Revised Biological Habitat Assessment of *Deer Creek* for Project Impacts from the Senior Housing Complex for Kilcha Sekyra Regarding Federal and State Listed Endangered and Sensitive Species for Compliance with the Endangered Species Act (ESA)

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
629 21st Street SE, Puyallup, WA 98372
Phone: 253-381-7098, E-mail: skilcha@live.com
C/o Azure-Green Consultants, LLC
409 East Pioneer, Suite A, Puyallup, WA 98372
Phone: 253-770-3144, E-mail: paul@mailagc.com

Original Report: May 17, 2013
Addendum: December 19, 2016
Updated: January 4, 2022
Revised: ~~June 30, 2023~~ August 9, 2023

Prepared by
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(JCA Job #130214 & 211109)

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City of Puyallup
Planning Services Department
333 S. Meridian, 2nd Floor
Puyallup, WA 98371
Attention: Chris Beale, Associate Planner for CAO and NMFS Bi-op Review

Subject: Revised Biological Habitat Assessment of *Deer Creek* for Project Impacts from the **Senior Housing Complex for Kilcha Sekyra** Regarding Federal and State Listed Endangered and Sensitive Species for Compliance with the Endangered Species Act (ESA)

Reference: FEMA Community Name: CITY OF PUYALLUP, PIERCE COUNTY, WASHINGTON Community No. 530144
Project ID: Senior Housing Complex for Kilcha Sekyra located at 704 25th Street SE, Puyallup, WA 98372, Parcel Nos. 0420267003, 0420267027, 0420267028, 0420267013, 0420267008, 0420267007, 0420267001, situated in the City of Puyallup in the SE ¼ of the SW ¼ of Section 26-T20N-R4E, W.M., Pierce County, Washington

To Whom It May Concern:

John Comis Associates (JCA) has completed a Biological Habitat Assessment of *Deer Creek* for potential project impacts from the proposed Senior Housing Complex for the Kilcha Sekyra property, which is situated west and south of the main channel of *Deer Creek*, a tributary to the *Puyallup River*. This report is prepared for review and approval by the City of Puyallup, Planning Services Department (the City). This is done for compliance with the FEMA National Flood Insurance Program (NFIP) Regional Guidance that took affect September 22, 2011, with regard to the Endangered Species Act (ESA) for Federal and State listed endangered and sensitive species, and in accordance with the requirements and standards of the Puyallup Municipal Code (PMC) Critical Areas Regulations.

This biological assessment includes onsite and offsite investigations for potential impacts that may occur to threatened, endangered or critically listed species of fish or wildlife, together with their associated habitats, that are listed by the National Fish and Wildlife Service (NFWS), the National Marine Fisheries Service (NMFS), and the Washington Department of Fish & Wildlife (WDFW).

The study area or "action area" complies with ESA requirements identified in 50 CFR 402.02 as "*all areas affected directly or indirectly by the Federal action and not merely the immediate area involved in the action*". The "action area" therefore includes: 1) the project site and offsite areas within ¼ mile (see Figure 1); 2) drainage from the site (both existing and proposed) that flows to *Deer Creek* (note that any fill material placed within the project site is also included as part of the "action"); and 3) the mapped floodplain of *Deer Creek* [Note the floodplain of *Deer Creek* overflows across the project site, see Figure 4, revised 2019, *FEMA Flood Zones for Deer Creek*].

The Senior Housing Complex for Kilcha Sekyra is referred to as the "project site" in this report. It includes Parcel Nos. 0420267003, 0420267027, 0420267028, 0420267013, 0420267008, 0420267007, 0420267001. It is located along the west side of 25th Street SE, 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 (see Figure 1, *Vicinity Map*).

The storm drainage and floodplain engineering information included with this report is provided by Azure-Green Consultants, Rob Trivitt, PE. All findings of fact and conclusions made by JCA in this report include this drainage and floodplain engineering information. The existing drainage conditions and possible development impacts from surface drainage from the project site are provided in this report. Existing condition runoff calculations, peak discharge calculations, volumes and sizing for pipes and impoundments are prepared by the project engineer and provided in a separate report in accordance with current City and state standards and requirements. The engineering report will be reviewed separately for those details. That report will include floodplain mitigation measures such as compensatory storage requirements for onsite impoundments and means for routing overflow flood waters back into *Deer Creek*.

Standard of Care:

Please be advised that John Comis Associates (JCA) has provided professional services that are in accordance with the degree of care and skill generally accepted in the performance of this environmental evaluation. Fish & Wildlife Habitat Assessments together with 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 me by phone or e-mail as listed above.

Respectfully,

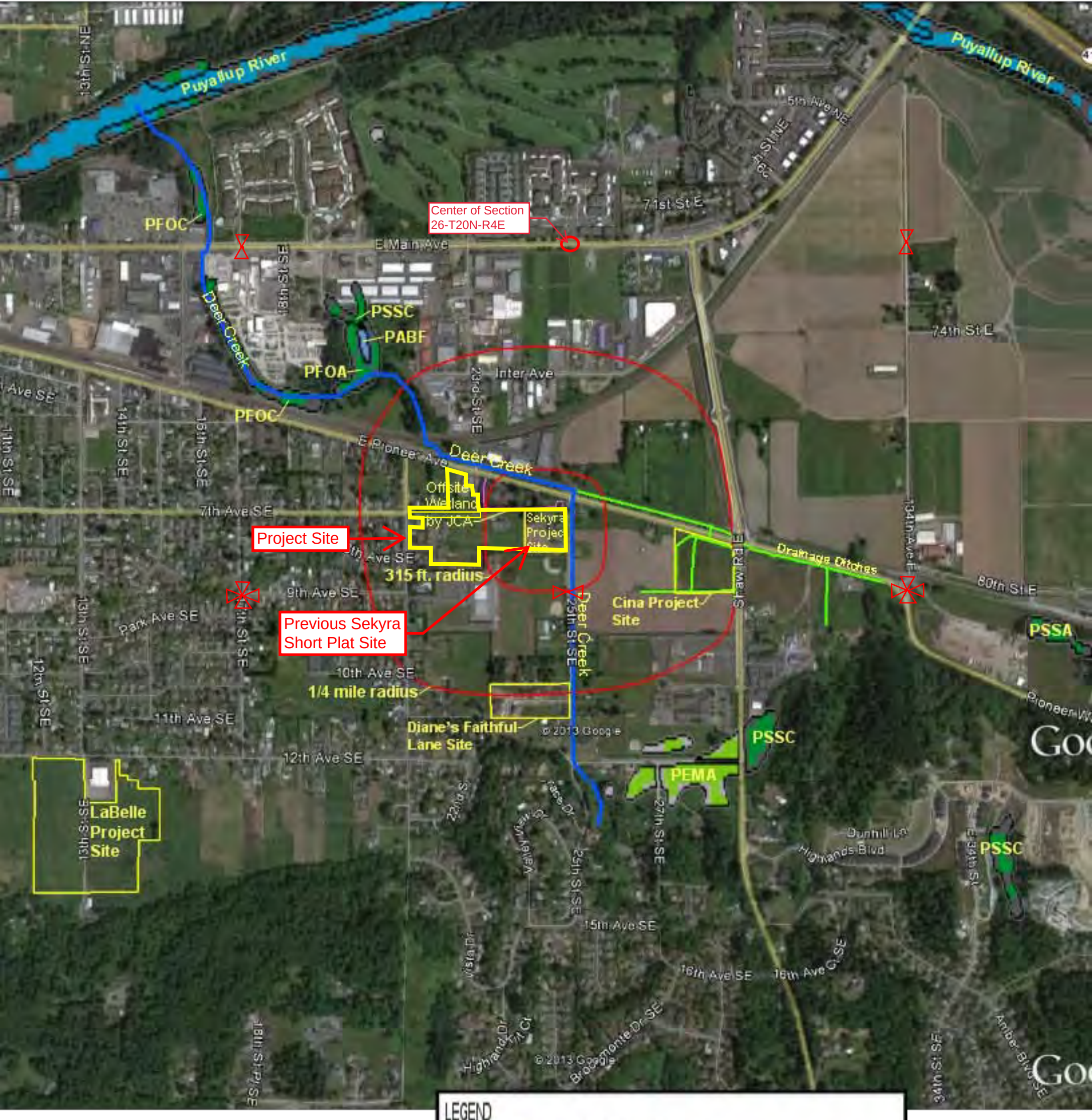
June 30, 2023

John G. Comis, PWS
Wetlands & Stream Specialist
Professional Wetland Scientist, SWS-PCP #00810

Enclosures (1 copy of each figure & appendix)
File: \Sekyra-SrHousingBio-AssessmentRptUpdate.doc (JCA Job#130214 & 211109)
Cc: Kilcha Sekyra, Owner/Applicant
629 21st Street SE, Puyallup, WA 98372, Phone: 253-381-7098, E-mail: skilcha@live.com
Azure-Green Consultants, LLC, Engineers & Surveyors, 409 E. Pioneer, Puyallup, WA 98372
Robert Trivitt, PE, Project Engineer, Phone: 253-770-3144, Fax: 253-770-3142, E-mail: rob@mailagc.com

FIGURES:

APPENDICES:



LEGEND

Yellow = **Project Site Boundary**

= 315 ft. and 1/4 mile Radii around Project Site

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

0 500 1000

1"=1000'

Fig: 1

Client/Owner:

Kilcha Sekyra Short Plat

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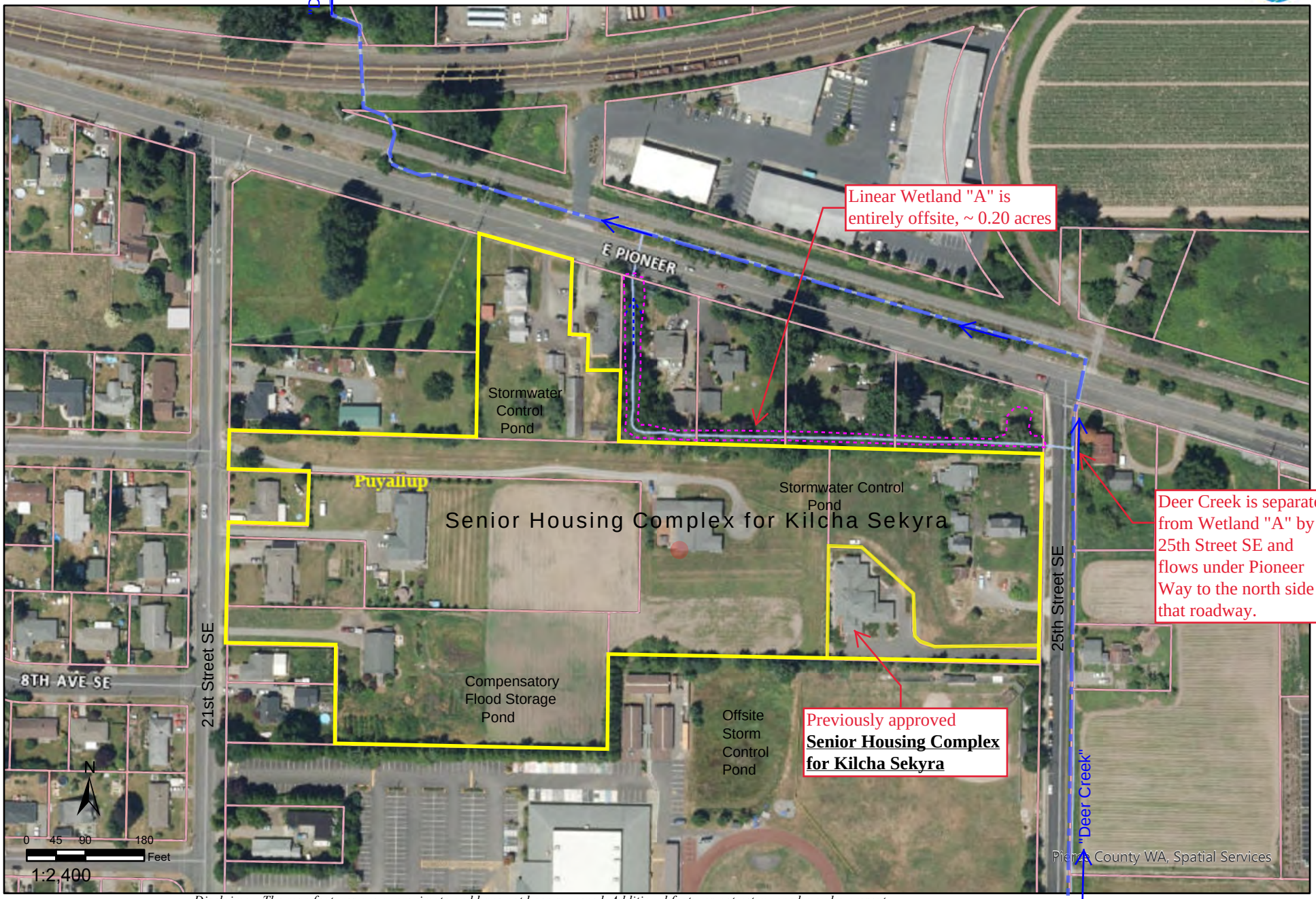
VICINITY & STUDY AREA MAP

