Update of the Wetland Delineation and Analysis Report for Offsite Wetlands and Streams for the **Kilcha Sekyra Senior Housing Complex** in Puyallup, Washington

Site Located at
704 25th Street SE, Puyallup, WA 98372
Parcel Nos. 0420267003, 0420267027, 0420267028, 0420267013, 0420267008, 0420267007, 0420267001

Situated in the
SE ¼ of the SW ¼ of
Section 26-T20N-R4E, W.M.
City of Puyallup, Pierce County, Washington

Prepared for
Kilcha Sekyra (Owner/Applicant)
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Phone: 253-381-7098, E-mail: skilcha@live.com
C/o Rob Trivitt, PE, (Project Engineer)
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Phone: 253-770-3144, E-mail: paul@mailagc.com

Original Report: October 10, 2016
Update: January 4, 2022

Prepared by
JOHN COMIS ASSOCIATES, LLC
Consulting for Wetlands, Streams & Mitigation Designs since 1989
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(JCA Job #160831 & 211109)

CITY OF PUYALLUP – WETLAND UPDATE REQUEST

Date: January 4, 2022

Project Name: **Kilcha Sekyra Senior Housing Complex**

Case Number: P-15-0081

Parcel Number(s): 0420267003, 0420267027, 0420267028, 0420267013, 0420267008, 0420267007, 0420267001

Site Address: 704 25th Street SE

Range, Township, Section, Quarter Section: R4E, T20N, Section 26, SW ¼

Regulated wetland: Yes ☒ No ☐

Wetland Report: Yes ☒ No ☐

If Yes: Report by: John G. Comis, PWS, John Comis Associates LLC
Date of Report: May 10, 2013, Revised: July 25, 2013 (JCA Job#130214) & Updated: January 4, 2022
Date of Report: January 4, 2022 (JCA Job#160831 & 211109)
If No: Provide a copy of reconnaissance letter with project information

Wetland Information:

Wetland Category: Linear Wetland 'A' (offsite) was rated Category IV by Updated WDOE Rating
Wetland Hydrogeomorphic (HGM) Classification: Depressional
Size of wetland: 0.202 acres (8,790 sq. ft.), includes offsite area along bottom of old drainage swale to Pioneer Way East
Buffer: Yes ☒ No ☐ If yes, size in acres: approx. 14,350 sq. ft.
Buffer Width by Category: 50 feet (modified to 35 feet as proposed by JCA 2013 & 2022 reports)
Buffer Reduction: Yes ☒ No ☐ If yes, please describe below (Add'l Info)
Total Functional Score: 28 pts. (by JCA, 2008 for Schuh property, and 2013 for Sekyra property)
Total Functional Score: 14 pts. (by JCA, 2021 for offsite Wetland "A", see new rating form)

1991 Wetland Inventory:	Yes ☐	No ☐ (unknown)
Countywide Wetland Inventory:	Yes ☐	No ☒
National Wetland Inventory:	Yes ☐	No ☒
2003 Critical Area Update Inventory:	Yes ☒	No ☐

Additional Information: See JCA reports dated 2013 thru 2022, with Figures 1 & 7 for details of wetland inventories and final wetland delineation by JCA for the offsite Linear Wetland "A". See new rating form provided herein by JCA for current update of WDOE rating of this wetland area.

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Original: October 10, 2016
Update: January 4, 2022

City of Puyallup
Planning Services Department
333 S. Meridian, 2nd Floor
Puyallup, WA 98371
Attention: Chris Beale, Associate Planner

Subject: Update of the Wetland Delineation and Analysis Report for Offsite Wetlands and Streams for the **Kilcha Sekyra Senior Housing Complex** in Puyallup, Washington

To Whom It May Concern:

John Comis Associates (JCA) has completed an update of the 2011 & 2013 wetland delineation and analysis for this project site. This includes a new 2021 rating for the offsite linear wetland along the north side of the project site, which was designated as *Wetland 'A'* by the previous JCA studies. There was also a regulated stream, *Deer Creek*, located just east of the project site and separate from the site by a City street, 25th Street SE. These were regulated critical areas that have been marked in the field by JCA and the data points have been survey-located by Azure-Green Consultants, the project surveyor and civil engineer.

A detailed report was prepared in 2013 by JCA describing our findings and recommendations for the *Kilcha Sekyra Short Plat*. That development included Parcel No. 0420263103, which was short plated into 2 lots: the larger Lot #1 (1.84 acres) included the existing houses and appurtenant structures, and smaller Lot #2 (0.58 acres) included the new building site for a senior housing facility. That report was reviewed and approved by the City of Puyallup, Planning Services Department (the City) in accordance with the applicable *Puyallup Municipal Code* (PMC) requirements for critical area regulations. Subsequently, these regulations changed in 2015 and newer PMC requirements apply to a new development, which is proposed for this project site.

At this time, an update of the original wetland delineation and analysis report is required by JCA for the *Kilcha Sekyra Senior Housing Complex*. This development includes Parcel Nos. 0420267003, 0420267027, 0420267028, 0420267013, 0420267008, 0420267007, 0420267001, located at 704 25th Street SE, Puyallup, WA 98372, situated in the City of Puyallup in the SE ¼ of the SW ¼ of Section 26-T20N-R4E, W.M., Pierce County, Washington. Please refer to Figure 1, *Vicinity & Study Area Map*, for project location information.

All findings of fact and conclusions made by the JCA were made to verify or determine if there appeared to be any significant impacts or changes from the development that may affect the wetland. Information describing drainage conditions and development impacts with respect to storm water runoff from this project site were provided to JCA by the project engineer, Azure-Green Consultants, in the "*Conceptual Drainage Report*" with preliminary drainage and grading plan sheets (see Section 9 for details).

Standard of Care:

Please be advised that John Comis Associates (JCA) has provided professional services that were in accordance with the degree of care and skill generally accepted in the performance of this environmental evaluation. Wetland delineations, classifications, ratings and other analysis should be reviewed and approved by the City agency with permitting authority and potentially other agencies with regulatory authority prior to extensive site design or development. No warranties are expressed or implied by this assessment until approved by the appropriate resource and permitting agency.

The findings expressed in this report are based on field investigations, best available data, and our professional judgment. If you have any questions regarding this information, our findings, conclusions, or recommendations, please feel free to contact JCA at the phone number or e-mail address listed above.

Wetland Specialist Certification:

The updated wetland rating and analysis report correctly represents a delineation made by me or under my direct supervision for the Kilcha Sekyra Senior Housing Complex located at 704 25th Street SE, Puyallup, WA 98372, Parcel Nos. 0420267003, 0420267027, 0420267028, 0420267013, 0420267008, 0420267007, 0420267001, situated in the SE ¼ of the SW ¼ of Section 26-T20N-R4E, W.M., Pierce County, Washington.

1/04/2022

John G. Comis, PWS
Certified Wetlands & Stream Specialist
Professional Wetland Scientist (PWS #0810)

Date

File: \Sekyra-SrHousingComplexUpdatedWetlandRptUpdate.docx (JCA Job#160831 & 211109)
Cc: Kilcha Sekyra, Owner/Applicant
629 21st Street SE, Puyallup, WA 98372, Phone: 253-381-7098, E-mail: skilcha@live.com
Robert Trivitt, PE, Project Engineer, Azure-Green Consultants, LLC, 409 E. Pioneer, Puyallup, WA 98372,
Phone: 253-770-3144, Fax: 253-770-3142, E-mail: rob@mailagc.com

Table of Contents:

FIGURES:

APPENDICES:

Updated of the Wetland Delineation and Analysis Report for Offsite Wetlands and Streams for the **Kilcha Sekyra Senior Housing Complex** in Puyallup, Washington

1. Summary & Background (including topography and existing site conditions)

All of Wetland 'A' is situated offsite, just north of a wood rail fence along the north property line. It is a linear wetland that extends through private property. It extends along a narrow, 15-foot wide (average) by 2 feet deep depression that may be an old creek bed, but is abandoned at this time. The linear wetland unit extends offsite from the roadway at 25th Street, to the north to Pioneer Way. Please see Photo Appendix 4 and figures included with this report for illustrations of the Wetland Unit and the features described.

Portions of the offsite wetland have been cleared and disturbed by normal and expected residential and agricultural activities. Agricultural activities on adjacent property to the east appear to include livestock grazing, although we did not see any livestock gazing at this time. It appeared to be used as pasture based on tracks and soil compaction that we observed in the adjacent areas. The offsite properties to the north of the fence line include residential uses with mowed yards that extend to the edge of the wetland in some areas.

The offsite stream (*Deer Creek*) does not flow through any part of this site. The stream appeared to have been diverted away from this site in the past by improvements along the east side of 25th Street SE. *Deer Creek* is now located entirely on the east side of 25th Street and flows north under Pioneer Way and confluences with another larger ditch that continues to flow west along the north side of Pioneer Way. Please see Figure 3 for surface drainage patters and tributary areas that drain to Wetland "A".

Topography across the site is generally described as flat valley lands, but the overall slope of the area is to the northwest. The highest point within this site appeared to be at elevation 52 feet. The lowest elevation is approximately 40 feet (NGVD, 1929). The low elevation is offsite along the north end of Wetland 'A' at Pioneer Way.

The sub-watershed boundary contributing surface runoff to Wetland "A" is shown on the drainage map (Figure 3). The boundary data is derived by JCA for a *Deer Creek* study and a separate biological assessment study that was prepared in 2013. These boundaries are based on contour elevations from topography maps, together with our onsite and offsite inspections, and marked on map figures provide with this report.

2. Dates and Weather Conditions during Analysis

On 4/22/11 and 5/12/11, JCA conducted field investigations to determine wetland conditions and boundaries. The field investigations were conducted by John G. Comis, Wetlands Specialist, or under his direct supervision. The field investigations included test plots that were dug by hand to determine the presence or absence of wetlands in this area. The field investigations were conducted during normal wet weather conditions during the early part of the 2011 "mesic" growing season.

The specific dates and weather conditions for this site analysis were recorded on field notes provided with this report in Appendix 2. The weather conditions were generally summarized as:

- Partly cloudy; rain during past 24 hours and during past week;
- Generally, "wet" site conditions; standing water present in depressions and roadside ditches;
- Standing and flowing water present in linear depression that forms offsite Wetland 'A';
- Antecedent moisture condition at the site was recorded as "wet" (i.e., AMC=3.0, Temp=50^0 F.

3. Methods Used for Identifying and Delineating Wetlands and Streams

"Wetlands" were delineated using the 1997 *Washington State Wetlands Identification and Delineation Manual* (WDOE, Pub No. 96-94, March 1997), together with the updated 2010 US Army Corps of Engineers *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region* (USACOE 2010). The identification of "regulated wetlands" was made in accordance with current Puyallup Municipal Code (PMC) regulations for environmentally critical wetland areas (PMC 21.06, adopted by Ord. 3101 §9, 2015, Ord. 3076 §4, 2014, Ord. 2859 §1, 2006). [1]

The wetland delineation method used by JCA during this study and analysis was consistent with the manual methods and the PMC requirements for using most recent editions of state and federal manuals and applicable regional supplements as approved and adopted by the Washington State Department of Ecology (WDOE). Please refer to Appendix 1 for more details about the methods used including key definitions, criteria, abbreviations, regulation standards and applicable portions of code used in this analysis.

The field investigation was limited to a determining the presence or absence of "regulated wetlands" on or near the project site, including offsite areas within 315 feet [2] of the site boundary. If an offsite wetland or stream was known or suspected to be within 315 feet of the project, then the wetland or stream should be evaluated and delineated based on the best available data for offsite areas. [See report Figure 1 for a depiction of the various radii used for this study around the project site.]

For an area to be determined a "jurisdictional wetland" it must necessarily meet the scientific ***definition and triple parameter criteria***. These criteria which an investigator must use to determine if a sample test plot was in a "wetland" or "non-wetland" area were limited to the presence of all 3 wetland criteria: hydrophytic vegetation, hydric soils, and persistent wetland hydrology. This means that to make a positive wetland determination, all 3 criteria must be present. The absence of one, two, or all three of the criteria should result in a non-wetland determination.

The presence or absence of "field indicators" was used to determine if a criterion was met. If a field indicator was absent, then an indirect indicator may be used. For example, the absence of inundation or saturation during a dry summer field investigation could result in the hydrology criterion not being met. However, the presence or absence of encrusted detritus on twigs or blackened leaves on bare ground in a depression may be used to help verify sufficient inundation during a wetter period of the growing season.

The 2010 *Regional Supplement Manual* stipulates 3 key provisions of the definition of wetlands include:

a. Inundated or saturated soil conditions resulting from permanent or periodic inundation or saturation by ground water or surface water (saturation within 12 inches of the surface for at least 20 to 30 consecutive days during periods in the Mesic growing season [March thru October]). In accordance with the USACOE 2010 "*Manual*" (pages 65 & 123): "*This standard requires 14 or more consecutive days of flooding, ponding, or a water table 12 inches (30 cm) or less below the soil surface, during the growing season at a minimum frequency of 5 years in 10 (50% or higher probability) (National Research Council 1995)* …"

b. A prevalence of vegetation typically adapted for life in saturated soil conditions (i.e. dominance of hydrophytic vegetation).

c. The presence of "normal circumstances".

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[1] Wetlands are delineated using the 1997 *Washington State Wetlands Identification and Delineation Manual*, prepared by the Washington State Department of Ecology (WDOE Publication #96-94). The WA Wetlands Manual is required to be used by all state agencies in the application of any state laws and regulations as well as any city or county in the implementation of any regulations under the Growth Management Act. This methodology has been modified at this time to be consistent with the 2010 US Army Corps of Engineers *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region* (COE 2010). http://www.usace.army.mil/Portals/2/docs/civilworks/regulatory/reg_supp/west_mt_finalsupp.pdf

[2] The 315-foot distance is the maximum width for the highest rated Category 1 wetland buffer, plus 15 feet for a building setback. This represents a reasonable distance from which a "regulated activity" should not impact a "regulated wetland" (per PMC).

The selection of a specific method and procedure for identifying wetlands may follow one of the following methods:

- the "routine determination method" for undisturbed and non-problem area wetlands;
- the "offsite determination method" for areas within 300' of the site boundary; and/or
- the "disturbed area and problem area wetland determination procedures" for areas with disturbed or atypical vegetation, soils or hydrology. If an area was disturbed, then a higher level of analysis such as a "Comprehensive" determination method may be required.

The preferred and simplest method was the "**ROUTINE** Determination Method" for typical, generally undisturbed areas with normal environmental conditions. The routine method was used in areas where the vegetation, soils and hydrology condition can be readily observed.

The wetland delineation for this project site was based on our professional judgment and existing conditions that we found at the site during our site visits. The existing conditions include established man-made changes such as the single-family residences and normal yard maintenance; farm cultivation and tillage; and relocation of *Deer Creek* to the eastern side of 25th Street SE that we verified during our 2011 and 2013 wetland studies.

The plant community criterion was used where vegetation was generally undisturbed and identification of dominant wetland indicator species can be made. That was where the vegetation was not mowed or recently tilled or otherwise significantly disturbed. The hydric soil criterion was used along with the hydrology criterion when it was present (i.e. when wetland depressions were not dried out during dry summer periods). If there was a marginal condition where the plants alone were not sufficient to make a determination, then soils and hydrology were used as the major determinates.

Test plots were sampled within the project site; holes were dug by hand generally 15 to 20 inches deep to compare and contrast dominant soil and hydrology characteristics. The sample test plots within interiors of wetlands were used to verify hydric soil and hydrology within these portions of the study area.

A wetland boundary was delineated and flagged by JCA as shown on the enclosed site plan map. If the boundary appeared to be clearly defined, then only a few test plots were used to document the interface between the wetland and non-wetland area. If the boundary was not clearly defined, or if it was disturbed, or if it was along a topographic depression, then more test plots were used to delineate that boundary.

Research of City records was also done to determine if there were any mapped wetlands within or near the project site. Possible wetlands were indicated on the City of Puyallup Critical Areas Map (Figure 5), which show possible wetlands and streams in this area. The National Wetland Inventory Map (NWI) also shows possible wetlands in this valley area. Please note that the Vicinity Map (Figure 1) was based on the Google aerial photo map for the area and overlaid with the NWI information that shows the 1 Km radius around the wetland unit for rating purposes per instructions in the updated 2014 WDOE Rating Manual.

Stream channels and their associated Ordinary High-Water Marks (OHWM) were identified and delineated by this study using the approach developed by the Washington State Department of Ecology (WDOE) and published in the Washington State Coastal Training Program report titled *How to Determine the Ordinary High-Water Mark* (see Appendix 1, Section E for details about methodology used for stream delineation).

JCA found that the OHWM for the portion of *Deer Creek* east of the project site was entirely contained within the existing top of bank as shown on the survey map provided with this report (Figure 6). Furthermore, the associated stream buffer was also separated from the project site by the existing paved roadway, 25th Street SE, and the creek was situated entirely east of the roadway within a channelized ditch along the east side of that roadway. Therefore, no additional OHWM delineation or survey was necessary for this study.

4. Flagging Used for Delineation of Wetland

The *Site Plan Map with Wetland Delineation & Buffer Plan* (Figure 6) shows the data points that were flagged by JCA along the offsite portion of Wetland 'A' that was nearest to a new building site. The offsite wetland boundary was located by measurements from the north fence line by JCA at the site on 5/12/11 and 2/25/13, and plotted to scale on this map.

The data points were flagged with colored ribbon as follows:

- "WETLAND DELINEATION-*number*" (pink ribbon, tied to vegetation, see circled numbers on site plan map)
- "TEST PLOT-*number*" (blue and green ribbons, tied to wooden stakes, see triangles on map)

The data points were numbered and marked as follows:

- Wetland 'A' (#A1 to #A4 located just offsite and north of the western Parcel No. 0420267003, and #A16-A24 located just offsite and north of eastern Parcel Nos. 0420267027 & 0420267028)
- 8 test plots (TP1 thru TP8) [Note that other test holes were dug and examined in this area but not flagged or recorded as they were the same as the recorded sample plots and were only use to assist in determining non-wetland areas within the site area.]

5. Field Observations and Data Analysis

For the purpose of this investigation, a total of 6 test plots (TP1 thru TP8) were sampled and recorded on our field notes. The results of the detailed investigation were provided on *Field Data Forms* included with this report in Appendix 2. The summary of the results for the test plot analysis were listed in the following table and their findings were summarized for the triple parameter determination. The location of each test plot was shown on the *Site Plan Map with Wetland Delineation & Buffer Plan* (see Figure 6).

Table 1: Summary of Triple Parameter Determination for Test Plots
(Note that hydrology was recorded during wet weather conditions at the site in April and May of 2011)

Test Plot	Hydrophytic Vegetation	Hydric Soils	Hydrology Present	Wetland/Non-Determination	Rationale
TP1	No	Yes	No	Non-WL+/-	Hydric soil was present, typical for a small depression in an open field but hydrology was not present or persistent
TP2	No	No	No	Non-WL	Hydrophytic veg. was not present, non-hydric soil & not sufficient hydrology for a non-wetland determination
TP3	No	No	No	Non-WL	Hydrophytic veg. was not present, non-hydric soil & not sufficient hydrology for a non-wetland determination
TP4	Yes	No	No	Non-WL	Hydrophytic veg. was present, but non-hydric soil & not sufficient hydrology for wetland determination
TP5	Yes	No	No	Non-WL	Hydrophytic veg. was present, but non-hydric soil & not sufficient hydrology for wetland determination
TP6	Yes	No	No	Non-WL	Hydrophytic veg. was present, but non-hydric soil & not sufficient hydrology for wetland determination
TP7	No	No	No	Non-WL	Hydrophytic veg. was not present, non-hydric soil & not sufficient hydrology for a non-wetland determination
TP8	No	No	No	Non-WL	Hydrophytic veg. was not present, non-hydric soil & not sufficient hydrology for a non-wetland determination

a. Vegetation

Vegetation conditions in the surrounding residential and agricultural upland areas around Wetland 'A' were generally characterized as cleared and mowed yards for single-family residences (see aerial photos provided for base maps for Figures 1 and 2). There was a small grove of trees in the northwest part of the site that was dominated by black cottonwoods (*Populus trichocarpa*). A tilled field for agricultural row crops was established in the southwestern part of this site.

Offsite to the north, a forested upland buffer generally extends along both sides of the drainage swale that has become a linear, depressional wetland, called Wetland 'A'. Vegetation classes within this wetland were identified and generally characterized in accordance with Cowardin et al [3] as follows:

Table 2: Offsite Linear Wetland 'A' Vegetation Classes:

WL:	SYSTEM	CLASS	WATER REGIME	(abbreviation)
A	palustrine	Forested-Emergent	seasonally flooded	(PFO-EMC)

Vegetation in the emergent offsite wetland was a mixture of grasses and forbs that do not appear to have as prolonged a hydrology condition as compared to the old drainage swale area. The emergent portion supports a less diverse plant community that includes a mixture of facultative (FAC) and facultative wetland (FACW) grasses and forb species. Invasive plant species were found in this area and include creeping buttercup (*Ranunculus repens*) that appear to mostly consist of intermittent core plants which would normally be expected to expand into a mat if the soils were more hydric. Please refer to the Field Data Forms for the dominant plant species found at each test plot in this area (see Appendix 2).

There was no unusual or dominant non-native PLANT species identified within the wetland. There was no endangered, threatened or sensitive PLANT species known to exist on this site. This was based on observations at the site and comparison with the current report by the Washington Department of Natural Resources, "*Endangered, Threatened & Sensitive Vascular Plants of Washington*", compiled by the Washington Natural Heritage program.

The dominant vegetation along the buffer adjacent to the entire length of offsite Wetland 'A' was a second growth forest with some planted vegetation along the upper banks. The forested upland buffer was mixed deciduous and fir trees with understory shrubs and forbs. These include of mostly big leaf maple (*Acer macrophylum*) and cottonwood trees and some planted Douglas firs (*Pseudotsuga menziesii*) that were mixed with various shrubs along the old swale (see field data forms in Appendix 2 for details at the plant species in each sample test plot; and photographs in Appendix 4 showing the onsite and adjacent offsite areas).

b. Soils

Soils in the study area were generally shown on the Soils Survey Map (see W5 in Appendix 3). These include hydric soils, if left un-drained. Briscot loam (6A-map unit) was the predominant soil found in this area of the site. Pilchuck, fine sandy loam, had a 0-3% slope (29A-map unit), and was shown to the south and west of the site. Other soils such as Puyallup fine sandy loam (31A) were also mapped in the general vicinity of the project site. The Sultan map unit (42A) was situated to the north and east of the site. The soil map units generally correspond with the soil types that we identified during our field investigations.

Soils were examined in detail in the test plot holes dug by a hand generally 15 to 16 inches deep to compare and contrast dominant soil characteristics in clearly hydric soil areas with soil characteristics in possible or non-hydric areas. A "hydric soil" was saturated or flooded or ponded long enough during the growing season to develop anaerobic conditions in the upper part of the soil horizon (generally less than 12" deep).

[3] US Fish and Wildlife Service's "Classification of Wetlands and Deepwater Habitats of the United States", FWS/OBS-79/31 (Cowardin et al, 1979)

Field indicators for hydric soil conditions included dominant matrix colors with a chroma of /1 or /2, together with at least 2 secondary indicators such as prominent (or distinct) red or gray mottles at depths less than 6 or 12" (if the mottles were not relic mottles).

The non-hydric soil test plots were characterized by higher chroma colors of /3 or /4, or if it had a chroma of /2, then it lacks at least 2 secondary indicators such as prominent (or distinct) mottles at depths above 12". Non-hydric soil characteristics also include deep roots and soil textures that have a relatively higher proportion of sands and gravel, and less silty clay, or blocky structure. These soils generally appear in areas that were better drained than hydric soil areas. Non-hydric soils developed under predominantly aerobic conditions.

c. Hydrology

An old drainage swale was established along the north side of the property. This swale may have once been the original course for *Deer Creek* through this area. However, the creek had been diverted away from this site and currently flows along the east side of 25th Street SE. The City Street still had an old culvert that extended under the roadway. However, that culvert appeared to be completely blocked as no water was flowing out of the "downstream end" (west end) of the culvert at the time of our site visit when we observed water flowing about 1-foot deep in the main channel of *Deer Creek* along the east side of 25th Street.

At the present time, *Deer Creek* flows continually along the east side of 25th Street SE, and under Pioneer Way where it confluences with another tributary channel along the north side of Pioneer. That main creek channel continues northwest and flows into a large "ox-bow" swamp located about 1700 feet northwest of this site. That swamp eventually flows into the Puyallup River through a dike on the south side of the river channel.

The linear depression along the north side of the site has become a "*linear wetland*" and has become overgrown with various woody shrubs and trees, and understory herbaceous vegetation. The depression appeared to be partly fed by groundwater and some surface runoff that still flows to the depression from nearby areas. The depression appeared too stagnant or flows very slowly to the northwest but the flow was so slow that it was almost imperceptible at this time (see photos #9 and #10 in Appendix 4).

The hydrogeomorphic wetland analysis subsequently identified offsite portion of Wetland 'A' as a linear "depressional wetland" with sufficiently prolonged saturation (or inundation) along the bottom of the depression. This had adequate hydrology for a positive wetland determination for Wetland 'A'.

The emergent portion of Wetland 'A' within the mowed yard in the Schuh property also appeared to have sufficient saturation. The saturation levels in the test holes we examined in this part of Wetland 'A' indicated saturation at less than 12 inches deep with some freewater in the bottom of these holes (see Appendix 2 field data forms for details).

Please note that we found an old yard drain in the center of this emergent part of Wetland 'A' that appeared to be partly (or entirely) plugged. If this drain were functioning, it may reduce the levels of saturation that previously existed in this area. However, if the drain was not functioning as indicated by the current study, then this area does appear to have sufficient hydrology for a positive wetland determination for the mowed yard area of Wetland 'A'.

The conclusion of this hydrologic analysis was that saturation and/or inundation were present for at least 20 consecutive days during the early growing season within the delineated areas of Wetland 'A'. Sufficient hydrologic indicators were present in these test holes at depths of less than 12" measured from the ground surface indicating sufficient hydroperiod for saturation.

d. Offsite Wetlands within 315 Feet of Project Site

Wetland 'A' was situated entirely offsite just north of the subject property. It was evaluated using the best available information and our visual observations along the property lines. Offsite Wetland 'A' appeared along an old drainage swale as a "depressional" wetland that extends linearly through the landscape behind and between the residential homes and farms in this area.

The offsite portions of Wetland 'A' appear to be directly "*associated*" with the onsite portion. The offsite areas were evaluated for functions and values and a new wetland rating. There were no other wetlands that were identified within 315 ft. of the site that affect this rating based on our examination of City and County wetland inventory maps (see figures included with this report, especially Figures 1 and 5).

6. Functions and Values of Wetland 'A'

The *Functions and Values Analysis* was used as a basis for assigning an overall score for each wetland in the value range of very high to very low. Functions were assigned and valued qualitatively through a range of "very high--high--medium high--medium--medium low--low--very low". This method was subjective, but based on the experience and knowledge of the investigator to compare the subject wetland with other wetlands with similar functions and values. The overall score for each wetland was indicated at the bottom of the following table.

The various wetland functions were evaluated for the onsite and offsite portions of Wetland 'A'. These functions include:

- water storage and flood attenuation (by impoundment of surface water runoff in a depression);
- water quality (by biofiltration of sediments and pollution in emergent vegetation);
- hydrologic support (by low-flow augmentation of waters to streams);
- biologic support (food chain contributions);
- wildlife habitat (by avian and terrestrial wildlife for nesting, roosting, cover and/or foraging sites);
- recreation, education or research value (by humans for these respective uses).

