CHAPTER 19

WETLANDS AND WATERS OF THE UNITED STATES

CONTENT

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This chapter discusses documentation of direct impacts to wetlands and other surface waters, including rivers, streams, ponds, and lakes.

Because of the stringent regulation of these resources, avoidance of impacts to wetlands, streams, or other waters is advisable whenever possible. If the waters cannot be avoided, then impacts should be minimized. Mitigation in the form of replacement is typically required for any unavoidable losses of these habitats. A separate "Only Practicable Alternative Finding" statement must be placed in the final environmental document for any unavoidable impacts.

From a regulatory viewpoint, direct impacts to waterways or wetlands and water quality impacts (as described in Chapter 18) are inseparable. However, this chapter specifically addresses the issues of identifying the limits of the wetlands and waters and assessing the impacts to those areas.

19.1 Summary of Key Legislation, Regulations, and Guidance

The preservation of aquatic habitats, wetlands, and water quality is the primary focus of many federal and District of Columbia regulations.

The following list of pertinent regulations is not all inclusive, but does include the primary regulations that are applicable to highway projects.

Federal Laws and Regulations

- Executive Order (EO) 11990, Protection of Wetlands
- Section 10 of the Rivers and Harbors Act (33 United States Code [USC] 403)
- Clean Water Act (CWA), Section 401
- CWA, Section 404 (33 USC 1344)
- 33 Code of Federal Regulations (CFR), Parts 320–330, Discharges of dredge and fill material into United States waterways
- 40 CFR, Part 6, Appendix A, Protection of Wetlands

- 40 CFR, Part 230, Protection of Wetlands
- 40 CFR, Parts 320-330, Protection of Wetlands
- Supreme Court Decision in the matter of Solid Waste Agency of Northern Cook County v. United States Army Corps of Engineers (USACE), 531 U.S. 159 (2001) ("SWANCC Decision")
- Supreme Court Decision in the matter of Rapanos v. United States, and Carabell v. United States, 126 S. Ct. 2208 (2006) ("Rapanos Decision")

District of Columbia Laws and Regulations

- Water Pollution Control Act of 1984 (District Law 5-188)
- District of Columbia Municipal Regulations (DCMR) Title 21, Chapter 11, Water Quality Standards
- DCMR Title 21, Chapter 14, Submerged Aquatic Vegetation (SAV) Regulations
- DCMR Title 21, Chapter 19, Water Quality Monitoring Regulations

Notably, the District of Columbia does not have coastal zone management regulations as do adjacent states.

Guidance Documents

- USACE. 1987. Corps of Engineers Wetland Delineation Manual.
- USACE. 2007. U.S. Army Corps of Engineers Jurisdictional Determination Form Instructional Guidebook.
- USACE and United States Environmental Protection Agency (USEPA). Compensatory Mitigation for Losses of Aquatic Resources. Final Rule. Federal Register: April 10, 2008 (Volume 73, Number 70).

19.2 Agency Roles

The federal and District of Columbia agencies share responsibilities for protecting the natural environment. The following discussion focuses on the roles of these agencies in the review and regulation, if applicable, of highway projects.

Federal Agencies

- USACE is the primary federal agency that regulates direct impacts to rivers, streams, and wetlands under Section 10 of the Rivers and Harbors Act and Section 404 of the CWA. Both Section 10 and Section 404 apply to all activities, public or private. Section 10 regulates activities in navigable waters, and Section 404 regulates the discharge of fill material into waters of the United States, including navigable waters but also extending along tributaries and adjacent wetlands. In general, USACE exercises its authority under both laws as a single permitting process.

  USACE has the authority to determine the jurisdictional limits of waters of the United States, and to issue permits that involve placing any fill material, including earth embankments or bridge piers, into these waters.

- USEPA has broad authority over air, water, and land pollution. USEPA has oversight of USACE execution of Section 404. Generally, USEPA is invisible in the 404 permitting process; however, USEPA has review authority over USACE 404 permits and can veto USACE 404 permits. USEPA also has approval authority for some USACE jurisdictional determinations.