PublicGIS

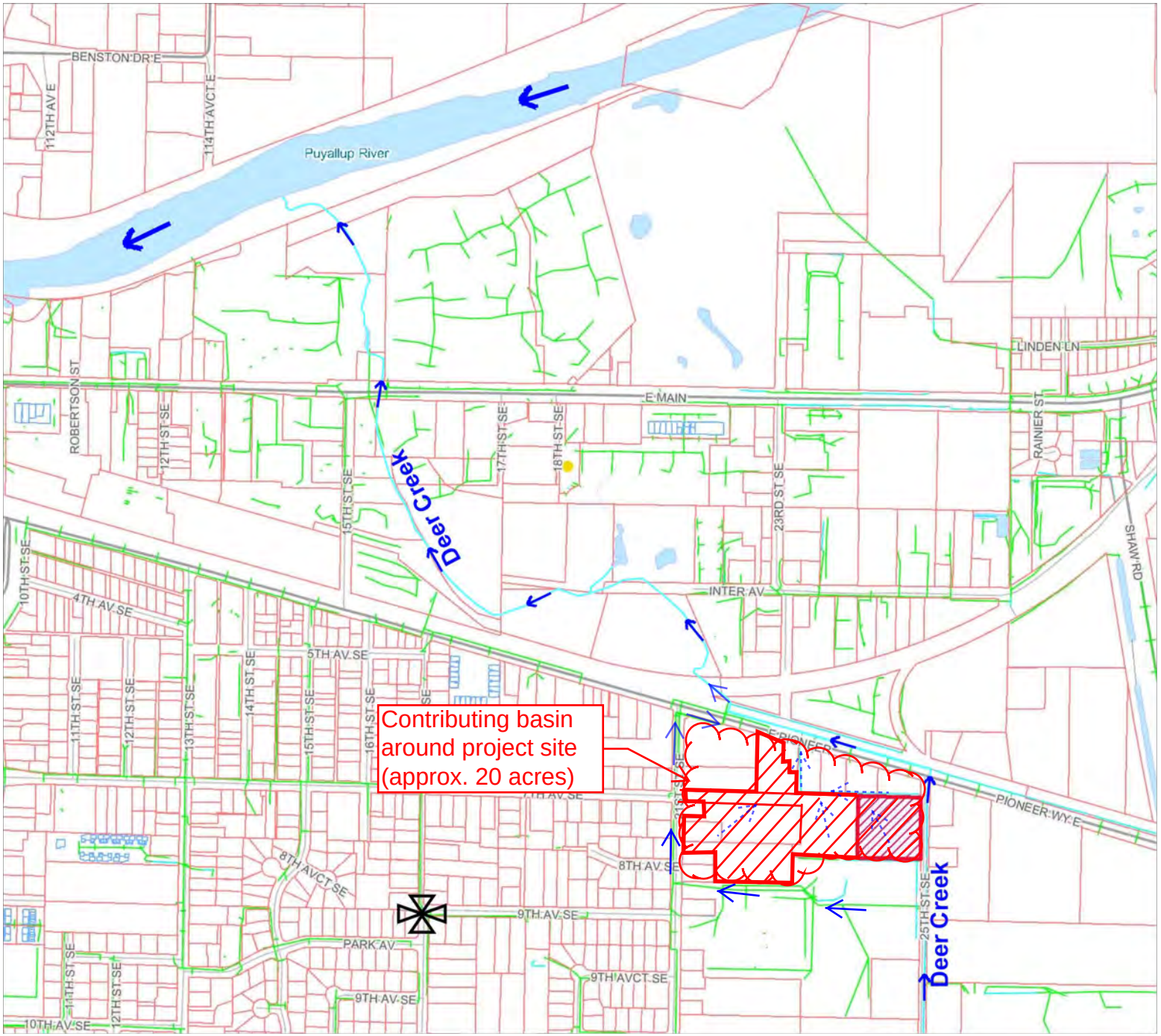


Disclaimer: The map features are approximate and have not been surveyed. Additional features not yet mapped may be present. Pierce County assumes no liability for variations ascertained by formal survey.

Date: 11/10/2021 08:53 AM

Aerial Map of Entire Project Site with Wetland Overlay

Figure 2



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
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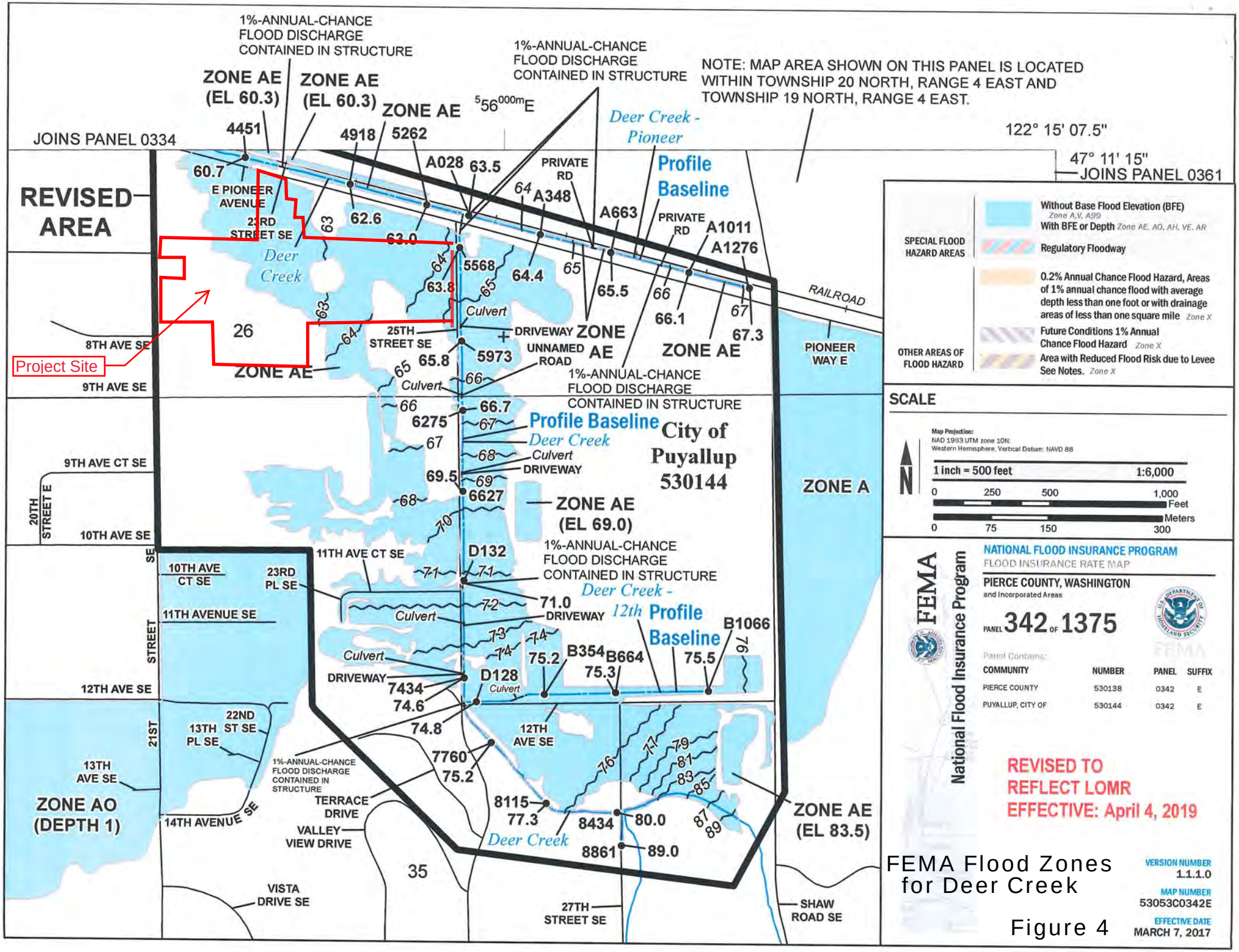
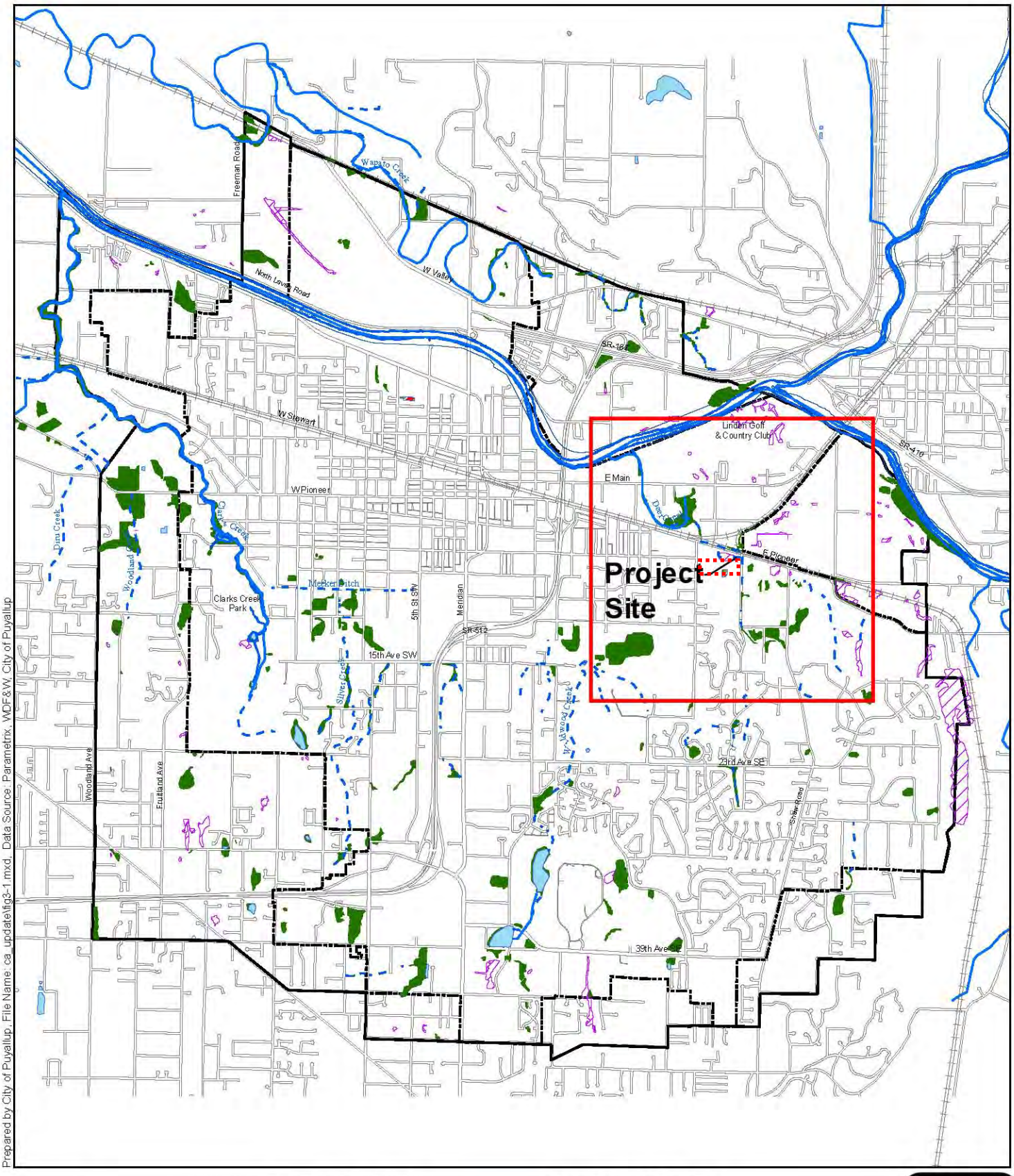
Fig:3



FEMA Flood Zones for Deer Creek

Figure 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

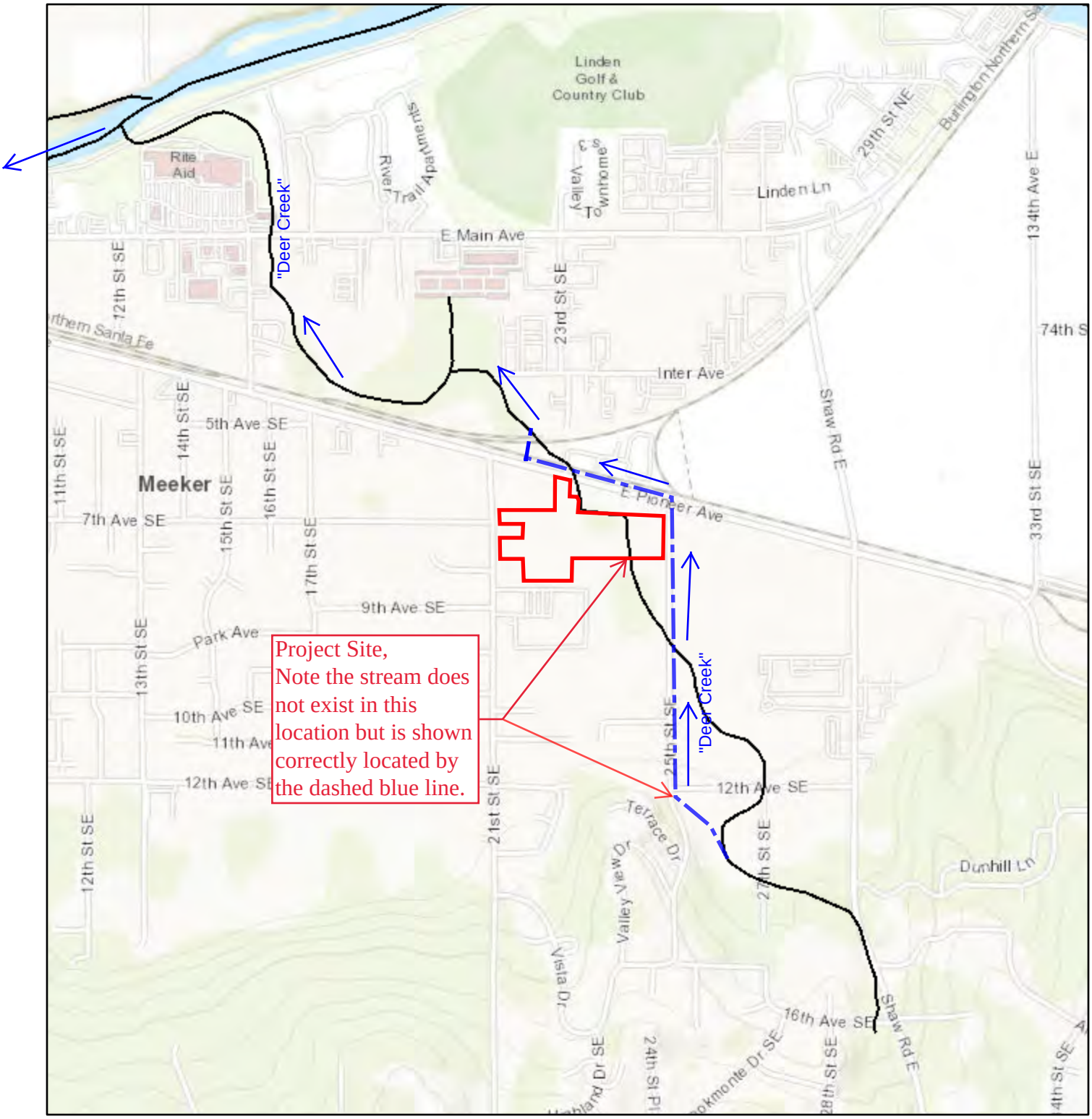
- Puyallup City Limits
- Urban Growth Boundary
- Roads
- Railways
- Shorelines of the State
- Streams
- Lakes / Ponds

