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OVERVIEW OF FEDERAL STORMWATER REGULATIONS AND LOCAL IMPLEMENTATION

RECENT STORMWATER DEVELOPMENTS IMPACTING MUNICIPALITIES

Presented to the International Municipal Lawyers Association

Scott A. Gould
Stephen J. Matzura
Adeolu Bakare
McNees Wallace & Nurick LLC
100 Pine Street
P.O. Box 1166
Harrisburg, PA 17101
Phone: (717) 232-8000
Email: sgould@mcneeslaw.com
smatzura@mcneeslaw.com
abakare@mcneeslaw.com

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OVERVIEW OF FEDERAL STORMWATER REGULATIONS AND LOCAL IMPLEMENTATION

Recent Stormwater Developments Impacting Municipalities

By Scott A. Gould, Stephen J. Matzura, and Adeolu Bakare[1]

These program materials provide an overview of recent stormwater developments that may impact municipalities in the United States. The materials include discussion of the federal Clean Water Act ("CWA") and municipal separate storm sewer systems ("MS4s"). They also provide a case study regarding implementation of Total Maximum Daily Loads ("TMDLs") in the Chesapeake Bay watershed, the largest TMDL implemented by the U.S. Environmental Protection Agency ("EPA") to date. The materials are only an overview of the overarching federal requirements, and any particular legal issue should be addressed by the municipality's solicitor and outside environmental counsel with consideration of state laws, regulations, and implementation of the CWA.

I. Stormwater Developments

A. Overview of Federal Stormwater Regulation.

1. NPDES Program. Under the CWA, the National Pollutant Discharge Elimination System ("NPDES") permitting program makes it illegal to discharge pollutants into waters of the United States without a permit. 33 U.S.C. §§ 1311, 1342.

    a. State environmental agencies generally are responsible for administering the NPDES program. An NPDES permit imposes effluent limitations and other conditions on dischargers.

    b. EPA initially exempted stormwater discharges from separate storm sewers, but that categorical exemption was overturned. *See NRDC v. Costle*, 568 F.2d 1369 (D.C. Cir. 1977). In 1987, the CWA was amended to include regulation of stormwater as

[1] Scott Gould is a partner at McNees Wallace & Nurick LLC in Harrisburg, Pennsylvania, where he is the Chair of the Environmental Law & Toxic Tort Group. Mr. Gould focuses his entire practice on environmental and toxic tort matters. Stephen Matzura and Adeolu Bakare are also attorneys with McNees Wallace & Nurick LLC practicing in the firm's Harrisburg office. Mr. Matzura's practice focuses primarily on environmental law and workplace safety. Mr. Bakare's practice focuses on energy matters, public utility services, and municipalities.

part of the NPDES permitting program, specifically requiring permits for discharges (i) from industrial facilities, and (ii) for municipal separate storm sewer systems serving a population of 250,000 or more, serving a population of 100,000 or more but less than 250,000, or for which EPA or the authorized state determines contributes to a violation of a water quality standard or is a significant contributor of pollutants to waters of the United States. § 1342(p).

c. Permits for discharges from municipal storm sewers (i) may be issued on a system- or jurisdiction-wide basis; (ii) must include a requirement to effectively prohibit non-stormwater discharges into the storm sewers (illicit discharges); and (iii) must require controls to reduce the discharge of pollutants to the "maximum extent practicable," including management practices, control techniques and system, design, and engineering methods, and other provisions that EPA or the authorized state determines appropriate. § 1342(p)(3)(B). This "maximum extent practicable standard" is known as "MEP," and it is intended to be a flexible standard that accounts for the difficulty in regulating stormwater runoff. It includes imposition of "best management practices," or "BMPs," which are a type of effluent limitation for permitting purposes. Unlike typical NPDES permits, MS4 permits generally do not require numerical effluent limitations. *Defs. of Wildlife v. Browner*, 191 F.3d 1159, 1166 (9th Cir. 1999). However, permitting authorities may include numerical limitations or limitations based on water quality standards. *See, e.g.*, *NRDC v. Cty. of L.A.*, 725 F.3d 1194, 1199 (9th Cir. 2013) (describing MS4 permit that prohibited stormwater discharges that "cause or contribute to the violation" of incorporated water quality standards).

d. Notably, combined sewer overflows ("CSOs") consisting of discharges from a municipal combined storm and sanitary sewer are addressed separately under the CWA. § 1342(q).

e. The 1987 CWA amendments also directed EPA to promulgate regulations for permitting discharges

from large and medium MS4s and from additional stormwater sources that need to be regulated to protect water quality. § 1342(p)(4), (6). The primary federal stormwater regulations are found at 40 C.F.R. Part 122, Subpart B (including the Phase I and Phase II regulations described below).