Table 3: Summary of Functions and Values Analysis

	Wetland 'A'
Water Storage & Flood Attenuation	Medium
Water quality (biofiltration)	Medium
Hydrologic Support	Low
Biologic Support	Medium-Low
Wildlife Habitat	Medium-Low
Recreation Value	Low
Education Value	Low
Research Value	Low
Overall Score	**Medium-Low**

Wetland 'A' had medium values for water storage and water quality control by retaining and detaining impounded waters that drain into it from small surrounding residential and agricultural areas. Most of the offsite drainage that previously was part of *Deer Creek* was routed away from this wetland as described in the 'hydrology' section above. Therefore, this wetland does not get the dilution from the creek waters that may have flowed through this area. Accordingly, it does not support biologic or hydrologic functions associated with the creek.

Water quality (biofiltration) functions were "medium" due to its proximity to the land use area to the north. Some small amounts of agricultural and animal wastes were tributary from onsite areas and other offsite areas to the

west. These were filtered by vegetation and woody vegetation along the linear swale that persists within the linear Wetland 'A'.

Wetland 'A' rates low for hydrologic support since it was no longer part of the *Deer Creek* stream channel. It appeared to retain impounded waters to depths up to 2 feet along the linear depression. Wetland 'A' provides very little groundwater recharge due to its small size, small tributary area and shallow depression.

The biologic support and wildlife habitat were medium to low for Wetland 'A'. This wetland was too small to provide significant biologic support or wildlife habitat due a lack of direct connection to other habitat areas; and the residential and agricultural use in the surrounding areas limit the ingress and egress of certain non-avian wildlife. This wetland was separated from the other habitat areas by roads or land uses such as residential or agricultural developments. Therefore, the interactions in the food chain provided by wetland habitat were limited. There were no plans and little value assigned for using Wetland 'A' for human functions such as recreation, education or research.

7. Wetland and Stream Rating Discussed

The categorization (or rating) of wetlands was done for regulatory purposes based on the 4-tiered system as required by the City of Puyallup Municipal Code (PMC 21.06.910). The categorization of wetlands was applicable to buffer standards and setback requirements. The current WDOE Wetland Rating Form [4] was completed by JCA (see Appendix 3) to support the recommendation for the wetland category that may be approved by the City in accordance with Code requirements.

The following City Code criteria apply to a Category IV wetlands:

> *(d) Category IV wetlands provide the lowest level of function, but still provide important functions as demonstrated by a [total] score of less than 16 points on the Western Washington Wetland Rating System, Updated 2014.*

The use of this rating system determines the degree of regulation and the applicable buffer standards and setback requirements for a wetland. Specific details for wetland regulation and rating standards are described in the "Methodology" Appendix 1, Section F. The applicable details and excerpts from the PMC are included in that appendix.

Wetland 'A' (offsite) was rated **Category IV** with a total score for functions of 15 points. The water quality functions score was 6; hydrologic functions score was 6; and habitat functions score was 3. This rating was based on field observations for a "depressional" wetland and conditions that exist at the time of study. Please refer to maps and a series of photographs provided with this report in Appendix 4 for a details and explanations of the site analysis (from Schuh 2008, and Sekyra 2011 & 2013).

Please note that Wetland 'A' had a very low habitat functions score (3 points). It does not function as a minor channel associated with *Deer Creek*. However, the wetland is situated within ¼ miles of a *Type II* stream, namely the main channel of *Deer Creek*; however it is separated from the creek by Pioneer Way on the north and by 25th Street SE on the east.

As described above, the main channel of *Deer Creek* is situated east of this site and separated from the site by a paved road, 25th Street SE. *Deer Creek* is rated a **Type II stream** in accordance with PMC 21.06.1010. This rating is based on natural stream conditions that are not Type I characteristics, and it has perennial (or occasionally intermittent) flow. It appears to have potential use by anadromous and resident fish species. Coho salmon may use the stream based on information provided by the City's consultant, ESA, for a previous bio-assessment study. However, there was no known presence of endangered or sensitive animal or plant species

[4] Washington State Department of Ecology, "*Washington State Wetlands Rating System, Western Washington-Revised*", August 2004, "version 2" revised 2006, updated 2008, WDOE Pub #04-06-025

directly associated with this stream. For details about salmon use of *Deer Creek* and critical fish and wildlife habitat values for this area, please refer to a separate "*Biological Assessment Report for the Kilcha Sekyra Short Plat*" by JCA dated May 11, 2013, submitted to the City under separate cover.

8. Buffers Recommended

Buffer areas are required by the PMC for all development proposals and activities adjacent to surface water systems to protect the integrity, functions and value of the resource. Buffers must consist of "*an undisturbed area of native vegetation and shall reflect the sensitivity of the surface water system and the type and intensity of human activity proposed to be conducted adjacent to them*".

Buffers are required that limit or mitigate impacts, which may arise from a development of new buildings within a site. The potential impacts from a new development may include glare, noise and/or intrusion from sources near a wetland or stream. Upland buffers also preserve valuable wildlife habitat in the areas adjacent to a wetland or stream.

a. Buffer Width for Wetland 'A' (PMC 21.06.930)

Width of buffer needed to protect a Category IV wetland scoring less than 16 points for all functions, and where the Impact of Proposed Land Use was "High", shall be 50-feet measured landward from the delineated (pink flag) edge of Wetland 'A'. This buffer width may be modified to 40 feet for a "Moderate" impact level if a proposal was approved by the City for adding native vegetation along the onsite portion of buffer for additional screening in an onsite area along Wetland "A" where practicable about 15 feet south of the north property line.

Please note that the total points for wetland function are 15 points for linear Wetland 'A'. However, the habitat score for this wetland was very low at 3 points. We met with an Associate Planner at the City, and discussed buffer requirements and recommendation for a modified buffer width for the *Kilcha Sekyra Senior Housing Complex*. Basically, we agreed that the standard 50-foot buffer along the linear wetland may be modified to 40 feet (minimum width per the City code), if we propose adding native vegetation along the onsite portion of buffer where practicable (about 15 feet south of the north property line). This would provide adequate buffer protection and enhance the existing 20-foot wide densely vegetated forested upland buffer that exists between the edge of the offsite wetland and the northern property line (see photos in Appendix 4 for details of this area).

b. Buffer Width for Stream (PMC 21.06.1050)

Stream buffers are required to be established landward of the Ordinary High-Water Mark (OHWM) along streams to protect the integrity, functions and values of the stream resource. The code goes on to state that "*Buffers shall consist of an undisturbed area of native vegetation and shall reflect the sensitivity of the stream and the type and intensity of the adjacent human use or activity*." This seems to imply that the buffer should be vegetated and if it was not so, then the buffer should reflect the existing conditions that are associated with the sensitivity of the stream compared to the proposed use and activity associated with the proposed development.

The standard buffer width required by this chapter for a Type II stream was 100 feet. However, we met with Chris Beale, Associate Planner at the City, and discussed the 100-foot stream buffer requirement for *Deer Creek* along the east side of the property. We noted that the property is effectively separated from the stream by the existing paved roadway, 25th Street SE. This roadway effectively separates any useful habitat areas within the site from the stream. JCA recommends that the stream buffer not be extended across the roadway. This is consistent with other projects that have been approved by Pierce County and other jurisdictions where a roadway separation existed.

c. Buffer Notes for the Site Plan

The following notes are included on Figure 6, the *Site Plan Map with Wetland Delineation & Buffer Plan*:

1. The SITE PLAN WITH WETLAND DELINEATION was based on Azure-Green Consultants drawing for the "*Kilcha Sekyra Short Plat*", and includes onsite and offsite measurements and wetland delineation data

obtained during field investigations on 5/12/11 and 2/25/13 by John Comis Associates LLC, John G. Comis, PWS, and Certified Wetlands Specialist.

2. Wetlands were delineated based on the *Washington State Wetlands Identification and Delineation Manual* (1997, WDOE Pub. #96-94), using routine onsite and approximate offsite methods as modified by the current 2010 US Army Corps of Engineers *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region* (COE 2010). Where wetlands were within 315 feet of a new building site, the delineation of the wetland boundary was based on 3-parameter criteria and detailed field indicators including hydric soils, hydrology and hydrophytic vegetation. Offsite areas were evaluated using best available data including current Wetland Inventories, Aerial Photos, Topography, Soil Surveys, and other studies prepared by JCA. [5]

3. The data points were marked as follows:
   - Wetland 'A': #A1 to #A4 [for western Parcel No. 0420267003], and #A16 to #A24 [for the eastern Parcel Nos. 0420267027 & 0420267028]
   - 8 test plots: TP1 thru TP8 [Note that other test holes were examined but were not flagged or recorded]

4. The data points were flagged with colored ribbon marked:
   - "WETLAND DELINEATION-*number*" (pink flags tied to vegetation, see circled numbers on site plan map)
   - "TEST PLOT-*number*" (blue and green ribbons, tied to wooden stakes, see triangles on site plan map)

5. Wetland 'A' (offsite) is rated Category IV with a total score for functions of 14 points (2021); water quality functions score is 6; hydrologic functions score is 6; and habitat functions score is 3. This rating is based on field observations by JCA and conditions at the time of this updated study in accordance with the revised 2015 *Puyallup Municipal Code* (PMC) using the Updated 2014 "*Western Washington Wetland Rating System.*" Please see the updated Wetland Rating Form provided in Appendix 3 [PMC 21.06.950].

6. Width of buffer needed to protect a Category IV wetland scoring less than 16 points for all functions, and where the Impact of Proposed Land Use was "High", shall be 50-feet measured landward from the delineated (pink flag) edge of Wetland 'A'. This buffer width may be modified to 40 feet for a "Moderate" impact level if a proposal was approved by the City for adding native vegetation along the onsite portion of buffer for additional screening (in an onsite area along Wetland "A" where practicable about 15 feet south of the north property line).

7. Deer Creek (offsite) was rated **Type II stream** for regulatory purposes in accordance with the PMC 21.06.1010. This rating was based on natural stream conditions that was not Type I and had either perennial or intermittent flow, and had known or potential use by anadromous or resident fish species. It does not appear to have significant wildlife habitat functions.

8. A standard stream buffer required for a Type II stream was **100 feet**. However, since the project site was effectively separated from the stream by the existing paved roadway, 25th Street SE, we recommended that **the stream buffer should not be extended across the roadway**.

9. Any new buildings should be set back an additional 10 feet from the buffer boundary line. A building setback was required to protect the buffer edge from building construction and provide a reasonable passage along the side of a building (PMC 21.06.840).

[5] Schuh Wetland Study 2008; Kilcha Sekyra Wetland Study 2011 & 2013; Kilcha Sekyra Bio-Assessment 2013; Diane's Faithful Lane Bio-Assessment 2010; Cina Property Bio-Assessment 2012; Labelle Plat Bio-Assessment 2012; and PMF-Pioneer Crossing Bio-Assessment 2015).

10. No regulated activity including new building, clearing, filling or grading was permitted within a designated buffer area, except as may be approved by the City of Puyallup for such reasons as danger tree removal or flood control. All regulated activities shall occur only in areas outside the buffer boundary.

11. Signs should be posted at 50' intervals along the buffer boundary at locations indicated on the site plan map. Signs may be obtained at the front counter of the City of Puyallup Development Services, 333 South Meridian, Puyallup, WA 98371.

12. Existing and ongoing residential and agricultural activities and uses that were established within the designated buffer shall continue in accordance with PMC standards and exemptions without further permit approval. This includes maintenance of lawns, driveways, parking areas and agricultural fields by mowing, weeding, tilling, orchard pruning and fences where these areas or features were existing facilities and established within the designated buffer area.

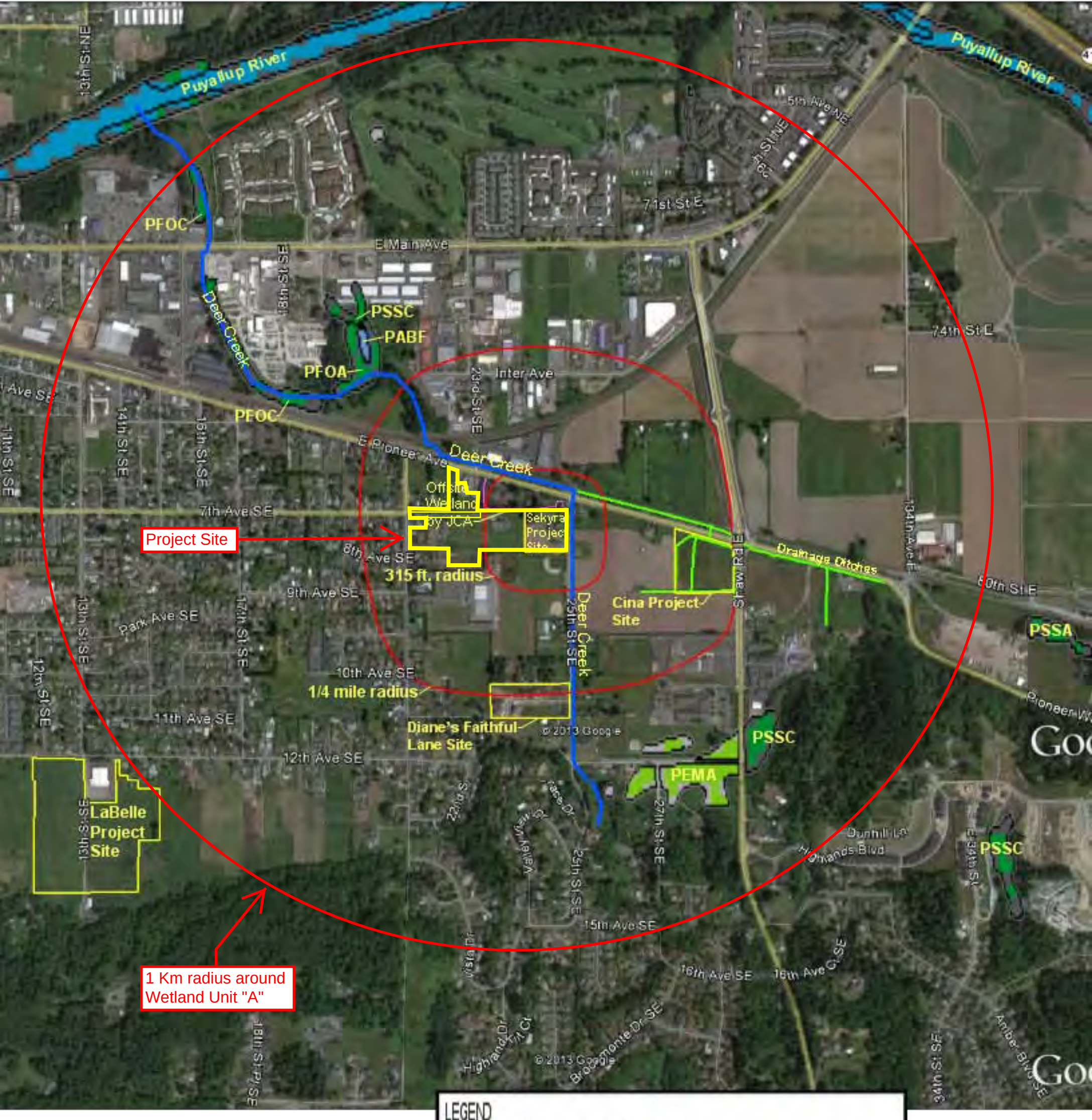
13. Maintenance within the designated buffer may include removal of invasive or noxious weed species designated as noxious by the State of Washington such as Tansy ragwort (*Tanacetum vulgare*). Invasive species include introduced and non-native plants such as Himalayan blackberry (*Rubus discolor or Rubus laciniatus*), Scotch broom (*Cytisus scoparius*), Reed canary grass (*Phalaris arundinacea*), Japanese knotweed (*Polygonum cuspidatum*) or English ivy (*Hedera spp.*). Removal of invasive and noxious plants must be by hand methods such as pulling, cutting or other approved method as may be allowed by the City. Disposal of plant residue must be done in areas outside the regulated buffer.

9. Conceptual Storm Drainage Control for Development of the Senior Housing Complex

Please note that information for a "*Conceptual Drainage Report*" was prepared by the project engineer, Robert Trivitt, PE, Azure-Green Consultants, LLC. It was provided in a separate document for review and approval by the City of Puyallup prior to preparing final details and engineering designs. The engineering report describes existing site conditions, offsite drainage, and the conceptual onsite storm water detention facilities and treatment for storm water runoff from the entire project development.

The conceptual drainage report assesses potential impacts to offsite Wetland 'A' and offsite fish and wildlife habitats associated with *Deer Creek*. Potential impacts due the storm water runoff may result from this development which includes filling and grading activities within the commercial senior housing complex, including new buildings, access roads, parking and landscape areas. The potential impact analysis also includes future changes to drainage patterns and other potential impacts due to construction of facilities for sanitary sewerage and a new access driveway that is described in the engineering report.

Future runoff from the project site will be dealt with through a combination of a storm water detention pond, dispersion trench, and raingardens. These measures should provide adequate control of increased runoff from impervious surfaces, and also maintain natural drainage patterns around the site. These findings and conclusions by the project engineer have been reviewed by JCA to verify that there will be no significant adverse impact(s) from the proposed development into the offsite linear Wetland 'A', or impact to any endangered or sensitive listed species in offsite areas along *Deer Cree*k.



Client/Owner:

Kilcha Sekyra Short Plat

JOHN COMIS ASSOCIATES
Wetlands, Streams & Mitigation Designs since 1989
1027 N. Oakes St. Tacoma WA, 98406
Office: (253) 272-6808
Mobile: (253) 686-4007

LEGEND

Yellow = **Project Site Boundary**
= 315 ft. and 1/4 mile Radii around Wetland "A"
Blue = Streams (Dear Creek and Puyallup River Overlays)
Green = National Wetland Inventory (NWI) Areas (Palustrine, Emergent, Forested, Scrub-Shrub, water regime)

Map Source: a portion of the "Google Earth" (July 2012) Aerial Photo Image and overlaid with NWI Data

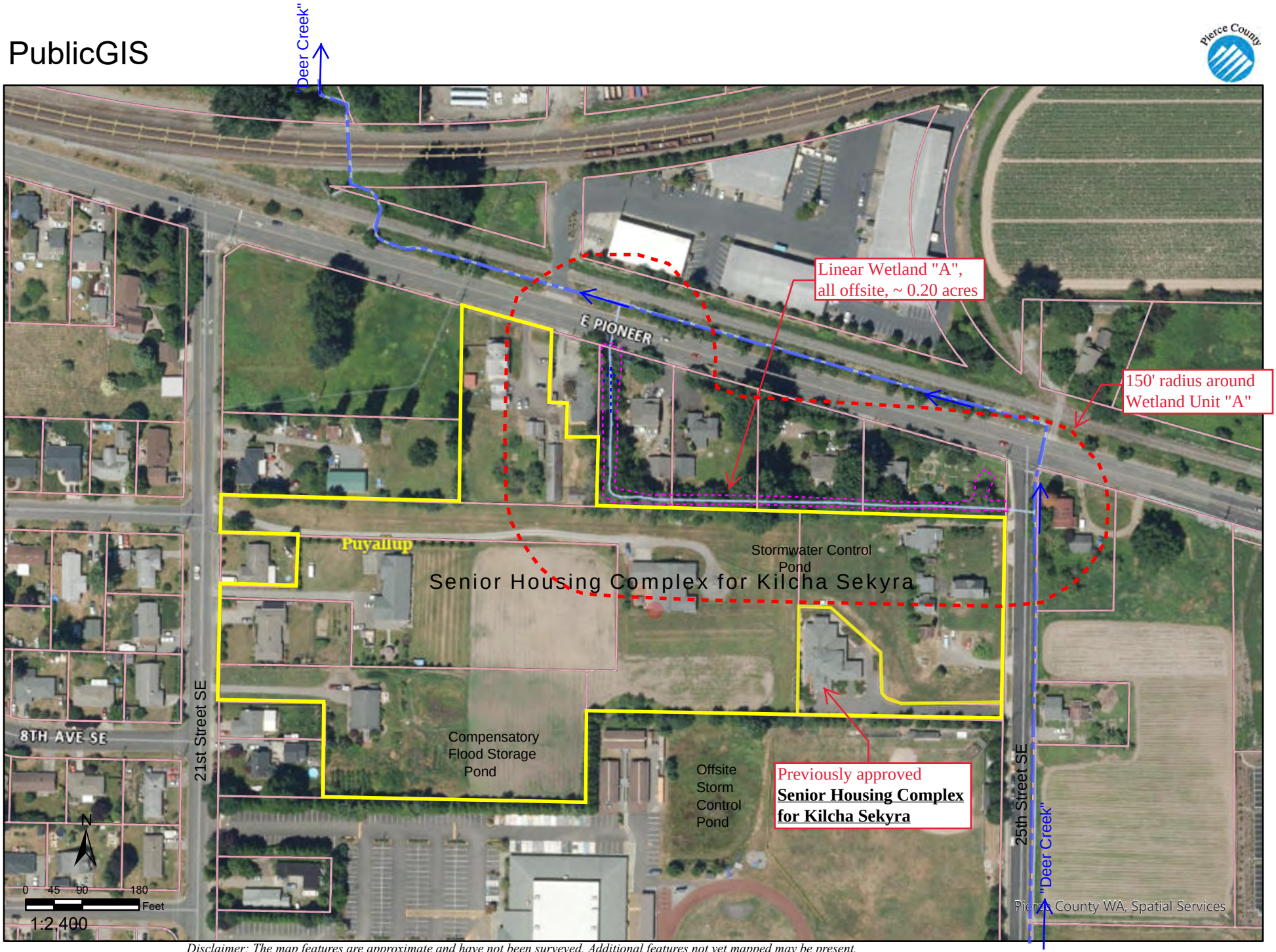
VICINITY & STUDY AREA MAP

0 500 1000

1"=1000'

Fig: 1

PublicGIS



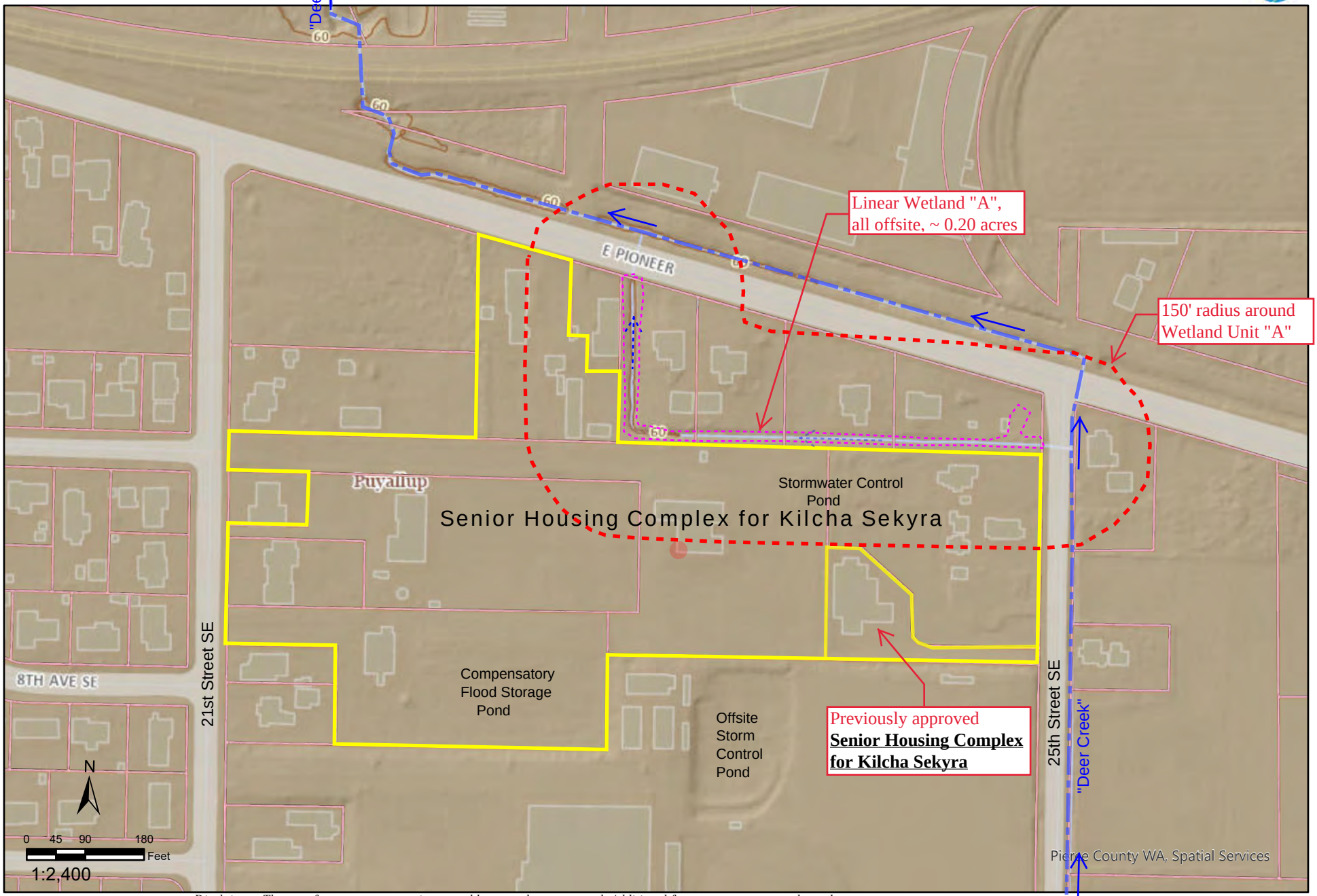
Disclaimer: The map features are approximate and have not been surveyed. Additional features not yet mapped may be present. Pierce County assumes no liability for variations ascertained by formal survey.

Date: 11/10/2021 08:53 AM

Aerial Map of Entire Project Site with 150' Radius Overlay

Figure 2a

PublicGIS



Disclaimer: The map features are approximate and have not been surveyed. Additional features not yet mapped may be present. Pierce County assumes no liability for variations ascertained by formal survey.

