

# Surf City Waterpark and Lodge, Ellensburg Critical Areas Report

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## Attachments

- Attachment A Figures: Vicinity Map, Buffer Drawing, Proposed Conditions
- Attachment B Riparian Restoration Plan
- Attachment C Wetland Determination Documents
- Attachment D Site Photos

## 1.0 Introduction

Canyon Road Investors, LLC is planning the construction and operation of a waterpark and hotel on a currently vacant parcel alongside Canyon Drive and Interstate 90 in Ellensburg, Washington (see Figure 1, Vicinity Map).

This critical areas report is prepared according to the general provisions in the City of Ellensburg's (City's) code for land development and critical areas, Chapter 15.600. According to the code, projects that alter critical areas must demonstrate, using best available science, that the alterations will protect the functions and values of the critical area, with special consideration given to anadromous fish and their habitat (Chapter 15.600.100). The City lists Wilson Creek, which borders the project site, as a critical area (Chapter 15.650.010). The waterpark and lodge will be built adjacent to this creek.

Canyon Road Investors hired biologists from Northwest Environmental Consulting, LLC (NWEC) to assess the project impacts to Wilson Creek, to determine the presence of any other undocumented critical areas on the project site, and to assist with planning appropriate mitigation in the riparian buffer.

This report provides details on the project background and activities; a summary of pre-construction conditions; analysis of impacts from construction; proposed mitigation for these impacts; and a monitoring, maintenance, and contingency plan.

## 2.0 Project Description

The applicant plans to build Surf City Waterpark and Lodge, which will be an indoor waterpark with an attached hotel. The park will include indoor pools, tube slides, restaurants (restaurant, café, and bar), and an outdoor lighted parking area with 745 stalls.

The project will be built in two phases. Phase 1 will involve grading and subsequent building of a 6-story, 215-key hotel and waterpark, the parking area, an on-site stormwater retention/detention system, and landscaping. The total building footprint of Phase I will be 122,939 square feet. The existing riparian buffer will be restructured and replanted to restore functionality and species diversity according to the riparian restoration plan (Attachment B). Phase II will follow within 1 year, with the construction of an additional approximately 189-key hotel connected to the Phase I facilities via an enclosed passage. The total building footprint of Phase II will be 34,200 square feet.

## 3.0 Project Site

The project is planned at Township 17N Range 18E Section 11, within the city limits of Ellensburg, Washington. The site is a relatively flat vacant lot, with bare ground, two roads, low grasses and herbaceous plants (Photos 1, 2 and 3). The site's elevation is approximately 1,490 feet above sea level.

The site is flanked on the north by Lakeshore Way, off of Umptanum Road; to the east by Canyon Road and the Burlington Northern train tracks; to the south by Interstate 90; and to the west by Wilson Creek and 26-acre Mattoon Lake (owned by Washington Department of

Fish and Wildlife [WDFW]). Lakeshore Way and South Opportunity Street, off of Umptanum Road, currently access the property. The parcel is zoned as Commercial Highway by the City of Ellensburg.

### 3.1 Site Surface Water and Vegetation

This flat site is primarily dry, but has a small creek, Wilson Creek, flowing through the western side of the site (see Figure 3, Proposed Conditions). Wilson Creek is a tributary to the Yakima River. An irrigation ditch, Bull Ditch, runs through the site and flows intermittently. Bull Ditch is connected to Wilson Creek on the northwest corner of the project site, and runs under the Burlington Northern train tracks and Canyon Road southeast of the site. A manmade pond is present in the southwest corner of the site. Excavated during preparation of the plat, this pond is surrounded by excavated dirt piles. Off-site to the west is 26-acre Mattoon Lake, owned by WDFW.

The vegetation on the property is typical of abandoned pasture. The ground is partially covered by a mix of grasses (native and nonnative) and herbaceous weedy species, including broad-leaved plantain (*Plantago major*), narrow-leaved plantain (*P. lanceolata*), tumble mustard (*Sisymbrium altissimum*), diffuse knapweed (*Centaurea diffusa*), Canada thistle (*Cirsium arvense*), mullein (*Verbascum thapsus*), chickweed spp. (*Stellaria spp.*), aster species, pineapple weed (*Matricaria discoidea*), milkweed species, chicory (*Cichorium intybus*), clasping pepperweed (*Lepidium perfoliatum*), and cheatgrass (*Bromus tectorum*). The steep banks of Bull Ditch are primarily bare ground or covered by dense growth of reed canarygrass (*Phalaris arundinacea*) (Photo 4). Similar species are colonizing the excavated piles of soil alongside the manmade pond on the southwest corner of the property (Photos 5 and 6), with additional thistle species and a few clumps of basin wildrye (*Elymus cinereus*). Vegetation grows slightly thicker along the southern border of the property, where it abuts a slope leading up to Interstate 90. Only a few bunchgrass specimens are present on the site, in pockets near the riparian area of Wilson Creek.

In the riparian corridor alongside Wilson Creek, the vegetation is dominated by reed canarygrass, with scattered willows (*Salix spp.*), patches of weeds such as diffuse knapweed, tumble mustard, mullein, and common teasel (*Dipsacus fullonum*) (Photos 10 through 15). Native shrubs are present sporadically along the creek banks (Photo 10); most of these on the east side of the creek were planted in 2008 or 2009 during previous restoration efforts, including ponderosa pine (*Pinus ponderosa*) and spruce (*Picea*) saplings, willows, and golden currant (*Ribes aureum*). Several plantings appear to have failed. The opposite, western bank of the creek contains thicker areas of *Ribes aureum*, well-established coyote willow (*Salix exigua*), and a few large willows (Photos 10, 11 and 15).

### 3.2 Critical Areas on Site

Ellensburg's City Code requires critical area reports for any critical areas within 300 feet of a project (15.640.020). The Surf City project site includes Wilson Creek, on the west border of the property, which the City has classified as a critical area (Ellensburg City Code, Chapter 15.650.010). The project's buildings and parking lots will be within 300 feet of Wilson Creek, and some will be built along the 85-foot buffer designated for Wilson Creek in the City Code (Chapter 15.650.040 D.2.). Wilson Creek contains several fish species, including rainbow

trout (*Onchorhynchus mykiss*) and brook trout (*Salvelinus fontinalis*), Middle Columbia River steelhead (*O. mykiss*), juvenile Chinook salmon (*O. tshawytscha*), and juvenile and adult coho salmon (*O. kisutch*) (Kittitas County 2013).

The remainder of the site, including Bull Ditch, is not listed as a critical area, and is primarily on disturbed land zoned as Commercial Highway by the City.

Mattoon Lake, the 26-acre manmade lake to the west of the project and Wilson Creek, is categorized as a fish and wildlife habitat conservation area by the City because it is stocked with game fish by WDFW each spring (Chapter 15.650.010.A.5). This lake is off-site and would not be affected by the project.

### 3.1 Wetland Determination

#### Methods

NWEC biologists assessed the project site for any additional critical areas present, including wetlands. NWEC's methods included a literature review for any known wetlands or hydric soils on site. NWEC reviewed the relevant National Wetland Inventory (NWI) maps and the U.S. Department of Agriculture (USDA) Soil Survey, Kittitas County (2015). NWEC then visited the site on March 23, 2015, to walk the entire site area and to assess for wetland and hydrology conditions.

The wetland determination used the "Routine Method" described in the Washington State Wetlands Identification and Delineation Manual (Ecology 1997), the Corps of Engineers Wetland Delineation Manual (Environmental Laboratory 1987), and the Western Mountains, Valleys and Coast Region Interim Regional Supplement to the Corps of Engineers Delineation Manual (U.S. Army Corps of Engineers 2008).

#### Results

The NWI map for the area does not indicate any wetlands on or immediately adjacent to the project site (see NWI map in Attachment C, Wetland Determination Documents). NWI does indicate the 26-acre lake to the west of the project (Mattoon Lake); and shows Wilson Creek and the irrigation ditch flowing through the property (Bull Ditch). The USDA Soil Survey for the county maps most soils on the site as gravelly ashy loams (Brickmill gravelly ashy loam, 0 to 2 percent slopes and Brickmill-Nanum complex, 0-5 percent slopes, on most of the site with Kayak gravelly ashy loam, 0 to 2 percent slopes close to Wilson Creek (see Soil Map, Attachment C).

NWEC biologists walked the project site and found no indications of wetland conditions either adjacent to Wilson Creek or elsewhere on the property. The biologists dug a test pit on the bank about 18 feet to the east of Wilson Creek's ordinary high water mark (as flagged by previous surveyors) to confirm this observation. Vegetation around the test pit was primarily reed canarygrass, a facultative wetland species. However, NWEC did not observe any evidence of wetland hydrology or soils. The pit encountered the water table at approximately 3.5 feet at this site. The test pit contained clay loams that were saturated starting at 24 inches below the surface. The test plot lacked wetland hydrology and is not considered a wetland (see Wetland Determination Form in Attachment C).

### 3.2 Other Sensitive Habitat

The City of Ellensburg lists performance standards for developments in or near critical areas (Chapter 15.650.030 and 040). These include the following requirements regarding any special status species or their habitat that may be present on a project site:

- If activities are proposed adjacent to a habitat conservation area with associated special-status species, protection measures will be applied. Such activities need to be reviewed by WDFW for animal species, and Washington State Department of Natural Resources (DNR) for plant species. (15.650.040.A.2).
- Bald eagle habitat shall be protected pursuant to the Washington State Bald Eagle Protection Rules (Washington Administrative Code 232-12-292). Whenever activities are proposed adjacent to a verified nest territory or communal roost, a habitat management plan shall be developed by a qualified professional (15.650.040.A.3).

