



SUBJECT Determining jurisdictional boundaries on non-tidally influenced, freshwater streams and features	FINAL NUMBER GE09-07(B)	EFFECTIVE DATE 08/10/2009	VALIDATION DATE 10/15/2020	SUPERSEDES GE09-07(B), dated 05/12/2020
TOPIC/PROGRAM Wetlands & Permits; Biology/Fish Passage; Hydraulics	WEB LINK(S) http://www.oregon.gov/ODOT/Engineering/Pages/Technical-Guidance.aspx ORIGINAL SIGNED BY: Susan Haupt Geo-Environmental Manager			

PURPOSE

This document is intended to promote a consistent and sound approach for determining the jurisdictional boundary and active channel width on freshwater, non-tidally influenced streams.

GUIDANCE

This document provides guidelines and information on considerations used to determine US Army Corps of Engineers (Corps) and Department of State Lands (DSL) jurisdiction and to document findings and rationale. The ordinary high water (OHW) is a field-determined boundary that defines Corps and DSL jurisdiction and the active channel (as used by the Oregon Dept. of Fish and Wildlife) of a non-tidally influenced waterway. The OHW and other terms such as bank full and 2-year flood elevation are currently used interchangeably, leading to confusion. In cases where OHW field indicators are absent, these other terms may be used. This guidance clarifies the different terms, how they relate to one another, and when each should be used to reflect jurisdictional boundaries. Regulatory references as well as a form to record findings are provided.

DEFINITIONS

Active channel width: Stream width as measured at OHW away from the influence of artificial structures or impacts and confluent tributaries. In the absence of a clear OHW, active channel width is measured at bankfull elevation in a non-incised stream. A suitable surrogate measurement for OHW in an incised stream channel would be the stream width as measured at the 2-year flood elevation (see attached figure).

Bank full elevation: The point on a streambank at which overflow into the floodplain begins. This point is often above active channel elevation and OHW. On non-incised stream channels bankfull can be used as a surrogate in the absence of clear OHW field indicators.

Channel: Manmade or natural feature that carries water.

Corps of Engineers (Corps): Federal regulatory agency responsible for administering Section 404 of the Clean Water Act, and Section 10 of the Rivers and Harbors Act.

Clean Water Act, Section 404 (33 USC 1344): Administered by the Corps, Section 404 requires authorization to place dredged or fill material in a water of the US. Freshwater, non-tidal streams are considered waters of the US to the OHW elevation.

Department of State lands (DSL): State regulatory agency responsible for administering the Removal Fill Law.

Delineation Map: Map showing all wetland and water features and their boundaries, within an ODOT-designated study area.

Incised Channel: Those channels that have been cut relatively deep into underlying formations by natural processes. Characteristics include relatively straight alignment and high, steep banks such that overflow rarely occurs, if ever (AASTHTO Model Drainage Manual, 1999).

Ordinary High Water (OHW): Corps and DSL jurisdictional boundary on fresh water streams or channels that are not tidally influenced. As used in this document, OHW is interchangeable with the terms Ordinary High Water line, mark, or elevation. Generally defined as the line on the bank or shore to which the high water ordinarily rises in season, excluding exceptionally high water levels caused by large flood events.

Oregon Fish Passage Statute (ORS 509.580-509.910; OAR 635 Division 10): Requires that upstream and downstream passage for native migratory fish be provided in all waters of this state in which native migratory fish are currently or have historically been present. It is administered by the Oregon Dept of Fish and Wildlife (ODFW).

Removal Fill Law (ORS 196.800-196.990): Administered by DSL, the Removal Fill Law requires that a permit be obtained prior to placing fill or removing material from a water of the state. Pacific Ocean, tidal and non-tidal waterways, lakes, ponds, and wetlands, are considered waters of the state.

Section 10 of the Rivers and Harbors Act (33 USC 403): Requires that authorization be obtained to excavate or fill, or in any manner to alter or modify, the course, location, condition, or capacity of any navigable water of the US (Navigable Waterways Within the State of Oregon, Corps Portland District; Navigable Bays Within the State of Oregon, Corps Portland District)

State-Owned Waterways: The State of Oregon owns and manages the submerged and submersible waterway land under the Territorial Sea (i.e. oceanward to the Three Mile Limit), tidally-influenced land, and the non-tidally influenced bed and banks of twelve waterways and a number of lakes in the state. As the Land Board's administrative arm, DSL is responsible for most of the day-to-day management of this publicly-owned submerged and submersible land.

Study Area: Boundary within which wetlands and waters are delineated. It can be smaller than the area of potential impact identified by project leaders, the REG and the lead designer. The study area should include areas that contain wetlands and waters that will either be impacted by the project or where construction activities will occur very near such resources and avoidance is desired.

Two-year flood elevation: Calculated based on hydrologic and hydraulic modeling using rainfall data, stream cross-sections, and step-backwater analysis. OHW is usually lower on the bank than the 2-year flood elevation. The two-year flood elevation may or may not be equivalent to bankfull. On incised stream channels the 2-year may be used as a surrogate in the absence of clear OHW indicators. (See note on Bankfull elevation definition).