2. Phase I NPDES Stormwater Program. EPA promulgated Phase I stormwater regulations in 1990 requiring an NPDES permit for the following categories of stormwater dischargers:

   a. Certain categories of industrial activities (excepting light industrial facilities where their industrial activities and materials are not exposed to stormwater);

   b. Large construction projects involving 5 or more acres of earth disturbance;

   c. Large MS4s (generally, systems located in a place with population of 250,000 or more); and

   d. Medium MS4s (population of 100,000 or more but less than 250,000).

   See 40 C.F.R. § 122.26(a). Many states are authorized to implement the federal regulations. In some states, the authority to regulate earth disturbance activities is passed down further to local implementing agencies. For instance, in Pennsylvania, primary responsibility for implementing the Phase I earth disturbance stormwater program has been delegated to County Conservation Districts.

3. Phase II NPDES Stormwater Program. In December 1999, EPA promulgated the Phase II stormwater regulations (to be implemented by December 2002) which require NPDES permits for the following additional categories of stormwater dischargers:

   a. Construction activities that involve an earth disturbance of between 1 and 5 acres and discharge from a point source into a "water of the United States"[2]; and

[2] Some states have gone further in their implementation of their own state water quality statutes and regulations. For instance, Pennsylvania requires an NPDES permit for small construction

b. Small MS4s (generally, not large or medium; serving a population of less than 100,000).

See § 122.26(a). In addition, the Phase II regulations establish an exception to the NPDES industrial stormwater program whereby an industrial facility (other than a construction activity) can certify that its industrial activities and materials are not exposed to stormwater (a "no exposure" certification"). § 122.26(g). Light industrial activities are already exempt without certification under the Phase I program.

4. Common Law. While not part of a "regulatory program" per se, it should be noted that common law principles have traditionally governed the quantity of stormwater discharged from one property to another in most states. For instance, in Pennsylvania and other states that follow the English common law, there is the "common enemy" doctrine. As a general matter, owners of lands that are higher are permitted to discharge stormwater onto lower lands without liability, provided that they do not unreasonably divert the stormwater from its natural course or unreasonably increase the quantity or change the quality of water discharged. Common law principles recognize that owners of higher lands are entitled to make use of and improve their properties and alter stormwater runoff provided that they do not *unreasonably* change the quantity or quality of stormwater running onto the lower properties.

B. Municipal Separate Storm Sewer Systems ("MS4s").[3] The Phase II NPDES stormwater regulations include regulation of small MS4s.[4] Small MS4s are now required to obtain an NPDES permit, but they are handled differently than large and medium MS4s. Generally, small MS4s will have general stormwater permits that implement and enforce a BMP watershed-based stormwater

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projects discharging to a "surface water of the Commonwealth," which is broader than its federal counterpart. "Surface waters of the Commonwealth" are defined broadly: "Perennial and intermittent streams, rivers, lakes, reservoirs, ponds, wetlands, springs, natural seeps and estuaries, excluding water at facilities approved for wastewater treatment such as wastewater treatment impoundments, cooling water ponds and constructed wetlands used as part of a wastewater treatment process." 25 Pa. Code § 93.1.

[3] An MS4 is a separate storm sewer (i.e., separate from domestic sewer and industrial wastewater) that is publicly owned, and typically includes roads, street drainage systems, basins, gutters, ditches, storm drains, etc. 40 C.F.R. § 122.26(b)(8).

[4] Regulated small MS4s were identified via public notice, designated in the federal regulations, or identified by state agencies, such as Pennsylvania DEP, based on criteria established under the federal regulations. Most states maintain a database of regulated MS4s.

program that incorporates six elements, known as "minimum control measures" ("MCMs"):

- Public education programs on stormwater impacts
- Public involvement/participation in decision-making
- Elimination or treatment of discharges not composed entirely of stormwater
- Erosion and sedimentation controls for construction activities
- Requiring BMPs for post-construction stormwater management for all new developments and redevelopment projects
- Good housekeeping/pollution prevention for municipal operations.

