MS4 STORMWATER PERMITTING GUIDE

presented by:

The National Association of Clean Water Agencies

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How to Use This Guide

This MS4 Permit Guide is both a useful tool for stormwater novices looking at their first municipal separate storm sewer system (MS4) permit, as well as for experts searching for answers to advanced MS4-related questions. The Guide provides straightforward explanations of key practical and legal issues that are likely to confront MS4 owners and operators and their consultants. Throughout the Guide are call-out boxes that provide practical advice and recommendations on the issues. For legal practitioners and those seeking more in-depth information, each section includes numerous footnotes with additional details and references to relevant authorities.

This Guide is divided into nine sections. Section 1 covers basic MS4 concepts. Section 2 addresses certain general requirements applicable to all MS4s. Sections 3 and 4 discuss the requirements that apply to Phase II Small MS4s and Phase I Large and Medium MS4s. Sections 5 and 6 detail MS4 permit requirements developed to comply with water quality standards and total maximum daily loads (TMDLs), respectively. Section 7 covers various new or evolving stormwater topics. Section 8 lays out the steps for preserving and instituting permit appeals. Lastly, Section 9 addresses MS4 permit enforcement and compliance actions.

For practical reasons, this Guide focuses on the Clean Water Act's requirements for MS4 permits. Forty-six states are authorized to issue MS4 permits, and state law, terminology, and interpretation of the federal requirements may vary. Effort has been taken to highlight areas in which state law most frequently differs from federal requirements, but specific state issues are beyond the scope of this Guide.

A note on terminology. Except where otherwise noted, this Guide refers to "MS4 permits" and "NPDES permits" interchangeably. MS4 permits are a type of NPDES permit. Also, this Guide refers to "MS4 owners," "MS4 owners and operators," and "MS4 permittees." These are all synonymous as well.

NACWA offers the information in this Guide to equip members with critical knowledge and tools, but the information in this publication should not be construed as legal advice to NACWA's member agencies or others who might refer to it. NACWA's publication of this work does not replace the need to conduct an independent legal evaluation of relevant issues applicable in individual circumstances.

Anyone with comments or questions on this Guide is encouraged to contact NACWA's Director of Regulatory Affairs, Emily Remmel, or NACWA's Deputy Counsel, Erica Spitzig.

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1. MS4 Permitting Overview

Municipal separate storm sewer systems, or MS4s, are referred to as "systems," although they are usually an ad hoc collection of publicly owned storm drains, gutters, roadside ditches, grassy swales, sediment ponds, and similar features—often interconnected with other privately owned systems—that function collectively to manage stormwater. These systems provide essential drainage and stormwater management for urban and suburban areas and must handle fluctuating precipitation events. As stormwater flows over land, it collects an unpredictable mixture of pollutants deposited on the landscape by natural and human activities. Depending on the nature of the MS4, it may discharge stormwater from hundreds or thousands of widely dispersed outfalls to a wide variety of streams, lakes, and other surface waterbodies.

MS4 permits authorize public entities, such as cities, counties, transportation agencies, and military bases, to discharge pollutants from public stormwater systems to waters of the United States.[1] The Clean Water Act's (CWA) usual tools for regulating discrete discharges from industrial and municipal wastewater treatment facilities, such as end-of-pipe numeric effluent limits on various pollutants, are poorly suited for episodic precipitation events and largely uncontrolled MS4 discharges. For this reason, MS4s are subject to a unique set of requirements under the Clean Water Act.[2] The Environmental Protection Agency's (EPA) first National Pollution Discharge Elimination System (NPDES) regulation, finalized in 1973, recognized the challenges of regulating stormwater under the CWA and exempted most stormwater discharges from the NPDES permit requirement.[3] In 1977, a federal court ordered the EPA to develop permitting regulations for stormwater discharges.[4] However, those regulations still had not been issued a decade later. Congress, in 1987, stepped in and added Section 402(p) to the CWA to create a distinct permitting standard for MS4s.[5]

Section 301 of the CWA generally mandates that NPDES permits include water quality-based effluent limits that are as stringent as necessary to ensure that permittees' discharges comply with all applicable water quality standards.[6] Section 402(p) exempts MS4 permits from this requirement and replaces it with a unique standard; MS4 permittees must "reduce the discharge of pollutants to the maximum extent practicable."[7] This is often referred to as the "MEP standard." To comply with the MEP standard, MS4 permits require permittees to determine and implement best management practices (BMPs) to reduce the quantity of pollutants entering into and/or discharging from the MS4.

"MS4 Permit" or "NPDES Permit"?

"MS4 permits" are NPDES permits. Except for the provisions outlined in CWA § 402(p) and its implementing regulations, MS4 permits are subject to the same requirements, conditions, and jurisdictional limitations as other NPDES permits.

1.1 MS4 DEFINED

An MS4 is defined as "a conveyance or system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, man-made channels, or storm drains)" that is (1) designed or used for collecting or conveying stormwater and (2) is owned or operated by a city, county, or other governmental entity (including federal and state entities).[8] The term "MS4" specifically excludes (1) combined sewers and (2) systems that are part of a publicly owned treatment works.[9]

1.2 SCOPE OF MS4 PERMIT REQUIREMENT

MS4 permits authorize cities, counties, or other governmental entities to discharge stormwater collected by their storm sewer systems to waters of the United States. Subject to the exceptions noted below and like all NPDES permits, MS4 permits are necessary, as a matter of federal law, only for "point source"[10] discharges to jurisdictional waters.

Who Issues the MS4 Permit?

EPA has delegated authority for issuance and administration of NPDES permits, including MS4 permits, to 46 states and the U.S. Virgin Islands. EPA oversees the program and issues permits in Idaho, Massachusetts, New Hampshire, New Mexico, and the District of Columbia, as well as American Samoa, Guam, Puerto Rico, and other territories. As a result, the majority of permits are issued by states. Many states use definitions and impose requirements on MS4s under state law that vary from, or are more stringent than, the federal requirements in the CWA. Additionally, some states use state law to expand the regulatory scope of MS4 permits to cover sources of stormwater that would not otherwise be subject to regulation under the federal CWA.

To constitute a point source discharge, stormwater must be collected or channeled into a storm sewer, drainage ditch, or other similar conveyance and discharged from a discrete point source. Stormwater that sheet flows off roads, buildings, or other surfaces without being collected or channelized is nonpoint source runoff that is not regulated by the MS4 permit program. Likewise, stormwater that does not discharge to waters of the United States—such as stormwater that flows into a field and infiltrates into the soil—is not subject to MS4 permitting requirements. Stormwater that flows into combined sewers is not subject to the MS4 permit requirement in CWA § 402(p), but it will be covered under the combined sewer system owner/operator's NPDES permit.

Defining the MS4's Service Area

As a practical matter, compliance costs for various common MS4 permit requirements have a proportional relationship to the size of the area served by the MS4. Permittees may be able to reduce their compliance costs by carefully reviewing their MS4 service area maps to ensure that they do not include areas that are not actually served by the MS4. The following

are examples of areas that may be excluded from an MS4's service area (except where otherwise required to be included by state law):

- Areas that contribute only unregulated nonpoint source runoff to streams (e.g., sheet flow off a parking lot directly to an adjacent stream)
- Areas where the stormwater runoff does not flow into jurisdictional waters (e.g., stormwater that is collected for reuse or discharged to an infiltration trench with no outflow)
- Areas flowing to point source discharges of stormwater owned and operated by third parties (e.g., commercial property's storm drain discharging directly to a stream)
- Areas draining to combined sewer systems

Not every MS4 discharge is subject to permitting requirements. Except in situations in which EPA or a state authority has designated the discharge for permitting, municipal stormwater discharges need not be covered by an MS4 permit in any of three circumstances:

- Discharges from Small MS4s located outside of Census designated urbanized areas;[11]
- Discharges from Small MS4s that have been granted a waiver by EPA or the state permitting authority; or[12]
- Discharges from separate storm sewers in "very discrete areas," such as individual buildings, that are not part of a larger "system."[13]

1.3 PHASE I (LARGE & MEDIUM) AND PHASE II (SMALL) MS4S

CWA § 402(p) and the implementing regulations make a distinction between Large and Medium MS4s, which are commonly referred to as "Phase I" MS4s, and Small MS4s referred to as "Phase II" MS4s. There are important differences in how Phase I and Phase II MS4s are regulated.

1.3.1 PHASE I LARGE AND MEDIUM MS4S

Large and Medium MS4s are called "Phase Is" because they were included in EPA's first round of MS4 regulations in 1990.[14] Large and Medium MS4s are subject to the same permitting requirements under the CWA, although some state permitting programs may have slightly different requirements for each. Phase I MS4s are classified based on the population served in the 1990 U.S. Census.

Large MS4s[15]

- Incorporated places with populations of 250,000 or more based on the 1990 Census; or
- Counties with unincorporated urbanized areas with populations of 250,000 or more based on the 1990 Census.

Medium MS4s[16]

- Incorporated places with populations between 100,000 and 250,000 based on the 1990 Census; or
- Counties with unincorporated urbanized areas with populations between 100,000 and 250,000 based on the 1990 Census.

The lists of cities and counties designated as Large or Medium MS4s are included in the CWA regulations as appendices.[17] EPA announced in 1999 that it would "freeze" those lists based on the 1990 Census.[18] A city or county that did not meet the Large or Medium MS4 population thresholds in 1990 cannot "grow into" Phase I MS4 status even if the most recent Census shows that its population has surpassed the population threshold. Even so, EPA and states have authority to designate new Phase I MS4s if certain criteria are met, but EPA doing so is uncommon.[19]

Phase I MS4s are covered by individual MS4 permits. To obtain coverage, a Phase I MS4 must submit a permit application to the relevant permitting authority (EPA or the state). Because most Phase I permittees received their first MS4 permits in or around 1994 (Large MS4s) or 1995 (Medium MS4s), these are typically reapplications that must be filed at least 180 days before their current MS4 permit expires.[20]

A detailed list of application requirements for a permittee's first Phase I MS4 permit is provided in the CWA regulations.[21] Most states have streamlined requirements for existing permittees reapplying for a permit. These requirements vary widely by state, but they often include:

- New or updated Stormwater Pollution Prevention Plan or Stormwater Management Program Plan
- Updated map of the MS4 system, major outfalls (e.g., 24 inches or larger), and regulated MS4 service area
- Identification of waterbodies receiving discharges from the MS4 and their condition (e.g., high quality, impaired, or TMDL waters)
- Submittal of TMDL Implementation Plans

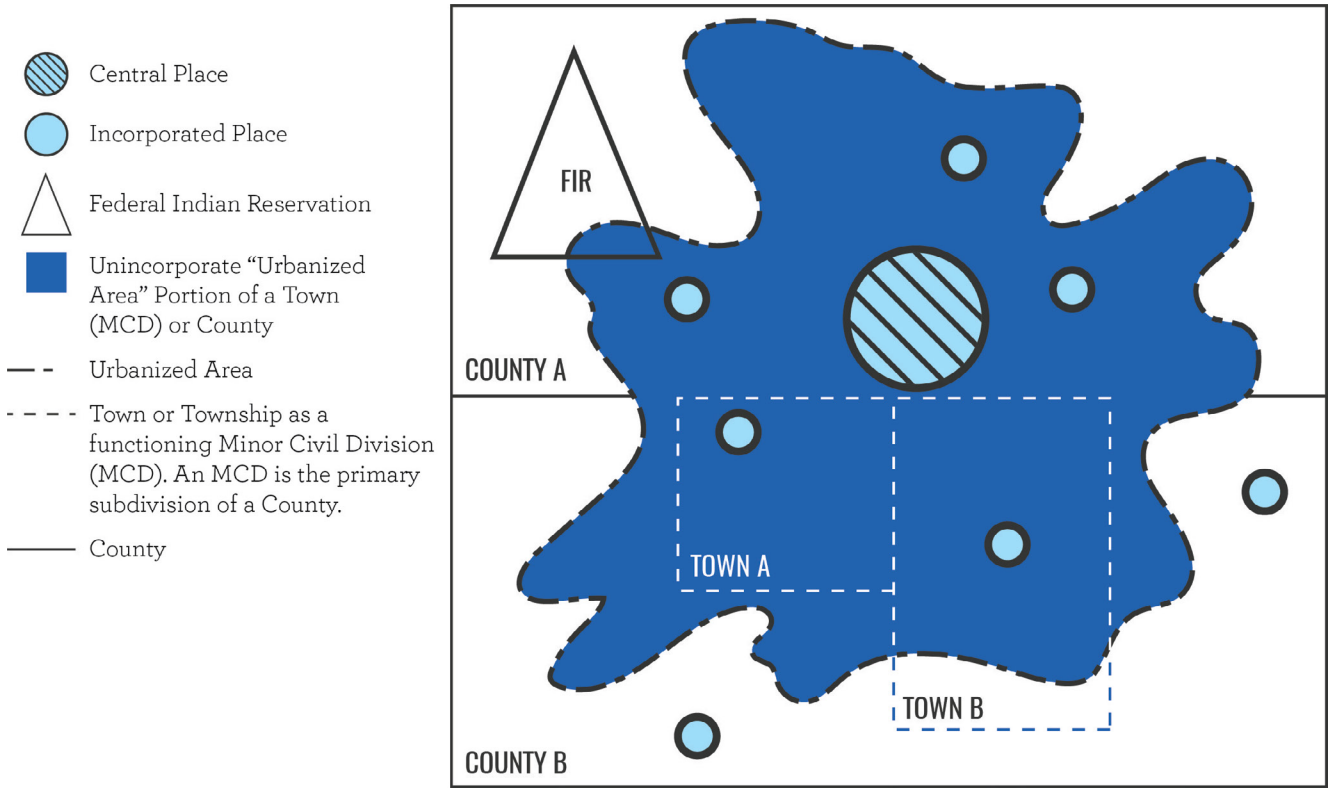
1.3.2 PHASE II SMALL MS4S

Small MS4s are defined as any MS4 that does not meet the definition of a Large or Medium MS4.[22] They are often called "Phase II" MS4s because they were included in EPA's second round of MS4 regulations in 1999.[23] Small MS4s include smaller cities, towns, and counties. MS4s operated by other types of federal, state, or local governmental entities, such as military bases, public universities, prisons, and state highway agencies, also are classified as Small MS4s.

An important distinction from Phase I MS4s is that not all Small MS4s are regulated. Some Small MS4s or portions of Small MS4s are not required to obtain NPDES permit coverage. A Small MS4 must obtain an NPDES permit only in two situations: if it (1) is within a Census-designated urbanized area or (2) has been designated by the permit authority as requiring a permit.

MS4 Permits Regulate MS4s (i.e., the Areas Served by the Public Storm Sewer System), Not Entire Towns, Cities, or Counties

In 1999, when the Phase II rule went into effect, the EPA added an important clarification on the scope of Small MS4 regulation by stating, "Today's rule does not regulate the county, city, or town. Today's rule regulates the MS4."[24] This is an important concept to bear in mind when reviewing a draft MS4 permit. It is not uncommon for permitting authorities to insert objectionable conditions in MS4 permits that have little or no relationship to reducing the discharge of pollutants from the MS4.



The first way a Small MS4 is regulated is if it is within a census-designated urbanized area.[25] The U.S. Census Bureau updates its urbanized area maps with every decennial census,[26] which means that the area of a regulated Small MS4 changes (and typically grows) with each new census. It is not uncommon for a city or county to be only partially within an urbanized area. In that case, only the portion of a Small MS4 within the urbanized area is required to be covered by an NPDES permit.[27] For example, in the figure above,[28] assume County A operates a Small MS4 throughout most of its jurisdiction but only a portion of the county (dark gray) is designated as an urbanized area based on the most recently issued

census. The county would have to obtain NPDES permit coverage for the portions of the MS4 it owns or operates within the newly designated urbanized area, but the remainder of its MS4 in other more rural parts of the county (light gray) would remain unregulated and would not need to be covered under County A's MS4 permit. Conversely, if County A only operates an MS4 in the portion of the county that is not in an urbanized area, County A would not need to apply for an MS4 permit.

What about "Urban Clusters"?

The Census Bureau's urban area reference maps identify "urbanized areas" and "urban clusters." The CWA's Small MS4 regulations refer only to "urbanized areas." Being within an "urban cluster" does not trigger the requirement to obtain an MS4 permit.

The second way a Small MS4 becomes regulated is by designation. EPA or the state NPDES permitting authority may designate other Small MS4s as regulated—and therefore requiring coverage under an MS4 permit—if it determines that discharges from the Small MS4 may have significant water quality impacts.[29] Designation may be used to regulate portions of Small MS4s that are not within an urbanized area. For example, in the figure above, the portion of County A's MS4 outside of the urbanized area could nevertheless be required to be covered by County A's MS4 permit if the permitting authority goes through the process of designating that portion of the MS4. Regulated Small MS4s may request a waiver of the permit requirement from EPA or the state NPDES authority.[30] To be eligible for a waiver, the Small MS4 must serve a population of less than 10,000 and meet other criteria. Although waivers are granted infrequently, for many truly small MS4 systems, a waiver of a formal MS4 permit program makes sense.

Typically, regulated Small MS4s are covered by general permits, although their owners may elect to apply for individual permits, subject to state procedural requirements. A general permit, in comparison to an individual permit, covers a large group of similarly situated entities (e.g., all Small MS4s in a particular state or watershed) and, generally, imposes a uniform set of requirements on all permittees. To obtain coverage under a Small MS4 general permit, the MS4 owner or operator must file a Notice of Intent (sometimes called a Registration Statement) within a specified time (usually 180 days) after the general permit has been issued. Notices of Intent generally are streamlined applications as compared to applications for individual Phase I permits, but they can be very different documents depending on the state.

EPA revised the application requirements for Small MS4s in what is commonly called the Phase II Remand Rule,[31] which became effective on January 9, 2017. The rule gives states two options. First, a state may issue a detailed general permit that includes all requirements on the face of the permit. In that case, a Small MS4 permittee need only submit a Notice of Intent for coverage under the permit and comply with its conditions. Alternatively, a state may issue a less detailed general permit that gives permittees more flexibility to customize their MS4 programs to meet the permit's requirements. In that case, the Small MS4

permittee would have to submit a Stormwater Management Plan, either with or following the Notice of Intent, that details what specific measures the permittee will implement to meet the permit's requirements. The plan would then be subject to a separate public notice and comment period.

1.4 EFFECTIVE PARTICIPATION IN THE MS4 PERMITTING PROCESS

Effective participation in the development of a draft individual or general MS4 permit is crucial to ensuring that the final permit includes legally appropriate, clear, reasonable, and achievable requirements that will address local water quality without imposing impracticable compliance burdens on an MS4 owner or operator. There are various steps at which an MS4 permittee can and should actively participate in the permitting process.

1.4.1 OTHER PARTIES' MS4 PERMITS

Permitting authorities typically strive to issue consistent permits to different entities and often employ permit templates. A new or revised condition in one party's MS4 permit may signal that future MS4 permits will include the same condition. This is true even for different types of MS4 permits. For example, a new condition in an individual permit for a Medium MS4 may be replicated in the next draft general permit for Small MS4s. For this reason, MS4 owners may wish to monitor the development of MS4 permits for other entities in the state or, where EPA is the permitting authority, as well as other permits in the same EPA region. An MS4 owner may participate in the public process for another party's permit by submitting written comments on the draft permit or speaking at public hearings. Likewise, where another party's MS4 permit is challenged in court, other MS4s may consider filing an amicus brief in the case either opposing challenges to favorable permit conditions or supporting challenges to objectionable conditions.

1.4.2 PERMIT APPLICATION[32]

For MS4 owners requesting an individual permit (as opposed to coverage under a general permit), the permit application often is an MS4 owner's first opportunity to express any preferences or significant concerns to the permitting authority on the record. Generally, there is no prohibition on supplementing a permitting authority's application form with additional information. Because the application will be part of the permitting record, this is the applicant's first opportunity to begin building a record in case it ultimately has to challenge the final permit.

Suggest Permit Changes Before It Is Drafted

All permittees, particularly those seeking individual permits, should send the EPA or state permitting authority a detailed letter identifying requested permit changes along with their application for renewal. This will allow as many changes to be included in the authorities' first draft renewal of the permit as possible.

1.4.3 PRE-DRAFT PERMIT STAGE

The pre-draft permit phase occurs when the permitting authority is drafting the MS4 permit and can be a permit applicant's most valuable opportunity to have meaningful input on the future permit. Once a permitting authority has formally issued a draft permit for public review and comment, it may be difficult to convince the authority to modify or remove permit terms that may be troublesome or even unlawful. A permitting authority may be reluctant to acknowledge publicly that it has made an error on the law, regulations, or policy. In addition, significant changes to draft permits may require the regulator to take the revised permit back out for public comment and/or resubmit the permit to EPA for review.[33] Thus, permitting authorities often hesitate to make significant changes in response to public comment, especially if it has established a target deadline for getting the permit reissued and accepting a comment will require the State to republish the permit for additional public comment.

EPA Review of State-Issued NPDES Permits

EPA has the authority to review every draft and proposed NPDES permit issued by an authorized state. A state may not issue a permit if EPA objects.[34] Every state authorized to issue NPDES permits must enter into a Memorandum of Agreement with the respective EPA region that outlines the process for EPA review of NPDES permits.[35]

For these reasons, getting permit terms right during this preliminary stage, before the draft permit is issued for public notice and comment, benefits both the permitting authority and the permit applicant. In the case of a Phase I MS4, it is often in the permittee's interest to request a meeting with the permitting authority—either alone or jointly with other similarly situated MS4 permittees—before any drafting begins to discuss expectations for the next iteration of the permit. This is the MS4 owner or operator's opportunity to express any major concerns and share successes in particular programs that the permittee would like to see included in the next permit. An MS4 should specifically request that the permitting authority refrain from issuing the draft permit for public review until after these initial discussions. Phase II MS4s can follow a similar path, even though the permit is typically issued to numerous permittees as a general permit. A coalition of Phase II MS4s can request a meeting, share concerns, and propose potential permit language for consideration by the permitting authority. The goal is to have the permittee's desired changes appear in the first draft that the agency puts out for public notice.

1.4.4 DRAFT PERMIT STAGE

All draft NDPES permits must be published for public notice and comment.[36] It is imperative to closely review draft permits for objectionable, untenable, or unclear terms and conditions. If the applicant has any concerns about the permit, the applicant should take advantage of its opportunity to submit comments during the comment period. Comments serve two purposes. First, they represent the applicant's formal request to the permitting

authority to revise the permit. Second, if the applicant later decides to challenge the issued permit, it generally will be barred from raising any arguments or complaints that were not first presented to the permitting authority during the formal public comment period.[37]

Treat Draft Permits as Drafts

Given the adaptive, iterative nature of MS4 permits, there is a greater opportunity to negotiate and refine permit requirements than there is with other types of NPDES permits (e.g., POTWs). It is good practice to view draft permits as drafts to be marked up and revised. A good practice is to submit a redlined version of the draft permit to the agency with appropriate explanations supporting the proposed changes. It is often helpful to submit a redline of the existing permit showing the desired changes to the agency before the agency has prepared its version of the next permit.

