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For updating printed manuals, page numbers indicating portions of the manual that are to be removed and replaced are shown below.

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**Washington State  
Department of Transportation**

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# **Environmental Manual**

M 31-11.23

October 2020

**Engineering and Regional Operations**  
Development Division, Environmental Services Office

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# Chapter 431 Wetlands

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## 431.01 Wetlands and Other Waters

This chapter presents policies to be followed when work is planned in or near wetlands or other waters of the state or of the U.S. It includes information on describing and assessing wetlands and other waters, determining impacts (adverse effects), mitigating for unavoidable impacts, and links to related information. Work described in this chapter that applies to wetlands may also apply to other waters.

WSDOT *Wetlands Protection and Preservation Secretary's Executive Order E 1102.00* directs employees to protect and preserve Washington's wetlands, to ensure no net loss of wetlands acreage and function is caused by department actions, and to increase the quantity and quality of wetlands in the long term. These activities must be implemented in planning, designing, constructing, and maintaining the state's transportation system. Employees must avoid impacts to wetlands and other waters where practical; minimize impacts where it is not possible to avoid wetlands; provide compensatory mitigation for unavoidable impacts; and protect, preserve, and maintain wetlands under department stewardship.

WSDOT's environmental policies direct employees to protect and preserve state natural resources while providing for cost-effective delivery and operation of transportation systems.

- WSDOT Secretary's Executive Order [E 1102.00](#) *Wetlands Protection and Preservation*
- WSDOT Secretary's Executive Order [E 1018.02](#) *Environmental Policy Statement*

Transportation project activities that may impact wetlands or other waters (aquatic resources) include:

- Filling wetlands
- Draining wetlands
- Altering natural drainage patterns
- Increasing or decreasing water levels
- Discharging sediment or toxicants in runoff
- Mechanically removing wetland vegetation
- Compacting wetland soils
- Using wetlands as staging areas
- Altering wetland or stream buffer areas
- Shading wetlands from bridges

## 431.02 Assessing Wetlands and Other Waters

WSDOT uses several methods to assess wetlands and aquatic resources depending on the complexity of the project and the stage in the project development process. [Qualified wetland biologists](#) have the specialized knowledge and skills that are needed to use the methods listed below. Each method is described below in order of increasing complexity, cost, and time required to complete the work.

**WSDOT GIS Workbench** – The GIS workbench is a comprehensive collection of GIS datasets that can be used to approximate the location and extent of known wetlands. The workbench contains map data from several sources helpful in determining if wetlands may be present, including the National Wetland Inventory, local wetland inventories, WSDOT mitigation site locations, hydric soils, topography, satellite imagery, and infrared and true-color aerial photographs.

The GIS workbench provides general information at a small scale suitable for screening for environmental impacts when projects are in the early stages of planning and scoping. This office-based activity should be paired with a field assessment scaled to suit the purposes of the investigation. It can be a first phase of an inventory or assessment. The GIS Workbench does not provide enough information to determine that wetlands are or are not present for permitting purposes.

**Wetland Inventory** – A wetland inventory is a reconnaissance-level analysis to confirm the presence or absence of wetlands based on a field visit by a wetland biologist. The report may include a sketch map showing the limits of the study area and the approximate location, size, and quality of the wetlands present. The inventory can be used to inform the preliminary design and provide an opportunity to avoid and minimize wetland impacts. If a Wetland Inventory Report concludes no wetlands are present in the project area, no further wetland work needs to be done, unless the project area changes. A Wetland Inventory report is not sufficient for wetland permit applications.

**Wetland and Stream Assessment** – A wetland and stream assessment is a detailed field study of wetlands and other aquatic resources within the project area. An assessment may be conducted instead of a Wetland Inventory if detailed wetland information is needed during early stages of project development. If wetlands or other aquatic resources will be impacted by a transportation project, a Wetland and Stream Assessment Report is required for the Environmental Review process and the Joint Aquatic Resource Permit Application (JARPA) submittal.

