempt from buffer requirements.

Stream 1

Stream 1 is a seasonal, non-fish bearing stream that originates near the western property boundary and continues offsite southwesterly into East Fork of the Lewis River; the DNR Forest Practices Application Mapping Tool (2018) maps Stream 1 as a Type N stream. The stream is within a well-defined ravine and has a densely vegetated but narrow forested and scrub-shrub riparian area. According to *LMC Table 18.300.090(2)(f)*, Type Ns streams require a 75-foot buffer.

Table 1. Summary of Critical Areas.

Critical Area	Category[1]/Cowardin Class[2]/HGM Class[3] or Water Type[4]	Size Onsite	Buffer Width[5]
Wetland A	III/emergent and scrub-shrub/ depressional and slope	2.18 acres (94,799 sq. ft.)	150 feet
Wetland AA	III/ emergent/depressional	0.17 acres (7,568 sq. ft.)	150 feet
Wetland BB	III/ emergent/slope	0.33 acres (14,422 sq. ft.)	150 feet
Wetland CC	III/ emergent/depressional	0.10 acres (4,195 sq. ft.)	150 feet
Wetland DD	III/emergent/depressional	0.08 acres (3,336 sq. ft.)	150 feet
Ditch 1	Jurisdictional (seasonal, non-fish bearing)	0.07 acres (3,000 sq. ft.)	N/A

Critical Area	Category[1]/Cowardin Class[2]/HGM Class[3] or Water Type[4]	Size Onsite	Buffer Width[5]
Stream 1	Type Ns (seasonal, non-fish bearing)	channel width: 3 feet	75 feet

[1]Hruby 2004

[2]Cowardin et al. 1979

[3]NRCS 2008

[4] DNR

[5]LCMC *18.300.090(6)(h)(i)-1 for wetlands and LMC 18.300.090(2)(f)* for streams

AVOIDANCE AND MINIMIZATION OF IMPACTS

The preferred mitigation sequencing of first avoidance, then minimization, and finally compensation for unavoidable wetland impacts was taken into consideration during the project design process. The proposed development has been designed to avoid the largest two wetlands onsite, Wetlands A and BB, and has also completely avoided the Type Ns stream and its 75-foot buffer. A 40-foot wide strip buffer will remain in its natural condition along the southern boundary of Wetland A. The undeveloped strip will taper toward the east leaving an approximate 10-foot wide undeveloped strip along southern boundary of Wetland BB. Wetland AA was originally going to have fewer direct impacts; however, the City of La Center requires improvements to Larson Drive at its intersection with Old Pacific Highway. Therefore, additional unavoidable wetland impacts will occur in Wetland AA due to the redesigned access (Figure 3). Silt fencing will be installed along the landward edge of the remaining critical area buffer boundaries. Silt fencing or orange construction fencing will also be installed at the edge of grading in areas where there are no critical area buffers. Staging areas will be designated in upland areas outside of critical area buffers. Fencing will be installed on all lots abutting critical area buffers and signage will be permanently affixed to the yard-side of the fence that reads "The area beyond this sign is a critical area or buffer. Alteration or disturbance is prohibited by law. No Dumping allowed. Please call the City of La Center for more information."

UNAVOIDABLE WETLAND IMPACT ACREAGE

Wetlands AA, CC, and DD, totaling 0.17 acres, 0.10 acres, and 0.08 acres respectively, will be completely filled for lot development. Indirect impacts due to insufficient buffer will also occur to Wetlands A and BB totaling 2.18 acres and 0.33 acres respectively. No indirect hydrology impacts are anticipated to occur to these wetlands as their hydrology sources will not be impacted. Table 2 below summarizes the wetland impacts.

Table 2. Summary of Wetland Impacts.

Impact Area	Category[1]	Cowardin Class[2]	HGM Class[3]	Impact Type	Impact Amount
Wetland A	III	Scrub-shrub/ Emergent	Depressional	Indirect[4] (insufficient buffer)	1.29 acres (56,160 sq. ft.)
Wetland AA	III	Emergent	Depressional	Direct (fill)	0.17 acres (7,568 sq. ft.)
Wetland BB	III	Emergent	Depressional	Indirect (insufficient buffer)	0.33 acres (14,422 sq. ft.)
Wetland CC	III	Emergent	Depressional	Direct (fill)	0.10 acres (4,195 sq. ft.)
Wetland DD	III	Emergent	Depressional	Direct (fill)	0.08 acres (3,336 sq. ft.)
[1]Hruby 2004 [2]Cowardin et al. 1979 [3]NRCS 2008 [4] Regulated by City and Ecology [5] Total based on adding all impact square footage. Differs from converting total impact acreage to square feet due to rounding error.				**Direct Total**	0.35 acres (15,099[5] sq. ft.)
				Indirect Total	1.62 acres (70,582[5] sq. ft.)