See § 122.34(b).

1. The Phase II regulations permit the use of existing state and local regulatory provisions to meet the NPDES MS4 requirements. Many states utilize a general NPDES MS4 permit to satisfy the majority of the MS4 requirements for the majority of systems.

2. The Phase II regulations permit the use of existing state and local regulatory provisions to meet the NPDES MS4 requirements. Many states utilize a general NPDES MS4 permit to satisfy the majority of the MS4 requirements for the majority of systems. *See, e.g.*, EPA, Massachusetts Small MS4 General Permit, https://www3.epa.gov/region1/npdes/stormwater/MS4_MA.html.

3. In January 2016, EPA proposed amendments to the regulations governing small MS4s in response to a Ninth Circuit case which held that two aspects of EPA's general permitting scheme were contrary to the CWA. 81 Fed. Reg. 415 (Jan. 6, 2016) (addressing remand in *Envtl. Def. Ctr. v. EPA*, 344 F.3d 832 (9th Cir. 2003) ("*EDC*")). The Ninth Circuit held that the general permit option under the Phase II regulations violated the CWA because:

    a. It did not require controls to reduce the discharge of pollutants to the MEP standard pursuant to 33 U.S.C. § 1342(p)(3)(B)(iii), because the regulations did not require NPDES permitting authorities to review the six MCMs to ensure that the measures small MS4s selected would, in fact, reduce

discharges to the MEP. *EDC*, 344 F.3d at 855. The court explained that "stormwater management programs that are designed by regulated parties must, in every instance, be subject to meaningful review by an appropriate regulating entity to ensure that each such program reduces the discharge of pollutants to the maximum extent practicable." *Id.* at 856.

b. It did not contain express requirements for public participation in the general permitting process and, therefore, violated the CWA's requirements for participation in the NPDES permitting process. The regulations failed to make notices of intent ("NOIs") for coverage under the general permit program "available to the public" or subject to public hearings as required by the CWA. *Id.* at 857-58.

Accordingly, the court vacated and remanded these portions of the rule to EPA. There is lingering uncertainty regarding the small MS4 general permitting program because EPA has not yet issued final regulations in response to the *EDC* case's remand. *See, e.g.*, *NRDC v. N.Y. State Dept. of Envtl. Conservation*, 34 N.E.3d 782, 794 (N.Y. 2015) ("Unless and until EPA revises its 1999 regulations, DEC's SPDES general permitting program for small MS4s must comply with them (as it concededly does), and DEC need not go beyond the specifications of those regulations unless New York law requires it to do so").

4. The *EDC* decision, and EPA's 2016 proposed rule, do not purport to affect the substantive requirements for MS4 permits, such as the MCMs. However, they provide an opportunity for municipalities' NOIs that seek general permit coverage to be subject to more scrutiny by permitting authorities and the public. EPA's proposed rulemaking seeks to addresses the remand by proposing three options:

a. *Option 1—Traditional General Permit Approach*. Option 1 would require public notice of NOIs and a 30-day comment period to address the public participation issues. To address the permit review issues, it would also amend the minimum permit requirements in 40 C.F.R. § 122.34(a) to shift the

decision concerning adequacy of permit conditions (i.e., whether they meet the MEP standard) from the permittee to the permitting authority. Under the proposal, the permitting authorities "must include permit conditions that establish in specific, clear, and measurable terms what is required to reduce the discharge of pollutants from the MS4 to the maximum extent practicable (MEP)." 81 Fed. Reg. at 432. Before the proposed rulemaking, EPA issued guidance to permitting authorities regarding effective MS4 permit writing and also compiled several examples of state-specific permit requirements across the United States that it considers "clear, specific, and measurable." *See* EPA, MS4 General Permits and the Six Minimum Control Measures: A Compendium of Permit Requirements (Oct. 2015), https://www.epa.gov/sites/production/files/2015-12/documents/epa_compendium_of_ms4_general_permit_requirements_2015.pdf.

b. *Option 2—Procedural Approach*. EPA did not propose specific regulatory text for Option 2, but sought comment on the approach. Option 2 would require the permitting authority to review the NOI to assess whether the MEP standard is met; provide EPA an opportunity to comment (where the state is the permitting authority); work with the permittee to obtain any supplemental information; and then, when satisfied, provide public notice and an opportunity for a hearing on the NOI.

c. *Option 3—State Choice Approach*. This approach would give permitting authorities the discretion to choose either Option 1 or 2, or some hybrid combination of both, to best suit the specific circumstances. EPA did not propose regulatory text for this option (it would require specific regulatory text to effectuate Option 2).

