

# SHORELINE BUFFER PLANTING PLAN

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**Parcel #893234  
Kittitas County, Washington**

*Prepared for:*

**Kurt Lustig**

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*Prepared by:*

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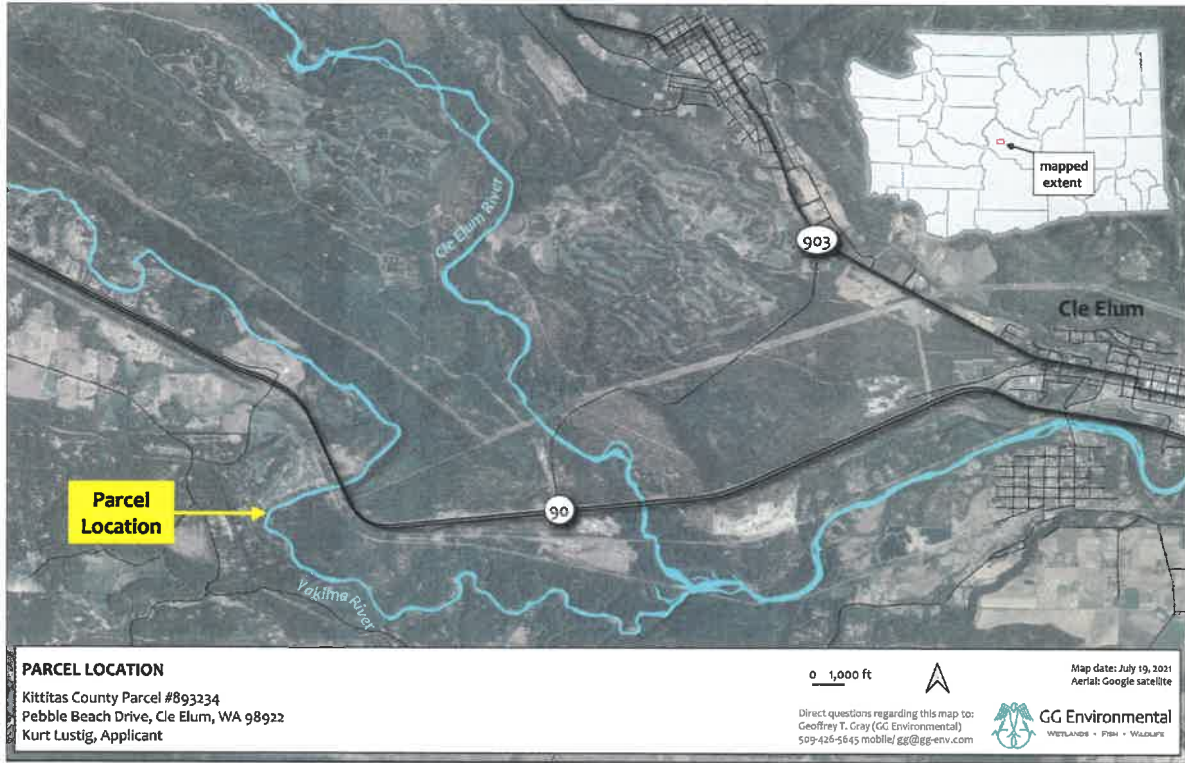
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**Kittitas County CDS**

## Introduction

Kurt Lustig (Applicant) intends to construct a single-family residence on parcel #893234, located on Pebble Beach Drive, in Kittitas County, Washington (**Figure 1**). The parcel falls within the eastern half of Section 35 in Township 20 North, Range 14 East, at latitude 47°10'58.86"N and longitude 121° 3'12.50"W (WGS84), in unincorporated Kittitas County, Washington.

Figure 1. Parcel Location



The eastern boundary of the parcel borders the right bank of the Yakima River, a Shoreline Stream,<sup>1</sup> designated as *Shoreline Residential*. The parcel intersects the 100-year floodplain and is adjacent to the floodway.<sup>2</sup> No wetlands are present within, or adjacent to, the parcel.<sup>3</sup>

<sup>1</sup> Kittitas County Compas 2021. Available online at:

<https://kitcogis.maps.arcgis.com/apps/webappviewer/index.html?id=8bcc146d9c2847acb2e9aa239187c25e>

<sup>2</sup> Draft floodplain information map, dated 11/6/2020. Submitted by Arden Thomas (Kittitas County).

<sup>3</sup> Per site reconnaissance by Geoffrey Gray of GG Environmental on 12/5/2020.

According to *Table 17B.06.200-1* of the Kittitas County Code (KCC), the minimum shoreline buffer from the river is 100 feet (ft) plus a building setback of 15 ft (115 ft total), unless common line shoreline buffer provisions are met per *KCC 17B.06.200(B)(7) Common line shoreline buffer*.