BACKGROUND/REFERENCE

The OHW of a non-tidal freshwater stream or flowing water feature (e.g., not a lake), represents the boundary of state and federal jurisdiction under the state Removal-Fill Law administered by DSL, and under Section 404 of the Clean Water Act, and Section 10 of the Rivers and Harbors Act, administered by the Corps. Removal and fill activities that occur below the OHW will likely trigger the need for a state or federal permit under these Laws.

Both Corps and DSL regulations use the following field indicators to define the OHW (reference: Removal Fill Law: OAR 141-085-0515(3); Clean Water Act: 33CFR 328.3 e):

- Clear, natural line impressed on the bank
- Presence of litter and debris,
- Silt stained leaves, silt lines on tree trunks
- Lowest extent of woody vegetation
- The top of the zone of washed roots (roots exposed in the bank)
- A break in the slope angle of the bank
- The tops of point bars or other sediment deposits (this is typically considered the lowest elevation to be considered as, potentially, the OHW surface)
- The elevation of float debris IF used in combination with above features (*float debris can be caused by extreme flood events and therefore not be representative of OHW unless used in combination with other factors*)
- The area of washed rock if used in combination with the above features
- Change in vegetation (riparian (e.g. willow) to upland (e.g. oak, fir) dominated
- Textural change of depositional sediment or changes in the character of the soil (e.g. from sand, sand and cobble, cobble and gravel, to upland soils);
- Elevation below which no fine debris (needles, leaves, cones) occurs
- Other appropriate means that consider the character of the surrounding area

The active channel width is one of the primary factors considered in designing adequately-sized culvert and bridge openings in compliance with Oregon's Fish Passage Statute. Active channel width is determined based on the OHW on freshwater streams.

Additionally, accurate determination of the OHW is important for the following reasons:

- To determine whether or not a project will impact jurisdictional waters
- To determine whether permits are needed and if so whether streamlined permits may apply
- To correctly calculate impacts occurring within DSL or Corps jurisdiction;
- To provide adequate protection when resources can be avoided;
- To accurately calculate mitigation needs;
- On state-owned waterways, the OHW represents a property boundary between private and public ownership, as well as a jurisdictional boundary.

The OHW should not be used to demarcate a conservative stream boundary to ensure avoidance during construction. To adequately avoid such a resource during construction the no-work zone should be located above the OHW whenever possible. This zone boundary would not be referenced on contract plans as the OHW unless it actually is the OHW.

EXPLANATION

Making and Recording the Determination

When necessary to determine for permitting or avoidance purposes, the OHW should be identified based on the field indicators as described above in the definition section. When making determinations on incised channels in the absence of clear OHW field indicators the 2-year flood elevation shall be used as a surrogate jurisdictional boundary and measure of active channel width. When making determinations on non-incised channels in the absence of clear OHW field indicators the bankfull elevation shall be used as a surrogate jurisdictional boundary and measure of active channel width.

Some state-owned waterways and some Section 10 navigable waters (e.g., the Willamette River, Columbia River), have published OHW data. These published data are relied upon by the regulatory agencies to determine their jurisdictional boundary. In such cases, the OHW is not field-determined.

In all cases, the OHW, bank full, or 2-year, whichever is used, should be identified and flagged, as appropriate, documented, and labeled on contract plans.

Qualifications

It is important that the person(s) making the determination in the field have some experience, know what to look for, seek input from others as appropriate, and document their findings and rationale. Preferably the OHW is determined using a collaborative approach by ODOT technical staff or consultants, and resource and regulatory agency staff, as appropriate. There are no certifications, qualifications, or licenses required for a person to determine the OHW unless it is being determined for the purpose of establishing a property boundary, which would require the services of a Licensed Professional Land Surveyor.

When the determination will be used for hydraulic design considerations (e.g., fish passage), the hydraulic engineer should be involved in determining the OHW, or surrogate boundary, and agreement on the determination should be reached among technical specialists and reflected in final documents.

Field Flagging Protocol

Markers (i.e., stakes, pin flags, tape, spray paint) used to mark the OHW in the field should be numbered and labeled as OHW markers. Soft banks should be staked using wooden stakes or pin flags. Tape flagging is sometimes required when banks are not soft and vegetation is available. When tape flagging is used to mark the OHW, describe how the flagging represents the OHW as follows:

- Where the horizontal location of the flag intercepts the ground
- At the location/elevation of the knot

In the absence of vegetation or soft banks spray paint can be the only practical option. If this is the case, labels/numbers should also be painted.

In many circumstances only one side of the stream or water feature will be accessible and therefore able to be flagged. When this is the case, the OHW on the non-flagged side of the stream shall be interpreted as being at the same elevation as that of the flagged side.

Photo Documentation

When feasible and as good practice, photographs should be taken both up- and down-stream of the project site and preferably both banks- after OHW markers are set. Capturing photos of field indicators and the location of the placed markers, along with written explanation or justification of observations, is especially helpful when reviewing and documenting the information upon returning to the office.