1.5 PERMITTING STEPS FOR LIABILITY PROTECTION

Inappropriate or unclear permit conditions can be compliance traps. Once the final permit is issued and accepted, the MS4 owner or operator is bound to comply with its terms. Non-compliance with any condition of the permit can trigger enforcement by the state permitting authority, EPA (whether or not it is the permitting authority), and private citizens and organizations through citizen suits.[38] Accordingly, MS4 owners and operators should object to and, where warranted, appeal objectionable permit terms.

1.5.1 MAKE SURE PERMIT TERMS ARE LEGALLY APPROPRIATE AND CLEAR ON THEIR FACE

MS4 permits often include subjective or unclear permit terms. Even if the permitting authority and permittee have a mutual understanding of what the unclear permit term means, the permittee nevertheless may be vulnerable. New agency staff or management or citizen groups may read the term differently and initiate an enforcement action. Accordingly, permittees should make sure permit requirements are as clear as possible so that there is no question as to what is required of the permittee and so that the permittee can defend itself against any attempts to impose an alternative interpretation of what the permit requires.

Don't Fall into the "Trust" Trap

MS4 permittees should be wary of a permitting authority that suggests that it will "interpret" a particular condition in a certain way in the future—the "trust us" approach—because citizen groups and courts are not bound by the permitting authority's informal statements. Agency priorities may also change over time, or new staff may not be aware of these informal agreements. If the authority will not clarify the language in the permit itself, the permittee should request that an explanation for the unclear permit language be provided in the fact sheet (or statement of basis) that is issued with the final permit. Although fact sheets are not legally binding, a court may give deference to fact sheet explanations to interpret vague

or ambiguous permit language. If the permit term is important substantively, the permittee should insist on a clarification in the permit itself and if the clarification is not forthcoming, consider filing an appeal.

1.5.2 COMMENT DURING THE FORMAL COMMENT PERIOD

Documenting objections to the permit in writing during the formal public comment period is essential to preserving the opportunity to appeal the agency's refusal to change that permit term. All significant comments and objections should be submitted in writing during the formal comment period. Permittees should be careful not to rely on informal writings submitted to the agency before the comment period because the agency may not include them in the permitting record. If pre-comment period submissions or correspondence are important to preserve in the record, they can be incorporated by reference into or attached to the MS4 permittee's formal public comment letter.

Explain All Requested Changes to the Draft

If the permittee requests specific changes to the draft permit and/or submits a redline markup of the draft permit to the agency, it is important to provide an adequate explanation for each suggested change to the permit language. Otherwise, the permitting authority may not understand the rationale for the request and may reject otherwise reasonable changes. Providing an explanation for all suggested changes to the draft permit in the comment record also will aid the permittee in a subsequent appeal if it decides to pursue one.

Providing formal public comments gives the permitting authority the opportunity to resolve the problem. It also will ensure that the permittee exhausted its administrative remedies in the event the permittee is compelled to later challenge the permit. Lastly, documenting the concerns in advance may prove valuable in a later enforcement action. For example, if the MS4 owner or operator believes a permit condition imposes impracticable or unclear conditions, documenting that concern early may be beneficial in persuading the permitting authority to exercise its enforcement discretion if compliance with the condition in fact proves later to be infeasible.

Following the draft permit phase, the permitting authority will issue the final permit with a fact sheet (or statement of basis) that explains the rationale for the permit conditions and a response to significant comments. If the agency did not make all of the permittee's requested changes, the MS4 owner or operator will have to decide whether to appeal the permit to the appropriate court or administrative review body.

1.6 POTWS AND OTHER NON-MS4 STORMWATER PERMITTEES

Entities that are not MS4s may be required to apply for NPDES permit coverage for their stormwater discharges in the following circumstances:

- Certain types of industrial facilities and activities typically covered by EPA's Multi-Sector General Permit for Stormwater Discharges Associated with Industrial Activities or state equivalents[39]
- Construction and other land-disturbing projects affecting greater than 1 acre of land (or less, depending on state requirements) either individually or as part of a plan of common development that are subject to EPA's General Permit for Discharges from Construction Activities or state equivalents[40]
- Any other types of non-MS4 stormwater dischargers (e.g., commercial developments, private universities) that are designated by the permitting authority[41]

Some activities are exempt from the CWA's stormwater permitting requirements, including (1) oil, gas, and mining operations and (2) silviculture activities.[42]

In addition to the MS4 permit, MS4 owners that also operate publicly owned wastewater treatment plants (POTWs) may have to obtain NPDES permit coverage for stormwater discharges from those facilities as well. POTWs fall within the category of industrial stormwater dischargers that may require a stormwater NPDES permit if the POTW (1) has a design flow greater than 1 MGD or (2) is required to have a pretreatment program.[43] Stormwater discharges from POTWs may be covered in the POTW's primary wastewater discharge permit or be subject to a separate permit applicable only to stormwater. However, POTWs may qualify for a valuable "no exposure" exclusion from the permit requirement if they can demonstrate that stormwater discharges from the facility are not contaminated by exposure to any industrial materials or activities.[44] Qualifying for the exclusion often entails putting material and activities under a storm-resistant cover, submitting to periodic inspections, and recertifying the no-exposure status every five years.

[1]While many state permit programs rely on the federal Waters of the United States standard to determine which waterbodies are regulated, some states regulate waterbodies that do not typically fall under federal jurisdiction (e.g., isolated wetlands, ephemeral streams). Permittees should be aware if their state takes a more expansive view of regulated waters.
[2]Federal Water Pollution Control Act, 33 U.S.C. § 1251 et seq.
[3]National Pollutant Discharge Elimination System, 38 Fed. Reg. 13528, 13530 (May 22, 1973) (previously codified at 40 C.F.R. § 125.4(f)) ("The following do not require an NPDES permit: . . . Uncontrolled discharges composed entirely of storm runoff when these discharges are uncontaminated by any industrial or commercial activity, unless the particular storm runoff discharge has been identified by the Regional Administrator, the State water pollution control agency or an interstate agency as a significant contributor of pollution.").
[4]National Resources Defense Council v. Costle, 568 F.2d 1369 (D.C. Cir. 1977).
[5]Water Quality Act of 1987, Pub. Law. No. 100-4, § 405, 101 Stat. 7, 69 (codified at 33 U.S.C. § 1342(p)).
[6]33 U.S.C. § 1311(b)(1)(C).
[7]33 U.S.C. § 1342(p)(3)(B)(iii); 40 C.F.R. § 122.26(d)(2)(iv) (applicable to Large and Medium MS4s); 40 C.F.R. § 122.34 (applicable to Small MS4s).
[8]40 C.F.R. § 122.26(b)(8). Examples of other governmental entities include military bases, public universities, and highway agencies.
[9]40 C.F.R. § 122.26(b)(8).
[10]33 U.S.C. § 1362(14).
[11]40 C.F.R. § 122.32(a)(1).
[12]40 C.F.R. § 122.32(c).
[13]40 C.F.R. § 122.26(b)(16)(iii).
[14]National Pollutant Discharge Elimination System Permit Application Regulations for Storm Water Discharges, 55 Fed. Reg. 48063 (Nov. 16, 1990).
[15]40 C.F.R. § 122.26(b)(4).
[16]40 C.F.R. § 122.26(b)(7).
[17]40 C.F.R. Part 122, apps. F, G, H, & I.
[18]NPDES Regulations for Revision of the Water Pollution Control Program Addressing Storm Water Discharges, 64 Fed. Reg. 68722, 68749 (Dec. 8, 1999).
[19]40 C.F.R. §§ 122.26(a)(1)(v), 123.25(a)(9).
[20]40 C.F.R. § 122.21(d)(2).
[21]40 C.F.R. § 122.26(d).
[22]40 C.F.R. § 122.26(b)(16).
[23]64 Fed. Reg. at 68722.
[24]64 Fed. Reg. at 68750.
[25]40 C.F.R. § 122.32(a)(1).
[26]U.S. Census Bureau, 2010 Census Urban Area Reference Maps.
[27]40 C.F.R. § 122.32(a)(1).
[28]This figure is from an EPA guidance document: Stormwater Phase II Final Rule, Urbanized Area: Definition and Description(rev. 2012).
[29]40 C.F.R. §§ 122.32(a)(2), 123.35(b).
[30]40 C.F.R. § 122.32(c).
[31]National Pollutant Discharge Elimination System (NPDES) Municipal Separate Storm Sewer System General Permit Remand Rule, 81 Fed. Reg. 89320 (Dec. 9, 2016).
[32]40 C.F.R. § 124.3.
[33]E.g., 40 C.F.R. § 124.14 (discussing EPA's authority to reopen a public comment period on a draft permit).
[34]40 C.F.R. § 122.4(c).
[35]40 C.F.R. § 123.24. The memoranda for each authorized state can be found on EPA's website at this link.
[36]40 C.F.R. §§ 124.6, 124.19, 122.21, 123.25.
[37]E.g., 40 C.F.R. §§ 124.13, 123.35.
[38]33 U.S.C. § 1365 (citizen suit provision).
[39]40 C.F.R. §§ 122.26(a)(6), 122.26(b)(14).
[40]40 C.F.R. §§ 122.26(a)(9)(i)(B), 122.26(b)(14), 122.26(b)(15).
[41]40 C.F.R. §§ 122.26(a)(1)(v), 122.26(a)(9)(i).
[42]33 U.S.C. § 1342(l); 40 C.F.R. §§ 122.26(a)(2), 122.27.
[43]40 C.F.R. § 122.26(b)(14)(ix).
[44]40 C.F.R. § 122.26(g).

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2. General Requirements Applicable to All MS4s

2.1 MAXIMUM EXTENT PRACTICABLE (MEP) COMPLIANCE STANDARD

The MEP standard is the unique compliance standard Congress added to the CWA in 1987 to govern MS4 permits. It provides:

> Permits for discharges from municipal storm sewers…shall 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 such other provision as the Administrator or the State determines appropriate for the control of such pollutants.[1]

For MS4s, the MEP standard completely replaces the CWA § 301(b)(1)(C) standard that most NPDES permits include any water quality-based effluent limits necessary to comply with applicable water quality standards.[2] The CWA § 301 standard remains applicable to industrial stormwater permittees, as well as "traditional" point sources such as industrial and municipal wastewater discharges. In NRDC v. EPA, the court summarized the difference between MS4s and other dischargers:

> Prior to 1987, municipal storm water dischargers were subject to the same substantive control requirements as industrial and other types of storm water. In the 1987 amendments, Congress retained the existing, stricter controls for industrial stormwater dischargers but prescribed new controls for municipal storm water discharge.[3]

The seminal case on the MEP standard is Defenders of Wildlife v. Browner, which was decided by the Ninth Circuit Court of Appeals in 1999.[4] In that case, several environmental groups objected to MS4 permits issued to five Arizona municipalities, arguing that they must contain limitations ensuring strict compliance with water quality standards pursuant to CWA § 301(b)(1)(C). The court disagreed, holding that the text of the MEP standard in CWA § 402(p)(3)(B), the structure of the CWA as a whole, and precedent "all demonstrate that Congress did not require municipal storm-sewer discharges to comply strictly" with water quality standards.[5] Since the Defenders decision in 1999, it has been followed by nearly every court that has considered the issue.[6]

EPA also has acknowledged the unique MEP standard for MS4s. In 2013, EPA explained, "Unlike other NPDES permits (including industrial stormwater permits), MS4 permits are subject to the unique requirements of CWA Section 402(p)(3)(B) rather than the requirements of CWA

§ 301(b)."[7] EPA further stated:

> The CWA requires, with the exception of MS4s, that NPDES permits contain technology-based effluent limits and water quality-based effluent limits . . . when the technology-based limits alone do not adequately protect water quality. The CWA standard for MS4s is that the permit must require controls to reduce the discharge of pollutants to the MEP [maximum extent practicable] to protect water quality.[8]

There is an ongoing debate as to whether the CWA authorizes conditions in MS4 permits that are more stringent than the MEP standard.

Can MS4 Permits Have Numeric Terms and Conditions?

Yes. EPA recommends that MS4 permits include numeric requirements and conditions but not necessarily numeric end-of-pipe limits on pollutant discharges.[10] BMPs may be "numeric" in nature as well. Some regulatory agencies have transitioned to issuing MS4 permits that include "numeric" requirements, likely in response to the Phase II Remand Rule; some regulatory agencies are still issuing MS4 permits with broader-based BMP requirements. Examples of numeric BMP terms include:

- Conduct field screenings for 50 outfalls per year to identify dry-weather flows
- Conduct street sweeping on a particular frequency with a goal of reducing the sediment load entering the MS4
- Collect and dispose of 30 tons of litter from the MS4 drainage area per year
- Plant a net increase of 50 trees for each year of the permit cycle
- Evaluate the feasibility of installing 1 square acre of green roofs on public buildings

However, watch out for numeric limits that exceed MEP. Numeric limits on specific pollutants designed to meet water quality standards exceed what is required to meet MEP.

Although MS4 permits or state regulations may identify specific BMPs that must be implemented by the permittee, BMPs can also be incorporated into a Stormwater Management Program (SWMP) Plan. For Small MS4s, a permitting authority may include specific BMPs in a general permit or allow the permittee to identify BMPs as a part of the SWMP.

2.2 BMP-BASED PROGRAM TO REDUCE THE DISCHARGE OF POLLUTANTS

MS4 permit compliance is largely focused on developing and implementing a suite of best management Practices (BMPs) that are designed to reduce the discharge of pollutants from the MS4 to the maximum extent practicable. BMPs are defined broadly as "schedules of activities,

prohibitions of practices, maintenance procedures, and other management practices to prevent or reduce the pollution of 'waters of the United States.'"[9] BMPs generally fall into two categories: structural and nonstructural.

Structural BMPs are physical structures or features that are intended to collect, treat, infiltrate, and/or convey stormwater. Examples of structural BMPs include:

- Retention ponds and swales
- Rain gardens
- Green roofs
- Constructed wetland
- Pervious pavement

Nonstructural BMPs include various practices or actions that are intended to directly reduce stormwater pollution or encourage the public to take steps to reduce stormwater pollution. Examples of nonstructural BMPs include:

- Public signage encouraging pet owners to pick up animal waste or stating that storm drains discharge to local waters
- Street sweeping program
- Ordinance prohibiting non-stormwater discharges to the MS4
- Inspection and maintenance schedule for structural BMPs
- Public education sessions
- Public rain barrel distribution program

Is Stormwater Runoff (or Flow) a Pollutant?

No. This question was answered by a federal court in Virginia Department of Transportation v. EPA (2013).[11] Following earlier guidance, EPA had established a TMDL for stormwater flow into Accotink Creek on the basis that flow is a surrogate for sediment.[12] The court disagreed, holding that "stormwater runoff is not a pollutant, so EPA is not authorized to regulate it via TMDL." EPA has reversed course since the ruling, and it revised its guidance in 2014 to remove references to the regulation of stormwater flow as a pollutant or pollutant surrogate.[13]

Permittees should be cautious of attempts by permitting authorities to regulate flows from the MS4 through TMDLs or permit conditions. Such regulation may take several forms, including post-construction stormwater retention standards, numeric limits on flows discharging from the MS4, or the attribution of sediment and nutrient loads from downstream stream erosion to the MS4.[14] Except where specifically authorized by state law, permittees may have an opportunity to challenge objectionable flow-based TMDLs or permit limits on the grounds that they are not authorized by the CWA.

2.3 STORMWATER MANAGEMENT PROGRAM (SWMP) PLAN

MS4 permittees develop SWMP Plans in order to implement the permit requirements. Each permit details the applicable stormwater management requirements to meet the CWA regulations and their state counterparts. Some SWMP Plans are enforceable documents, approved by the permitting agency and incorporated by reference into the MS4 permit itself; some are not—they are purely local planning documents.

To meet applicable CWA regulations, Phase I MS4s must list the specific program components in their SWMP Plan, in addition to any state requirements. Whereas, Phase II MS4s must adhere to a list of specific terms that is included in the permit, if the permit-issuing authority issues a comprehensive general permit. In addition, all Phase II MS4 permits require a SWMP Plan that explains how the permittee will comply with the permit terms. It is generally up to permittees to develop a SWMP Plan by selecting appropriate BMPs to satisfy each of the applicable permit terms. However, MS4 permits can vary widely in how much leeway they give permittees to develop SWMP Plans. The permit may prescribe the BMPs the permittee must implement, provide a menu of BMPs for the permittee to select from, leave the permittee wide discretion to develop the plan, or, as is most often the case, require some combination of the preceding three approaches to implement the applicable regulatory requirements.

SWMP Plans are usually submitted at the time of permit application submittal, with the submission of a Notice of Intent to the permitting authority, or within a reasonable period (e.g., one year) after the permit is issued. Typically, the SWMP plan will be an enforceable condition of the permit.

Is the SWMP Plan Enforceable?

If compliance with the SWMP Plan is an enforceable permit term, it should be clearly stated in the permit. Under this approach, compliance with the SWMP Plan should provide a federal permit shield to the permittee.

Requirements for Phase I MS4s' SWMP Plans are listed in CWA regulations.[15] In some instances, the SWMP Plan must be developed through a public participation process "to reduce the discharge of pollutants to the maximum extent practicable using management practices, control techniques and system, design and engineering methods, and such other provisions which are appropriate."[16] At a minimum, the SWMP Plan must include:

- Structural and source control BMPs to reduce runoff from commercial and residential areas to the MS4
- Ilicit discharge detection and elimination (IDDE) program
- Industrial and construction site runoff program

Phase II MS4 permits must include six minimum control measures (MCMs) outlining permittees' stormwater management program.[17] Although the six MCMs are only required in Phase II MS4

permits, the same concepts are relevant and useful for the development of Phase I SMWP Plans.

Incorporation of Phase I Requirements into Phase II Permits

There is a trend for Phase II Small MS4 permits to include conditions that traditionally have been imposed only on Phase I Large and Medium MS4 permittees. In some cases, permit requirements that may be practicable for Large and Medium MS4 permittees may overwhelm or otherwise be inappropriate for Small MS4 owners. A Phase II MS4 should carefully review all conditions in draft permits and pay particular attention to new, impracticable requirements that the permit writer may have been borrowed from previous Phase I MS4 permits.

2.4 LEGAL AUTHORITY TO IMPLEMENT LOCAL PROGRAM

Phase I MS4 permits usually require the permittee to demonstrate that it has adequate legal authority to comply with the permit.[18] This demonstration most often is made in the permit application. More specifically, the CWA regulations state that a Phase I application must demonstrate that the MS4 permittee has "[a]dequate legal authority" to: (i) control pollutants into the MS4 by industrial stormwater dischargers; (ii) prohibit illicit discharges to the MS4; (iii) control spills, dumping or "disposal of materials other" than stormwater; (iv) control contributions by co-permittees to the MS4; (v) require compliance with MS4 conditions; and (vi) inspect and monitor in order to determine compliance with the permit terms, including the prohibition on illicit discharges into the MS4.[19]

Phase II MS4 general permits typically require a similar demonstration of adequate legal authority to comply with the permit. However, the Phase II regulations do not specifically mandate this.

Beware of Permit Requirements that Are Beyond the MS4 Owner's Legal Authority

MS4 permit applicants should watch carefully for draft permit terms that require the MS4 to use legal authority that it does not have under state law or that is inconsistent with federal law. For example, a permit term requiring an MS4 to inspect privately-owned properties for potential illicit discharge detection and elimination (IDDE) violations could be questioned if there is no state law authorization to allow a right of entry on private property. This is a particularly common issue in "Dillon Rule" states, in which local governments only have the powers expressly granted to them by state statutes.[20] If there is any doubt about adequate legal authority, the permit should include appropriate limiting language (e.g., "to the extent permitted by law…").

2.5 STORM SEWER SYSTEM MAPS

All MS4s must have a map that satisfies regulatory requirements. In general terms, an MS4 should be able to produce upon request a map that shows, at a minimum, the jurisdictional boundaries of the MS4, all MS4 outfalls (or at least constructed or major outfalls), and receiving waters. State law may impose additional restrictions beyond those provided by federal law.

> *What is an Outfall?*
>
> An outfall is any point at which flow from the MS4 discharges to a water of the United States. Most, but not all, outfalls are constructed features. A naturally formed ditch or swale that is used to convey stormwater from the MS4 to a stream may be a "point source," and therefore an outfall.

At first, Phase I MS4s were required to submit a topographic map to assist in identifying sources discharging to the MS4 as part of their initial permit application.[21] Each subsequent permit application must include an updated identification of major outfalls and an inventory of facilities that may discharge stormwater associated with industrial activity to the MS4.[22]

Similar to Phase I MS4s, Phase II MS4s must develop a map "showing the location of all outfalls" and associated receiving waters as a part of Minimum Control Measure 3.[23] State permitting authorities may impose additional requirements that must be included in permittees' maps.[24]

> *Timing for Map Updates*
>
> Mapping is often one of the most time-consuming and expensive aspects of managing an MS4. MS4 permit applicants should review draft permit terms to ensure that any mapping requirements include reasonable expectations for when maps will be updated. A permittee may need additional time (i.e., several years) if a reissued permit includes more extensive mapping requirements than the previous permit. Likewise, the permit should clearly spell out when new features (e.g., a new outfall) must be added to the system map, to allow MS4 staff the time needed to accomplish the task.

2.6 ANNUAL REPORTS

Phase I MS4s must submit an annual report by the anniversary of the date of permit issuance that includes the following elements, plus any other information that may be imposed by the permitting authority:

- Stormwater management program implementation status
- Proposed changes to the programs
- Revisions, as needed, to the assessment of controls and fiscal analysis provided with the permit application

- A summary of data, including monitoring data, from the year
- Annual expenditures and a budget for the following year
- A summary of enforcement actions taken, inspections, and public education programs implemented
- An identification of water quality improvements or degradation over the reporting period[25]

Phase II MS4s also must submit an annual report to the permitting authority for the first permit term. For permit terms thereafter, the permittee must submit reports in years two and four unless the permitting authority requires additional reporting. Reports must assess the permittee's compliance with the permit and include monitoring results (or results from any other information collection), a summary of activities proposed for the next reporting cycle, an explanation for any changes made to the program, and notice if the permittee is relying on another governmental entity for permit implementation.[26]

Going Above and Beyond on Annual Reporting

Annual reports are critically important because they will be used by permitting authorities and the public to evaluate the quality and compliance of an MS4's program. Accordingly, invest an appropriate amount of effort in preparing these reports. In particular, do not limit yourself to the issues that must be included in the report. An MS4 may consider including additional information that will help the permitting authorities and/or the public understand the comprehensiveness and/or quality of the MS4 program. If the MS4 owner or operator is voluntarily going above and beyond the requirements of its permit to address local concerns and/or further improve water quality, there is a risk that the regulatory agency reviewing the annual report, or the program generally, will view those efforts as the new "floor" for future permit negotiations. This risk must be weighed against the benefit of showcasing an excellent program, which not only increases public support for a program, but can often convince a regulator that the MS4 is serving as a partner, or "co-regulator," on many important programs.