Canyon Road Investors, LLC and NWEC consulted with WDFW on any special-status species concerns on the site. No special-status wildlife or plants are suspected on the site, due to its disturbed condition and lack of any features that would attract any special-status species likely to occur in Kittitas County. During the March 23, 2015 site visit, NWEC biologists did not observe any habitat that would be associated with special-status species. Bald eagles (a State Sensitive species and Federal Species of Concern) may be present along the shoreline of Mattoon Lake, and one bald eagle was observed during the March 23 visit. However, vegetation along the lake and in the Wilson Creek buffer does not provide nesting or communal roosting habitat for the bald eagle.

### 4.0 Impacts to the Site's Critical Areas from the Project

The Surf City Waterpark will include the construction of buildings and impervious surfaces within 300 feet of Wilson Creek (see Figure 3, Proposed Conditions). The facilities are configured to meet zoning requirements.

Due to site constraints, some construction will occur adjacent to or slightly within the 85-foot buffer established by Ellensburg City Code. A FEMA 100 year flood plain is mapped on the site. In order to maintain a zero rise in the floodplain, excavation is proposed along Wilson Creek to maintain flood elevations at the site. The Code allows for some infringement on the buffer, provided that buffer averaging is implemented. Stream buffer width averaging requires the following elements (Chapter 15.650.040 D.4.):

- a. The width reduction will not reduce stream or habitat functions, including those of nonfish habitat.
- b. The width reduction will not degrade the habitat, including habitat for anadromous fish.
- c. The proposal will provide additional habitat protection.
- d. The total area contained in the riparian habitat area of each stream on the development proposal site is not decreased.
- e. The recommended stream buffer width is not reduced by more than 25 percent in any one location.

- f. The width reduction isn't located within another critical area or associated buffer.
- g. The reduced stream buffer width is supported by the best available science.

To comply with the buffer averaging requirements listed above, the riparian area adjacent to the project will have a variable edge to achieve an average of 85 feet from the stream (see Buffer Averaging drawing in Attachment A). No portion of the construction is closer than 63.75 feet (75% of 85 feet) from the ordinary high water mark along the stream. The areas between 63.75 and 85 feet are on flat ground, currently covered with non-native species of grass and herbaceous weeds. During grading and other construction, silt fencing and other Best Management Practices will be used to minimize or eliminate any impacts to the riparian area and the adjacent Wilson Creek.

The mitigation design for buffer impacts (Section 5.0, Riparian Mitigation Proposal) has been developed with the input of WDFW. WDFW has requested that the mitigation includes increased habitat complexity along Wilson Creek. To comply with this request, as well as Ellensburg City Code for buffer averaging, the mitigation plan includes enhancement of approximately 188,611 square feet of riparian zone (slightly more than the full area of an 85-foot buffer, which would be 118,598 square feet).

Enhancements include planting a variety of native trees, shrubs, and grasses; adding large woody debris (LWD) along the streambanks to add complexity in the aquatic environment; and grading within the buffer to create horizontal variations including swales that will function as non-contiguous backwater channels to Wilson Creek. These enhancements will increase habitat functions and values for both terrestrial species and anadromous fish, thus fulfilling the requirements a, b, and c in the City Code (Chapter 15.650.040 D.4). The mitigation plan is illustrated in Attachment B, and the details and effects of these changes are described in more detail in Section 5.0, Riparian Mitigation Proposal.

To create the swales and regraded buffer area, approximately 2,600 cubic yards of material will be removed from the riparian buffer, primarily in zones 2 and 5 illustrated in the Riparian Restoration Plan (Attachment B).

## **5.0 Riparian Mitigation Proposal**

### **5.1 Mitigation Strategy**

#### **Avoidance and Minimization**

The plan avoids direct impacts to Wilson Creek. Site design criteria make it impossible to stay completely out of the 85-foot buffer for Wilson Creek and maintain zero rise of floodwaters at the site. The plan minimized impacts by maintaining the minimum 63.75 foot setback for all buildings and parking lots from Wilson Creek and uses buffer averaging to maintain the minimum area required in the buffer (see Buffer Averaging drawing, Attachment A). Silt fences and other Best Management Practices will be employed to minimize impacts to the buffer area and adjacent creek. Per City Code, the riparian zone of Wilson Creek will be restored according to the Riparian Restoration Plan, which was developed with WDFW participation (Chapter 15.650.040 A) and incorporates WDFW

design concepts and features. Impacts to the stream buffer will be minimized by creating a native riparian zone.

**Compensatory Mitigation**

The City of Ellensburg allows a reduced buffer width through buffer averaging as long as the minimum buffer is not less than 75% of that required and an equal amount of area is created through buffer averaging. The proposed mitigation will meet the minimum width requirement for the riparian zone and provide slightly more area than required. Figure 2 shows the buffer averaging area.

**Mitigation Approach**

The buffer will be graded to create four lower bench areas with “backwater channels” that connect to the ordinary high water mark of Wilson Creek (see Riparian Restoration Plan, Attachment B). These benches will act as floodplains during high water events in Wilson Creek. During normal flows, the channels (swales) will not contain standing water. During high flows in Wilson Creek, these swales will fill with overflowing water, providing refuge for fish.

Areas that are not graded will be mowed and existing desirable vegetation will be preserved. Trees and shrubs will be planted to add shade for the creek and habitat for riparian wildlife. To add to habitat complexity at the site, large woody debris (LWD) will be placed in the bench areas and groups of logs with rootwads will be placed along Wilson Creek so that the root wads are in the stream and create stream habitat complexity. These logs and rootwads will be placed and anchored in a manner that avoids the excavation or disturbance of any portion of the stream bank below the ordinary high water mark. The entire buffer area will be mulched 3 inches deep, an irrigation system installed, and then planted with native trees and shrubs per the Riparian Restoration Plan (Attachment B).

Native plants will be established throughout the buffer. For planting purposes, the buffer has been divided into 5 zones. Trees and shrubs will also be planted in zones 1, 2, 3, and 4 (Table 1). Grass seed mix will be spread in zones 2 and 5 (Table 2).

Twelve species of trees will be planted (1,000 individual plantings), as well as 12 species of shrubs (approximately 3,000 individual plantings). Plantings will be 5 feet apart, and staked if necessary. Planting details and plant spacing diagrams are shown on page 2 of the Riparian Restoration Plan.

**Table 1. Native species proposed in the Riparian Restoration Plan**

Common Name	Scientific Name	Zone
<b>Trees</b>		
Black cottonwood	<i>Populus balsamifera ssp. trichocarpa</i>	1
Bitter cherry	<i>Prunus emarginata</i>	1
Quaking aspen	<i>Populus tremuloides</i>	1,4
Water birch	<i>Betula occidentalis</i>	2

Black hawthorn	<i>Crataegus douglasii</i>	1,2
Boxelder	<i>Acer negundo</i>	1
Pacific willow	<i>Salix lucida lasiandra</i>	2,3
Mountain alder	<i>Alnus incana</i>	1,2
Scoulers willow	<i>Salix scouleriana</i>	3
Bebb willow	<i>Salix bebbiana</i>	2,3
Ponderosa pine	<i>Pinus ponderosa</i>	4
Common chokecherry	<i>Prunus virginiana</i>	4
<b>Shrubs</b>		
Common snowberry	<i>Symphoricarpos albus</i>	2
Red-osier dogwood	<i>Cornus sericea</i>	2,3
Golden currant	<i>Ribes aureum</i>	1
Oceanspray	<i>Holodiscus discolor</i>	1,4
Douglas spirea	<i>Spiraea douglasii</i>	2,3
Whitestem gooseberry	<i>Ribes inerme</i>	1,4
Wax currant	<i>Ribes cereum</i>	1,4
Shrubby cinquefoil	<i>Dasiphora fruticosa ssp. floribunda</i>	1,4
Nootka rose	<i>Rosa nutkana</i>	2
Blue elderberry	<i>Sambucus nigra ssp. cerulea</i>	1,4
Saskatoon serviceberry	<i>Amelanchier alnifolia</i>	4
Mock orange	<i>Philadelphus lewisii</i>	4

**Table 2. Grass species seeded in zones 2 and 5 under the Riparian Restoration Plan**

Common Name	Scientific Name	Zone
Basin wildrye	<i>Elymus cinereus</i>	2
Blue wildrye	<i>Elymus glaucus</i>	2, 5
Idaho fescue	<i>Festuca idahoensis</i>	2
Prairie junegrass	<i>Koeleria macrantha</i>	2
Red fescue	<i>Festuca rubra</i>	2
Western mangrass	<i>Glyceria occidentalis</i>	5
Tufted hairgrass	<i>Deschampsia cespitosa</i>	5
Chamisso sedge	<i>Carex pachystachya</i>	5
Small-winged sedge	<i>Carex microptera</i>	5
Panicled rush	<i>Juncus phaeocephalus</i>	5

### Instream Improvements

In addition to plants and seeds, LWD will be placed on site to add complexity to both the swales and the aquatic habitat in Wilson Creek. Logs will be placed at two locations within the swales. These logs will be approximately 20 feet long and 12 inches in diameter, and should be anchored using duckbill earth anchors or the equivalent to prevent losing these

logs during flood events (see diagram 2, page 3 in the Riparian Restoration Plan [Attachment B]). Along the shoreline, additional 20-foot-long, 12-inch-diameter logs will be placed. These logs will have rootwads that overhang the bank, to provide shelter and shade for aquatic species. These logs should also be anchored with duckbill earth anchors, and partially buried into the bank as shown in diagram 1, page 3 in the Riparian Restoration Plan. The placement and anchoring of these logs will not disturb the creek bank below the ordinary high water mark.