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



November 11, 2021

1:18,056

0 0.1 0.2 0.4 mi

0 0.15 0.3 0.6 km

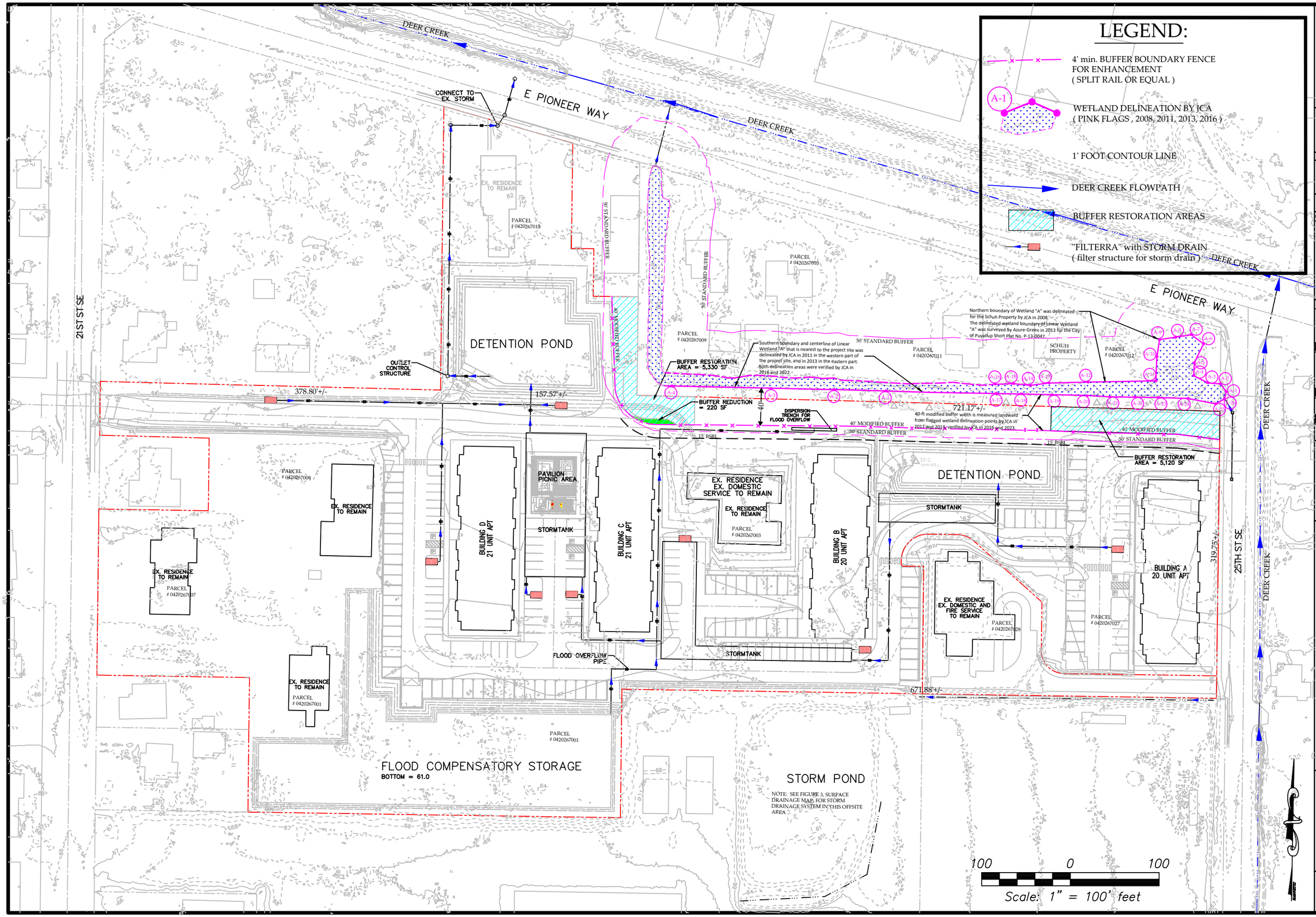
All SalmonScape Species

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 Data for Deer Creek

Figure 6



CBAY CONSULTING
sheldon@cbayconstruction.com
1307 Garfield St. S. Ste# 4
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phone 253-380-2357

Project Info

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Site Address
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Puyallup, WA 98372

Parcel
0420267003, 0420267027, 0420267028, 0420267013, 0420267008, 0420267007, 0420267001

Date
6 / 21 / 2023

Revised
-

SITE PLAN FOR SEKYRA SENIOR HOUSING COMPLEX W/ WETLAND DELINEATION & MODIFIED BUFFER PLAN

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PWS PCP JOHN G. COMIS 000810 PROFESSIONAL WETLAND SCIENTIST

FIG - 7

Revised Biological Habitat Assessment of *Deer Creek* for Project Impacts from the **Senior Housing Complex for Kilcha Sekyra** Regarding Federal and State Listed Endangered and Sensitive Species for Compliance with the Endangered Species Act (ESA)

A. Summary of Evaluation and Findings:

The following points are evaluated by JCA for a biological assessment of this area:

- Level of Use of the Project Area by Listed Species, and Distribution of Taxon of Listed Plant Species in the Project Vicinity

- Effect of the Project on Listed Species' Primary Food Stocks, Prey Species, and Foraging Areas in All Areas Influenced by the Project; including Impacts from Project Activities and Implementation that May Result in Disturbance to Listed Species and/or their Avoidance of the Project Area

Summary of Project Specific Evaluations:

- The project site does not drain directly to the *Puyallup River*. It lies within the *Puyallup River* watershed, and it is more than 1/2 mile south of the river (see Figure 1).

- The project site does not drain directly to *Deer Creek*. It appears to be directly tributary to the Linear Wetland "A" on the northeastern side of the site and tributary to the City's Storm drain system along 21st Street SE on the western side of the site (see Figure 3).

- The *Puyallup River* floodplain does not overflow into the onsite flood zone of *Deer Creek*. This is indicated by the FEMA Flood Zones for *Deer Creek* (see Figure 4 & floodplain data in Appendix 2).

- The new project site development extends south of Pioneer Way and west of 25th Street SE and east of 21st Street SE, and includes the development of onsite stormwater drainage systems to control excess stormwater runoff.

- There is a flood hazard "AE" Zone for *Deer Creek* which extends across the project site with a base flood elevation of 65 feet at the southeast side of site, and 63 feet at the northwest side (NVGD88) (see revised Figure 4 which was provided by Confluence Environmental Company in their letter dated 3/31/2023).

- Onsite and adjacent offsite habitat features do not appear to support resident fish populations and are not regulated as streams by the Puyallup Municipal Code (PMC) Critical Area Regulations. The adjacent portion of Linear Wetland "A" is regulated as a Category IV wetland with a standard 50-foot buffer, modified to 40-feet (see the separate "*Wetland Delineation and Analysis Report for the Kilcha Sekyra Short Plat*" by JCA, dated 5/10/13).

- The northern-most part of Linear Wetland "A" may provide refugia for migrating salmonids during flood events in *Deer Creek*.

- Chinook salmon and Steelhead trout are assumed to be present in *Deer Creek* based on SalmonScape data (see Figure 6). However, it is the conclusion of this evaluation that no ESA-listed species or habitats should be effected by the project's revised stormwater drainage and control system or compensatory flood storage plan.

Summary of Findings by JCA:

In compliance with current BiOp requirements, one of the following three (3) alternatives must be valid for a project for the assessment of potential impacts to listed species or designated critical habitats:
[http://www.nws.usace.army.mil/PublicMenu/Menu.cfm?sitename=REG&pagename=mainpage_ESA]

- **No effect (NE):** Literally no effect: No probability of any effect. The action is determined to have 'no effect' if there are no proposed or listed salmon and no proposed or designated critical habitat in the action area or downstream from it. This effect determination is the responsibility of the action agency to make and does not require NMFS review.

- **May Affect, Not Likely to Adversely Affect (NLAA):** Insignificant, discountable, or beneficial effects. The effect level is determined to be 'may affect, not likely to adversely affect' if the proposed action does not have the potential to hinder attainment of relevant properly functioning indicators and has a negligible (extremely low) probability of taking proposed or listed salmon or resulting in the destruction or adverse modification of their habitat. An insignificant effect relates to the size of the impact and should never reach the scale where take occurs. A 'discountable effect' is defined

as being so extremely unlikely to occur that a reasonable person cannot detect, measure, or evaluate it. This level of effect requires informal consultation, which consists of NMFS and/or USFWS concurrence with the action agency's determination.

- **May Affect, Likely to Adversely Affect (LAA):** This form is not appropriate for use with a project that is LAA listed species. Please see the Biological Assessment (BA) template on the Corps website:

The following conclusions were drawn by JCA for a biological assessment of the project and the adjacent and downstream areas:

1. The conclusion of the biological assessment is the project "**May Affect, Not Likely to Adversely Affect (NLAA)**" endangered or threatened species or critical habitats due to new development of this project site including placement of fill material within the designated Zone AE floodplain. Furthermore, JCA finds that there are no impacts to endangered, threatened or sensitive species listed by either the USFWS or the NMFS for compliance with the Endangered Species Act (ESA).

2. This assessment includes an evaluation of the Level of Use of two (2) Action Areas by Listed Species, and the Distribution of Taxon of Listed Plant Species in the project area. This assessment includes the potential for the action to affect listed species' primary food stocks, prey species, and foraging areas in all areas influenced by the initial and added project sites, including impacts from project activities that may result in disturbance to listed species and/or their habitats in the action area.

B. Background:

Photographs were taken by John Comis Associates (JCA) of ***Deer Creek*** and of the study area during various studies of the creek and wetlands in this area. Selected photographs are included with this report in Appendix 3. They show the main drainage channel of ***Deer Creek*** located just east of the project site along the east side of 25th Street SE. The object of the investigations included a "linear" wetland delineation, called "Wetland A", that extends west of 25th Street SE along an old abandoned channel of the creek. This wetland is located entirely offsite and parallel with the northern property line of the Sekyra property. It receives all the surface runoff from the central and eastern parts of the project site. The photographs taken include the Schuh Property (photo #1 thru #7 on 4/11/08), the Sekyra Property (photo #8 thru #10 on 4/22/11), and the Cascade Christian School Annex Property (photo #11 & #12 on 3/11/08).

The project site and "action area" are located south of *East Pioneer Way* and west of *25th Street SE* within the City Limits of Puyallup. There are residential and agricultural buildings constructed in parts of the property, tilled and agriculturally managed fields for row crops, and existing driveways into residences on the site from both 25th Street and from 21st Street. There are two existing nursing homes in the eastern part of the Senior Housing Complex that are owned by the applicant, Kilcha Sekyra.

Clearing and grading of the property has been done in the past for agricultural and residential uses and improvements. The existing single-family residences were constructed in accordance with applicable City of Puyallup requirements for wetlands and stream protection. A separate "*Wetland Delineation and Analysis Report*" dated May 10, 2013, is prepared by JCA and approved by the City. Applicable information for an updated "Storm Drainage Plan" is also provided by Azure Green Consultants (Robert Trivitt, PE). That plan is submitted to the City under separate cover. A final Storm Drainage Plan will be required by the City at time of building permit application.

This report includes aerial photo maps and data showing onsite and adjacent offsite areas, together with descriptions of existing physical features found in the action area that are based on field observations and analysis of current and historical aerial and topographic imagery. Please refer to the Figures 1 thru 7 and the appendices in this report, and the maps provided in the wetland delineation report for details.

Our findings, conclusions and recommendations for a biological assessment and critical habitat assessment are provided in this report in the following sections and appendices. Appendix 1 lists the species and their respective habitats that are required for analysis for a biological assessment in accordance with the Endangered Species Act (ESA). Appendix 2 provides flood plan map information to document separation between the site and the river flood hazard areas. Appendix 3 includes photographs taken by JCA that show existing onsite and offsite areas. Appendix 4 provides background information for resumes for JCA wetland and wildlife habitat consultants, and Appendix 5 provides references used specifically by JCA for the wildlife habitat analysis.