IMPACTED WETLAND FUNCTIONS

WETLANDS A AND BB

No direct impacts will occur to Wetlands A or BB. These wetlands will be indirectly impacted due to insufficient buffer. Wetland buffers can reduce adverse impacts to wetland functions and values from adjacent development by moderating the effects of stormwater runoff including stabilizing soil to prevent erosion, filtering runoff, and moderating water level fluctuations. Buffers also provide habitat opportunity for forage, refuge, mobility, and thermal protection. Additionally, buffers help screen the wetland from adjacent developments, blocking noise, providing visual separation, and providing protection from other human disturbances (Castelle et al 1992). The impacted portion of the buffer on both wetlands lie downhill of the wetlands with a general slope continuing downhill, therefore water quality functions provided by the buffer to the wetland will not be impacted. Because the impacted buffer area consists of annually mowed herbaceous vegetation it does not provide visual separation, noise, or other screening functions, or thermal protection and refuge. It will impact other habitat functions including forage areas and wildlife movement. A 40-foot strip of buffer will remain along the southern boundary of Wetland A; however, this strip will taper to the east and will only be approximately 10 feet wide along the southern boundary of Wetland BB.

WETLAND AA

Wetland AA will be partially filled from road improvements and lot development. The remaining wetland will also be considered directly impacted, as the road improvements may affect hydrology input into the wetland from roadside ditch along Old Pacific Highway drying up the wetland. Fill in the wetland will result in loss of flood storage, groundwater recharge, and water quality improvement functions of the wetland as water from the ditch flows into wetland. These functions will be provided by onsite stormwater facilities, however. Habitat functions provided by the buffer, although limited due to annual mowing of the single strata of herbaceous vegetation, will also be lost due to lot development.

WETLANDS CC AND DD

Wetlands CC and DD will be filled in their entirety. These wetlands are depressional with no outlets. Flood storage and groundwater recharge functions will be lost although these functions can be replaced by the onsite stormwater facilities. Additionally, habitat functions provided by the buffer, although limited due to annual mowing of the single strata of herbaceous vegetation, will be lost due to lot development.

MITIGATION SITE SELECTION RATIONALE

The wetlands proposed for impact are located within the service area for the EFLMB (Bank; Figure 4). The project site is located approximately 8 miles west of the Bank within the western portion of the service area. Recent 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)."

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.

HYDROLOGY

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 will allow the site to saturate, creating new wetland area (108+ acres), which will 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.

WATER QUALITY

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.

WILDLIFE HABITAT

Overall habitat suitability for invertebrates, amphibians, wetland-associated birds, and wetland-associated mammals will improve 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 interspersion, 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 will provide temperature regulation and leaf litter. The wetlands will also increase groundwater recharge that will supplement low flows during the dry season, and the wetland vegetation will improve 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 interspersion, 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 water quality and water quantity functions of the wetlands that will be impacted by the project. Runoff generated from the new imperious 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 East Fork Lewis Mitigation Bank.

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

This bank use plan proposes to purchase a total of 1.16 Bank credits to compensate for 0.35 acres of direct and 1.62 acres of indirect wetland impacts. Bank credits will be purchase from EFLMB at a ratio of 1 to 1 as designated for impacts to Category III wetlands. Indirect wetland impacts to the Category III wetlands will be mitigated at a 1:1 ratio with a 0.50 multiplier. The 0.50 (50 percent) multiplier is based on the rationale that indirect impacts can be adequately compensated for by using 50 percent of the Bank's required ratio for direct wetland impacts. Indirect impacts adversely affect the ability of the wetland to provide functions and values which the wetland provided prior to disturbance. Examples are changes in drainage characteristics, changes in water levels, and changes in wetland characteristics. Direct impacts result in immediate changes of hydrological characteristics of a wetland, loss of habitat, loss of flood storage, and loss of nutrient removal or retention. Indirect impacts do not result in these immediate changes, therefore mitigating at 50 percent of the Bank's required ratio for direct wetland impacts is reasonable and scientifically sound. In addition, the 50 percent multiplier for indirect wetland impacts has been used on previous projects that were subsequently approved by both the Army Corps of Engineers and the Department of Ecology. Purchasing 1.16 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.