### **Signage and Fencing**

Surf City Waterpark will attract many visitors that may be interested in visiting the banks of Wilson Creek, as it is directly adjacent to the park's facilities. To limit impacts from these visitors on the riparian buffer area, and to comply with the City Code's general requirements for critical areas, Chapter 15.650.030.G, the area will be fenced with low wooden fencing or other fencing that provides a visual barrier to access along most of the buffer. Similar fencing was installed in previous habitat enhancement efforts along the creek (Photos 8 and 9). Signage will also be installed requesting that visitors remain outside the sensitive areas. A walking trail and specific stream access areas will be established through the riparian area, to keep visitors in limited areas within the riparian restoration area.

## **5.2 Function and Values Improvements**

According to Ellensburg city code, Chapter 15.610.100, projects that alter critical areas (such as Wilson Creek's riparian area), must demonstrate, using best available science, that the alterations will protect the functions and values of the critical area, with special consideration to anadromous fish and their habitat (Chapter 15.600.100). The following is a discussion of functions and values the Wilson Creek riparian buffer currently provides, and how the project will change and improve these values.

Besides the natural functions of a riparian zone, the proposed riparian restoration will provide recreational opportunities at the site by increasing fish and wildlife habitat at the site. A recreational trail will be included to enhance opportunities for wildlife viewing at the site.

### **Large Woody Debris Recruitment**

An important function of an established riparian zone includes the potential for the recruitment of LWD in the form of fallen trees and tree parts that form structural elements in stream channels. LWD in streams creates complex, submerged instream habitat that provides flow refugia and essential cover for fish by providing cover and positions for favorable feeding within the stream. LWD is a significant driver for stream structure dynamics.

The existing riparian zone of Wilson Creek has very few trees that can provide LWD to the stream; therefore, the current conditions provide very low LWD recruitment functions. The proposed restoration will include LWD with rootwads in the channel to provide immediate instream habitat functions, and will add LWD in the bench areas and backwater channels. The proposed riparian plantings include some larger trees that will naturally provide the potential for LWD recruitment in the long-term. The project will improve this riparian function.

### **Sediment/Pollutant Control**

Established riparian zones also function to provide uptake of dissolved chemicals and to filter sediments from overland-runoff and flood water. The dissolved substances and filtered runoff also may provide plant nutrients may be largely incorporated in the riparian zone's biomass.

The existing riparian zone contains mostly herbaceous weedy species, which provide some filtration and nutrient uptake. The proposed riparian restoration will include a wider variety of woody and herbaceous vegetation and a much greater contour dynamic. The increased vegetation diversity and contours will increase this function by increasing detention times in the riparian zone and providing greater biomass to absorb pollutants.

### **Bank Stabilization**

Riparian vegetation functions to naturally stabilize stream banks while providing structural habitat for fisheries. Riparian vegetation can also influence water current and shoreline shape in other ways that benefit fisheries habitat by providing tree roots and brush that drapes into the water. These structures have the potential to create positions that are concealed from predators, give flow refugia, and provide advantageous positions for foraging.

The existing stream bank vegetation is mostly herbaceous and provides minimal bank stabilization functions and little to no habitat functions within the stream. The proposed enhancement includes stream bank planting mix that includes woody vegetation that is adapted to growth along the stream banks of Wilson Creek and provide overhanging and rooting vegetation within the stream channel. Woody vegetation will provide more stable stream banks due to a deeper and more substantial rooting system. The proposed restoration will increase this riparian function in the long term.

### **Wildlife Habitat/Food Sources**

Riparian zones can be very productive and provide refuge, food sources, screening functions, and migration corridors for terrestrial wildlife species. Riparian vegetation drop leaves, pollen, and aquatic insects into the stream, providing allochthonous sources of food for aquatic species. These functions are especially important for smaller streams such as Wilson Creek that do not have high levels of instream (autochthonous) production of food sources from algae production.

The current habitat in the Wilson Creek buffer is flat land with primarily grass and herbaceous species. The plant species are primarily non-native weeds that do not provide a high function for wildlife, and a lack of plant diversity does not provide much allochthonous food sources for the stream. The herbaceous vegetation also lacks refuge and screening functions for wildlife.

The proposed restoration plan will increase the functions for wildlife by providing a greater diversity of plant species. The woody vegetation will also provide better refuge and screening functions. Eventually the proposed vegetation will drape over the stream and provide allochthonous food sources for the stream. The proposed restoration plan will provide greater functions for wildlife along Wilson Creek and partially restore part of the riparian corridor in the Ellensburg area.

The riparian buffer currently serves as a corridor through which wildlife can travel. The buffer will continue to serve this function after the project enhancements, and should provide additional shelter for species moving through the area than in its pre-project state. This complies with City Code 15.650.030.B, which states that mitigation sites shall be located to preserve or achieve contiguous wildlife habitat corridors.

### **Thermal Regulation/Microclimates**

The riparian zone has the potential to provide thermal buffering for Wilson Creek. Shading of the stream provides the function of keeping summer stream temperature lower. An established continuous riparian zone can also provide microclimatic influences of the riparian forest. These influences can affect humidity, temperature, and wind speed.

The existing riparian zone does not provide much summer shading or breaks from the wind and does not create a microclimate along Wilson Creek. Once established, the proposed restoration will improve this function by provide overhanging vegetation along the stream. The established vegetation will also provide wind breaks and changes in local humidity and temperature within the riparian zone.

## **5.3 Mitigation Goals and Performance Standards**

The proposed mitigation will include grading of the riparian zone to create varied topography. The plan also includes restoring riparian vegetation and adding LWD to the graded areas and along the streambank to create instream cover and habitat complexity. The proposed restoration is shown in the Riparian Restoration Plan (Attachment C).

The goal of the riparian restoration is as follows:

### **Goal 1: Restore 2.72 acres of riparian buffer along Wilson Creek**

To complete this goal, three objectives must be met.

- Establish native forested and shrub riparian vegetation communities
- Create habitat complexity to benefit fish
- Limit invasive species coverage

Below is a description of each objective, and the performance measures that will be used to ensure each objective is met.

#### *Objective 1: Establish native forested and shrub riparian vegetation communities*

Native riparian vegetation will be established in the riparian restoration zone to increase species diversity and create riparian vegetation communities that are typical for the area. The planting will include four tree and shrub zones and one emergent zone in the backwater areas, using at least seven species of native trees and shrubs. The riparian communities will improve habitat complexity at the site.

#### **Performance Measures**

- Year 1 – Native woody species (planted and volunteer) will achieve a density of at least four plants per 100 square feet in scrub-shrub and forested wetlands. A

total survival estimate will be required during the first year monitoring.

- Year 3 – Native woody species (planted and volunteer) will achieve a density of at least four plants per 100 square feet in scrub-shrub and forested wetlands.

**Performance Standard**

- Year 5 – Native woody species will achieve a minimum 35 percent areal cover in the riparian areas and have at least seven varieties of native trees and shrubs.

*Objective 2: Create habitat complexity to benefit fish*

Large woody debris will be placed in the planting zones and also along the stream so that rootwads will be below the ordinary high water mark of Wilson Creek to provide instream habitat complexity. A total of five LWD clusters will be placed along Wilson Creek and 12 LWD pieces will be placed in the backwater areas. These features will be created from bringing LWD onto the site and anchoring them into place.

**Performance Standard**

- Year 1 – LWD clusters will be present at the riparian restoration site in Year 1.

*Objective 3: Limit invasive species coverage*

The growth of nonnative invasive plant species will be limited by shading and competition from planted trees and shrubs in the riparian zone. Plantings have been chosen to establish fast growing forested and shrub communities.

**Performance Measures**

- Years 1 through 4 – Kittitas County listed Class A weeds will not exceed 20 percent areal cover in the riparian restoration area.

**Performance Standard**

- Years 5 – Kittitas County listed Class A weeds will not exceed 20 percent areal cover in the riparian restoration area.

*Objective 3 – Limit the amount of invasive plant species*

Limit growth of nonnative invasive plant species by shading and out competing invasive species by establishing fast growing forested and scrub-shrub wetland communities.

**Performance Measures**

- Years 1 through 4 – Kittitas County listed Class A weeds will not exceed 20 percent areal cover in the riparian restoration area.

**Performance Standard**

- Years 5 – Kittitas County listed Class A weeds will not exceed 20 percent areal cover in the riparian restoration area.

## 5.4 Proposed Monitoring, Reporting and Contingency

The site will be monitored for 5 years from the time of completion of site construction by a

qualified individual(s) who is experienced in vegetation and monitoring techniques.