C. Potential Site Development Impacts:

Fill in the Flood Plain:

Floodplains for the project area are shown on the updated National Flood Insurance Program panel #342 of 1375 for this project area (see Figure 4). The revised FEMA Flood Zones for *Deer Creek* (Figure 4) show the Senior Housing Complex in a Zone AE with an estimated flood depth range from elevation 65 at the southeast corner to elevation 62 at the northwest side of the project

site. Please note that the flood study mapping for this area has been revised to reflect the Letter of Map Revisions (LOMR) effective April 4, 2019. The calculated flood depths in this area are based on the detailed engineering analysis by Azure-Green Consultants and summarized in this report.

Development of the site will require filling to elevate the building pads and excavations to improve site drainage. The City of Puyallup requires new building finished floors be a minimum of 1 foot above adjacent flood plain elevations or crowns of roadways. To meet minimum finished floor elevation requirements, the finished floor elevations will vary from building to building between an elevation 66 at the southeast side of the site to elevation 63 at the northwest side.

An average depth of fill will be approximately 2-4 feet at the building pads to meet minimum finished floor elevation requirements, to provide positive drainage, and to provide adequate detention depth to meet storm drainage release requirements. To maintain the driveway areas above the flood elevation and to provide positive drainage for stormwater runoff, the proposed driveways will require between 1 and 2 feet of fill. The project will not require fill for the existing residences. The total fill volume in the areas of new construction is expected to be approximately 32,233 cubic yards, with 7,811 cubic yards of excavation, for a net fill volume of 24,422 cubic yards.

To compensate for filling of floodplains in the project site, a mitigation designed is proposed by the project engineer to provide compensatory flood storage capacity in the south-central part of the project site. The compensatory flood storage pond location is shown on the aerial map (Figure 2) and site plan (Figure 7). The details for sizing and volume capacity of the pond are provided in a separate storm drainage report prepared by the project engineer.

Storm and Overflow Floodplain Drainage:

In existing conditions, runoff from the site generally sheet flows to the north into the adjacent offsite wetland designated by this study as "Linear Wetland-A". The runoff enters the wetland and is impounded until it eventually flows west and north to a large 36"x60" elliptical corrugated metal pipe culvert that crosses under East Pioneer Way and enters *Deer Creek*. The runoff from the west half of 25th Street SE flows onto the site from the street, and the east half the street drains east into *Deer Creek* and bypasses the site.

Normally, no offsite runoff appears to enter this site from the south. An existing drainage system in the adjacent school property just south of the site collects offsite runoff and conveys it west to an existing storm detention pond on the adjacent school property. The storm flow is then conveyed west and into a storm drain along 21st Street SE. This storm water then flows north in a drain in 21st Street to Pioneer Way and thence east in a storm drain in Pioneer Way to *Deer Creek*. Please refer to Figure 3 for details.

In the developed condition, runoff from the project will be collected in a closed conveyance system, routed through treatment devices ("Filterra": a filter structure for storm drains), and into a surface detention pond and underground detention storage systems as shown on the site plan, Figure 7. Release will be limited to that allowed by storm drainage regulations and released into the existing City storm system in Pioneer Way. Per the current storm drainage regulations, releases will be duration based, restricted to the pre-developed condition.

Post-development overflow floodwater routing will be provided by the engineered design to bypass floodwaters around the new buildings and into the linear Wetland "A" area to the north. The overflow waters will be passed though the wetland and back into *Deer Creek* north of Pioneer Way as shown on the site plan, Figure 7.

D. Findings and Details for the Bio-Assessment: [1]

a. A map showing the location of the site and action area; inventory data; and when the Bio-Assessment was done:

The project site location and action area are shown on the Vicinity map (Figure 1), which includes the National Wetland Inventory Map (NWI) information for this area. The details for the new updated project site are shown on the Site Plan Map (see Figure 7). These include the total of the legal parcel areas at 11.684 acres, the total of disturbed project area for storm analysis at 7.455 acres, and the proposed coverage for new roof area (delt with by a new storm system) at 75,000 sq. ft. (1.722 acres). The existing roof area that will remain and not be subject to storm water control regulations is at 21,254 sq. ft (0.488 acres). The land use for parking area is at 2.640 acres. These data are based on a land survey of the site, together with future site plans and drainage engineering by Azure-Green Consultants as shown on Figure 7.

JCA has conducted onsite and offsite investigations during normal wet weather conditions in April 2011, February 2013, and October 2021. The weather conditions were judged to be "normal" and "typical" for this late winter to early spring

[1] Please note that items a-g are taken from the Pierce County Critical Areas Regulations for stream habitats (PCC 18E.40.030) and included as applicable for this analysis. Additional items are added at the end of this section to be in accordance with the City of Puyallup and their consultant "ESA", concerning existing site conditions, hydrology, drainage, floodplains and project impacts.

seasons. Drainage patterns and hydrology indicators were present to make positive determinations for Ordinary High-Water Marks (OHWM) in offsite streams including the channel of ***Deer Creek*** (see photos in Appendix 3).

b. A detailed description of vegetation and drainage patterns onsite and adjacent to the site:

The entire site has been cleared, graded and tilled for agricultural use and single-family development. Row crops have been planted in the tilled areas of the site for many years. Vegetation has grown up in the northern part of the site along and within Wetland "A", and fences are constructed around the perimeter of the site (see photos in Appendix 3). Various non-native grasses and forbs include reed canary grass (*Phalaris arundinacea*), blackberries (*Rubus discolor and Rubus ursinus*). Dominant tree species include a small grove of black cottonwood (*Populous trichocarpa*) in the northwest side of the site, Douglas fir (*Pseudotsuga menziesii*) and big leaf maple (*Acer macrophyllum*) in the upland buffer along the wetland, mixed with various shrub species including willows (*Salix spp*.) and red osier dogwood (*Cornus stolonifera*) within the wetland.

Agricultural drainage ditches are dug for conveying surface drainage around the perimeter of the site (see Figures 3 thru 6 for locations of nearby ditches and streams). These ditches have been maintained for years. Drainage from the agricultural field collects in depressions and overflows into the offsite agricultural drainage ditch to the south of the site, and in the abandoned channel, now Wetland "A" to the north of the site. Water runoff from offsite tributary area(s) to the south is intercepted by the southern ditch and flows to the west into the City storm drain in 21st Street SE, and thence north to its confluence with *Deer Creek*. (See Figure 3 for offsite drainage and Figure 7 for onsite topography and updated storm drainage controls in this action area). The stormwater treatment devices will provide biofiltration; the stormwater detention system will reduce flow rates; and the grading plan with closed conveyance collection of runoff will reduce potential erosion and sedimentation impacts from runoff from the site into offsite wetland "A" and downstream to *Deer Creek*, which may occur during and after development of new buildings, driveways and parking areas.

Some additional habitat mitigation along the modified onsite buffer area is necessary. The onsite portion of the 50-foot-wide standard buffer is proposed to be reduced to be 40-feet-wide, measured horizontally from the offsite wetland "A" delineation line that extends along the southern side of the linear wetland. This means that a 25-foot-wide area long the northern property line that corresponds with the reduced buffer will be enhanced with native tree, shrub and ground cover vegetation that will improve the upland habitat along the southern side of the linear wetland. A buffer enhancement plan is not provided at this time but may be provided as added Figures 8 & 9 that can be included with a separate "*Wetland Buffer Enhancement Plan*" if required by the City.

c. A description of the habitat features or types that are available as compared to the habitat features that may be effected (disturbed) by the project. Describe any indirect effects on habitat. Describe if mitigation may be necessary to preserve habitat; and if mitigation is necessary, what measures would be feasible.

Mapping provided with this report (see figures and maps in Appendix 1) shows the ***Puyallup River*** (a critical habitat) is more than 1.0 mile from the "action area". There is no direct drainage from the project site to the river. The portion of *Deer Creek* nearest to the project site is designated "Type F1" water. *Deer Creek* is separated from the project site on the east side by a paved roadway, 25th Street SE, and on the north side by East Pioneer Way (see Figure 2). No stream habitat will be directly impacted by this project. Mitigation of stream buffers is not required along the eastern side of the project site due to separation from the stream by the existing roadway. It should be noted that other single-family residential projects have been approved where paved roadways effectively separate a stream channel from a project site. A 40-foot-wide modified wetland buffer (25-feet on the project site) will be enhanced along the north side of the site to protect offsite portions of the Linear Wetland "A" and enhance associated upland buffer habitat. Please refer to the original "*Wetland Delineation and Analysis Report for the Kilcha Sekyra Short Plat*" by JCA, dated May 10, 2013, for details about the wetland delineation and the standard width buffer plan, which was approved by the City under separate cover.

d. Fish and Wildlife Habitat Areas—Streams: Identify and describe any critical fish or wildlife species or habitats within or adjacent to the site and the distance of such habitats or species in relation to the proposed site development.

The U.S. Fish & Wildlife Service (USFWS) has designated critical habitats for the endangered and threatened species under the Endangered Species Act (ESA). For Washington, the species' critical habitat designation covers approximately 3,793 stream miles; 66,308 acres of lakes or reservoirs; and 754 miles of marine shoreline.[2] Please refer to Appendix 1 in this report for the complete list of ESA species prepared by the USFWS with maps that show critical habitat areas for this vicinity. Other candidate species and species of concern in Pierce County are prepared by WDFW, revised August 26, 2010.

- Sources of hydrology: Please refer to Section C above, and conceptual drainage report for descriptions of how the offsite ditch on the south intercepts offsite flow from the south. Runoff from the street frontage does sheet-flow onto the site. City regulations will require curb and gutter to be installed along the frontage and the street runoff will be directed

[2] For background on the species' listing, prior critical habitat designation, and substance of the proposed rule, see Jessica Ferrell, U.S. Fish & Wildlife Service Proposes Dramatic Expansion of Critical Habitat for Threatened Bull Trout, Marten Law News (Jan. 28, 2010); and Final Rule on Critical Habitat for Bull Trout Impacts Five Western States, by Jessica Ferrell, Martin Law News Environmental and Energy Briefing No. 238 (December 9, 2010).

into the City's storm drainage system. As a result, the only source on hydrology will be rainfall on the site. See Figures 3 and 7 in this report for details about drainage patterns including updated storm drainage system and topography.

- Onsite and offsite flow rates – Please refer to Section C above and conceptual drainage report for description of the onsite flow durations that are required to match pre-developed conditions from ½ the 2-year event through the 50-year event. The offsite flows will continue to bypass the site at their current flow rates. This drainage plan will be reviewed and approved by the City.
- Potential fish use – Please note there is no potential for fish use of onsite areas. For discussion of fish use in the adjacent offsite Wetland "A", refer to the following discussions regarding connection to other regulated streams and presence of salmon species.
- Connection to other regulated streams – Please note that the large roadside ditch along the east side of 25th Street SE contains *Deer Creek*. *Deer Creek* continues south (upstream) along the east side of 25th Street to the terrace hillside above 12th Ave SE. The culverts that provide conveyance for flows in *Deer Creek* apparently do not block passage of anadromous fish passage upstream to 12th Ave. SE. Data obtained by "ESA" from the "*Washington Priority Habitats and Species*" (WDFW 2011) indicates that some coho salmon have been observed in the upstream reach of the creek. However, based on our personal communications with the WDFW area biologist and our personal field observations of this drainage channel over several years during various studies, it does not appear to confirm this information for this area (see various references in Appendix 5).

e. Species Distribution: Describe information received from biologists with special expertise on the species or habitat type, such as WDFW, Tribal, USFS, or other local, regional, federal biologist and/or plant ecologist. Include any such conversations in the habitat assessment and cite as personal communication.

Deer Creek is a regulated stream in accordance with the City of Puyallup Municipal Code (PMC 21.06.1010, "Stream designation, mapping and rating"). It is tributary to the ***Puyallup River***, which is located more than 1.0 miles north of the project site and is also a regulated by the City and WDFW. The ***Puyallup River*** does have ESA concerns for fishery habitat. It is "designated critical habitat for Bull trout (*Salvelinus confluentus*)—Coastal-Puget Sound DPS" (see maps and ESA species list in Appendix 1). This species is listed as a threatened species for habitat protection in accordance with the Federal Register.[3] However, this species is not known to use *Deer Creek* for either spawning or rearing habitat.

As stated above in the Summary of Findings, the distribution of Coho salmon in *Deer Creek* appears to extend upstream to 12th Ave. SE based on data from the "*Washington State Priority Habitats and Species*" (WDFW 2011). However, this species is not listed as endangered (see Appendix 1). Other salmonid species including Chinook salmon and Steelhead trout, are present in the *Puyallup River*, are expected to occur in *Deer Creek* and its tributaries.

Deer Creek is designated as having Chinook salmon and steelhead trout are present based on SalmonScape data (see Figure 6). The reach of *Deer Creek* located downstream of the project site appears to have no suitable habitat for Bull trout (*Salvelinus confluentus*). Coho salmon [not listed ESA species] appear to range upstream of 12th Avenue, and it is assumed that Chinook salmon and steelhead trout [both listed ESA species] are present in *Deer Creek*, based on SalmonScape data. This stream is located entirely offsite to the north and east of the project site. Furthermore, *Deer Creek* probably includes resident species of rainbow trout (*Oncorhynchus clarki* or *O. mykiss*) and sculpin (*Cottus* spp.).

The following table is a summary of NMFS listed species with analysis of distribution that focuses on Chinook salmon and steelhead trout that are both present in *Deer Creek*. The analysis includes Bull trout that are listed in the *Puyallup River* by the USFWS and do not appear in *Deer Creek*.