C. Construction Activities. The CWA requires an NPDES permit for certain discharges of stormwater resulting from construction activities. *See* 33 U.S.C. § 1342(p)(2)(B); 40 C.F.R. § 122.26(b)(15) & Ex. 1.

1. Phase II Earth Disturbance between 1 and 5 Acres. An NPDES permit is required in many jurisdictions for small

construction sites – construction activities involving between 1 and 5 acres of earth disturbance (including earth disturbances of less than 1 acre that occur as part of a larger common plan of development or sale between 1 and 5 acres) – that discharge to a surface water.

2. Post-Construction Stormwater Management Plan. In most states, post-construction stormwater Best Management Practices ("BMPs") are used to manage any net increase in runoff from the project, but no effluent or other limits apply to the quality of the runoff from the site (other than for industrial facilities). Many states without sandy soils require that developers of land manage any net increase in stormwater runoff volume from a 2-year/24 hour frequency storm or otherwise ensure that water quality is maintained.

3. Utilization of Infiltration BMPs. Historically, in urban and suburban portions of the United States, stormwater was managed as a peak rate issue whereby retention ponds were used to hold the water from larger storms and then release it over time as a means of avoiding flooding. In the Northeast, as an example, this historic practice has lead in many cases to increased volumes of stormwater, which in turn leads to streambank scouring, flash floods, and an overall hydrologic cycle that does not mimic the "natural" cycle that may include infiltration and evapotransporation.

    a. Many states, including Pennsylvania as an example, through policy and in some cases regulation, require the maximization of infiltration technology. Infiltration is often required to be used whenever possible, particularly in watershed designated as high quality or exceptional value.

    b. In any event, many urban and suburban areas (and states as a whole) require that a developer of land, whether residential, commercial, or industrial, evaluate and utilize infiltration BMPs to manage the net change in stormwater generated or otherwise replicate, to the extent practicable, preconstruction stormwater infiltration and runoff conditions so that post-construction stormwater discharges do not degrade the physical, chemical, or biological characteristics of the receiving waters. In some cases, water quality treatment BMPs must be used, as necessary, to ensure protection of water quality, while managing the volume and rate of stormwater

discharges in a manner to prevent the physical degradation of receiving waters. Those water quality measures can include vegetated swales, bioretention basins, filtration units on inlets and outlets from ponds, riparian buffers along streams, forested riparian buffers, and even legacy sediment removal and floodplain restoration.

D. Combined Sewers. The CWA separately regulates combined sewer overflows ("CSOs"), which consist of discharges of stormwater and sanitary sewer combined into a single system. § 1342(q). These systems typically have "overflows" or "bypasses" whereby untreated or partially treated storm and sanitary sewer are discharged during wet-weather events.

1. Urban areas throughout much of the Northeast and Great Lakes regions, as well as the upper Northwest, were developed with combined sewers. There are over 700 combined sewers in the United States. When first implemented, these systems served the important purposes of providing for evacuation of sanitary sewer when indoor plumbing became commonplace, and preventing flooding by removing stormwater from urban areas.

2. With the regulation of sewer discharges and requirements for treatment plants, the plants could not be appropriately sized to treat flows during severe wet-weather conditions. Overflows and bypasses were implemented to ensure evacuation of the materials, but typically result in the discharge of raw, albeit diluted, sewage to rivers, streams, and lakes.

3. CSOs have been on EPA's priority enforcement list for much of the past decade. EPA has required various municipalities to reduce the number of CSOs, to implement green infrastructure projects to reduce the overall amount of stormwater reaching the systems, and treat certain problematic CSOs.

4. EPA published a CSO Control Policy in 1994 that remains in effect today: https://www.epa.gov/sites/production/files/2015-10/documents/owm0111.pdf.