Valid monitoring data are critical to making meaningful management decisions that help the mitigation site meet its objectives. Monitoring plans are based on mitigation site conditions and plant community development. These factors together with the wetland mitigation objectives are to be incorporated into a site-specific monitoring plan that will be developed at the beginning of each monitoring season that will use standard vegetation sampling methodology to measure site performance standards such as line intercept methods or belt transect methods.

Quantifiable criteria presented as final-year (Year 5) performance standards are used as a basis for evaluating the success of the restoration site. Post construction vegetation monitoring of the mitigation sites will be performed once annually during the summer growing season (June through September) during years 1, 2, 3 and 5.

Surf City Water Park will maintain plantings for the five year establishment period. A 100% survival of all planting material will be required. A subset of the total area may be used to determine planting survival. The monitoring team will be responsible for taking a representative sample of the site and determining an appropriate sample size.

Annual monitoring reports will be prepared for each year monitoring takes place. Reports will include an introduction, methods, results, discussion, recommendations, and appropriate appendices with data sheets and photographs. Surf City Water Park will follow the recommendations in the monitoring reports.

## 6.0 Document Preparers

Brad Thiele	Biologist	21 years of experience	Northwest Environmental Consulting, LLC. (NVEC)
Emily Drew	Ecologist/Botanist	16 years of experience	NVEC
Paul Korsmo	Environmental Planner	30+ years of experience	NVEC

## 7.0 References

Environmental Laboratory, 1987. Corps of Engineers Wetland Delineation Manual (1987 Manual). Technical Report Y-87-1, U.S. Army Engineers Waterways Experiment Station, Vicksburg, Mississippi.

Kittitas County, 2013. Kittitas County Regional Shoreline Master Program Update – Shoreline Inventory and Characterization Report. Final, published May 2013.

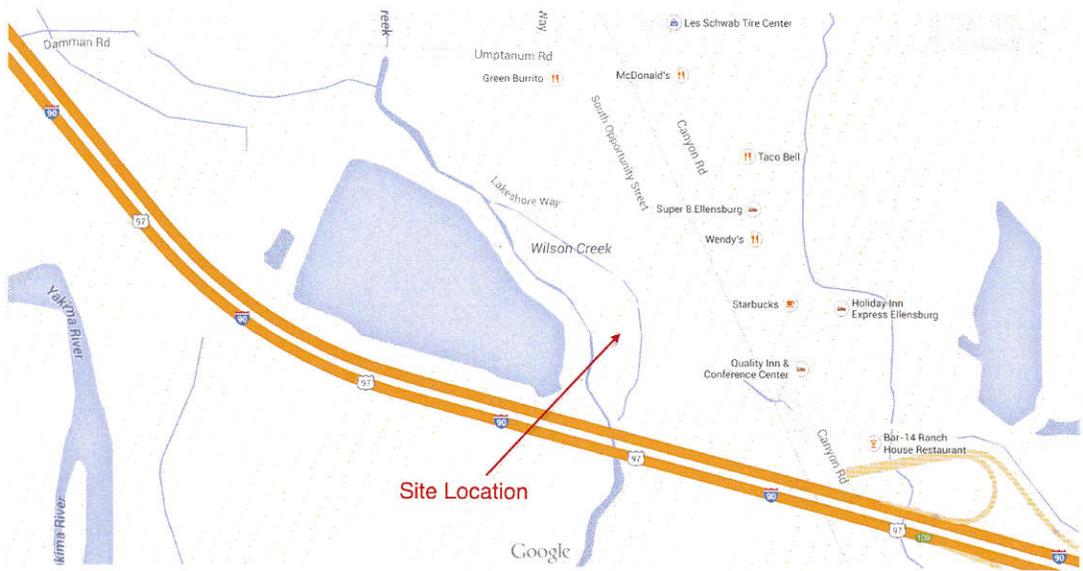
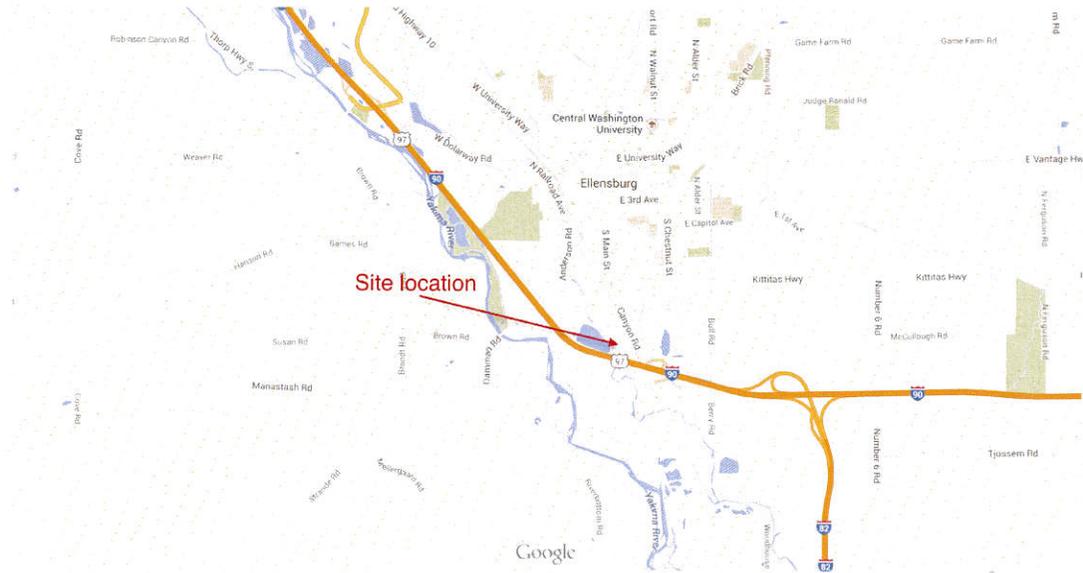
U.S. Army Corps of Engineers, 2008. Western Mountains, Valleys and Coast Region Interim Regional Supplement to the Corps of Engineers Delineation Manual. Report ERDC/EL TR-08-13. April.

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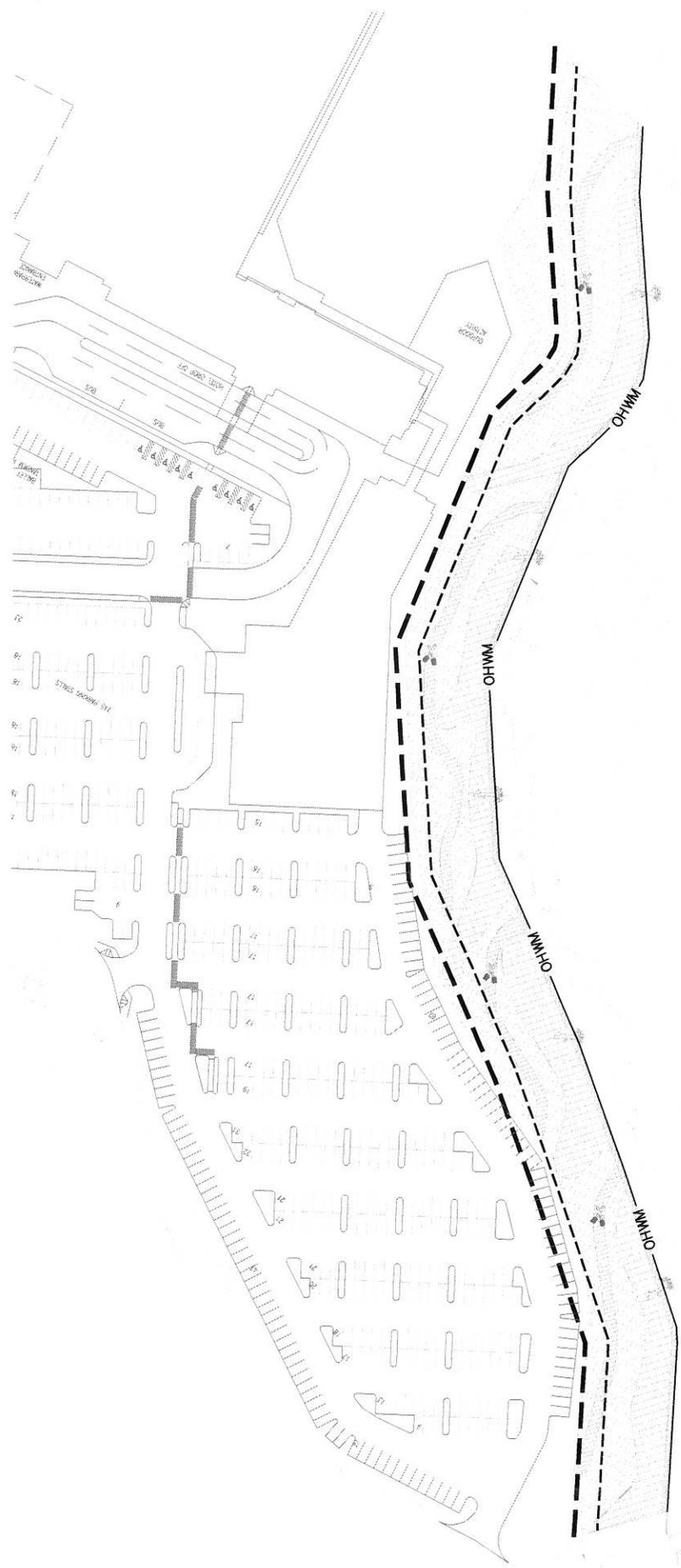
Washington State Department of Ecology (Ecology), 1997. Washington State Wetlands Identification and Delineation Manual. Ecology Publication 96-94.