Impacted Resource	Impact Type	Impact Area Sq. Ft.	Impact Area Acres	Bank Ratio	Indirect Impact Multiplier	Proposed Credit Purchase[1]
Category III Wetland A	Indirect	56,160	1.29	1:1	0.5	0.645
Category III Wetland AA	Direct	7,568	0.17	1:1	N/A	0.170
Category III Wetland BB	Indirect	14,422	0.33	1:1	0.50	0.165
Category III Wetland CC	Direct	4,195	0.10	1:1	N/A	0.100
Category III Wetland DD	Direct	3,336	0.08	1:1	N/A	0.080
					Total Credit Purchase	**1.16**

[1] Credit purchase based on acreage totals

CREDIT PURCHASE OR TRANSFER TIMING

ECM Riverside LLC will enter into a Buy/Sell Agreement with EFL 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

EFL 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 (see contact information of the following page.

Interagency Review Team contact information:

Kate Thompson
Washington Department of Ecology
Shorelands and Environmental Assistance Program
P.O. Box 47600
Olympia, WA 98504
(360) 407-6749
kate.thompson@ecy.wa.gov

Suzanne Anderson
US Army Corps of Engineers
Regulatory Branch, Seattle District
PO Box 3755
Seattle, WA 98124
206-764-3708
Suzanne.L.Anderson@usace.army.mil

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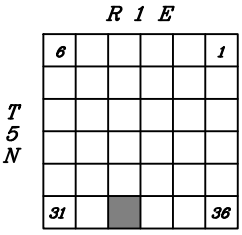
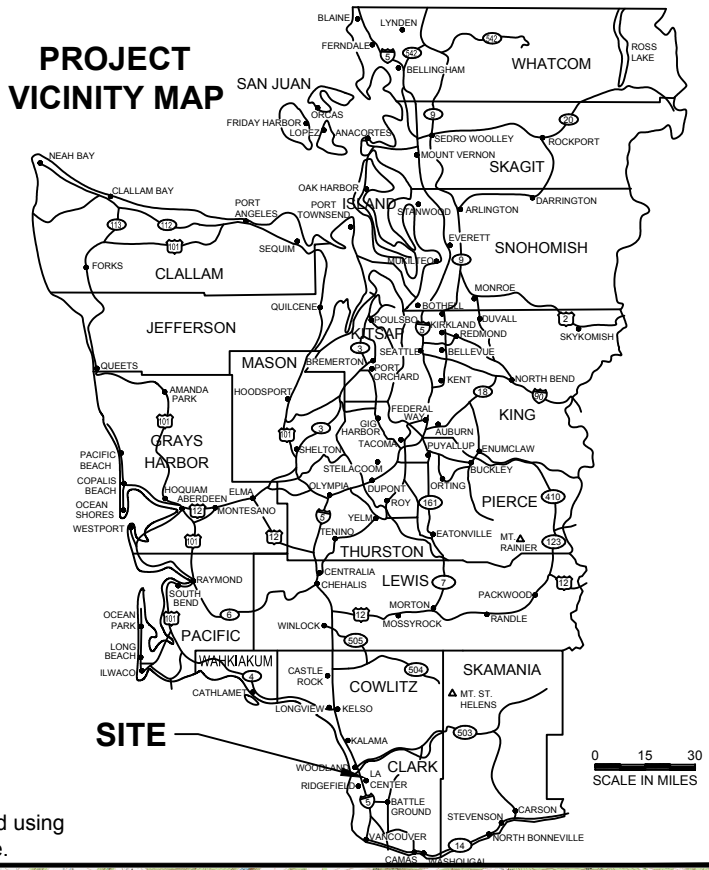
FIGURES