In implementing additional programs not required by the permit, or highlighting those programs in an annual report, MS4s should:

- Clearly identify them as practices that go above and beyond permit requirements.
- Caveat any discussions of those programs by explaining that current implementation is not a guarantee of future implementation (for funding or operational reasons).
- Clarify that implementation is not an indication of willingness to agree to include such requirements in future permits.

[1]33 U.S.C. § 1342(p)(3)(B)(iii) (emphasis added).

[2]33 U.S.C. § 1311(b)(1)(C).

[3]Natural Resources Defense Council, Inc. v. EPA, 966 F.2d 1292, 1308 (9th Cir. 1992) (emphasis added).

[4]Defenders of Wildlife v. Browner, 191 F.3d 1159 (9th Cir. 1999).

[5]Defenders of Wildlife, 191 F.3d at 1166.

[6]See Mississippi River Revival, Inc. v. City of St. Paul, Case No. 01-cv-1887, 2002 WL 31767798, at *6, 2002 U.S. Dist. LEXIS 25384, at *19 (D. Minn. Dec. 2, 2002) ("While CWA requires permits to contain conditions that ensure that water quality standards are met, the CWA specifically exempts municipal storm water permittees from that requirement." (emphasis added)); Tualatin Riverkeepers v. Oregon Department of Environmental Quality, 230 P.3d 559, 564 n.10 (Or. Ct. App. 2010) ("Federal law generally requires that discharges pursuant to NPDES permits must strictly comply with state water quality standards. However, under 33 U.S.C. section 1342(p)(3)(B), dischargers of municipal storm water are not subject to that requirement." (emphasis added)); Minnesota Center for Environmental Advocacy v. Minnesota\. Pollution Control Agency, 660 N.W.2d 427, 438 (Minn. Ct. App. 2003); Conservation Law Foundation, Inc. v. Boston Water & Sewer Commission, Case No. 10-10250-RGS, 2010 WL 5349854, at *5, U.S. Dist. LEXIS 134838, at *18–20 (D. Mass. Dec. 21, 2010); NRDC v. New York State Department of Environmental Conservation, 120 A.D.3d 1235, 1241-42 (N.Y. App. Div. Sept. 10, 2014); City of Abilene v. EPA, 325 F.3d 657, 659–60 (5th Cir. 2003) (characterizing MS4 permits subject to the maximum extent practicable standard as "management permits," as distinct from "numeric end-of-pipe permits" like those for industrial stormwater); Maryland Department of the Environment v. Anacostia Riverkeeper, 134 A.3d 892 (Md. 2016) ("MS4s are subject to the MEP standard under 33 U.S.C. § 1342. MS4s are not, however, required to impose effluent limitations necessary to meet water quality standards.").

[7]Quoted text is from page 6 of a brief EPA filed before the Environmental Appeals Board in In re Buckley Air Force Base, NPDES Appeal No. 13-07 (Doc. 21) (E.A.B. 2013) (emphasis added).

[8]EPA, TMDLs to Stormwater Permits Draft Handbook, at 10 (Nov. 2008) (emphasis added).

[19]40 C.F.R. § 122.2.

[10]EPA, Revisions to the November 22, 2002 Memorandum "Establishing Total Maximum Daily Load (TMDL) Wasteload Allocations (WLAs) for Storm Water Sources and NPDES Permit Requirements Based on Those TMDLS, at 4 & n.5 (Nov. 26, 2014).

[11]Case No. 1:12-cv-775, 2013 U.S. Dist. LEXIS 981, 2013 WL 53741 (E.D. Va. Jan. 3, 2013).

[12]EPA, Revisions to the November 22, 2002 Memorandum "Establishing Total Maximum Daily Load (TMDL) Wasteload Allocations (WLAs) for Storm Water Sources and NPDES Permit Requirements Based on WLAs", at 6 (Nov. 12, 2010).

[13]EPA, Revisions to the November 22, 2002 Memorandum "Establishing Total Maximum Daily Load (TMDL) Wasteload Allocations (WLAs) for Storm Water Sources and NPDES Permit Requirements Based on WLAs", at 6 (Nov. 26, 2014).

[14]E.g., Pennsylvania 2018 PAG-13 NPDES General Permit for Stormwater Discharges from Small Municipal Separate Storm Sewer Systems, at App'x E (requiring use of modeling tool that includes pollutant loads from downstream erosion in development of numeric nutrient and sediment discharge reduction requirements for discharges to impaired waters).

[15]40 C.F.R. § 122.26(d)(2)(iv).

[16]40 C.F.R. § 122.26(d)(2)(iv).

[17]40 C.F.R. § 122.34(b).

[18]E.g., City of Portland & Port of Portland NPDES MS4 Discharge Permit No. 101314, at Schedule D.1 (administratively extended).

[19]40 C.F.R. § 122.26(d)(2)(i).

[20]Dillon's Rule refers to a legal principle named after John Forest Dillon, who served on the Iowa Supreme Court from 1864 to 1869, that local government power is limited to those areas where the state legislature has expressly given the locality specific authority. The rule states that powers "granted in express words…those necessarily or fairly implied in or incidental to the powers expressly granted…[and] those essential to the declared objects and purposes of the corporation, not simply convenient but indispensable." Richmond v. Board of Supervisors, 101 S.E.2d 641 (Va. 1958) (quoting Dillon on Municipal Corporations, Section 89).

[21]The map was to include: (i) the location of known MS4 outfalls discharging to U.S. waters; (ii) a description of land uses (along with estimates of population densities and projected 10-year growth) served by the MS4; (iii) the location and a description of currently operating or closed municipal landfills or other facilities for municipal waste; (iv) the location and permit number for any NPDES permittees discharging to the MS4; (v) the location of "major structural controls" (for example, retention basins); and (vi) the identification of public parks, recreation areas, and "other open lands." 40 C.F.R. § 122.26(d)(1)(iii)(B).

[22]40 C.F.R. § 122.26(d)(2)(ii).

[23]40 C.F.R. § 122.34(b)(3)(i)(A).

[24]E.g., California NPDES Small MS4 General Permit, No. CAS000004, at Part A.1(b)(3) (expires June 30, 2018). California's Small MS4 general permit requires that a permittee include on its map: (i) priority areas (for example, parts of the service area with a history of illegal dumping); (2) field sampling stations; and (3) the permit boundary. Additional mapping requirements will likely vary by state.

[25]40 C.F.R. § 122.42(c). As of December 21, 2020, all annual reports must be submitted electronically in compliance with EPA's 2015 e-Reporting Rule. [LINK TO § 7.10] For more information, EPA's website includes more information here.

[26]40 C.F.R. § 122.34(d)(3). The December 21, 2020 e-reporting deadline also applies to Phase II MS4s.

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3. Six Minimum Control Measures (MCMs) For Phase II Small MS4s

3.1 MCM 1: PUBLIC EDUCATION AND OUTREACH

MCM 1 requires Small MS4s to implement a public education and outreach program that involves distributing educational materials to the public or conducting outreach on stormwater impacts on water bodies.[1] Often, the permit includes a goal that the MS4 will work to increase the public's knowledge of stormwater pollutants and their impacts on local waters.

Public education can take many forms and regulators are often flexible with this part of the permit. A common requirement of MCM 1 is to identify populations that may contribute particular pollutants to the MS4 and then develop materials to target those populations and encourage behavior that will reduce the pollutants. This is consistent with EPA's guidance in the Phase II Remand Rule; EPA recommends that an MS4 target specific audiences or types of facilities (commercial, industrial, and institutional entities). EPA also recommends that the permit encourage the MS4 to reach out broadly, including to disenfranchised communities, and to consider the needs of children.[2] Examples of BMPs to satisfy MCM 1 include:[3]

- Posting signage in pulic parks reminding dog owners to pick up after their pets
- Distributing brochures to citizens highlighting stormwater issues in the community
- Providing public schools with stormwater-related educational materials or conducting presentations at schools
- Developing display materials to showcase at local events (state and local fairs, etc.)
- Developing public service announcements (PSAs) for mass media outlets
- Purchasing or producing give-away materials that educate the public on stormwater issues (refrigerator magnets, bookmarks, pens, etc.)
- Painting, stenciling, or marking storm drains to alert citizens not to dump materials into the system
- Running a poster or essay contest to encourage citizens to consider clean water issues

Measuring the Impacts of Public Education

Permittees should be wary of draft "public education" permit terms that require the MS4 to actually impact public awareness or behavior and to measure improvements in public understanding. For example, a draft permit might require that the permittee conduct a survey at the beginning and end of the permit term to assess how much the public knows about

stormwater pollutants and their impacts on receiving waters, with the requirement that levels of awareness are increased by a certain amount. If citizens are not more informed, this type of permit language leaves the MS4 at risk of non-compliance. At most, the permittee should be required to review whether educational materials and activities can be improved based on the results of the survey. An MS4 can provide education and it can target particular behaviors, but it cannot force its citizens to pay attention to and learn from the messages.

3.2 MCM 2: PUBLIC INVOLVEMENT AND PARTICIPATION

MCM 2 requires that MS4s implement a public involvement and participation program that complies with state, tribal, and local public notice requirements.[4] The objective is to provide opportunities for residents from all economic and ethnic backgrounds to participate in the stormwater management program, for example, as a part of a citizen advisory committee or as a volunteer monitor.[5] As with public education, public participation and involvement can take many forms, but common permit terms include the following:[6]

- Making a copy of the permittee's SWMP Plan and annual reports available to the public (oftentimes on a website)
- Taking public feedback on the SWMP Plan during its development
- Participating in local outreach activities (i.e., stream clean-ups)
- Convening local citizens to serve on a stormwater panel
- Working with local civic organizations to install medallions or to stencil catch basins to remind the public that pollutants entering the storm sewer system reach local water
- Hosting a storm water "art walk" initiative where local groups adopt and design artistic motifs for storm sewer inlets

3.3 MCM 3: ILLICIT DISCHARGE DETECTION AND ELIMINATION (IDDE)

MCM 3 provides that MS4s develop, implement, and enforce a program to detect and eliminate illicit discharges into the MS4. The program must include: development of a storm sewer system map; a method for prohibiting non-stormwater discharges into the MS4 with "appropriate enforcement procedures and actions;" a method for detecting non-stormwater discharges, "including illegal dumping," to the MS4; and a program to educate public employees, businesses, and the public on the "hazards associated with illegal discharges and improper disposal of waste."[7] Illicit discharge is defined as "any discharge to a municipal separate storm sewer that is not composed entirely of storm water except discharges pursuant to an NPDES permit (other than the NPDES permit for discharges from the municipal separate storm sewer) and discharges resulting from firefighting activities."[8]

MCM 3 typically requires that a permittee maintain a map of its system and then have a plan to conduct regular visual screenings of outfalls in an effort to identify dry-weather flows that may be associated with illicit discharges.[9] Most parts of a typical MS4 system should be dry during dry weather. Dry weather IDDE sampling may be advantageous in identifying illegal sanitary connections to storm sewers and failing septic systems that either are connected to the storm sewer or contribute flow to a storm sewer.

To further increase identification of illicit discharges, MS4s either establish a hotline or publicize a municipal phone number for the public to call to report suspicious discharges. If the MS4 identifies an illicit discharge, the MS4 then follows established standard operating procedures (SOPs) to evaluate and track the source of the discharge and address it.

Although all discharges of non-stormwater that are not permitted or related to firefighting are categorized as unlawful (not authorized by the MS4 permit), federal, and often state, regulations include a list of "acceptable" non-stormwater discharges. Note that these non-stormwater discharges are not acceptable if the permittee identifies them as problematic.[10] The list includes (although wording often varies by state): water line flushing, landscape irrigation, diverted stream flows, rising ground waters, uncontaminated ground water infiltration (as defined at 40 CFR 35.2005(20)) to separate storm sewers, uncontaminated pumped ground water, discharges from potable water sources, foundation drains, air conditioning condensation, irrigation water, springs, water from crawl space pumps, footing drains, lawn watering, individual residential car washing, flows from riparian habitats and wetlands, dechlorinated swimming pool discharges, and street wash water.[11]

"Ensuring" Illicit Discharge Elimination

It is sound practice for MS4 permit applicants to review draft permits and reject any terms that mandate that the MS4 "prevent" or "ensure" the elimination or permitting of a discovered illicit discharge. Identifying the source of a dry-weather discharge at a particular outfall is often impossible, especially if the source is transient or temporary. Permits should only require that the MS4 use best efforts to identify the source and follow an established standard operating procedure to address the discharge.

3.4 MCM 4: CONSTRUCTION SITE RUNOFF CONTROL

To satisfy MCM 4, MS4s must develop and implement a program to reduce pollutant discharges from stormwater runoff associated with construction that disturbs one or more acres or that disturbs less than one acre if the construction is part of a larger common plan of development or sale that would disturb one acre or more. A program should include: an ordinance or other mechanism "to require erosion and sediment controls" with enforcement mechanisms "to ensure compliance;" requirements for erosion and sediment control at construction sites; requirements for construction sites to control other types of waste; site plan reviews; a method to accept public information on construction sites; and procedures to inspect and enforce erosion and sediment controls on regulated sites.[12]

MCM 4 typically requires that a permittee oversee land-disturbing activities that trigger the need for a separate federal NPDES permit.[13] Because many states have erosion and sediment (E&S) control laws, the permit may simply require that the permittee impose the state law's technical criteria on construction sites that are large enough to meet the one-acre threshold. Depending on state law, a permittee may be required to conduct a pre-construction review and approve or disapprove the E&S plan. If the MS4 inspects a construction site and finds that E&S controls are not in place or are not being adequately maintained as required by the approved E&S plan, the permit will require follow-up and enforcement. As with IDDE, MCM 4 also includes a requirement to allow the public to report concerns they have regarding construction sites and water quality impacts. Although E&S laws are typically focused on sediment, MCM 4 is not so limited—MS4s must police construction sites for other types of waste (i.e., concrete washout).

Can MS4 Permittees Be Held Liable for Violations at Third Parties' Construction Sites?

It happens. EPA or state inspections of stormwater management at third parties' construction sites often find violations. Sometimes regulators will also issue notices of violation to the relevant MS4 permittee for failure to properly monitor the third party's construction site. If the MS4 owner has been implementing a construction site monitoring and inspection program in accordance with its permit, it should contest any attempt by EPA or the state to hold it responsible for the failure of third parties to comply with E&S requirements.

Construction Sites Smaller than One Acre

States sometimes request that a permittee oversee construction sites that are smaller than one acre. An MS4 permit applicant should approach this with caution. Regulating more construction sites to help address local water quality problems may seem appealing, but monitoring a large number of small sites may prove challenging and a failure to regulate small construction projects may be held against the MS4 in an EPA or state-led inspection or audit.

EPA or state audits may question whether the controls in place on a particular construction project are adequate. Because many construction sites are owned and/or operated by a third-party, unrelated to the MS4 permittee, an MS4 should only be held responsible for its failure to adequately regulate such a site—an MS4 should not be penalized if an unrelated entity fails to comply with an approved plan.

3.5 MCM 5: POST-CONSTRUCTION RUNOFF CONTROL

For MCM 5,[14] MS4s must develop and implement a program to address stormwater runoff from development and redevelopment projects that meet the size criteria referenced above in MCM 4—that is land disturbance that individually or as part of a common plan of development

will impact greater than one acre. MCM 5 typically requires that a permittee compel developers to implement structural BMPs to address post-construction runoff from the development or redevelopment site.[15] EPA's Phase II MS4 regulations require that a permit include a post-construction program that includes: (i) development and implementation of strategies (with structural and non-structural BMPs) "appropriate for the community;" (ii) use of an ordinance or regulatory mechanism to address post-construction runoff "to the extent allowable under State, Tribal or local law;" and (iii) a plan to "[e]nsure adequate long-term operation and maintenance of BMPs."[16]

As with E&S, some states have stormwater regulations that impose technical criteria on development and redevelopment sites across the state. If this is the case, the MS4 permit may reference the statewide standards, and indicate that compliance with state law is adequate for permit compliance purposes. States without stormwater regulations may simply reference the need for an MS4 to require post-construction controls and address long-term maintenance and operation by the BMP owner.

Over time, permitting authorities have significantly ramped-up the requirements for MCM 5 in MS4 permits. In 2015, the Arizona Department of Environmental Quality (ADEQ) took comments on a draft reissuance of the Arizona Small MS4 general permit, which includes MCM 5 text. The ADEQ added extensive and detailed new terms for inspection and reporting on post-construction controls (including what must be included in the inspection report), for creating a searchable inventory of all post-construction structural stormwater control measures, and for conducting an assessment of the impacts of existing local regulations on stormwater quality, quantity, and velocity.

Resisting Unachievable Permit Requirements

Permitting authorities have made similar changes to MCM 3 and MCM 6 in many permits across the United States. What once were relatively straightforward terms to guide local stormwater management planning are now detailed and prescriptive. Permitting authorities have a reasonable expectation that programs will become more sophisticated over time, but permit applicants should guard against impracticable, ineffective, and unwise requirements. Also, while detailed minimum requirements provide a compliance safe harbor, too much detail may inappropriately limit flexibility to achieve the optimum MS4 system performance.

The Phase II regulations do not specify what must be included in an ordinance or other regulatory mechanism. Typically, local post-construction stormwater runoff control ordinances include the following general elements:

- Recitation or incorporation by reference of established technical standards—usually state-adopted standards—for post-construction stormwater control
- Requirement that developers submit plans to the local entity for review and approval prior to construction

- Requirement that developers operate and maintain any post-construction facilities in accordance with their design
- Enforcement actions available to the MS4 permittee if developers do not comply

The rules for writing local ordinances and regarding local enforcement options are often driven by state law.

Operation and Maintenance (O&M) of Post-Construction BMPs

An MS4 that needs to oversee operation and maintenance of post-construction stormwater BMPs could require in its ordinance that developers execute an agreement to keep the BMPs maintained and in good operational condition. The agreement also may require the developer to regularly inspect the BMPs and file reports on their condition. If the agreement is recorded with local land records, any subsequent owner of the property would take the property subject to the O&M commitments in the agreement.

An MS4 permit applicant should carefully review any draft permit text that incorporates state law or policy by reference. An MS4 permittee can easily be bogged down in the details often provided by state law. Additionally, when a state law or policy is incorporated into an NPDES permit, the permittee's compliance with that state-only provision may become federally enforceable by EPA or by citizen groups under the CWA's citizen suit provision.

State laws and policies usually can be referenced in an MS4 permit in a manner that does not potentially make compliance with the state requirement a federally enforceable permit requirement. For example, the following requirement: "The permittee's stormwater management plan shall comply with the Governor's Executive Order on Green Infrastructure."
could be revised to avoid making compliance with a governor's executive order a federal permit requirement: "The permittee's stormwater management plan shall evaluate opportunities to implement the Governor's Executive Order on Green Infrastructure."

Likewise, the following: "The permittee shall implement the state law ban on coal tar pavement products, including conducting outreach and enforcement activities." could be revised so that the permit requirement is consistent with the state law without making compliance with the state law a permit requirement: "The permittee shall prohibit the use of coal tar pavement products within the MS4 service area to the extent it is authorized by the state law ban on coal tar pavement products."

In some cases, it is advisable to delete the state-law reference altogether. The second example presents a state law reference to which a permittee should consider objecting. The language subjects the MS4 permittee to an independent legal obligation imposed by state law to implement a ban on coal tar paving products. There is little reason to also make compliance with that state law an MS4 permit condition. Doing so exposes the permittee to potential enforcement action by EPA or citizen groups who may view the state law requirements differently than the state.

3.6 MCM 6: POLLUTION PREVENTION AND GOOD HOUSEKEEPING

MCM 6 requires that MS4s develop and implement a program to address stormwater runoff from municipally-owned facilities and activities.[17] Specifically, EPA's Phase II MS4 regulations include municipal activities that may occur as a part of "park and open space maintenance, fleet and building maintenance, new construction and land disturbances, and storm water system maintenance." MCM 6 typically requires that a permittee conduct regular employee training on how to reduce the potential for stormwater impacts.[18] Training could involve educating municipal employees on how to identify a potential IDDE situation from the municipal site and report it so that follow-up can occur.

An MS4 permit may also require that the permittee inventory the municipal facilities and activities that could have stormwater impacts, and then develop SOPs, or even stormwater pollution prevention plans (SWPPPs), for employees to follow. For example, an employee working for the municipal parks department may be directed to follow labeling and storage instructions for use and storage of pesticides, herbicides, and fertilizers.

Beware of draft permit terms that require the permittee to, for example, "ensure" that there are no leaks from municipally-owned automobiles or equipment into the MS4. BMPs can be installed to reduce potential releases to the maximum extent practicable when oil is being changed, but it is not possible to entirely eliminate releases from a municipal fleet. An MS4 permit applicant should also be concerned if the regulator seeks to incorporate standard operating procedures (SOPs) by reference into the permit or SWMP Plan—that may make any deviation from the SOPs a permit violation and make it cumbersome to update the SOPs as needed.

Permittees should scrutinize any requirement to "ensure" or "prevent" anything. Permittees can prohibit activities but cannot "prevent" or "ensure" public behavior and/or action. This is a practical necessity despite language in 40 C.F.R. § 122.26(d)(2)(iv)(B)(4) which requires that MS4 system "prevent, contain, and respond to spills" that "may" discharge into the MS4. Recall the MS4 statutory performance obligation is built on implementation of best management practices. Regulatory requirements to "prevent" spills, for example, must be evaluated within that statutory BMP-based limitation.

Permit Requirements Should Have Water Quality Benefits

MS4 dollars are limited, particularly as most permittees are in the program development stage. Permittees should negotiate with permitting authorities to ensure that permit requirements deliver the greatest environmental and public health benefits in a cost-effective manner. It is critical that MS4 programs deliver tangible public benefits to support further program development and revenue enhancements and avoid permit conditions that will have little or no water quality benefit. Requirements to provide MS4 training (IDDE) for clerical staff is one example of an overbroad requirement that is unlikely to provide any material water quality benefits.

[1]EPA's Phase II MS4 regulations require that a permit include a public education program "to distribute educational materials to the community or conduct equivalent outreach activities about the impacts of storm water discharges on water bodies and the steps the public can take to reduce pollutants in storm water runoff." 40 C.F.R. § 122.34(b)(1). The Phase II regulations also provide guidance for each MCM regarding potential permit terms to satisfy the broader requirement.

[2]40 C.F.R. § 122.34(b)(1)(ii).

[3]EPA, Stormwater Phase II Final Rule Fact Sheet Series: Public Education and Outreach Minimum Control Measure (Dec. 2005).

[4]40 C.F.R. § 122.34(b)(2)(i).

[5]40 C.F.R. § 122.34(b)(2)(ii).

[6]EPA, Stormwater Phase II Final Rule Fact Sheet Series: Public Participation/Involvement Minimum Control Measure (Dec. 2005).

[7]40 C.F.R. § 122.34(b)(3).

[8]40 C.F.R. § 122.26(b)(2).