US Fish and Wildlife Service, 2015. Website: Wetlands Mapper. National Wetland Inventory. Accessed March 23, 2015 at <http://wetlandsfws.er.usgs.gov>. Data last modified on October 6, 2014.

**Attachment A:  
Vicinity Map, Buffer Drawing, Proposed Conditions Map**



**Figure 1**  
**Vicinity Map -**  
**Surf City Waterpark and Lodge Site**



**LEGEND:**

--- 85' SETBACK

--- MINIMUM 63.75' SETBACK WITH BUFFER AVERAGING

— OHWM

**AREAS:**

- 85' SETBACK = 118,598 SQ FT
- RIPARIAN RESTORATION = 118,611 SQ FT



# BUFFER AVERAGING



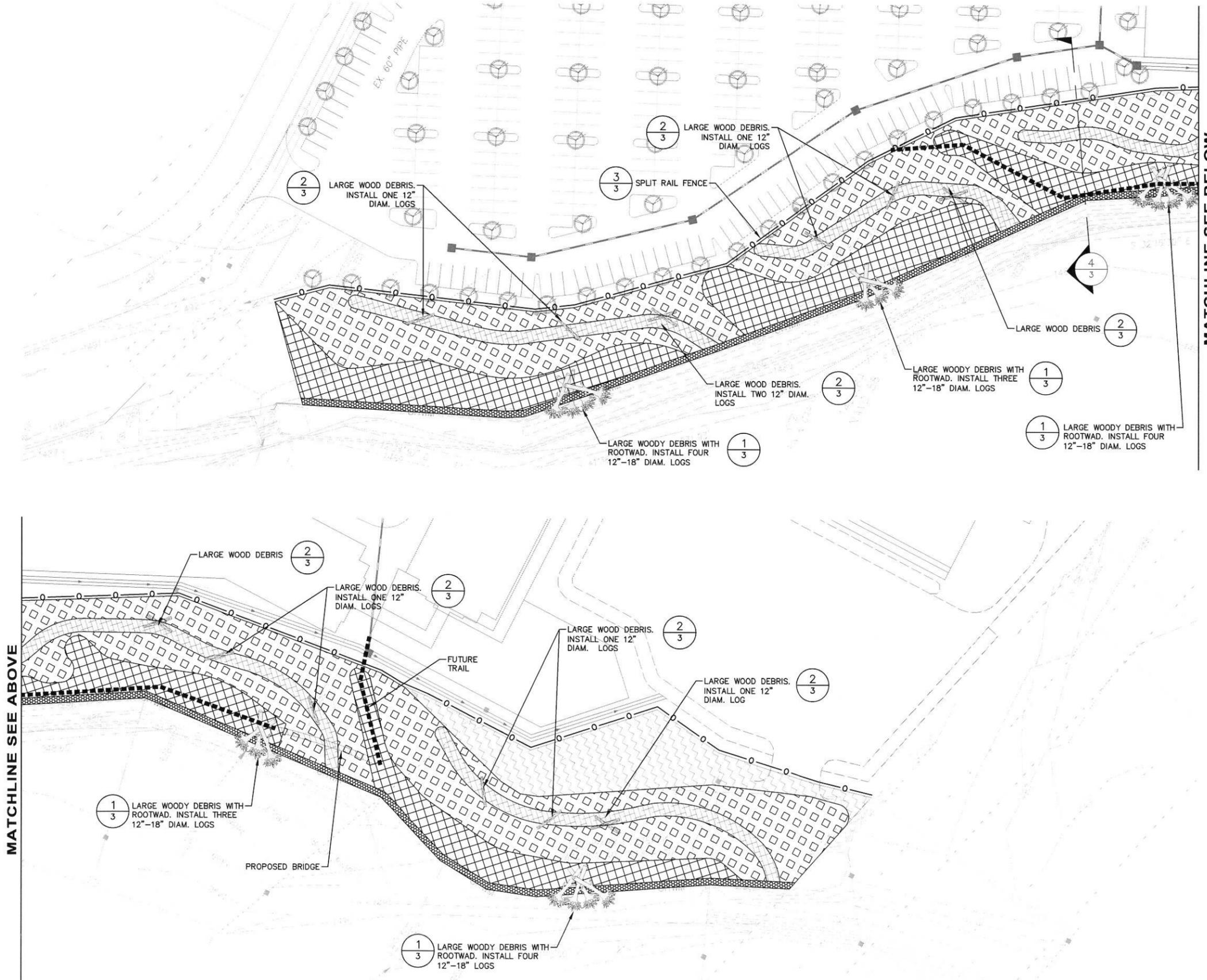
## **Attachment B: Riparian Restoration Plan**



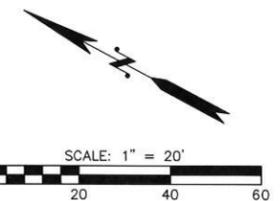
**Figure 3**  
**Proposed Conditions -**  
**Surf City Waterpark and Lodge Site**

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MATCHLINE SEE ABOVE



MATCHLINE SEE BELOW



**CONSTRUCTION NOTES:**

1. GRADE SITE AS INDICATED AND MOW UNGRADED AREAS AND PRESERVE EXISTING SHRUBS AND TREES.
2. INSTALL LARGE WOODY DEBRIS AND SPREAD SEED MIX AS INDICATED IN ZONE 2 AND 5.
3. PLACE 3 INCHES OF ARBORIST CHIPS ACROSS THE SITE AND INSTALL TEMPORARY IRRIGATION.
4. INSTALL PLANTINGS IN ZONES 1 THROUGH 5 AS INDICATED.

**GENERAL NOTES:**

1. FOR PLANTING LIST AND DETAILS SEE SHEET 2.
2. PLANTS LOCATED ON PLAN ARE SCHEMATIC AND MAY NEED ADJUSTMENT TO MEET ACTUAL FIELD CONDITIONS. WHEN A CONFLICT WITH FIELD CONDITION IS APPARENT, CONSULT WITH THE ENGINEER.

**LEGEND:**

-  ZONE 1 = 32,395 SQ FT  
PLANT THE FOLLOWING TREES AND SHRUBS, SIZES AS NOTED AT 5' O.C. AS SHOWN:  

TREES	SHRUBS
BLACK COTTONWOOD	GOLDEN CURRENT
BITTER CHERRY	OCEAN SPRAY
QUAKING ASPEN	WHITESTEM GOOSEBERRY
BLACK HAWTHORN	WAX CURRANT
BOXELDER	SHRUBBY CINQUEFOIL
MOUNTAIN ALDER	BLUE ELDERBERRY
-  ZONE 2 = 56,570 SQ FT  
PLANT THE FOLLOWING TREES AND SHRUBS, SIZES AS NOTED AT 5' O.C. AS SHOWN:  

TREES	SHRUBS
WATER BIRCH	COMMON SNOWBERRY
BLACK HAWTHORN	REDOSIER DOGWOOD
PACIFIC WILLOW	DOUG SPIREA
MOUNTAIN ALDER	ROSE
BEBB WILLOW	
-  ZONE 3 = 6,728 SQ FT  
PLANT THE FOLLOWING TREES AND SHRUBS, SIZES AS NOTED AT 5' O.C. AS SHOWN:  

TREES	SHRUBS
PACIFIC WILLOW	REDOSIER DOGWOOD
SCOUCLERS WILLOW	DOUG SPIREA
BEBB WILLOW	
-  ZONE 4 = 10,449 SQ FT  
PLANT THE FOLLOWING TREES AND SHRUBS, SIZES AS NOTED AT 5' O.C. AS SHOWN:  

TREES	SHRUBS
QUAKING ASPEN	OCEAN SPRAY
PONDEROSA PINE	WHITESTEM GOOSEBERRY
COMMON CHOKECHERRY	WAX CURRANT
	SHRUBBY CINQUEFOIL
	BLUE ELDERBERRY
	SASKATOON SERVICEBERRY
	MOKE ORANGE
-  ZONE 5 = 12,468 SQ FT  
PLANT THE FOLLOWING TREES AND SHRUBS, SIZES AS NOTED AT 5' O.C. AS SHOWN:  

SEED MIX  
(SEE SEED MIX LIST ON SHEET 2)

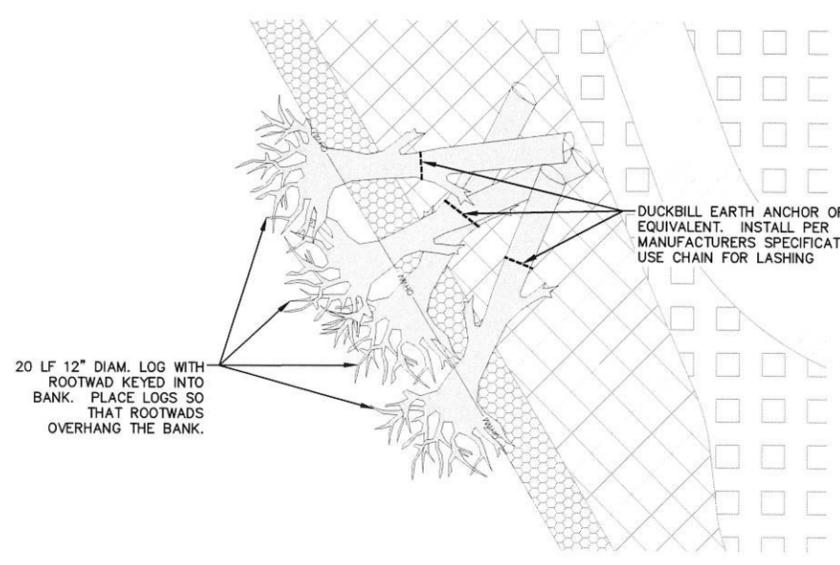


Know what's below.  
Call before you dig.