Latitude:45.8705°
Longitude:-122.6889°

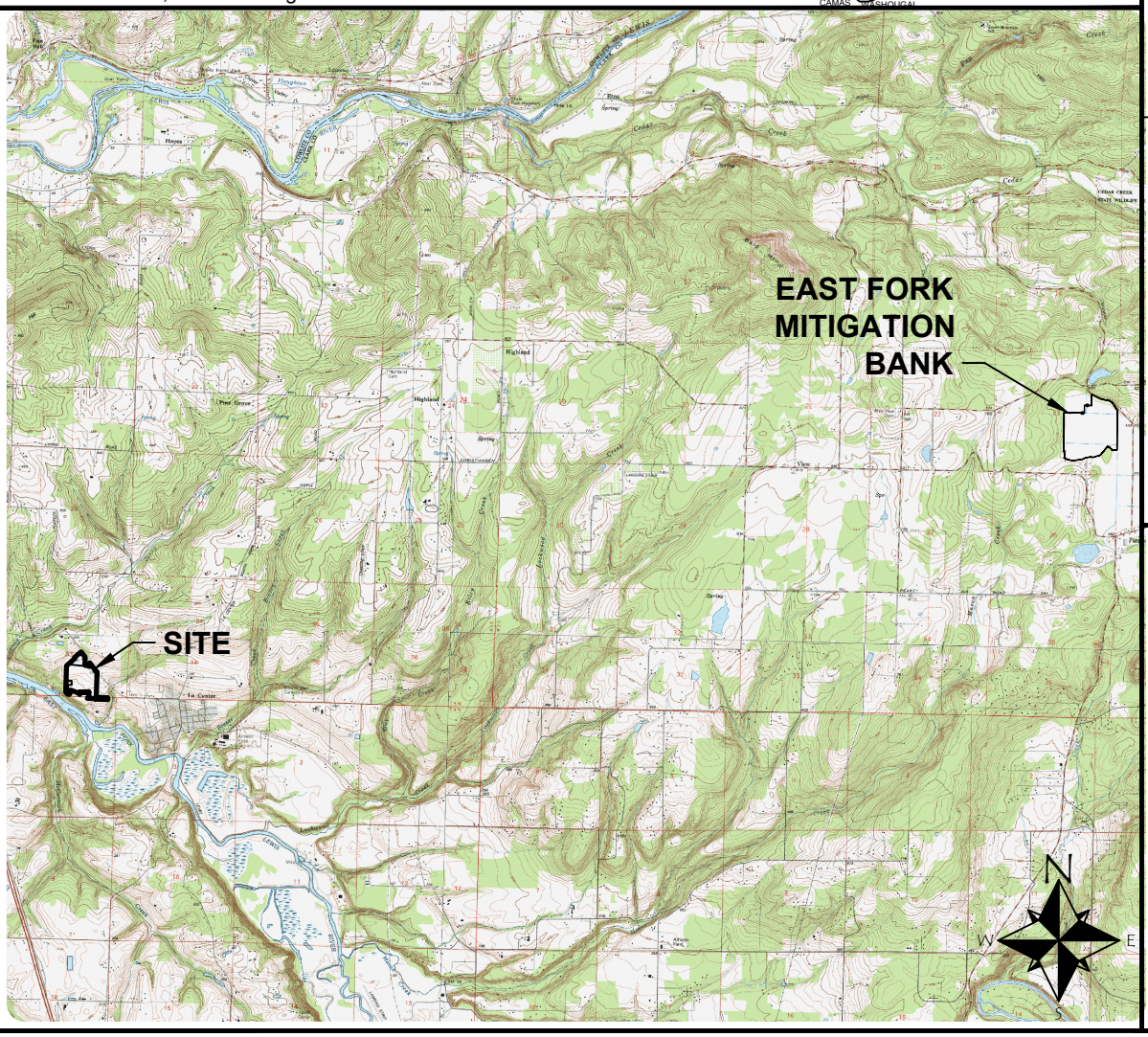
LOCATION MAP



PROJECT VICINITY MAP



NOTE:
USGS topographic quadrangle map reproduced using MAPTECH Inc., Terrain Navigator Pro software.



PROPOSED: Wetland fill

IN Onsite Wetlands
NEAR: La Center **STATE:** WA
COUNTY: Clark
SHEET 1 **OF** 5
DATE: 11/6/18

VICINITY MAP
APPLICANT: ECM Riverside LLC
PROJECT NAME: Riverside Estates
REFERENCE #: Not yet assigned
SITE LOCATION ADDRESS:
34506 Old Pacific HWY
La Center, WA

