

CHAPTER 17

WATER QUALITY POLICY AND REGULATIONS

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WATER QUALITY POLICY AND REGULATIONS

This chapter focuses on assessing impacts to surface water quality from stormwater runoff during and after construction. Maintaining the water quality in streams, rivers, wetlands, and other waters is important for human health and recreation, as well as for the natural aquatic environment.

The assessment and regulation of direct impacts to wetlands and stream habitats is discussed in Chapter 19, Wetlands and Waters of the United States. Chapter 20, Biological Resources, discusses impacts to biological resources in those waters.

17.1 Summary of Key Legislation, Regulations, and Guidance

Federal Laws and Regulations

- Clean Water Act (CWA), Section 402, National Pollutant Discharge Elimination System (NPDES)

- CWA, Section 401, Water Quality Certification (WQC)
- 40 Code of Federal Regulations (CFR), Part 122.26, Storm Water Discharges

District of Columbia Laws and Regulations

- Water Pollution Control Act of 1984 (DC Law 5-188)
- Storm Water Permit Compliance Amendment Act of 2000 (DC Law 13-311)
- District of Columbia Municipal Regulations (DCMR) Title 21, Chapter 11, Water Quality Standards
- DCMR Title 21, Chapter 19, Water Quality Monitoring Regulations

17.1.1 Guidance Documents

- Guidance for Preparing and Processing Environmental and Section 4(f) Documents, Federal Highway

Administration (FHWA) Technical Advisory (TA)
T6640.8A

17.2 Agency Roles

Federal and District of Columbia agencies share responsibilities for protecting water quality from point and nonpoint sources, including stormwater runoff. The following discussion focuses on the roles of these agencies in the review and regulation of highway projects.

Federal Agency

- United States Environmental Protection Agency

In the District of Columbia, the United States Environmental Protection Agency (USEPA) is the permitting authority for Section 402, the NPDES program. For highways, NPDES permitting relates to stormwater discharges.

USEPA Region 3 (Mid-Atlantic) office in Philadelphia and its field office in Annapolis are responsible for programs in the District of Columbia.

Local Agencies

District of Columbia Department of the Environment (DDOE) is the District government's equivalent of USEPA.

- Water Quality Division is an important regulatory agency to contact for any impacts to waterways or wetlands. The Water Quality Division provides drinking water testing, source water assessment, and water quality certification under Section 401 of the CWA. The Water Quality Division monitors water

quality and designates appropriate uses of the various water bodies.

As required under Section 401 of the CWA, the Water Quality Division provides WQC for draft NPDES permits (issued by USEPA). The 401 WQC process provides the District with the opportunity to review the federal permits for consistency with District of Columbia water quality standards.

In accordance with Section 303(d) of the CWA, the Water Quality Division also provides total maximum daily load (TMDL) assessment for each of the watersheds (Potomac, Anacostia, and Rock Creek) in the District of Columbia.

- Watershed Protection Division, Sediment and Storm Water Technical Services Branch is responsible for stormwater management, sediment and erosion control, and floodplain management for all land-disturbing activities. It is responsible for reviewing project plans for consistency in these areas with the DCMR zoning regulations.
- Water and Sewer Authority (DCWASA) maintains records of water quality in the drinking and wastewater systems. The District of Columbia Stormwater Administration, part of DCWASA, is the lead agency for controlling stormwater outfalls in the District.
- Metropolitan Washington Council of Governments (MWCOG) maintains water quality and fisheries data on a regional basis. MWCOG also monitors fish habitat conditions and areas in need of restoration.

17.3 General Methodology

17.3.1 Definitions

Best Management Practices (BMPs): Techniques found to be most effective and practical for reducing erosion and sedimentation into waterways.

NPDES: The NPDES program, established in Section 402 of the CWA, is the permitting program for discharges from point sources into waters of the United States.

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.

Total Maximum Daily Load: A calculation of the maximum amount of a pollutant that a water body can receive and still meet water quality standards, and an allocation of that amount to the pollutant's sources. A TMDL is the sum of the allowable loads of a single pollutant from all contributing point and nonpoint sources.

17.3.2 Section 402 Permits

Section 402 of the CWA is also called the NPDES permit. Under NPDES, all facilities that discharge pollutants from any point source into waters of the United States are required to obtain a permit.

Many DDOT activities fall under the DC MS4 permit (which still requires NOI submission to EPA); however,

the following DDOT activities may require separate Section 402 permits:

- Construction dewatering operations associated with activities such as utility excavation, bridge pier installation, foundation or trench digging, or other subsurface activities.
- If discharge is expected to occur from a point source discharge from mechanical wastewater treatment plants, vehicle washing, or industrial discharges.

The permitting authority for the District of Columbia is the USEPA Region 3 Office Water Protection Division.

There are two basic types of NPDES permits:

- Individual Permits
- General Permits

Individual Permits are specifically tailored to an individual facility. An individual permit is issued to a facility based on the information provided in the permit application (such as type of activity, nature of discharge, receiving water quality). This permit is issued to the facility for a specific time period (not to exceed 5 years) with a requirement that the facility reapply prior to the expiration date. A water treatment plant, or an industrial facility are examples of types of facilities that may require an individual permit.