Local Agencies

- District of Columbia Department of the Environment (DDOE), Water Quality Division is an important regulatory agency to contact for any impacts to

waterways or wetlands. As required under Section 401 of the CWA, the Water Quality Division provides Water Quality Certification (WQC) for draft NPDES permits (issued by USEPA) and Section 404 permits (issued by USACE). The 401 WQC process provides the District with the opportunity to review the federal permits for consistency with District water quality standards and SAV regulations. The limits of jurisdiction of the Water Quality Division may extend beyond the limits determined by USACE for waters of the United States; that is, the Water Quality Division may also regulate isolated waters. The 401 WQC from DDOE is required for all Section 404 permits including Nationwide Permits and Individual Permits.

19.3 General Methodology

19.3.1 Definitions

Ephemeral: Ephemeral streams have flowing water only during and for a short duration after precipitation events in a typical year. Runoff from rainfall is the primary source of water for stream flow. Groundwater is not a source for water for the stream.

Intermittent: An intermittent stream has flowing water during certain times of the year, when groundwater provides water for stream flow. During dry periods, intermittent streams may not have flowing water. Runoff from rainfall is a supplemental source of water for stream flow.

Perennial: A perennial stream has flowing water year-round during a typical year. The water table is located above the stream bed for most of the year. Groundwater is the primary source of water for stream flow.

Submerged Aquatic Vegetation: SAV beds typically occur in depths of 3 to 6 feet along the larger waters of the District of Columbia, namely the Potomac and Anacostia Rivers, and vary in extent from year to year. They comprise a particular collection of floating leaved or submerged plant species.

Waters of the United States:

- All waters that are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters that are subject to the ebb and flow of the tide
- All interstate waters, including interstate wetlands
- 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—the use, degradation, or destruction of which could affect interstate or foreign commerce, including any such waters:
  - That are or could be used by interstate or foreign travelers for recreational or other purposes
  - From which fish or shellfish are or could be taken and sold in interstate or foreign commerce
  - That are used or could be used for industrial purpose by industries in interstate commerce
- All impoundments of waters otherwise defined as waters of the United States under the definition
- Tributaries of waters identified above
- Wetlands adjacent to waters (other than waters that are themselves wetlands)

Wetlands: Areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in

saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas.

19.3.2 Existing Conditions/Affected Environment

While there are a number of published sources that show wetlands and waters in the District of Columbia, the jurisdictional boundaries must be determined in the field and confirmed by the USACE on a case-by-case basis. The confirmation process has been made especially important because of two recent Supreme Court decisions: the Solid Waste Agency of Northern Cook County v. USACE (2001) (known as SWANCC), and the consolidated cases Rapanos v. United States, and Carabell v. United States (2006) (known as Rapanos). These decisions excluded any isolated waters that have no "significant nexus" to navigable waters or their tributaries from regulation under the CWA. Streams that have relatively permanent flow, at least seasonally (generally 3 months or more), and wetlands adjacent to these streams are clearly regulated. Wetlands and waters that are clearly isolated, with no connections to other waters, are not regulated. For many waters, a significant nexus determination is needed.

- Tributaries that do not typically have continuous flow at least seasonally
- Wetlands that are adjacent to such tributaries
- Wetlands that are adjacent to but that do not directly abut a relatively permanent tributary

These determinations are often not straightforward. Therefore, it is prudent to confirm all jurisdictional determinations through the USACE.

Following is an approach to collecting pertinent information to identifying regulated waters and wetlands.

Office Analysis

Various published and Internet resources are available that identify wetlands and other waters. It is recommended that data regarding resources within a 1-mile radius of the project area be collected. The collected data should be incorporated into the project base map. Examples of these available data sources are:

- District of Columbia Geographic Information System (GIS). The District of Columbia GIS contains mapping of streams and wetlands. A map of wetlands in the District of Columbia is also available as a download from the DDOE Water Quality Division website.