Date: 11/10/2021 08:55 AM

Terrain Map of Entire Project Site with 150' Radius Overlay

Figure 2b

Client/Owner:
Kilcha Sekyra Short Plat

JOHN COMIS ASSOCIATES
Wetlands, Streams & Mitigation Designs since 1989
1027 N. Oakes St. Tacoma WA, 98406
Office: (253) 272-6808
Mobile: (253) 686-4007

LEGEND

Yellow = Project Site Boundary

"A" = Wetland Boundary

= Stream/Creek

= Wetland Drain

UP = Upland (non-wetland)

= Ordinary High Water Mark

= Test Plot

= Photo Point

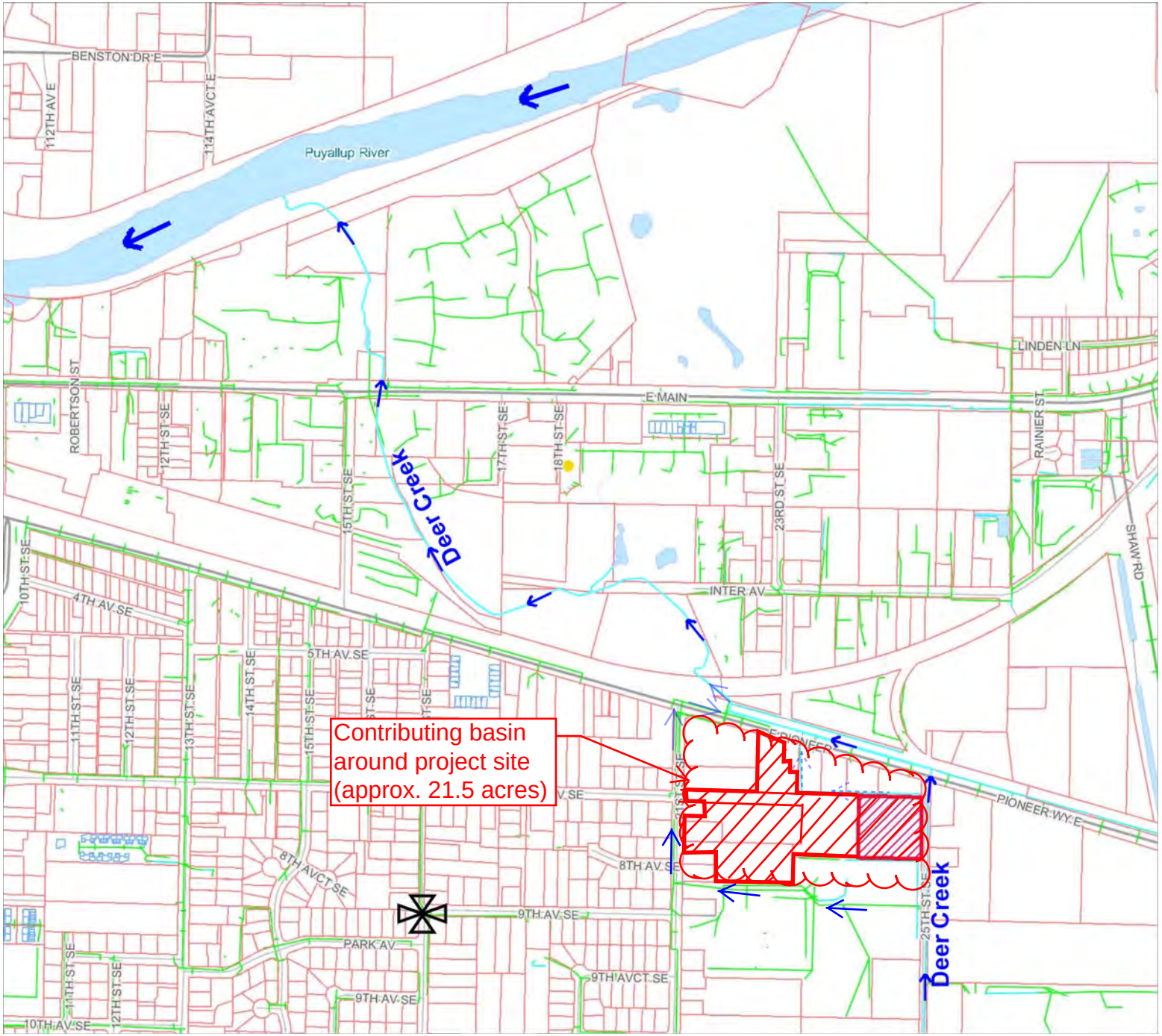
Map Source: a portion of the Image Data from "Google Earth" overlaid with Pierce County "Public GIS" Data, July of 2012

PARCEL & WETLAND OVERLAY MAP

N

N.T.S.

Fig: 2C



Kilcha Site

Legend

- Kilcha
- Drainage - Control Structures - Puyallup
- Highlighted Tax Parcels
- Tax Parcels
- Base Parcel
- Condominium
- Other
- Drainage - Culverts - Puyallup
- Drainage - Channels - Puyallup
- Drainage - Pipes - Puyallup
- Hydro - Centerlines
- Stream
- Piped Stream Sections
- Roads
- Interstate
- Limited Access State Routes
- Other State Routes
- Ramps
- Major Arterial
- Collector
- Local Access
- Hydro - Surface Boundaries
- Water body
- Island

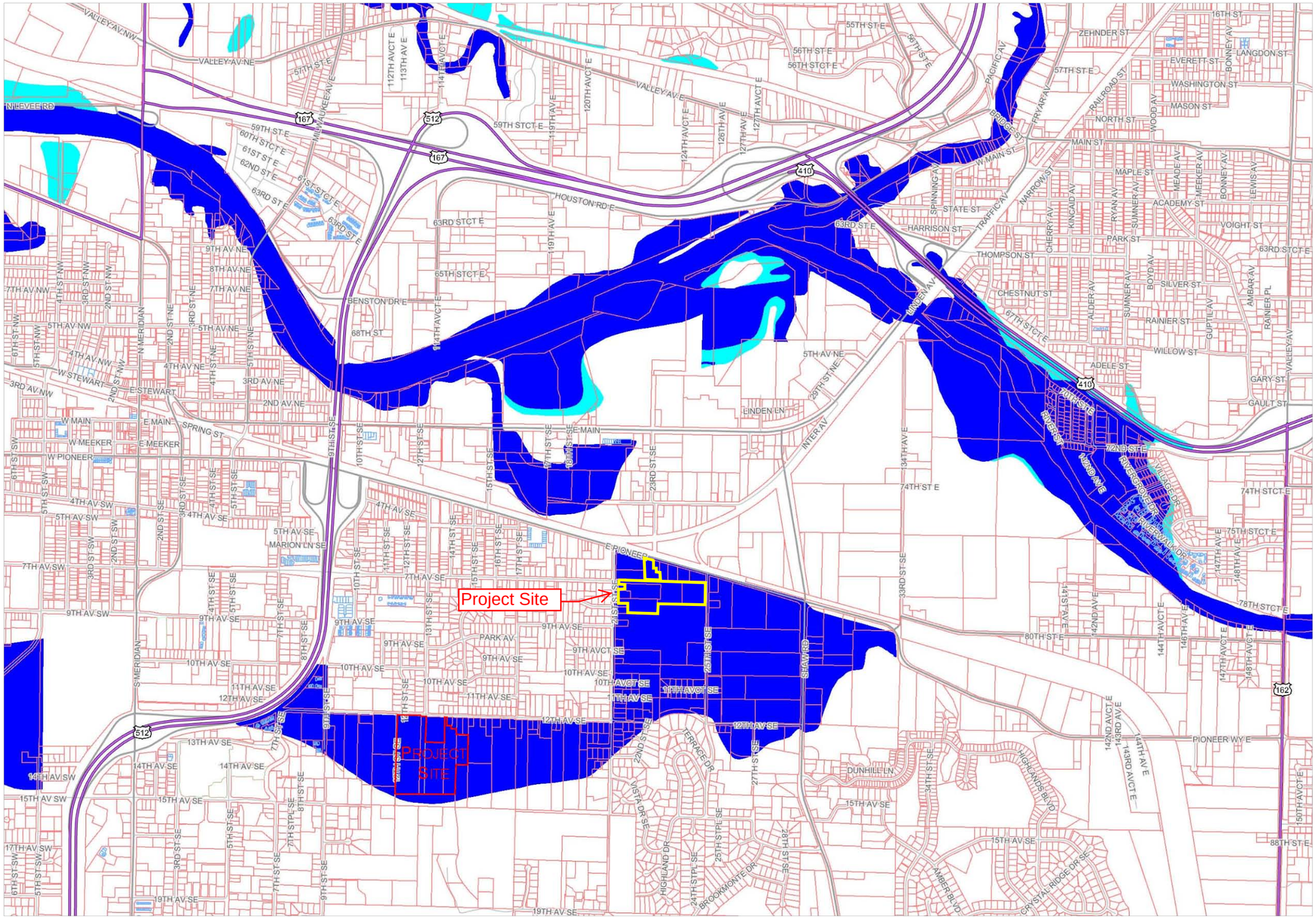
Printed: 2/27/13 4:57 PM

Scale 1:9,103

0 375 750 ft

AZURE | GREEN
CONSULTANTS
409 E Pioneer, Suite A
Puyallup, WA 98372
253-770-3144

Fig:3



FEMA FLOOD ZONES
(1980 City)
(1987 County)

Legend

Tax Parcels
- Base Parcel
- Condominium
- Other

Roads
- Interstate
- Limited Access State Routes
- Other State Routes
- Ramps
- Major Arterial
- Collector
- Local Access

Flood Hazard Areas (FEMA)
- 100 year(A Zone)
- 500 year(X500 Zone)

Floodways (FEMA)
- Floodway

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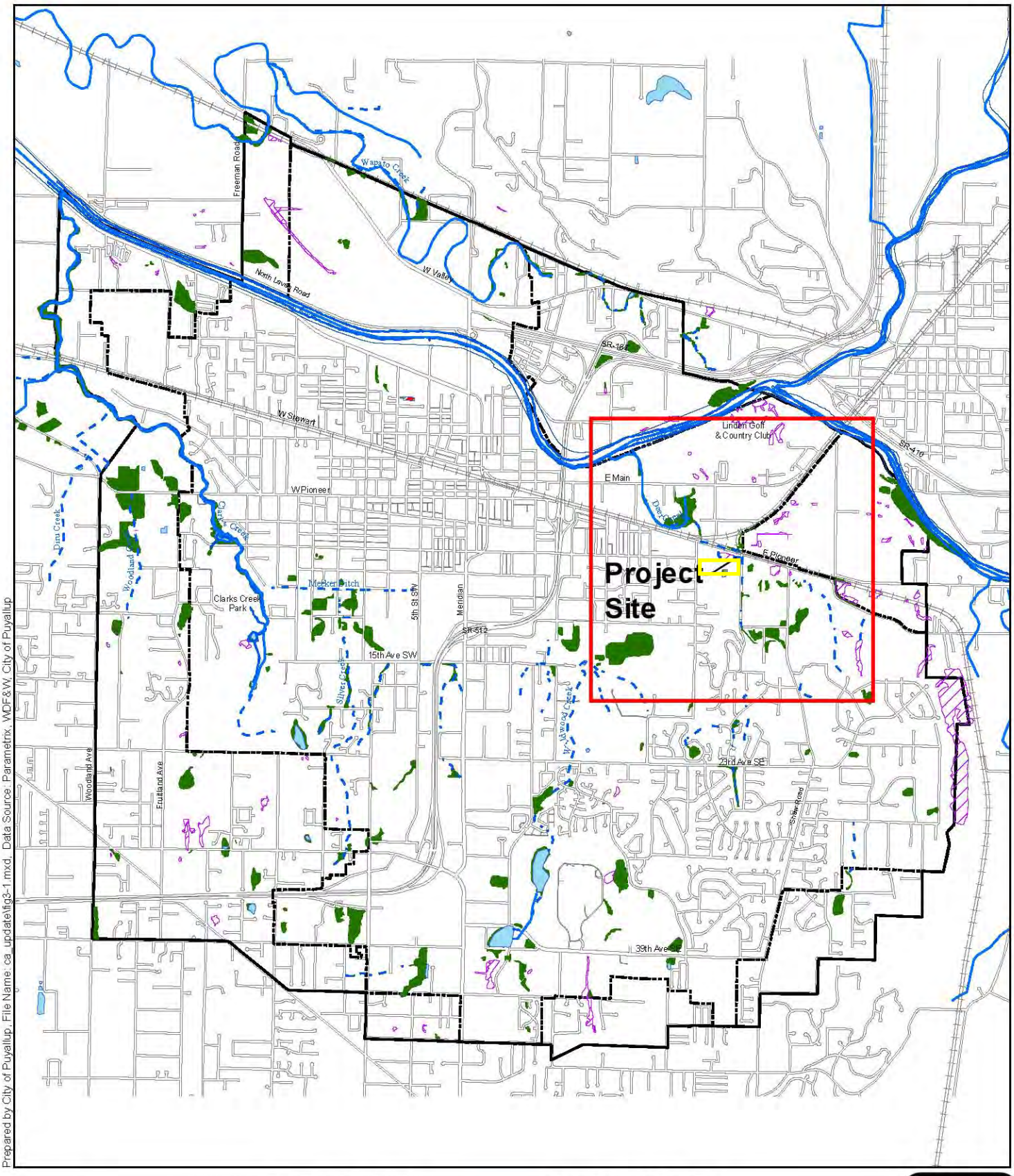
0 650 1300ft.

N

AZURE | GREEN CONSULTANTS

Fig:4



Prepared by City of Puyallup. File Name: ca_update\fig3-1.mxd. Data Source: Parametrix, WDF&W, City of Puyallup

N

City of Puyallup

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

Feet

Puyallup City Limits

Urban Growth Boundary

Roads

Railways

Shorelines of the State

Streams

Lakes / Ponds

Parametrix Field Inventoried Wetlands

Field-Verified

Unverified

Note: Wetlands and streams shown on this map are approximate. They have not been formally delineated or surveyed and are intended for planning purposes only. Additional site-specific evaluation may be needed to confirm/verify information shown on this map.

Scale As Shown

Fig: 5

VICINITY MAP

KEY/LEGEND:

- PROPERTY CORNER
- CONTOURS
- PROPERTY BOUNDARY
- EXISTING HOME(S)
- PROPOSED HOME
- EXISTING CATCH BASIN(S)
- EDGE OF TILLED FIELD
- WATER LINE
- 6" SIDE SEWER
- EASEMENT
- EXISTING TREE(S)
- EXISTING FENCE

WETLAND/LEGEND:

- WETLAND DELINEATION (FLAGGED PINK)
- TEST PLOT FOR WETLAND DETERMINATION (FLAGGED BLUE & GREEN)
- 50' STD. WETLAND BUFFER BOUNDARY (WITH SIGN LOCATIONS, 14 SIGNS)
- 15' BUILDING SETBACK LINE (BSL)
- TREE LINE (APPROXIMATE)

Wetland Delineation and Buffer Notes:

1. The SITE PLAN MAP is based on "Commencement Bay Construction" (C-Bay) drawing for the "Kilcha Sekyra Property", and includes onsite measurements and wetland delineation data obtained during field investigations on 4/22/11 & 5/12/11 by John Comis Associates, LLC (JCA), John G. Comis, PWS, Professional Wetland Scientist.

2. Wetlands are delineated based on the *Washington State Wetlands Identification and Delineation Manual* (1997, WDOE Pub. #96-94), using routine onsite and approximate offsite methods. Where wetlands are within 315 feet of the new building site, the delineation of the wetland boundary is based on 3-parameter criteria and detailed field indicators including hydric soils, hydrology and hydrophytic vegetation. Offsite areas are evaluated using best available data including Wetland Inventory maps, Aerial Photo maps, Topography maps, and Soil Survey maps.

3. The data points are marked as follows:
   - Wetland 'A' (#A-1 to #A-5) and A-17 to A-29.
   - 3 test plots (TP1 thru TP3) [Note that other test holes were examined but are not flagged or recorded]

4. The data points are flagged with colored ribbon marked:
   - "WETLAND DELINEATION- *number*" (pink flags, tied to vegetation, see circled numbers on site plan map)
   - "TEST PLOT-*number*" (blue and green ribbons, tied to wooden stakes, see triangles on site plan map)
   - "BUFFER BOUNDARY" (green ribbons, tied to fence or wood stakes, see squares on map.

5. Wetland `A' (offsite) is rated Category IV with a total score for functions of 15 points (2016); water quality functions score is 6; hydrologic functions score is 6; and habitat functions score is 3. This rating is based on field observations by JCA and conditions at the time of this updated study in accordance with the revised 2015 *Puyallup Municipal Code* (PMC) using the Updated 2014 "*Western Washington Wetland Rating System.*" [PMC 21.06.950] Please see the updated Wetland Rating Form provided in Appendix 3.

6. 50 - Foot Standard Wetland buffer shall be measured from the delineated (pink flag) edge of Wetland "A" for a Category IV wetland if the total wetland function score is 14 1 points as determined on the Wetland Rating Form (see report appendix 3).

7. Any new buildings should be set back an additional 10 feet from the buffer boundary line. A building setback is required to protect the buffer edge from building construction and provide a reasonable passage along the side of a building (PMC 21.06.840).

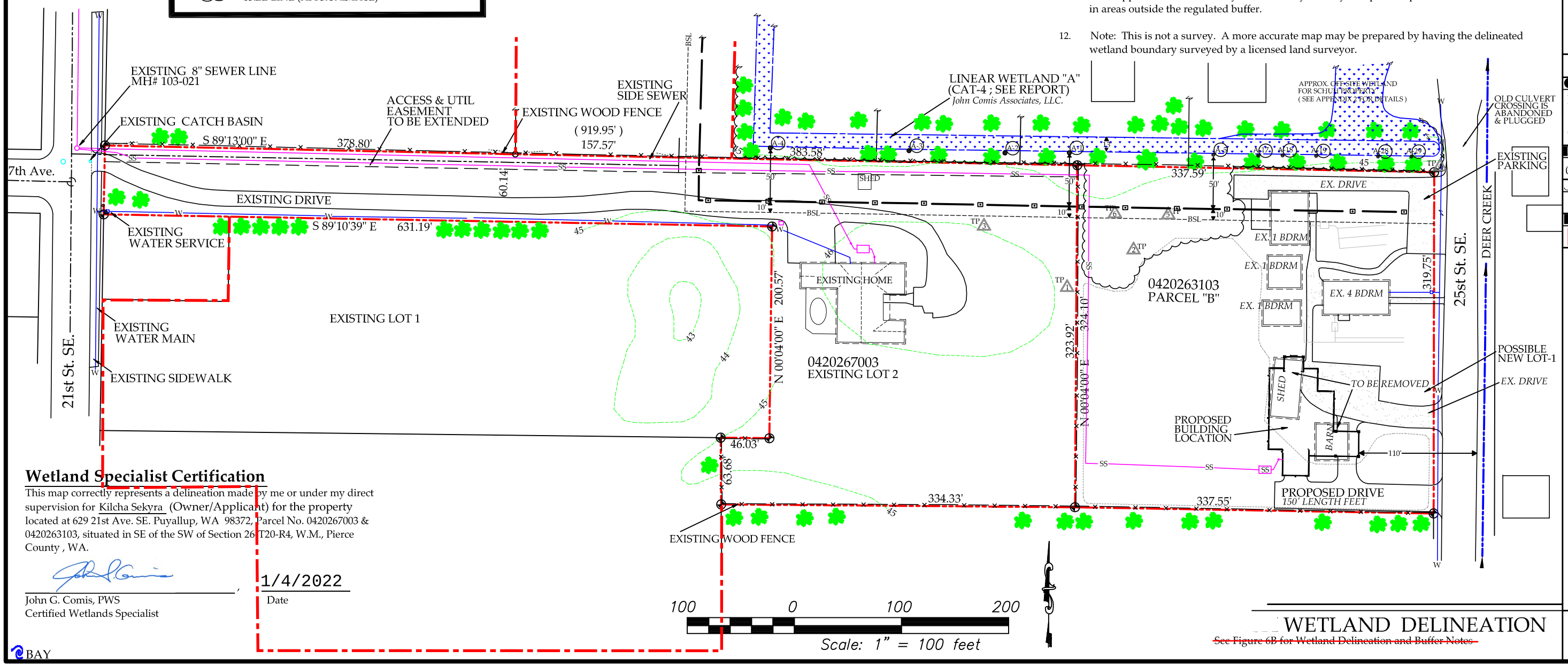
8. No regulated activity including new building, clearing, filling or grading is permitted within a designated buffer area, except as may be approved by the City of Puyallup for such reasons as danger tree removal or flood control. All regulated activities shall occur only in areas outside the buffer boundary.

9. Sign shall be posted at 50' intervals along the wetland buffer boundary at locations indicated on the site plan map. Signs may be obtained at the front counter of the City of Puyallup Development Services, 333 South Meridian, Puyallup, WA 98371, at $2 to #3 per sighn. The total number of signs needed for both parcels are 14.

10. Existing and ongoing residential and agricultural activities and uses that are established within the designated buffer shall continue in accordance with PMC standards and exemptions without further permit approval. This includes maintenance of lawns, driveways, parking areas and agricultural fields by mowing, weeding, tilling, orchard pruning and fences where these areas or features are existing facilities and established within the designated buffer area.

11. Maintenance within the designated buffer may include removal of invasive or noxious weed species designated as noxious by the State of Washington such as Tansy ragwort (*Tanacetum vulgare*). Invasive species include introduced and non-native plants such as Himalayan blackberry (*Rubus discolor or Rubus laciniatus*), Scotch broom (*Cytisus scoparius*), Reed canary grass (*Phalaris arundinacea*), Japanese knotweed (*Polygonum cuspidatum*) or English ivy (*Hedera spp.*). Removal of invasive and noxious plants must be by hand methods such as pulling, cutting or other approved method as may be allowed by the City. Disposal of plant residue must be done in areas outside the regulated buffer.

12. Note: This is not a survey. A more accurate map may be prepared by having the delineated wetland boundary surveyed by a licensed land surveyor.



Wetland Specialist Certification

This map correctly represents a delineation made by me or under my direct supervision for Kilcha Sekyra (Owner/Applicant) for the property located at 629 21st Ave. SE. Puyallup, WA 98372, Parcel No. 0420267003 & 0420263103, situated in SE of the SW of Section 26, T20-R4, W.M., Pierce County , WA.

John G. Comis, PWS
Certified Wetlands Specialist

1/4/2022
Date

WETLAND DELINEATION

~~See Figure 6B for Wetland Delineation and Buffer Notes~~

CBAY CONSULTING
sheldon@cbayconstruction.com
3043 Center St.
Tacoma, WA, 98409
phone (253)-380-2357

NOTICE:
The written dimensions on this plan supercede any scaled measurements.
This is not a survey
Topography based on public GIS.
For building purposes only.

Project Info

Owner
Kilcha Sekyra
629 21st St. SE.
Puyallup, WA, 98372
(253) 381-7098

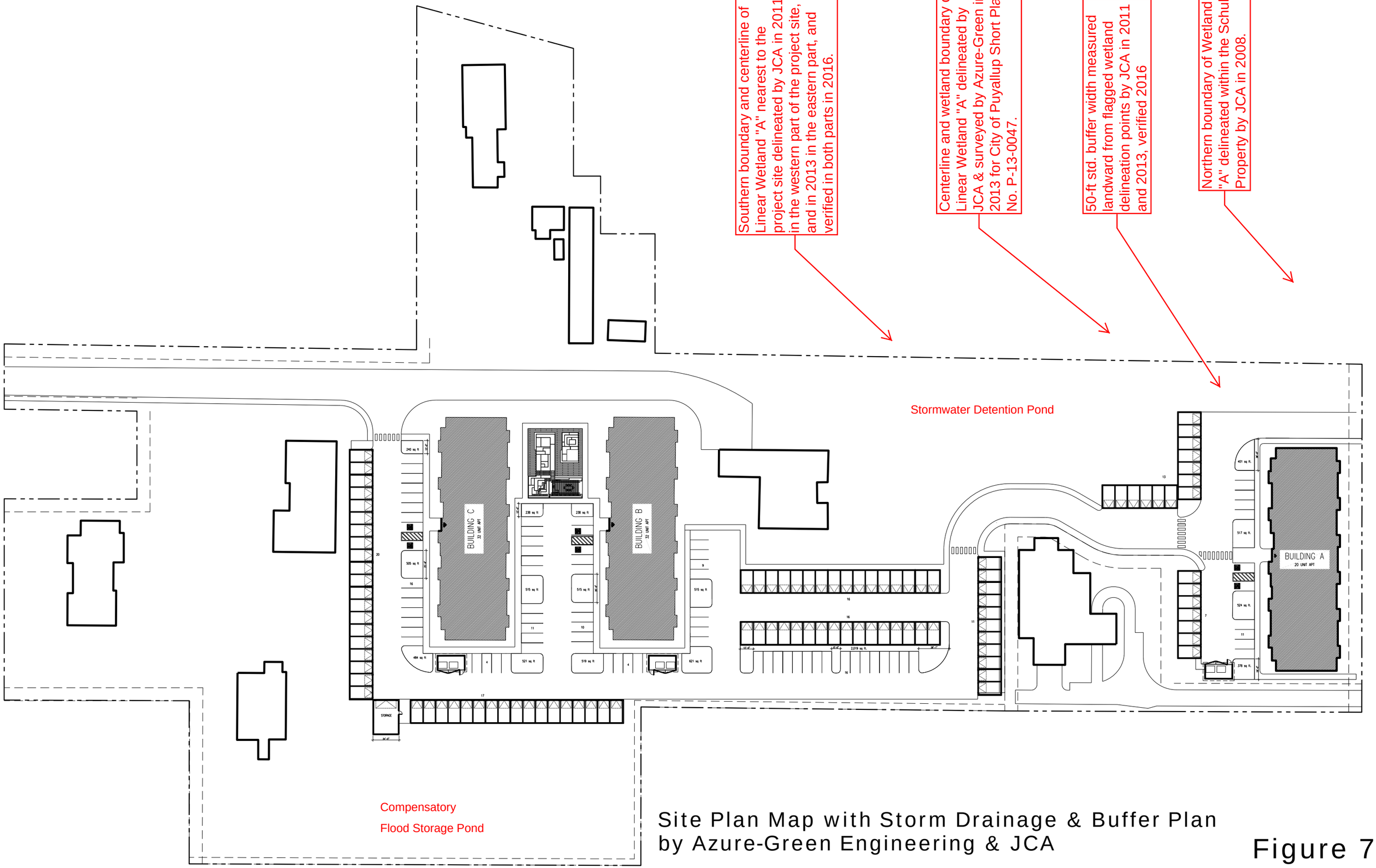
Parcel#
0420267003 & 0420263103

Job#
JCA-110310

Date revised
1/4/2022

JOHN COMIS ASSOCIATES
Consulting for Wetlands, Streams & Mitigation Designs since 1989
~~2106 Pacific Ave., Suite 300~~
Tacoma, WA 98402
Office: 253-272-6808
Mobile: 253-686-4007
jcomis@johncomisassociates.com

FIG: 6



Site Plan Map with Storm Drainage & Buffer Plan
by Azure-Green Engineering & JCA

Figure 7

Appendix 1

METHODOLOGY USED FOR WETLAND DETERMINATION, DELINEATION, REGULATION AND BUFFER STANDARDS

METHODOLOGY

A. Manual Methods Used For Wetland Determination And Delineation

"Wetlands" were delineated using the 1997 *Washington State Wetlands Identification and Delineation Manual* (WDOE, Pub No. 96-94, March 1997), together with the updated 2010 US Army Corps of Engineers *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region* (USACOE 2010). The identification of "regulated wetlands" was made in accordance with the Puyallup Municipal Code (PMC), *Regulations-Critical Wetland Areas*. This includes using the newest standards for wetland delineation (USACOE 2010) and wetland rating (WDOE updated 2014). [6]

The wetland delineation methods used by JCA during this study and analysis were consistent with these manual methods and the PMC requirements which require using most recent editions of state and federal wetland delineation manuals and applicable regional supplements as approved and adopted by the Washington State Department of Ecology (WDOE). This appendix describes the methods used including key definitions, criteria, abbreviations, regulation standards and applicable portions of code used in this analysis.

The field investigation was limited to a determination of the presence or absence of "regulated wetlands" on or near the project site, including offsite areas within 315 feet [7] of the site boundary. If an offsite wetland or stream was known or suspected to be within 315 feet of the project, then the wetland or stream must be evaluated and delineated based on the best available data for offsite areas. [See report Figure 1 for a depiction of the various radii used for this study around the project site.]

For an area to be determined a "wetland" it must necessarily meet the scientific ***definition and triple parameter criteria***. These criteria which an investigator must use to determine if a sample test plot was in a "wetland" or "non-wetland" area were limited to the presence of all 3 wetland criteria: hydrophytic vegetation, hydric soils, and persistent wetland hydrology. This means that to make a positive wetland determination, all 3 criteria must be present. The absence of one, two, or all three of the criteria should result in a non-wetland determination.

The presence or absence of "field indicators" was used to determine if a criterion was met. If a field indicator was absent, then an indirect indicator may be used. For example, the absence of inundation or saturation during a dry summer field investigation could result in the hydrology criterion not being met. However, the presence or absence of encrusted detritus on twigs or blackened leaves on bare ground in a depression may be used to help verify sufficient inundation during a wetter period of the growing season.