General Permits are issued for multiple facilities within a specific category. Categories for the general permit include:

- Stormwater point sources

- Facilities that involve the same or substantially similar types of operations
- Facilities that discharge the same types of wastes or engage in the same types of sludge use or disposal practices
- Facilities that require the same or similar monitoring

General permits, however, may only be issued to dischargers within a specific geographical area such as city, county, or state political boundaries; designated planning areas; sewer districts or sewer authorities; state highway systems; standard metropolitan statistical areas; or urbanized areas.

The Municipal Separate Storm Sewer System (MS4) permit is used for a conveyance or system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, man-made channels, or storm drains): (i) Owned or operated by a state, city, town, borough, county, parish, district, association, or other public body (created to or pursuant to state law) including special districts under state law such as a sewer district, flood control district or drainage district, or similar entity, or an Indian tribe or an authorized Indian tribal organization, or a designated and approved management agency under Section 208 of the Clean Water Act that discharges into waters of the United States. (ii) Designed or used for collecting or conveying stormwater; (iii) Which is not a combined sewer; and (iv) Which is not part of a Publicly Owned Treatment Works (POTW) as defined at 40 CFR 122.2.

Most DDOT work is covered under the MS4 permit. However, construction projects near the waters of the

United States that discharge directly into the water require a separate Section 402 permit. For such projects USEPA and DDOE should be contacted.

For most DDOT construction projects, a Construction General Permit (CGP) should be obtained by submitting the Notice of Intent (NOI) application available at the USEPA NPDES website.

17.3.3 Existing Conditions/Affected Environment

The primary waterways of the District are the Potomac River, the Anacostia River, and Rock Creek. Each of these has a number of tributaries.

Data collection should begin with identifying the watershed where the project is located, and all waters and wetlands that may receive stormwater runoff from the project area. A number of sources for this information are available, as outlined in Chapter 19, Wetlands and Waters of the United States. Whatever published data is referenced, the presence of waters or wetlands should be verified with a site visit. The site visit would also document the current physical conditions of the surface waters. This information may be provided in an ecological overview report or a wetlands and stream delineation report (see Chapter 19, Wetlands and Waters of the United States).

Current, baseline water quality information can be obtained from the resource agencies. Examples of these data sources are listed below:

- USEPA collects water quality and other data from a variety of sources and studies and provides a summary for many waterways in the District in its online

National Assessment Database. The summary includes the suitability of the waters for various uses and sources of impairment.

- United States Army Corps of Engineers (USACE) is responsible for the dredging of navigation channels in the Potomac and Anacostia Rivers. As part of that activity, USACE may be able to provide water quality information.
- DDOE Fisheries and Wildlife Division regularly surveys larger water bodies and maintains a database. A request for current data (biological and water quality) should be forwarded to the Fisheries and Wildlife Division for waters in the project area. The Fisheries and Wildlife Division is also responsible for establishing appropriate recreational uses, such as fishing, in the waters of the District.
- DDOE Water Quality Division provides TMDL and other water quality reports for various waters in the District. Waters that are identified as “impaired” on the 303(d) list have TMDL reports that identify the water quality problems in these waters. The TMDLs will also set limits for pollutant loads to impaired waters. These limits could be important considerations in developing stormwater and erosion control measures for compliance with water quality standards. The Water Quality Division may also provide other unpublished water quality data by request.
- DCWASA may be able to provide current surface water quality data in a project area where there is a combined sewer overflow or other wastewater outfall.

- Other nongovernmental agencies may also provide water quality information. For example, several groups are interested in and monitoring the restoration of the Anacostia River.

Also pertinent to assessing current water quality in receiving streams are the biological resources. In particular, any sensitive, threatened or endangered species that inhabit a particular waterway should be noted. The agencies who are primarily involved with monitoring these populations, such as the DDOE Fisheries and Wildlife Division (mentioned above), the United States Fish and Wildlife Service (USFWS), and the National Marine Fisheries Service (NMFS), would provide this information as part of the early project coordination (Chapter 12, Agency Coordination Process). The presence of these species provides both indications of the current conditions of the water body, as well as a standard for assessing impacts. These agencies may also provide additional water quality data as part of their rare species monitoring.

Depending on the data that are available from the resource agencies for water bodies in the project area, additional water quality measurements or laboratory analysis may be necessary. The need for additional data collection should be coordinated with the agencies early in the project development.

17.3.4 Determination of Water Quality Impacts

Stormwater runoff from roadways and urban environments can carry a number of pollutants, including suspended solids, volatile compounds, oil and grease, nutrients, and metals. Stormwater from road surfaces is

often collected into a storm sewer, and then discharged into a nearby waterway.

Impacts on the water quality of the receiving water should be discussed in terms of the expected amount of additional stormwater generated by the project and the amount of pollutants it will carry. The 1981 FHWA research report, *Constituents of Highway Runoff*; the 1985 report, *Management Practices for Mitigation of Highway Stormwater Runoff Pollution*; and the 1987 report, *Effects of Highway Runoff on Receiving Waters*, contain procedures for estimating pollutant loading from highway runoff.