File Documentation

When a project requires completion of a wetland delineation report wetlands and waters occur in a study area, all waters and their jurisdictional boundaries within the identified study area boundary must also be identified in a wetland delineation report (OAR 141-090-0035).

When described and included in a wetland delineation report, stream boundaries are also reviewed and approved by DSL.

Complete documentation should be stored in the project file and include: project identification and location information (Key number, waterway name if named, or the name of the stream an unnamed tributary flows to); ordinary high water indicators observed; date of observation; names of people involved in making the determination; whether the 2-year or bank full was used instead of the OHW, and if so, why. Site sketch or photo documentation, if completed, should be included with the final documentation.

RESPONSIBILITIES

Region Technical Specialists (wetlands, biology, hydraulic engineers):

- Complete field assessment, flagging, and documentation of the OHW on fresh water streams
- Coordinate with hydraulic engineers and other technical staff as appropriate and when OHW will be considered in structure design.
- Preferably, obtain buy-in from internal ODOT stakeholders prior to requesting regulatory or resource agency review.
- When a proposed project may or will trigger Oregon fish passage law, coordinate site visit with ODFW and other resource or regulatory agencies, as practical, to reach agreement on the OHW early in project development
- In the absence of a project triggering the fish passage law, coordinate as needed with resource and regulatory agencies when determining the OHW.
- Ensure proper labeling of water feature boundaries on contract plans (OHW, bankfull, or 2- year).
- Mark the OHW in the field with visible, labeled markers (pin flags, stakes, flagging, etc)
- Send complete documentation to the Region Environmental Coordinator (REC), and copy to NRU Trans for tracking purposes, as one complete PDF document.

REC

Ensure documentation received is saved to the project file (STIP, maintenance, etc).

Geo-Environmental Wetlands & Permits Program Coordinator/Biology Program Coordinator(s)

- Respond to feedback on how the guidance is working and provide training.

- Update guidance as needed
- Coordinate review of determination should disagreements arise, upon request by Region or resource and/or regulatory agency liaisons.

Region Geo-Hydro and Environmental Managers

- Ensure appropriate level of documentation and that collaboration is used in determination as appropriate

ACTION REQUIRED

Documentation should be made to the project file by using the [OHW Determination Form](#) or other means of documentation.

This guidance should be reviewed and implemented by Region Environmental and Geo/Hydro Managers and their staff, respectively.

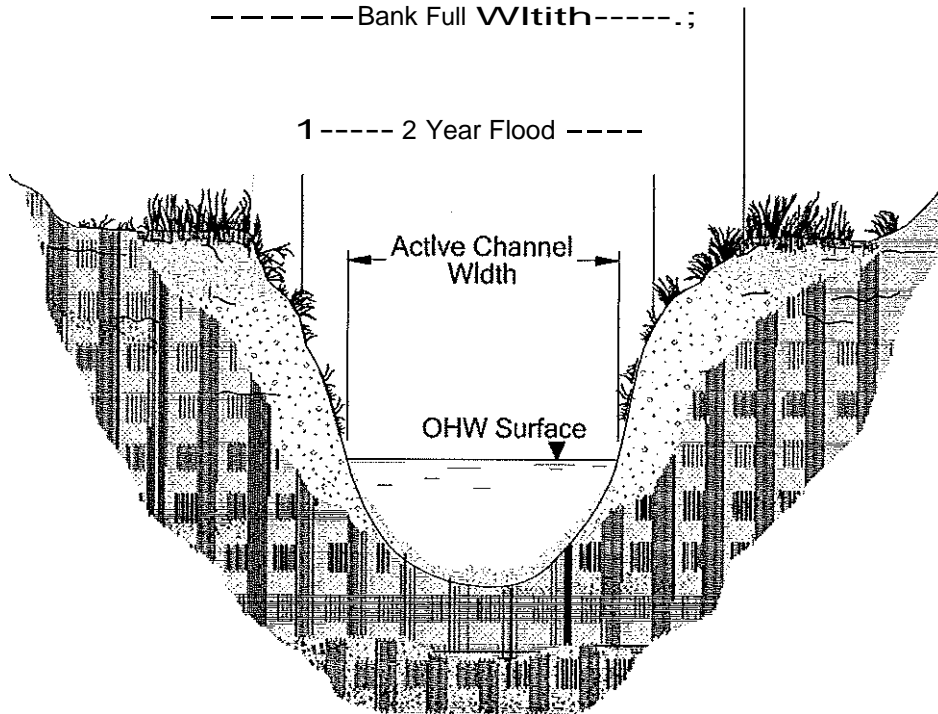
SPECIAL INSTRUCTIONS

This guidance may be used immediately; no restrictions. This guidance relies upon definitions referenced in state and federal regulations and is part of the ODOT Wetlands and Permits Manual. Updates will be provided if and when definitions or regulations change.

CONTACT INFORMATION

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Incised Channel



Non-Incised Channel