A wetland and stream assessment includes delineating:

- Boundaries of wetlands and other aquatic resources
- Ordinary High Water Mark (OHWM) of streams and lakes
- High Tide Line of tidal waters
- Corps jurisdictional ditches (document either wetland boundaries or stream/tributary OHWM)
- Non-Corps jurisdictional ditch centerlines

It includes classifying the wetlands using one or more national methods, using the Washington rating system to determine the category based on the functions and values the wetlands provide. Additional functional assessment may be necessary to develop detail for more complex projects. A Wetland and Stream Assessment Report summarizes the field data and includes a surveyed map of the wetland and stream boundaries. This information is used to determine the impacts and required compensatory mitigation for each alternative and to show how projects avoid impacts where possible.

Ditches that meet wetland or stream/tributary criteria are included in the wetland and stream assessment. If it is not known which ditch sections the project might impact at the time of the wetland assessment work, a Jurisdictional Ditch Memo is prepared by the wetland biologist to evaluate ditches for potential jurisdiction by the US Army Corps of Engineers (Corps) or the Washington State Department of Ecology (Ecology) to include with the JARPA submittal. WSDOT doesn't make jurisdictional calls, but can recommend a jurisdictional determination.

The Corps considers wetland delineations valid for five years from the date of the field work. If the project is delayed, the field work and report may need to be updated before the JARPA is submitted.

- Additional information on how WSDOT conducts wetland inventories is available on the WSDOT [Wetland & stream reconnaissance](#) webpage, and how WSDOT conducts wetland assessments, and evaluates ditches is available on the WSDOT [Wetland & stream assessment](#) webpage.
- WSDOT guidance on ditches is available on the WSDOT [Wetland & stream assessment](#) webpage and from the Corps [CWA Guidance](#) webpage.

### 431.03 Identifying Impacts to Wetlands and Other Waters

Wetland impacts are identified by comparing the surveyed wetland boundaries to the project footprint during environmental review. A short description of wetland impacts may be included directly in the environmental review document. A separate wetland discipline report may be written if the impacts are environmentally controversial or complex.

- Find guidance for writing appropriately sized discipline reports on the [Preparing quality environmental documents](#) webpage.
- Find the Wetland Discipline Report Checklist on the WSDOT [Wetland & stream assessment](#) webpage.
- The WSDOT [Wetland Mitigation](#) webpage provides additional information on identifying impacts.

## 431.04 Mitigating for Impacts to Wetlands and Other Waters

WSDOT's wetland protection and preservation Secretary's Executive Order is to mitigate for all adverse effects to wetlands in accordance with Governor's Executive Order [89-10](#).

WSDOT uses the mitigation sequence outlined in state and federal executive orders and state and federal regulations. **Mitigation sequencing** requires the applicant to:

1. **Avoid impacts** the project may have on wetlands and other aquatic resources. Avoidance is the preference because it has the greatest reliability and is the simplest and most effective way to preserve and protect wetlands.
2. **Minimize unavoidable impacts.**
3. **Compensate for unavoidable impacts** through required compensatory mitigation.
  - WSDOT Secretary's Executive Order [E 1102.00 Wetlands Protection and Preservation](#)
  - Additional information is available on the WSDOT [Wetland Mitigation](#) webpage.
  - The Federal Highway Administration (FHWA) [Mitigation of Environment Impacts](#) webpage summarizes parts of [40 CFR § 1500](#), [1508](#), and [23 CFR 771](#) that pertain to mitigation.

### 431.04(1) **Selecting a Compensatory Mitigation Option**

The 2008 Final Rule on Compensatory Mitigation for Losses of Aquatic Resources expresses a preference for using credit from mitigation banks as a first choice, credit from an in-lieu fee programs as a second choice, and permittee-responsible mitigation as least desirable. Project specifics provide additional context for determining which mitigation option is the most suitable choice.

Approved third-party mitigation banks and in-lieu fee programs are available for use in many areas, however, permittee-responsible mitigation may be the only option in some areas. Using credit from previously implemented compensatory mitigation is preferred because the functioning wetland or other aquatic resources are developed before impacts to wetlands and waters occur. This reduces many of the risks and uncertainties related to impacts and mitigation success. Mitigation developed on larger sites in carefully selected landscape positions has the potential to provide higher ecological functioning and may be more sustainable over time.