*Provision (e) of KCC 17B.06.200(B)(7)* requires that a management and mitigation plan be prepared by a qualified professional that demonstrates no net loss of ecological functions, consistent with *KCC 17B.05.020 Environmental protection and critical areas* and *KCC 17B.05.050 Shoreline buffers and vegetation conservation*.

The purpose of *KCC 17B.05.020 Environmental protection and critical areas* is to ensure that a project applicant employs all reasonable measures to protect shoreline functions and processes. Those adverse impacts, if any, caused by new shoreline use and development shall be mitigated through avoidance, minimization, and/or compensation.

The purpose of *KCC 17B.05.050 Shoreline buffers and vegetation conservation* is to promote vegetated shoreline buffers to provide habitat, maintain water quality, stabilize slopes and streambanks, and help achieve no net loss of shoreline ecological functions.

The objective of this shoreline buffer planting plan is to propose that construction of the residence, including landscaping with native plants along the riverbank, will not result in a net loss of baseline ecological functions.

## **Baseline Ecological Condition of the River Reach**

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The flow path of the local Yakima River reach<sup>4</sup> has remained relatively stable over time, showing little variation in its meander since at least 1954 (CWU 2021). At that time, riparian vegetation along the north (right) bank of the river was limited to a narrow band of trees and shrubs, presumably due to clearing for adjacent agricultural management (**Figure 2**).

Historic aerial imagery shows high-density residential development on the right bank of the river since at least 1998 (Google 2021) (**Figure 3**). For at least the past two decades, vegetation along the bank has been limited to that which spatially conforms to the aggregate layout of residential structures. Each residence has a uniquely-managed shoreline exposure with diverse plant densities and communities.

The river thalweg is biased toward the right bank, along which higher water velocities result in sporadic scour, addressed with commensurate reinforcement of the bank with rock. Due to high levels of human and vehicular disturbance, including an adjacent golf course, terrestrial habitat along the right bank is generally unsuitable for wildlife. Overall, the baseline ecological functioning of the buffer along the river's right bank is low to none.

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<sup>4</sup> Defined as the river reach up to 4,200 feet downstream of I-90.

Figure 2. Aerial image from 1954



Figure 3. Aerial image from 2018



## Baseline Ecological Condition of Parcel 893234

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The riverbank along the parcel is sparsely vegetated, limited to a small alder, several snowberry shrubs, a single Oregon grape, and reed canarygrass. The upstream section of the bank includes rock reinforcement. Several mature Douglas fir trees are present at the top of the riverbank in the parcels' southeast corner. The rest of the parcel is largely devoid of woody vegetation, excepting two small shrub clusters near Pebble Beach Drive, consisting of vine maple, elderberry, snowberry, and Oregon grape. No bird nests were observed in the shrubs. Wildlife observations in the vicinity were limited to deer on the golf course and a single instance of beaver gnaw near the parcel. No sign of pooled water or surface runoff was observed on the parcel. As such, it is inferred that infiltration is rapid and no surface flow enters the river. No wetlands were observed within the parcel boundary. Photos of the parcel are included in **Attachment 1 – Site Photos**.

Given the low plant cover and surrounding disturbance, the baseline ecological function of the parcel is low to none. Addition of native, woody vegetation along the shoreline would improve ecological functions over the existing buffer baseline in providing habitat for wildlife, protecting water quality via increased infiltration of stormwater, and helping to stabilize the riverbank.

## Proposal

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It is proposed to construct a single-family residence with a buffer radius offset of 35.6 feet from the OHWM (**Attachment 2 – Proposed Residence Footprint and Planting Zone**). To ensure that this action will not result in the net loss of ecological functions, the following reasonable measures will be undertaken to promote a vegetated shoreline buffer that will provide habitat, protect water quality, and stabilize the streambank:

1. **Avoid** existing conifers and woody vegetation rooted between the ordinary high water mark (OHWM) and top of the riverbank.
2. **Minimize** disturbance to existing woody vegetation near Pebble Beach Drive to the greatest extent practicable.
3. **Infiltrate** all stormwater runoff arising from constructed impervious surface.
4. **Enhance** the vegetative baseline by adding native plants along the riverbank and sides of the residence. See **Attachment 2 – Proposed Residence Footprint and Planting Zone** for the proposed planting area.

## Planting Plan

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### Task 1: Plant installation

A mixed palette of native trees, shrubs, and/or groundcover species including, but not limited to, the suggested plants in **Table 1**, shall be installed within the planting zone<sup>5</sup> as illustrated in **Attachment 2**. The suggested<sup>6</sup> plants are ideal for dry, shady conditions.