III. Water Quality

A. Total Maximum Daily Loads ("TMDLs") - General.

1. Under the CWA, states are responsible for setting water quality standards by assigning designated "uses" for waters (e.g., fishery) and then developing criteria to protect the uses and prevent degradation. *See* 33 U.S.C. § 1313. The CWA requires states to identify and prioritize "impaired" waters where implementation of technology-based effluent limits (NPDES permit limits) is insufficient to meet the water quality standards applicable to those waters, and to identify the specific pollutants and sources causing the impairment. § 1313(d)(1)(A). That is, states are required to identify all waters where water quality is not sufficient to meet the designated uses for those streams, identify the pollutant(s) causing the impairment, and identify each source of the pollutant(s), including both point sources and nonpoint sources. The first such list was due in October 1992, and the states must update those lists by April 1 of every even year thereafter. 40 C.F.R. § 130.7(d).

2. A TMDL represents the maximum amount of pollutant loading that a waterbody can receive from all combined sources and assimilate without exceeding applicable state water quality standards, and an allocation of that amount to the various sources of that pollutant. A TMDL is expressed generally as the sum of (1) the individual wasteload allocations ("WLAs") from point sources, (2) the load allocation ("LA") for nonpoint sources, and (3) a margin of safety ("MOS"). 40 C.F.R. §§ 130.2, 130.7. In a sense, a TMDL is a pollution reduction goal and a plan (allocation scheme) to achieve that goal. TMDL = LA + WLAs + MOS

3. For nonpoint sources, the CWA and its regulations provide that best management practices ("BMPs") should be utilized to achieve the load allocations. For point sources, the waste load allocations are to be converted into water quality based effluent limits ("WQBELs") and incorporated into NPDES permits. *See* 40 C.F.R. § 122.44(d).

4. The first Pennsylvania TMDL was approved by EPA in 1999. Since that time, over one hundred TMDLs have either been developed by the state and approved by EPA or developed by EPA. States continue to assess their streams

and lakes, and states along with EPA continue to develop TMDLs.

5. Expansive TMDLs are possible based on impairment to a larger watershed. EPA established the Chesapeake Bay TMDL in 2010 to reduce nitrogen, phosphorous, and sediment discharged to the Bay from Washington, D.C., and the six surrounding Bay states (the "Bay jurisdictions"). The Bay TMDL establishes pollutant reductions to be met by 2025 through the Bay jurisdictions' "Watershed Implementation Plans" ("WIPs") that explain how reductions will be achieved. Challenges to the Bay TMDL have been rejected by the Third Circuit. *See Am. Farm Bureau Fed'n v. EPA*, 792 F.3d 281 (3d Cir. 2015). For more information on the Bay TMDL implementation, see Stephen J. Matzura & Craig P. Wilson, *Water Quality*, Chapter 4 in Pennsylvania Bar Institute, Pennsylvania Environmental Law and Practice, at 108-13 (8th ed. 2015) (Scott A. Gould & Andrew T. Bockis, eds.).

B. Impacts of TMDLs.

1. TMDLs may impact the ability to develop properties that discharge into an impaired stream, including (a) affecting whether an earth disturbance permit can be obtained, (b) impacting the type of post-construction stormwater controls that will be required or may be permitted (sometimes rendering the facility economically infeasible), and (c) impacting the ability to add new dischargers to an impaired stream.

2. Questions have been raised regarding whether an NPDES permit for construction activity can be issued where the stream into which it will discharge is impaired by siltation, whether or not a TMDL has been developed for it.

3. Impaired waters and corresponding TMDLs are present throughout the country and could affect MS4 permit conditions. MS4s are not explicitly subject to the CWA requirement that imposes effluent limitations necessary to meet water quality standards. *See* 33 U.S.C. § 1311(b)(1)(C). However, the regulations set up a permitting scheme under which small MS4 operators "must comply with any more stringent effluent limitations in [the small MS4] permit, including permit requirements that modify, or are in addition to, the minimum control measures based on an approved total maximum daily load

(TMDL) or equivalent analysis." "The permitting authority may include such more stringent limitations based on a TMDL or equivalent analysis that determines such limitations are needed to protect water quality." 40 C.F.R. § 122.34(e)(1).

4. Accordingly, states have imposed TMDL-based requirements in stormwater permits for MS4s. For example, Pennsylvania is changing MS4 requirements for any TMDL watershed. *See* DEP, Strategy to Enhance Pennsylvania's Chesapeake Bay Restoration Effort (Jan. 2016), http://files.dep.state.pa.us/Water/ChesapeakeBayOffice/DEP%20Chesapeake%20Bay%20Restoration%20Strategy%20012116.pdf.