- District of Columbia Soil Survey. The soil survey, assembled by the Natural Resources Conservation Service, contains maps and descriptions of the soils throughout the District. The soil survey describes the soil characteristics, such as drainage and texture, which can determine plant community composition. In particular, the "hydric" soil units can show the location of historical wetlands and areas where wetlands may still occur.

- National Wetland Inventory (NWI). This inventory, developed by the United States Fish and Wildlife Service (USFWS), primarily from aerial photos, shows few wetlands in the District. However, it should be referenced for the project area.

- SAV beds are mapped annually by the Virginia Institute of Marine Sciences (VIMS), under contract with the National Marine Fisheries Service (NMFS). The annual maps of SAV beds in the Potomac and Anacostia rivers can be viewed online or downloaded from the VIMS website.

The amount of documentation needed depends on the project and nature of the environment in the project area.

A large portion of the District is densely developed, and, therefore, wetlands and streams are absent. For some projects in more developed areas, the secondary information gathered can be adequate to document the lack of wetlands or streams.

On the other hand, projects near Rock Creek, the Anacostia River, the Potomac River, any of their tributaries, parks or greenways may contain wetlands or streams that have not been previously identified or delineated. Therefore, field studies should be performed to confirm secondary data and to add detail to the inventory of wetlands and waters for any project that includes natural areas.

Field Studies

On a project-by-project basis where wetlands and other waters are present, a qualified consultant should be employed to delineate the limits of regulated waters and wetlands according to the USACE guidance. These more accurate, updated boundaries should replace the secondary source information in the project base map for project planning and impact analysis. The field studies should also document the conditions of the waters. To adequately assess the biological characteristics, the field studies should be performed during the growing season (between the last freeze date in spring to the first freeze date in the fall), which in the District is generally between April 7 and October 29.

Waterways Delineation

Rivers and streams are classified as tidal (the Potomac River upstream to Little Falls, the Anacostia River from its mouth to the confluence of the Northwest and Northeast Branches, and the lower 400 meters of Rock Creek) or nontidal (all others).

The regulatory boundary of a waterway is the "ordinary high water mark." In tidal waters, the ordinary high water mark corresponds to the Mean High Water (spring tide) elevation, which can be determined from tide tables available from the National Oceanographic and Atmospheric Administration (NOAA) and USACE.

For nontidal waters, the ordinary high water mark can usually be delineated and marked in the field using guidance from the USACE, and then located with global positioning or other survey methods.

Based on the field studies, nontidal streams should be additionally classified as perennial, intermittent, or ephemeral. The physical habitat of the stream should be described using an acceptable method, such as USEPA's Rapid Bioassessment Protocols. Depending on the availability of recent data from the District Fisheries Division or Metropolitan Washington Council of Governments (MWCOG), the sensitivity of the habitat, or the potential level of impact, detailed studies of the fish and macroinvertebrates in project area streams also may be necessary. This is discussed in Chapter 20, Biological Resources.

The USACE generally will not assert jurisdiction over the following features.

- Swales or erosional features (such as gullies, small washes characterized by low volume, infrequent, or short duration flow)
- Ditches (including roadside ditches) excavated wholly in and draining only uplands and that do not carry a relatively permanent flow of water

Wetlands Delineation

The official methodology, developed by USACE, defines wetlands based on a combination of the dominant vegetation, soils characteristics, and positive indicators of at least seasonal soil saturation or inundation. Contrary

to some beliefs, all wetlands that meet the definition are regulated, regardless of their sizes. The Corps of Engineers Wetland Delineation Manual (1987) and other USACE guidance must be used to identify wetlands and their regulatory boundaries. The wetland delineation should be documented on wetland determination data forms acceptable to USACE. Wetland boundaries should be marked in the field and surveyed using global positioning or other survey methods.

Wetlands should be classified based on their vegetative and hydrologic characteristics. The Cowardin classification system (USFWS 1979) is typically used.

Functions and values of the wetlands must be assessed. Methods, such as the USACE Wetland Evaluation Technique or the USACE Hydrogeomorphic Model, can be used to qualitatively assess the functions that wetlands serve in the landscape, such as: floodlfow alteration, groundwater discharge or recharge, bank stabilization, sediment and toxicant retention, and wildlife habitat. Methods developed by the Maryland Department of the Environment may also be applicable.