Table: Status for NMFS Listed Species

Common Name	Scientific Name	ESA Status	Jurisdiction	Critical Habitat Present
Puget Sound Evolutionarily Significant Unit (ESU) for Chinook salmon	*Oncorhynchus tshawytscha*	Threatened	NMFS	Yes - Puyallup River Yes – Deer Creek
Puget Sound Distinct Population Segment (DPS) for Steelhead trout	*O. mykiss*	Threatened	NMFS	Yes - Puyallup River Yes – Deer Creek
Coastal-Puget Sound DPS for Bull trout	*Salvelinus confluentus*	Threatened	USFWS	Yes - Puyallup River Not in Deer Creek

(Available at: http://www.nwr.noaa.gov/ESA-Salmon-Listings/upload/1-pgr-8-11.pdf)

The evaluation of critical habitat provided for Chinook salmon indicates that the *Puyallup River* is designated Chinook habitat and a determination of effect is made based on the 6 Chinook salmon PCEs (primary constituent elements). None of the PCEs (including PCE#2 - Freshwater rearing sites with water quantity and *floodplain* connectivity) is affected by the

[3] http://www.fws.gov/pacific/news/news.cfm?id=2144374635 USFWS, Endangered and Threatened Wildlife and Plants; Revised Designation of Critical Habitat for Bull Trout in the Coterminous United States; Final Rule, 75 Fed. Reg. 63898 (Oct. 18, 2010) ("Bull trout habitat rule")

project. Information on Pacific salmon critical habitat can be accessed at:
http://www.nmfs.noaa.gov/pr/species/criticalhabitat.htm

This assessment includes both onsite and offsite field investigations for determining presence or absence of ESA species and habitats, conducted by JCA in December 2011 and March 2012, together with location data that is in accordance with FEMA NFIP Regional Guidance that took effect on September 22, 2011.

Summary of Possible Affected Species and/or Habitats:

USFWS species (according to IPaC), which are evaluated by this assessment include marbled murrelet, streaked horned lark, yellow-billed cuckoo, Bull trout, and North American wolverine. The applicable USFWS species found in this general area include Bull trout in the *Puyallup River*, but not in Deer Creek. The river is "designated critical habitat for Bull trout (*Salvelinus confluentus*)—Coastal-Puget Sound DPS" (see maps and ESA species list in Appendix 2). This species is listed as a threatened species for habitat protection in accordance with the Federal Register. However, this species does not use *Deer Creek* for either spawning or rearing habitat.

Fish use of *Deer Creek* appear to include Chinook salmon and steelhead trout [both listed ESA species] based on SalmonScape data, together with possible resident species such as rainbow trout (*Oncorhynchus clarki* or *O. mykiss*) or sculpin (*Cottus* spp.).

Regarding other federally listed species by the USFWS possibly present in the action area, these are provided with this report in Appendix 2. This assessment includes listed salmonid species by the National Marine Fisheries Service (NMFS) shown in the table above "*that are associated with the Puyallup River and Deer Creek, together with their associated floodplains*."

Regarding other species such as marbled murrelet, streaked horned lark, yellow-billed cuckoo, and North American wolverine, these species and their habitats are not present within the action area and are not pertinent to this assessment. Please note that these species are included by reference in Appendix 2 and are considered possible candidates for projection if they are present in an action area. However, their habitats are not present and therefore not affected by this proposed action.

f. Level of use of the project area by listed animal species, and distribution of Taxon of listed plant species in the project vicinity.

There are no endangered, threatened or sensitive ANIMAL species known to inhabit the project site or the offsite areas adjacent to the site within 315 feet. This is based on our observations at the site and comparison with the *Listed and Proposed Endangered and Threatened Species and Critical Habitat; Candidate Species and Species of Concern in Pierce County, Washington* (Appendix 1). It also includes comparison with other publications by the Washington Department of Fish and Wildlife (WDFW) titled "*Washington Priority Habitats and Species*", "*Status Report on Endangered and Threatened Species*", and "*Nongame Data Systems Special Animal Species List*". The Washington lists include federally listed species identified by the Endangered Species Act (ESA); and includes "species of concern" as non-game animals.

There is no endangered, threatened or sensitive PLANT species known to exist on this site. Only the onsite area is evaluated for plant species as the adjacent offsite plant communities are not affected by this development. This is based on our observations at this site and comparison with adjacent offsite properties along the property lines using the current report by the Washington Department of Natural Resources, "Endangered, Threatened & Sensitive Vascular Plants of Washington", compiled by the Washington Natural Heritage program.

We observed deer tracks left recently along the west side of the site. This was probably due to deer foraging in an offsite orchard to the west. Deer are common to the area and considered ubiquitous. The various song birds appear to be using this site that include typical species found in this area and no ESA listed species. No waterfowl nests or nesting activity were observed in the onsite or adjacent offsite areas. No raptor nest or perch tree were observed or known to exist within 315 feet of the project site.

No other information was received from the local area WDFW biologist or Puyallup Tribal Biologist about this site. JCA recommends that no further evaluation is needed for an ESA habitat assessment for this project. Please note that we called local area WDFW biologists about fishery information for this area and were told that there are no known habitats or species of significance in this area.

g. Effect of the project on listed species' primary food stocks, prey species, and foraging areas in all areas influenced by the project; including impacts from project activities and implementation that may result in disturbance to listed species and/or their avoidance of the project area.

There are no vulnerable food stocks, prey or foraging habitat areas that will be influenced or impacted by the normal and reasonable use in this proposed project. As stated above, JCA observed evidence of browsing deer and some common song bird use of the site.

Offsite to the north, the nearest significant habitat for wildlife is within the linear Wetland "A". This habitat is located about 15 feet north of the north property line, and includes a densely forested buffer with well-established trees and shrubs along the upper bank out to the existing fence line (north property line of the project site, see photos in Appendix 3). An additional 25 feet of buffer width will be preserved onsite, to total 40 feet of buffer width. This upland buffer should be sufficient to protect the linear wetland habitat from normal and reasonable residential use in this project site. This includes filling and construction activities for a Senior Housing Complex; increased noise levels due to a new access driveway in the

northern part of the site; and minor removal of vegetation along the fenced property line. No significant effect to the offsite wetland and any ESA species should occur as a result of temporary disturbances to adjacent upland habitats in this area.

Offsite to the east, the nearest significant riparian corridor for fish and wildlife habitat is *Deer Creek*. *Deer Creek* flows seasonally in a open channel along the east side of 25th Street SE. The overall size of the channel is 4-5 feet deep by 10 feet wide at the top. The west side of the roadway is entirely cleared and mowed along the edge of 25th Street. The east side of the 25th Street to the bank of the creek is vegetated with mostly overgrown reed canary grass to the Ordinary High-Water Mark (OHWM) of the creek. The OHWM is about 14 inches above the channel bottom in this area just east of the project site. Please refer to the photographs of this area in Appendix 3.

Onsite drainage features do not constitute or provide fish habitat. Please refer to section 'C', "Site Development Impacts", in this report for details about drainage impacts and mitigation for proposed site development. Erosion or sedimentation from the development will be controlled onsite and not affect the riparian habitats associated with *Deer Creek*.

The standard stream buffer width for Type F waters is 150 feet as prescribed by the PMC. However, the existing roadway for 25th Street SE separates the project site from *Deer Creek*. Therefore, no buffer is prescribed along the east side of the project site. Existing features such as buildings and parking areas will be changed or modified along the eastern part of the site by this project action. The site will continue to drain by infiltration and overflow runoff to the north of the site (see section C above and the engineered drainage plan for details).

The *Puyallup River* is located more than 1.0 mi. north of the site. It is separated from the site a sufficient distance so that normal and reasonable use of this site for residential development, including filling, construction activities, increased noise levels, and driveway access from existing roadways, "may affect, but not likely to adversely affect (NLAA)" listed ESA species, or result in any significant disturbance to fish or wildlife habitats that may exist in this area.

h. Floodplain Development Consistency:

Physical characteristics of drainage features within and adjacent to the property are describe in section 'C', "Site Development Impacts" by the project engineer. The onsite hydrology and soil conditions are described in detail in a separate "Wetland Delineation and Analysis Report:" for this site by JCA. There are NO significant biological characteristics or habitats provided by onsite ditches or other features. These include agricultural drainage ditches that are maintained by the farmer and property owner to the south for existing and ongoing agricultural activities.

- Project description – Please refer to Section C above and the Conceptual Drainage Report for descriptions of this project that will be reviewed and approved by the City.
- Discussion of construction activities – Please refer to Section C above and the Conceptual Drainage Report for a list of the required construction activities for this project that will be reviewed and approved by the City.
- Fill areas/volumes – Please refer to Section C above and the Conceptual Drainage Report for descriptions of the area and expected volume of fill for this project that will be reviewed and approved by the City.
- Drainage changes – Please refer to Section C above and the Conceptual Drainage Report for descriptions of the existing and proposed drainage system for this project that will be reviewed and approved by the City.
- Stormwater Treatment BMP's – Please refer to Section C above and the Conceptual Drainage Report for descriptions of the rain gardens that will be used to treat runoff as reviewed and approved by the City.
- Amount of additional impervious areas – Please refer to Section C, "Site Development Impacts", above that is prepared by Azure-Green Consultants.
- Effects related to flood hydrology – Please refer to Section C above. Since natural flow paths and rates are maintained by the drainage design for this project, no impact to flood hydrology is expected after development.

There are 2 separate floodplains for the *Puyallup River* and for *Deer Creek*. The floodplain that is directly associated with this site is shown on the FEMA map for the project area and is designated "Zone AE" (see reference floodplain map provided as Figure 4). The overflow waters from the main channel of *Deer Creek* extend across the project site as "Zone AE" as shown by updated FEMA FIRM panel (Figure 4). There is no flood plain connectivity between the project site and the *Puyallup River* floodplain.

E. NFIP Regional Guidance for Compensatory Storage:

An analysis of floodplain hydrology and flood storage functions is provided as follows, as well as an analysis of fish habitat access within the floodplain (floodplain *refugia*):

a. Description of Floodplain:

The site is within an "AE" flood zone and determined to have a maximum of 1 foot of depth of flooding. The flood zone appears in the *Deer Creek* basin on FIRM maps (see Figure 4 and the maps in Appendix 2). It is generally situated in the area north of the toe of South Hill, south of Pioneer between 21st Street SE and the "S" curve of East Pioneer; and south of 12th Ave. SE between SR-512 and 21st Street SE. The potential area of flooding along *Deer Creek* has been observed by both the City and this author in past events, which generally consisted of sheet flow or small rivulet flow crossing the valley from along the toe of the terrace hillside in depressions and across lower roadways and private property. Most flooding appears to be the result of undersized culverts and storm drains within 12th Ave. SE and East Pioneer. Near the project site, the road bed of East Pioneer has been built up over the years preventing flooding from continuing north. A review of updated FIRM maps for the area between the site and the *Puyallup River*; indicates the project site flood zone is not directly connected to the *Puyallup River* flood

zone. The elevation of the nearest *Puyallup River* Flood Zone is between elevations 47 and 48 (NAVD88). The general elevation in the project site is elevation 64. It is clear from this data that there is no connection between the two flood zones.

b. Fill in Floodplain and Compensatory Storage:

The project will require filling of the site, and therefore, within the "AE" flood zone. The placement of fill in a floodplain can reduce or eliminate flood storage and *refugia* if listed species are present during flooding events. Fill associated with the project development will effectively eliminate the entire site as potential flood storage. As required by City of Puyallup, and as indicated in the updated storm drainage report by Azure-Green, the storm drainage design will include a compensatory flood storage pond in the southern part of the site, two storm water detention ponds for onsite storm water control, and a bypass system to allow any offsite runoff tributary to the site to continue to flow around the site as it does in existing conditions.

Since listed species are not present in *Deer Creek*, associated floodplains do not provide *refugia* for these species during flood events. The flood storage currently provided by the site, like other areas along *Deer Creek* south (upstream) of East Pioneer Avenue and the BNSF railroad corridor, do not provide dynamic storage or otherwise have the ability to influence water levels in the *Puyallup River* (where listed species are present).

Based on FEMA flood study maps and flood elevations in this area, overbank flooding and backwater from the *Puyallup River* are limited to the downstream-most portion of *Deer Creek*. That effected reach is approximately 500 feet downstream of the BNSF railroad culvert. Due to the nature of the "AE" flood zone, i.e., as sheet flow across the site that is disconnected from the river floodplain due to elevation differences, the inclusion of a bypass system will not result in any negative effects on floodwater storage or fish habitat functions. Given this understanding of basin and flood event dynamics, the placement of project-related fill will not negatively impact listed species in the *Puyallup River*. Therefore, no compensatory storage is recommended or should be required.

c. Stormwater Management:

A stormwater detention system will be designed by Azure-Green Engineering in accordance with the 2012 WDOE Storm Drainage Design Manual requirements.

Azure Green has designed a preliminary storm system being reviewed by the City as part of the CUP review process. Final stormwater designs will be submitted for review and approval after completion of the CUP review process.

F. Application and Review:

There has been some confusion regarding who FEMA expects to review permit-by-permit submittals. FEMA has clarified that it expects local jurisdictions to review the applicant's habitat assessment and determine what impact, if any, a proposed project will have on endangered species or their habitat. Local jurisdictions are not required to consult with NOAA-Fisheries for projects that do not require a Section 10 Incidental Take Permit. Applicants should consult directly with NOAA-Fisheries on projects with the federal nexus. Local jurisdictions are free to approach FEMA and/or NMFS for "technical assistance" at any time if the local jurisdiction feels that it is necessary or appropriate, but it is not required.