[9]EPA, Stormwater Phase II Final Rule Fact Sheet Series: Illicit Discharge Detection and Elimination Minimum Control Measure (Dec. 2005).

[10]40 C.F.R. § 122.26(d)(2)(iv)(B)(1) ("[H]owever the following category of non-storm water discharges or flows shall be addressed where such discharges are identified by the municipality as sources of pollutants to waters of the United States."); 40 C.F.R. §122.34(b)(3)(ii) (discharges from firefighting activities must be addressed "only if the permittee identifies them as a significant contributor of pollutants to the small MS4").

[11]40 C.F.R. § 122.26(d)(2)(iv)(B)(1).

[12]40 C.F.R. § 122.34(b)(4).

[13]EPA, Stormwater Phase II Final Rule Fact Sheet Series: Construction Site Runoff Control Minimum Control Measure (Dec. 2005).

[14]EPA, Stormwater Phase II Final Rule Fact Sheet Series: Post Construction Runoff Control Minimum Control Measure (Dec. 2005).

[15]40 C.F.R. § 122.34(b)(5).

[16]40 C.F.R. § 122.34(b)(5)(i)(C).

[17]EPA's Phase II MS4 regulations require that a permit include an good housekeeping program that includes employee training "to prevent and reduce storm water pollution from activities such as park and open space maintenance, fleet and building maintenance, new construction and land disturbances, and storm water system maintenance." 40 C.F.R. § 122.34(b)(6).

[18]EPA, Stormwater Phase II Final Rule Fact Sheet Series: Pollution Prevention/Good Housekeeping Minimum Control Measure (Dec. 2005).

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4. More Specific or Additional Requirements For Large & Medium MS4s

As Phase I MS4 permittees tend to represent larger and more densely populated areas, the regulations impose additional obligations on Large and Medium MS4s. These additional obligations are not found in the federal regulation for Small Phase II MS4s, although they may be included in permits by federal or state permitting authorities.

MEP and Permit Negotiations

Phase I MS4 permits are written as individual permits, not as general permits. This process often involves extensive negotiation between the individual MS4 community and the regulator to determine the nature and extent of BMPs necessary to fulfill the MEP standard for the permittee during the upcoming permit cycle. An MS4 that has defined the appropriate level of effort and specific activities for its program over the permit term should strive to negotiate specific requirements consistent with the MEP determination because implementing those specific requirements should provide the MS4 with a compliance permit shield.

4.1 STRUCTURAL CONTROL MAINTENANCE

Phase I MS4 permits require structural and source control measures to reduce pollutants from runoff in commercial and residential areas.[1] Although the specifics will vary widely, this requirement is often imposed through a permit condition obligating the permittee to keep an inventory of privately and publicly-owned structural controls (BMPs) and inspect and maintain its own BMPs. In addition, the MS4 permittee may be required to mandate that owners or operators of privately-owned structural controls within the MS4 service area keep an inventory of their BMPs, as well as inspections and maintenance records, and to submit reports to the permittee.

MS4 Responsibility for Third-Party Actions

MS4s owners should be wary of attempts to make them responsible for the actions of third parties. A permittee can require that a private property owner inspect and maintain its BMPs if they discharge into the MS4, and it may be able to address poor maintenance and bill the owner for the work (depending on state and local law), but it generally cannot force a third party to take action (although court-ordered injunctions may be available in some circumstances).

4.2 ROADWAYS

Phase I MS4 permits must require management practices to reduce the impact of stormwater runoff from local streets.[2] A common permit term would require the permittee to keep an inventory of the streets, roads, and highways it owns or operates, and, in colder climates, to develop SOPs to optimize the selection and application of deicing materials. Most MS4s also have street sweeping programs, which, by their nature, reduce trash, leaves, and associated pollutants from local roadways.

Covering Road De-icing Salt Piles

A requirement to cover salt piles to reduce runoff potential may seem reasonable on its face, but it is a common concern for regulators during an inspection. Often, an MS4 owner will have built a permanent structure to store salt, but, when EPA or the state visits the site, salt is spilling out onto adjacent pavement. An MS4 owner should instruct employees who work with salt to keep the materials under cover. A written SOP is also useful to have for purposes of an EPA or state compliance inspection or audit.

4.3 INDUSTRIAL FACILITIES

Phase I MS4 permits must require oversight of certain enumerated industrial facilities.[3] A typical permit term would require the permittee to keep an inventory of the industrial facilities it serves,[4] and to develop a program for regular inspections of covered facilities. If the MS4 identifies concerns during the inspection, the MS4 should have SOPs for follow-up and enforcement.

The list of facilities that an MS4 must inventory as a part of its source identification efforts—facilities that may discharge stormwater associated with industrial activity—is broader than the list of facilities the regulations require that it inspect. For example, POTWs that have a design capacity greater than 1 million gallons per day or more, or that are required to have an approved pretreatment program, are regulated as industrial facilities if they discharge stormwater to a nearby waterbody. However, POTWs are not included in the list of facilities that must be inspected and monitored unless the MS4 identifies the plant as contributing a substantial pollutant loading to the MS4. Permits should appropriately reflect the regulatory requirements.

The Proper Role of MS4s for Monitoring Industrial Facilities

State regulators that are understaffed and underfunded may seek to transfer responsibility for reviewing industrial facilities' compliance with their respective NPDES permits to the MS4 owner. MS4 owners should resist any such attempted transfer of this responsibility.

MS4s also should not be asked to inspect, monitor, or enforce against industrial facilities

that directly discharge to local waters. Industrial sites, especially those with larger footprints, commonly construct stormwater management systems to drain their properties directly to a stream. In that case, the industrial facility is not in the MS4's service area, and has no direct impact on the publicly-owned stormwater drainage system. If the MS4 receives a citizen call regarding a potential illicit discharge from the facility, it may wish to investigate whether there is an illicit discharge and, if so, whether the facility drains to the MS4. If it does not, the MS4 should only be expected to notify the state regulator, and not to pursue enforcement under its MS4 permit.

4.4 FLOOD MANAGEMENT

Phase I MS4 permits must include a term requiring consideration of flood management projects and their potential impacts on water quality, and whether existing flood control devices can be upgraded to improve pollutant reduction.[5] A common permit term would require the permittee to assess the impact of flood management projects on receiving waters and to evaluate retrofits for existing flood control devices. MS4 permits may also require a review of development in the flood plain to allow for careful consideration of water quality impacts. Flood management is something that local jurisdictions typically address already, separate and distinct of MS4 permitting (e.g., as part of the National Flood Insurance Program). This presents a challenge in documenting the required water quality improvement reviews for flood management projects.

4.5 PESTICIDES, HERBICIDES, AND FERTILIZERS

Phase I MS4 permits must include a term requiring a program to reduce to the MEP discharges associated with the application of pesticides, herbicides, and fertilizers (PHFs).[6] A reasonable permit term may require the permittee to implement good housekeeping measures, including proper use and storage of materials, at publicly-owned facilities that use PHFs. Some Phase I MS4 permits require that the permittee develop nutrient management plans for applications of fertilizers (particularly in areas with nutrient impairments). Other permits include a requirement for the MS4 to implement integrated pest management in its community.[7] In all cases, the permittee must ensure that properly certified/licensed individuals perform PHF applications on public property.

4.6 SPILLS

Phase I MS4 permits must include a term requiring a program to respond to spills that may discharge to the MS4.[8] A common permit condition would require the permittee to implement a program, working with other emergency responders, to respond to spills that may discharge into the MS4.

Liability for Spills and Sanitary Sewer Overflows

The MS4 permit should clarify that liability for the spill itself and/or the responsibility for reporting and responding to the spill, if required, does not transfer to the MS4 owner as a result of the MS4 permit obligation that the MS4 owner respond to illicit releases.[9]

An MS4 permit applicant should also request that the permit-issuing authority delete any term that requires the MS4 to contain and remove sanitary sewer overflows (SSOs) that may impact the MS4. SSOs are typically prohibited as a part of a locality's wastewater permit, and there may be civil penalties associated with an SSO. If the MS4 owner or operator also operates the sanitary sewer system, it should not be doubly liable for overflows to the MS4. Conversely, if the MS4 and sanitary sewer system are operated by different entities, an SSO should be treated no differently than any other IDDE event. The permittee should be expected to investigate and help facilitate a cessation of the SSO and appropriate cleanup by the sanitary sewer system owner.

4.7 FISCAL ANALYSIS

Phase I MS4 permits must be supported by a fiscal analysis that identifies the level of expenditures needed to comply with the permit.[10] This often means that the permittee must submit, with each year's annual report, a budget for the next fiscal year along with an explanation for the source of funding for the budget.

MS4 Budgets

When reviewing draft permits, MS4 owners should carefully evaluate likely funding during the permit term (reasonable rate increases) and seek to tailor permit requirements to be consistent with realistic funding projections.

4.8 MONITORING

Phase I MS4 permits must include a monitoring term that requires the collection of "representative" data on the stormwater management program.[11] Monitoring terms vary widely depending on the jurisdiction and individual Phase I permittee. The goals of monitoring can also vary. Some regulators impose monitoring to assess the effectiveness of BMPs, some to gather big-picture data on instream pollutant levels, some to determine whether state stormwater regulations are having the desired impact in areas of development and redevelopment, and some to gauge the success of a TMDL program. There are also numerous types of monitoring, including chemical, physical, and, more rarely, biological monitoring that may be required.

Right-Sizing Monitoring and Paperwork Requirements

Monitoring can be one of the most expensive requirements of an MS4 program. If the permit requirement is poorly written, monitoring can also result in little to no useful information to allow the MS4 to assess progress (despite the cost). Similarly, MS4 permits may include multiple reporting and paperwork requirements that will prove costly to implement.

Monitoring requirements should be carefully targeted to provide meaningful information to assess program progress and optimal approaches going forward. Instream monitoring will not always yield useful information about MS4 performance due to the stage of most MS4 programs and the numerous variables associated with instream monitoring during wet weather events. An MS4 permit applicant should scrutinize draft monitoring, reporting, and paperwork requirements and identify and object to requirements that unreasonably divert funds away from actions that will have substantive programmatic and/or water quality benefits.

4.9 ASSESSMENT OF CONTROLS

Phase I MS4 permits typically require that the permittee estimate reduced loadings of pollutants that will result from implementation of the stormwater management program.[12] Assessment of controls is consistent with the adaptive management focus of MS4 permits. A typical permit term would require that the permittee submit an assessment to the permit-issuing authority on a regular schedule (each year with the annual report, every other year, after the permittee has implemented particular permit terms, etc.) that estimates any net change to a particular pollutant loading based on efforts the MS4 has taken over the period in question.

[1]A permittee must describe "maintenance activities" and how maintenance will occur for structural controls in its Phase I MS4 permit application. 40 C.F.R. § 122.26(d)(2)(iv)(A)(1).

[2]A permittee must describe "practices" for operating and maintaining "public streets, roads and highways" and "procedures" for reducing impacts on receiving water from discharges from the MS4, including "pollutants discharged as a result of deicing activities." 40 C.F.R. § 122.26(d)(2)(iv)(A)(3). Although the Phase II MS4 regulations do not specifically call out "roads" as a regulatory requirement, EPA recommends that an MS4 address discharges of pollutants from streets, roads, and highways.

[3]This includes describing a program to "monitor and control pollutants" in stormwater discharges from: (1) municipal landfills; (2) hazardous waste treatment, disposal and recovery facilities; (3) industrial facilities subject to SARA (Superfund amendments); and (4) industrial facilities that the applicant has determined are "contributing a substantial pollutant loading" to the MS4, which program includes "priorities and procedures" for inspecting these sites and "implementing control measures" for discharges, and a monitoring program for specific pollutants. 40 C.F.R. § 122.26(d)(2)(iv)(C). In addition, the permittee must describe a program to monitor runoff from operating or closed municipal landfills or "other treatment, storage or disposal facilities for municipal waste." 40 C.F.R. § 122.26(d)(2)(iv)(A)(5).

[4]The permittee must provide an inventory of facilities that may discharge stormwater associated with industrial activity into the MS4. 40 C.F.R. § 122.26(d)(2)(ii).

[5]The permittee must have procedures in place to "assure" that decisions regarding flood management projects are not made without considering impacts on receiving water quality and that "assure" that existing flood control devices "have been evaluated" for possible retrofits to "provide additional pollutant remove from storm water." 40 C.F.R. § 122.26(d)(2)(iv)(A)(4).

[6]The permittee must also have a program to reduce to the maximum extent practicable pollutants associated with pesticide, herbicide, and fertilizer applications that includes "controls such as educational activities, permits, certifications and other measures for commercial applicators and distributors, and controls for application in public right-of-ways and at municipal facilities." 40 C.F.R. § 122.26(d)(2)(iv)(A)(6).

[7]The goal of integrated pest management (IPM) is to reduce the use of pesticides. EPA, Introduction to Integrated Pest Management.

[8]The permittee's proposed management program must describe procedures to "prevent, contain, and respond to spills" that "may" discharge into the MS4. 40 C.F.R. § 122.26(d)(2)(iv)(B)(4). Again, the requirement to "prevent" spills comes within the statutory context of using BMPs to fulfill such requirements.

[9]As an example, one state's Phase I MS4 permit template states: "This permit does not transfer the liability for the spill itself from the party(ies) responsible for the spill nor relieve the party(ies) responsible for the spill from the reporting requirements under [state law]."

[10]For each fiscal year of the permit, the permittee must have completed an analysis of needed capital and O&M expenditures "necessary" to accomplish the characterization data and management program portions of the permit. 40 C.F.R. § 122.26(d)(2)(vi). The MS4's submittal of this data must provide the sources of funds "including legal restrictions on the use of such funds."

[11]Relating to characterization data, the applicant must submit a proposed monitoring program for the term of the permit, with (1) a description of outfalls, field screening points, or instream stations that will be sampled, (2) an explanation for why the chosen location is representative, and (3) other details needed to support the program. 40 C.F.R. § 122.26(d)(2)(iii)(D). In addition, the Phase I federal regulations require that the applicant submit quantitative data from representative outfalls designated by EPA or the state director based on information provided with the part 1 application. Federal regulations provide specific requirements for how often samples must be taken, narrative information that must be provided with the data, and which pollutants must be monitored. 40 C.F.R. § 122.26(d)(2)(iii)(A). There are also monitoring requirements embedded in the IDDE and industrial stormwater programs.

[12]A Phase I MS4 permittee must submit estimated loading reductions that it expects to achieve as a result of the stormwater management program. The assessment should also include "known impacts" of stormwater on ground water. 40 C.F.R. § 122.26(d)(2) (v). This may be very difficult to quantify on a system-wide basis. Permittees should qualify any such predictions and consider using ranges to reflect the many variables which affect MS4 loadings year-to-year.

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5. Water Quality Standards Provisions

Under the MEP standard in CWA § 402(p), MS4 permits are not required to include water quality-based effluent limits to comply with water quality standards. However, there is an increasing trend of permitting authorities including numeric effluent limits and other permit conditions that are intended to bring MS4 discharges into compliance with water quality standards (or for compliance with TMDL wasteload allocations).

5.1 MS4 PERMIT CONDITIONS TO ADDRESS THE ATTAINMENT WATER QUALITY STANDARDS

Permitting authorities generally take one of three approaches to developing permit conditions addressing water quality standards:

5.1.1 ADAPTIVE/ITERATIVE APPROACH

As recommended by EPA,[1] many permitting authorities have adopted an iterative approach that sets a practicable and attainable water quality goal for each five-year permit term. Permit conditions are designed to ensure that reasonable progress is made toward the attainment of water quality standards over the course of the permit term. The water quality-based permit conditions would then be reevaluated when the permit is reissued to ensure that reasonable further progress will again be made in the subsequent permit term toward the eventual goal of compliance with water quality standards. During each iterative term the permit requirements must reflect the maximum extent practicable standard.

5.1.2 LONG-TERM COMPLIANCE SCHEDULES

Other permitting authorities have established water quality standards attainment as a goal to be achieved by a fixed compliance date that may be within or beyond the current five-year permit term—such as mandating compliance by the end of the current five-year permit term, by year 10, or by the end of the third permit cycle. This approach gives regulators and permittees some flexibility to develop a schedule and interim goals that are practicable and attainable. However, there are inherent risks in setting a schedule with goals that are years, and perhaps multiple permit terms, in the future and which may prove to be impracticable or unattainable.

Compliance Schedules

Compliance schedules can be extended before the end of the compliance period, but permittees should not count on such extensions when deciding whether to appeal a fixed end date for MS4 compliance.

5.1.3 STRICT COMPLIANCE APPROACH

Some MS4 permits expressly prohibit discharges that cause or contribute to exceedances of water quality standards. Because compliance with such conditions may be impracticable or impossible for MS4 permittees, there are substantial questions whether such conditions are lawful in light of the maximum extent practicable standard.

Appeal Unattainable Permit Conditions

Permit conditions requiring strict compliance with water quality standards generally set the permittee up for failure, noncompliance, and enforcement action. If a requirement is not attainable, the permittee should object and evaluate its options for appealing the permit.

5.2 STATUTORY AND REGULATORY PROVISIONS

States have primary responsibility for the development of water quality standards. By the terms of CWA §303(a), most state water quality standards adopted and in effect before October 18, 1972 were grandfathered—some of which are still in effect today.[2] States that did not have water quality standards adequate to protect its waters as of that date were required to develop them. Water quality standards must be reviewed and updated every three years to reflect the best current science.[3]

Water quality standards consist of the following:[4]

- Designated uses, which are the "appropriate water uses to be achieved and protected" (public water supply, aquatic life protection, recreation, etc.)[5]
- Water quality criteria, which are the numeric or narrative requirements of water quality standards adequate to protect the designated uses[6]
- Antidegradation policy, which is aimed at protecting existing uses and the levels of water quality necessary to do so, maintaining high quality waters, and identifying exceptional quality waters, and methods for implementing the policy[7]

EPA plays an advisory role in water quality standards development. EPA is responsible for developing, publishing, and periodically updating national recommended water quality criteria, also called 304(a) Guidance or 304(a) criteria, which incorporate the latest scientific knowledge of the effects of pollutants on aquatic life and other designated uses of the states' surface waters.[8] EPA's recommended criteria are not regulations—they are guidance. States are free to depart from the criteria when establishing their own standards if the state standards are based on scientifically defensible methods and are protective of designated uses for surface waters.[9]

In addition to establishing proposed criteria, EPA reviews and approves or disapproves state water quality standards for consistency with the CWA.[10] When a state submits new or revised water quality standards to EPA, the Agency must notify the state within 60 or 90 days of its approval or disapproval. If EPA disapproves water quality standards revisions, and the state does not address EPA's recommendations for changes within 90 days, EPA is directed to promptly propose and adopt appropriate water quality standards for the state.[11] In practice, EPA and the states negotiate state water quality standards, often over substantial periods of time.

5.3 CAPABILITY OF COMPLIANCE WITH WATER QUALITY STANDARDS

MS4s have little practical ability to control what pollutants flow into their systems and only limited ability to provide treatment for those pollutants before they discharge from the system. In addition to pollutants introduced to the system by third parties, MS4 systems in urban environments provide considerable habitat for local wildlife, resulting in bacterial and other pollutant loadings which are beyond the MS4's control. Generally, it is considered impracticable, if not impossible, for MS4 discharges to attain full compliance with conditions prohibiting discharges that cause or contribute to exceedances of water quality standards. This is particularly true with respect to "first flush" discharges when storms occur after a long dry period, which mobilizes sediment and other pollutants that have been deposited in the MS4 system and on the landscape.

Recognizing the impracticability of mandating strict compliance with water quality standards for MS4s, and consistent with the MEP standard, EPA has recommended that MS4 permits adopt an iterative approach to water quality standards compliance that sets water quality standards compliance as a long-term goal to be addressed over multiple permit terms. The permit should therefore include conditions that will achieve "reasonable further progress towards attainment of water quality standards."[12] This means that the BMPs should set "measurable goals" and be targeted toward addressing the pollutant and watersheds of concern.[13]

Compliance Schedules, Variances, and UAAs

The CWA and many state counterparts include various provisions that may provide relief for an NPDES discharger that cannot immediately come into compliance with applicable requirements, such as limits developed to comply with water quality standards. Among other options, permittees may request compliance schedules,[14] variances,[15] and use attainability analyses (UAAs)[16] to defer or change requirements of concern. Although these regulatory tools should be unnecessary if the MS4 permit complies with the MEP standard, they are available should a state elect to impose requirements that are more stringent than federal requirements or where water quality standards compliance requirements are included in the permit.

5.4 PERMIT CONDITIONS REQUIRING COMPLIANCE WITH WATER QUALITY STANDARDS

Some permitting authorities and citizen groups have argued that Congress intended to give permitting authorities the power to impose conditions that are more stringent than the MEP standard. The CWA states that MS4 permitting authorities "shall require controls to reduce the discharge of pollutants to the maximum extent practicable, including . . . such other provision as the Administrator or the State determines appropriate for the control of such pollutants."[17] MS4s interpret this to mean that all requirements in an MS4 permit must be consistent with the MEP standard. After all, it is illogical (and, arguably, per se arbitrary and capricious) for the permitting authority to impose requirements above and beyond those which already represent the "maximum extent practicable."

Nevertheless, EPA has taken the contrary position that the "such other provisions" clause means EPA and state permitting authorities have broad discretion to impose conditions in addition to the conditions necessary to ensure that discharges are reduced to the MEP.[18] This raises an important and unresolved legal question: whether the NPDES permitting authority has the authority to issue a permit that requires an MS4 permittee to reduce its discharges to the MEP and also manage its stormwater discharges so that they strictly comply with water quality standards—an objective that is rarely, if ever, "practicable" for MS4s.

In a 2014 guidance memo, EPA took this position a step further by recommending:

> Where the NPDES authority determines that MS4 discharges have the reasonable potential to cause or contribute to a water quality standards excursion, EPA recommends that the NPDES permitting authority exercise its discretion to include clear, specific, and measurable permit requirements and, where feasible, numeric effluent limitations as necessary to meet water quality standards.[19]

This position has been challenged, however,[20] and it is unclear if the EPA will reverse course or adhere to its previous statements.

Can Water Quality Standards Compliance Terms Be Compatible with the MEP Standard?

The leading federal case, Defenders of Wildlife, suggested that permitting authorities have broad discretion to impose water quality standards compliance permit terms in MS4 permits.

There are two generally prevailing views on this case. The first is the court meant that permitting authorities have discretion to impose water quality standards compliance permit terms that are beyond the MEP standard (i.e., EPA's position). The second is that Defenders of Wildlife was wrongly decided. MEP is the exclusive standard and water quality standards compliance conditions are inherently incompatible with that standard (i.e., many MS4s' position).