The wetland's size, classification, and functional assessment can be used to evaluate its uniqueness and relative importance compared to other wetlands in the watershed.

SAV Beds

Field studies should delineate the extent of these beds, which may require a boat, and their species composition. While they are located below the ordinary high water mark of waterways and are regulated under the CWA, there are other special District of Columbia regulations that apply to them that require their separate delineation.

Isolated Waters

Isolated wetlands and other waters (such as ponds) are not regulated under the CWA, but may be regulated by the District of Columbia Department of Health (DDOH). The same methodologies described above can be used to determine the boundaries of isolated wetlands or other waters.

Jurisdictional Determination

A USACE Jurisdictional Determination Form should be completed for each wetland or water body. These forms should be used to document if a wetland or other water is connected to navigable waters or a tributary (therefore regulated under Section 404) or if it can be considered isolated.

Field studies should be summarized in a technical memorandum that includes:

- Study methods
- Dates of field surveys
- Background data (such as soil survey, NWI, District of Columbia GIS, and spring tide elevations)
- Number, sizes, types and functions of the wetlands and other waters in the project area
- Wetland delineation data forms
- Photos of the wetlands
- Maps of the wetlands and waters delineated

The technical memorandum should be submitted to the USACE with a request for a Jurisdictional Determination (JD). USACE typically makes a field visit to the site to confirm the boundaries and will issue an official JD letter.

NEPA Document

The Affected Environment section of the NEPA document should provide a summary of the waters in the project area, as described in the technical memorandum, the date the fieldwork was completed, and the date confirmed by the USACE. Include tables with the following information.

- Unique identifier for each wetland or water in the project area
- If a wetland or pond, include the total approximate size
- If a stream, include the dimensions such as the length of the stream in the study area and average width
- Brief description of the wetland or water
- Brief description of habitat characteristics and classification of each wetland or water
- Functions and values of the wetland or waterway

19.3.3 Determination of Impacts

As both a regulatory and a practical matter, avoidance of impacts to wetlands, streams, SAV beds, or other waters is advisable whenever possible. Any impacts will require a justification and analysis of avoidance alternatives. Also, the CWA permitting process that will be required for any impacts to wetlands or other waters can have an effect on project budget and schedule.

The extent of the construction footprint over wetlands and waters is the first step to quantify the impacts. The area of wetlands or waters directly affected by the project footprint should be identified. Permanent and temporary impacts should be separately evaluated. Stream crossings that are made with culverts, which would permanently remove stream habitats, should be separately assessed from bridges, which generally have temporary impacts except in the areas of any piers that are placed in the waterway.

The stability and function of wetlands and waters that are only partly affected should be assessed. The NEPA document should examine potential peripheral impacts to hydrology or functions in the remaining portion of the wetland or stream beyond the project footprint.

If the project includes unavoidable impacts to wetlands, then an "Only Practicable Alternative Finding" will need to be specifically included in the NEPA document in accordance with EO 11990.

A proposed action that includes wetlands impacts will not be approved unless FHWA finds that the proposed significant encroachment is the only practicable alternative. This finding shall be included in the final environmental document (Final EIS or FONSI) and shall be supported by the following information.

- The reasons why the proposed action must be located in the wetland
- The alternatives considered and why they were not practicable
- A statement indicating whether the action conforms to federal and District regulations

19.3.4 Permitting Process

The placement of dredged and fill material into waters of the United States, including wetlands, is regulated under Section 404 of the CWA. A permit from the USACE is required for activities such as roadway embankments or utility lines. It is during the early detailed design process when the permits are obtained and the details of the mitigation are planned and designed. In general, Section 404 permits can be divided into two main categories.

- General Permits
- Individual Permits

General Permits

General permits are issued for project that have minimal individual and cumulative impacts. General permits are of three types:

- Nationwide Permits (NWP)
- State and Regional Permits
- Programmatic Permits

Currently the District of Columbia is covered only under the NWP.

