

# Memorandum

December 5, 2022

To: Alex Kovach, City Planner, and Chris Young, Grant County

From: Sara Noland and Josh Jensen, Anchor QEA; Ben Floyd, White Bluffs Consulting

Cc: Jeremy Sikes, Washington State Department of Ecology

**Re: Soap Lake Shoreline Jurisdiction Review for SMP Update**

## Introduction

The City of Soap Lake (City) and Grant County (County) are currently conducting a periodic review of their Shoreline Master Programs (SMPs) as required by the state Shoreline Management Act (SMA). The review is being undertaken in coordination other cities in the county and the Washington State Department of Ecology (Ecology).

To support the City and County's SMP periodic review, the SMP consultant team was asked to review the extent of shoreline jurisdiction on Soap Lake. Water levels in Soap Lake are managed by the U.S. Bureau of Reclamation as part of the Columbia Basin Project. Findings from this memorandum will be applied to both the City and County SMPs.

The County's SMP states that the shoreline includes floodways; land within 200 feet of the ordinary high water mark (OHWM) of the waterways; floodplains up to 200 feet from the floodway edge; and associated wetlands. The City's existing (2014) SMP contains the following statements about shoreline jurisdiction (bold added):

- Section I of the SMP states: "The City of Soap Lake's shoreline jurisdiction consists of land within 200 feet of the **ordinary high water mark** of shoreline within the city limits along Soap Lake."
- Note 1 of SMP Table 14.08.210 (A). Development Standards indicates that riparian buffer widths are "measured from the **1078-foot mean sea level (MSL) elevation**, as this elevation is controlled by the U.S. Bureau of Reclamation."

Including both the OHWM and the 1078 MSL elevation as reference points in the SMP may lead to confusion for City staff and project applicants when shoreline permits are being processed. These two reference points may not be at the same location on a given parcel (i.e., the OHWM delineated in the field may be higher or lower than the 1078 foot elevation). This means that the landward extent of shoreline jurisdiction and riparian buffers could be in question.

This memorandum discusses relevant state regulations and guidance, reviews aerial photograph and mapping information for Soap Lake, and presents recommendations for making the SMPs more internally consistent and efficient to implement.

## State Regulations

The SMA applies to lakes at least 20 acres in size, lands extending 200 feet from the OHWM, and associated wetlands (RCW 90.58.030). The OHWM is defined as follows:

“Ordinary high water mark” on all lakes, streams, and tidal water is that mark that will be found by examining the bed and banks and ascertaining where the presence and action of waters are so common and usual, and so long continued in all ordinary years, as to mark upon the soil a character distinct from that of the abutting upland, in respect to vegetation as that condition exists on June 1, 1971, as it may naturally change thereafter, or as it may change thereafter in accordance with permits issued by a local government or the department: PROVIDED, That in any area where the ordinary high water mark cannot be found, the ordinary high water mark adjoining salt water shall be the line of mean higher high tide and the ordinary high water mark adjoining fresh water shall be the line of mean high water (RCW 90.58.030(2)(c)).

## Mapping and Aerial Photograph Review

Ecology has published a guidance document for determining the OHWM in the context of SMA compliance.<sup>1</sup> The document provides a summary table of several key indicators for determining the OHWM of lakes in the field (included as Attachment 1). Delineating the OHWM on the ground is not required for SMP compliance; applicants can have an OHWM delineation completed on their parcels as part of a permit application if desired.

For purposes of this memorandum, the consultant team reviewed aerial photographs in Google Earth for indications of the approximate OHWM location on Soap Lake (shown in Attachment 2). The OHWM location illustrated in Attachment 2 is based largely on clear topographic changes and the water level visible in the April 2021 Google Earth aerial photograph.<sup>2</sup>

As stated earlier, the U.S. Bureau of Reclamation maintains the water level in Soap Lake at 1078 feet MSL. This elevation is not yet depicted in Attachment 2 because as the consultant team is working with the U.S. Bureau of Reclamation to obtain the vertical datum to accurately depict the elevation location. We also hope to obtain a dataset of historical lake level fluctuation and will amend this

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<sup>1</sup> Washington State Department of Ecology, 2016. *Determining the Ordinary High Water Mark for Shoreline Management Act Compliance in Washington State*. October 2016 Final Review. Publication No. 16-06-029. Available at: <https://apps.ecology.wa.gov/publications/documents/1606029.pdf>. Accessed November 2022.

<sup>2</sup> While salt deposits are visible in Google Earth, they were not used to estimate the OHWM because they may reflect higher water levels that occurred more commonly in past years. Little riparian vegetation is present around the lake; it was used as part of the OHWM estimation where it was visible.

memorandum in the future with this information, along with a comparison between the two elevations and recommendation for OHWM description updates in the SMPs.

## **Conclusions and Recommendations**

To be added in next version of this memorandum.