Appendix 1

Listed and Proposed Endangered and Threatened Species and Critical Habitat; Candidate Species and Species Of Concern In Pierce County, Washington

As Prepared by the U.S. Fish and Wildlife Service (USFWS) and
Washington Department of Fish and Wildlife, Revised August 26, 2010

LISTED AND PROPOSED ENDANGERED AND THREATENED SPECIES AND CRITICAL HABITAT; CANDIDATE SPECIES; AND SPECIES OF CONCERN IN **PIERCE COUNTY**
AS PREPARED BY
THE U.S. FISH AND WILDLIFE SERVICE
WASHINGTON FISH AND WILDLIFE OFFICE

(Revised August 26, 2010)

LISTED

Bull trout (*Salvelinus confluentus*) – Coastal-Puget Sound DPS
Canada lynx (*Lynx canadensis*)
Gray wolf (*Canis lupus*)
Grizzly bear (*Ursus arctos* = *U. a. horribilis*)
Marbled murrelet (*Brachyramphus marmoratus*)
Northern spotted owl (*Strix occidentalis caurina*)

Major concerns that should be addressed in your Biological Assessment of project impacts to listed species include:

1. Level of use of the project area by listed species.

2. Effect of the project on listed species' primary food stocks, prey species, and foraging areas in all areas influenced by the project.

3. Impacts from project activities and implementation (e.g., increased noise levels, increased human activity and/or access, loss or degradation of habitat) that may result in disturbance to listed species and/or their avoidance of the project area.

Arenaria paludicola (marsh sandwort) [historic]
Castilleja levisecta (golden paintbrush) [historic]
Howellia aquatilis (water howellia)

Major concerns that should be addressed in your Biological Assessment of project impacts to listed plant species include:

1. Distribution of taxon in project vicinity.

2. Disturbance (trampling, uprooting, collecting, etc.) of individual plants and loss of habitat.

3. Changes in hydrology where taxon is found.

DESIGNATED

Critical habitat for bull trout
Critical habitat for the marbled murrelet
Critical habitat for the northern spotted owl

PROPOSED

Revised critical habitat for bull trout

CANDIDATE

Fisher *(Martes pennanti)* – West Coast DPS
Mardon skipper (*Polites mardon*)
(Roy Prairie and Tacoma) Mazama pocket gopher (*Thomomys mazama* ssp. *glacialis* and *tacomensis* [historic])
Oregon spotted frog (*Rana pretiosa*)
Streaked horned lark (*Eremophila alpestris strigata*)
Taylor's checkerspot (*Euphydryas editha taylori*)
Yellow-billed cuckoo (*Coccyzus americanus*)

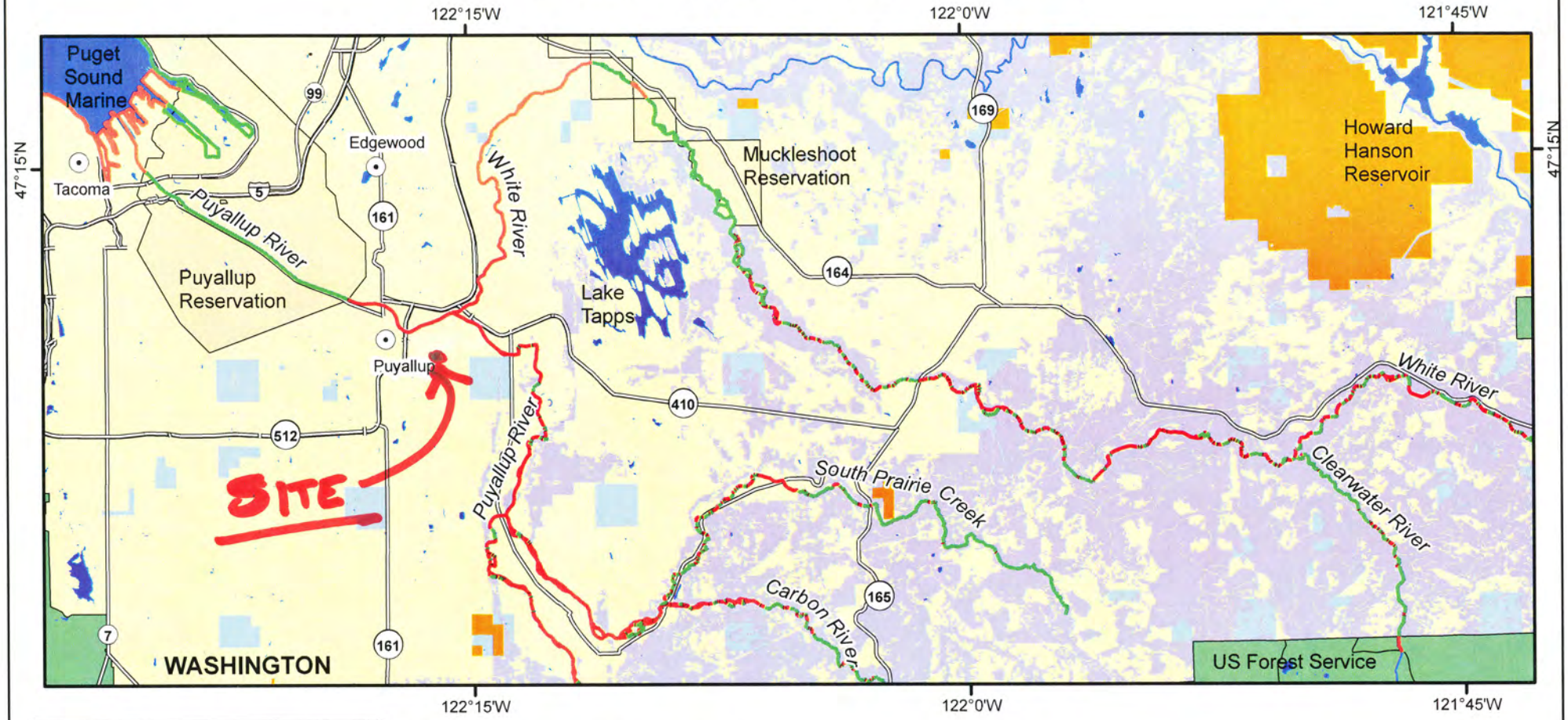
SPECIES OF CONCERN

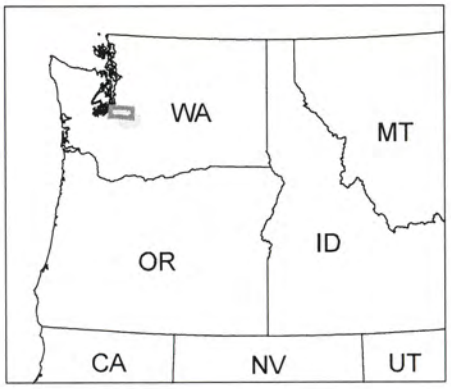
Bald eagle (*Haliaeetus leucocephalus*)
California wolverine (*Gulo gulo luteus*)
Cascades frog (*Rana cascadae*)
Fender's soliperlan stonefly (*Soliperla fenderi*)
Larch Mountain salamander (*Plethodon larselli*)
Long-eared myotis (*Myotis evotis*)
Long-legged myotis (*Myotis volans*)
Northern goshawk (*Accipiter gentilis*)
Northern sea otter (*Enhydra lutris kenyoni*)
Northwestern pond turtle (*Emys* (= *Clemmys*) *marmorata marmorata*)
Olive-sided flycatcher (*Contopus cooperi*)
Oregon vesper sparrow (*Pooectetes gramineus affinis*)
Pacific lamprey (*Lampetra tridentata*)
Pacific Townsend's big-eared bat (*Corynorhinus townsendii townsendii*)
Peregrine falcon (*Falco peregrinus*)
River lamprey (*Lampetra ayresi*)
Slender-billed white-breasted nuthatch (*Sitta carolinensis aculeata*)
Tailed frog (*Ascaphus truei*)

Valley silverspot butterfly (*Speyeria zerene bremeri*)
Western gray squirrel (*Scirius griseus griseus*)
Van Dyke's salamander (*Plethodon vandykei*)
Aster curtus (white-top aster)
Botrychium ascendens (triangular-lobed moonwort)
Castilleja cryptantha (obscure paintbrush)
Cimicifuga elata (tall bugbane)
Cypripedium fasiculatum (clustered lady's slipper)
Lathyrus torreyi (Torrey's peavine)

Critical Habitat for Bull Trout *(Salvelinus confluentus)*

Unit: 2, Puget Sound, Sub-unit: Puyallup River,
Map 1 of 3 (Lower Puyallup River)





N

0 1 2 Miles

0 2.5 5 Kilometers

Where a water body is bordered on just one side by lands qualifying it for exclusion, it is excluded only to its midpoint.

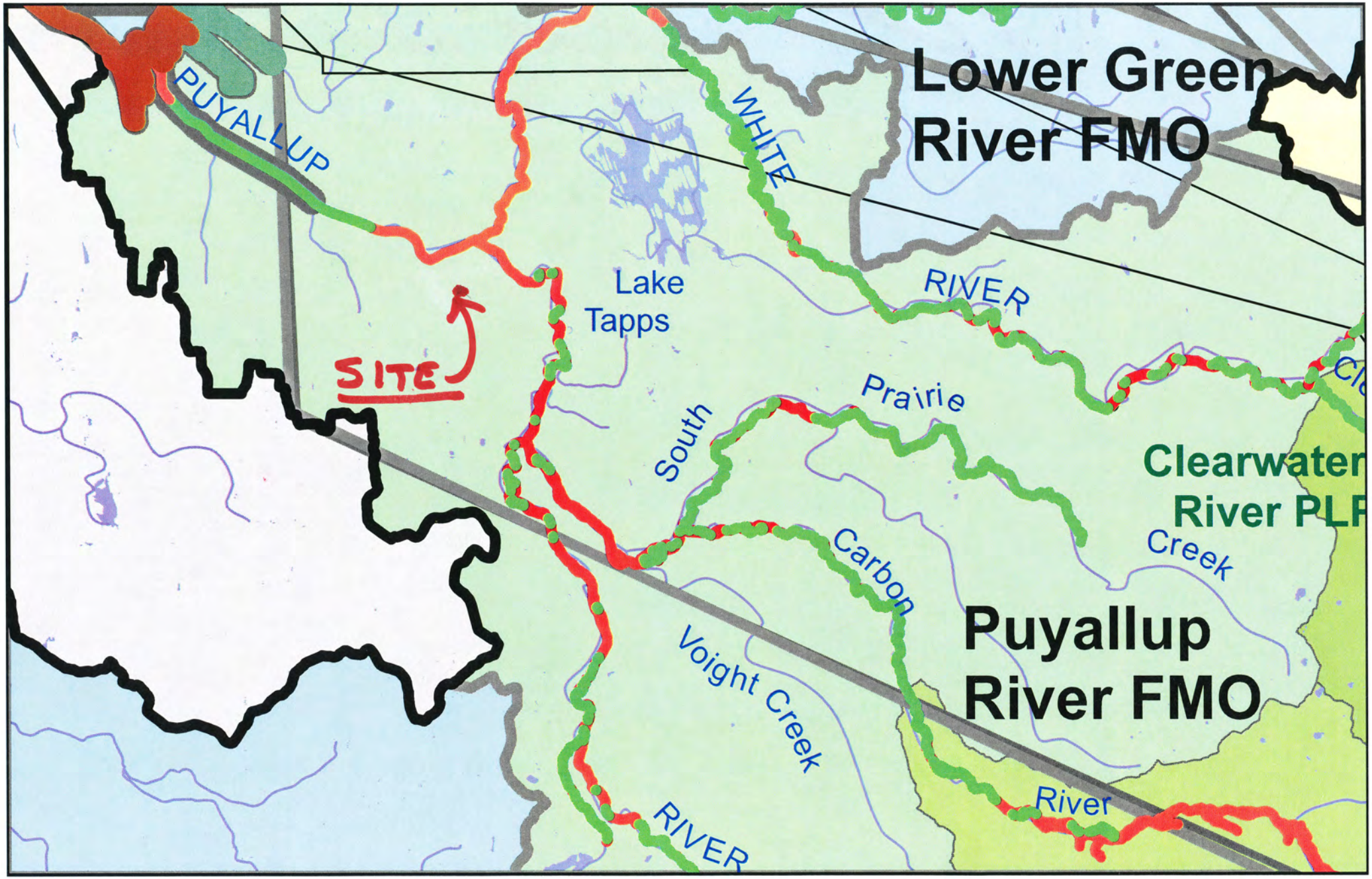
Lateral Extent of Marine Critical Habitat: The inshore extent is the mean higher high-water (MHHW) line, including the uppermost reach of the saltwater wedge within tidally-influenced freshwater heads of estuaries. Marine critical habitat extends offshore to the depth of minus 10 meters (m) (33 feet (ft)) relative to the mean low low-water (MLLW) line.