These loadings can be compared to the existing water quality conditions, uses of the receiving waters, and the District water quality standards (21 DCMR Chapter 11) and TMDLs (if any) established for the receiving waters. Potential impacts to sensitive species in the receiving waters, if any, from water quality degradation should also be addressed. The discussion should also include all measures implemented to control the pollutant loads as required by water quality regulations (as discussed below).

17.3.5 Identification of Appropriate Mitigation Measures

Some mitigation to reduce water pollutants is required by NPDES permits and District of Columbia water quality standards. An erosion and sediment control plan is required for 50 square feet of land disturbance. During construction, the control of erosion and sedimentation in nearby waters is standard practice. Section 107 of the DDOT Standard Specifications for Highways and Structures specifies the use of sediment and erosion control methods as described in DDOE 2003 Standards and

Specifications for Soil Erosion and Sediment Control and the District of Columbia Erosion and Sediment Control Handbook. These manuals contain standard details to develop a Stormwater Pollution Prevention Plan to meet the requirements of the NPDES construction permit. Such methods should be mentioned in the assessment of impacts and mitigation in the environmental document.

Also during construction, point discharges of stormwater may be created temporarily, such as dewatering or vehicle washing. The quality of these discharged waters must also be controlled. Frequently, that will involve removal of suspended solids.

Postconstruction, the use of BMPs to manage stormwater and reduce pollutant loads into waterways from nonpoint sources (such as roadways) or point sources (such as a roadside rest or other facility) must be considered in accordance with District water quality standards. A stormwater management plan is required for 5,000 square feet of land disturbance. DDOT has committed to implement BMPs to reduce stormwater runoff from roadways to the extent possible. The DDOT Standard Specifications for Highways and Structures adopts the methods as described in the District of Columbia Stormwater Management Guidebook to design and construct stormwater infiltration, detention, retention or attenuation structures, or other devices to abate pollution or control runoff. The use of low impact development (LID) techniques such as vegetated drainage swales, rain “gardens,” and/or treatment wetlands may also be considered. These techniques can reduce substantially the amount of metals, polycyclic aromatic hydrocarbons (PAHs), and other contaminants borne in roadway runoff.

The commitment to particular BMPs in the environmental document will depend on the size of the project, the sensitivity of the receiving waters, the available space, and adjacent land use.

17.4 Post-NEPA Commitments

For water quality issues, permits are normally required from the DDOE. As mentioned in the previous section, the permits cover three types of water quality issues: sediment and erosion control during construction, point source discharges (such as dewatering or vehicle washing) during construction, and long-term stormwater management.

Typically, the project manager will be responsible to submit a permit application to the DDOE at 65-percent completion of design. Measures to control sediment and erosion, revegetation, and temporary and permanent stormwater management methods will be included in the plans with the application. The project manager must be sure to incorporate all comments and requirements before final review submission.

17.5 Additional Information

- USEPA
USEPA Region III (3WP41)
Water Protection Division
Philadelphia, PA 19103-5103
- Regulatory Branch
USACE, Baltimore District
10 South Howard Street
8th Floor
Baltimore, MD 21201
<http://www.nab.usace.army.mil/Regulatory/>

- USFWS
Chesapeake Bay Field Office
177 Admiral Cochrane Drive
Annapolis, MD 21401
Tel: 410-573-4573
<http://www.fws.gov/chesapeakebay/>
- 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
Division of Fisheries and Wildlife
51 N Street, NE Suite 5002
Washington, DC 20002
Tel: 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
- DDOE
District Department of the Environment
Water Quality Division
51 N Street, NE, 5th Floor
Washington, DC 20002
Tel: 202-535-2190
http://ddoe.dc.gov/ddoe/cwp/view,a,1209,q,494812,ddoeNav_GID,1486,ddoeNav,31375/31377/.asp

- DDOE Water Quality Division data:
http://ddoe.dc.gov/ddoe/cwp/view,a,1209,q,494812,ddoeNav_GID,1486,ddoeNav,/31375/313771.asp
- DCMR Title 21, Chapter 11 Water Quality Standards:
<http://ddoe.dc.gov/ddoe/frames.asp?doc=/ddoe/lib/ddoe/wqd/WaterFinalRules06.pdf>
- Federal Highway Administration. (undated). Stormwater Best Management Practices in an Ultra-Urban Setting: Selection and Monitoring:
www.fhwa.dot.gov/environment/ultraurb/index.htm
- Water quality criteria for discharges into Chesapeake Bay watershed:
<http://www.chesapeakebay.net/waterquality.aspx?menuitem=13945>
- EPA Site for TMDLs in the District:
http://iaspub.epa.gov/waters10/attains_index.control?p_area=DC
- EPA National Assessment Database for D.C. Waterways:
http://iaspub.epa.gov/waters10/w305b_report_control.get_report?p_state=DC
- District of Columbia Water and Sewer Authority (DCWASA): *<http://www.dcwasa.com/default.cfm>*