During scoping and environmental review, WSDOT considers available compensatory mitigation options in the following order:

1. Wetland mitigation banks (established by WSDOT or others)
2. In-Lieu Fee Programs (established by a non-profit entity or a government agency involved in natural resource management)

The procurement reform law ([RCW 39.26](#)) must be followed to purchase mitigation credit. For assistance first go to the [Wetland Mitigation](#) webpage, or contact the ESO Financial Program Manager Jodie Vosse at [jodie.vosse@wsdot.wa.gov](mailto:jodie.vosse@wsdot.wa.gov).



3. Advance mitigation established by WSDOT (permittee-responsible mitigation)
4. Constructing a new WSDOT compensation site concurrently with the project (permittee-responsible mitigation)

The selected mitigation option may be included in the environmental review document if the concept is easy to explain. A wetland biologist may need to explain more complex mitigation concepts in a NEPA/SEPA Mitigation Memorandum or Conceptual Mitigation Plan appended to the environmental review document.

State and federal regulatory agencies evaluate the mitigation concept to determine if it adequately compensates for the future expected project impacts. A commitment to the mitigation option must be made during the NEPA process, leaving sufficient time to develop an appropriate mitigation plan and design for the JARPA.

Additional information is available on WSDOT's [Wetland Mitigation](#) webpages.

### **431.04(2)      *Developing Detailed Mitigation Plans***

A Draft Wetland, Stream or Aquatic Resources Mitigation Plan prepared by a wetland biologist documents how the project avoids and minimizes impact to wetlands or other waters, describes the project and the remaining unavoidable impacts, and the approach for providing compensatory mitigation. Additional work necessary to develop the mitigation plan for submittal with the JARPA varies depending on the mitigation option chosen:

1. Mitigation Bank and In-Lieu Fee Programs – A mitigation bank credit use plan or an in-lieu fee program use plan must be submitted.
2. Advance Mitigation or Excess Mitigation Credit – Advanced Mitigation plans are approved at the time the site is authorized and include details of how the advance mitigation credit will be developed and used.

An advance mitigation credit use plan briefly explains how the available credit compensates for project impacts and provides a ledger showing the debits and remaining credit value.

3. Permittee-Responsible Mitigation – The Draft Mitigation Plan includes all the information needed for WSDOT to plan appropriate mitigation including the rationale for selecting the site; data describing baseline (pre-construction) conditions; a detailed mitigation plan (including a grading plan and planting plan); and goals, objectives, and performance standards.

The [2008 Federal Rule](#) requires long-term mitigation site protection. Long-term site protection must be in perpetuity. Another natural resource management entity may provide the long-term management, with or without direct property transfer to their ownership.

The long-term site protection mechanism most often used for WSDOT compensation sites are recordings on the right-of-way plan or a sundry site plan that identify it as a compensatory mitigation site with the Corps permit number. If the site won't be maintained for the long term in WSDOT ownership, another legal mechanism for long-term protection must be developed.

WSDOT environmental staff coordinate with the region Real Estate Services office to develop the long-term protective mechanisms for land transferred to other than WSDOT ownership. Conservation easements, restrictive covenants, or other mechanisms may be suitable for protection.

WSDOT environmental staff also coordinate with the region Real Estate Services office and legal counsel as needed to develop any compensatory mitigation site transfer mechanism. See [RCW 47.12.370](#) on the Washington State Legislature page for the requirements for environmental mitigation exchange agreements. Transfer of compensation site ownership to other parties for long-term management is only allowed after meeting all performance criteria during monitoring. There must be an agreement that the new entity will protect the environmental functions in perpetuity.

As of March 2015, the Corps and Ecology require Mitigation Plans to contain a commitment to develop a 10-Year Long-Term Management Plan. This requirement does not affect the ongoing requirement for perpetual stewardship of mitigation sites.

- WSDOT provides guidance on including Long-Term Management Plans and proposing use of excess mitigation area in mitigation plans on the WSDOT [Wetland Mitigation](#) webpage.

For sites that include advance mitigation, the Draft Mitigation Plan should identify how the mitigation value will be developed and tracked. If the site has more wetland area available than needed for project compensation, the mitigation plan should propose that the excess be available for use by other projects, or the value will not be approved for later use by the permitting agencies.

WSDOT can only use agricultural lands of long-term commercial significance for mitigation when there are no other options ([RCW 47.01.305](#)). Washington law directs WSDOT to consider public and private lands before using agricultural lands. Every effort must be made to avoid any net loss of commercial agricultural lands.