## Attachment 1

# Summary Descriptions of Key Field Indicators for Lake OHWM (Ecology 2016)

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### Summary Descriptions of Key Field Indicators for Lake OHWM

Lake Indicators	Description	Below	Straddling	Above
<b>Vegetation changes at lake-upland transition</b>	Community transition from lacustrine fringe to UPL community at lake-upland transition	✓	✓	
<b>Eroded/exposed roots</b>	Wave and water action on lakes with sufficient fetch can expose roots of trees and shrubs growing on the shoreline.	✓	✓	
<b>Morphological adaptations</b>	Buttressed tree trunks, adventitious roots, multi-stemmed trunks, plants on hummocks. Some OBL emergent species such as <i>Carex obnupta</i> , which tolerate prolonged inundation, grow on elevated hummocks in the zone between OHWM and low pool elevation.	✓	✓	
<b>Plants on hummocks</b>	Some OBL emergent species, tolerant of prolonged inundation, may grow on elevated hummocks in the zone between OHWM and low pool elevation. FACU or UPL species growing on hummocks would be above OHWM.	✓	✓	✓
<b>Topographic break</b>	Erosional or depositional features.	✓		
<b>Substrate changes</b>	Changes in soil color, texture, and organic content resulting from wind-driven wave action on the lake shoreline that sorts and washes the substrate.	✓	✓	
<b>Filamentous algal growth/crust</b>	Algal growth is an indicator of prolonged inundation. Colonies of green algae that grow into hair-like mats on rocks, plants, woody stems, and other substrates. Desiccate into an algal crust on substrate at low water. Filamentous algae are more prevalent on developed lakes with nutrient inputs.	✓	✓	
<b>Live and dead remains of animals</b>	Presence of aquatic invertebrates and vertebrates (e.g., fish) shows that area is subject to at least periodic recent inundation and is at or below OHWM.	✓	✓	
<b>Amphibian egg masses</b>	Note: seasonal indicator; not apparent at low water	✓	✓	
<b>Water marks and stains</b>	Discolorations or stains on bark of woody vegetation, bulkheads, rocks, bridge supports, building, fences, or other fixed objects as a result of inundation. May include lines on lichen growth that are stunted or killed by standing water. On alkali lakes with high concentrations of dissolved salts, and in areas with high evaporation, shoreline rocks can be coated with salt deposits, typically in bands.	✓	✓	
<b>Sediment deposits</b>	Thin layers or coatings of fine-grained material (e.g., silt or clay) or organic matter (e.g., pollen), sometimes mixed with other detritus, remaining on tree bark, plant stems or leaves, rocks, and other objects after surface water recedes.	✓	✓	
<b>Water stained leaves</b>	Fallen or recumbent leaves that have turned grayish or blackish in color due to inundation for long periods.		✓	
<b>Wrack accumulation</b>	Debris (trash, leaves, grass, etc.) left on the ground or caught on drift logs, structures or vegetation from past high water events.		✓	✓
<b>Organic soil accumulation</b>	Accumulation of organic matter and duff.			✓

### Summary Descriptions of Key Field Indicators for Lake OCHW

Lake Indicators	Description	Below	Straddling	Above
<b>Continuous and contiguous pool of water</b>	At high pool elevations determine the extent of the “continuous and contiguous” water surface elevation from the adjoining lake to establish the outer boundary between lake fringe and slope wetlands or upland.	✓	✓	

Considerations:

Low-water masking of indicators. Consider late-season drawdown and growth of annuals. Wrack builds up towards the water. Accumulation is a function of supply.

High-water masking of indicators. During extreme high water events indicators will be inundated or may be obscured once water recedes.

Attachment 2

Aerial Photograph Mapping

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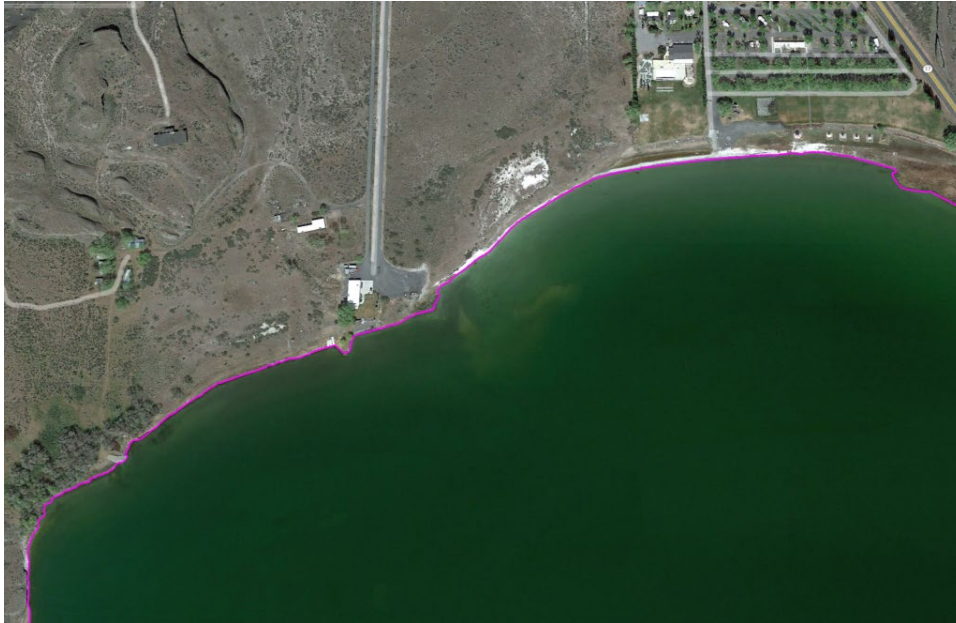
**Approximate extent of OHWM (pink line) based on aerial photo review in Google Earth (April 2021 photo)**



Overview



**Approximate extent of OHWM (pink line) based on aerial photo review in Google Earth (April 2021 photo)**



North end



South end