PURPOSE:
Development of Subdivision

DATUM: NAD83

ADJACENT PROPERTY OWNERS:
SEE JARPA

0 1.5 3
SCALE IN MILES

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

Ecological Land Services

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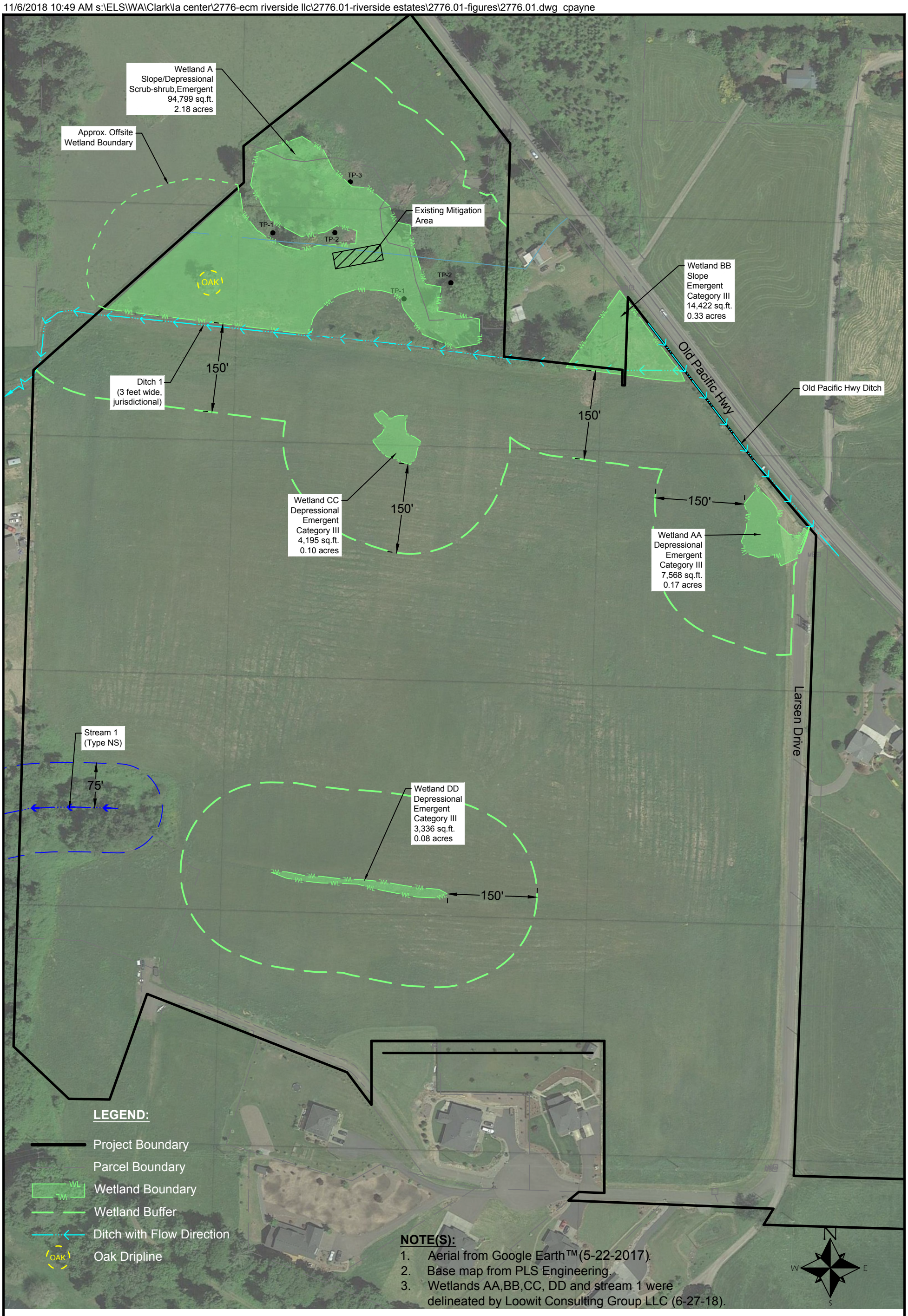

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SCALE IN FEET

Ecological Land Services

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

PURPOSE:
Development of Subdivision

DATUM: NAD83
ADJACENT PROPERTY OWNERS:

SEE JARPA

EXISTING CONDITIONS SITE MAP
APPLICANT: ECM Riverside LLC
PROJECT NAME: Riverside Estates
REFERENCE #: Not yet assigned
SITE LOCATION ADDRESS:
34506 Old Pacific HWY
La Center, WA

PROPOSED: Wetland fill

IN Onsite Wetlands
NEAR: La Center
COUNTY: Clark **STATE:** WA
SHEET 2 **OF** 5
DATE: 11/6/18