- WSDOT provides guidance on how to identify agricultural lands that must be protected and how to comply with [RCW 47.01.305](#).

Assessment Reports are required for permittee-responsible mitigation sites to document existing wetlands and other aquatic resources. The mitigation design team uses the baseline resource conditions to determine the area available for the various types of compensatory mitigation, e.g., restoration, establishment, enhancement, and preservation. The ESO wetland monitoring group uses digital files (MicroStation dgn or GIS shapefiles) of the delineations of pre-existing wetlands or other waters to evaluate how much of each type of mitigation has been provided at the end of the planned monitoring period.

- Additional information is available on the WSDOT [Wetland & stream assessment](#) webpage.

### **431.04(3) Joint Aquatic Resources Permit Application (JARPA) Submittals and Final Plan Development**

The JARPA can be submitted when further design refinements are not likely to change the wetland impacts. Wetland reports supporting the JARPA may include one or more Wetland and Stream Assessment Reports, and a Draft Wetland and Stream Mitigation Plan. In some cases, a Jurisdictional Ditch Memo may also be included.

After the JARPA has been submitted, the Draft Wetland and Stream Mitigation Plan is finalized in coordination with the permitting agencies. Work on the Final Wetland and Stream Mitigation Plan should not begin until the appropriate review agencies have provided written conditional approval of the Draft Wetland and Stream Mitigation Plan. The final mitigation design approved by the permitting agencies is prepared for contract during the design phase with development of the final Plans Specifications and Estimates.

## **431.05 Policies, Regulations, and Agreements**

There are many policies, regulations, and agreements that protect wetlands. The purpose of this section is to identify wetland policies, regulations, agreements, and guidance that pertain to the environmental review phase.

### **431.05(1) Policies**

- WSDOT [Secretary's Executive Order E 1102.00 Wetlands Protection and Preservation](#)
- [Eco-Logical: An Ecosystem Approach to Developing Infrastructure Projects](#)

### **431.05(2) Federal Statutes and Regulations**

- [National Environmental Policy Act \(NEPA\)](#)
- Clean Water Act ([Section 404](#)) ([Section 401](#))
- [Coastal Zone Management Act](#)
- Presidential [Executive Order 11990 Protection of Wetlands](#)
- Rivers and Harbors Act of 1899 ([Section 9](#)) ([Section 10](#))
- [Final Rule on Compensatory Mitigation for Losses of Aquatic Resources \(2008\)](#)
- [Presidential Wetland Policy 1993](#)

### **431.05(3) State Statutes and Regulations**

- [State Environmental Policy Act \(SEPA\)](#)
- Governor's Executive Order [EO 89-10 Protection of Wetlands](#)
- [RCW 90.48 Water Pollution Control](#)
- [RCW 90.58 Shoreline Management Act](#)
- [Chapter 173-700 WAC Wetland Mitigation Banks](#)

### 431.05(4) Local Requirements

Growth Management Act ([RCW 36.70A](#) and [RCW 36.70B](#)). Local governments are required to use Best Available Science for Wetlands when reviewing and revising their policies and regulations on wetlands.

Critical Areas Ordinances identify local requirements for protection and management of wetlands including wetland identification, categorization, assessment, and mitigation required for unavoidable impacts to wetlands.

### 431.06 Abbreviations and Acronyms

Corps	US Army Corps of Engineers
Ecology	Washington State Department of Ecology
EO	Executive Order
FHWA	Federal Highway Administration
JARPA	Joint Aquatic Resources Permit Application
NEPA	National Environmental Policy Act
RCW	Revised Code of Washington
SEPA	State Environmental Policy Act

### 431.07 Glossary

This glossary provides reader friendly context for terms in this chapter. The associated links provide technical definitions. These terms may have other meanings in other chapters. Many of the terms below are included in the definitions in Title 33 Navigation and Navigable Waters, Part 332 Compensatory Mitigation for Losses of Aquatic Resources: [33 CFR § 332.2](#).

**Advance Mitigation** – Compensatory mitigation that is accepted by regulatory authorities as being established before an impact occurs. This is a form of permittee-responsible mitigation.

**Buffer** – An upland, wetland, or riparian area that protects or enhances wetlands or aquatic resource functions from disturbances associated with adjacent land uses.