Nationwide Permits

The NWP represents authorizations that have been issued for specific activities nationwide. If certain conditions are met, the specified activities can take place with little or no individual review. Nationwide permits apply to projects that entail minimal impacts to the aquatic environment. Projects must involve less than 0.5 acre of cumulative wetland impacts to be eligible for a nationwide permit and must be completed within 2 years from the date of issuance. Nationwide permits allow the USACE to streamline the permitting of activities with minimal adverse environmental impacts. The USACE issues the NWP for 5 years. The current NWP has 45 categories including NWP 3 Maintenance, NWP 6 Survey Activities, NWP 14 Linear Transportation Projects, and NWP 15 USCG Approved Bridges that typically apply to DDOT projects. Most of the work performed by DDOT is generally covered under one or more categories of the NWP. The NWP has certain requirements that must be met before the NWP can be used. Refer to the NWP issuance notice from the USACE for the requirements and general conditions. A copy of the NWP issued in March 2007 is included in the References section.

NWP usually has some additional regional requirements that can be obtained from the USACE District office. The USACE Baltimore District Permitting Office should be contacted any time a Section 404 permit is required. This NWP has to be certified by DDOE for Section 401 WQC.

Individual Permits

Individual permits are needed when the impacts are greater than the limits set by USACE. Individual permits apply to projects involving more than 0.5 acre of wetland impacts and to those projects impacting high-quality aquatic resources. These permits require a public notice and interagency review. For individual permits, CWA Section 404 (b) guidelines must be followed. When an individual permit is required, close coordination with USACE and DDOE is needed.

Section 401 Permit Certification

The Section 401 WQC process provides District of Columbia with the opportunity to review the federal permits for consistency with District water quality standards and SAV regulations. The limits of jurisdiction of the Water Quality Division may extend beyond the limits determined by USACE for waters of the United States; that is, the Water Quality Division may also regulate isolated waters. In the District of Columbia, the DDOE provides the Section 401 WQC.

19.4 Identification of Appropriate Mitigation Measures

As a rule, any loss of wetlands, streams, SAV, or other waters that are regulated by the CWA or District of Columbia regulations must be mitigated within the District to meet both the USACE and the DDOE permitting requirements. Federal rules for mitigation have been published (Federal Register, April 10, 2008). The DDOE has not yet published mitigation guidelines or rules. Case-by-case coordination with the USACE and the DDOE is necessary to define mitigation requirements.

Initiating the planning for mitigation is advisable as soon as the need is identified during the NEPA/project planning process, because of the limited mitigation opportunities in the District. Generally, the use of mitigation banks is preferable, but at this time there are no mitigation banks in the District of Columbia. Restoration of degraded habitats should first be considered for mitigation, followed by enhancement of existing wetlands, creation of replacement wetlands, and lastly preservation of wetlands. The right mitigation could be a combination of these methods. The goal is usually at least an in-kind replacement of wetlands or waters that are permanently disturbed by the project for "no net loss" of the wetlands. Depending on the importance of the affected wetland or water, the regulatory agencies may require mitigation at a ratio of 1.5 times the area of impact or more.

The NEPA document should discuss the mitigation goals for the project, as determined in coordination with the regulators, and conceptual mitigation strategies. The NEPA document may identify several alternatives for mitigation, with a commitment to developing the final mitigation plan during detailed design and the permitting process.

The project manager should note that wetlands created for the management and treatment of stormwater (see Chapter 17, Water Quality Policy and Regulations) are typically not acceptable as mitigation for wetland impacts.

19.5 Post-NEPA Commitments

Impacts to wetlands or other waters of the United States will require a Section 404 Permit from the USACE, and a Section 401 WQC from the DDOE. It is during the early detailed design process when the permits are obtained and the details of the mitigation are planned and designed.

19.5.1 Mitigation Detailed Design

Both Section 404 and Section 401 permits will require mitigation of impacts, as discussed in the previous section. Typically, the same mitigation plan can be used to satisfy the mitigation requirements for both permits.