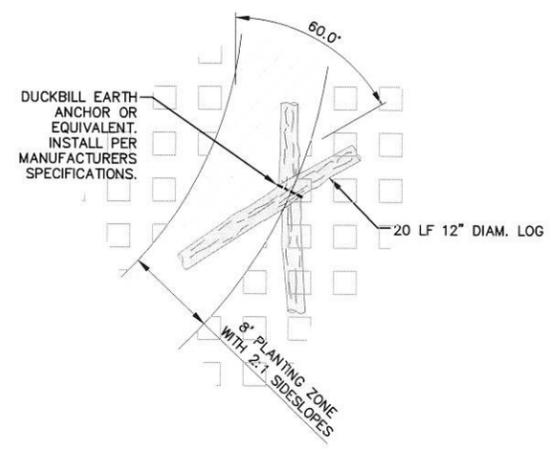
**PERMIT SUBMITTAL**

DESIGNED BY BT	 <b>OSBORN CONSULTING, INC.</b> 1800 112th Ave. NE, Suite 220E Ph (425) 451-4009 Bellevue, WA 98004 Fax (425) 451-4901					 <b>Northwest</b> Environmental Consulting, LLC	<b>SURF CITY</b> ELLENSBURG, WA RIPARIAN RESTORATION PLAN	JOB# / DWG 10-150022	DATE APRIL 2015
DRAWN BY RDH		NO.	DATE	REVISION	BY			SCALE H: 1"=20' v: N/A	SHEET 1 of 3
CHECKED BY BT									

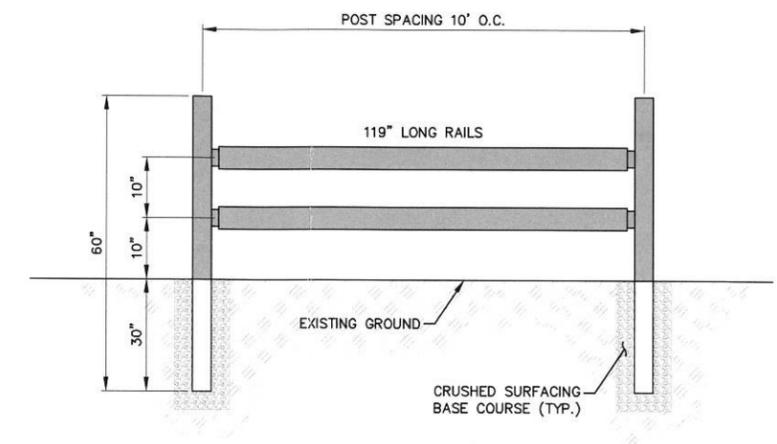
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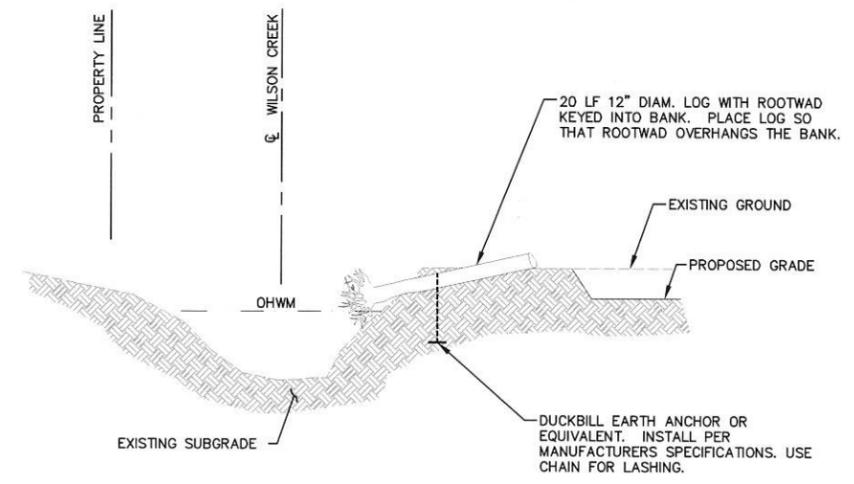
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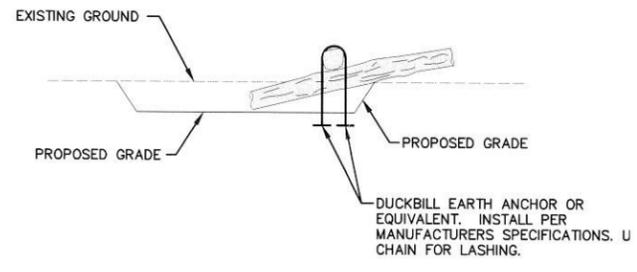
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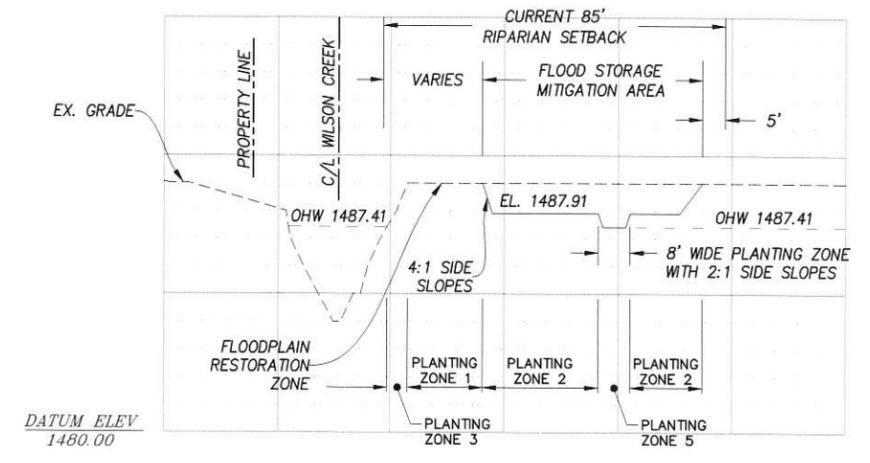
**3 SPLIT RAIL FENCE**  
N.T.S.



**SECTION**



**SECTION**



**4 SECTION F-F**  
N.T.S.

**1 LARGE WOODY DEBRIS WITH ROOTWAD**  
N.T.S.

**2 LARGE WOOD DEBRIS**  
N.T.S.

DESIGNED BY BT	<b>OSBORN CONSULTING INCORPORATED</b> OSBORN CONSULTING, INC. 1800 112th Ave, NE, Suite 220E Ph (425) 451-4009 Bellevue, WA 98004 Fax (425) 451-4901	NO.	DATE	REVISION	BY
DRAWN BY RDH					
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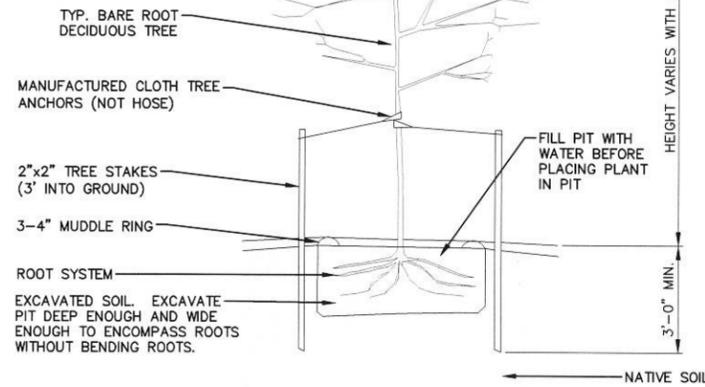
**SURF CITY ELLENSBURG, WA**  
STANDARD DETAILS AND SECTIONS

JOB# / DWG 10-150022	DATE APRIL 2015
SCALE H: N/A V: N/A	SHEET 3 of 3

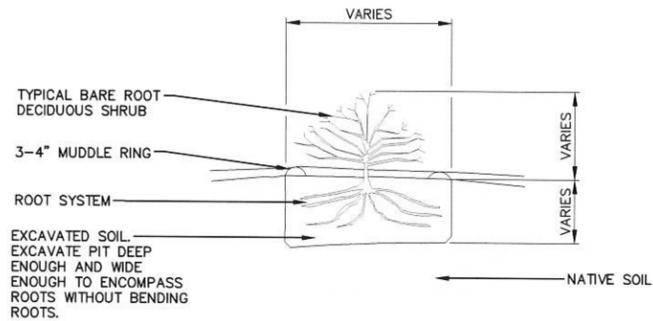
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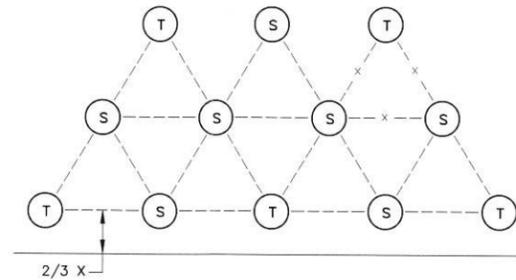
NOTE:  
ALL TREES OVER 1-1/4" DIAMETER  
ARE TO BE STAKED (2 PER TREE)



**DECIDUOUS AND EVERGREEN TREE PLANTING**  
N.T.S.



**SHRUB PLANTING**  
N.T.S.



NOTE:  
GROUP LIKE SHRUBS IN GROUPS OF 3 TO 5.  
TREES SHOULD NOT BE PLACED NEXT TO EACH OTHER.