5. In Maryland, several organizations challenged MS4 permits issued to counties, which are large MS4s, because the permits incorporated provisions to meet the Bay TMDL. *Md. Dep't of the Env't v. Riverkeeper*, 134 A.3d 892 (Md. 2016). The permits in *Riverkeeper* were more stringent than typical MS4 permits because they attempted to account for the Bay TMDL reductions by imposing conditions to reduce impervious surface areas. They required the counties, by the end of the five-year permit term, to restore 20% of the impervious surface areas in their watersheds that have not been restored to the MEP through use of BMPs. This requirement served as a "surrogate TMDL target," setting a minimum restoration requirement at 20%. The challengers argued that this permit condition was inconsistent with MEP under the CWA. The court disagreed, holding that this was a performance standard established by Maryland consistent with the broad authority granted to states under the CWA. The court held that the requirement complies with the MEP for MS4s standard because "33 U.S.C. § 1342(p)(3)(B)(iii) does not require a specific performance standard, and because the concepts of restoration and impervious surface 'not restored to the MEP' are sufficiently clear as to the controls that the Counties must install." *Id.* at 914-15. The court also rejected arguments that the Bay TMDL did not justify this permit condition. Maryland determined that the 20% restoration requirement is a key strategy to comply with the Bay TMDL pursuant to express provisions in its WIP. The inclusion of such requirements in Maryland's WIP satisfied the court that inclusion of similar requirements in the MS4 permits was supported by

substantial evidence and not arbitrary or capricious. *Id.* at 915-16.

Other aspects of the *Riverkeeper* case are noteworthy. For example, the MS4 permits required the following from the counties:

- Thorough analyses of water quality in the watersheds and assessment of impervious surface areas;
- Identification of water quality improvement projects;
- Annual reporting of the stormwater program and data concerning impervious surfaces and pollutant load reductions, with state review of the progress toward meeting WLAs developed under EPA-approved TMDLs (including the Bay TMDL);
- Submission of pollutant load reductions determined based on monitoring; and
- Compliance with the terms of the permit *without regard to lack of adequate funding*.

6. The types of TMDL-based requirements described above will increase the costs for municipalities with respect to their stormwater programs. For example, in *Riverkeeper*, the court noted potential funding issues, explaining that Maryland legislation had required the counties "to adopt local laws or ordinances necessary to establish an annual stormwater remediation fee and a local watershed protection and restoration fund to provide financial assistance for the implementation of local stormwater management plans." Maryland "had investigated the costs of meeting the Bay TMDL and commissioned a study that revealed that 'stormwater BMPs likely represent the largest costs to local governments in implementing the TMDL.'" *Id.* at 908. The permits in *Riverkeeper* also provided for civil and criminal penalties for failure to comply with permit conditions. As explained below, enforcement actions are the alternative cost for failing to implement an adequate stormwater program.

IV. Other Considerations for Municipalities

A. Enforcement of MS4 Stormwater Permits. NPDES permits are federally enforceable, including against small MS4s. *See* 40 C.F.R. § 122.36. Failure to adhere to the program has resulted in significant enforcement actions against municipalities. The following are some recent examples resulting in settlement:

Recent Enforcement/Settlements			
Municipality/Entity	**Jurisdiction**	**Penalty**	**Matter**
Rockford (MS4)	Illinois	$329,395	United States v. City of Rockford, No. 3:15cv50250 (N.D. Ill. Oct. 8, 2015).
State Department of Transportation (MS4)	Rhode Island	$315,000	United States v. Rhode Island Dep't of Transportation, No. CV-15-433-ML-PAS (D.R.I. Oct. 15, 2015).
Salt Lake County (MS4)	Utah	$280,000	United States v. Salt Lake County, No. 2:16cv87BCW (D. Utah Feb. 2, 2016).
Swampscott (MS4)	Massachusetts	$65,000	United States v. Town of Swampscott, No. 1:15-cv-13388-DJC (D. Mass. Sept. 18, 2015).
City of Bangor (CSO and MS4)	Maine	n/a	United States v. City of Bangor, No. 1:15-cv-00350-NT (D. Me. Aug. 26, 2015).
Lawrence (CSO and MS4)	Massachusetts	n/a	United States v. City of Lawrence, No. 1:15-cv-11743-RGS (D. Mass. Apr. 29, 2015).
Harrisburg (CSO and MS4)	Pennsylvania	n/a ($82M in upgrades)	United States v. Capital Region Water, No. 1:15-cv-00291-WWC (M.D. Pa. Feb. 10, 2015).