All mitigation plans will require approval from the regulatory agencies during the permitting process. The negotiation of final, acceptable mitigation can be time consuming, and the project team should plan accordingly. Preferred sites should be selected as early in detailed design process as possible.

Once they are implemented, mitigation sites typically require monitoring for 5 years to fulfill permitting obligations. Mitigation monitoring includes qualitative and quantitative data collection for soils, hydrology, and vegetation. The level of monitoring may vary from site to site and should be negotiated and established at the permit stage and identified in the permit conditions. Typically, annual monitoring reports are submitted to the agencies.

19.6 Additional Information

- Regulatory Branch
  USACE, Baltimore District
  10 South Howard Street
  8th Floor
  Baltimore, MD 21201
  http://www.nab.usace.army.mil/Regulatory/

- National Marine and Fisheries Service (NMFS)
  Northeast Regional Office
  National Oceanic and Atmospheric Administration
  One Blackburn Drive
  Gloucester, MA 01930-2298
  http://www.nero.noaa.gov/nero/

- DDOE
  District Department of the Environment
  Water Quality Division
  51 N Street, NE, 5th Floor
  Washington, DC 20002
  202-535-2190
  http://ddoe.dc.gov/ddoe/cwp/view,a,1209,q,494812,ddoeNav_GID,1486,ddoeNav,/31375/31377/.asp

- Division of Fisheries and Wildlife
  District of Columbia
  51 N Street, NE, Suite 5002
  Washington, DC 20002
  Phone: 202-535-2266
  Fax: 202-535-1373
  http://ddoe.dc.gov/ddoe/cwp/view,a,1209,q,492187,ddoeNav_GID,1486,ddoeNav,|31375|31377|.asp

- District Geographic Information System: *http://dcatlas.dcgis.dc.gov/catalog/*

- Virginia Institute of Marine Science (VIMS), annual maps of SAV beds in the Potomac and Anacostia Rivers: *http://www.vims.edu/bio/sav/maps.html*

- USEPA's Rapid Bioassessment Protocols: *http://www.epa.gov/bioindicators/html/rbps.html*

- DC Water Quality standards: *http://ddoe.dc.gov/ddoe/frames.asp?doc=/ddoe/lib/ddoe/wqd/WaterFinalRules06.pdf*

- Maryland Department of the Environment, Summary of Wetland Functional Indicators: *http://www.mde.state.md.us/Programs/WaterPrograms/Wetlands_Waterways/about_wetlands/description.aspx*

- National Academies Press. Compensating for Wetland Losses under the Clean Water Act: *http://www.nap.edu/openbook.php?record_id=10134&page=285*

- Cowardin, L., V. Carter, F. Golet and E. Laroe. 1979. Classification of Wetlands and Deepwater Habitats of the United States. U.S. Department of the Interior, Fish and Wildlife Service, Office of Biological Services, Washington, D.C. 20240. *http://el.erdc.usace.army.mil/emrrp/emris/emrishelp2/cowardin_report.htm*

- USACE and USEPA. 2008. Compensatory Mitigation for Losses of Aquatic Resources. Final Rule. Federal Register: April 10, 2008 (Volume 73, Number 70). *http://www.epa.gov/fedrgstr/EPA-WATER/2008/April/Day-10/w6918a.htm*

- USACE. 2005. Anacostia River and Tributaries, Maryland and the District of Columbia, Comprehensive Watershed Plan, Section 905(b) (WRDA 86) Analysis. U.S. Army Corps of Engineers, Baltimore District, July 2005.

- USACE, Waterways Experiment Station. 1987. Wetland Evaluation Technique (WET) Volume II: Methodology. Army Corps of Engineers, Vicksburg, Mississippi.

- USACE, Guide to Clean Water Act Jurisdiction in light of the SWANCC and Rapanos Decisions *http://www.usace.army.mil/CECW/Pages/cwa_guide.aspx*

- District of Columbia. 1997. District of Columbia Wetland Conservation Plan.