**TYPICAL PLANT SPACING**

X = PLANT SPACING (SEE PLANTING PLAN)

S = SHRUB  
T = TREE

**PLANT MATERIAL LIST**

COMMON NAME	SCIENTIFIC NAME	MINIMUM HEIGHT	SPACING	ZONE 1	ZONE 2	ZONE 3	ZONE 4	TOTAL
<b>TREES</b>								
BLACK COTTONWOOD	<i>POPULUS BALSAMIFERA SSP. TRICHOCARPA</i>	18"	5'	54				54
BITTER CHERRY	<i>PRUNUS EMARGINATA</i>	18"	5'	54				54
QUAKING ASPEN	<i>POPULUS TREMULOIDES</i>	18"	5'	54			31	85
WATER BIRCH	<i>BETULA OCCIDENTALIS</i>	18"	5'		109			109
BLACK HAWTHORN	<i>CRATAEGUS DOUGLASII</i>	18"	5'	54	109			163
BOXELDER	<i>ACER NEGUNDO</i>	18"	5'	54				54
PACIFIC WILLOW	<i>SALIX LUCIDA LASIANDRA</i>	36"	5'		109	20		129
MOUNTAIN ALDER	<i>ALNUS INCANA</i>	18"	5'	54	109			163
SCOULERS WILLOW	<i>SALIX SCOULERIANA</i>	36"	5'			25		25
BEBB WILLOW	<i>SALIX BEBBIANA</i>	36"	5'		109	25		134
PONDEROSA PINE	<i>PINUS PONDEROSA</i>	18"	5'				20	20
COMMON CHOKECHERRY	<i>PRUNUS VIRGINIANA</i>	18"	5'				10	10
<b>SHRUBS</b>								
COMMON SNOWBERRY	<i>SYMPHORICARPOS ALBUS</i>	12"	5'		407			407
REDOSIER DOGWOOD	<i>CORNUS SERICEA</i>	12"	5'		407	101		508
GOLDEN CURRANT	<i>RIBES AUREUM</i>	12"	5'	162				162
OCEAN SPRAY	<i>HOLIDISCUS DISCOLOR</i>	12"	5'	162			36	198
DOUG SPIREA	<i>SPIRAEA DOUGLASII</i>	12"	5'		407	101		508
WHITESTEM GOOSEBERRY	<i>RIBES INERME</i>	12"	5'	162			36	198
WAX CURRANT	<i>RIBES CEREUM</i>	12"	5'	162			36	198
SHRUBBY CINQUEFOIL	<i>DASIPHORA FRUTICOSA SSP. FLORIBUNDA</i>	12"	5'	162			36	198
ROSE	<i>ROSA NUTKANA</i>	12"	5'		407			407
BLUE ELDERBERRY	<i>SAMBUCUS NIGRA SSP. CERULEA</i>	12"	5'	162			36	198
SASKATOON SERVICEBERRY	<i>AMELANCHIER ALNIFOLIA</i>	12"	5'				36	36
MOCK ORANGE	<i>PHILADELPHUS LEWISII</i>	12"	5'				36	36
<b>TOTAL TREES</b>				<b>324</b>	<b>545</b>	<b>70</b>	<b>61</b>	<b>1000</b>
<b>TOTAL SHRUBS</b>				<b>972</b>	<b>1628</b>	<b>202</b>	<b>252</b>	<b>3054</b>

**SEED MIX LIST**

COMMON NAME	SCIENTIFIC NAME	% BY WEIGHT
<b>ZONE 2 SEED MIX</b>		
BASIN WILDRYE	<i>LEYMUS CINEREUS</i>	24%
BLUE WILDRYE	<i>ELYMUS GLAUCUS</i>	32%
IDAHO FESCUE	<i>FESTUCA IDAHOENSIS</i>	20%
PRAIRIE JUNEGRASS	<i>KOELERIA MACRANTHA</i>	12%
RED FESCUE	<i>FESTUCA RUBRA</i>	12%
*RATE 20 LBS ACRE		
<b>ZONE 5 SEED MIX</b>		
BLUE WILDRYE	<i>LEYMUS CINEREUS</i>	32%
WESTERN MANNAGRASS	<i>GLYCERIA OCCIDENTALIS</i>	18%
TUFTED HAIRGRASS	<i>DESCHAMPSIA CESPITOSA</i>	12%
CHAMISSO SEDGE	<i>CAREX PACHYSTACHYA</i>	14%
SMALL WINGED SEDGE	<i>CAREX MICROPTERA</i>	14%
PANICLED RUSH	<i>JUNCUS PHAEOCEPHALUS</i>	10%
**RATE 22.5 LBS ACRE		

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**Northwest**  
Environmental Consulting, LLC

**PERMIT SUBMITTAL**

**SURF CITY**  
ELLENSBURG, WA  
PLANT MATERIAL LIST AND DETAILS

JOB# / DWG	10-150022	DATE	APRIL 2015
SCALE	H: N/A v: N/A	SHEET	2 of 3



Know what's below.  
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## **Attachment C: Wetland Determination Documents**

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

Project/Site: Surf City Waterpark and Lodge City/County: Ellensburg, Kittitas Co. Sampling Date: March 23, 2015  
 Applicant/Owner: Canyon Park Investors, LLC State: WA Sampling Point: Test Plot 1  
 Investigator(s): Brad Thiele, Emily Drew Section, Township, Range: Section 11, Township 17N, Range 18E  
 Landform (hillslope, terrace, etc.): flat Local relief (concave, convex, none): none Slope (%): <5%  
 Subregion (LRR): \_\_\_\_\_ Lat: \_\_\_\_\_ Long: \_\_\_\_\_ Datum: \_\_\_\_\_  
 Soil Map Unit Name: Kayak gravelly ashy loam, 0-2% slopes NWI classification: Not wetland  
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No  (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes  No   
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	<b>Is the Sampled Area within a Wetland?</b>	Yes _____	No <input checked="" type="checkbox"/>
Hydric Soil Present?	Yes _____	No <input checked="" type="checkbox"/>			
Wetland Hydrology Present?	Yes _____	No <input checked="" type="checkbox"/>			

Remarks:

## VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <u>5m</u> )	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:			
1. <u>None</u>				Number of Dominant Species That Are OBL, FACW, or FAC:	<u>1</u> (A)		
2. _____				Total Number of Dominant Species Across All Strata:	<u>1</u> (B)		
3. _____				Percent of Dominant Species That Are OBL, FACW, or FAC:	<u>100</u> (A/B)		
4. _____							
<u>0</u> = Total Cover				<b>Prevalence Index worksheet:</b> Total % Cover of:      Multiply by: OBL species      _____ x 1 = _____ FACW species <u>98</u> x 2 = <u>196</u> FAC species <u>1</u> x 3 = <u>4</u> FACU species <u>1</u> x 4 = <u>4</u> UPL species      _____ x 5 = _____ Column Totals: <u>100</u> (A) <u>104</u> (B)  Prevalence Index = B/A = <u>1.1</u>			
Sapling/Shrub Stratum (Plot size: <u>5m</u> )	Absolute % Cover	Dominant Species?	Indicator Status				
1. <u>None</u>							
2. _____							
3. _____							
4. _____							
<u>0</u> = Total Cover							
Herb Stratum (Plot size: <u>5m</u> )	Absolute % Cover	Dominant Species?	Indicator Status				
1. <u>Phalaris arundinacea</u>	<u>98</u>	<u>Y</u>	<u>FACW</u>				
2. <u>Verbascum thapsus</u>	<u>trace</u>	<u>N</u>	<u>FACU</u>				
3. <u>Cirsium arvense</u>	<u>trace</u>	<u>N</u>	<u>FAC</u>				
4. _____							
5. _____							
6. _____							
7. _____							
8. _____							
9. _____							
10. _____							
11. _____							
<u>98</u> = Total Cover							
Woody Vine Stratum (Plot size: <u>5m</u> )	Absolute % Cover	Dominant Species?	Indicator Status				
1. <u>None</u>							
2. _____							
<u>0</u> = Total Cover							
% Bare Ground in Herb Stratum <u>2%</u>				<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>			

Remarks: Riverbank is dominated by reed canarygrass, with traces of upland-associated weeds

**SOIL**

Sampling Point: TP1

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-12"	10YR 2/2						clay loam	
12-24"	10YR 3/2		10YR 3/3				clay loam	more sand in this layer than 0-12"; mottling is very fine
24-36"							clay soil	saturated

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. <sup>2</sup>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<sup>3</sup>:**