CH Streams & Marine

- Critical Habitat
- Essential Excluded Habitat

Ownership

- Federal
- Private
- State
- Tribal
- WDNR HCP
- Forest Practice HCP estimate


Lower Green
River FMO
PUYALLUP
WHITE
RIVER
Lake
Tapps
SITE
South
Prairie
Clearwater
River PLF
Creek
Carbon
Puyallup
River FMO
Voight Creek
River
RIVER

Appendix 2

MORE FLOOD STUDY DATA:

- 1987 FEMA Composite City & County Flood Hazard Zones
  By John Comis Associates, LLC

- 1980 FEMA County Flood Data for the *Puyallup River*
  By Azure-Green Consultants, LLC

- 1980 City & 1987 County Flood Zones for the *Puyallup River* & *Deer Creek*
  By Azure-Green Consultants, LLC

APPROXIMATE SCALE
500 0 500 FEET
1" = 800'

NATIONAL FLOOD INSURANCE PROGRAM

FIRM
FLOOD INSURANCE RATE MAP

PIERCE COUNTY, WASHINGTON
(UNINCORPORATED AREAS)

COMMUNITY-PANEL NUMBER
530138 0334 C

EFFECTIVE DATE:
AUGUST 19, 1987

PANEL 334 OF 1375
(SEE MAP INDEX FOR PANELS NOT PRINTED)

PIERCE COUNTY
FIRM PANEL 0353C
AUG. 19, 1987

ELEVATION REFERENCE MARKS

REFERENCE MARK	ELEVATION (FT. NGVD)	DESCRIPTION OF LOCATION
RM124	60.69	Chiseled "X" on concrete sidewalk at the southwest corner of bridge over the White River at the intersection of 142nd Avenue East, Fryar Avenue, and Puyallup Street. Established by Western Aerial Surveys, Inc.
RM127	56.85	Chiseled "X" on northeast corner of concrete headwall at bridge over Salmon Creek at Washington State Highway 167 (East Valley Highway). Established by Western Aerial Surveys, Inc.

City of Puyallup
AREA NOT INCLUDED

City of Sumner
AREA NOT INCLUDED

Project Site

SITE

ZONE A0 (DEPTH 1)
ZONE A4
ZONE A5
ZONE B
ZONE C

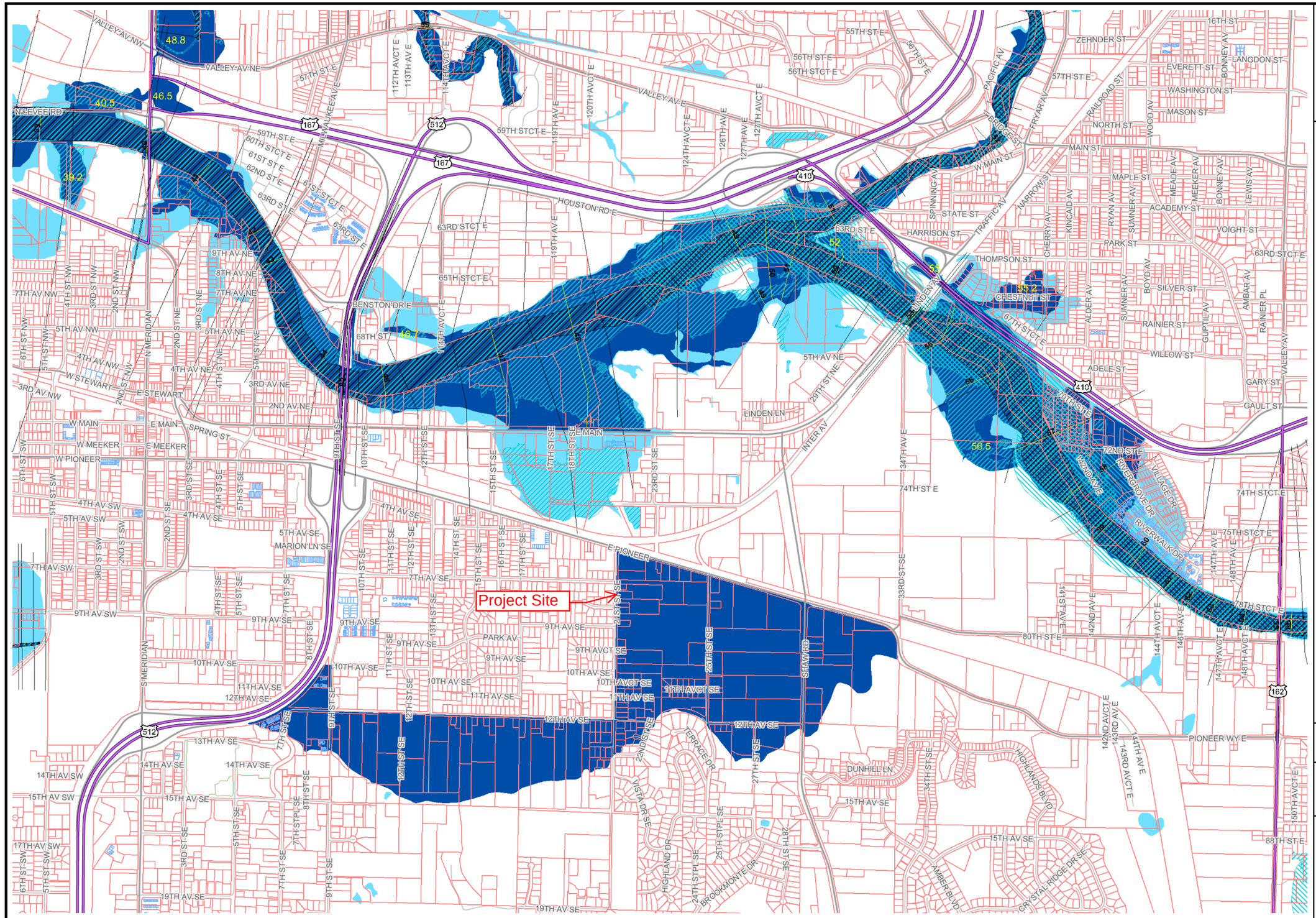
PUYALLUP RIVER
CORPORATE LIMITS
OLD CORPORATE LIMITS
CORP LIMITS
AREA NOT INCLUDED
Bank on Levee
TRAFFIC AVENUE
EAST PIONEER AVENUE
INTER AVENUE
74TH STREET EAST
134TH AVENUE EAST
142ND AVENUE EAST
146TH AVENUE EAST
GARDELLA ROAD
PIONEER WAY
BOWMAN - HILTON ROAD
RIVERSIDE
SHAW ROAD
BURLINGTON
Culvert
RM123
RM8
RM9
8TH AVENUE SOUTHEAST
9TH AVENUE SE
11TH AVE SE
12TH AVENUE SE
TERRACE DRIVE
12TH AVE SE
22ND STREET SE
14TH AVENUE SE
27TH STREET SE
15TH STREET SE
17TH ST SE
23RD STREET SE
25TH STREET SOUTHEAST
21ST STREET SOUTHEAST
19TH AVENUE SE
11TH AVE SE
R.4E
R.5E
T.20N
T.19N
26
25
30
35
36
31
40
51

PIERCE COUNTY
FIRM PANEL 530138-0350C
AUG. 19, 1987

PIERCE COUNTY
FIRM PANEL 530138-0361C
AUG. 19, 1987

1000 FEET
1" = 800'

1987, FEMA Composite City & County Flood Hazard Zones



County Flood Data

Legend

Tax Parcels
- Base Parcel
- Condominium
- Other

- County Floodplain Cross Sections
- County Floodplain BFE (NAVD 88)

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

County Coastal Hazard Areas
- 15'
- 16'
- 17'
- County Floodways
- Deep and/or Fast Flowing Floodway
- Channel Migration Zone Floodway

County Floodplains
- 1% Annual Chance Flood
- VE - Coastal High Hazard Areas
- X - 0.2% Annual Chance Flood

1980 FEMA County Flood Data for the Puyallup River by Azure-Green

Printed: 4/12/12 2:11 PM

Scale 1:15,916

0 650 1300 ft.

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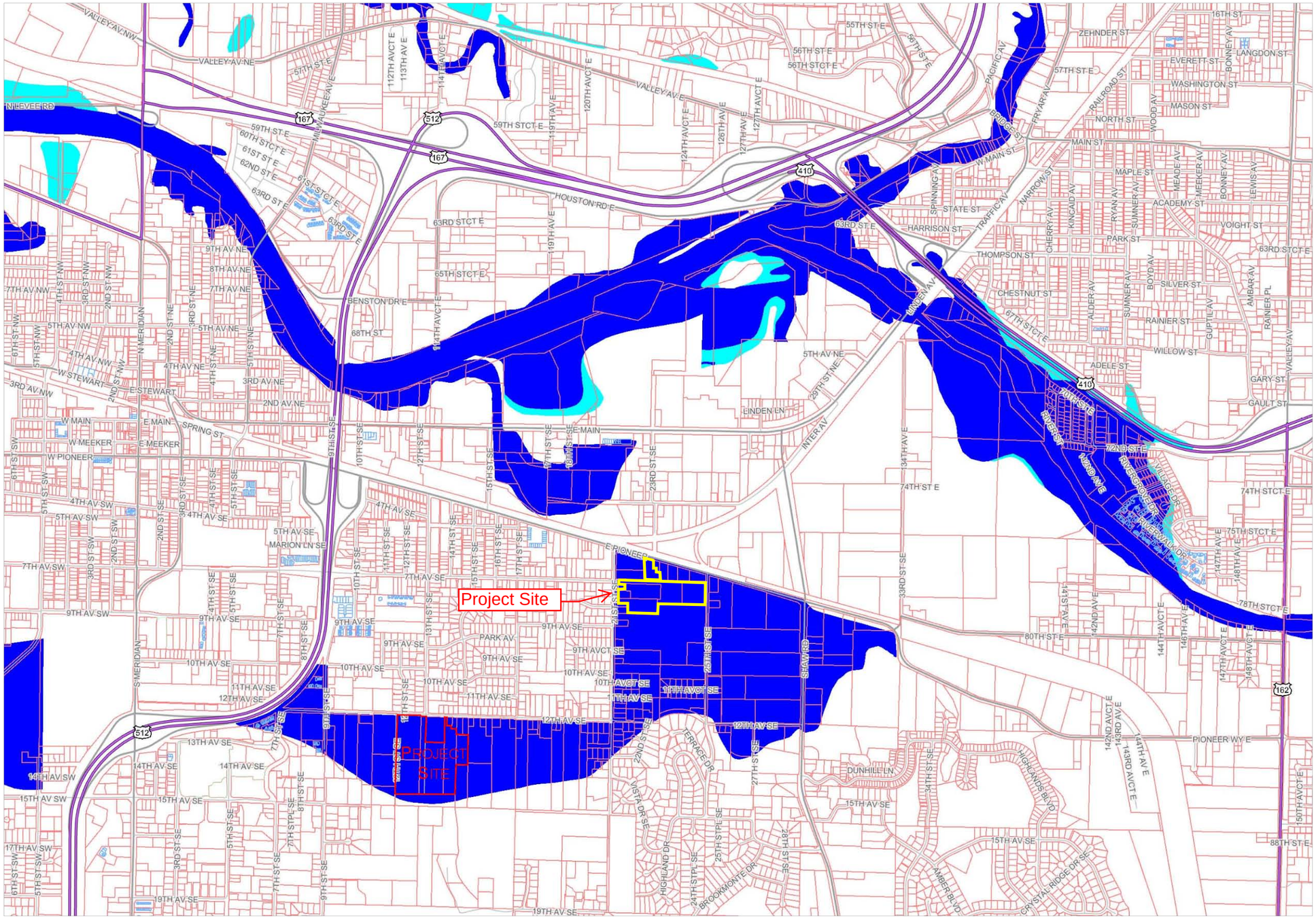
409 E Pioneer, Suite A

Puyallup, WA 98372

253-770-3144

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

1980 City & 1987 County Flood Zones for the Puyallup River & Deer Creek by Azure-Green

Printed: 4/12/12 2:03 PM

Scale 1:15,916

0 650 1300ft.

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Fig:4

Appendix 3

Photographs of Existing Onsite and Offsite Areas

By John Comis Associates
(Taken: 3/11/2008 [for the Cascade Christian School Annex], 4/11/2008 [for the Schuh Property], and 4/22/2011 [for the Sekyra Property])

INTRODUCTION

Photographs were taken of ***Deer Creek*** and the project site by John Comis Associates (JCA) on 4/11/08 for the Schuh Property (photo #1 thru #7), 4/22/11 for the Sekyra Property (photo #8 thru #10), and 3/11/08 for the Cascade Christian School Annex (photo #11 & #12). These photographs included the main drainage channel of ***Deer Creek*** located just east of 25th Street SE. The object of these investigations included a "linear" wetland, called "Wetland A", that extends west of 25th Street SE along the old abandoned channel of the creek. This wetland is located entirely offsite and parallel with the north property line of the project Sekyra property, and it receives all the surface runoff from this site. The digital photographs are on file at JCA, together with additional photographs that were taken in the project site area, and may be obtained upon request, if needed.