However, the Defenders of Wildlife decision did not specifically address arguably the most important question: whether water quality standards compliance permit conditions must be practicable. A third emerging "middle ground" view on the case is that water quality standards compliance conditions may be permissible so long as compliance is practicable for the MS4 permittee. An example of such a condition would be an adaptive/iterative requirement to make reasonable further progress toward water quality standards compliance by setting an attainable numeric goal to be achieved within the current five-year permit term (e.g., reduce sediment discharges from the MS4 by a certain percent). A second example would be a condition that requires strict compliance with water quality standards but retains the permit shield defense if the water quality standards exceedance occurs despite the permittee's compliance with all other applicable terms of the permit (i.e., implementation of all required BMPs).

The debate over whether permitting authorities can impose "beyond MEP" permit conditions—such as mandating strict compliance with water quality standards or numeric limits—may be academic in some states. The CWA gives states latitude to impose requirements that are more stringent than the CWA.[21] A number of states have taken advantage of this authority to impose requirements under state law that result in MS4 permit conditions that exceed the MEP standard.[22] However, "beyond MEP" permit requirements remain a key issue in (1) states where EPA is the permitting authority, (2) delegated states where state law prohibits the imposition of permit conditions that are more stringent than federal requirements, and (3) states where the law is silent on the limits of the state's authority.[23]

Alternative Grounds for Challenging "Beyond MEP" Requirements

Even where state law allows the imposition of "beyond MEP" requirements in MS4 permits, most states have administrative procedure statutes that prohibit agencies from acting in an arbitrary and capricious or unreasonable manner. These administrative procedure statutes provide alternative grounds for challenging permit conditions that are unreasonably burdensome or impossible to achieve.

5.5 DEFINING MAXIMUM EXTENT PRACTICABLE IN AN MEP ANALYSIS

MS4 permit conditions intended to obtain compliance with water quality standards or TMDL wasteload allocations may entail obligations that go beyond an MEP level of effort. MS4 permit applicants that are reviewing a permit with multiple TMDL requirements and other expensive programmatic terms can submit an MEP Analysis, or MEPA, during the draft permit public comment stage. An MEPA presents an evaluation of what would be practicable for the applicant to achieve during the five-year permit term, given the applicant's financial capability and other relevant logistical considerations.

Defining a flexible and inherently subjective standard like "maximum extent practicable" has

proven challenging for EPA, states, and MS4 permittees since the term was added to the CWA in 1987. EPA has rebuffed requests to develop a regulatory definition, stating in its 1999 Phase II rulemaking:

> EPA has intentionally not provided a precise definition of MEP to allow maximum flexibility in MS4 permitting. MS4s need the flexibility to optimize reductions in storm water pollutants on a location-by-location basis. EPA envisions that this evaluative process will consider such factors as conditions of receiving waters, specific local concerns, and other aspects included in a comprehensive watershed plan. Other factors may include MS4 size, climate, implementation schedules, current ability to finance the program, beneficial use of receiving water, hydrology, geology, and capacity to perform operation and maintenance.[24]

The practicability factors EPA listed in the Phase II rule preamble provide a useful list of factors to choose from when outlining the sections of an MEPA. The two most important considerations are the applicant's financial capability (e.g., what can the MS4 afford to do in the next five years?) and logistics (e.g., which tasks or projects cannot reasonably be completed within five years even if adequate funding is available?). MEPAs also can consider potential integrated planning opportunities which may identify higher environmental/public benefit opportunities for prioritization over MS4 controls.

An MEPA can be relatively simple or complex, based on the time, staff, and resources the locality is able to devote to the task, but the goal is always the same. An MEPA is meant to put the permitting authority on notice that the MS4 has reviewed the draft permit and has carefully considered its ability to comply based on the underlying MEP standard. MEPA challenges the regulator to customize the permit to fit the permittee's financial and logistical capabilities. If the final permit nevertheless includes impracticable or impossible requirements, a well-supported MEPA provides a solid record basis for challenging the permit as arbitrary and capricious or otherwise unlawful.

The MEPA gets permittees past theoretical discussions about what is practicable. It frames the discussion within the boundary of the resources available to the MS4 permittee and the priorities and benefits reflected by different BMP solution sets.

5.6 PRESERVATION OF THE CWA NPDES PERMIT SHIELD

The CWA permit shield provides that a permittee's compliance with its NPDES permit insulates the party from enforcement actions based on alleged violations of the CWA.[25] In Piney Run Preservation Association v. County Commissioners of Carroll County,[26] a federal appeals court held that an NPDES permittee is shielded from liability provided it (1) has complied with the express terms of its permit and (2) properly disclosed the pollutant of concern during the permit application process.

Two recent cases show the limits of the permit shield. In Ohio Valley Environmental Coalition v. Fola Coal Company,[27] the court held that the permit shield does not protect a permittee from liability for violations of narrative water quality standards if they are incorporated by reference into the permit, even if the permittee disclosed the pollutant that caused the exceedance of the narrative standard. In NRDC v. County of Los Angeles,[28] the court held that an MS4 permittee could not claim protection under permit shield where its discharges exceeded a prohibition on discharges that cause or contribute to exceedances of water quality standards.

As recent cases have demonstrated, preserving the permit shield may require more than satisfying the permit application disclosure requirements and performing all actions required by the permit. Permittees should contest any permit conditions for which compliance is not reasonably possible, such as conditions that require discharges to comply generally with numeric or narrative water quality standards.

If the permitting authority insists on including water quality standards compliance requirements in a permit, the permit shield can still be preserved if the language is appropriately qualified. Consider first the permit condition reviewed by the court in the Fola Coal case:

> The discharge or discharges covered by a WV/NPDES permit are to be of such quality so as not to cause violation of applicable water quality standards adopted by [the State].

This permit term contains no qualifying language, and the court found that the permittee had no permit shield defense where it found the permittee's discharges violated a narrative water quality standard prohibiting discharges that are "harmful" to aquatic life or that have a "significant adverse impact" on aquatic ecosystems. [29]

There are various ways to qualify or revise water quality standards compliance conditions to preserve the permit shield. In the Fola Coal example above, the provision could have been qualified as follows:

> Except in compliance with this permit, the discharge or discharges covered by a WV/NPDES permit are to be of such quality so as not to cause violation of applicable water quality standards adopted by [the State].

The revision to this permit condition ("Except in compliance with this permit") should preserve the permit shield. It states that discharges from the MS4 that exceed the applicable narrative water quality standard quoted in the permit do not violate the permit provided that the permittee is compliance with the other requirements of the permit.

Avoid Permit Conditions that Require Strict Compliance with Water Quality Standards

MS4 permittees should oppose the inclusion of any general water quality standards-compliance language in their MS4 permit (and in any NPDES permit). Such language is contrary to the MEP standard applicable to MS4 discharges. Also, permittees can be deprived of fair notice of what pollutant levels they can discharge as well as due process in being able to comment and challenge the agency's determination of such allowable discharge levels.

Alternatively, MS4 permittees can request that their permits add a separate "safe harbor" provision clarifying the conditions under which discharges may constitute a permit violation. One approach is to include language stating that discharges in compliance with all other permit terms are deemed to comply with water quality standards. For example, Small MS4 general permits in Virginia include a provision stating that compliance with the permits' other requirements "ensures compliance by the operator with water quality standards and satisfies the appropriate water quality requirements of the Clean Water Act and regulations."[30] Another safe harbor approach is one utilized by California, which provides that discharges that exceed water quality standards do not constitute permit violations if the permittee takes specified actions, including submitting and implementing a plan to remedy the discharge causing the exceedance.[31]

[1]See EPA, Measurable Goals Guidance for Phase II Small MS4s, at 4 (2001).
[2]33 U.S.C. § 1313(a)(1)–(2).
[3]33 U.S.C. § 1313(a)(3). Federal regulations on water quality standards can be found in 40 C.F.R. Part 131.
[4]40 C.F.R. § 131.6.
[5]40 C.F.R. § 131.10(a).
[6]40 C.F.R. § 131.11(a).
[7]40 C.F.R. § 131.12(a).
[8]33 U.S.C. § 1314(a).
[9]40 C.F.R. § 131.11(b).
[10]33 U.S.C. § 1313(d)(2); 40 C.F.R. § 131.5.
[11]40 C.F.R. § 131.21.
[12]NPDES Regulations for Revision of the Water Pollution Control Program Addressing Storm Water Discharges, 64 Fed. Reg. 68722, 68731 (Dec. 8, 1999).
[13]Measurable Goals Guidance for Phase II Small MS4s, at 4.
[14]40 C.F.R. § 131.15. EPA, Compliance Schedules for Water Quality-Based Effluent Limitations in NPDES Permits (May 10, 2007).
[15]40 C.F.R. § 131.14.
[16]40 C.F.R. § 131.10(g).
[17]33 U.S.C. § 1342(p)(3)(B)(iii).
[18]E.g., EPA Response to Comments Regarding the NPDES General Permits for Stormwater Discharges from Small Municipal Separate Storm Sewer Systems in Massachusetts Nos. MAR041000, MAR042000, and MAR043000, at 51 (April 4, 2016); Building Industry Association of San Diego County v. State Water Resources Control Board, 124 Cal. App. 4th 866 (Cal. Ct. App. 2004).
[19]EPA, Memorandum, Revisions to November 22, 2002 Memorandum "Establishing Total Maximum Daily Load (TMDL) Wasteload Allocations (WLAs) for Storm Water Sources and NPDES Permit Requirements Based on Those WLAs", at 4 (Nov. 26, 2014).
[20]In 2016 and 2017, EPA issued final general permits for Small MS4s in Massachusetts and New Hampshire, which require compliance with water quality standards. Both permits were appealed and the related matters are proceeding before the U.S. D.C. Circuit Court of Appeals. The Massachusetts' matter is docketed as No. 16-1246 and the New Hampshire matter is docketed as No. 17-1060.
[21]40 C.F.R. § 123.l(i).
[22]E.g., California Phase I MS4 Permit for the County of Sonoma, City of Cloverdale, et al., NPDES No. CA0025054, at Part IV.A (effective Jan. 6, 2016), ("Discharges of storm water or non-storm water from an MS4 shall not cause or contribute to a violation of water quality standards in receiving water. Water quality standards includes water quality objectives in the Basin Plan and statewide water quality control plans and policies."); Vermont Phase II MS4 General Permit, NPDES No. VTR040000, at Part IV.B.1 (effective Dec. 5, 2012), ("Discharges shall not cause or contribute to an exceedance of applicable water quality standards for the receiving water. Applicable water quality standards are the Vermont Water Quality Standards that are in place upon the effective date of this permit.").
[23]E.g., N.C. Gen. Stat. § 150B-19.3(a) (2017) ("An agency authorized to implement and enforce State and federal environmental laws may not adopt a rule for the protection of the environment or natural resources that imposes a more restrictive standard, limitation, or requirement than those imposed by federal law or rule, if a federal law or rule pertaining to the same subject matter has been adopted, unless adoption of the rule is required by one of the subdivisions of this subsection."); Ariz. Rev. Stat. Ann. § 49-203(A)(2) (2017) (stating that the Arizona Department of Environmental Quality shall "[a]dopt, by rule, a permit program that is consistent with but no more stringent than the requirements of the clean water act for the point source discharge of any pollutant or combination of pollutants into navigable waters").
[24]64 Fed. Reg. at 68754.
[25]33 U.S.C. § 1342(k).
[26]268 F.3d 255 (4th Cir. 2001); see also Sierra Club v. ICG Hazard, LLC, 781 F.3d 281 (6th Cir. 2015); Wisconsin Resource Protection Council v. Flambeau Mining Co., 727 F.3d 700 (7th Cir. 2013).
[27]845 F.3d 133 (4th Cir. 2017).
[28]725 F.3d 1194 (9th Cir. 2013).
[29]845 F.3d at 143 n.8.
[30]9 Va. Admin. Code § 25-890-40.
[31]California State Water Resources Board, NPDES General Permit No. CAS000004, Waste Discharge Requirements for Storm Water Discharges from Small Municipal Separate Storm Sewer System, Part D (Feb. 5, 2013).

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6. Total Maximum Daily Load (TMDL) Provisions

Similar to the water quality standards compliance provisions discussed in Section 5, permitting authorities are increasingly considering numeric limits and similar conditions in MS4 permits to require compliance with wasteload allocations in TMDLs. For MS4 permittees, TMDL compliance issues present many of the same issues as water quality standards compliance.

6.1 TMDL STAGES

The process of developing and implementing a TMDL generally include the following:

6.1.1 303(d) LISTING AND DECISION TO PREPARE A TMDL

The CWA regulations require states to develop a list of all waters (the "303(d) list") for which technology-based effluent limits for NPDES-permitted dischargers are not sufficient to attain water quality standards.[1] States must give the waters on the list a priority ranking "taking into account the severity of the pollution and the uses to be made of such waters," and then develop TMDLs based on the ranking.[2]

6.1.2 TMDL DEVELOPMENT

There is no standard process for developing a TMDL, although some states have adopted procedures that may include a rulemaking process. The level of public participation in this process varies depending on the jurisdiction. Although a third party may develop some or all of the technical elements of a TMDL, the state is ultimately responsible for complying with public participation requirements and submitting the TMDL to EPA for review and approval.

The state, EPA, or a third party typically begins by determining the total amount of the target pollutant that can enter the 303(d) listed water without causing any exceedance of water quality standards. This is referred to as the "assimilative capacity" or "total load." Once the state, EPA, or a third party establishes the total load, it is allocated among point source dischargers (WLAs) and nonpoint sources (load allocations). The TMDL must include a margin of safety, and some of the load may be reserved for that purpose or for future dischargers. In accordance with EPA guidance, stormwater discharges from MS4s and other permitted dischargers are included in the wasteload allocation, whereas unpermitted stormwater sources (e.g., unregulated Small MS4s) are included in the load allocation.[3]

The TMDL is circulated for public review and comment as outlined in the state's Continuing Planning Process.[4] If the state is developing the TMDL, upon completion of the state TMDL adoption process, the state submits the TMDL to the EPA Regional Administrator for review and approval.[5] EPA must act on the draft within 30 days; if EPA disapproves the TMDL, it must develop its own TMDL. The TMDL generally becomes effective upon publication in the state register or the Federal Register (for an EPA-developed TMDL). To reiterate, state TMDL development procedures vary widely so permittees should consult their local counsel to optimize their input and for strategic advice should they wish to contest a TMDL.

Challenging Objectionable TMDLs

As with MS4 permits, it is essential for permittees to comment on relevant draft TMDLs—both to bring relevant issues to the agency's attention and to preserve the permittee's right to challenge the TMDL if necessary.

EPA-issued TMDLs can be challenged in federal district courts. State-issued TMDLs often can be challenged state and federal venues. State laws vary on the rights and processes for challenging TMDLs, but they often permit challenges through state administrative appeals processes or state courts. EPA's approval of a state-issued TMDL can be challenged in federal court as well.

It is generally advantageous to bring a challenge to a state-developed TMDL before EPA approves it. Filing a challenge in state venue before EPA has approved may deter EPA from acting and prevent the state from relying on EPA approval of the TMDL during the state-level challenge.

It also is critical that MS4 permittees challenge any objectionable TMDLs before permit issuance. Permit writers are generally allowed to rely on permit inputs (including TMDLs) which have not been challenged as of the time of permit development/issuance. Likewise, most courts will not allow a TMDL to be questioned in the context of an appeal of an NPDES permit. Accordingly, out of an abundance of caution MS4 owners and operators should consider challenging objectionable TMDLs well ahead of their next permit issuance or renewal.

6.1.3 IMPLEMENTATION PLANS

An implementation plan details how TMDL allocations will be attained. In practice, an implementation plan typically incorporates an explanation for how the nonpoint source load allocation will be met (also known as "reasonable assurance" that the goals of the TMDL will be achieved) and a monitoring plan to assess implementation. Federal law does not require that a state develop a TMDL implementation plan. However, states may have their own individual legal requirements or preferences for implementation plans. State implementation plans can provide an option for managing difficult TMDL reduction requirements.

Including Implementation Language in TMDLs

Sophisticated MS4 systems will try to include key implementation language in the state-developed TMDL (often in return for agreeing to the loading allocations or not challenging the TMDL) rather than deferring to a later implementation plan development or permitting process. Sometimes EPA will approve the overall TMDL, including the implementation language. In other cases, EPA will approve the TMDL exclusive of implementation language (which it is not required to approve). Even in the latter case, having the implementation agreement in the body of the TMDL is a significant strategic benefit rather than leaving implementation to the permit process.

6.1.4 TMDL IMPLEMENTATION

TMDLs are not self-implementing.[6] They do, however, have a direct effect on NPDES permitting. The CWA regulations require that effluent limits in NPDES permits be "consistent with the assumptions and requirements of any available wasteload allocation."[7] There is a general, but not universal, consensus that this requirement applies to MS4 permits.

The CWA includes few tools to ensure that nonpoint sources comply with load allocations. Nonpoint source load allocations are typically addressed through the implementation plan if one was developed or through other state laws, plans, federal and state grant programs, or voluntary measures.

Converting Wasteload Allocations to Permit Effluent Limits

The CWA regulations state that effluent limits must be "consistent with" wasteload allocation assumptions and requirements; they do not require that permit limits be identical to the TMDL.[8] The flexible process of translating wasteload allocations to MS4 permit conditions should be guided by reasonableness, common sense, and, above all, the MEP standard.

6.2 ALLOCATION ISSUES

The load allocation stage of the TMDL development process is important for all affected parties, and MS4s are no exception. A number of important decisions will be made during this process that could have a substantial impact on MS4s.

6.2.1 ALLOCATION PROCESS

TMDL studies typically make assumptions about the sources of the pollutant of concern and attempt to find a reasonable and equitable methodology for allocating the available load. MS4 owners and operators should participate in the allocation process to to ensure their load allocation is reasonable and that required reductions from source sectors and within each sector are equitable.

6.2.2 MS4 SERVICE AREA ASSUMPTIONS

MS4 permittees should carefully review the assumptions in a TMDL regarding the geographic scope of its service area. Under federal law, an MS4 is only responsible for point source discharges of the pollutant of concern from its system. Permittees should be vigilant if a TMDL assigns loadings to the MS4 under any of the following scenarios: (1) loadings from properties that directly discharge stormwater to the waterbody; (2) loadings from properties that are served by a combined sewer system; (3) loadings assigned across the entire jurisdiction, even though the MS4 is only physically present in part of the jurisdiction; and (4) any loadings assigned to a Phase II MS4 outside of the regulated urbanized area (unless the jurisdiction has properly exercised its designation authority [LINK TO § 7.8] to expand the regulatory footprint). Because permit limits must be consistent with the assumptions of applicable wasteload allocations, improper assumptions about an MS4's service area could result not only in burdensome permit requirements, but also in liability for addressing pollutant loadings from third parties.

When defining the MS4 service area, the area should include the MS4 actually owned or operated by the permittee and the MS4's drainage area within the jurisdiction. Mapping the MS4 is fact-based and depends on the particular drainage system(s) involved, but the guidelines below are a starting point to establishing the MS4 service area. Also note that establishing an MS4 service area does not impact local authority over development issues. The authority to regulate land disturbance on construction sites is typically derived from state and local law, not from the federal Clean Water Act. The following should be excluded from the MS4 service area:

- Areas draining to other separately regulated systems and sites, including other MS4s (including non-traditional MS4s such as state highway systems) and industrial stormwater permittees
- Areas that discharge directly to a waterbody without flowing through the MS4 (e.g., large commercial developments with their own drainage systems)
- Areas that have only sheet flow off the property to the nearest water body (i.e., nonpoint sources) or to upland areas (i.e., no point or nonpoint sources)
- Large unpermitted federal or state lands, because other governmental entities should not shift their responsibilities to the locality
- Sewer sheds for combined sewer systems
- For Small MS4s, all areas outside of the census-designated urbanized area (unless those areas have been designated by the permitting authority)
- Forested areas

While the areas listed above should be excluded from a permittee's MS4 service area for MS4 permit compliance purposes, there are complicated factual situations that could lead to different outcomes. For example where a subdivision drains into a highway stormwater

system, rather than a locality's MS4 system, the subdivision generally should be excluded from the locality's MS4 area but the locality may still be required to address development and related stormwater management requirements under state law.

State Law Requirements Incorporated Into MS4 Permits

Local governments in some states are responsible for overseeing state laws for erosion and sediment control and post-construction stormwater management for construction and development projects within the locality's jurisdiction. Such state law requirements often are independent of the MS4 permit program. Nevertheless, permit-issuing authorities regularly make local governments' compliance with these state-law obligations a condition of their MS4 permits. Unless state law dictates otherwise, the MS4 permit condition should apply only within the MS4 service area. This means, for example, that if a state regulator alleges that a local government failed to properly inspect the erosion and sediment measures at a construction site that is within the locality's jurisdiction but not within the MS4 service area, then this failure may not be in compliance with state law but it is not necessarily a violation of the MS4 permit.

6.2.3 AGGREGATION OF ALLOCATIONS AMONG MS4S

Some TMDLs assign all MS4s an aggregated allocation—that is, an allocation that includes all of the MS4s in the TMDL study area, without any sub-allocations among the individual MS4 systems. If an MS4 is required by its permit to address applicable TMDLs by developing an implementation plan, disaggregating an aggregated allocation can prove a difficult problem, as various permittees may not agree on their respective share of the allocation. Best practice, whenever possible, is to reach consensus on allocation issues during the TMDL development process rather than resolving it through potentially ad hoc permitting decisions. Such an allocation agreement can be memorialized in a state TMDL implementation plan.

Clear Statement of TMDL Assumptions and Requirements

TMDLs should expressly state the assumption that MS4s will comply with their respective wasteload allocations by reducing their discharges of the pollutant of concern to the MEP. For example, the TMDL may state, "It is an assumption of this TMDL that MS4 permittees will address their respective wasteload allocations for stormwater through the iterative implementation of programmatic BMPs consistent with the maximum extent practicable standard." Such clarifying language can help ward off attempts to compel MS4 permittees achieve impracticable compliance with wasteload allocations within a single five-year permit term.[9]

6.3 SCHEDULE ISSUES

MS4 permits are written for a maximum term of five years. However, TMDLs often take decades to fully implement, which can present drafting challenges for MS4 permit writers. Regulators may be tempted to include requirements that will not be accomplished until after the permit expires or requirements that subsequent TMDL plans include an end-date for reaching the wasteload allocation. Both are potentially expensive compliance traps for MS4 permittees. Making commitments that extend 10 or 20 years into the future may result in future permits that far exceed (or perhaps fall short of) a level of effort that is consistent with the MEP standard. MS4 permits should be adaptive in all respects.

Strategic Approaches to TMDL Implementation Schedules

Permittees should carefully scrutinize efforts by regulators to impose obligations, goals, or deadlines that extend beyond the five-year permit term. The best practice is to set reasonable goals for each new five-year permit term that are consistent with an MEP level of effort. Each permit cycle thereafter should include an evaluation of the progress made within the previous permit cycle and set a new reasonable goal for the next permit cycle. This applies equally to TMDL implementation plans.