The 2010 *Regional Supplement Manual* stipulates 3 key provisions of the definition of wetlands include:

a. Inundated or saturated soil conditions resulting from permanent or periodic inundation or saturation by ground water or surface water (saturation within 12 inches of the surface for at least 20 to 30 consecutive days during periods in the Mesic growing season [March thru October]). In accordance with the USACOE 2010 "*Manual*" (pages 65 & 123): "*This standard requires 14 or more consecutive days of flooding, ponding, or a water table 12 inches (30 cm) or less below the soil surface, during the growing season at a minimum frequency of 5 years in 10 (50% or higher probability) (National Research Council 1995) …*"

b. A prevalence of vegetation typically adapted for life in saturated soil conditions (i.e. dominance of hydrophytic vegetation).

c. The presence of "normal circumstances".

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[6] Wetlands are delineated using the 1997 *Washington State Wetlands Identification and Delineation Manual*, prepared by the Washington State Department of Ecology (WDOE Publication #96-94). The WA Wetlands Manual is required to be used by all state agencies in the application of any state laws and regulations as well as any city or county in the implementation of any regulations under the Growth Management Act. This methodology has been modified at this time to be consistent with the 2010 US Army Corps of Engineers *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region* (COE 2010). http://www.usace.army.mil/Portals/2/docs/civilworks/regulatory/reg_supp/west_mt_finalsupp.pdf

[7] The 315-foot distance is the standard buffer width for the highest rated Category 1 wetland, plus 15 feet for a building setback. This represents a reasonable distance from which a "regulated activity" should not impact a "regulated wetland" (per PMC for buffers).

The selection of a specific method and procedure for identifying wetlands may follow one of the following methods:

- the "routine determination method" for undisturbed and non-problem area wetlands;
- the "offsite determination method" for areas within 300' of the site boundary; and/or
- the "disturbed area and problem area wetland determination procedures" for areas with disturbed or atypical vegetation, soils or hydrology. If an area was disturbed, then a higher level of analysis such as a "Comprehensive" determination method may be required.

The preferred and simplest method was the "**ROUTINE** Determination Method" for typical, generally undisturbed areas with normal environmental conditions. The routine method was used in areas where the vegetation, soils and hydrology condition can be readily observed.

For areas that were complex, atypical, disturbed or altered environmental conditions, a "**COMPREHENSIVE** Determination Method" may be used. The comprehensive method employs transect sampling procedures that may require deeper test holes to be dug in areas that have been filled or graded.

Generally, the investigator was looking for a portion of the site (called a test plot) where a "typical condition" exists--where a well-established plant community was present with no evidence of recent clearing, grubbing, filling, grading, or soil drainage activities. This situation should occur during a period when "normal circumstances" were present. That was during periods of the year when normal environmental conditions such as moderate rainfall and average antecedent moisture conditions (AMC) exist within a wetland or a watershed area.

For the hydrophytic vegetation criterion to be met, a dominant number (i.e. more than 50%) of "OBL, FACW and/or FAC" indicator species must be present in the sample plot (see the discussion of these abbreviations in a later section of this appendix). The vegetation analysis was based on the 3 dominant species in each of 4 vegetation layers (or strata: trees, saplings/shrubs, herbs/grasses, and woody vines). Or if only 1 or 2 vegetation layers exist at the test plot, then 5 dominant species were used to make the determination.

If a test plot had no well-established vegetation due to recent clearing and grubbing, or the soils have been severely disturbed due to excavation, filling or grading activities, the test plot was called an "atypical situation". In atypical or disturbed situations, the wetland determination may be based only on soil borings into the undisturbed soil stratum below the fill line and by hydrology criteria. If an area was disturbed, then a higher level of analysis such as a "comprehensive" determination method may be required.

The procedure used for each test plot was indicated on the individual data sheets. The environmental conditions that exist at the site on the day of the field investigations were indicated in field notes and marked in the appropriate "normal" (or not normal) blank at the top of the data sheet. If the vegetation, soils or hydrology were found disturbed, this was explained at the bottom of the sheet. The results for each test plot were recorded on data forms and included with this report in Appendix 2.

B. KEY DEFINITIONS USED

For this study, "wetlands" were defined using the adopted *State of Washington's Growth Management Act* definition:

> "Those areas that were inundated or saturated by surface water or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soils conditions. Wetlands generally include swamps, marshes, bogs, and similar areas." (Corps of Engineers Regulation 33 CFR 328.3, 1988) (Federal Resister 1982), the Environmental Protection Agency (Federal Register 1985), the Shoreline Management Act (SMA), and the Growth Management Act (GMA)
>
> In addition, the SMA and GMA definitions added: "Wetlands do not include those artificial wetlands intentionally created from non-wetland sites, including but not limited to, irrigation and drainage ditches,

grass-lined swales, canals, detention facilities, wastewater treatment facilities, farm ponds, and landscape amenities, or those wetlands created after July 1, 1990, that were unintentionally created as a result of the construction of a road, street, or highway. Wetlands may include those artificial wetlands intentionally created from non-wetland areas to mitigate the conversion of wetlands."

Another key definition used for this study was the "Ordinary High-Water Mark" or "Line" (OHWM). As defined in the *Washington Joint Aquatic Resources Permits Application* (JARPA),

> "OHWM means the visible line on the banks where the presence and action of water were so common as to leave a mark upon the soil or vegetation: Provided that in any area where the ordinary high-water line cannot be found the ordinary high water line adjoining saltwater shall be the line of mean higher high water and the ordinary high water line adjoining freshwater shall be the elevation of the mean annual flood."

Other key definitions may also apply that were in the adopted City of Puyallup Municipal Code (PMC), 2015, *Environmentally Critical Areas Management*, Chapter 21.06 (Ord. 3101 §9, 2015, Ord. 3076 §4, 2014, Ord. 2859 §1, 2006). [See Section F in this appendix for more details about applicable City regulations]

C. WETLAND IDENTIFICATION AND DELINEATION CRITERIA

By Vegetation:

When "normal circumstances" exist on the site, vegetation was used where plants were established and relatively undisturbed. These circumstances were considered "typical" situations as compared to "atypical salutations" where one or more of the 3 parameters (vegetation, soil, and/or hydrology) have been sufficiently altered or disturbed. The legal definition of wetlands [8] contains the phrase "under normal circumstances," which was included because there were instances in which the vegetation in wetlands may have been inadvertently or purposely removed or altered as a result of recent natural events or human activities. "Recent" was defined to mean that period of time since legal jurisdiction of an applicable law began.

Field Data Form was used for "routine wetland determination" when the 3-parameters (vegetation, soil and/or hydrology) have not been sufficiently altered by recent human activities or natural events to preclude the presence of wetland indicators.[9] Test plot in which vegetation, soils, and/or hydrology have not been significantly altered were indicated on the forms by YES for "Do normal circumstances exist?" and by NO for "Is the site significantly disturbed (Atypical situation)?"

Do normal circumstances exist on the site?	Yes☒	No☐
Is the site significantly disturbed (Atypical situation)?	Yes☐	No☒
Is the area a potential problem area?	Yes☐	No☒

"Problem areas" apply to certain wetland types (or difficult conditions) that may make application of field indicators of one or more parameters difficult to determine, at least at certain times of the year. These were not considered to be "atypical situations". Instead, they were types of wetlands in which an indicator(s) of one or more parameters may be periodically lacking due to **normal environmental conditions or** seasonal or annual variations in environmental conditions that result from causes other than human activities or catastrophic natural events. [10]

For this study, vegetation was used as a primary field indicator, documented at 8 individual test plots (TPs) and recorded on Field Data Forms (see Appendix 2). The interpretation of data for determining areas as "wetland" or "non-wetland" was based on dominance of hydrophytic vegetation, which means that the presence of hydrophytes was more than 50% of the listed indicator species at each test plot.

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8 WDOE 1997 *Manual*, paragraph 25a, page 9, Definition (from Federal Register, SMA and GMA)

9 Based on WDOE 1997 *Manual*, Appendix A, Glossary definition for "Atypical situation"

10 WDOE 1997 *Manual*, paragraph 77, page 81, Section G: Problem Areas

The TP locations were shown on the report figures and on our Field Note Sketch Maps (FNSM, see Appendix 2). Onsite data were extrapolated to adjacent offsite areas as indicated as “upland” or “wetland” on the field note sketch map(s).

Sample test plots (TPs) were located across the site in areas where wetlands may be expected to occur or may have occurred in the past. We assume hydrophytic vegetation would become established within a delineated area if hydric soil and wetland hydrology conditions (based on topography, drainage patterns, evidence of past flooding, and various other field indicators as note on data forms) persisted and were present. If adjacent offsite areas have not been significantly disturbed by past agricultural activities or land development, including clearing, filling, draining, farming, or drainage ditches, then the offsite areas were used to help evaluate the adjacent onsite areas.

A plant species was considered dominant in a test plot if more than 10% of the plants growing in that area appear to be the same species. This was an estimate of the relative density of a species in a sample area. By routine methods, this was usually made by visual inspection of the dominant plants in a representative sample area. As defined in the USACOE 2010 *Manual*, a dominant species exerts a controlling influence on or defines the character of a plant community. Dominance on the other hand was used as a descriptor of vegetation that was related to the standing crop of a species in an area, usually measured by height, aerial cover, or basal area (for trees). This should not to be confused with a vegetation class that must comprise more than 30% of the aerial cover in the entire wetland (or upland).

If more than 50% (i.e., 51 or more percent) of the dominant plant species in a test plot were OBL, FACW and FAC, then the hydrophytic vegetation criteria was said to be met and it was marked “yes” on the field data form.

The specie identifications were based on available plant keys such as Hitchcock and Cronquist's *Flora of the Pacific Northwest* (1973). To determine whether plant species exhibit hydrophytic adaptations, if they were native or non-native (introduced), and which strata (tree, shrub, herb) they normally occupy, we use the *National List of Plant Species That Occur in Wetlands: Northwest (Region 9)*, published by the US Fish and Wildlife Service, May 1988. The indicator statuses for the various species found in the area were determined based on the National List together with the December 1993 supplement for the Northwest Region.

The indicator status describes the estimated probability of a plant species occurring in wetlands. Parenthesis ( ) around an indicator signifies the status was assigned by JCA. A question mark (?) after an indicator signifies it was tentative based on JCA field experience & observations. Indicators are:

OBL = Obligate Wetland species: "almost always occurs", >99% probability
FACW = Facultative Wetland species: "usually occurs", 67-99% probability
FAC = Facultative species: "equally likely to occur", 34-66% probability
FACU = Facultative Upland species: "usually occurs in non-wetlands", 67-99% probability
UPL = Upland species: "almost always occurs in non-wetlands", >99% probability
NI = No Indicator assigned: if a species does not occur in wetlands in any region of the National List, then “no indicator was assigned”.
+ = Slightly *more* frequently found in wetlands
- = Slightly *less* frequently found in wetlands
* = Tentative assignment based on either limited information or conflicting reviews from the 1993 Northwest Supplement of the National List.

By Soils:

For wetland (or “hydric”) soil determinations, we use the hydric soil criterion prescribed in Part III of the 1993 Washington State Wetland Manual. Hydric soils were defined as *"a soil that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part"* (USDA-NRCS 1995, Federal Register, 7/13/94, Vol. 59, No. 133, pp. 35680-83). The National Technical Committee for Hydric Soils (NTCHS) had established the ‘criteria’ for soil classification and ‘field indicators’ for hydric soil determination (see following reference). In general, a hydric soil determination was made based on primary soil color indicators and secondary indicators in representative sample test plots that we

examine onsite in the upper 12" to 16” of the soil profile. If a soil was saturated long enough, then that soil may be determined as hydric based on its color indicators.

Notice that the hydrology criteria usually means that the soil remains saturated for at least 20 or more consecutive days during the early growing season when soil temperatures were above biologic zero (41oF) as measured at a depth of 16” below the soil surface.

In general, "organic hydric soils" develop as a result of prolonged anaerobic conditions with long periods of saturation impeding decomposition (peat or muck) and have greater than 16" of organic matter in the surface layer (Histosols). "Mineral hydric soils" have less than 16" of organic matter (if some was present, then it may have a 'histic epipedon'). They were saturated for more than 15 consecutive days during the growing season (the period when soil temperatures were above biologic zero, 41^{O}F, as defined by "*Soil Taxonomy*", 1975; usually March-October), and contain dominant gleying and/or redoximorphic features.

The soil color and/or presence of *redoximorphic features* [11] or gleying in a sample were primary field indicators of whether a mineral soil was either hydric or non-hydric soil. Non-hydric soils were generally a dark brown to rusty red or yellowish brown in their matrix color. Hydric soils were generally black, very dark brown, grayish brown to gray, or washed out in color. A field indicator for a saturated organic hydric soil was a rich black matrix color of say 2/1 or 2/2. A field indicator for a saturated mineral soil was a leached matrix color of say 3/1 or 4/1 or 5/1 or 6/1). A hydric mineral soil may have a low chroma color feature (at least 1 if no redoximorphic features were present or a chroma 2 if prominent redox features were present in the soil matrix).

Gleying and prominent redoximorphic features were color indicators of prolonged saturation and indicate that anaerobic conditions probably exist for sufficient periods of time to develop wetland soils. Gleyed soils were generally bluish-green to grayish-green in color throughout the soil mass or in mottles (spots or streaks) interspersed within the dominant soil color (matrix color) in a layer (soil horizon). Gleying results from the leaching of the dissolved (reduced) iron and manganese minerals out of the soil matrix. Soils gleyed to the surface or to the surface layer of organic material were generally considered hydric. Soils that were saturated throughout the year were usually uniformly gleyed to the surface (Tiner and Veneman 1987).

Redoximorphic features or “mottles” were generally yellow to reddish brown blotches or spots accumulating in mineral soil due to a fluctuating water table during the growing season. The size, number and color of redox features reflect the duration of soil saturation and thus whether the soil was hydric. Redox features in hydric soils should be "distinct" or "prominent" in the upper horizon. Mineral soils that have a dark grayish matrix color (chroma 2 or less) with distinct or prominent redox features were hydric if the features were not relic. Mineral soils with a predominantly brown or yellow matrix color (chroma of 3 or more) and light gray redox features were not usually hydric.

The National Technical Committee for Hydric Soils developed criteria for identifying hydric soils and a list of the Nation's hydric soils was maintained by the National Resource Conservation Service (NRCS [formerly Soil Conservation Service, SCS], 1987). A federal manual was published by the USDA-NRCS and describes current methods and limitations for identifying hydric soils for the National and State lists.

The NRCS maintains the list of hydric soil map units for each county in the US. The list was used for identifying which soils were hydric based on the local soil series descriptions. These soil series descriptions for soil map units were indicated by this study as within or associated with the project site. The soil descriptions for the mapped areas may be found in the 1979 [NRCS] *Soil Survey of Pierce County* (see the References appendix for information about the *Pierce County Soil Survey Report*).

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[11] “Redoximorphic features” are formed by the processes of reduction, translocation, or oxidation of Fe and Mn oxides (formerly called *mottles* and low chroma colors). Redox concentrations (reddish mottles) occur as pore linings along root channels and ped faces (Vepraskas, 1994). “Distinct” and “prominent” are defined in the glossary of the reference text *Field Indicators of Hydric Soils in the United States*.

By Hydrology:
Hydrology observations at each sample plot were indicated on the revised Field Data Forms provided with this report in Appendix 2. The saturation and water level data together with the respective date that the measurement was made were shown on the data form.

For wetland hydrology determination, we use the "*COE Manual, 2010*" for wetland hydrology indicators. The presence of inundation and/or saturation for a sufficient "hydroperiod" was determined based on the depth to saturation including capillary fringe. This depth must be 12" or less as measured from the ground surface. In wetland margins this may also include observations or assumptions based on the presence or absence of hydric soils and hydrophytic vegetation when there was a general lack of saturation or standing water due to observations made during dry periods during the water year.

Other field indicators were also used to help determine the presence or absence of sufficient hydrology for a positive or negative wetland determination. These indicators include topographic features and elevations, encrusted detritus or debris, silt lines, hydraulic gradients, free-water in a pit or soil probe hole, and tributary area analysis of onsite and offsite drainage.

If the saturation level was determined to be below 12" for more than 7 consecutive days during the growing season, then the primary indicator for saturation may not sufficient for a positive wetland determination. If the saturation level falls below 12" during the period before or after the 12" measurement was made, then the test plot was determined to be non-wetland by hydrology.

After a wetland determination was made, the wetland area was analyzed to determine if it was a high-quality wetland or if it had any of several irreplaceable ecological functions. The wetland was then analyzed for any significant habitat values such as size, classifications, plant species diversity, structural diversity, special habitat features, buffer conditions, and connection to streams or other habitat areas.

D. WETLAND CLASSIFICATION

Wetlands identified by this study were classified using a hierarchical multi-level approach developed by the US Fish and Wildlife Service for their scientific classification system. The classification system was published in the report titled *Classification of Wetlands and Deep-Water Habitats of the United States*, FWS/OBS-79/31, by Cowardin, et al. (December 1979).

The system of classification divisions was based on habitats that share the influence of similar hydrology, geomorphology, chemical, or biological factors. The wetland systems involved in the project site were generally limited to "*Palustrine*" systems. Palustrine wetlands (these were the only wetlands identified within this study area) were divided into 9 classes with 24 different subclasses. These were determined by either the substrate material or the 'dominance vegetation' associated with a respective non-tidal area. The classes of non-tidal palustrine systems were as follows:

CLASS [NON-TIDAL]
(RB) Rock Bottom
(UB) Unconsolidated Bottom
(AB) Aquatic Bed
(US) Unconsolidated Shore
(ML) Moss-Lichen
(EM) Emergent
(SS) Scrub-Shrub
(FO) Forested
(OW) Open Water (unknown bottom)

The subclasses were not identified in this study area but if assigned they would be based on the substrate material or 'dominance vegetation' associated with the non-tidal area. 'Dominance types' may also be characterized within freshwater *Palustrine* Systems based on different invertebrate fauna that typically inhabit these areas.

Water regimes were assigned for each class based on the hydroperiod or duration of flooding (inundation) or saturation associated with the non-tidal area. These were defined for non-tidal (freshwater) areas as follows:

WATER REGIME [NON-TIDAL]
(A) Temporarily flooded: flooded (inundation by surface water) for brief periods during growing season but the water table was otherwise well below the soil surface
(B) Saturated: substrate was saturated for an extended period during growing season but surface water was seldom present
(C) Seasonally flooded: flooded for extended periods during the growing season, but usually no surface water by the end of the growing season
(D) Seasonally flooded/well drained
(E) Seasonally flooded/saturated: flooded for periods, but usually saturated by groundwater at or near the surface thru most of the growing season
(F) Semipermanently flooded: flooded throughout growing season in most years, when surface water was absent, water table was at or near the surface
(G) Intermittently exposed: flooded throughout year except in years of extreme drought
(H) Permanently flooded: flooded (water covers land surface) throughout the year in all years
(J) Intermittently flooded: surface was usually exposed with surface water present for variable periods with no seasonal pattern
(K) Artificially flooded
(W) Intermittently flooded/temporary
(Y) Saturated/semi-permanent/seasonal
(Z) Intermittently exposed/permanent
(U) Unknown

SPECIAL MODIFIERS
(b) beaver
(d) partially drained/ditched
(f) farmed
(h) diked/impounded
(r) artificial substrate
(s) spoil
(x) excavated

Other modifiers for water chemistry and soil may also be employed to more adequately describe the wetland and deepwater habitats. These may be applied at the class or lower level in the hierarchy. The farmed modifier may also be applied to the ecological system.

The class of a particular wetland describes its general appearance in terms of either the dominant vegetation or the substrate. When over 30% cover by vegetation was present, a vegetation class was used (e.g., "*emergent*", "*scrub-shrub*" and/or "*forested*"). When less than 30% of the substrate was covered by vegetation, then a substrate class was used (e.g., "*unconsolidated bottom*", "*aquatic bed*", or "*moss-lichen*"). Typical demarcations of these classes of *palustrine* wetland systems were shown in the Cowardin report. [Also, reference was made to the current (1988) National Wetlands Inventory (NWI) map and legend.]

Wetlands that have a single vegetation species that dominate 90% of the total wetland area were called a "mono-type". This may occur where more than the one species was present but the total area of their coverage was less than 10%. If another vegetation class or species dominates more than 10% of the wetland, then it has higher habitat diversity. This can be based on the number of plant species found in a class, the number and quality of the structural layers and the interspersion of classes which creates increased "edge effect" and habitat diversity. This may also result in a higher wetland "rating".

E. STREAM DELINEATION

Stream channels and their associated Ordinary High Water Marks (OHWM) were identified and delineated by this study using the approach developed by the Washington State Department of Ecology (WDOE) and published in the Washington State Coastal Training Program report titled *How to Determine the Ordinary High Water Mark* (see WDOE Publication #08-06-001, review draft March 2008, by Dr. Patricia Olson and Erik Stockdale, Shorelands & Environmental Assistance Program, "*Determining the Ordinary High Water Mark on Streams in Washington State*").

The draft document was still under review. However, this investigator took the Coastal Training Program 2-day workshop that was offered on April 16-17, 2008 in Lacey, Washington, which presented the overview and instruction for using the OHWM determination/delineation manual that was underdevelopment. The workshop included detailed instruction on the manual methods and field instruction at several representative sites that demonstrated the manual techniques and applications in real-world conditions found in western Washington streams.

F. CITY OF PUYALLUP WETLAND REGULATION AND BUFFER STANDARDS

If a wetland had a large enough area or high enough rating requiring regulation, then appropriate measures for buffering or impact mitigation shall be required for a new development. Generally, for the City of Puyallup, the minimum threshold size for an "isolated" Category III wetland was 2,500 square feet, and a Category IV wetland was 10,000 square feet.

If the total size of a wetland unit was greater than or equal to a threshold size, then the wetland unit was regulated. The size of a wetland unit was determined after a wetland specialist completes a detailed delineation of the wetland boundary. The size of smaller areas may be measured by onsite methods such as hip chain or tape measure by the wetland specialist. A measurement by more detailed methods such as a land survey may be required to determine a precise size for a wetland that was at or near the threshold size.

An "isolated wetland" was defined in the PMC 21.06.210 (75), to mean: "a wetland that was hydrologically isolated from other aquatic resources, as determined by the United States Army Corps of Engineers (USACE). Isolated wetlands may perform important functions and were protected by state law (Chapter 90.48 RCW) whether or not they were protected by federal law. Generally, this means a wetland that was not connected directly to another wetland in a system of definite channels or by hydric soils. This was also determined by reference to the definition of a "stream" in PMC 21.06.210 (126), and the standards for the classification of surface water systems (see Chapter 21.06.910).

After the wetland boundary was delineated and the size was measured, then the wetland unit was "rated" or categorized for regulatory purposes using the 4-tiered system, defined by the most current Washington Department of Ecology (WDOE) *Washington State Wetlands Rating System for Western Washington: 2014 Update*" (WDOE Pub #04-06-029). This document contains the methods for determining the wetland category based on criteria for Category I, II, III, and IV wetlands. The rating and buffer requirements for wetlands used in this study were specifically made in accordance with PMC 21.06.910, *Designation, mapping, and rating*, and PMC 21.06.930, *Performance standards – Wetland buffer widths* (see excerpts below).

JCA used the 2014 updated rating manual by the WDOE. The manual was primarily based on water regimes. The boundaries between contiguous or connected wetlands were set at the point where the volume, flow, or velocity of the water changes significantly.[12] Furthermore, the manual describes criteria used for establishing wetland boundaries where they were not obvious such as along margins of open water bodies, along small or large streams, and where they were separated by open water bodies or by uplands that form a patchwork on the

12 It is noted in the manual that property lines should not be used as wetland boundaries for assessment unless they coincide with changes in hydrology.

landscape (mosaic complexes), and situations where the boundaries of wetlands may overlap or be contiguous along a stream (i.e. riparian) corridor.

21.06.910 Wetland designation, mapping, and rating

(1) Wetlands are those areas identified through any and all technical wetland delineation manuals as required by RCW 36.70A.175. Wetland delineations will be conducted in accordance with the current manual(s) required to be utilized by the Department of Ecology, including federally approved Army Corps of Engineers manual(s) and regional supplements. All areas within the city meeting the criteria in the approved federal manual and applicable regional supplements, regardless of any formal identification, are hereby designated critical areas and are subject to the provisions of this chapter. Ponds and other open water bodies shall also be subject to the provisions of this chapter.

(2) The approximate location and extent of previously identified wetlands are shown on the city's adopted critical area maps. These maps are to be used as a guide for the city, project applicants and/or property owners, and shall be updated as new wetlands are identified. The city's maps do not represent to show all possible wetlands within city boundaries. The actual location of a wetland's boundary shall be determined through field investigation by a qualified professional applying the methods and procedures in the approved federal manual and applicable regional supplements.

(3) Wetlands shall be rated and regulated according to the categories defined by the most current Washington Department of Ecology *Wetland Rating System for Western Washington*. This document contains the methods for determining the wetland category based on the following criteria:

(a) Category I. Category I wetlands are: (1) relatively undisturbed estuarine wetlands larger than one acre; (2) wetlands of high conservation value that are identified by scientists of the Washington Natural Heritage Program/DNR; (3) bogs; (4) mature and old-growth forested wetlands larger than one acre; (5) wetlands in coastal lagoons; (6) interdunal wetlands that score eight or nine habitat points and are larger than one acre; and (7) wetlands that perform many functions well (scoring 23 points or more). These wetlands: (1) represent unique or rare wetland types; (2) are more sensitive to disturbance than most wetlands; (3) are relatively undisturbed and contain ecological attributes that are impossible to replace within a human lifetime; or (4) provide a high level of functions.

(b) Category II. Category III wetlands are: (1) wetlands with a moderate level of functions (scoring between 16 and 19 points); (2) can often be adequately replaced with a well-planned mitigation project; and (3) interdunal wetlands between one-tenth and one acre. Wetlands scoring between 16 and 19 points generally have been disturbed in some ways and are often less diverse or more isolated from other natural resources in the landscape than Category II wetlands.

(c) Category III. Category III wetlands provide a moderate level of functions. They are typically more disturbed, smaller, and/or more isolated in the landscape than Category I or II wetlands. Category III wetlands include all wetlands that score 30 to 50 points on the Western Washington Wetland Rating System form.

(d) Category IV. Category IV wetlands have the lowest levels of functions (scoring fewer than 16 points) and are often heavily disturbed. These are wetlands that we should be able to replace, or in some cases to improve. However, experience has shown that replacement cannot be guaranteed in any specific case. These wetlands may provide some important functions, and should be protected to some degree.