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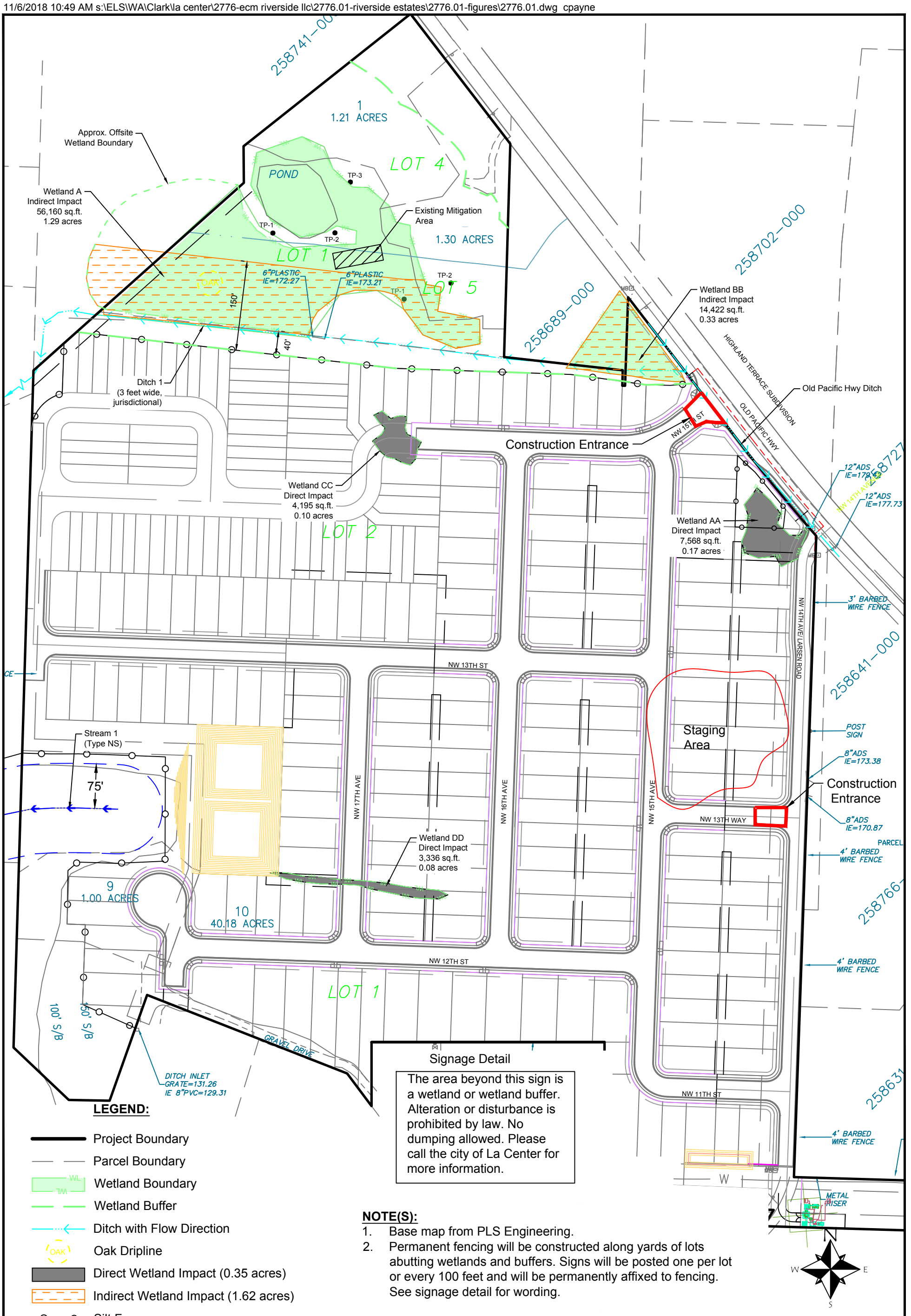

LEGEND:

- Project Boundary
- Parcel Boundary
- Wetland Boundary
- Wetland Buffer
- Ditch with Flow Direction
- Oak Dripline
- Direct Wetland Impact (0.35 acres)
- Indirect Wetland Impact (1.62 acres)
- Silt Fence

0 150 300

SCALE IN FEET

Signage Detail

The area beyond this sign is a wetland or wetland buffer. Alteration or disturbance is prohibited by law. No dumping allowed. Please call the city of La Center for more information.

NOTE(S):

1. Base map from PLS Engineering.
2. Permanent fencing will be constructed along yards of lots abutting wetlands and buffers. Signs will be posted one per lot or every 100 feet and will be permanently affixed to fencing. See signage detail for wording.

Ecological Land Services
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Phone: (360) 578-1371