An MS4 permit applicant should object to any permit term that requires it to develop a TMDL implementation plan with a fixed end date to achieve the wasteload allocation. Even requirements to set an "estimated end date" have proven problematic for permittees. Estimating a date for compliance with a wasteload allocation is necessarily based on speculation. The regulator may also be frustrated if the MS4 chooses a date too far in the future—even though it may represent a reasonable timeframe for full implementation. Notably, the District of Columbia has proposed a 125-year compliance schedule to meet TMDL allocations for district storm water.[10] It is preferable that the TMDL implementation plan provide that each permit renewal will include a process of determining measures that can be implemented within the five-year permit to ensure that adequate further progress is made toward attaining MS4's wasteload allocation.

Protracted compliance schedules risk judicial intervention and a loss of control over the MS4 program. Under such a scenario, all MS4 resources could be focused on achieving one TMDL—rather than greater system-wide programmatic improvements. Thus, permittees should avoid requirements to develop long-term implementation programs in favor of a shorter term, adaptive management implementation approach.

[1]33 U.S.C. § 1313(d)(1).
[2]33 U.S.C. §§ 1313(d)(1)(A), (d)(1)(C); 40 C.F.R. § 130.7.
[3]EPA, Establishing TMDL WLAs for Storm Water Sources (Nov. 22, 2002).
[4]33 U.S.C. § 1313(e); 40 C.F.R. § 130.7(a).
[5]33 U.S.C. § 1313(d); 40 C.F.R. § 130.7(d).
[6]Anacostia Riverkeeper, Inc. v. Jackson, 798 F.Supp.2d 210, 216 (D.D.C. 2011); Pronsolino v. Nastri, 291 F.3d 1123, 1128-29 (9th Cir. 2002).
[7]40 C.F.R. § 122.44(d)(1)(vii)(B).
[8]In re Moscow, 10 EAD 135 (EAB 2001).
[9]Arguably, federal law does not require that an MS4 permit include any TMDL terms. Proponents of including TMDL terms in an MS4 permit argue that 40 C.F.R. § 122.44(d)(1)(vii)(B) mandates that a permit include effluent limits that are "consistent with theassumptions and requirements of any available wasteload allocation for the discharge prepared by the State and approved by EPA pursuant to 40 C.F.R. § 130.7." In fact, 40 C.F.R. § 122.44 broadly sets forth numerous permit requirements and expressly states in the introductory sentence that a permit must contain those conditions "when applicable," suggesting that not all conditions are applicable to MS4s. Arguably § 122.44(k) is applicable to MS4s. This section authorizes a permit with BMPs when "[a]uthorized under section 402(p) of the CWA for the control of storm water discharges." Despite this argument, many MS4 permits do include TMDL terms.
[10]D.C. Department of Energy and Environment, Consolidated Total Maximum Daily Load (TMDL) Implementation Plan Report (August 2016).

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7. Hot Stormwater Permit Topics

7.1 INTEGRATED PLANNING

EPA's Integrated Planning framework is based on the recognition that many communities have multiple regulatory obligations for their wastewater treatment plants, stormwater systems and, in some cases, drinking water systems, which are often competing for the same pool of funds. Even though those separate obligations have the same objective—improving water quality, human health, and the environment—communities often are compelled to spread their limited resources among these competing needs in a way that does not maximize public benefits. In 2011, EPA acknowledged integrated planning as a smarter approach in which communities can consider traditionally independent obligations holistically and can prioritize limited resources on actions that will yield the greatest water quality benefits.[1]

Integrated planning has been used successfully by a number of communities to jointly address their MS4 and wastewater treatment plant NPDES permit obligations. For example, the City of Santa Maria, California is working with EPA, the Central Coast Regional Water Quality Control Board, consultants, and stakeholders to develop its draft Integrated Plan.[2] The City has developed a broad plan to address water quality concerns and requirements associated with stormwater, wastewater, and drinking water. Integrated planning also has been employed successfully in the context of consent decrees, as exemplified by the City of Seattle, Washington. There, the City's consent decree provides that the City may submit an integrated plan to EPA and the state for their approval.[3]

> *Integrated Planning In Action*
>
> A leading national integrated plan as of this writing is the Hampton Roads Sanitation District's Sustainable Water Initiative for Tomorrow (SWIFT) program—which is pending EPA and Virginia Department of Environmental Quality approval. HRSD's SWIFT program seeks to essentially eliminate the discharge of six 20 million gallon per day wastewater plants to the Chesapeake Bay by installing advanced treatment and injecting the effluent to recharge the Potomac aquifer. This project helps achieve the Chesapeake Bay nutrient reduction requirements, recharges groundwater, prevents saltwater intrusion to the aquifer and reverses land subsidence (a critical benefit combating sea level rise). Through SWIFT, HRSD will generate enough nutrient and sediment credits to cover the region's MS4 reduction requiring, avoiding, or deferring $1-2 billion in MS4 compliance costs. HRSD's federal consent decree expressly facilitates this integrated planning success.[4]

In theory, integrated planning should allow municipalities to leverage efficiencies and sequence infrastructure investments to address water discharge permit requirements, source water protection efforts, and other environmental priorities that provide maximum environmental and human health benefits.[5] In practice, however, some regulators have been hesitant to consider

integrated plan proposals that incorporate regulatory requirements or environmentally beneficial projects outside of the narrow context of wastewater and stormwater—such as a project to improve source water protection for the locality's water treatment plant. EPA's Integrated Municipal Stormwater and Wastewater Planning Approach Framework requires projects to address six elements,[6] and, in practice, there is some question about implementing an environmentally superior project ahead of a legally required project, even if the project is less beneficial. Additionally, EPA has been using either an administrative order or federal consent decree to implement the terms of a pollution reduction plan approved under its integrated planning policy, rather than simply integrate the plan into NPDES permits,[7] which has been done in only a few instances.[8] Permittees can face penalties and fines for noncompliance for its effort to implement an integrated planning approach through its permits.[9] CWA amendments authorizing integrated planning-based scheduling, which would help with these concerns, are proceeding through Congress with support from NACWA.[10]

7.2 GREEN INFRASTRUCTURE

Green infrastructure is defined by EPA and other stakeholders in different ways.[11] Generally speaking, green infrastructure emphasizes the installation of stormwater management facilities to address runoff where it occurs (e.g., at the source) and to mimic natural hydrology. Unlike "gray" infrastructure measures, which are constructed facilities (for example, stormwater detention basins), green infrastructure is not meant to store and/or convey stormwater to a discharge point. Rather, green infrastructure seeks to use soils, plants, and other natural materials to infiltrate and treat stormwater where it falls.

Supporters of green infrastructure point to the multiple surface benefits associated with rain gardens, bioswales, green roofs, and other green options. Not only are they effective at removing pollutants and, if infiltration occurs, at recharging groundwater, but they are popular with the citizens that fund stormwater programs because they are much more aesthetically pleasing than under- or above-ground concrete and steel detention facilities, sewers, tunnels, etc. Regional green solutions can be particularly cost-effective in delivering multiple community benefits in comparison to traditional gray sewer solutions.

Removal of Toxic Pollutants

The presence of toxic pollutants, legacy pollutants, and emerging pollutants in MS4 discharges has received increasing attention in recent years. Traditional gray infrastructure generally is ill-suited for removing such pollutants. Green infrastructure provides more effective means to filter and treat such nonconventional pollutants to prevent or minimize surface water loadings.

Maintaining Flexibility for Green Approaches

MS4 permittees need flexibility in all aspects of permit implementation. Requirements for installing BMPs should give a permittee the option to design a BMP program that includes green or gray infrastructure depending on local needs, priorities, and financial capabilities. An MS4 permittee reviewing a draft permit should encourage the permit-issuing authority to include text that authorizes the use of various types of BMPs, programmatic approaches, and trading to address local stormwater runoff.

7.3 WATER QUALITY TRADING

Water quality trading is a compliance tool that takes advantage of economies of scale within a watershed or defined local TMDL area. Trading allows one permittee to meet all or part of its pollutant reduction obligations using the reductions of another source that may have lower pollution control costs.[12] Successful programs have, among other things, a clear state legal basis for trading[13] and an established state discharge permitting strategy.[14]

Trading programs vary across the country and can involve both point sources[15] (e.g., POTWs, industrial facilities, MS4s) and nonpoint sources[16] (e.g., farms, silviculture) generating credits, which then can be traded in a variety of ways (e.g., via exchanges, credit banks, NPDES permit, or contract[17]). For example, a locality can utilize credits generated from its wastewater treatment plant to help meet its MS4 reduction requirements.[18] Given the many benefits from water quality trading (Connecticut estimates the cost savings from allowing its regulated community to strategically upgrade nitrogen removal technologies to be between $300-400 million[19]), it is likely to be increasingly used as a compliance tool.

Trading between POTWs and MS4s Under Common Ownership

The importance of water quality trading to MS4 permittees has grown as permits increasingly include state-imposed numeric pollutant reduction requirements driven by TMDL implementation or water quality standards. Pollutant reductions from MS4s are often expensive and may require extensive capital projects to design and construct BMPs.

MS4s often look to POTWs—particularly when they are owned by the same entity—as an interim source of credits until MS4 BMPs can implemented. POTWs discharging at less than their design flow are often able to generate credits under many water quality trading programs. POTWs may be reluctant to commit to providing credits to an MS4 over the long term, because doing so may effectively strand part of the POTW's capacity investment if it cannot make use of the pollutant loadings available to it. Nevertheless, many POTWs can project their estimated credit generation capacity several years into the future. This lends itself to situations in which the POTW provides (or leases) credits to the MS4 for a specified duration, which would allow the MS4 to better manage its BMP construction schedule. As those BMPs are implemented, the MS4 will reduce the need to buy or lease credits.

Trading programs have drawn criticism and legal challenges from certain citizen groups. The concerns most often expressed are that trading may not protect local water quality if credits are purchased from a source that is downstream or in a different watershed. Proponents of water quality trading should ensure a state statutory foundation for water quality trading.[20] The typical elements of a trading program include:

- Statutory authorization by the state to implement and utilize water quality trading
- Regulations and/or written guidance document by the regulator establishing requirements and limitations of trading program
- Permit provision recognizing trading as a method to comply with one or more permit requirements

Chesapeake Bay TMDL Compliance in Virginia[21]

Water quality trading has proven very successful in reducing compliance costs for many affected parties that must make substantial nutrient discharge reductions related to the Chesapeake Bay TMDL. MS4 permittees are starting to utilize this compliance tool as trading programs in the state mature. Trading success in Virginia is due largely to willing legislators and regulators providing:

- Chesapeake Bay TMDL: Trading is a stated TMDL assumption;[22]
- State Law: "An MS4 permittee may acquire, use, and transfer nutrient credits for purposes of compliance with any WLAs …in an MS4 permit[,]"[23]; and
- MS4 Permit: "As part of development of the Chesapeake Bay TMDL Action Plan, the operator may consider…Utilization of any pollutant trading or offset program . . . governing trading and offsetting[.]"[24]

7.4 POST-CONSTRUCTION WATER QUALITY AND QUANTITY CONTROLS BY EPA

Some states have adopted stormwater regulations to govern the quantity and quality of stormwater runoff after development or redevelopment, and MS4 permittees often are responsible for implementing them at the local level. In 2009, EPA announced that it was considering adopting a post-construction stormwater rule that would do the same at the national level.[25] In a Notice published in the Federal Register, EPA explained that it was seeking stakeholder feedback on a number of potential changes to federal stormwater regulations, including whether to "establish specific requirements, including standards, to control stormwater discharges from new development and redevelopment."[26] EPA suggested the potential for a "national requirement for on-site stormwater controls such that post development hydrology mimics predevelopment hydrology on a site-specific basis."[27] This could take the form of an on-site retention standard, limits on the amount of impervious surfaces on a particular site, a site-specific calculation of predevelopment hydrology, or standards developed to address regional differences.[28]

EPA followed-up by conducting numerous listening sessions through 2010, and by circulating Information Requests to MS4s, NPDES permitting authorities, and to owner/developers.[29]

After significant negative feedback from stakeholders, EPA announced in June 2017 that it was formally withdrawing the proposed rule. EPA stated that it would "[i]nstead...continue to provide technical assistance and tools to communities to more effectively address stormwater pollution. EPA's efforts will encourage local efforts to implement long-term, community-based stormwater plans that use approaches such as green infrastructure and leverage other capital investment opportunities."[30]

Frustrated by inability to move the rule forward, EPA continued to press for more stringent post-construction terms in individual MS4 permits. Recently, in January 2017, EPA issued a general permit for small MS4s in New Hampshire that mandates that post-construction run-off from new development "be controlled by" retention or treatment calculated to retain the water volume mandated by the state stormwater regulations, or that BMPs are designed to remove 90% of the average annual load of total suspended solids and 60% of the average annual load of total phosphorus.[31] In 2016, EPA issued a similar general permit for small MS4s in Massachusetts.[32]

Multiple appeals have been filed protesting the issuance of both the New Hampshire and Massachusetts permits. In the Massachusetts appeal, permittees are challenging the permit's regulation of post-construction stormwater quantity by arguing that EPA has no authority to regulate flow. Permittees have cited Virginia Department of Transportation v. EPA.[33] In that case, the Eastern District of Virginia held that the flow of water is not a pollutant and EPA is therefore not authorized to regulate flow through a TMDL by claiming it is a surrogate for sediment. Whether the Trump Administration will continue to support the Obama Administration's efforts to implement post-construction standards at the federal level through regulations or permits is an open question.[35]

Permit Limits for Water Quantity

MS4 permit applicants should be vigilant against permit requirements to reduce water quantity discharged from an MS4. Federal law prohibits EPA from regulating water quantity and few states have enacted state quantity requirements. After several legal challenges to EPA's authority to regulate MS4 flows (including on-site retention requirements), it appears that EPA is stepping back and will, instead, press states to impose water quantity control requirements on MS4 systems. Most states are resisting. As noted above, although state stormwater regulations typically include water quality and quantity components in technical criteria, these standards are not imposed on discharges from the MS4. Rather, the MS4 is required to impose them if development or redevelopment meets the threshold size for regulation.

7.5 TRASH AND FLOATABLES

Another stormwater topic of great interest relates to the regulation of trash and floatables. The NPDES definition of "pollutant" includes "garbage" and "industrial, municipal, and agricultural waste."[36] Seven states, including Alaska, California, Connecticut, District of Columbia, Hawaii, Maryland, and New York, have listed over 200 segments as impaired for trash, debris, or floatables.[37]

Developing TMDLs to address a trash impairment has been controversial. In 2007, the California Regional Water Quality Control Board issued a trash TMDL for the Los Angeles River.[38] More recently, in 2010, EPA approved a trash TMDL for the Anacostia River in the District of Columbia calling for the prevention, capture, or removal of 105 percent of the average daily load of trash in the River (100 percent plus an additional five percent for a margin of safety). The Natural Resources Defense Council (NRDC) filed suit against EPA in 2016 over the Anacostia trash TMDL, arguing that the TMDL inappropriately sets a minimum amount of trash that should be removed or prevented from entering the River, versus setting a maximum load of trash that can enter the River.[39]

The Anacostia trash TMDL raises big picture questions including: (1) how to interpret narrative water quality criteria ("free from" criteria) as allowing zero amount of the pollutant of concern, (2) whether onerous assumptions and requirements in the TMDL's wasteload allocation to the local MS4 go beyond that which is considered to be the maximum extent practicable, (3) whether establishment of likely unattainable allocations (100% removal) and associated permit requirements increases enforcement exposure, and (4) how issuance of TMDLs either helps or hinders the best prioritization of available public resources for water quality protection and improvement.

7.6 LEGACY POLLUTANTS

Because MS4s drain land and properties owned by third-parties in their regulated service areas, MS4s are at risk of "inheriting" pollutants discharged onto the land by industrial and commercial properties that may have been shuttered for years. Legacy pollutants often migrate from contaminated sites through groundwater migration and can appear in springs or seeps or infiltrate into storm sewers. Local governments, which typically operate MS4s, generally have little regulatory authority over contaminated sites and their remediation. These factors make controlling legacy pollutants a difficult objective.

One common example is polychlorinated biphenyls, or PCBs, which were used extensively in the U.S. from the 1920s until they were banned in 1979.[40] PCBs are a common pollutant identified in TMDLs, and they exemplify the unique implementation challenges legacy pollutants present for MS4s. Not only are PCBs ubiquitous in certain regulated service areas, but they are difficult to trace and treat using cost-effective stormwater BMPs. In fact, even PCB monitoring can be problematic and expensive.

Legacy pollutants which run off from the land and/or infiltrate into storm sewers can be viewed to be illicit discharges. Discharging from these MS4s can contaminate sediment and trigger clean up liability. MS4 systems need to be cognizant of any legacy pollutants (including contaminated groundwater) which may be entering the MS4 system. Some MS4 systems enter state voluntary remediation programs when faced with such legacy contaminated sources entering their MS4.

7.7 EMERGING POLLUTANTS

"Emerging pollutants" (also called "emerging contaminants" or "constituents of emerging concern") generally refers to pollutants that are potentially hazardous but which are not subject to regulatory controls and/or monitoring programs. Emerging pollutants have been a significant concern in the municipal wastewater context for some time, with increasing attention on trace pollutants from personal care products, pharmaceuticals, and other sources present in wastewater. In more recent years, regulators and permittees have begun to turn their attention to stormwater discharged from MS4s as another potential source of emerging pollutants. Examples of emerging pollutants detected in stormwater include numerous constituents of fertilizers and pesticides, flame retardants, fire-fighting foams, industrial solvents, wood preservatives, and plasticizers.

Several states have initiated programs to monitor and characterize emerging pollutants in MS4 discharges[41] or have included requirements in MS4 permits to monitor for emerging pollutants.[42] To date, regulatory or permitting actions to manage emerging pollutants levels in stormwater are rare.

7.8 RESIDUAL DESIGNATION OF STORMWATER SOURCES FOR PERMITTING

CWA § 402(p)(2)(E) authorizes the EPA Administrator or state to require discharge permits for a stormwater discharge if the Administrator or the state determines that the discharge "contributes to a violation of a water quality standard or is a significant contributor of pollutants" to waters of the U.S. This power is commonly called "Residual Designation Authority" or "RDA," and it is reinforced in federal regulation.[43]

EPA has used RDA to designate additional stormwater discharges on a very limited basis.[44] More recently, however, EPA has refused to use RDA to regulate additional sites, rejecting two separate sets of petitions filed in 2013 and 2015. In 2014, EPA Regions 3 and 9 rejected requests by environmental groups to designate commercial, industrial, and institutional sites that discharge pollutants to impaired waters. Both regions refused to accept the petition because the data provided by the petitioners was insufficient to support use of RDA and because EPA found that existing programs were already in place to address the underlying concerns.[45] EPA found that the 2013 petitions failed to provide information "connecting stormwater discharges

from a particular" commercial, industrial or institutional site, or any category of sites to "any specific water body impairments." Region 1 also responded to a similar petition but refused to grant or deny the petition.

In 2015, several environmental groups submitted follow-up petitions with EPA Regions 3 and 9 for designation of commercial, industrial, and institutional sites that discharge stormwater to four waterbodies: the Dominguez Channel and the Alamitos Bay/Los Cerritos Channel in the Los Angeles, California area, the Army Creek in New Castle County, Delaware, and Back River, in Baltimore, Maryland. EPA rejected these petitions as well, based on concerns that the sites could not be properly linked to pollutant discharges listed in the petition, that the data were insufficient to evaluate whether the sites actually contributed to impairments, and that current programs already address the sites.[46]

Regulated MS4s may have differing opinions on RDA. On one hand, RDA can be used to individually regulate sites that are causing significant water quality problems. This could reduce the MS4's burden of addressing TMDLs with limited authority to order private sites to install BMPs or other actions. On the other hand, RDA can upset businesses because of the additional cost associated with being a regulated entity. Businesses may relocate to neighboring localities to the detriment of the local economy. The potential backlash may explain why EPA and states have been hesitant to aggressively use the tool. Also, for Small MS4s, regulators may rely on RDA to expand the MS4 permit area to parts of the MS4 outside the urbanized area.[47]

7.9 EPA'S PHASE II MS4 REGULATION REMAND RULE

Shortly after EPA issued the original Phase II MS4 regulations in 1999[48], environmental groups filed a challenge to the rule. They argued, among other things, that the process for obtaining coverage under and implementing Small MS4 general permits—i.e., by filing a Notice of Intent and thereafter developing a SWMP Plan to implement the permit requirements—violated the public participation provision of the CWA. The Ninth Circuit agreed in a 2003 decision remanding the rule to EPA.[49]

EPA's revised rule to address the Ninth Circuit ruling, the so-called Phase II MS4 Remand Rule, became effective on January 9, 2017.[50] The Remand Rule gives states the choice of either of two options regarding the procedure for issuing a Phase II general permits: a "Comprehensive General Permit" or a "Two-Step General Permit." A Comprehensive General Permit includes all substantive requirements on the face of the permit. Once the general permit is issued, an operator seeking coverage submits a relatively simple Notice of Intent and the permit-issuing authority issues coverage.

A Two-Step General Permit includes some substantive requirements on the face of the permit (called the "base permit"), but requires that an operator go through a second stage of permitting to incorporate more permittee-specific terms and conditions. Public notice and comment occurs during the second step, and coverage cannot occur until this stage is complete. As

an option, a permitting authority can create a "hybrid" permit, with some terms settled with specificity and others subject to a two-step process. The permitting authority will be allowed to change options between permit cycles, although the option must be clearly identified in either the permit or fact sheet.

The rule's preamble was instructive on a number of issues. EPA clarified that the permitting authority must include permit terms and conditions to comply with the "MS4 permit standard," which is to reduce pollutants "to the maximum extent practicable (MEP), to protect water quality, and to satisfy the appropriate water quality requirements of the Clean Water Act."[51] With regard to SWMP Plans, EPA explained that the SWMP is not meant to be an enforceable document, but is a "tool" for planning purposes only.[52] If the permitting authority incorporates the SWMP into the general permit as an enforceable document, the SWMP will need to undergo public participation requirements by going through the two-step process. The same logic applies if a general permit requires that a permittee develop a TMDL implementation plan. Nevertheless, state approaches do vary.

The Remand Rule reinforced the concept of iterative, adaptive management for MS4 permit implementation.[53] Changes to the SWMP Plan are a "fundamental part of the Phase II program, which has always emphasized the need for adaptive management to make iterative progress toward water quality goals."[54] There is similar language on TMDL implementation: "Where a waterbody is impaired in part due to discharges from small MS4s, especially where an approved TMDL allocates wasteload reduction responsibilities to those MS4s, additional controls to achieve reasonable progress towards attainment of water quality standards will need to be considered."[55]

EPA also highlighted the need for clear, specific, and measurable permit terms, and provided examples of unacceptable general permit terms (for example, terms with caveats like "if feasible"). "Measurable" does not mean that a permittee must conduct monitoring to determine compliance and "it does not mean that numeric, end-of-pipe pollutant concentrations or loadings must be included in permits."[56] It could mean, for example, construction site inspections once a week until stabilization. For this reason, EPA substituted "terms and conditions" for "effluent limitations" in the regulations because the latter inappropriately connotes a numeric limit.[57]

7.10 E-REPORTING RULE

On October 22, 2015, EPA issued a final rule on electronic reporting for NPDES permittees.[58] Phase I MS4s and MS4s designated pursuant to 40 C.F.R. § 122.26(a)(1)(v) must submit an annual report by the anniversary date of the issuance of the permit, and as of December 21, 2020, must submit those reports electronically.[59] Federal regulations also require that Phase II MS4 permittees submit annual reports electronically as of December 21, 2020.[60] Both rules clearly state that they do not supplant existing rules for electronic reporting. If a permittee is currently required by state law to report by electronic means, the permittee must continue to do so.