(4) All wetlands shall be regulated and subject to the provisions of this chapter regardless of size, except for Category III wetlands less than 2,500 square feet if the wetland is not associated with a riparian corridor or part of a wetland mosaic and Category IV wetlands less than 10,000 square feet. Impacts will be allowed to Category III wetlands between 2,500 square feet and 3,000 square feet, if the following criteria are met as detailed in an approved critical area report demonstrating:

(a) The wetland is not associated with a riparian corridor;

(b) The wetland is not part of a wetland mosaic;

(c) The wetland does not score 20 points or greater for habitat in the Western Washington Wetland Rating System form; and

(d) The wetland does not contain habitat identified as essential for local populations of priority species identified by the Washington Department of Fish and Wildlife; and

(e) The impacts are fully mitigated in accordance with any conditions from the state Department of Ecology and/or U.S. Army Corps (USACE). This exemption does not relieve the applicant/property owner from permits required by the state Department of Ecology and/or U.S. Army Corps (USACE). The applicant/property owner shall provide proof of applicable approvals, exemptions and/or permits obtained from the state Department of Ecology and/or U.S. Army Corps (USACE) prior to the city approving any construction permits for the subject fill action. (Ord. 3101 §7, 2015; Ord. 3076 §3, 2014; Ord. 2859 §1, 2006)

21.06.930 Performance standards – Wetland buffer widths.

(1) Wetland buffer areas shall be established for all development proposals and activities adjacent to wetlands to determine the need for the buffer to protect the integrity, function and value of the wetland. The director shall determine appropriate buffer widths based upon the wetland rating form and critical area report prepared pursuant to PMC 21.06.950. Wetland buffers shall be measured perpendicular to the wetland edge as marked in the field. Except as otherwise permitted by this chapter, buffers shall consist of an undisturbed area of native vegetation.
(2) The standard buffer widths required by this chapter are considered to be the minimum required and presume the existence of a dense native vegetation community in the buffer zone adequate to protect the wetland functions and values at the time of the proposed activity. The standard buffer widths assume that the buffer area contains no more than 20 percent invasive plant coverage in the buffer area. If the vegetation is inadequate, then the buffer width shall be increased and/or the buffer managed (e.g., invasive plant removal and monitoring) and planted to maintain or improve the buffer functions. The following standard buffer width requirements are established:

(a) Wetland buffer widths shall be determined based on the adjacent land use activities as follows:

Level of Impact from Proposed Land Use	**Types of Land Use Based on Common Zoning Designations**
High	• Commercial development • Industrial development • Institutional • Retail sales • Residential (more than 4 units/acre) • Conversion to high intensity agriculture (dairies, nurseries, greenhouses, growing and harvesting crops requiring annual tilling and raising and maintaining animals, etc.) • High intensity recreation (golf courses, ball fields, etc.) • Hobby farms
Moderate	• Residential (4 units/acre or less) • Moderate intensity open space (parks with biking, jogging, etc.) • Conversion to moderate intensity agriculture (orchards, hay fields, etc.) • Paved trails • Building of logging roads • Utility corridor or right-of-way shared by several utilities and including access/maintenance road
Low	• Forestry (cutting of trees only) • Low intensity open space (hiking, bird-watching, preservation of natural resources, etc.) • Unpaved trails • Utility corridor

(b) Width of buffers needed to protect Category I wetlands (for wetlands scoring 23 points or more for all functions or having the “special characteristics” identified in the rating system):

Wetland Characteristics	Buffer Widths by Impact of Proposed Land Use (apply most protective if more than one criterion is met)
Natural Heritage Wetlands	Low – 125 ft Moderate – 190 ft High – 250 ft
Bogs	Low – 125 ft Moderate – 190 ft High – 250 ft
Forested	Buffer width to be based on score for habitat functions or water quality functions
Estuarine	Low – 100 ft Moderate – 150 ft High – 200 ft
Wetlands in Coastal Lagoons	Low – 100 ft Moderate – 150 ft High – 200 ft
High level of function for habitat (score for habitat 8 – 9 points)	Low – 150 ft Moderate – 225 ft High – 300 ft
Moderate level of function for habitat (score for habitat 5 – 7 points)	Low – 75 ft Moderate – 110 ft High – 150 ft
High level of function for water quality improvement (8 – 9 points) and low for habitat (less than 5 points)	Low – 50 ft Moderate – 75 ft High – 100 ft
Not meeting any of the above characteristics	Low – 50 ft Moderate – 75 ft High – 100 ft

(c) Width of buffers needed to protect Category II wetlands (for wetlands scoring 20 to 22 points for all functions or having the "special characteristics" identified in the rating system):

Wetland Characteristics	Buffer Widths by Impact of Proposed Land Use (apply most protective if more than one criterion is met)
High level of function for habitat (score for habitat 8 – 9 points)*	Low – 150 ft Moderate – 225 ft High – 300 ft

Wetland Characteristics	Buffer Widths by Impact of Proposed Land Use (apply most protective if more than one criterion is met)
Moderate level of function for habitat (score for habitat 5 – 7 points)	Low – 75 ft Moderate – 110 ft High – 150 ft
High level of function for water quality improvement and low for habitat (score for water quality 8 – 9 points; habitat less than 5 points)**	Low – 50 ft Moderate – 75 ft High – 100 ft
Estuarine	Low – 75 ft Moderate – 110 ft High – 150 ft
Interdunal	Low – 75 ft Moderate – 110 ft High – 150 ft
Not meeting above characteristics	Low – 50 ft Moderate – 75 ft High – 100 ft

* Maintaining connections to adjacent and continuous habitat or wildlife corridors shall be considered.
** No additional discharge of untreated storm water permitted.

(d) Width of buffers needed to protect Category III wetlands (for wetlands scoring 16 to 19 points for all functions):

Wetland Characteristics	Buffer Widths by Impact of Proposed Land Use
Moderate level of function for habitat (score for habitat 5 – 7 points) * *If wetland scores 8 – 9 habitat points, use buffers for Category II.	Low – 75 ft Moderate – 110 ft High – 150 ft
Not meeting above characteristic	Low – 40 ft Moderate – 60 ft High – 80 ft

(e) Width of buffers needed to protect Category IV wetlands (wetlands scoring less than 16 points for all functions):

Wetland Characteristics	Buffer Widths by Impact of Proposed Land Use
Score for all three basic functions is less than 16 points	Low – 25 ft Moderate – 40 ft

Wetland Characteristics	Buffer Widths by Impact of Proposed Land Use
	High – 50 ft

(3) The standard buffer widths of subsection (2) of this section may be decreased through the reduction measures of this section.

(a) The buffer widths recommended for land uses with "high intensity" impacts to wetlands can be reduced to those recommended for "moderate intensity" impacts under the following conditions:

(i) A relatively undisturbed vegetated corridor at least 100 feet in width is established, enhanced and/or protected (if adequate vegetation exists) between the wetland and any other upland priority habitats adjacent to the wetland as defined by the Washington State Department of Fish and Wildlife. The corridor shall be protected by a native growth protection easement or some other legal mechanism providing permanent protection.

(ii) A buffer enhancement plan, consistent with applicable mitigation report and monitoring requirements of this chapter, is submitted and approved in order to improve the functions of the buffer area to the maximum extent possible.

(iii) All applicable measures to minimize the potential impacts of different land uses on wetland habitat functions, as summarized in the following table, are applied to the development:

Examples of Disturbance	Examples of Measures to Minimize Impacts	Activities That Cause the Disturbance
Lights	Direct lights away from wetland	Parking lots, warehouses, manufacturing, high density residential
Noise	Place activity that generates noise away from the wetland	Manufacturing, high density residential
Toxic Runoff	Route all new untreated runoff away from wetland Covenants limiting use of pesticides within 150 feet of wetland Integrated pest management programs	Parking lots, roads, manufacturing, residential areas, application of agricultural pesticides, landscaping
Change in Water Regime	Infiltrate or treat, detain and disperse into buffer new runoff from surfaces	Any impermeable surface, lawns, tilling
Pets and Human Disturbance	Fence around buffer Plant buffer with "impenetrable" natural vegetation appropriate for region	Residential areas
Dust	BMPs for dust	Tilled fields

(b) For all wetlands that score less than 20 points for habitat, the buffer width can be reduced to those required for moderate land use impacts if measures to minimize the impacts of different land uses on wetlands as summarized in the table above are applied.

The director has the authority to "average" buffer widths on a case-by-case basis where a qualified professional demonstrates that all the following criteria are met:

(a) The total area contained in the buffer area after averaging is no less than that which would be contained within the standard buffer;
(b) The buffer averaging does not reduce the functions or values of the wetland;
(c) The portion of the buffer subject to buffer averaging is less than 20 percent of the total buffer length on a project site; provided, that:
(i) The director may waive the 20 percent limitation when there are specific topographic conditions adjacent to the wetland that render portions of the buffer nonessential or ineffective in protecting wetland functions, and
(ii) The director finds that the averaging occurs parallel to the existing wetland boundary;
(d) The wetland contains variations in sensitivity due to existing physical characteristics or the character of the buffer varies in slope, soils, or vegetation;
(e) The buffer width for Category I and II wetlands is not reduced to less than 25 percent of the standard width; and
(f) The buffer width of a Category III or IV wetland with moderate habitat functions (five to nine points for habitat) may be reduced to no less than 33 percent of the standard buffer width. The buffer width of a Category III or IV wetland with low habitat functions (less than five points for habitat) may be reduced to 35 feet.
(g) In any case where a reduced buffer width is applied consistent with the subsections above, the buffer shall be composed of a dense native plant community; if the buffer area contains over 20 percent coverage by invasive plant species, the applicant shall provide a vegetation management plan to remove those invasive plants, supplement the buffer area with native trees and shrubs and monitor the buffer area for a period of no less than three years to ensure eradication of invasive plants and establishment of new native plants from the buffer area. The enhanced functions must be documented to the satisfaction of the director through a functions and values analysis prepared by a qualified professional.
(4) The director may have the authority to increase the standard buffer width for any category of wetland on a case-by-case basis when such increase is necessary to protect the function and value of the wetland, protect significant habitat, or protect lands adjacent to the wetland from erosion and other hazards. The standard buffer widths assume a dense native plant community is present with less than 20 percent invasive plant coverage in the buffer area. In determining if buffer width increases are warranted, the director shall consult with the Departments of Ecology and/or Fish and Wildlife and shall consider the following information to be provided in a critical area report:
(a) The specific plant and animal composition of the wetland and subject buffer area; the project wetland biologist shall implement wider buffer areas where the buffer is composed of invasive plants that cover more than 20 percent of the buffer area, unless buffer management and enhancement actions are proposed to remove the invasive plants and manage the establishment of new native trees and shrubs over a three-year period through a buffer vegetation enhancement plan;
(b) The sensitivity of the plant and animal species in the wetland to disturbance from existing and proposed land uses;
(c) The extent to which the wetland buffer is relied on to perform water quality functions such as sediment trapping and pollutant removal;
(d) Whether the wetland supports wetland-dependent wildlife species or wildlife that require large dispersal areas or access to upland habitats for critical life stage needs;
(e) The risk of altering the existing wetland functions if the standard buffers are used; and
(f) Other information that the director deems pertinent to the subject wetland.
(5) The edge of the buffer area shall be clearly staked, flagged, and fenced prior to any site clearing and construction. The buffer boundary markers shall be clearly visible, durable, and permanently affixed to the ground. Site clearing shall not commence until the applicant has submitted written notice to the department that buffer requirements of this chapter are met. Field-marking shall remain until all construction and clearing phases are completed, and removal of the markers has been granted by the city.
(6) Impervious surfaces shall not be constructed in wetland buffers within 50 feet of the wetland boundary except as provided for in this chapter. (Ord. 3101 § 9, 2015; Ord. 3076 § 4, 2014; Ord. 2859 § 1, 2006)

21.06.1010 Stream designation, mapping and rating

(1) Fish and wildlife habitat areas are those areas identified as being of critical importance to the maintenance of fish, wildlife, or plant species. All areas within the city meeting these criteria, regardless of any formal identification, are hereby designated critical areas and are subject to the provisions of this chapter.
(2) The approximate location and extent of previously identified fish and wildlife habitat areas are shown on the critical area maps adopted by the city, as most recently updated. These maps are to be used as a guide for the city, project applicants and/or property owners, and may be updated as new fish and wildlife habitat areas are identified. The city's maps may not represent to show all the fish and wildlife habitat areas within the city. The actual location of a fish and wildlife habitat area shall be determined through field investigation by a qualified professional applying the best available science.
(3) For purposes of this chapter, fish and wildlife habitat areas shall include the following:

(a) Streams and their associated riparian habitat areas. Streams shall be designated Type I, Type II, Type III, and Type IV according to the following criteria:

(i) Type I streams are those streams identified and regulated as "Shorelines of the State" pursuant to WAC 173-18-310 and the City of Puyallup Shoreline Master Program. Within the city's corporate limits and the urban growth area, Type I streams are the Puyallup River and Clarks Creek, below Maplewood Springs;

(ii) Type II streams are those natural streams that are not Type I streams and are either perennial or intermittent, and have known or potential use by anadromous or resident fish species, significant recreational value, or significant wildlife habitat functions. Potential use shall be determined based upon species life cycle requirements, habitat suitability, presence or lack of natural barriers, and a reasoned evaluation of current, historic, and future fish use by a qualified professional. Within the city's corporate limits and the urban growth area, known Type II streams including but not limited to *Deer Creek*, Diru Creek, Meeker Ditch, Rody Creek, Silver Creek, Wildwood Creek, Woodland Creek, and Wapato Creek;

(iii) Type III streams are those streams with perennial or intermittent flow and are not used by anadromous fish; and

(iv) Type IV streams are those intermittent or ephemeral streams with channel width less than two feet taken at the ordinary high-water mark, that are not used by anadromous fish or resident fish.

(b) Nonriparian habitat areas that support or have a primary association with:

(i) State or federally designated endangered, threatened, and sensitive species;

(ii) State priority habitats and areas associated with state priority species; or

(iii) Habitats and species of local importance including habitat corridors connecting habitat blocks and open spaces. (Ord. 2859 §1, 2006)

21.06.1050 Performance standards – Stream and riparian buffer widths

(1) Stream buffers shall be established landward of the ordinary high water mark adjacent to streams to protect the integrity, functions and values of the resource. Buffers shall consist of an undisturbed area of native vegetation and shall reflect the sensitivity of the stream and the type and intensity of the adjacent human use or activity.
(2) The standard buffer widths required by this chapter are considered to be the minimum required and presume the existence of a relatively intact native vegetation community in the buffer zone adequate to protect the stream functions and values at the time of the proposed activity. If the vegetation is inadequate, then the buffer width shall be increased or the buffer planted to maintain and improve the buffer functions. The following standard buffer width requirements are established:

(a) Type I: 150 feet;
(b) Type II: 100 feet;
(c) Type III: 50 feet; and
(d) Type IV: 35 feet.

(3) The director has the authority to "average" buffer widths on a case-by-case basis where a qualified professional demonstrates that all the following criteria are met:

(a) The total area contained in the buffer area after averaging is no less than that which would be contained within the standard buffer;

(b) The buffer averaging does not reduce the functions or values of the stream or riparian habitat;

(c) The portion of the buffer subject to buffer averaging is less than 20 percent of the total buffer length on a project site;

(d) The site contains variations in sensitivity due to existing physical characteristics or the character of the buffer varies in slope, soils, or vegetation;

(e) The buffer width for Type I and II streams is not reduced to less than 50 percent of the standard width;

(f) The buffer width of a Type III or IV stream may not be reduced under any circumstance.

(4) The director may increase the minimum size of a riparian buffer width on a case-by-case basis when it can be demonstrated by a critical area report that such increase is necessary to:

(a) Protect the functions and values of the stream;

(b) Protect significant habitat;

(c) Protect lands adjacent to a stream from erosion or channel migration;

(d) Provide flood protection; or

(e) Provide protection from erosion, landslide, or other geologic hazards.

(5) The edge of the buffer area shall be clearly staked, flagged, and fenced prior to any site clearing and construction. The buffer boundary markers shall be clearly visible, durable, and permanently affixed to the ground. Site clearing shall not commence until the applicant has submitted written notice to the department that buffer requirements of this chapter are met. Field-marking shall remain until all construction and clearing phases are completed, and final approval has been granted by the city.

(6) Structures shall be set back in accordance with PMC 21.06.840 such that construction activities and outdoor living areas do not infringe upon the required buffer edge.

(Ord. 2859 §1, 2006)

APPENDIX 2

FIELD NOTE SKETCH MAPS (FNSM)
and
FIELD DATA FORMS

By John Comis Associates (JCA)
Field Data for Schuh Property dated 3/17/08
Field Data for Sekyra Property dated 4/22/11 & 5/12/11
Field Data for Sekyra Property dated 2/25/13

(For sample test plot locations, see the *Field Note Sketch Maps* in this appendix, and Figure 6, "*Site Plan Map with Wetland Delineation & Buffer Plan*", in this report)

WEATHER: P. CLOUDY 3/17/08

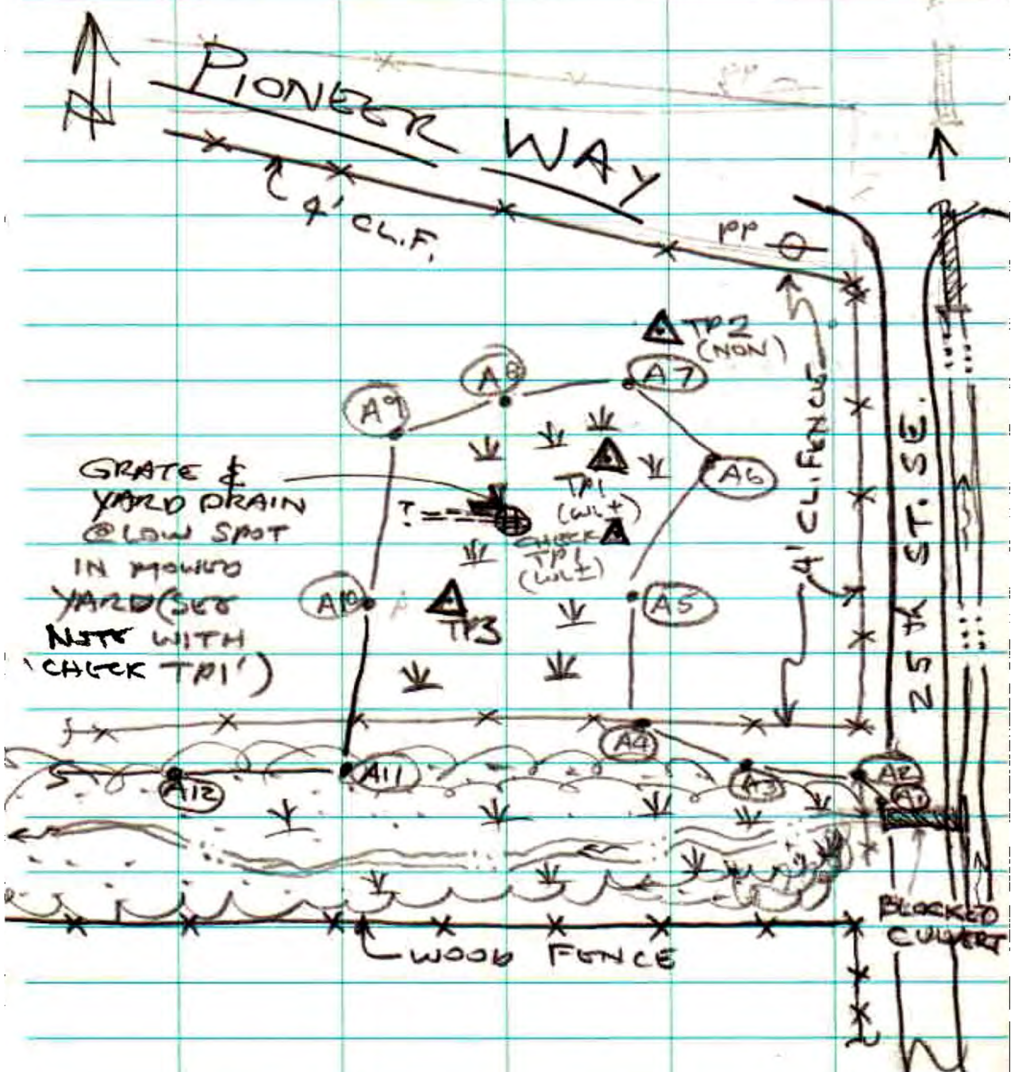
RAIN PAST 24 hr.

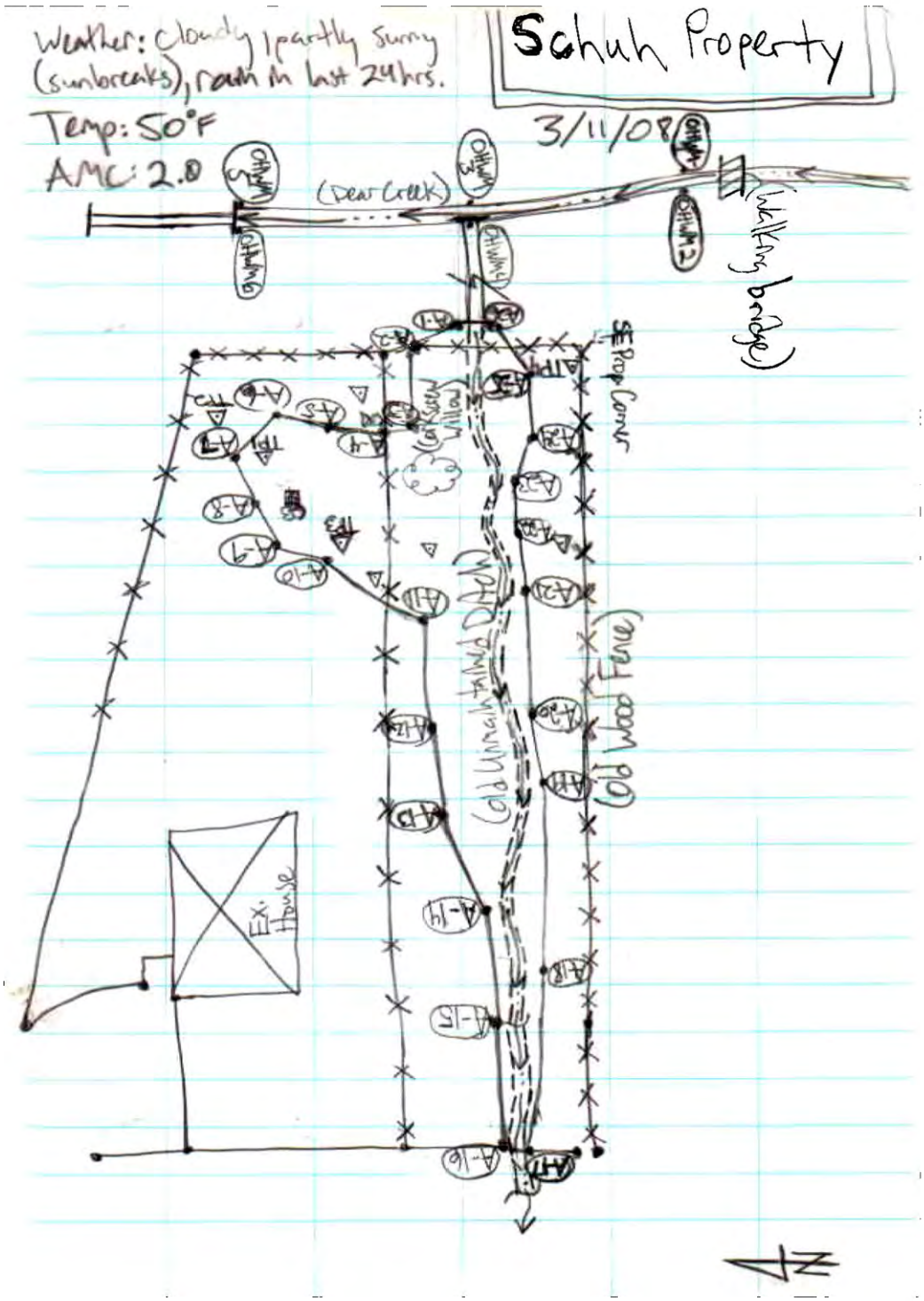
" " WEEK

SCHUH PROPERTY

WET SITE CONDITIONS

AMC = 3.0, TEMP = 50°F.




Schuh Property
Weather: cloudy / partly sunny (sunbreaks), rain in last 24 hrs.
Temp: 50°F
AMC: 2.0
3/11/08
(Deer Creek)
(walking bridge)
SE Pop Cons
(Lakeview Willow)
(old Unmaintained Ditch)
(old Wood Fence)
Ex. House

2/25/13 (7)

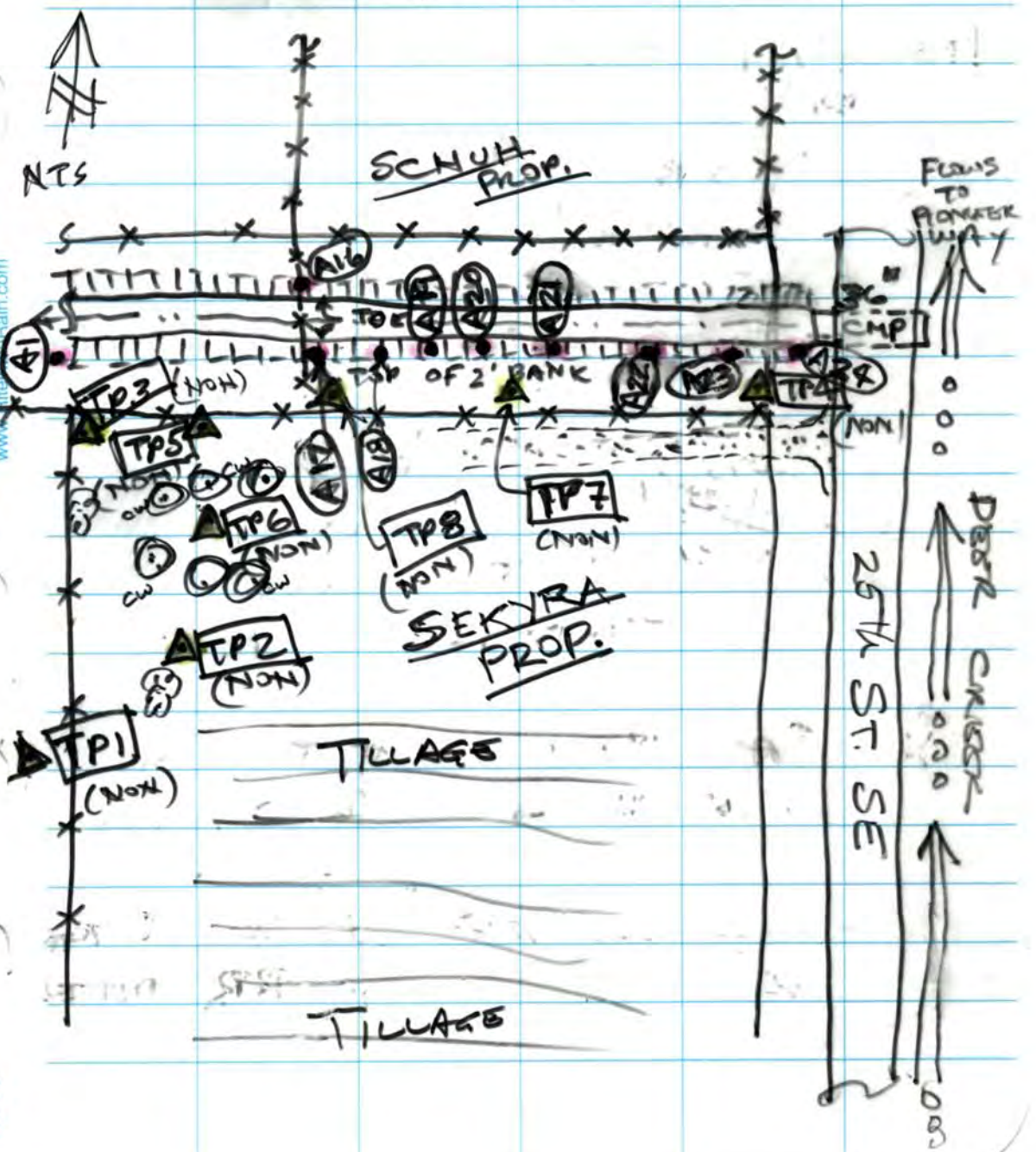
KILCHA SEKYRA SFR
@ PUYALLUP

BY J. COMIS, PWS
W. CHRIS, ASSIST.

PARCEL NO. 0402263103
SITE: 704 25th ST. SE
PUYALLUP, WA 98372

WEATHER: OVC
RAIN PAST 24hr.
" " WEEK
AMC = 3.0
TEMP = 69°F

- WET SITE CONDITIONS
- CULVERT UNDER PIONEER WAY = 54" CMP-ARCH IS FREE-FLOWING & OPEN (SEE PHOTOS).