PURPOSE: Development of Subdivision

DATUM: NAD83

ADJACENT PROPERTY OWNERS: SEE JARPA

PROPOSED CONDITIONS SITE MAP

APPLICANT: ECM Riverside LLC

PROJECT NAME: Riverside Estates

REFERENCE #: Not yet assigned

SITE LOCATION ADDRESS: 34506 Old Pacific HWY, La Center, WA

PROPOSED: Wetland fill

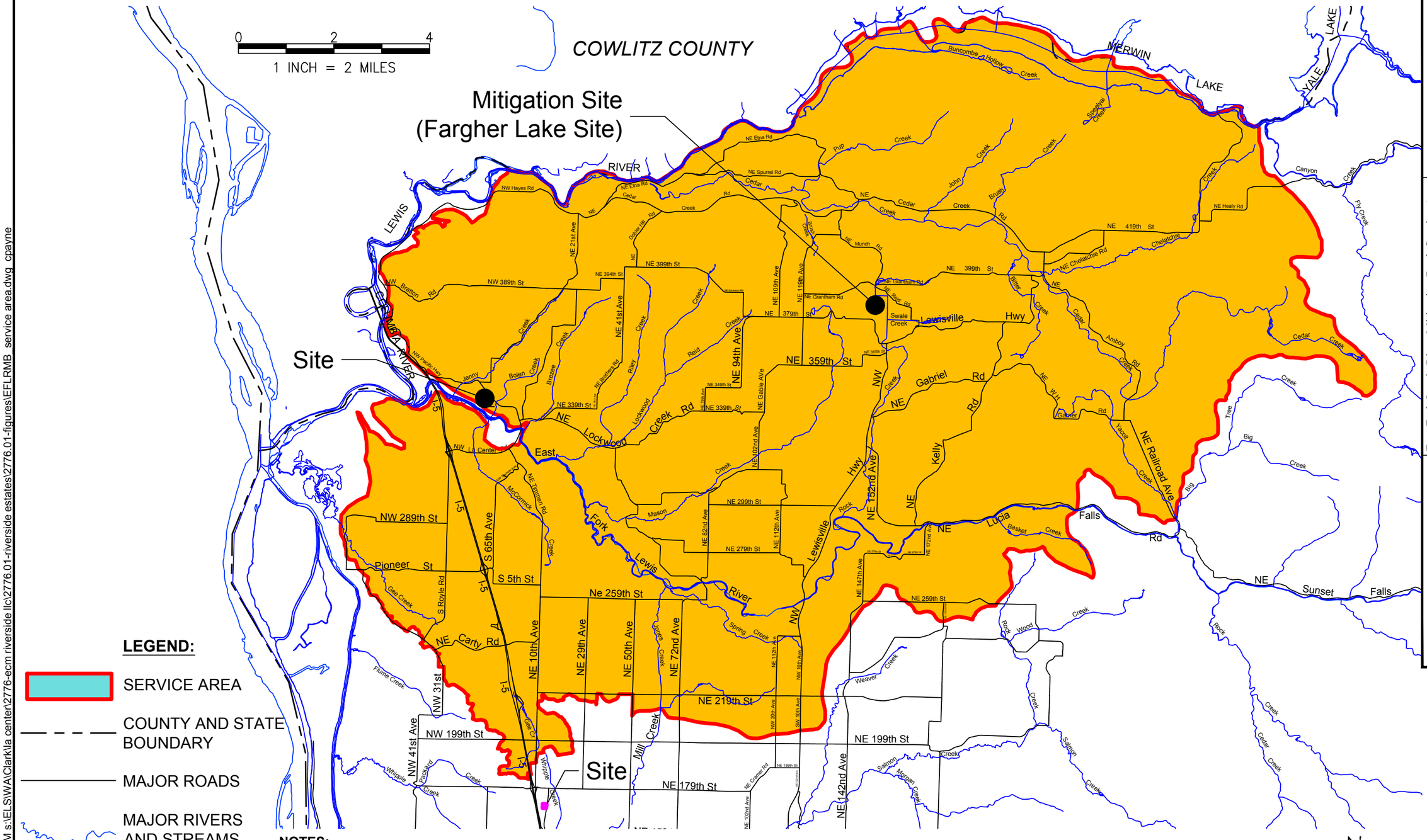
IN Onsite Wetlands

NEAR: La Center

COUNTY: Clark **STATE:** WA

SHEET 3 **OF** 5

DATE: 11/6/18



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.

East Fork Lewis River Mitigation Bank Service Area
APPLICANT: ECM Riverside LLC
PROJECT NAME: Riverside Estates
REFERENCE #: Not yet assigned
SITE LOCATION ADDRESS:
34506 Old Pacific HWY
La Center, WA

PURPOSE:
Development of Subdivision

DATUM: NAD83

ADJACENT PROPERTY OWNERS: SEE JARPA

PROPOSED: Wetland fill

IN Onsite Wetlands
NEAR: La Center
COUNTY: Clark **STATE:** WA
SHEET 4 **OF** 5
DATE: 11/6/18