E-Reporting Greatly Expands Public Access to MS4 Information

Once MS4 data is submitted electronically, it will significantly increase public availability of data which, to this point, has been relatively inaccessible. That will bring a greater understanding of MS4 issues, approaches, and performance. It will also bring scrutiny and facilitate comparisons of BMPs implemented to meet the MEP standard.

Electronic reporting is a key element of EPA's "Next Generation Compliance Strategy." EPA explained in the final e-reporting rule that Next Generation Compliance "is an integrated strategy to improve regulations and permits with new monitoring and information technology and expanded transparency."[61] EPA's goal is to "motivate the regulated community to increase compliance, inform the public about performance, and help ensure the public has access to information about their communities that allows them to more fully engage in environmental protection efforts."[62]

Double Check Electronic Monitoring Data Posted to Public Sites

Although EPA's goal of improving transparency in the MS4 program is laudable, an MS4 permittee should carefully monitor how its reporting data are used once the full electronic platform is functional. However, there have been several recent examples of incorrect electronic monitoring data being posted to EPA databases that erroneously showed that the facilities were in noncompliance with their permits, and correcting these errors has proven to be a lengthy endeavor. MS4 permittees should periodically check their electronic data on EPA's webpages to ensure that they are accurate.

7.11 CLIMATE RESILIENCY

Climate resiliency is closely tied to integrated planning. Broadly, the term refers to the notion that communities should proactively build infrastructure resilient to threats posed by local climate conditions as they exist today and as they are likely to be in the future (e.g., sea level rise, more extreme weather events). In some ways, this approach builds on what many MS4s already do by implementing best management practices tailored to local climate conditions (e.g., dry, semi-arid climate).[63] By developing a long-term adaptive planning framework that complements an MS4 community's resiliency efforts, MS4s can make more informed decisions about asset management and new infrastructure developments.[64] As an example, the City of Albuquerque, New Mexico recently participated in a charrette to explore ways to build climate resiliency.[65] Green infrastructure practices (e.g., conserving areas around floodplains, bioretention areas) were identified as solutions to meet the City's compliance obligations under its MS4 permit, while also supporting the City's long-term resiliency goals

7.12 JURISDICTIONAL "WATERS OF THE UNITED STATES"

NPDES permits under CWA § 402 and dredge and fill permits under CWA § 404 are required only for discharges to "navigable waters."[66] The Clean Water Act defines "navigable waters" as "waters of the United States." However, no nationwide consensus on the meaning of "waters of United States"[67] has been reached. MS4 permittees should have a working familiarity with the meaning of waters of the United States under the CWA because there are circumstances in which the jurisdictional status of a stream, wetland, or other water feature may affect MS4 operation, maintenance, or compliance efforts.

There is great uncertainty about how waters of the United States will be defined going forward. The previous version of the waters of the United States rule dated to 1986, although the text of the rule had largely been superseded by a series of court decisions.[68] In June 2015, EPA and the Army Corps of Engineers jointly promulgated the "Clean Water Rule" which substantially revised the prior regulatory definition of waters of the United States.[69] However, the rule was suspended by a federal appeals court in October of the same year. EPA and Corps published a proposal in July 2017 to rescind the Clean Water Rule and recodify the previous definition from 1986.[70] At the same time, the agencies are in the process of developing a new proposed definition of waters of the United States.[71] This issue is likely to remain unsettled for years to come.

Notwithstanding the uncertainty about the meaning of waters of the United States, MS4 permittees should be aware that it may be important to determine the jurisdictional status of particular water features in certain situations, including maintenance and mapping activities.

7.12.1 MAINTENANCE OF DITCHES, DETENTION PONDS, AND STRUCTURAL BMPS

Certain maintenance activities for stormwater BMPs, such as dredging or widening ditches and ponds, may require coverage under a CWA § 404 permit if the activity is within a water of the United States. Stormwater conveyances (e.g., ditches, swales) and structural BMPs (e.g., detention ponds, constructed wetlands) will not be considered waters of the United States in many—but not all—cases. There are a number of reasons why regulators may conclude that a part of an MS4 is a jurisdictional water. For example, ditches or detention ponds may be considered waters of the United States if they were constructed in a pre-existing natural stream or pond or if flow from a stream has been diverted into them. In some cases, agencies have found ditches and structural BMPs that were built wholly in dry land to be waters of the United States because they carry regular flows (e.g., ditch exposed groundwater that developed into a base flow) or have developed wetland vegetation. These situations are highly dependent on the particular facts and there are many examples of regulators reaching inconsistent conclusions in similar factual situations.

7.12.2 MS4 MAPPING

MS4 permittees are often required to map their systems and identify the locations of all outfalls. Differentiating between features that are and are not waters of the United States

is important to correctly mapping the system, and the distinctions may affect other permit requirements as well. Consider, for example, a roadside ditch that receives stormwater from a dozen separate drains before flowing into a natural perennial stream. In many cases, the ditch will be properly mapped as part of the MS4 and there will be one outfall—where the ditch meets the stream. If the ditch is considered a water of the United States, however, then there are a dozen separate outfalls to map. This may, in turn, affect dry weather screening or water quality monitoring requirements. Moreover, the status of this hypothetical ditch may take on added importance if the permit requires that the MS4 not cause any exceedances of water quality standards in any receiving water—which would include the ditch if it is a water of the United States.

Determining Jurisdictional Status of Waters

If there is a question about the jurisdictional status of a water that may have a bearing on MS4 permit compliance, permittees should obtain assistance from technical and/or legal experts familiar with stream and wetland delineation. If additional assurances are needed, the permittee can request an advisory "Preliminary Jurisdictional Determination" from the local Army Corps of Engineers District. Additionally, permittees should be aware if their state imposes any applicable regulatory or permitting requirements for waters that do not meet the definition of waters of the United States.

7.13 ANTI-BACKSLIDING CHALLENGES TO ADAPTIVE/ITERATIVE PERMITS

The CWA's anti-backsliding rule restricts a permitting authority from issuing an NPDES permit "with effluent limitations which are less stringent" than the previous permit in certain circumstances.[73] This rule is often misconstrued as an absolute prohibition on reducing effluent limits—which includes BMP requirements in MS4 permits—when a permit is reissued or modified. It is not. The rule includes numerous limitations and exceptions.[74]

MS4 permits should be modified with each permit renewal to ensure that the conditions meet the MEP standard and are targeted to achieving effective water quality benefits. With each permit renewal, conditions that have proven less effective at achieving water quality improvements or which have been fully implemented (e.g., a source of stormwater pollutants has been eliminated) should be replaced and/or augmented with new conditions. There is a risk that these types of permit changes may be challenged by third parties as violations of the anti-backsliding rule. Similarly, permitting authorities may be hesitant to prune obsolete conditions from reissued MS4 permits for the same reason.

MS4 permittees should be familiar with the anti-backsliding rule and, more importantly, its limitations and exceptions when participating in the MS4 permit renewal or modification process. Given the extensive exceptions to the anti-backsliding rule, it often does not preclude the removal of ineffective BMPs. Permittees should be prepared to respond to any insinuations that beneficial changes to the permit conditions violates the rule.

[1]EPA, Achieving Water Quality Through Integrated Municipal and Wastewater Plans (Oct. 27, 2011).
[2]Larry Walker Associates, Draft Santa Maria Integrated Plan (April 2016).
[3]Consent Decree, U.S.A. and State of Washington v. City of Seattle, Civil Action No. 2:13-cv-678, at 20 (Apr. 16, 2013).
[4]Fourth Amendment to Consent Decree, United States v. Hampton Roads Sanitation District, Case No. 2:09-cv-481 (Feb. 21, 2017).
[5]EPA, Integrated Municipal Stormwater and Wastewater Planning Approach Framework, at 1 (June 5, 2012).
[6]Integrated Municipal Stormwater and Wastewater Planning Approach Framework, at 4-6.
[7]Johnathan L. Ramseur, Cong. Research Serv., R44223, EPA Policies Concerning Integrated Planning and Affordability of Water Infrastructure, at 3 (2017).
[8]E.g., Lawrence Kansas River Wastewater Treatment Facility NPDES Permit, No. KS0038644, Part F (effective Aug. 1, 2014).
[9]EPA Policies Concerning Integrated Planning and Affordability of Water Infrastructure, at 3.
[10]E.g., S. 692, 115th Cong. (2017); H.R. 465, 115th Cong. (2017).
[11]EPA's website on Green Infrastructure can be viewed here.
[12]EPA, Water Quality Trading Policy (Jan. 13, 2003).
[13]E.g., Va. Code Ann. § 62.1-44.19:12 et seq.
[14]E.g., 9 Va. Admin. Code § 25-820 et seq.; see also Cy Jones, Nutrient Trading by Municipal Stormwater Programs in Maryland and Virginia: Three Case Studies (Feb. 2017).
[15]E.g., the Virginia Nutrient Credit Exchange, involving 73 owners of 105 treatment facilities in the Chesapeake Bay Watershed. More information on this program can be found here.
[16]E.g., Rahr Malting Company meets its NPDES Carbonaceous Biochemical Oxygen Demand via equivalent credits from upstream non-point sources. Watershed-Based Permitting Case Study: Minnesota River, Minnesota, EPA (Dec. 11, 2009).
[17]For an excellent general resource on point source to nonpoint source trades, refer to National Network on Water Quality Trading, Building a Water Quality Trading Program: Options and Considerations (June 2015), and Water Environment Federation, Advances in Water Quality Trading as a Flexible Compliance Tool (2015).
[18]Nutrient Trading by Municipal Stormwater Programs in Maryland and Virginia: Three Case Studies, at 5.
[19]Connecticut Department of Energy and Environmental Protection, Nitrogen Control Program for Long Island Sound.
[20]NACWA, Legality of Water Quality Trading on Trial Again (Feb. 21, 2017).
[22]9 Va. Admin. Code § 25-890-40, Section I.C.2(b).
[23]EPA, Chesapeake Bay TMDL, 10-3 (Dec. 29, 2010).
[24]Va. Code § 62.1-44.19:21.
[25]9 Va. Admin. Code § 25-890-40, Section I.C.2(b).Stakeholder Input; Stormwater Management Including Discharges From New Development and Redevelopment, 74 Fed. Reg. 68617 (Dec. 28, 2009).
[26]74 Fed. Reg. at 68621.
[27]74 Fed. Reg. at 68621.
[28]74 Fed. Reg. at 68621-22.
[29]EPA's questionnaires are available here.
[30]EPA Notice Rule Withdrawn: Stormwater Regulations Revision to Address Discharges from Developed Sites, (Office of Info. andRegulatory Affairs June 6, 2017).
[31]The New Hampshire general permit has an effective date of July 1, 2018. The permit and accompanying documents are available here.
[32]The Massachusetts general permit and accompanying documents are available here.
[33]Case No. 1:12-cv-775, 2013 U.S. Dist. LEXIS 981, 2013 WL 53741 (E.D.Va. Jan. 3, 2013).
[35]EPA management has signaled a potential willingness to negotiate the post-construction stormwater issue by requesting Alternative Dispute Resolution in Massachusetts and New Hampshire general permit appeals and by delaying the effective date for the Massachusetts general permit by one year, until July 1, 2018.
[36]33 U.S.C. § 1362(6); 40 C.F.R. § 122.2.
[37]For information, refer to EPA's website titled, The Clean Water Act and Trash Free Waters.
[38]California Regional Water Quality Control Board, Trash TMDLs for the Los Angeles River Watershed (Aug. 9, 2007).
[39]Whitney Pipkin, How Clean is Clean Enough on the Anacostia? (Sept. 26, 2016).
[40]National Oceanic and Atmospheric Administration, PCBs: Why Are Banned Chemicals Still Hurting the Environment Today?.
[41]E.g., Southern Cal. Coastal Water Research Project, Monitoring Strategies for Chemicals of Emerging Concern in California's Aquatic Ecosystems (Apr. 2012).
[42]E.g., California Regional Water Quality Control Board San Francisco Bay Region Municipal Regional Stormwater NPDES Permit (Nov. 2015).
[43]40 C.F.R. § 122.26(a)(9)(i)(C) authorizes the designation on discharges based on WLAs in a TMDL. 40 C.F.R. § 122.26(a)(9)(i)(D) authorizes the designation if a discharge or category of discharges in a geographic area if the discharge(s) contributes to a water quality standards violation or is a significant contributor of pollutants to waters of the United States. In addition, the regulations governing small MS4s allow an NPDES permitting authority to designate additional small MS4s using specific steps in 40 C.F.R. §122.35(b). First, the permitting authority must develop criteria to determine whether the discharge is or may violate water quality standards. Second, the criteria are then applied to small MS4s outside urbanized areas that meet certain population and density requirements. Id. §123.35(b)(2). Alternatively, the permitting authority may designate a small MS4 that "contributes substantially" to the loadings of a physically interconnected MS4 that is already regulated by the program. Id. § 123.35(b)(4). RDA can also be based on petitions. 40 C.F.R. § 122.26(f).
[44]For example, in 2008, EPA Region 1 designated existing developments of two or more impervious acres in the Charles River Watershed in Massachusetts. Proposed Amendments to EPA's Preliminary Residual Designation Determination (Preliminary Residual Designation issued Nov. 12, 2008). Also, in 2009, EPA Region 1 designated property owners with more than one acre of impervious surface in the Long Creek Watershed in Maine. Final Residual Designation For Long Creek, EPA (Oct. 28, 2009).
[45]A copy of EPA Region 3's response to the 2013 petition is available here. A copy of EPA Region 9's response to the 2013 and 2015 petitions is available here.
[46]EPA, EPA's Residual Designation Authority. Notably, the Natural Resources Defense Council, American Rivers, and Blue Water

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Baltimore appealed Region 3's decision in 2017. The appeal is ongoing.
[47]40 C.F.R. § 122.32.
[48]NPDES Regulations for Revision of the Water Pollution Control Program Addressing Storm Water Discharges, 64 Fed. Reg. 68,722(Dec. 8, 1999) (codified at 40 C.F.R. pts. 9, 122, 123, and 124).
[49]Environmental Defense Center v. EPA, 344 F.3d 832 (9th Cir. 2003).
[50]National Pollutant Discharge Elimination System (NPDES) Municipal Separate Storm Sewer System General Permit Remand Rule, Final Rule, 81 Fed. Reg. 89320, 89345 (Dec. 9, 2016) (codified at 40 C.F.R. Pt. 122).
[51]81 Fed. Reg.at 89349.
[52]81 Fed. Reg.at 89339.
[53]81 Fed. Reg.at 89341.
[54]81 Fed. Reg.at 89341.
[55]81 Fed. Reg.at 89344.
[56]81 Fed. Reg.at 89336.
[57]81 Fed. Reg.89337.
[58]National Pollutant Discharge Elimination System (NPDES) Electronic Reporting Rule, Final Rule, 80 Fed. Reg. 64064 (Oct. 22, 2015). See also NPDES Electronic Reporting Rule Implementation Guidance, Notice of Guidance, 81 Fed. Reg. 62395 (Sept. 9, 2016). Additional information on the e-Reporting rule is available here.
[59]40 C.F.R. § 122.42(c). The report must include: (i) a discussion of the status of SWMP implementation; (ii) proposed changes to the SWMP; (iii) revisions, as necessary, to the assessment of controls and the fiscal analysis that were included in the permit application; (iv) a summary of all data gathered during the reporting year; (5) annual expenditures and a budget for the following year; (6) a summary explanation of how many and the types of enforcement actions, inspections, and public education programs implemented; and (7) identification of any improvements or degradation to water quality.
[60]40 C.F.R. § 122.34(d)(3).
[61]80 Fed. Reg. at 64069. For additional information on EPA's Next Generation Compliance Strategy, refer to EPA's website.
[62]80 Fed. Reg. at 64069.
[63]As an example of BMPs tailored to arid climates, see Leslie Shoemaker, Stormwater Management for TMDLs in an Arid Climate: A Case Study Application of SUSTAIN in Albuquerque, New Mexico (2013).
[64]Water Environment Federation, Rainfall to Results: The Future of Stormwater (2015).
[65]City of Albuquerque Green Infrastructure and Climate Resiliency Charrette (Sept. 17, 2015).
[66]33 U.S.C. §§ 1342(a), 1344(a); see also Rapanos v. United States, 547 U.S. 715, 743 (2006).
[67]33 U.S.C. § 1362(7) ("The term 'navigable waters' means the waters of the United States, including the territorial seas.").
[68]E.g., Rapanos v. United States, 547 U.S. 715 (2006); Solid Waste Agency of Northern Cook County. v. Army Corps of Engineers, 531 U.S. 159 (2001); United States v. Riverside Bayview Homes, Inc., 474 U. S. 121 (1985).
[69]Clean Water Rule: Definition of "Waters of the United States", 80 Fed. Reg. 37054 (June 29, 2015).
[70]Definition of "Waters of the United States"–Recodification of Pre-Existing Rules, 82 Fed. Reg. 34899 (July 27, 2017).
[71]Executive Order 13778: Restoring the Rule of Law, Federalism, and Economic Growth by Reviewing the "Waters of the United States"Rule, 82 Fed. Reg. 12497 (Feb. 28, 2017).
[72]The relevant Army Corps of Engineers District can be located on here.
[73]33 U.S.C. § 1342(o).
[74]33 U.S.C. § 1342(o)(1), (o)(2); 33 U.S.C § 1313(d)(4).

8. Permit Appeals

Appeals of MS4 permits generally follow the same basic framework as for other NPDES permits.[1] The permitting authority's "final agency action" is appealable [2] when the agency issues the final permit. However, the permit appeal procedures will differ depending on whether the objectionable permit is a general permit or an individual permit, and in delegated states, any additional state procedural requirements.

8.1 STEPS FOR PRESERVING APPEAL RIGHTS AND APPEAL ISSUES

When a permitting authority issues an MS4 permit with terms that are impracticable, unlawful, ineffectual, unnecessarily costly, or otherwise objectionable, an appeal should be considered. Although the decision to file an appeal need not be made until the final permit is issued, the likelihood of that appeal being successful will be greatly increased if the applicant has been proactive in building the foundation of its appeal during the application (for individual MS4 permits) and draft permit (for individual and general MS4 permits) stages of the process. There are several important concepts that MS4 permit applicants should be aware of to prepare for a possible appeal.

8.1.1 PRESERVE ISSUES FOR APPEAL

With few exceptions, federal and state courts will not consider objections to permits unless those objections were first presented to the permitting authority in a manner that gave the authority an opportunity to consider and address the objections.[3] To preserve issues for appeal, they should be clearly stated in writing and should provide an explanation for the basis of the objection. The applicant's objections should always be submitted during the public comment period on the draft permit. Even if the objections were communicated to the agency in meetings or in written communications before the draft permit stage, they should be reiterated in or attached to the applicant's formal public comments.

8.1.2 BUILD THE RECORD

A court's review of the permit will be limited to the record made before the agency. This means that if there are any facts, records, studies, or documents (such as an MEP Analysis) that will be useful or necessary to supporting a future appeal, courts generally will not consider them unless they were supplied to the agency during or before the draft permit stage. For example, if the applicant believes that the draft permit includes conditions that are impracticably expensive to comply with, it should submit supporting documentation of (1) the estimated compliance costs for those conditions and (2) the permittee's financial capability to bear those costs. Such documents generally should be attached to the applicant's comments on the draft permit.

8.1.3 EXHAUST ADMINISTRATIVE APPEALS

In many cases, applicants cannot appeal permit decisions directly to courts. They must first exhaust any administrative remedies that may be provided by federal or state law, such as by filing an appeal with state permit review bodies.[4] A surprising number of permit appeals are rejected by courts because the permittee failed to first submit its objections to the administrative review body.[5]

8.2 STANDARDS GOVERNING ISSUES OF LAW, FACT, OR AGENCY DISCRETION

Courts generally apply a very deferential standard of review to agency actions as to technical matters as well as matters within the agency's expertise or in the interpretation of the agency's own regulations. Considerably less or no deference may be afforded to the agency on matters of law. MS4 permit decisions are no different. On technical matters, the agency's permit decision will be overturned only if the permittee (or third party challenger) overcomes this deferential standard. Understanding the standard of review that courts will apply is essential both for building an appropriate record during the draft permit stage to succeed on appeal and to better assess the likelihood of success when determining whether to file a legal challenge to a permit.

Appeal issues will be characterized as "questions of law," "questions of fact," or mixed questions of law and fact. The permitting authority's interpretation and application of the governing laws and regulations (e.g., whether the authority may impose conditions that go beyond MEP) are questions of law. Questions of fact include an agency's technical determinations and how it exercises its judgment and discretion. A different standard of review applies to each category.

8.2.1 QUESTIONS OF LAW

Where the appeal involves a question of law based on EPA's interpretation of the CWA or another statute, federal courts typically apply what is known as Chevron[6] deference. State courts reviewing state permitting authorities' actions typically apply a similar standard.[7] To apply this deference, courts first ask if the relevant statutory language is ambiguous or clear on its face. If deemed clear, the court then pronounces its meaning and "give[s] effect to the unambiguously expressed intent."[8] If the court concludes that the statute is ambiguous, it then proceeds to the second step of its analysis to determine if the agency's interpretation is reasonable or permissible. If the court concludes that it is, the court will uphold the agency's interpretation even if it does not think that the agency's interpretation is the best interpretation.[9] The contours of Chevron deference are still evolving[10] and there has been a push by some to limit the deference accorded to agencies, especially at the federal level.[11]

Courts apply a similar approach to agency interpretations of the agency's own rules, which is referred to as Auer or Seminole Rock deference.[12] If the regulation is clear on its face, that is the end of the analysis and it is applied as written. If the language unclear, then the court determines if a particular interpretation is inappropriate in light of a statute or the constitution. An agency's interpretation will be controlling unless "plainly erroneous or inconsistent."[13]

8.2.2 QUESTIONS OF FACT

Generally, courts will hold unlawful and set aside an agency's factual determinations if they are "unsupported by substantial evidence."[14] Substantial evidence means:

> [M]ore than a mere scintilla. It means such relevant evidence as a reasonable mind might accept as adequate to support a conclusion. Accordingly, it must do more than create a suspicion of the existence of the fact to be established. . . . it must be enough to justify, if the trial were to a jury, a refusal to direct a verdict when the conclusion sought to be drawn from it is one of fact for the jury.[15]

Where the challenge is to an agency's exercise of judgment or discretion, the court will generally review the action to determine if it was arbitrary and capricious.[16]

8.3 TYPICAL PERMIT APPEAL PROCEDURES

While permittees must comply with the specific permit appeal procedures proscribed by state and federal statutes and the regulations of their respective permitting authority, typical permit appeal procedures are:

1. Obtain a final permit from the agency;
2. File a permit appeal within the prescribed time (e.g., 30 days) with the agency's adjudicatory body;[17]
3. In some states, the filing of the appeal automatically stays the contested provisions (or entire permit), while in other states it may also be necessary to request a stay to delay the effective date of the permit;
4. Litigate the matter in a hearing before the agency's adjudicatory body (developing the record by presenting evidence and calling witnesses);
5. File initial and reply pleadings (e.g., proposed findings of fact and conclusions of law);
6. The agency's adjudicatory body will render a final decision on the matter; and
7. This decision may be appealed to state or federal court (EPA-issued permits) within the prescribed time (e.g., 30 days).[18]

These procedures may vary by state.