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

Project/Site: **Kilcha Sekyra Property** City/County: **Puyallup/ Pierce County** Sampling Date: **04/22/11, 5/12/11 & 2/25/13**

Applicant/Owner: **Owner: Kilcha Sekyra** State: **WA** Sample Test Plot: **TP 1**

Investigator(s): **John Comis (PWS), Assistant: Sheldon Smith** Section, Township, Range: **SE ¼ of the SW ¼ of Section 26-T20N-R4E**

Landform (hillslope, terrace, etc.): **Valley** Local relief (concave, convex, none): **very gradual slope to NW to Linear Wetland "A"** Slope (%): **0.5%**

Subregion (LRR): **Northwest Forests and Coasts (LRR A)** Lat: **47^0-11.150' N** Long: **122^0-15.770' W** Parcel No.: **0420267003 & 0420263103**

Soil Map Unit Name: **Briscot, loam (6A,** hydric if undrained, see Fig 3**)** and **Puyallup, fine sandy loam (31A**) NWI classification: **None**

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

Are Vegetation X, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ___.

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks. **SEE Remarks below**)

SUMMARY OF FINDINGS – See *Site Plan Map* for sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____ No X	**Is the Sampled Area within a Wetland?** **Yes ____ No X**
Hydric Soil Present?	Yes X No	
Wetland Hydrology Present?	Yes ____ No X	

Remarks: Problematic vegetation includes "managed plant communities" due to residential and agricultural activities in this area. Problematic soils in some areas due to tillage. Hydrology is not problematic due to established and maintained drainage in this part of the valley. Normal climate and hydrology conditions are typical for this early growing season analysis. This sample plot is located south of the "Linear Wetland 'A'" within the mowed yard of the existing residence. This sample plot was originally dug for hydrology check on 4/22/11 within a slight depression which had dominant 'buttercup'. It was re-checked on 5/12/11 and 2/25/13 (see Hydrology data below).

VEGETATION – Use scientific names of plants

Tree Stratum (Plot size: ____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	____ = Total Cover		
Sapling/Shrub Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
5.			
	____ = Total Cover		
Herb Stratum (Plot size: ____)			
1. buttercup, creeping (*Ranunculus repens*)	50%	Y	FACW
2. grasses, unidentified (*Unidentified*)	40%	Y	unknown
3. dandelion, common (*Taraxacum officinale*)	10%	Y	FACU
4.			
5.			
	____ = Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	____ = Total Cover		
% Bare Ground in Herb Stratum			

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: ____ (A)

Total Number of Dominant Species Across All Strata: ____ (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: ____ (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species ____	x 1 =
Column Totals: ____ (A)	____ (B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Wetland Non-Vascular Plants[1]

___ 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 X**

Remarks: Vegetation is not used due to the "managed plant community" within a mowed yard. The sample plot is in a small depression where creeping buttercup (*Ranunculus ripens*, FACW) appears to be dominant, but other herbs and grasses are dominant around the depression and generally appears to be non-hydrophytes. Due to the managed plant community, the grasses and forbs are not identified for purposes of determining hydrophytic vegetation criteria. Atypical methodology is used and the hydrophytic vegetation is assumed based on wetland hydrology, hydric soils, landscape position, and the vegetation in neighboring areas. Hydrophytic vegetation is **NOT** assumed based on observations of non-wetland hydrology.

SOIL

Sample Test Plot: **TP 1**

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:
0-5	10yr 3/3	100		<2			Loam	Few faint redox features < 5"
5-9	10yr 3/2	90	5yr 4/6	<5	C	PL	Loam	Distinct redox features @ 6"
9-17	10yr 4/2	70	5yr 4/6	>15	C	PL/M	Loam	Many prominent redox features @ 12"

[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)
- X 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)
- ___ 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 Soil Present? Yes X No

Remarks: Upper part of soil profile is very fine sandy loam (Loam) and has been disturbed by past residential and farming practices. Mapped soils for sample location are included on the NRCS list of hydric soils if undrained. Soils at sample plot **did** exhibit hydric indicators in the upper part and **do** meet the NRCS hydric soil indicator listed above.

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 Stressed 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:

Surface Water Present? Yes ____ No X Depth (inches):

Water Table Present? Yes X No ____ Depth (inches): 16" after 15 min

Saturation Present? Yes X No ____ Depth (inches): 15" (4/22/11) 15" (2/25/13)

(includes capillary fringe)

Wetland Hydrology Present? Yes ____ No X

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

Remarks: Although hydrology is present, it is **not sufficient** for positive wetland determination. On 4/22/11, there was only saturation in the bottom of the hole after 15 min. The water level was re-checked by JCA on 2/25/13 after heavy rainfall during the past 24 hours and there was still drainage into this area, and we noted some standing water in shallow depressions in the tilled filed to the southeast but conclude that this is temporary and drainage is generally to the northwest. Comparison between the newer test hole and the one done previously indicates that this area does not have sufficient hydrology for a positive wetland determination.

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

Project/Site: **Kilcha Sekyra Property** City/County: **Puyallup/ Pierce County** Sampling Date: **04/22/11, 5/12/11 & 2/25/13**

Applicant/Owner: **Owner: Kilcha Sekyra** State: **WA** Sample Test Plot: **TP 2**

Investigator(s): **John Comis (PWS), Assistant: Sheldon Smith** Section, Township, Range: **SE ¼ of the SW ¼ of Section 26-T20N-R4E**

Landform (hillslope, terrace, etc.): **Valley** Local relief (concave, convex, none): **very gradual slope to NW to Linear Wetland "A"** Slope (%): **0.5%**

Subregion (LRR): **Northwest Forests and Coasts (LRR A)** Lat: **47^0-11.150' N** Long: **122^0-15.770' W** Parcel No.: **0420267003 & 0420263103**

Soil Map Unit Name: **Briscot, loam (6A,** hydric if undrained, see Fig 3**)** and **Puyallup, fine sandy loam (31A**) NWI classification: **None**

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

Are Vegetation X, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ___.

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks. **SEE Remarks below**)

SUMMARY OF FINDINGS – See *Site Plan Map* for sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X No	**Is the Sampled Area within a Wetland?** **Yes ____ No X**
Hydric Soil Present?	Yes ____ No X	
Wetland Hydrology Present?	Yes ____ No X	

Remarks: Problematic vegetation includes "managed plant communities" due to residential and agricultural activities in this area. Problematic soils in some areas due to tillage. Hydrology is not problematic due to established and maintained drainage in this part of the valley. Normal climate and hydrology conditions are typical for this early growing season analysis. This sample plot is located south of the "Linear Wetland 'A'" within the mowed yard of the existing residence. This sample plot was originally dug for hydrology check on 4/22/11 within a slight depression which had dominant 'buttercup'. It was re-checked on 5/12/11 and 2/25/13 (see Hydrology data below).

VEGETATION – Use scientific names of plants

Tree Stratum (Plot size: ____)	Absolute % Cover	Dominant Species?	Indicator Status
1. cottonwood, black (*Populus trichocarpa*)	10%	Y	FAC
2.			
3.			
4.			
	____ = Total Cover		
Sapling/Shrub Stratum (Plot size: ____)			
1. willow, Scouler (*Salix scouleriana*)	10%	Y	FAC
2.			
3.			
4.			
5.			
	____ = Total Cover		
Herb Stratum (Plot size: ____)			
1. grass, reed canary (*Phalaris arundinacea*)	30%	Y	FACW
2. grass, bunch (*Festuca spp.*)	30%	Y	FACU
3.			
4.			
5.			
	____ = Total Cover		
Woody Vine Stratum (Plot size: ____)			
1. blackberry, Himalayan (*Rubus discolor*)	20%	Y	FACU
2.			
	____ = Total Cover		
% Bare Ground in Herb Stratum			

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 60% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species ____	x 1 =	
Column Totals: ____ (A)	____ (B)	

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

X Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Wetland Non-Vascular Plants[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? **Yes X No**

Remarks: Vegetation is a "managed plant community" within a previously tilled area of the plowed field that has become overgrown where invasive non-native reed canary grass (*Phalaris arundinacea*, FACW) and bunch grass appear to be dominant. There are large cottonwood trees and some willow shrubs around this area but these generally appear to be less hydrophytic. The grasses are used for purposes of determining hydrophytic vegetation criteria. Typical methodology is used and includes wetland hydrology, hydric soils, landscape position, and vegetation in neighboring areas.

SOIL

Sample Test Plot: **TP 2**

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:
0-12.5”	10yr 3/3	100					Loam	No redox features < 12”
12.5-15”	10yr 3/2	90		<2			Loam	Faint, few redox features < 15”
15-16+	10yr 2/2	70	5yr 4/6	>5	C	PL/M	Loam	Prominent redox features @ 16”

[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)
- ___ 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 Soil Present? Yes ____ No _X_

Remarks: Upper part of soil profile is very fine sandy loam (Loam) and has been disturbed by past farming practices, but soil is relatively undisturbed in this area based on established large trees growing in this area. Mapped soils for sample location are included on the NRCS list of hydric soils if undrained. Soils at sample plot **did not** exhibit hydric indicators in the upper layers and **do not** meet the NRCS hydric soil indicator listed above.

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 Stressed 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:

Surface Water Present? Yes ____ No _X_ Depth (inches):

Water Table Present? Yes ____ No _X_ Depth (inches): 16” after 10 min

Saturation Present? Yes ____ No _X_ Depth (inches): 16” (4/22/11) 18” (2/25/13)

(includes capillary fringe)

Wetland Hydrology Present? Yes ____ No _X_

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

Remarks: No hydrology is present in the bottom of the test hole @ 16” after 10 min on 4/22/11. The test hole was re-checked on 5/12/11 and there was no saturation in the bottom. The test plot was re-checked on 2/25/13 by JCA after heavy rainfall during the past 24 hours and there was no saturation in the bottom at 18” deep. Even though there was some standing water in shallow depressions in the tilled filed to the south, the soil appears to be well drained. We conclude that there is only temporary inundation in small depressions in this area and drainage is generally to the northwest. Comparison between the newer test plot data and the previous data indicate that this area does not have sufficient hydrology for a positive wetland determination. Hydrology is **not sufficient** for wetland determination.

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

Project/Site: **Kilcha Sekyra Property** City/County: **Puyallup/ Pierce County** Sampling Date: **2/25/13**

Applicant/Owner: **Owner: Kilcha Sekyra** State: **WA** Sample Test Plot: **TP 3**

Investigator(s): **John Comis (PWS), Assistant: Sheldon Smith** Section, Township, Range: **SE ¼ of the SW ¼ of Section 26-T20N-R4E**

Landform (hillslope, terrace, etc.): **Valley** Local relief (concave, convex, none): **very gradual slope to NW to Linear Wetland "A"** Slope (%): **0.5%**

Subregion (LRR): **Northwest Forests and Coasts (LRR A)** Lat: **47^0-11.150' N** Long: **122^0-15.770' W** Parcel No.: **0420267003 & 0420263103**

Soil Map Unit Name: **Briscot, loam (6A,** hydric if undrained, see Fig 3**)** and **Puyallup, fine sandy loam (31A**) NWI classification: **None**

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

Are Vegetation X, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ___.

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks. **SEE Remarks below**)

SUMMARY OF FINDINGS – See *Site Plan Map* for sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____	No X	**Is the Sampled Area within a Wetland?** **Yes ____ No X**
Hydric Soil Present?	Yes ____	No X	
Wetland Hydrology Present?	Yes ____	No X	

Remarks: Located at the NW property corner; no problematic vegetation, but includes "managed plant communities" due to residential and agricultural activities in the surrounding area. Appears that some trees have been added along the upper bank of an old abandoned drainage channel. Problematic soils are not present in this plot location. Hydrology is not problematic due to established and maintained drainage in this part of the valley. Normal climate and hydrology conditions are typical for this early growing season analysis. This sample plot is located onsite and just south of "Linear Wetland 'A'".

VEGETATION – Use scientific names of plants

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: ____)			
1. maple, big-leaf (*Acer macrophyllum*)	40%	Y	FACU
2. cottonwood, black (*Populus trichocarpa*)	20%	Y	FACU
3.			
4.			
	____ = Total Cover		
Sapling/Shrub Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
5.			
	____ = Total Cover		
Herb Stratum (Plot size: ____)			
1. grass, reed canary (*Phalaris arundinacea*)	10%	Y	FACW
2. grass, bunch (*Festuca spp.*)	10%	Y	FACU
3.			
4.			
5.			
	____ = Total Cover		
Woody Vine Stratum (Plot size: ____)			
1. blackberry, Himalayan (*Rubus discolor*)	20%	Y	FACU
2.			
	____ = Total Cover		
% Bare Ground in Herb Stratum			

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 20% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species ____	x 1 =
Column Totals: ____ (A)	____ (B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Wetland Non-Vascular Plants[1]

___ 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 X**

Remarks: Vegetation is non-wetland by dominance test. The sample plot is within an area where invasive non-native reed canary grass (*Phalaris arundinacea*, FACW) appears. There are red osier dogwood and willow shrubs growing within the wetland edge but not up the bank into the non-wetland test plot area along Linear Wetland 'A'. The methodology also considers the wetland hydrology, hydric soils, landscape position, and the vegetation in neighboring areas. Dominant hydrophytic vegetation is not present.

SOIL

Sample Test Plot: **TP 3**

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:
0-3	10yr 3/2	100		<2			Loam	Few faint redox features < 3"
3-18	10yr 3/3	90					Loam	No redox to 18"; many deep roots to bottom

[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)
- ___ 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 Soil Present? Yes _____ No X

Remarks: Upper part of soil profile is very fine sandy loam (Loam) and has not been disturbed by recent farming practices in this area; soil is relatively undisturbed based on established trees and fences along linear wetland. Mapped soils for sample location are included on the NRCS list of hydric soils if undrained. Soils at sample plot **did not** exhibit hydric indicators in the upper layers and **do not** meet the NRCS hydric soil indicator listed above.

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 Stressed 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:

Surface Water Present? Yes _____ No X Depth (inches):

Water Table Present? Yes _____ No X Depth (inches):

Saturation Present? (includes capillary fringe) Yes _____ No X Depth (inches):

Wetland Hydrology Present? Yes _____ No X

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

Remarks: No saturation at bottom in test hole at 18". **Not sufficient** hydrology for positive wetland determination even after heavy rainfall during the past 24 hours. The soil appears well drained. There was some standing water observed in shallow depressions in the tilled filed to the south. We conclude that any small depressions with inundation are only temporary and drainage is out to the northwest. Comparison between the newer test holes and the ones done previously indicate this area does not have sufficient hydrology for a positive wetland determination.

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

Project/Site: **Kilcha Sekyra Property** City/County: **Puyallup/ Pierce County** Sampling Date: **5/12/11 & 2/25/13**

Applicant/Owner: **Owner: Kilcha Sekyra** State: **WA** Sample Test Plot: **TP 4**

Investigator(s): **John Comis (PWS), Assistant: Sheldon Smith** Section, Township, Range: **SE ¼ of the SW ¼ of Section 26-T20N-R4E**

Landform (hillslope, terrace, etc.): **Valley** Local relief (concave, convex, none): **very gradual slope to NW to Linear Wetland "A"** Slope (%): **0.5%**

Subregion (LRR): **Northwest Forests and Coasts (LRR A)** Lat: **47^0-11.150' N** Long: **122^0-15.770' W** Parcel No.: **0420267003 & 0420263103**

Soil Map Unit Name: **Briscot, loam (6A,** hydric if undrained, see Fig 3**)** and **Puyallup, fine sandy loam (31A**) NWI classification: **None**

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

Are Vegetation X, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ___.

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks. **SEE Remarks below**)

SUMMARY OF FINDINGS – See *Site Plan Map* for sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X No	**Is the Sampled Area within a Wetland?** **Yes ____ No X**
Hydric Soil Present?	Yes ____ No X	
Wetland Hydrology Present?	Yes ____ No X	

Remarks: Problematic vegetation includes "managed plant communities" due to residential and agricultural activities in this area. Problematic soils in some areas due to past (and current) tillage. Hydrology is not problematic due to established and maintained drainage in this part of the valley. Normal climate and hydrology conditions are typical for this early growing season analysis. This sample plot is located south of the "Linear Wetland 'A'" in the area of tall, large cottonwood trees. This sample plot was originally dug for hydrology check on 4/22/11 in a slight depressional area with dominant 'reed canary grass'. It was re-checked on 5/12/11 (see Hydrology data below).

VEGETATION – Use scientific names of plants

Tree Stratum (Plot size: ____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	____ = Total Cover		
Sapling/Shrub Stratum (Plot size: ____)			
1. willow, Scouler (*Salix scouleriana*)	40%	Y	FAC
2.			
3.			
4.			
5.			
	____ = Total Cover		
Herb Stratum (Plot size: ____)			
1. grass, reed canary (*Phalaris arundinacea*)	40%	Y	FACW
2.			
3.			
4.			
5.			
	____ = Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	____ = Total Cover		
% Bare Ground in Herb Stratum			

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species ____	x 1 =
Column Totals: ____ (A)	____ (B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

X Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Wetland Non-Vascular Plants[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? **Yes X No**

Remarks: Vegetation is a "managed plant community". The sample plot is within an area where invasive non-native reed canary grass (*Phalaris arundinacea*, FACW) appears to be dominant. There are willows in this area along the Linear Wetland "A" but they are generally delineated within the wetland edge. The plant community, including invasive grasses, is used for determining hydrophytic vegetation criteria. Also the methodology considers the wetland hydrology, hydric soils, landscape position, and the vegetation in neighboring areas. Hydrophytic vegetation is present.

SOIL

Sample Test Plot: **TP 4**

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:
0-8"	10yr 3/2	100					Loam	No redox features < 7"
8-12"	10yr 3/2+	90		<2			Loam	Few, faint redox features 7-12"
12-18	10yr 3/1	70	10yr 4/6	>2	C	PL	Loam	Prominent redox features @ 12+"

[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)
___ 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 Soil Present? Yes _____ No __X

Remarks: Upper part of soil profile is very fine sandy loam (Loam) and has been disturbed by past farming practices, but soil is relatively undisturbed in this area based on established trees and fences along linear wetland in this area. Mapped soils for sample location are included on the NRCS list of hydric soils if undrained. Soils at sample plot **did not** exhibit hydric indicators in the upper layers and **do not** meet the NRCS hydric soil indicator listed above.

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 Stressed 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:

Surface Water Present? Yes _____ No __X__ Depth (inches):

Water Table Present? Yes __X__ No _____ Depth (inches): 17" after 10 min

Saturation Present? Yes __X__ No _____ Depth (inches): 18" (5/12/11) 17" (2/25/13)

(includes capillary fringe)

Wetland Hydrology Present? Yes _____ No __X

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

Remarks: Hydrology was present in the bottom of the test hole @ 17" on 5/12/11 and there was saturation into the bottom at 18". The test plot was re-checked on 2/25/13 by JCA after heavy rainfall during the past 24 hours and there was saturation in the bottom at 17". Even though there was some standing water in shallow depressions in the tilled filed to the southwest, the soil appears to be well drained. We conclude that there is only temporary inundation in small depressions in this area and drainage is generally to the northwest. Comparison between the newer test plot data and the previous data indicate that this area does not have sufficient hydrology for a positive wetland determination. Hydrology is **not sufficient** for wetland determination.

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

Project/Site: **Kilcha Sekyra Property** City/County: **Puyallup/ Pierce County** Sampling Date: **5/12/11 & 2/25/13**

Applicant/Owner: **Owner: Kilcha Sekyra** State: **WA** Sample Test Plot: **TP 5**

Investigator(s): **John Comis (PWS), Assistant: Sheldon Smith** Section, Township, Range: **SE ¼ of the SW ¼ of Section 26-T20N-R4E**

Landform (hillslope, terrace, etc.): **Valley** Local relief (concave, convex, none): **very gradual slope to NW to Linear Wetland "A"** Slope (%): **0.5%**

Subregion (LRR): **Northwest Forests and Coasts (LRR A)** Lat: **47^0-11.150' N** Long: **122^0-15.770' W** Parcel No.: **0420267003 & 0420263103**

Soil Map Unit Name: **Briscot, loam (6A,** hydric if undrained, see Fig 3**)** and **Puyallup, fine sandy loam (31A**) NWI classification: **None**

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

Are Vegetation X, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ___.

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks. **SEE Remarks below**)

SUMMARY OF FINDINGS – See *Site Plan Map* for sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____	No X	**Is the Sampled Area within a Wetland?** **Yes ____ No X**
Hydric Soil Present?	Yes ____	No X	
Wetland Hydrology Present?	Yes ____	No X	

Remarks: No problematic vegetation, but includes "managed plant communities" due to residential and agricultural activities in the surrounding area. Appears that some trees have been added along the upper bank of an old abandoned drainage channel. Problematic soils are not present in this plot location. Hydrology is not problematic due to established and maintained drainage in this part of the valley. Normal climate and hydrology conditions are typical for this early growing season analysis. This sample plot is located along the south bank of "Linear Wetland 'A'".

VEGETATION – Use scientific names of plants

Tree Stratum (Plot size: ____)	Absolute % Cover	Dominant Species?	Indicator Status
1. maple, big-leaf (*Acer macrophyllum*)	40%	Y	FACU
2. cottonwood, black (*Populus trichocarpa*)	20%	Y	FACU
3.			
4.			
	____ = Total Cover		
Sapling/Shrub Stratum (Plot size: ____)			
1. holly, English (*Ilex angustifolia*)	20%	Y	NI(UPL)
2.			
3.			
4.			
5.			
	____ = Total Cover		
Herb Stratum (Plot size: ____)			
1. grass, reed canary (*Phalaris arundinacea*)	20%	Y	FACW
2.			
3.			
4.			
5.			
	____ = Total Cover		
Woody Vine Stratum (Plot size: ____)			
1. blackberry, Himalayan (*Rubus discolor*)	20%	Y	FACU
2.			
	____ = Total Cover		
% Bare Ground in Herb Stratum			

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 20% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species ____	x 1 =
Column Totals: ____ (A)	____ (B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Wetland Non-Vascular Plants[1]

___ 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 X**

Remarks: Vegetation is non-wetland by dominance test. The sample plot is within an area where invasive non-native reed canary grass (*Phalaris arundinacea*, FACW) appears. There are red osier dogwood shrubs growing within the wetland edge but not up the bank into the non-wetland test plot area along Linear Wetland 'A'. The methodology also considers the wetland hydrology, hydric soils, landscape position, and the vegetation in neighboring areas. Dominant hydrophytic vegetation is not present.

SOIL

Sample Test Plot: **TP 5**

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"	10yr 3/2	100					Loam	No redox features < 6"
6-14"	10yr 3/2+	90		<2			Loam	Few, faint redox features < 14"
14-18"+	10yr 3/3	90		<2			Loam	Few, faint redox features < 18"

[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)
___ 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 Soil Present? Yes _____ No __X

Remarks: Upper part of soil profile is very fine sandy loam (Loam) and has been disturbed by past farming practices, but soil is relatively undisturbed based on established trees in this area. Mapped soils for sample location are included on the NRCS list of hydric soils if undrained. Soils at sample plot **did not** exhibit hydric indicators in the upper layers and **do not** meet the NRCS hydric soil indicator listed above. Many fine deep roots to 15". Low soil moisture above 17" even after recent heavy rainfall the past 24 hours and past week. Bottom of hole at 20".

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 Stressed 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:

Surface Water Present? Yes _____ No __X__ Depth (inches):

Water Table Present? Yes _____ No __X__ Depth (inches):

Saturation Present? Yes _____ No __X__ Depth (inches): 18" (5/12/11) 20" (2/25/13)

(includes capillary fringe)

Wetland Hydrology Present? Yes _____ No __X

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

Remarks: No saturation at bottom in test hole at 20" on 2/25/13 after heavy rainfall during the past 24 hours. Note that pervious site visit by JCA on 5/12/11 found only slight hydrology present at the bottom at 20" after 15 min. The soil appears well drained. There was some standing water observed in shallow depressions in the tilled filed to the south. However, we conclude that any small depressions with inundation are only temporary and drainage is generally to the northwest. Comparison between the newer test hole and the previous one indicate this area does **not** have sufficient hydrology for a positive wetland determination.

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

Project/Site: **Kilcha Sekyra Property** City/County: **Puyallup/ Pierce County** Sampling Date: **5/12/11 & 2/25/13**

Applicant/Owner: **Owner: Kilcha Sekyra** State: **WA** Sample Test Plot: **TP 6**

Investigator(s): **John Comis (PWS), Assistant: Sheldon Smith** Section, Township, Range: **SE ¼ of the SW ¼ of Section 26-T20N-R4E**

Landform (hillslope, terrace, etc.): **Valley** Local relief (concave, convex, none): **very gradual slope to NW to Linear Wetland "A"** Slope (%): **0.5%**

Subregion (LRR): **Northwest Forests and Coasts (LRR A)** Lat: **47^0-11.150' N** Long: **122^0-15.770' W** Parcel No.: **0420267003 & 0420263103**

Soil Map Unit Name: **Briscot, loam (6A,** hydric if undrained, see Fig 3**)** and **Puyallup, fine sandy loam (31A**) NWI classification: **None**

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

Are Vegetation X, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ___.

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks. **SEE Remarks below**)

SUMMARY OF FINDINGS – See *Site Plan Map* for sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____	No X	**Is the Sampled Area within a Wetland?** **Yes ____ No X**
Hydric Soil Present?	Yes ____	No X	
Wetland Hydrology Present?	Yes ____	No X	

Remarks: Problematic vegetation includes "managed plant communities" due to residential and agricultural activities in this area. Problematic soils in some areas due to past (and current) tillage. Hydrology is not problematic in this part of the valley. Normal climate and hydrology conditions are typical for this early growing season analysis. This sample plot is located south of the "Linear Wetland 'A'" in a grove of tall, large cottonwood trees. This sample plot was dug for soil and hydrology analysis in a small, slight depression with dominant 'reed canary grass' surrounded by a cottonwood grove. (see Hydrology data below).

VEGETATION – Use scientific names of plants

Tree Stratum (Plot size: ____)	Absolute % Cover	Dominant Species?	Indicator Status
1. cottonwood, black (*Populus trichocarpa*)	40	Y	FAC
2.			
3.			
4.			
	____ = Total Cover		
Sapling/Shrub Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
5.			
	____ = Total Cover		
Herb Stratum (Plot size: ____)			
1. grass, reed canary (*Phalaris arundinacea*)	40%	Y	FACW
2. grass, bunch (*Festuca spp.*)	10%	Y	FACU
3.			
4.			
5.			
	____ = Total Cover		
Woody Vine Stratum (Plot size: ____)			
1. blackberry, Himalayan (*Rubus discolor*)	10%	Y	FACU
2.			
	____ = Total Cover		
% Bare Ground in Herb Stratum			

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species ____	x 1 =
Column Totals: ____ (A)	____ (B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Wetland Non-Vascular Plants[1]

___ 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 X**

Remarks: Vegetation in this sample plot was not recently tilled based on the existing large cottonwood trees established around this area. However, invasive non-native reed canary grass (*Phalaris arundinacea*, FACW) appears to be dominant. The plant community is used for purposes of determining hydrophytic vegetation criteria. Also the methodology considers the wetland hydrology, hydric soils, landscape position, and the vegetation in neighboring areas. Hydrophytic vegetation is present but not dominant.

SOIL

Sample Test Plot: **TP 6**

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:
0-7"	10yr 3/2	100					Loam	No redox features < 7"
7-16"	10yr 3/2+	90		<2			Loam	Few, faint redox features 7-16"
16-18"+	10yr 4/1or5/1	80	10yr 5/6	>5	C	PL	Loam	Prominent redox features > 16"

[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)
___ 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 Soil Present? Yes _____ No __X

Remarks: Upper part of soil profile is very fine sandy loam (Loam) and has been disturbed by past farming practices, but soil is relatively undisturbed in this area based on established trees around this area. Mapped soils for sample location are included on the NRCS list of hydric soils if undrained. Soils at sample plot **did not** exhibit hydric indicators in the upper layers and **do not** meet the NRCS hydric soil indicator listed above. Many fine deep roots to 15". Low soil moisture above 16" even after recent heavy rainfall the past 24 hours and past week. Bottom of hole at 19".