**Table 1. Suggested Native Plant Palette**

Common Name	Scientific Name	Type	Max Height (ft)	Minimum #
snowberry	<i>Symphoricarpos albus</i>	Shrub	4	10
Oregon grape	<i>Mahonia nervosa</i>	Shrub	3	10
oceanspray	<i>Holodiscus discolor</i>	Shrub	15	5
vine maple	<i>Acer circinatum</i>	Tree	25	5
salal	<i>Gaultheria shallon</i>	shrub	5	10
sword fern	<i>Polystichum munitum</i>	Groundcover	3	10

Minimum total plants: 50

### Task 2: Weed control

Non-desirable weeds will be managed via mechanical, manual, barrier, and/or chemical methods.

## Monitoring Plan

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Plants will be monitored for three years after installation. Buffer enhancement goals, and the performance standards for each goal, are outlined below.

### Goal 1 – Increase native woody vegetation within the shoreline buffer

#### **Objective:**

Enhance the shoreline buffer by adding a minimum of 50 native trees, shrubs, and/or groundcover species (**Table 1**).

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<sup>5</sup> Final planting zone footprint and individual plant placement will be determined by the Applicant.

<sup>6</sup> The final plant palette will be determined at the discretion of the Applicant.

### **Performance Measures**

**Year 1 (one year post-planting):** Survival of the installed plants shall be 100 percent. If dead plants are replaced to achieve this threshold, the performance measure will be met. Native trees, shrubs, and/or groundcover species that volunteer within the buffer shall count toward survivorship.<sup>7</sup>

**Year 2 (two years post-planting):** Survival of the installed plants shall be 75 percent. Installation of new plants to achieve this threshold is acceptable in meeting the performance measure. Native trees, shrubs, and/or groundcover species that volunteer within the buffer shall count toward survivorship.

**Year 3 (three years post-planting):** Survival of the installed plants will achieve 50 percent survival or 50 percent average aerial cover across the planted footprint.<sup>8</sup> Installation of additional native plants to achieve either of these thresholds is acceptable in meeting the performance measure. Native trees, shrubs, and/or groundcover species that volunteer within the buffer shall count toward survivorship and/or aerial cover.

### **Goal 2 – Noxious Weed Control**

#### **Objective:**

Control the establishment and spread of noxious weeds within the buffer.

#### **Performance Measures**

**Years 1-3:** Kittitas County Class A-C noxious weeds<sup>9</sup> will be controlled. All other non-desirable plants will be managed such that Goal 1 objectives are achieved.

## **As-built and Monitoring Reports**

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An **as-built report** describing the planted baseline of the buffer will be submitted to Kittitas County within 30 days of plant installation.

A **monitoring report**, documenting progress toward meeting the annual performance measures for Goals 1 and 2, will be submitted by January 1 of the year following the monitoring efforts for post-planting years 1-3.

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<sup>7</sup> Survivorship may exceed 100 percent.

<sup>8</sup> The planted footprint includes only those areas planted within the buffer, at the discretion of the Applicant.

<sup>9</sup> Kittitas County Noxious Weed Control Board (2020). Available online at: <https://www.co.kittitas.wa.us/noxious-weeds/list.aspx>

## **Adaptive Management**

Should plant survival and/or growth not perform on a trajectory to meet the performance measures for post-planting year 3, adaptive management may include, but is not limited to, one or more of the following:

1. Installation of additional native plants.
2. Installation of different native plant species.
3. Modified weed control methods.
4. Lengthened monitoring period.
5. Alternate planting area(s).

Adaptive management measures that are implemented shall be included in the annual monitoring report.



## Resources

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Central Washington Historic Aerial Photograph Project. 2021. Available online at:

[https://www.gis.cwu.edu/geog/historical\\_airphotos/](https://www.gis.cwu.edu/geog/historical_airphotos/)

Kittitas County Code Title 17B Shorelines. 2021. Available online at:

<https://www.co.kittitas.wa.us/boc/countycode/title17B.aspx>

Kittitas County Compas. 2021. Available online at:

<https://kitcogis.maps.arcgis.com/apps/webappviewer/index.html?id=8bcc146d9c2847acb2e9aa239187c25e>

Kittitas County Noxious Weed Control Board. 2021. Noxious weed list. Available online at:

<https://www.co.kittitas.wa.us/noxious-weeds/list.aspx>

Google Earth. 2021. Desktop installer available online at:

<https://www.google.com/earth/versions/#download-pro>

**ATTACHMENT 1. Site Photos**

**Photo 1. East end of the parcel at the river. Viewed downstream on 12-5-2020.**



**Photo 2. East end of the parcel at the river. Viewed upstream on 12-5-2020.**



**Photo 3. Existing vegetation on the riverbank. Viewed upstream on 12-5-2020.**



**Photo 4. South boundary of the parcel. View toward the west on 12-5-2020.**



**Photo 5. North boundary of the parcel. View toward the west on 12-5-2020.**



**Photo 6. View of the parcel from Pebble Beach Dr on 11-11-2020.**