8.4 SPECIAL CONSIDERATIONS FOR MS4 GENERAL PERMITS

As with individual permits, MS4s should participate in the general permit reissuance process—ideally as a coalition with other similarly situated Small MS4s. This approach is likely to achieve greater permit revisions than would result through an individual permit reissuance or even as an individual commenter on the general permit. MS4s should raise all concerns clearly and early in the process. It is much harder to convince a regulator to change permit terms after the draft has been published for public comment. This approach also establishes the basis for record, which must be continually developed and preserved throughout the reissuance process to preserve issues for possible appeal.

State procedures vary widely regarding whether an MS4 has the option to pursue an individual permit if the MS4 is not satisfied with the general permit. For example, in West Virginia, state procedure requires an MS4 authorized by a general permit but wishing to apply for an individual permit to "request to be excluded from the coverage of the general permit" by submitting an application to the Department "no later than 90 days after the general permit notice."[19] This effectively means that an MS4 must decide before the general permit is issued in final whether it would like to seek coverage under an individual permit.

Knowing if you can appeal a general permit (in lieu of simply applying for an individual permit) and when to appeal a general permit is more challenging than with individual permits. The threshold question is whether the general permit is even subject to appeal in the first instance. The MS4 must then determine whether it can challenge the general permit when it is issued or whether it must wait until it has submitted a Notice of Intent for general permit coverage to the state agency (at which point an individual permittee's interests are directly affected). The answer to these questions vary in different jurisdictions. For example, Washington State law provides different procedures for appealing a general permit by a class of dischargers or appeal of the general permit by an individual permittee.[20]

If a permittee is not satisfied with the terms of the general permit, it usually has the option of seeking an individual permit. While this application process is typically lengthier than for a general permit, obtaining more tailored permit terms may be a good choice for some. In states in which general permits cannot be challenged, permittees dissatisfied with the terms of the general permit must seek individual permit coverage in order to challenge the state's approach.

8.5 DEFENDING AGAINST THIRD PARTY CHALLENGES TO PERMITS

The CWA and state counterparts establish a low bar for participation in water discharge permit appeals.[21] For this reason, MS4 permittees may face challenges from third parties—typically when they believe the permit's conditions are inadequate to protect water quality. The following list provides some general suggestions to effectively prepare for and defend against these challenges.

8.5.1 HELP THE AGENCY BUILD A DEFENSIBLE RECORD

The permitting authority will have to defend its decision to issue the permit on the basis of the record before it at the time the decision is made. Permittees should not assume that the agency will build a proper record to defend its action. When the third party's objections are known or anticipated, the MS4 permit applicant should coordinate with the regulator to the extent the agency will allow. The applicant is advised to respond to the third party's objections with written comments to the agency that include any appropriate legal arguments and supporting documentation. Supplying correct legal arguments may aid the permitting authority in drafting a well-supported fact sheet to accompany the final permit and supplying important technical information will help provide the agency with record evidence to defend against challenges to its factual determinations.

8.5.2 INTERVENE IN THE THIRD PARTY'S CHALLENGE

Permittees have the right to intervene in cases challenging their permits.[22] This has several obvious benefits. First, the permittee will be able to address any deficiencies in the agency's legal defense of the permit. Second, the permittee will have a seat at the table for any potential settlement or judicial remedy discussions that may result in a remand of its permit.

[1]See generally 40 C.F.R. § 124.1 and 40 C.F.R. § 124.51.
[2]E.g., 5 U.S.C. § 704; N.C. Gen. Stat. § 150B-43. For further discussion of what constitutes a final agency action under the Administrative Procedure Act, see Bennett v. Spear, 520 U.S. 154, 177–78 (1997).
[3]E.g., 40 C.F.R. § 124.13; United States v. L.A. Tucker Truck Lines, Inc., 344 U.S. 33, 37 (1952); North Coast Rivers Alliance v. Marin Municipal Water District, 216 Cal. App. 4th 614, 623 (Cal. Ct. App. May 21, 2013) (stating that the rule protects "the public agency's opportunity to receive and respond to articulated factual issues and legal theories before its actions are subjected to judicial review"); Feudale v. Aqua Pennsylvania, Inc., 122 A.3d 462, 465 (Pa. Commw. Ct. July 22, 2015).
[4]E.g., 5 U.S.C. § 704; 40 C.F.R. § 124.15(a) (EPA-issued NPDES permits); Miss. Code Ann. 49-17-29(b) (Mississippi); Vt. Stat. Ann. tit. 9, § 8503 (Vermont).
[5]E.g., Pickard v. Tennessee Water Quality Control Board, 424 S.W.3d 511 (Tenn. 2013).
[6]Chevron, USA v. NRDC, 467 U.S. 837 (1984).
[7]Erb v. Maryland Department of the Environment, 676 A.2d 1017, 1023 (Md. Ct. Spec. App. 1996); Cobb v. Board of Counseling Professionals Licensure, 896 A.2d 271, 275 (Maine 2006).
[8]Chevron, 467 U.S. at 843.
[9]E.g., National Cable Telecom Association v. Brand XI Internet Service, 545 U.S. 967, 980 (2005).
[10]E.g., Christopher v. SmithKline Beecham Corp., 567 U.S. 142 (2012).
[11]Thomas A. Lorenzen and Sharmistha Das, The Decline of Deference: Is the Supreme Court Pruning Back the Chevron Doctrine?, 47A.B.A. 1, (Sept./Oct. 2015).
[12]E.g., Long Island Care at Home, Ltd. v. Coke, 551 U.S. 158 (2007); Auer v. Robbins, 519 U.S. 452 (1997).
[13]Arizona Public Service Co. v. EPA, 562 F.3d 1116, 1123 (10th Cir. 2009).
[14]E.g., 5 U.S.C. § 706(2)(E).
[15]Universal Camera Corp. v. National Labor Relations Board, 340 U.S. 474, 477 (1951) (internal quotations and citations omitted).
[16]American Farm Bureau Federation v. EPA, 984 F. Supp. 2d 289, 340–41 (M.D. Pa. 2013).
[17]For example, the Water Quality Control Commission hears water discharge permit appeals in Colorado. Colo. Code Regs. § 61.7.
[18]E.g., S.C. Code Ann. § 1-23-610.
[19]W. Va. Code R. § 47-10-6.b.2.C.
[20]Wash. Rev. Code Ann. § 173-226-190.
[21]33 U.S.C. § 1365 (2017).
[22]E.g., Fed. R. Civ. P. 24; Sierra Club v. EPA, 995 F.2d 1478 (9th Cir. 1993).

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9. Permit Enforcement

9.1 REGULATORY AGENCY INSPECTIONS AND ENFORCEMENT

EPA and state regulators have the legal authority to conduct MS4 inspections and audits, and to pursue enforcement, at the regulators' discretion, for alleged non-compliance. As discussed below, enforcement can be a costly proposition, and can include civil and criminal penalties (both fines and jail time) and injunctive relief that results in extensive and expensive programmatic changes.

For these reasons, an MS4 should familiarize itself with how inspections are conducted in its EPA region (if EPA is inspecting) or in its state (if the state has the primary responsibility for MS4 inspections). Inspections can be focused on particular areas of MS4 permit implementation. EPA typically focuses on MCM 3 through MCM 6 for Small MS4s. Or, EPA or the state can choose to audit the entire program, reviewing compliance with the permit and the stormwater management plan (if it is incorporated into the permit as an enforceable document). Inspections or audits can be desktop only (EPA or the state reviews an annual report and any response to an information request to identify compliance concerns) or they can be in-person, multi-day events, with a mix of MS4 employee interviews and field visits to construction, post-construction, and municipally-owned sites.

9.2 THIRD PARTY ENFORCEMENT (CITIZEN SUITS)

CWA § 505 authorizes a lawsuit by any citizen "having an interest which is or may be adversely affected."[1] After satisfying a 60-Day Notice requirement, a citizen may file a civil suit in an appropriate federal district court against any person who has allegedly violated an effluent standard or limitation or an order relating to the same.[2] A citizen may also sue to allege a failure by the EPA Administrator to act on a non-discretionary duty. The right to a citizens' suit is abrogated if the Administrator or a state has "commenced and is diligently prosecuting a civil or criminal action" in a court to ensure compliance. A citizen who is successful may be awarded attorneys' fees and other litigation costs.[3]

Make Good Use of the 60-Day Citizen Suit Notice Period

The 60-Day Notice period provides an opportunity to stave off citizen suits. Citizen suits can only challenge ongoing—and not past—violations, so fixing correctable noncompliance can cut off the suit. If the alleged violation cannot be adequately corrected in 60 days, the permittee can work with the permitting authority to initiate an enforcement action that will result in a reasonable, negotiated consent order/decree to resolve the alleged violations. Negotiating an outcome with the regulator is often preferable to the risk that a citizen group and reviewing court may not understand the issues and impose inappropriate requirements.

9.3 COMMON COMPLIANCE ISSUES

EPA and delegated states have cited MS4s for a broad range of alleged violations over the last decade. Allegations run the gamut from failure to obtain permit coverage to failure to properly implement a specific section of the permit. Generally speaking, MS4s are at risk for allegations of non-compliance for MCM 3 through MCM 6. Below is a list of frequently identified issues:

MCM 3 (IDDE)

- Failure to properly enforce against illicit dischargers
- No outreach program; no "hotline" for citizens to report illegal dumping or spills
- MS4 map is outdated; not field verified
- No written standard operating procedures for investigating and eliminating IDDEs
- No paperwork to support outfall inspections

MCM 4 (Construction)

- Failure to follow-up on earlier identified E&S violations on a construction site (e.g., storm drains not protected, unstabilized soil stockpiles, vehicular tracking of sediment on paved surfaces) or taking too long to follow-up
- Inspector did not identify violations during inspection; failed to identify problems with non-sediment pollutant sources and did not document in inspection report
- Not inspecting at required intervals

MCM 5 (Post-Construction)

- Failure to develop an ordinance or other regulatory mechanism to address post-construction runoff
- Failure to develop written procedures for routine maintenance inspections, to prepare reports, to enforce, and to follow-up for all BMPs
- Failure to enforce against BMP owners who failed to maintain structural controls
- Missing O&M agreements for permanent BMPs

MCM 6 (Good Housekeeping)

- Failure to develop SWPPP
- Poor housekeeping (e.g., oil staining, uncovered dumpsters, open paint drums, trash all over site)
- No employee training program on good housekeeping
- No employee training program; no documentation of employee training
- Salt shed overloaded

9.4 RESOLUTION METHODS

EPA and state regulators with delegated programs have the legal authority to pursue enforcement if they identify potential noncompliance during an MS4 inspection or audit. State authority varies depending on the jurisdiction. Federal authority is provided by CWA §309.[4] EPA commonly pursues MS4 enforcement under CWA § 309(g), which provides an administrative penalty option. Administrative penalties for a Class I violation may not exceed $20,965 per violation, with a maximum amount of $52,414; the penalty for a Class II violation may not exceed $20,965 per day for each day of violation with a maximum amount of $262,066.[5] Often, EPA negotiates an administrative order and a penalty with the permittee, resulting in a Consent Agreement and Final Order (CAFO) and/or an Administrative Order on Consent (AOC).

EPA has discretion to forgo an administrative enforcement approach, and instead file an enforcement action in federal court.[6] Civil penalties cannot exceed $52,414 per day per violation. A court can also order injunctive relief. EPA or the MS4 permittee may wish to forego litigation and seek to resolve the matter through a judicial settlement called a Consent Decree. A Consent Decree has the force and effect of a judgment (meaning that it can be enforced by a court), and is therefore an attractive settlement tool for regulators where a significant undertaking is required. NACWA's Consent Decree Handbook—a free resource for members—is a useful tool that helps demystify the process of negotiating and implementing Consent Decrees.

Lastly, EPA can pursue criminal penalties,[7] although this has been rare for MS4 permittees. For a first conviction, penalties for negligent violations can range from $2,500 to $25,000 per day of violation with possible imprisonment for up to 1 year, and for knowing endangerment, penalties can range up to $250,000 per day of violation and up to 15 years of imprisonment. For false statements, first convictions can result in a fine of not more than $10,000 and/or imprisonment for not more than 2 years. Additional criminal and civil penalties may apply under other federal laws (e.g., violations of Title 18 of the U.S. Code, Crimes and Criminal Procedure).

Promptly Respond to Inspection and Audit Reports

If EPA conducts an inspection or audit of an MS4, the permittee should respond promptly and carefully to any subsequent report. Prompt corrections of legitimate findings of non-compliance may stave off a formal enforcement action.

[1]33 U.S.C. § 1365.
[2]33 U.S.C. § 1365(a); Decker v. Northwest Environmental. Defense Center, 568 U.S. 597, 608 (2013).
[3]33 U.S.C. § 1365(d).
[4]33 U.S.C. § 1319.
[5]EPA increased its civil penalties effective August 1, 2016. Civil Monetary Penalty Inflation Adjustment Interim Final Rule, 81 Fed. Reg. 43091 (July 1, 2016).
[6]33 U.S.C. § 1319(b).
[7]33 U.S.C. § 1319(c).

Glossary

A

Adaptive Management	AOC	The process by which new information and priorities is incorporated into a remediation plan; involves a blend of scientific research, monitoring, and practical management that allows for experimentation and provides the opportunity to "learn by doing"
Administrative Orders on Consent		In an EPA administrative enforcement action, settlements are often in the form of consent agreements/final orders (CA/FOs) or administrative orders on consent (AOCs).

B

Best Management Practices	BMP	A permit condition used in place of or in conjunction with effluent limitations to prevent or control the discharge of pollutants. BMPs may include a schedule of activities, prohibition of practices, maintenance procedure, or other management practice.

C

Citizen Suit		CWA § 505 authorizes a lawsuit by any citizen "having an interest which is or may be adversely affected."
Clean Water Act	CWA	33 U.S.C. § 1251 *et seq.* *See also* FWPCA
Combined Sewer System	CSS	A wastewater collection system owned by a municipality (as defined by Section 502(4) of the Clean Water Act) that conveys domestic, commercial and industrial wastewater and stormwater runoff through a single pipe system to a POTW.
Consent Agreements/Final Orders	CA/FO	In an EPA administrative enforcement action, settlements are often in the form of consent agreements/final orders (CA/FOs) or administrative orders on consent (AOCs).

E

Effluent Limits		Restrictions established by a state or EPA on quantities, rates, and concentrations in municipal or industrial wastewater discharges.
Environmental Protection Agency (US)	EPA	Federal agency authorized to implement and enforce the provisions of the Clean Water Act.
Erosion and Sediment Control Laws	E&S	State laws that require the development of a program to reduce stormwater runoff associated with construction sites of a certain size.

F

Federal Water Pollution Control Act of 1972	FWPCA	Commonly known as the Clean Water Act, amended by Clean Water Act Amendments of 1977, Water Quality Amendments of 1986, the Wet Weather Water Quality Act of 2000, and the Beaches Environmental Assessment and Coastal Health Act of 2000.
Final Agency Action		Agency action that triggers the right of appeal under federal law and most state statutes. Examples of final agency action include issuance of a final rule or final permit.

G

Gray Infrastructure		Conventional piped drainage and water treatment systems designed to move stormwater away from constructed environment.
Green Infrastructure		A cost-effective, resilient approach to managing wet weather impacts that provide many community benefits. Unlike gray stormwater infrastructure, green infrastructure reduces runoff by absorbing and filtering through soil and plants.

I

Illicit Discharge		40 CFR 122.26(b)(2) defines an illicit discharge as any discharge to an MS4 that is not composed entirely of storm water, except allowable discharges pursuant to an NPDES permit, including those resulting from firefighting activities.

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Illicit Discharge Detection and Elimination	IDDE	Phase II MS4s are required to develop an IDDE program/plan to detect and eliminate illicit discharges.
Infiltration		Storm water and groundwater that enter a sewer system through such means as defective pipes, pipe joints, connections, or manholes. (Infiltration does not include inflow).
Integrated Planning		An approach to where communities consider traditionally independent obligations holistically and prioritize limited resources on actions that will yield the greatest water quality benefits.

L

Legacy Pollutant		"Inherited" pollutants from industrial or commercial properties that may infiltrate MS4 drain land through groundwater or other hydrologic features.

M

Maximum Extent Practicable	MEP	A unique standard embedded in Section 402(p) of CWA that requires MS4 permittees to implement "best management practices, design and engineering methods, and such other provisions as the Administrator or the State determines" appropriate for control of certain pollutants.
Million Gallons per Day	MGD	A unit of flow commonly used for wastewater discharges. One MGD is equivalent to a flow rate of 1.547 cubic feet per second over a 24-hour period.
Minimum Control Measures	MCM	A requirement of Phase II MS4 programs that implementation of the MEP standard requires the achievement of measurable goals to satisfy each of the six minimum control measures
Municipal Separate Storm Sewer System	MS4	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

Municipal Separate Storm Sewer System	MS4	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. 40 CFR 122.26(b)(8))

N

National Association of Clean Water Agencies	NACWA	NACWA represents the interests of more than 300 public agencies and organizations that have made the pursuit of scientifically based, technically sound and cost effective laws and regulations their objective. NACWA members serve the majority of the sewered population in the United States.
National Pollutant Discharge Elimination System	NPDES	The national program for issuing, modifying, revoking and reissuing, terminating, monitoring and enforcing permits, and imposing and enforcing pretreatment requirements, under Sections 307, 318, 402, and 405 of the Clean Water Act.
Numeric Effluent Limit		Technology-based limitation on specific pollutants subject to several levels of control.
Notice of Intent		Notice that an entity intends to be authorized to discharge pollutants to waters of the United States under a general NPDES permit.
Nutrient		Any substance assimilated by living things that promotes growth. The term is generally applied to nitrogen and phosphorus in wastewater, but is also applied to other essential and trace elements.

P

Permit Shield		The standard that dictates compliance with a permit during its terms constitutes compliance with the CWA and thus shields the permittee from meeting more-stringent limitations.

Pesticides, Herbicides, and Fertilizers	PHFs	Discharge pollutants that require a specific program in Phase I MS4 permits to reduce to the MEP discharges associated with these substances.
Phase I MS4		Large and Medium MS4s that were included in EPA's first round of MS4 regulations in 1990.
Phase II MS4		Any MS4 that does not meet the definition of a Large or Medium MS4. These types of MS4s were included in EPA's second round of MS4 regulations in 1999 and include smaller cities, towns, and counties.
Point Source		Any discernible, confined, and discrete conveyance, including but not limited to any pipe, ditch, channel, tunnel, conduit, well, discrete fixture, container, rolling stock, concentrated animal feeding operation, landfill leachate collection system, vessel, or other floating craft from which pollutants are or may be discharged.
Polyclorinated Biphenyls	PCBs	A group of man-made chemicals extensively used in the U.S. that present unique challenges for MS4s in cost and implementation.
Pretreatment Program		An aspect of a POTWs water treatment process that reduces conventional and toxic pollutants discharged by industries and other nondomestic wastewater sources into municipal sewer systems and into the environment
Publicly Owned Treatment Works	POTW	A treatment works, as defined by Section 212 of the Clean Water Act that is owned by a state or municipality. This definition includes any devices and systems used in the storage, treatment, recycling, and reclamation of municipal sewage or industrial wastes of a liquid nature. It also includes sewers, pipes, and other conveyances only if they convey wastewater to a POTW treatment plant [40 CFR §403.3].

R

Residual Designation Authority	RDA	CWA § 402(p)(2)(E) authorizes the EPA Administrator or state to require discharge permits for a stormwater discharge if the Administrator or the state determines that the discharge "contributes to a violation of a water quality standard or is a significant contributor of pollutants" to waters of the U.S.

S

Sanitary Sewer Overflow	SSO	An untreated or partially treated sewage release from a sanitary sewer system.
Sanitary Sewer System	SSS	A municipal wastewater collection system that conveys domestic, commercial and industrial wastewater, and limited amounts of infiltrated ground water and stormwater, to a POTW. Areas served by sanitary sewer systems often have a municipal separate storm sewer system to collect and convey runoff from rainfall and snowmelt.
Sheet Flow		Runoff feature where water flows over an impervious surface to open space. These events are typical in urban areas with high volume of impervious surfaces.
Standard Operating Procedures	SOP	Set of written instructions that document a routine or repetitive activity followed by an organization.
Stormwater Management Plan	SWMP	A plan prepared by an MS4 designed to reduce the discharge of pollutants to the MEP using management practices, control technologies and systems, design and engineering methods.
Stormwater Pollution Prevention Plan	SWPPP	A SWPPP may also be called a "construction best practices plan," "sediment and stormwater plan," "erosion, sedimentation, and pollution prevention plan," or similar term. The SWPPP (or similarly named plan) is generally required to comply with EPA's or the state's stormwater construction general permit. A SWPPP will address the steps and techniques to reduce pollutants in stormwater runoff leaving a construction site.

Swale		A graded, engineered landscape feature that serves to filter stormwater pollutants. Also known as bio-filtration swale.

T

Technology Based Effluent Limits	TBEL	Effluent limitations applicable to direct and indirect sources, which are developed on a category-by-category basis using statutory factors, not including water quality effects.
Total Maximum Daily Load	TMDL	A calculation of the maximum amount of a pollutant that a water body can receive and still safely meet water quality standards.
Total Suspended Solids	TSS	A measure of the filterable solids present in a sample of water or wastewater (as determined by the method specified in 40 CFR Part 136).

U

Urban Cluster	USCM	An urban area that has at least 2,500 and less than 50,000 people.
Use Attainability Analysis	UAA	A structured scientific assessment of the factors affecting the attainment of uses specified in Section 101(a)(2) of the Clean Water Act (the so called “fishable/swimmable” uses). The factors to be considered in such an analysis include the physical, chemical, biological, and economic use removal criteria described in EPA’ s water quality standards regulation (40 CFR 131.10(g)(1)-(6)).

W

Waters of the United States		A regulatory definition used by the EPA and Army Corps of Engineers to determine waters that fall under the jurisdiction of the Clean Water Act. Full definition at 40 CFR 230.3.
Water Quality Standards	WQS	A law or regulation that consists of the beneficial use or uses of a waterbody, the numeric and narrative water quality criteria that are necessary to protect the use or uses of that particular waterbody, and an antidegradation statement.

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