B. Compliance for Municipalities.

1. *Determine Whether Permitting Applies*. Note the waiver provisions in 40 C.F.R. § 122.32 for small MS4s serving populations under 10,000 in urbanized areas where the permitting authority determines that discharges do not have the potential to impair water quality.

2. *Understand the State and Federal Permitting Programs*. Learn the state-specific process and how it fits within the overall regulatory scheme, as well as any regional programs that may encompass the municipality.

3. *Understand the Watershed*. Evaluate the watershed, other affected municipalities, and consider any special requirements that may be imposed, including based on TMDLs for impaired waters.

4. *Analyze Templates*. Consider EPA and state guidance, as well as effective programs developed by other municipalities (particularly in the same or comparable watersheds).

5. *Consider BMPs, MCMs, and Potential Costs*. Evaluate how the six MCMs will apply to the municipality/watershed and consider types of appropriate BMPs. While nonstructural BMPs may be easily understood and implemented, structural BMPs may require assistance from technical experts/engineers.

6. *Consider Delegation to Another Entity or Creation of Stormwater Utility*. The federal regulations allow municipalities to rely on another entity to satisfy NPDES permit obligations, and EPA encourages execution of legally binding agreements to ensure compliance. *See* 40 C.F.R. § 122.35. Depending on the applicable governing law, stormwater utilities can be formed by a municipality or by an independent municipal authority and develop a variety of fee structures to recover costs.

7. *Determine Whether Funding Is Available*. Historically, many municipalities installed and maintained stormwater infrastructure using revenues from general funds, similar to police, school, and fire protection services. Municipalities should consider stormwater utilities/fees and other sources of funding (e.g., grants, state legislation).

V. Financing Stormwater Utilities

A. Background

1. To meet regulatory obligations under the CWA, municipalities across the country have developed and implemented stormwater programs.

2. Historically, many municipalities installed and maintained stormwater infrastructure using revenues from general funds, similar to police, school, and fire protection services.

3. Heightened regulatory obligations require municipalities to improve current drainage capabilities by reducing or diverting stormwater runoff.

4. Costly! – Stormwater management upgrades range in cost, but can exceed $250,000 per treated acre.

5. The question becomes how can municipalities generate additional revenue to improve stormwater management?

B. Stormwater Utilities

1. Like water and wastewater utilities, stormwater utilities provide a public service.

2. Stormwater utilities can develop a variety of fee structures to recover stormwater costs in proportion to customers' impact on the municipality's stormwater infrastructure.

3. Depending on the applicable governing law, stormwater utilities can be formed by a municipality or by an independent municipal authority.

4. Although increasingly widespread (over 1,000 stormwater utilities in United States), municipal stormwater fees can be subject to legal challenges.

C. Stormwater Fee Structure

1. Stormwater fees are most often (80%) based on the impervious area on a parcel of land.

2. Impervious area – buildings, pavement, or other material impeding the natural infiltration of surface water into the soil, (e.g. parking lots, rooftops, driveways, etc).

3. In addition to area-based fees, stormwater fees may also include a separate billing and collection charge.

4. Two basic rate structure options

a. Flat Fee – Simple per-parcel fee for all.

b. Dual Fee – Separate fees for Non-Residential and Residential.

In dual-rate situations, Residential parcels typically pay a flat fee.

Non-Residential parcels may pay a higher flat fee or a fee based on the individual parcel area, as determined by Geographic Information System ("GIS") measurements.

5. More detailed variants

    a. Equivalent Residential Unit ("ERU")

    b. ERU = average impervious area for a single family residential parcel.

    c. Equivalent Hydraulic Unit ("EHA") - EHA = combined impact of impervious and pervious areas.

    d. Tiered – Separate flat fees for multiple ranges of impervious area.

    e. Development – Fees based on sliding scale from vacant/light development to heavy development.

    f. Runoff-based – Fees based on estimated runoff flows, with a higher per-unit rate for impervious area and a lower rate for pervious area.

D. Can My Municipality Form a Stormwater Utility?

1. Some states may not affirmatively grant power to form stormwater utilities.

2. The requisite authority may be granted by statute or caselaw.

3. In cases of uncertainty, municipalities may seek an opinion from their State Attorney General to affirm power to form a stormwater utility.