**Compensatory Mitigation** – The restoration (re-establishment or rehabilitation), establishment (creation), enhancement, or in certain circumstances preservation of wetlands or other aquatic resources for the purposes of offsetting unavoidable adverse impacts which remain after all appropriate and practicable avoidance and minimization has been achieved.

**Concurrent Mitigation** – Compensatory mitigation established at the same time as project impacts. This is a form of permittee-responsible mitigation.

**Enhancement** – Changing a wetland to improve specific aquatic resource functions. Enhancement results in a gain in aquatic function, but does not result in a gain in wetland area.

**Establishment** – Converting an upland area to a wetland or other aquatic resource. Establishment results in a gain in wetland area and functions. (Equivalent to the term ‘creation’ used previously.)

**Impact** – Adverse effect, whether direct, indirect, temporary, or cumulative. Typical adverse effects to wetlands or other waters include filling, draining, altering natural drainage patterns, increasing or decreasing water levels, discharging sediment or toxicants from runoff, mechanically removing wetland vegetation, altering wetland or stream buffers, or compacting wetland soils.

**In-Lieu Fee Program** – A program administered by a governmental or nonprofit natural resources management entity that provides compensatory mitigation and sells mitigation credits. With regulatory approval, the obligation to provide compensatory mitigation is transferred from the permittee to the in-lieu fee entity when the credit purchase is complete.

**Mitigation** – Avoiding adverse impacts to wetlands, streams and other aquatic resources, where practical; minimizing unavoidable impacts; and compensating for all remaining unavoidable impacts.

**Mitigation Bank** – A property developed for the purpose of providing compensatory mitigation in advance of authorized impacts to aquatic resources where wetlands are established, restored, enhanced, or preserved. A mitigation bank may sell credits to, and assume the mitigation obligations of third parties. With regulatory approval, the mitigation obligation is transferred when the credit purchase is finalized.

**Mitigation Sequence** – An ordered approach to mitigation that involves analyzing the affected environment, determining the effects of projects, avoiding and minimizing adverse impacts, and compensating for the remaining unavoidable impacts.

**Permittee-Responsible Mitigation** – Compensatory mitigation for which the permittee retains full responsibility.

**Preservation** – Removing a threat to, or preventing a decline of aquatic resources by implementing legal or physical mechanisms to provide permanent protection. Preservation does not result in a gain of wetland area or functions.

**Restoration** – Changing a site so natural or historic functions are returned to a former or degraded wetland. For the purpose of tracking net gains in wetland area, restoration is divided into Re-establishment and Rehabilitation. Re-establishment results in a gain in wetland area; rehabilitation results in a gain in aquatic resource function, but not in area.

**Waters of the State** – Lakes, rivers, ponds, streams, inland waters, underground waters, salt waters and all other surface waters and watercourses within the jurisdiction of the state of Washington ([RCW 90.48.020](#)).

**Waters of the United States** – Briefly, all waters that are:

1. Used in interstate commerce, including tidally influenced waters.
2. Interstate waters including interstate wetlands.
3. All other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds.
4. Some impoundments.
5. Tributaries of the above.
6. Territorial seas.
7. Wetlands adjacent to waters.
8. Excludes prior converted croplands and waste treatment ponds.

**Wetland** – In general, wetlands are areas that are normally wet enough to support plants typically adapted for life in saturated soil conditions. [Washington State](#) and [federal](#) jurisdictional definitions of wetlands are slightly different.

**Wetland and Stream Assessment Report** – Describes the location, classification, ratings and functional assessment for each wetland based on field work by a qualified wetland biologist and a land survey. The project area for this report should include all potential work areas so the report does not have to be updated unless the project area changes.

**Wetland and Stream Mitigation Plan** – Describes measures taken to avoid and minimize wetland impacts and the way compensatory mitigation will be accomplished. This plan may have several iterations and levels of detail depending on the stage of design and discussions with regulatory agencies. It is finalized as permits are issued, and often is incorporated into the permit conditions.

**Wetland Discipline Report** – Uses the wetland boundaries and categories in the Wetland and Stream Assessment Report and the project footprint for each alternative to estimate impacts to wetlands and other waters. It may be updated as design modifications change the adverse impacts.

**Wetland Inventory Report** – Describes the presence or absence of wetlands based on a brief field visit. The project area for this report should include the potential work areas for all alternatives.