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 Stressed 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:

Surface Water Present? Yes _____ No __X__ Depth (inches):

Water Table Present? Yes __X__ No _____ Depth (inches): 16" after 15 min

Saturation Present? Yes __X__ No _____ Depth (inches): 18" (5/12/11) 20" (2/25/13)

(includes capillary fringe)

Wetland Hydrology Present? Yes _____ No __X

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

Remarks: Hydrology is present in the bottom of the test hole on 5/12/11 after 15 min. but **not sufficient** for positive wetland determination. Note that a new test hole was re-checked on 2/25/13 by JCA after heavy rainfall during the past 24 hours and the soil appears well drained, even though there was some standing water in shallow depressions within the tilled filed to the south. We conclude that any small depressions with inundation are only temporary and it will drain down and out to the northwest. Comparison between the newer test holes and the ones done previously indicate that this area does not have sufficient hydrology for a positive wetland determination.

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

Project/Site: **Kilcha Sekyra Property** City/County: **Puyallup/ Pierce County** Sampling Date: **2/25/13**

Applicant/Owner: **Owner: Kilcha Sekyra** State: **WA** Sample Test Plot: **TP 7**

Investigator(s): **John Comis (PWS), Assistant: Sheldon Smith** Section, Township, Range: **SE ¼ of the SW ¼ of Section 26-T20N-R4E**

Landform (hillslope, terrace, etc.): **Valley** Local relief (concave, convex, none): **very gradual slope to NW to Linear Wetland "A"** Slope (%): **0.5%**

Subregion (LRR): **Northwest Forests and Coasts (LRR A)** Lat: **47^0-11.150' N** Long: **122^0-15.770' W** Parcel No.: **0420267003 & 0420263103**

Soil Map Unit Name: **Briscot, loam (6A,** hydric if undrained, see Fig 3**)** and **Puyallup, fine sandy loam (31A**) NWI classification: **None**

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

Are Vegetation X, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ___.

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks. **SEE Remarks below**)

SUMMARY OF FINDINGS – See *Site Plan Map* for sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____	No X	**Is the Sampled Area within a Wetland?** **Yes ____ No X**
Hydric Soil Present?	Yes ____	No X	
Wetland Hydrology Present?	Yes ____	No X	

Remarks: No problematic vegetation, but includes "managed plant communities" due to residential and agricultural activities in the surrounding area. Appears that some trees have been added along the upper bank of an old abandoned drainage channel. Problematic soils are not present in this plot location. Hydrology is not problematic due to established and maintained drainage in this part of the valley. Normal climate and hydrology conditions are typical for this early growing season analysis. This sample plot is located along the south bank of "Linear Wetland 'A'".

VEGETATION – Use scientific names of plants

Tree Stratum (Plot size: ____)	Absolute % Cover	Dominant Species?	Indicator Status
1. maple, big-leaf (*Acer macrophyllum*)	40%	Y	FACU
2. fir, Douglas (*Pseudotsuga menziesii*)	20%	Y	FACU
3.			
4.			
	____ = Total Cover		
Sapling/Shrub Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
5.			
	____ = Total Cover		
Herb Stratum (Plot size: ____)			
1. grass, reed canary (*Phalaris arundinacea*)	20%	Y	FACW
2.			
3.			
4.			
5.			
	____ = Total Cover		
Woody Vine Stratum (Plot size: ____)			
1. blackberry, Himalayan (*Rubus discolor*)	20%	Y	FACU
2.			
	____ = Total Cover		
% Bare Ground in Herb Stratum			

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 25% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species ____	x 1 =
Column Totals: ____ (A)	____ (B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Wetland Non-Vascular Plants[1]

___ 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 X**

Remarks: Vegetation is non-wetland by dominance test. The sample plot is within an area where invasive non-native reed canary grass (*Phalaris arundinacea*, FACW) appears. There are red osier dogwood shrubs growing within the wetland edge but not up the bank into the non-wetland test plot area along Linear Wetland "A". The methodology also considers the wetland hydrology, hydric soils, landscape position, and the vegetation in neighboring areas. Dominant hydrophytic vegetation is not present.

SOIL

Sample Test Plot: **TP 7**

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:
0-8"	10yr 3/2	100					Loam	No redox features < 7"
8-12"	10yr 3/2+	90		<2			Loam	Few, faint redox features 7-12"; deep roots to 12"
12-21	10yr 3/2	70	10yr 4/6	>2	C	PL	Loam	Prominent redox features @ 12+"

[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)
___ 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 Soil Present? Yes ____ No _X_

Remarks: Upper part of soil profile is very fine sandy loam (Loam) and has not been disturbed by recent farming practices in this area; soil is relatively undisturbed based on established trees and fences along linear wetland. Mapped soils for sample location are included on the NRCS list of hydric soils if undrained. Soils at sample plot **did not** exhibit hydric indicators in the upper layers and **do not** meet the NRCS hydric soil indicator listed above.

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 Stressed 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:

Surface Water Present? Yes ____ No _X_ Depth (inches):

Water Table Present? Yes ____ No _X_ Depth (inches):

Saturation Present? (includes capillary fringe) Yes _X_ No ____ Depth (inches): 20" (2/25/13)

Wetland Hydrology Present? Yes ____ No _X_

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

Remarks: Hydrology is present in the bottom of the test hole at 20" but **not sufficient** for positive wetland determination. Note that this test hole was checked by JCA after heavy rainfall during the past 24 hours and the soil appears well drained, even though there was some standing water in shallow depressions within the tilled filed to the south. We conclude that any small depressions with inundation are only temporary and drainage is to the northwest. Comparison between the newer test holes and the ones done during previous site visits indicate that this area does not have sufficient hydrology for a positive wetland determination.

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

Project/Site: **Kilcha Sekyra Property** City/County: **Puyallup/ Pierce County** Sampling Date: **2/25/13**

Applicant/Owner: **Owner: Kilcha Sekyra** State: **WA** Sample Test Plot: **TP 8**

Investigator(s): **John Comis (PWS), Assistant: Sheldon Smith** Section, Township, Range: **SE ¼ of the SW ¼ of Section 26-T20N-R4E**

Landform (hillslope, terrace, etc.): **Valley** Local relief (concave, convex, none): **very gradual slope to NW to Linear Wetland "A"** Slope (%): **0.5%**

Subregion (LRR): **Northwest Forests and Coasts (LRR A)** Lat: **47^0-11.150' N** Long: **122^0-15.770' W** Parcel No.: **0420267003 & 0420263103**

Soil Map Unit Name: **Briscot, loam (6A,** hydric if undrained, see Fig 3**)** and **Puyallup, fine sandy loam (31A**) NWI classification: **None**

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

Are Vegetation X, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ___.

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks. **SEE Remarks below**)

SUMMARY OF FINDINGS – See *Site Plan Map* for sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____	No X	**Is the Sampled Area within a Wetland?** **Yes ____ No X**
Hydric Soil Present?	Yes ____	No X	
Wetland Hydrology Present?	Yes ____	No X	

Remarks: No problematic vegetation, but includes "managed plant communities" due to residential and agricultural activities in the surrounding area. Appears that some trees have been added along the upper bank of an old abandoned drainage channel. Problematic soils are not present in this plot location. Hydrology is not problematic due to established and maintained drainage in this part of the valley. Normal climate and hydrology conditions are typical for this early growing season analysis. This sample plot is located along the south bank of "Linear Wetland 'A'".

VEGETATION – Use scientific names of plants

Tree Stratum (Plot size: ____)	Absolute % Cover	Dominant Species?	Indicator Status
1. maple, big-leaf (*Acer macrophyllum*)	40%	Y	FACU
2. fir, Douglas (*Pseudotsuga menziesii*)	20%	Y	FACU
3.			
4.			
	____ = Total Cover		
Sapling/Shrub Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
5.			
	____ = Total Cover		
Herb Stratum (Plot size: ____)			
1. grass, reed canary (*Phalaris arundinacea*)	20%	Y	FACW
2.			
3.			
4.			
5.			
	____ = Total Cover		
Woody Vine Stratum (Plot size: ____)			
1. blackberry, Himalayan (*Rubus discolor*)	20%	Y	FACU
2.			
	____ = Total Cover		
% Bare Ground in Herb Stratum			

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 25% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species ____	x 1 =
Column Totals: ____ (A)	____ (B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Wetland Non-Vascular Plants[1]

___ 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 X**

Remarks: Vegetation is non-wetland by dominance test. The sample plot is within an area where invasive non-native reed canary grass (*Phalaris arundinacea*, FACW) appears. There are red osier dogwood shrubs growing within the wetland edge but not up the bank into the non-wetland test plot area along Linear Wetland "A". The methodology also considers the wetland hydrology, hydric soils, landscape position, and the vegetation in neighboring areas. Dominant hydrophytic vegetation is not present.

SOIL

Sample Test Plot: **TP 8**

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:
0-15"	10yr 3/3	100					Loam	No redox features < 7"
								Few, faint redox features 7-15"; deep roots to 12"; dryer than TP7 at 15"; may be Puyallup series

[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)
- ___ 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 Soil Present? Yes _____ No _X_

Remarks: Upper part of soil profile is very fine sandy loam (Loam) and has not been disturbed by recent farming practices in this area; soil is relatively undisturbed based on established trees and fences along linear wetland. Mapped soils for sample location are included on the NRCS list of hydric soils if undrained. Soils at sample plot **did not** exhibit hydric indicators in the upper layers and **do not** meet the NRCS hydric soil indicator listed above.

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 Stressed 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:

Surface Water Present? Yes _____ No _X_ Depth (inches):

Water Table Present? Yes _____ No _X_ Depth (inches):

Saturation Present? (includes capillary fringe) Yes _____ No _X_ Depth (inches): >15" (2/15/13)

Wetland Hydrology Present? Yes _____ No _X_

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

Remarks: No hydrology is present in the bottom of the test hole after 10 min. at 15" deep. Note that this test hole was checked by JCA after heavy rainfall during the past 24 hours and the soil appears well drained, even though there was some standing water in shallow depressions within the tilled filed to the south. We conclude that any small depressions with inundation are only temporary and drainage is to the northwest. Comparison between the newer test holes and the ones done during previous site visits indicate that this area does not have sufficient hydrology for a positive wetland determination.

APPENDIX 3

WETLAND RATING FORM

by John Comis Associates (JCA)
Site Visits: 2008, 2011, 2013 & 2021 (see report for details)
Rating Form Updated 2021

Source: "*Washington State Wetlands Rating System, Western Washington, Updated 2014*." Washington Department of Ecology (WDOE) Publication #04-06-029 [original published: Aug 2004; revised v.2 2006; updated Oct 2014, effective Jan 2015]. https://fortress.wa.gov/ecy/publications/documents/1406029.pdf

INTRODUCTION:
This categorization (or rating) of the wetland area that is associated with the project site is done for regulatory purposes based on the 4-tiered system as required and specified by the *Pierce County Code* (PCC). This rating is applicable to buffer standards and setback requirements. The current WDOE *Wetland Rating Form* is used and completed by JCA to support this rating, which may be approved by the City in accordance with the PCC requirements.

This appendix includes a copy of maps used by JCA for this analysis, which are noted and highlighted to show various features. These maps are:

W1, 1 Km Radius around Wetland Unit "A" with Roads, Wetlands & Hydro Features [See Figure 1]
W2, 150' & 330' Radius around Wetland Unit "A" with Cowardin Vegetation Classes [See Figure 2a & 2b]
W3, Hydroperiods & Contributing Basin Map around Wetland Unit "A" [See Figure 3]
W4, WDOE 303(d) Map for Study Area
W5, USDA-NRCS Soils Survey Map of Study Area
W6, USF&W National Wetland Inventory (NWI) Map of Study Area
W7, FEMA Flood Insurance Rate Map of Study Area [See Figure 4]
W8, SalmonScape Fish Species Data for Deer Creek

Certain data requirements are called out in various parts of the rating form and described in detail in the 2014 WDOE rating manual. The list of figures on page 2 of the rating form indicate what maps are required and which maps are used for that information. See the List of Figures on Page 2 of the rating form completed by JCA for more details.

Wetland name or number "A"

Kilcha Sekyra Property @ Puyallup

RATING SUMMARY – Western Washington

Name of wetland (or ID #): Linear Wetland "A" (offsite to north) Date of site visit: 11/2/2021

Rated by John Comis, PWS Trained by Ecology? X Yes ___No Date of training 2005,2007 11/5/2014

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 Goggle Earth with Pierce County Public GIS overlay data, includes offsite wetland and details of surveyed data by Azure Green Engineering and JCA.

OVERALL WETLAND CATEGORY IV (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

_____**Category III** – Total score = 16 - 19

__X__**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	6	5	3	14

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

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

2. Category based on SPECIAL CHARACTERISTICS of wetland

CHARACTERISTIC	CATEGORY
Estuarine	**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

[Note: Linear Wetland "A" extends along the northern side of the project site as shown by the figures in this report. It is situated entirely offsite. Based on calculations by JCA from map data, the size of Wetland "A" is estimated to be approx. 8,800 sq. ft. (0.20 acres).]

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	Fig.2a&2b,WRF Map in Apdx.3
Hydroperiods	D 1.4, H 1.2	Fig.3,WRF Map in Apdx.3
Location of outlet (*can be added to map of hydroperiods)*	D 1.1, D 4.1	Fig.3,W6,Photos in Apdx.4(#13&14)
Boundary of area within 150 ft of the wetland *(can be added to another figure)*	D 2.2, D 5.2	Fig.2a&2b
Map of the contributing basin	D 4.3, D 5.3	Fig.3
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	Fig.1
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	D 3.1, D 3.2	W4 in Apdx.3
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	D 3.3	(none)

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.

(Note that Linear Wetland "A" is isolated from Deer Creek by 25th Street and by Pioneer Way.)

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.*

WL-A

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. (see Photo #4 in Appendix 4) 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	1
D 1.2. The soil 2 in below the surface (or duff layer) is true clay or true organic *(use NRCS definitions)*. Yes = 4 **(No = 0)**	0
D 1.3. Characteristics and distribution of persistent plants (Emergent, Scrub-shrub, and/or Forested Cowardin classes): Wetland has persistent, ungrazed, plants > 95% of area points = 5 Wetland has persistent, ungrazed, plants > ½ of area ← **(points = 3)** Wetland has persistent, ungrazed plants > $^1/_{10}$ of area points = 1 Wetland has persistent, ungrazed plants < $^1/_{10}$ of area points = 0	3
D 1.4. Characteristics of seasonal ponding or inundation: *This is the area that is ponded for at least 2 months. See description in manual.* Area seasonally ponded is > ½ total area of wetland points = 4 Area seasonally ponded is > ¼ total area of wetland points = 2 Area seasonally ponded is < ¼ total area of wetland ← (~20% seasonally ponded in east part of Wetland "A"; very small watershed drains into "A" , Fig. 3) **(points = 0)**	0
Total for D 1 — Add the points in the boxes above	4

Rating of Site Potential If score is: ___**12-16 = H** ___**6-11 = M** X **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? (area is served by City sewers) 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? (see note below) **(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*)? (no TMDL found listed) Yes = 2 **(No = 0)**	0
Total for D 3 — Add the points in the boxes above	2

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

(Wetland "A" appears to be hydrologically connected to Deer Creek which is designated as "Category 4A" (orange) offsite to the north.)

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

* See Note — Wetland has ~~an~~ unconstricted, or slightly constricted, surface outlet that is permanently flowing points = 0 (circled)

0

D 4.2. Depth of storage during wet periods: *Estimate the height of ponding above the bottom of the outlet. For wetlands with no outlet, measure from the surface of permanent water or if dry, the deepest part.*

Marks of ponding are 3 ft or more above the surface or bottom of outlet points = 7

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 (circled) ←

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

(watershed ~ 21.5 acres (Fig.3), wetland "A" = 0.20 acres 21.5/0.20 = 107.5 times)

The area of the basin is more than 100 times the area of the unit points = 0 (circled) ←

Entire wetland is in the Flats class points = 5

0

Total for D 4	Add the points in the boxes above	3

Rating of Site Potential If score is: ___ **12-16 = H** ___ **6-11 = M** X **0-5 = L** (circled) *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 (circled) 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 (circled) 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 (circled) 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** (circled) ___ **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 (circled) ←

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 (circled)

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** (circled) *Record the rating on the first page*

* Note: UNCONSTRICTED outlet does not have the opportunity to reduce downstream flooding (see photos in Appendix 4.

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.*

(offsite Wetland "A" is approx. 0.20 acres in size and entirely forested, see Figure 2a)

____Aquatic bed
____Emergent
____Scrub-shrub (areas where shrubs have > 30% cover)
__X__Forested (areas where trees have > 30% cover)

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

If the unit has a Forested class, check if:

__X__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

1

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*).

(see Field Data Form for TP1 in Appendix 2 dated 2011 & 2013)

____Permanently flooded or inundated
__X__Seasonally flooded or inundated
__X__Occasionally flooded or inundated
____Saturated only

4 or more types present: points = 3
3 types present: points = 2
2 types present: points = (1)
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**

1

H 1.3. Richness of plant species

Count the number of plant species in the wetland that cover at least 10 ft^2.

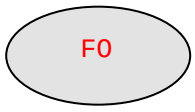
Different patches of the same species can be combined to meet the size threshold and you do not have to name the species. ***Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, Canadian thistle***

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

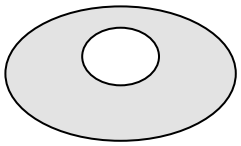
1

H 1.4. Interspersion of habitats

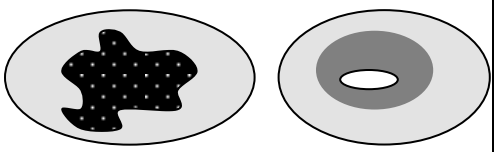
Decide from the diagrams below whether interspersion among Cowardin plants classes (described in H 1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, moderate, low, or none. *If you have four or more plant classes or three classes and open water, the rating is always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



None = 0 points

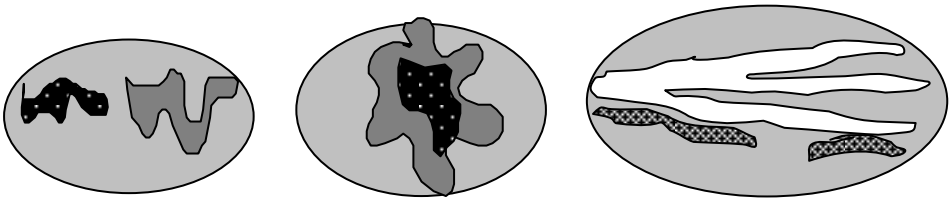


Low = 1 point



Moderate = 2 points

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



0

Wetland name or number "A"

H 1.5. Special habitat features: Check the habitat features that are present in the wetland. *The number of checks is the number of points.* _X_Large, downed, woody debris within the wetland (> 4 in diameter and 6 ft long). ____Standing snags (dbh > 4 in) within the wetland ____Undercut banks are present for at least 6.6 ft (2 m) **and/or** overhanging plants extends at least 3.3 ft (1 m) over a stream (or ditch) in, or contiguous with the wetland, for at least 33 ft (10 m) ____Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 30 degree slope) OR signs of recent beaver activity are present *(cut shrubs or trees that have not yet weathered where wood is exposed)* _X_At least ¼ ac of thin-stemmed persistent plants or woody branches are present in areas that are permanently or seasonally inundated *(structures for egg-laying by amphibians)* ____Invasive plants cover less than 25% of the wetland area in every stratum of plants (*see H 1.1 for list of strata*)	2
Total for H 1 Add the points in the boxes above	5

Rating of Site Potential If score is:___**15-18 = H** ___**7-14 = M** _X_**0-6 = (L)** *Record the rating on the first page*

H 2.0. Does the landscape have the potential to support the habitat functions of the site?

H 2.1. Accessible habitat (include *only habitat that directly abuts wetland unit*). *Calculate:* % undisturbed habitat 4.1 + [(% moderate and low intensity land uses)/2] 1.3 = 5.4 % If total accessible habitat is: > 1/3 (33.3%) of 1 km Polygon points = 3 20-33% of 1 km Polygon points = 2 10-19% of 1 km Polygon points = 1 < 10% of 1 km Polygon ← points = 0 (No accessible habitat directly abuts Wetland "A" as it is separated from Deer Creek by streets & culverts, and other residential developments; central part of WL-A has been filled with yard waste and brush debris.)	0
H 2.2. Undisturbed habitat in 1 km Polygon around the wetland. *Calculate:* % undisturbed habitat 15 + [(% moderate and low intensity land uses)/2] 20 = 35 % Undisturbed habitat > 50% of Polygon points = 3 Undisturbed habitat 10-50% and in 1-3 patches points = 2 Undisturbed habitat 10-50% and > 3 patches ← points = 1 Undisturbed habitat < 10% of 1 km Polygon points = 0 (Separated habitats of Deer Creek and other wetlands NW & SE of Wetland "A", farm fields, pastures, forested hillsides, golf course)	1
H 2.3. Land use intensity in 1 km Polygon: If > 50% of 1 km Polygon is high intensity land use ← points = (- 2) ≤ 50% of 1 km Polygon is high intensity points = 0	-2
Total for H 2 Add the points in the boxes above	-1

Rating of Landscape Potential If score is:___**4-6 = H** ___**1-3 = M** _X_**< 1 = (L)** *Record the rating on the first page*

H 3.0. Is the habitat provided by the site valuable to society?

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

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

* $A=\pi r^2$
$A=3.14*3280^2/43{,}560$
A=775.5 acres

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. (Linear Wetland "A" is separated from Deer Creek by roads at Pioneer Way and at 25th Street SE.)

— **Westside Prairies:** Herbaceous, non-forested plant communities that can either take the form of a dry prairie or a wet prairie (*full descriptions in WDFW PHS report p. 161 – see web link above*).

— **Instream:** The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources.

— **Nearshore**: Relatively undisturbed nearshore habitats. These include Coastal Nearshore, Open Coast Nearshore, and Puget Sound Nearshore. (*full descriptions of habitats and the definition of relatively undisturbed are in WDFW report – see web link on previous page).*

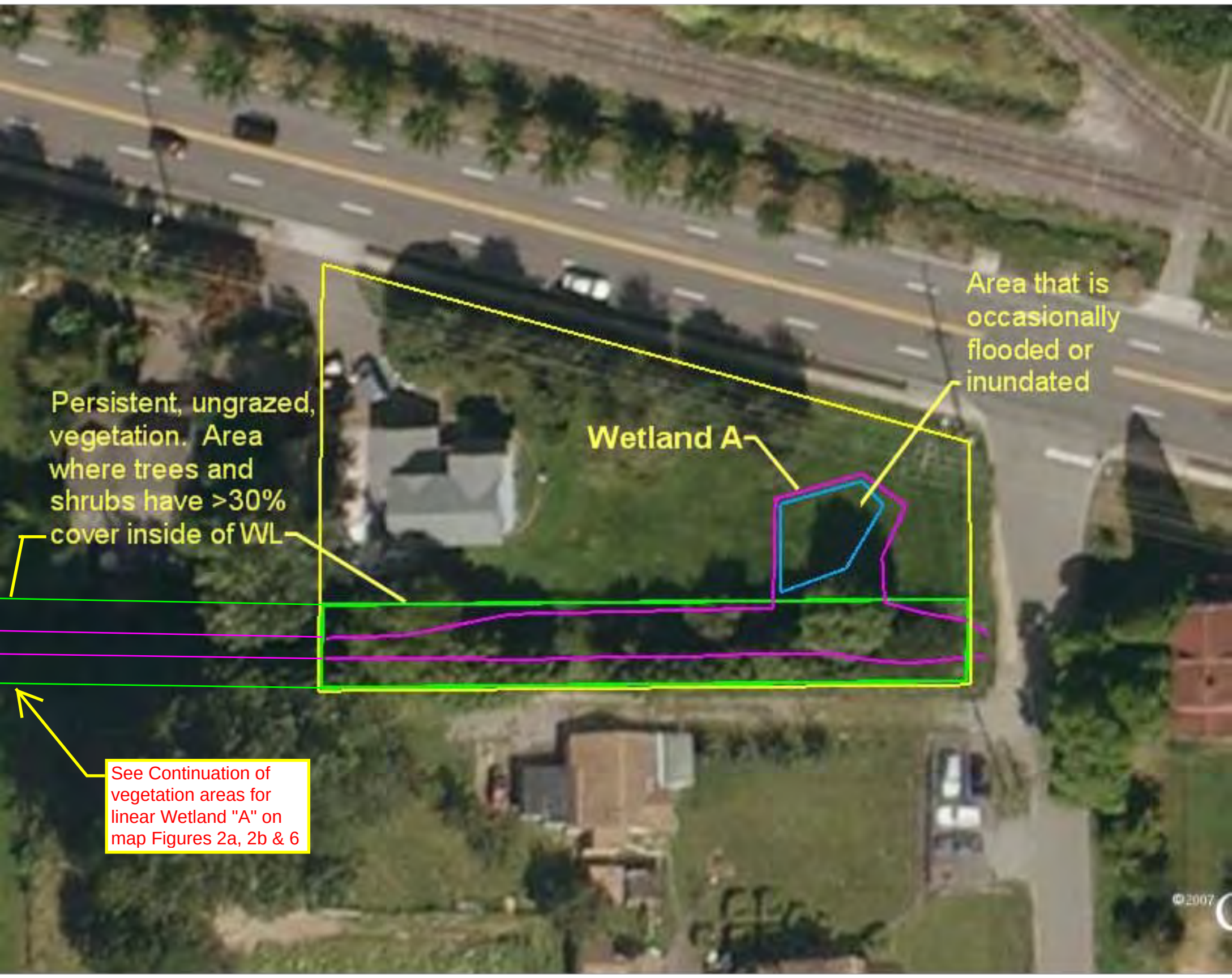
— **Caves:** A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils, rock, ice, or other geological formations and is large enough to contain a human.

— **Cliffs:** Greater than 25 ft (7.6 m) high and occurring below 5000 ft elevation.

— **Talus:** Homogenous areas of rock rubble ranging in average size 0.5 - 6.5 ft (0.15 - 2.0 m), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.

— **Snags and Logs:** Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 20 in (51 cm) in western Washington and are > 6.5 ft (2 m) in height. Priority logs are > 12 in (30 cm) in diameter at the largest end, and > 20 ft (6 m) long.