4. To establish the stormwater fees and other program terms, the municipality must enact a local ordinance.

5. In some jurisdictions, stormwater utilities can be formed as independent municipal authorites.

    Ex. – In 2013, Pennsylvania state legislature passed an amendment allowing municipalities to form independent stormwater authorities.

6. Where applicable, creation of a stormwater authority carries advantages:

    a. Governed by separate board, but municipality retains a degree of oversight.

b. Flexibility to monetize municipal assets through sale or leaseback arrangements with the authority.

c. Greater potential for regional coordination of stormwater rates and programs.

E. Case Study: Philadelphia Water Department ("PWD")

1. History of PWD Stormwater Fee Structure

a. Prior to 1976 - PWD recovered stormwater costs as part of its wastewater charges.

b. In 1976, PWD implemented separate stormwater fees based solely on water meter size.

c. 40,000 PWD customers have no water meter!

d. In 2002, PWD implemented parcel-based stormwater fees for Residential customers.

e. In 2010, PWD began four year phase-in of parcel-based stormwater fees for all Non-Residential customers.

f. By July 1, 2013, PWD had transitioned to 100% parcel-based fees for Non-Residential customers.

2. PWD Stormwater Rate Structure

a. Rate Based on Runoff Factor

b. Residential customers pay uniform fee based on the city-wide average Impervious Area ("IA") and average Gross Area ("GA") for Non-Residential parcels.

c. Non-Residential Customers pay a per sq. ft. fee for total parcel GA and an additional per sq. ft. fee for total parcel IA.

<5,000 sq. feet = estimated IA (25% IA for undeveloped lots, 85% IA for developed).

>5,000 sq. feet = GIS-mapped IA and GA.

d. Credits

NPDES credit – automatic 7% reduction of total stormwater charge for parcels subject to NPDES compliance.

IA and GA area credits:

Parcels implementing stormwater mitigation measures (pervious pavement, green roofs, etc.) eligible for up to 100% reduction of IA and/or GA fee.

3. Community Engagement

a. Following implementation of Non-Residential parcel-based rates, PWD receives barrage of complaints from non-residential customers experiencing significant rate increases from meter-based stormwater fees.

For example, a used car lot would have paid minimal stormwater fees under meter based rates, but would be assessed high stormwater fees under parcel-based rates due to extensive paved area.

Similarly, vacant lots with no connected water meters would now be assessed stormwater fees based on parcel size.

b. In 2011, PWD convened a Customer Advisory Committee ("CAC") comprised of non-residential customer, regulatory, and community stakeholders.

c. CAC recommended modifications to PWD's stormwater fee structure.

d. Grant program to support customer investment in stormwater mitigation measures.

e. Enhanced Customer Assistance Program for parcels subject to extraordinary rate increases.

f. Reduced maximum IA and GA credits to 80%.

g. PWD implemented each of the CAC recommendations in 2012.

4. Legal Concerns

a. Although many municipalities have successfully created stormwater utilities, some have faced significant legal challenges.

b. *Zweig v. Metropolitan St. Louis Sewer District*, 412 S.W.3d 223 (Mo. 2013).

Supreme Court of Missouri struck down the Metropolitan St. Louis Sewer District's stormwater user charge on grounds the charge was a tax and not a user fee. The court based its ruling on a finding of no direct relationship between impervious area and stormwater runoff.

c. *Jackson County v. City of Jackson*, 836 N.W.2d 903 (Mich. Ct. App. 2013).

Court of Appeals of Michigan found the stormwater management charge implemented by the City of Jackson met no regulatory purpose and was intended primarily to increase revenue. The court also found the charge did not reflect usage of the stormwater sewer system and therefore constituted a tax for the public benefit rather than a fee for services rendered.

d. Lessons Learned?

To minimize potential for legal challenges to stormwater fees, municipalities must:

Develop equitable fee structures based on customers' use of stormwater infrastructure.

Engage in extensive customer outreach campaign to secure public support.

Educate key local leaders and media outlets on the cost drivers and ultimate purpose of stormwater fees.

F. Conclusion

1. Municipalities will face increasing costs to comply with Federal and State water quality regulations.

2. Relying in general fund revenue hinders development of sustainable stormwater management practices.

3. Stormwater utilities are necessary to develop equitable fees and generate stable revenue.

4. With appropriate formation, fee structures, and customer outreach, stormwater utilities provide an excellent vehicle to appropriately recover costs of environmental compliance from the affected customers.