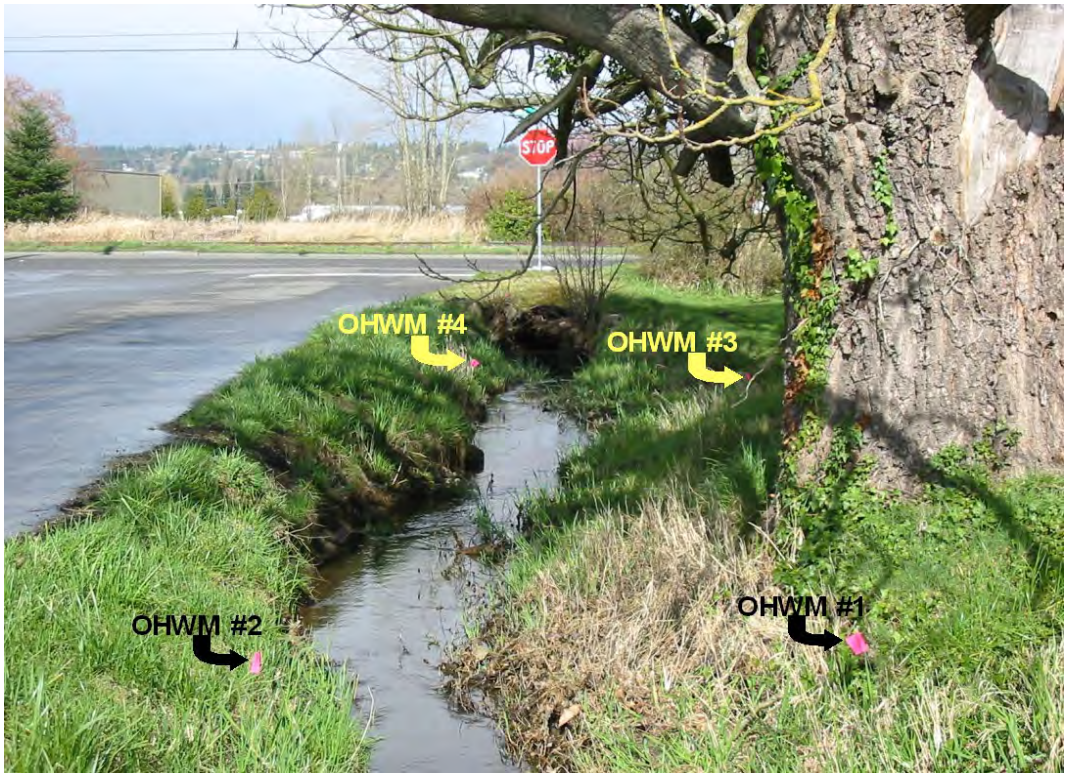

Photo #1: Looking north along the main channel of *Deer Creek* from a location on a wooden foot-bridge that was built over the channel to the adjacent residence. Notice the Ordinary High Water Marks are flagged with pink on short wire stakes. (Taken 4/11/08)

Photo #2: Looking west under an old unused culvert which has been blocked, and no longer conveys water flow to the west under 25th Street SE. Notice the Ordinary High Water Mark flag #4. (Taken 4/11/08)

Photo #3: 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 is 25th Street SE, which separates the regulated stream and its buffer from the Sekyra property. (Taken 4/11/08)

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

Photo #5: Looking southwest from the same location as Photo #4 toward the Sekyra Property, eastern site, Parcel No. 0420263103. Test Plot #4 (non-wetland) is located at the corner of that site. The pink flags mark the wetland delineation done by JCA in 2008 for the Schuh Property. (Taken 4/11/08)

Photo #6: Looking east along the central line of linear Wetland "A". The property on the right along the wood fence is the Sekyra Property, eastern site, and is entirely outside and beyond the edge of the delineated wetland done by JCA in 2008 for the Schuh Property. (Taken 4/11/08)

Photo #7: Looking east along the central line of linear Wetland "A" at the depression formed by the old abandoned stream channel. The property on the right along the wood fence is the Sekyra Senior Housing Complex Property, and it is entirely outside the edge of the delineated wetland. (Taken 4/11/08)


Photo #8: Looking west (downstream) along the old linear Wetland "A" depression. The property on the left along the wood rail fence is the Sekyra Property, western site, and it is entirely outside and beyond the edge of the delineated edge of Wetland "A" by JCA done in 2011. (Taken 4/22/2011)

Photo # 9: Looking east along the edge of offsite Wetland “A”. The Sekyra Property, western site, Parcel No. 0420267003, extends to the right of the wood rail fence, which has a measure average width of 17 feet from the edge of the delineated wetland by JCA in 2011 (pink flags tied to vegetation). (Taken 4/22/11)

Photo #10: Looking east along the northern edge of offsite Wetland “A”. The property on the left has residential uses with mowed yard and a playhouse that extend along the delineated upland side of this linear wetland. Note the old channel bottom in the depression is not flowing and has some stagnant water with accumulated oils and iron bacteria. (Taken 4/22/11)

Photo #11: Looking north (downstream) along *Deer Creek*, which is channelized in an open ditch along the east side of 25th Street SE. The pink flags are located at the "Ordinary High Water Mark" (OHWM) along the stream channel. The existing Cascade Christian School is on the left side of 25th Street SE and the CCSchool Annex property is on the right in this photo, which was the subject of a 2008 study by JCA. (Taken 3/11/08)

Photo #12: Looking south (upstream) along *Deer Creek*, which is channelized in an open ditch along the east side of 25th Street SE. The pink flags mark the OHWM along the stream channel. The plat of "Diane's Faithful Lane" is another action area by JCA that is located in the background to the right (west) of 25th Street, opposite the blue house in the background. (Taken 3/11/08)

APPENDIX 4

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 floodplain 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 floodplain 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 floodplain analysis and mapping, and writing floodplain 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); National Audubon Society; 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 5

References
For Fish & Wildlife Habitat Analysis

PROJECT-SPECIFIC REFERENCES

1. Cooke, Sarah Spear (Editor). 1997. *A Field Guide to the Common Wetland Plants of Western Washington & NW Oregon*. Seattle Audubon Society & Washington Native Plant Society, Seattle, Washington.

2. Cowardin, L.M., V. Carter, F.C. Golat and E.T. LaRoe. 1979. *Classification of Wetlands and Deep Water Habitats of the United States*. U.S. Department of Interior, Fish and Wildlife Service, Washington, D.C., Publication FWS/OBS-79/31, 131 pages. (Also referred to in the Federal Geographic Data Committee Standard, FGDC-STD-004, see reference below) http://www.npwrc.usgs.gov/resource/wetlands/classwet/index.htm (Version 04DEC1998), or http://www.fws.gov/wetlands/_documents/gNSDI/ClassificationWetlandsDeepwaterHabitatsUS.pdf

3. Federal Emergency Management Agency (FEMA) floodplain maps:
   - 1980 FEMA *Flood Insurance Rate Map—City of Puyallup, Washington*, (adopted FIRM panel)
   - 2007 FEMA *Flood Insurance Rate Map—Pierce County, Washington*, (updated preliminary FIRM panel 53053C-342E, to determine flood hazard areas including base 100-year and 500-year flood elevations and floodways)

4. Guard, B. Jennifer. 1995. *Wetland Plants of Oregon and Washington*. Lone Pine Publishing, Redmond, Washington.

5. Hitchcock, C.L., A. Cronquist. 1977. *Flora of the Pacific Northwest*. University of Washington Press, Seattle, Washington.

6. John Comis Associates. June 18, 2008. "*Wetland and Stream Analysis Report for the **Cascade** Christian School Annex*", located at 903 25th St SE, Puyallup, WA 98372, Parcel No. 0420351003, situated in the NW ¼ of the NE ¼ of Section 35-T20N-R4E, W.M., City of Puyallup, Pierce County, WA (JCA Job#080213, includes OHWM delineation of ***Deer Creek*** adjacent to the east side of 25th Street SE).

7. John Comis Associates. December 24, 2008. "*Wetland and Stream Delineation and Analysis Report for the **Schuh** Property @ Puyallup*", located at 2426 E. Pioneer Way, Puyallup, WA 98372, Parcel No. 0420267012 [Lot 4 of Short Plat #8908040263, corner lot of 25th and E. Pioneer], situated in the SE ¼ of the SW ¼ of Section 26-T20N-R4E, W.M., City of Puyallup, Pierce County, WA, (JCA Job#080225, includes OHWM delineation of ***Deer Creek*** adjacent to the east side of 25th Street SE).

8. John Comis Associates. October 20, 2011. "*Addendum2 for Biological Assessment at **Diane's Faithful Lane** for Compliance with the Endangered Species Act (ESA)*, located at 2309 11th Avenue Ct. SE, Puyallup, WA 98373, Parcel No. 6026250030, situated in the NE ¼ of the NW ¼ of Section 35-T20N-R4E, W.M., Pierce County, Washington (JCA Job#101018, includes Addendum1 dated December 22, 2010, and original report to FEMA dated October 25, 2010).

9. John Comis Associates. April 16, 2012. "*Addendum to Revised Biological Habitat Assessment for Project Impacts from **Pioneer Crossing** - Binding Site Plan to Listed Species for Compliance with the Endangered Species Act (ESA) [No Effect]*", located at 12807 E Pioneer Way, Puyallup, WA 98373, Parcel No. 0420264010 (Pioneer Way LLC property) and 0420351003 (the northern part of Cascade Christian School property), situated in a portion of the SW ¼ of the SE ¼ of Section 26-T20N-R4E, W.M., Pierce County, Washington (JCA Job#111104, includes the revised report dated March 2, 2012, and original report dated December 13, 2011).

10. John Comis Associates. Aug 23, 2012. "*Revised Biological Habitat Assessment of Project Impacts for the **LaBelle** Preliminary Plat @ Puyallup Regarding Federal and State Listed Endangered and Sensitive Species for Compliance with the Endangered Species Act ["No Effect"]*"; located at 13th St. SE & 12th Ave. SE, Puyallup, WA 98373, Parcel Nos. 042034-1135, -1161, -1185, -1187, -1188; situated in a portion of the SW ¼ and SE ¼ of the NE ¼ of Section 34-T20N-R4E, W.M., Pierce County, WA, (JCA Jobf#120420, includes revisions to original report by JCA dated June 7, 2012).

11. Larsen, E., J. M. Azerrad, N. Nordstrom, editors. 2004. *Management Recommendations for Washington's Priority Species, Volume IV: Birds*. Washington Department of Fish and Wildlife, Olympia, Washington.

12. Parametrix. 1990. *Wetland Inventory for City of Puyallup*, used to identify wetlands in this area that were mapped by the City's consultant.

13. Pojar, J., and A. MacKinnon. 1994. *Plants of the Pacific Northwest Coast*. BC Forest Service Research Program. Lone Pine Publishing, Vancouver, Canada.

14. Puyallup Municipal Code (PMC). *Environmentally Critical Areas Management Regulations*, Chapter 21.06 (Ord. 2859 § 1, 2006)

15. US Federal Emergency Management Agency (FEMA). 1987. *Flood Insurance Study Maps: Pierce County, Washington (unincorporated areas) and City of Puyallup, Washington*, Volumes 1 and 2 of 2 and FIRM/FLOODWAY maps, used to determine flood hazard areas including base 100-year and 500-year computed flood elevations and floodways in the study area.

16. US Fish and Wildlife Service (USFWS). Current. *National Wetland Inventory (NWI)*, used to identify mapped wetlands in the study area (original map data published in 1988). Digital wetland map information is maintained at http://www.fws.gov/wetlands/Data/Mapper.html

17. US Fish and Wildlife Service (USFWS). Current. *National Standards and Quality Components for Wetlands, Deepwater and Related Habitat Mapping*, maintained at http://www.fws.gov/stand/standards/dl_wetlands_National%20Standards.doc

18. US Fish and Wildlife Service (USFWS). 2010. *Endangered and Threatened Wildlife and Plants*; review of native species that are candidates for listing as endangered or threatened; annual notice of findings on resubmitted petitions; annual description of progress on listing actions. Department of the Interior, Federal Register Vol. 75, No. 217. 73pp.

19. US Office of the Federal Register. *Endangered and Threatened Wildlife and Plants*. 50 CFR 17. Code of Federal Regulations. Available at: http://www.access.gpo.gov/nara/cfr/waisidx_01/50cfr17_01.html

20. Washington Department of Fisheries (WDF). 1975. *Catalog of Washington Streams and Salmon Utilization—Volume 1*. Olympia, Washington

21. Washington Department of Fish and Wildlife (WDFW). 2005. *Washington's Comprehensive Wildlife Conservation Strategy*. Olympia, WA. Available at: http://wdfw.wa.gov/wlm/cwcs/

22. Washington Department of Fish and Wildlife (WDFW). 2008. *Priority Habitat and Species List*. Olympia, Washington. 174 pp.
Note: Document available in Fish and Wildlife Habitat Conservation Areas: *Prairies section*. Occurrence of priority species by county is available at: http://wdfw.wa.gov/conservation/phs/list/, by clicking on "Appendix 2: 2010 Species Distribution by County."

23. Washington Department of Fish & Wildlife (WDFW). 2011. *Washington Priority Habitats and Species—Streams and Salmon Utilization*. Olympia, Washington.

24. Washington Department of Fish and Wildlife (WDFW). 2012. *Threatened and Endangered Wildlife in Washington: 2011 Annual Report*. Endangered Species Section, Wildlife Program. Washington Department of Fish and Wildlife, Olympia. 180 pp.

25. Washington Department of Fish and Wildlife (WDFW). 2015. *SalmonScape*: use this WDFW application to create a map, zoom in to a WRIA of interest and select the fish distribution you wish to see. Generate a map in PDF, JPG, or PNG format: http://apps.wdfw.wa.gov/salmonscape/

26. Washington Department of Fish and Wildlife (WDFW). 2015. *StreamNet*: Salmon GIS data and maps for the Pacific Northwest are available here: http://www.streamnet.org/

27. Washington Department of Natural Resources (WDNR). 2011. *Washington Natural Heritage information system – a partial list of animals in Washington*. Available online: http://www1.dnr.wa.gov/nhp/refdesk/lists/animal_ranks.htm, accessed online: October 5, 2011.
    Note: To be used in conjunction with WDFW's *Priority Habitats and Species List*, and the federal Endangered Species Act listings. This list is statewide – it does not break down animal occurrences by county.

28. Washington Department of Natural Resources (WDNR). 2010. *Washington Natural Heritage information system – list of known occurrences of rare plants in Washington* [Pierce County]. Available online: http://www1.dnr.wa.gov/nhp/refdesk/lists/plantsxco/pierce.html, accessed online: March 5, 2016.