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



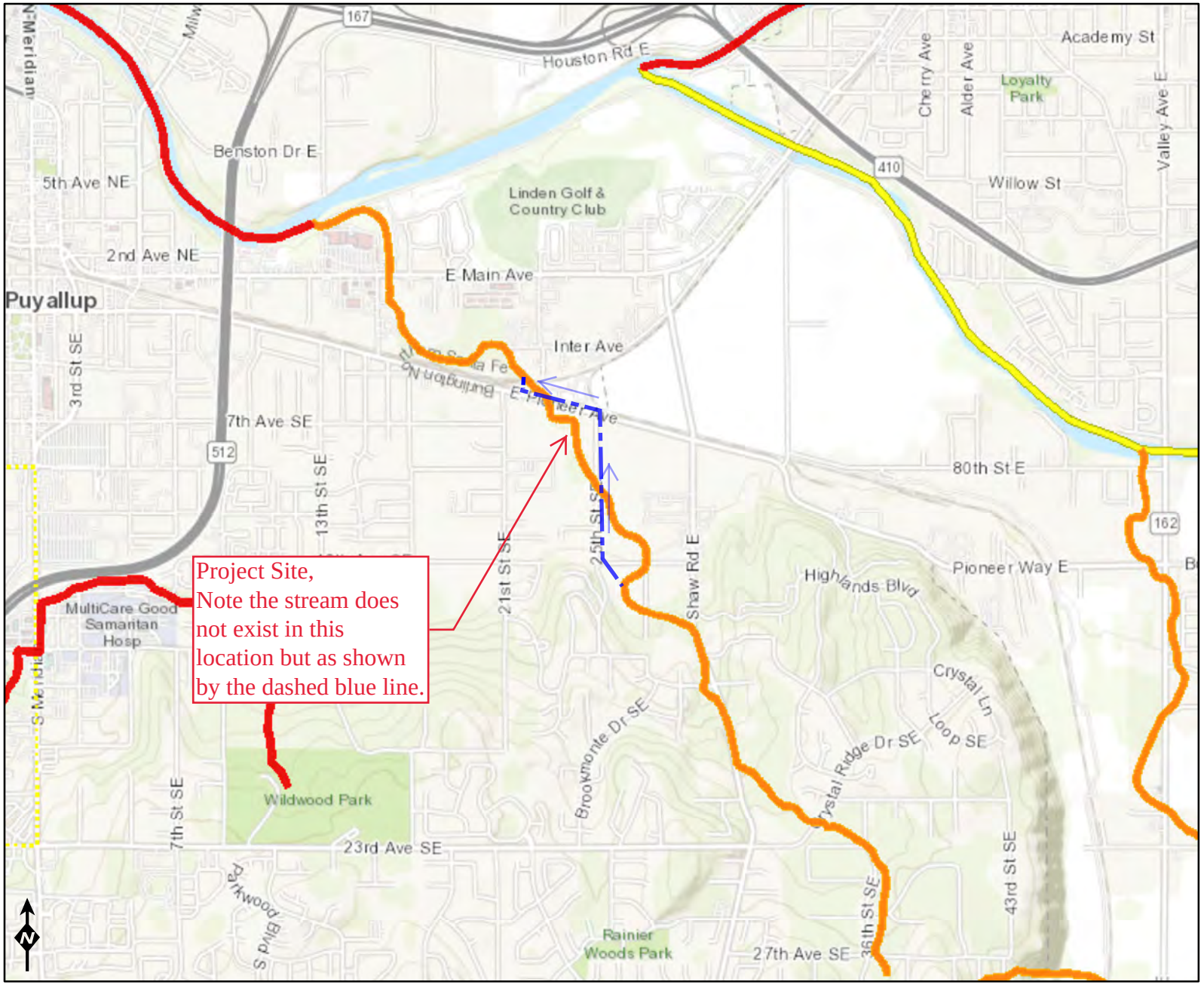
JOHN COMIS ASSOCIATES, Inc.
Wetlands, Streams & Mitigation Designs since 1989
1027 N. Oakes St. Tacoma WA, 98406
Office: (253) 272-6808 Fax: (253) 272-6807

1"=50'

WETLAND RATING FORM MAP

January 4, 2022

Water Quality Atlas



Assessed Water/Sediment

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

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

Miles
0 0.25 0.5 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

WDOE 303(d) Map of Study Area

W4

DEPARTMENT OF ECOLOGY
State of Washington

LEGEND

Yellow = **Project Site Boundary**

1C = Soil Map Units

= Wetland

= Open Water

Pierce County Area, Washington (WA653)

6A = Briscot loam (hydric soil if left undrained)*

29A = Pilchuck, fine sandy, 0-3% slopes

31A = Puyallup, fine sandy loam, 0-3% slopes

42A = Siltan, silt loam, 0-2% slopes

Note: No soils found within this site area are listed as hydric. Inclusions of other soil types may occur within a soil map unit as indicated in the table above (see individual soil descriptions in Appendix 3 and the list of hydric soils from "Hydric Soils in Pierce County by SCS dated 9/18/86.

Map Source: a portion of the Image Data from "Google Earth" overlaid with a Web Soil Survey Map taken from the Natural Resources Conservation Service (USDA); found at URL http://websoilsurvey.nrcs.usda.gov/app/, 2007.

SOIL SURVEY MAP

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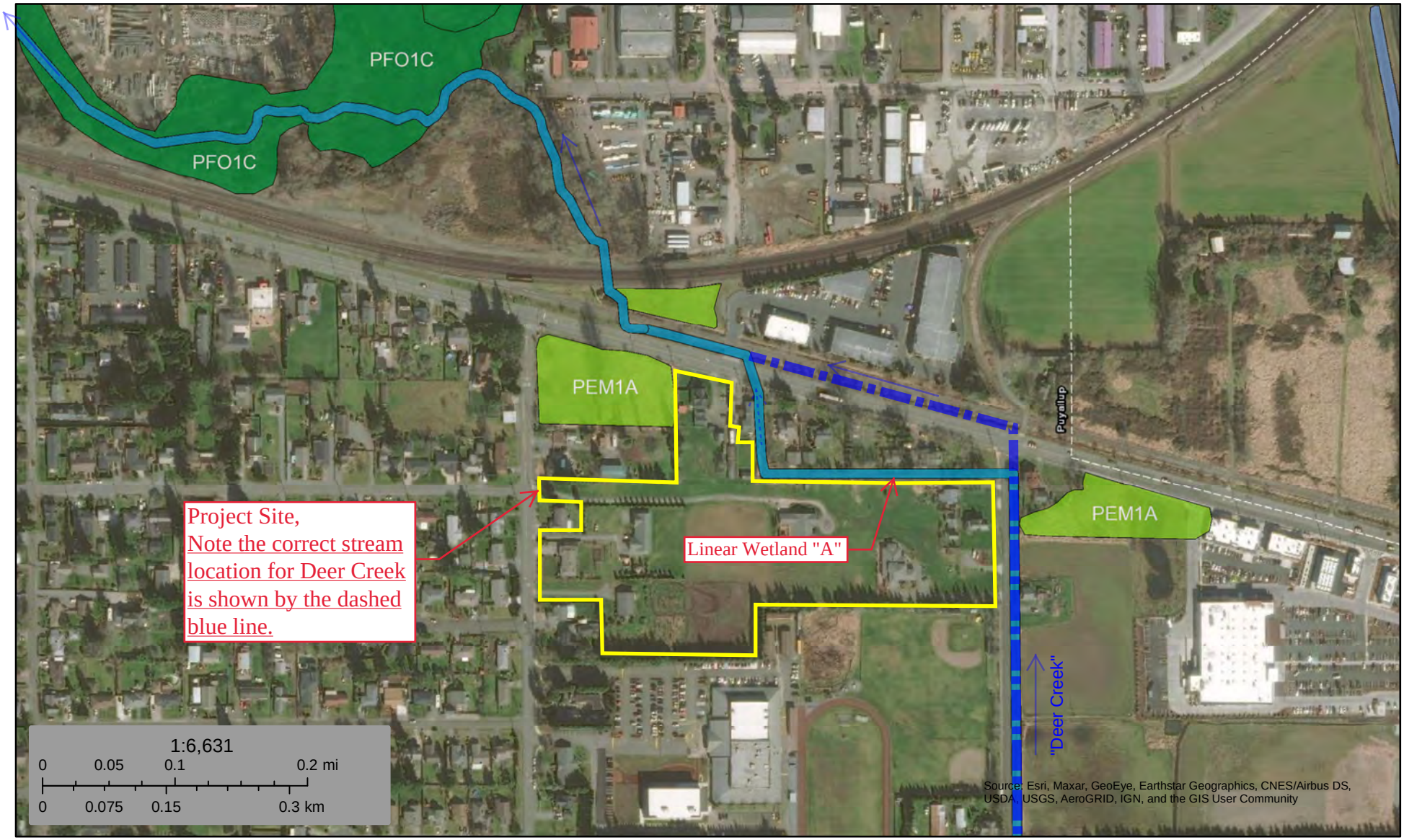
1"=1000'

Fig: W5

U.S. Fish and Wildlife Service
National Wetlands Inventory

Wetlands



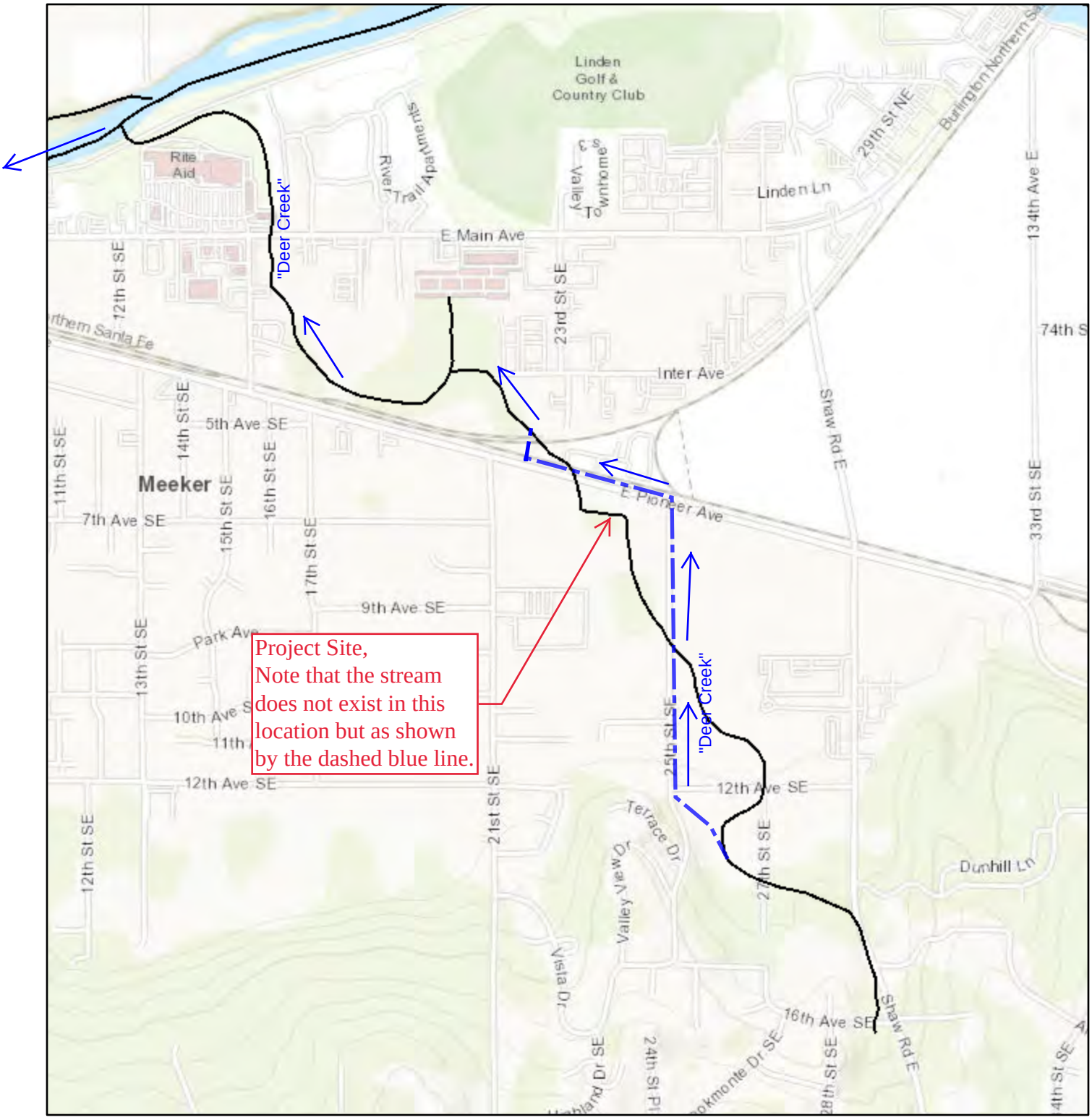
January 4, 2022

Wetlands

- Estuarine and Marine Deepwater
- Estuarine and Marine Wetland
- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Lake
- Other
- Riverine

W6

USF&W National Wetland Inventory (NWI) Map of Study Area



November 11, 2021

1:18,056

0 0.1 0.2 0.4 mi

0 0.15 0.3 0.6 km

All SalmonScape Species

Pink Salmon (odd years): Modeled Presence
Winter Steelhead: Modeled Presence
Fall Chum: Modeled Presence
Coho: Documented Presence
Fall Chinook: Modeled Presence

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 the GIS User Community, WDFW

SalmonScape Fish Species for Deer Creek

W8

Appendix 4

PHOTOGRAPHS OF EXISTING ONSITE AND ADJACENT OFFSITE AREAS

By John Comis Associates
Taken: 4/11/2008 [for the Schuh Property]
Taken: 4/22/2011 [for the Sekyra Property]
Taken: 9/13/2016 [for Onsite Sekyra Property
& Offsite Schuh and Adjacent Properties]

INTRODUCTION

Photographs were taken by John Comis Associates (JCA) of the Sekyra and other study sites located just to the north of the linear wetland and along the main drainage course associated with ***Deer Creek***. The primary object of this investigation was the "linear" wetland, called Wetland 'A', which was along an old abandoned swale just north of the project site. The entire Wetland "A" was located offsite from the Sekyra Project Site, and parallel to the north property line. These digital photographs are on file at JCA, together with additional photographs that were taken in the project site area. These other photos may be obtained from JCA upon request if needed.

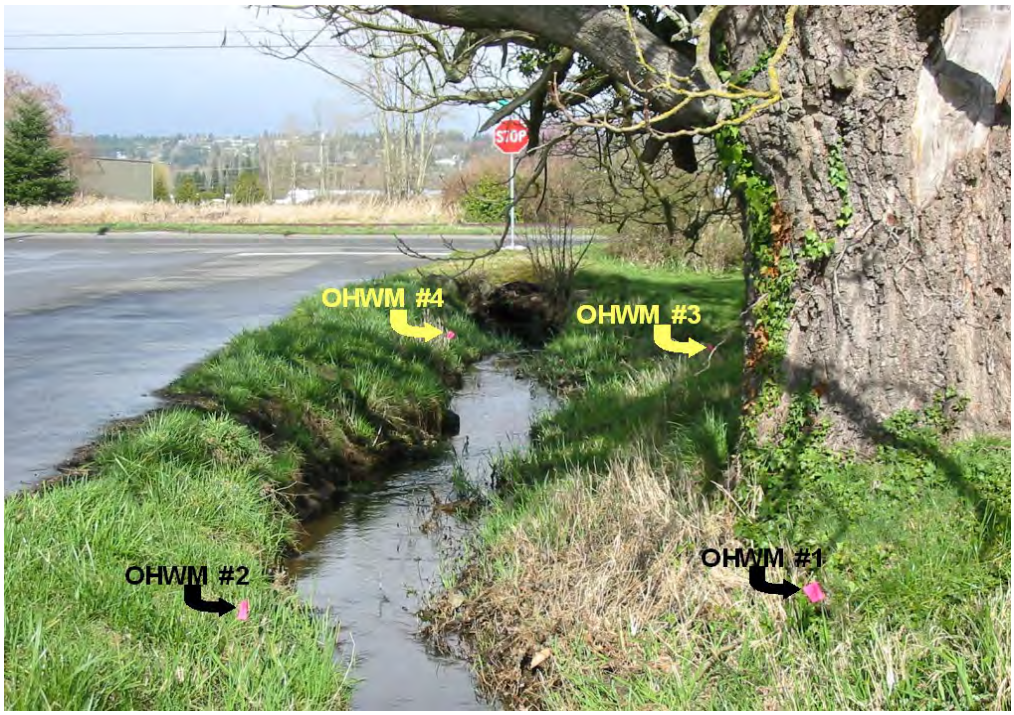


Photo #1: Looking downstream (north) along the main channel of *Deer Creek* from a wooden foot-bridge that was built over the channel to the adjacent residence. The Ordinary High Water Marks (OHWM) were delineated by JCA at numbered points along the main channel in 2008 with small pink flags on short wire stakes. (Taken 4/11/08)

Photo #2: Looking upstream (south) along the main channel of *Deer Creek* from the top of the culvert that flows under Pioneer Way East. The roadway on the right was 25th Street SE, which separates the regulated stream and its buffer from the Sekyra property. (Taken 4/11/08)

Photo #3: Looking west from 25th Street along the "linear depressional wetland" called Wetland 'A' for this study. The depression appeared to have been formed by an old abandoned swale for *Deer Creek*. The water seen in the ditch was not hydrologically connected with the water flowing in *Deer Creek*. The wetland delineation flags were set by JCA for the Schuh Property (on right) in 2008. (Taken 4/11/08)

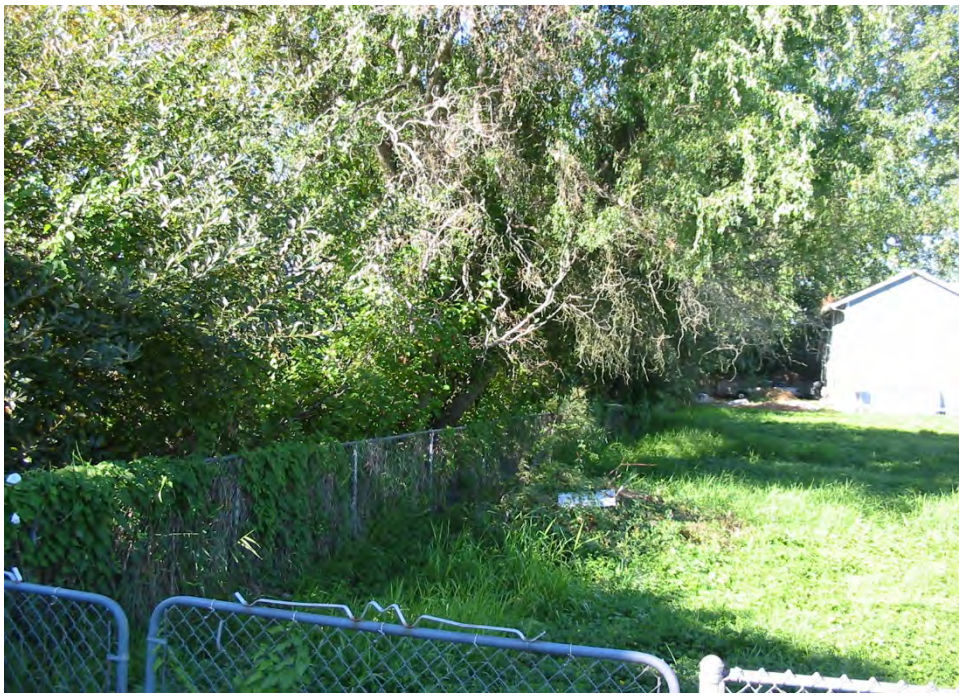


Photo #4: Looking southwest along the northern side of linear Wetland 'A'. The property on the right (north side) of the chain link fence was the Schuh Property, and the edge of the wetland delineated by JCA in 2008 has become more densely overgrown with willows and other vegetation. (IMG-003, Taken 9/13/16)

Photo #5: Looking northwest from the fence line that separates the western Sekyra Property (Parcel #0420267003) from the eastern property (#0420267027 & 0420267028). Note the blue buffer boundary signs set for the 2013 wetland study of the eastern property were located 50 feet from the delineated edge of OFFSITE Wetland "A" [pink flags marked by JCA in 2008, 2011 and 2013]. (IMG 019, Taken 9/13/16)

Photo #6: Looking east along the centerline of linear Wetland 'A' from about the center of the (extended) property line between the two Sekyra Properties. The property on the right along the wood fence was the eastern part of the Sekyra Property, and it was entirely outside and beyond the edge of the delineated wetland. The pink ribbons on the left mark the delineation points along the northern bank. (Taken 4/11/08)

Photo #7: Looking east along the centerline of linear Wetland "A". Note the densely overgrown woody and shrub vegetation along both sides of the wetland, and the dense grasses and forbs growing up out of the wetland bottom. Compare this photo with photos #9 & #10 taken in 2011. (IMG-024, Taken 9/13/16)

Photo #8: Looking east (upstream) along the southern buffer of Wetland 'A' at the western part of the Sekyra Property (Parcel #0420267003) in the foreground on the right side of the wood rail fence. The eastern part of the Sekyra Property in the background beyond the white rail fence was short platted in 2013 (Parcel #0420267027 & #0420267028). (Taken 4/22/2011)

Photo #9: Looking east along the northern side of offsite Wetland "A". The property on the left has residential uses with mowed yards and a playhouse that extend along the delineated upland side of the wetland. Note the bottom in the depression was not flowing and had some stagnant water with accumulated oils and iron bacteria. (Taken 4/22/11)

Photo # 10: Looking east along the offsite Wetland "A". The average width of Wetland 'A' in this part of the site was 15 feet, measured from the north side to the south side of the wetland [flagged by JCA in 2011 with pink ribbons]. Note the bottom in this linear depression was not flowing and had accumulated surface water runoff that generally stagnates with oils and iron bacteria that have formed in the bottom of the swale. (Taken 4/22/11)

Photo #11: Looking east along the north side of the Sekyra Property from the fence corner. Note the wood rail fence marks the north property line, and the tall trees in the offsite buffer provide adequate shade for Wetland "A" in this area [see IMG-032 thru IMG-039 for more details]. (IMG-040, Taken 9/13/16)

Photo #12: Looking east along the north side of the Sekyra Property, along the boundary of the 50-foot wide buffer (note a blue sign along fence in the background). The buffer boundary was approximately along the edge of the driveway on the right [see Figure 7 in report for details]. (IMG-041, Taken 9/13/16)

Photo #13: Looking at the inlet (upstream end) of the CMP Arch culvert under Pioneer Way where Wetland "A" drains unconstricted under the roadway to confluence with "Deer Creek" on the north side of the road. (Taken 2/25/13)

Photo #14: Looking at the outlet (downstream end) of the CMP Arch culvert under Pioneer Way where Wetland "A" drains unconstricted into "Deer Creek". Note that the creek was in the foreground flowing from left to right in this photo. (Taken 2/15/13)

APPENDIX 5

RESUMES
FOR WETLAND AND WILDLIFE CONSULTANTS

Resumes for Consultants: Wetland Delineations, Mitigation Plans & Landscape Designs, Mitigation Monitoring & Wildlife Biology

JOHN G. COMIS

Professional Wetland Scientist (PWS, Certification No. 000810, dtd Nov 27, 1995)
Wetlands Specialist (Listed as Certified "Wetlands Specialist" by Pierce County, since 1992)

EDUCATION: Bachelor of Science, Environmental Bioengineering,
University of Washington, Seattle, 1973

EMPLOYMENT HISTORY:

Consoer, Townsend & Associates, junior engineer, 1974-77
Pierce County Public Works, civil engineer II, planning & drainage engineer, 1977-89
John Comis Associates, principal as a sole proprietorship, 1989-2005
JCA, **Incorporated** (Inc.), 2005 to 2010
JCA, **Limited Liability Corp.** (LLC), 2010 to present

QUALIFICATIONS: Mr. Comis has worked a total of 49 years in both public sector surface water management (15 years) and private sector wetland consulting (34 years). Mr. Comis' education, research, and experience combine the highly technical fields of water biology and water engineering. John has applied his experience and knowledge to preparing wetland delineations and mitigation plans for clients for all manner of large and small-scale projects.

Private projects have dealt with all aspects of wetland consulting including identification, delineation, mitigation, restoration, and simply setback avoidance for new developments. Wetland projects include over 1000 sites and developments in Pierce, King, Kitsap, Lewis, Thurston and Grays Harbor Counties, including work that was done within the City's of Algona, Auburn, Bellevue, Bothell, Bonney Lake, Buckley, Enumclaw, Edgewood, Federal Way, Fife, Fircrest, Issaquah, Kent, Lakewood, Milton, Olympia, Ocean Shores, Pacific, Puyallup, Renton, Sumner, Tacoma and University Place. John has also assisted clients with flood plain and drainage studies including runoff modeling and backwater analysis.

Public sector experience involves many aspects of drainage and surface water management from basin level planning to site specific analysis and design. John has experience with computer models used for estimating runoff, routing stream flows, calculating flood plain elevations and sizing retention/detention facilities. On many projects, John has worked closely with soil scientists, fishery biologists, civil engineers, surveyors, and regulatory agency staffs at all levels of government. He has frequently been involved with interdisciplinary project teams at both the planning and implementation stages of project development.

In academic research, John directed two National Science Foundation projects for an interdisciplinary research team on Kelsey and Coal Creeks, King County, Washington while he was attending the University of Washington. He has conducted drainage and flood studies at all levels of project development. This has provided opportunities to put theory into "on-the-ground" applications for stream studies, FEMA flood plain analysis and mapping, and writing flood plain management regulations together with other aspects of surface water management.

AFFILIATIONS: Member, Society of Wetland Scientists (SWS-PNW Chapter); Society for Ecological Restoration (SER); Washington Native Plant Society (WNPS); Association of State Wetland Managers (ASWM)

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CATHERINE A. COMIS

Wildlife Biologist and Native Landscape Designer

EDUCATION: Bachelor of Arts, Near Eastern Studies,
University of Washington, Seattle, 1972
Bachelor of Science, Landscape Architecture (BSLA),
University of Washington, Seattle, 1978

EMPLOYMENT HISTORY:

US Army, Lieutenant, Military Intelligence Corps, 1972-1976
TRA, landscape designs, park plans, and comprehensive master plans, 1978-1982
Richard Haag & Associates, landscape designs, 1983
Edward Chaffee & Associates, residential & commercial landscape designs, 1983-1987
Natural System Designs, woman owned business for native landscape designs, restoration construction, habitat assessments and small mammal (bat) studies, 1989 to present

QUALIFICATIONS: Kate has continued her studies in wildlife science with courses in **Basic Bird Biology Cornell University (10-week Program), 1995**, and **Master Birding Workshops** for avian identifications and general habitat assessment. Kate has continued to work and study both in the US and abroad with wildlife biologists at **Bat Conservation International (BCI) workshops and sponsored research projects, 1998 thru 2009**. The bat research projects include "*Bats in the Mexican Coffee Agro-ecosystem*", Chiapas, Mexico in 2007; "*Founder's Bat Conservation International Workshop Instructor*", western Uganda in 2008; and "*Vertical Canopy Utilization of Bat Carnivores and Frugivores*", Barro, Panama in 2009. Bat management and research training include protocols for netting, handling, and acoustics identification at the **Bat Grid Workshops in Moses Coulee, WA, June 2010**.

Kate Comis has served as both a designer and project manager for numerous residential and commercial landscape design and comprehensive master plan projects including park projects. She has served as a team member for landscape designs and recreational plans that included studies of wildlife habitats, wetland and stream mitigation and restorations.

Her experience includes stream corridor restoration for park and recreation facility design; multi-use equestrian, pedestrian and bike trails. Preparations of site plans include all aspects of site surveys, cost estimating, construction drawings, specification writing, project inspections and management. She has worked on wildlife studies and consulted with other project biologists doing habitat evaluations and enhancements on Public Utility District (PUD) projects.

Various parks and recreation projects in eastern Washington State include the Chelan County "Entiat Park", "Lincoln Rock Park" and "Daroga Park Master Plan" at the Rocky Reach Reservoir. She has worked on the Chelan County PUD projects for "Mason Park" at Lake Chelan and "Douglas County River Park" at Rock Island Reservoir. These parks were established as a minimum requirement for recreational area development along the reservoirs after damming of the Columbia River.

She also worked for private clients on designs for recreational projects such as Camp Benbow @ Lake Tanwax, Pierce County Jewish Camping Association; Camp Orkila @ Orcas Island, YMCA of Greater Seattle; and Camp Sealth @ Vashon Island, Seattle-King County Campfire Council.

AFFILIATIONS: Society for Ecological Restoration; National Audubon Society; the Wildlife Society, Bat Conservation International (BCI), American Society of Mammologists and Acta Chiroptera.

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APPENDIX 6

REFERENCES
FOR WETLAND & WILDLIFE ANALYSIS

PROJECT-SPECIFIC REFERENCES

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