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

Ecological Land Services

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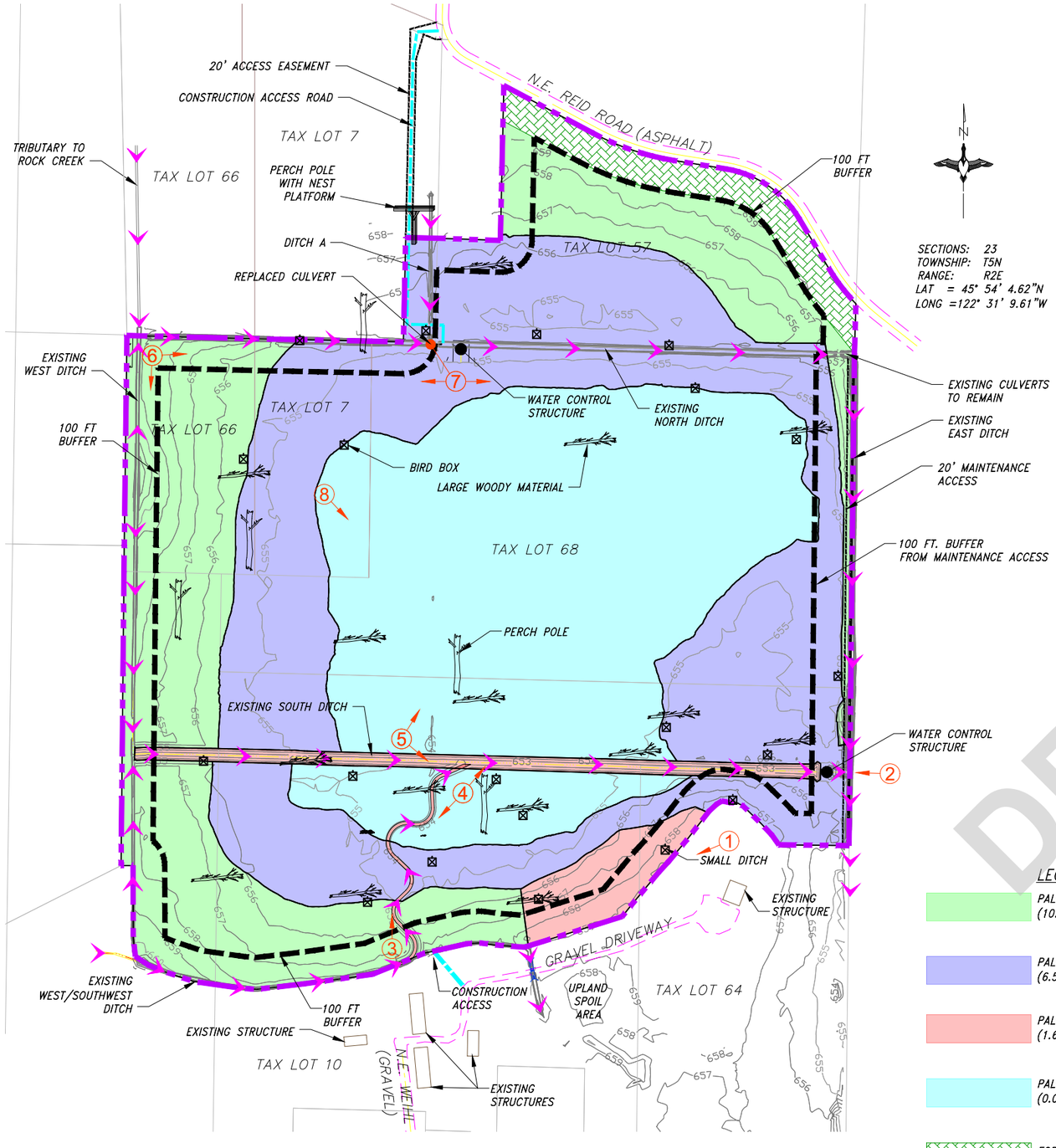

Habitat Features	
Type	*Amount*
Large woody material assemblage/root wad/downed log/perch pole	15
Standard nest box/nest platform/wood duck nest box/purple martin next house/bat box	21

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	**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.

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)
- PHOTO LOCATION
- 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.

PROPOSED: Wetland fill
IN Onsite Wetlands
NEAR: La Center **STATE:** WA
COUNTY: Clark **SHEET** 5 **OF** 5
DATE: 11/6/18

APPLICANT: Bank Site Design
ECM Riverside LLC
PROJECT NAME: Riverside Estates
REFERENCE #: Not yet assigned
SITE LOCATION ADDRESS:
34506 Old Pacific HWY
La Center, WA

PURPOSE: Development of Subdivision
DATUM: NAD83
ADJACENT PROPERTY OWNERS: SEE JARPA

SCALE IN FEET 0 400 800

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