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

<sup>3</sup>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

Remarks: Soil is saturated starting at 24"

**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  Depth (inches): \_\_\_\_\_  
 Water Table Present? Yes  No  Depth (inches): 42" deep  
 Saturation Present? (includes capillary fringe) Yes  No  Depth (inches): 24" and lower

Wetland Hydrology Present? Yes  No

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

Remarks:



# U.S. Fish and Wildlife Service National Wetlands Inventory

Surf City  
Waterpark and  
Lodge site

Apr 16, 2015

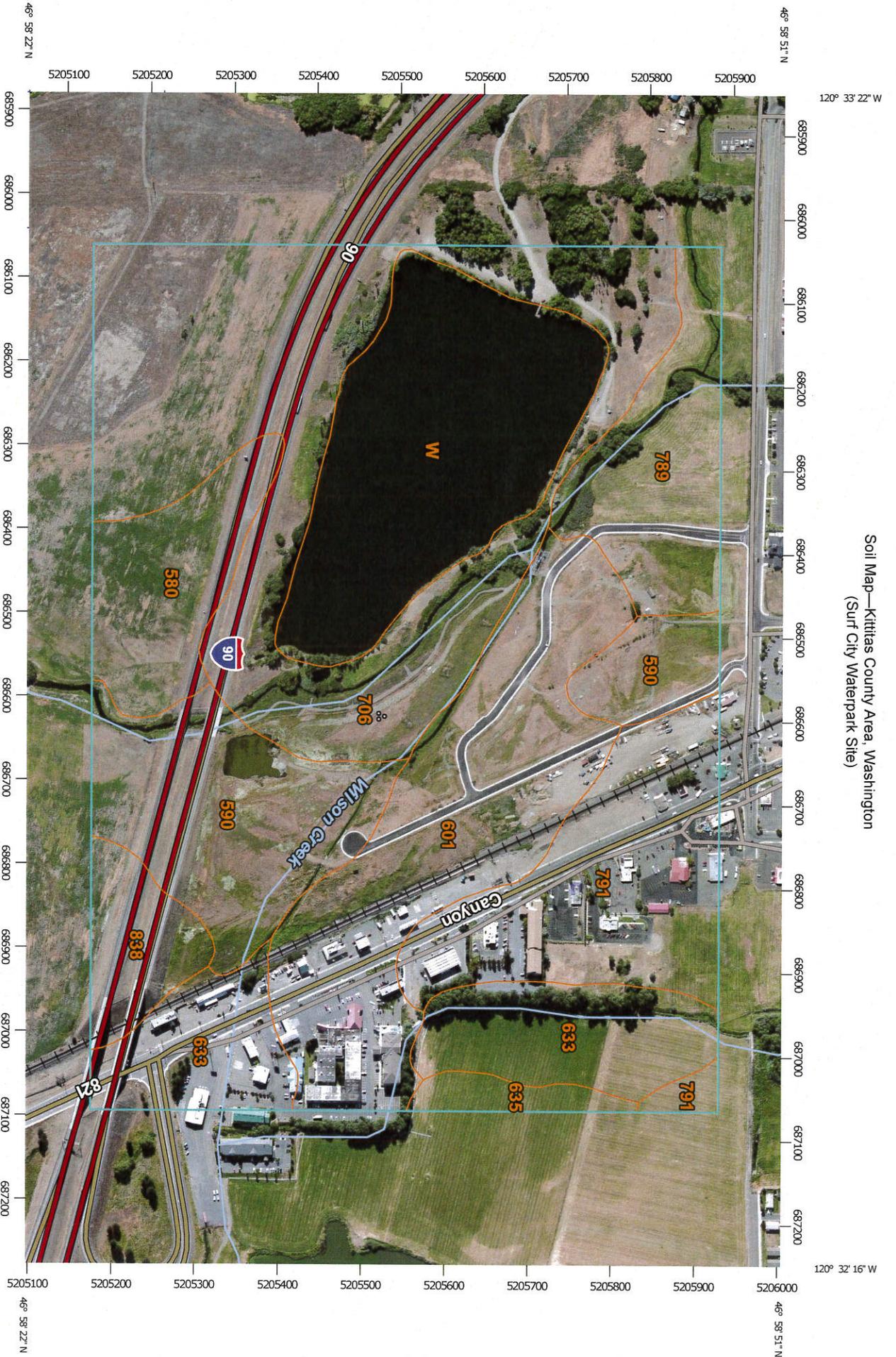


- Wetlands**
- Freshwater Emergent
  - Freshwater Forested/Shrub
  - Estuarine and Marine Deepwater
  - Estuarine and Marine
  - Freshwater Pond
  - Lake
  - Riverine
  - Other

User Remarks:

This map is for general reference only. The US Fish and Wildlife Service is not responsible for the accuracy or currentness of the base data shown on this map. All wetlands related data should be used in accordance with the layer metadata found on the Wetlands Mapper web site.

Soil Map—Kittitas County Area, Washington  
(Surf City Waterpark Site)



Map Scale: 1:6,390 if printed on A landscape (11" x 8.5") sheet.

120° 33' 22" W



0 50 100 200 300 Meters

0 300 600 1200 1800 Feet

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 10N WGS84

120° 32' 16" W

## MAP LEGEND

 Area of Interest (AOI)	 Area of Interest (AOI)	 Spoil Area
<b>Soils</b>	 Soil Map Unit Polygons	 Stony Spot
 Soil Map Unit Lines	 Very Stony Spot	 Wet Spot
 Soil Map Unit Points	 Other	 Special Line Features
<b>Special Point Features</b>	 Blowout	<b>Water Features</b>
 Borrow Pit	 Clay Spot	 Streams and Canals
 Closed Depression	 Gravel Pit	<b>Transportation</b>
 Gravelly Spot	 Landfill	 RAILS
 Lava Flow	 Marsh or swamp	 Interstate Highways
 Mine or Quarry	 Miscellaneous Water	 US Routes
 Perennial Water	 Rock Outcrop	 Major Roads
 Saline Spot	 Sandy Spot	 Local Roads
 Severely Eroded Spot	 Sinkhole	<b>Background</b>
 Slide or Slip	 Sodid Spot	 Aerial Photography

## MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service  
Web Soil Survey URL: <http://websoilsurvey.nrcs.usda.gov>  
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Kittitas County Area, Washington  
Survey Area Data: Version 7, Sep 3, 2014

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jul 19, 2010—Oct 17, 2010

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

## Map Unit Legend

Kittitas County Area, Washington (WA637)			
Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
580	Woldale clay loam, 0 to 2 percent slopes	10.5	5.4%
590	Brickmill-Nanum complex, 0 to 5 percent slopes	22.0	11.4%
601	Brickmill gravelly ashy loam, 0 to 2 percent slopes	29.3	15.1%
633	Nack ashy loam, 0 to 2 percent slopes	18.0	9.3%
635	Opnish ashy loam, 0 to 2 percent slopes	2.3	1.2%
706	Kayak gravelly ashy loam, 0 to 2 percent slopes	45.9	23.7%
789	Deedale clay loam, 0 to 2 percent slopes	12.6	6.5%
791	Mitta ashy silt loam, drained, 0 to 2 percent slopes	20.6	10.6%
838	Nosal ashy silt loam, 0 to 2 percent slopes	5.8	3.0%
W	Water	26.5	13.7%
<b>Totals for Area of Interest</b>		<b>193.5</b>	<b>100.0%</b>

**Attachment D:**  
**Site Photos,**  
**Surf City Waterpark and Lodge Site**



Photo 1. Middle of project site, looking north towards Umpatanum Road.



Photo 2. Middle of project site looking southeast towards Canyon Road and I-90.



Photo 3. Middle of project site looking northeast, towards intersection of Canyon Road and Umtanum Road.



Photo 4. Bull Ditch, showing bare ground along banks in foreground, and reed canarygrass along banks in background.



Photo 5. Manmade pond in southwest corner of property.



Photo 6. Manmade pond in southwest corner of property, showing mullein and grasses reestablishing on excavated material.



Photo 7. Small pit in south-central area of property, showing a small patch of cattails growing from excavated area.



Photo 8. Land adjacent to riparian area, looking south to freeway. Low wooden fencing indicates approximate border of riparian buffer.



Photo 9. Land adjacent to riparian area, looking northwest towards Mattoon Lake. Low wooden fencing indicates approximate border of riparian buffer.



Photo 10. Riparian buffer area along Wilson Creek, looking south, showing reed canarygrass, mullein, and small shrubs/trees on east bank, and coyote willow clumps on west bank.



Photo 11. Riparian buffer area along Wilson Creek, looking north, showing dominant reed canarygrass on east bank and coyote willows on west bank.



Photo 12. Riparian area along Wilson Creek looking north, showing mitigation plantings (foreground, protected by mesh), low grasses (foreground), and mullein, tumble mustard, and teasel

(background).



Photo 13. Riparian area of Wilson Creek looking south to Interstate 90, showing flat bank with low grasses and teasel.



Photo 14. Riparian area along Wilson Creek showing tumble mustard and benches.



Photo 15. Banks of Wilson Creek on southwest corner of property, showing coyote and Pacific willow on west bank, reed canarygrass on east bank, and yellow flag iris sprouting along waterline.



Photo 16. Woody debris on west bank of Wilson Creek.