

NPDES Compliance Inspection Manual

Chapter 11



EPA Publication Number: 305-K-17-001
Interim Revised Version, January 2017

CHAPTER 11 – STORMWATER

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A. BACKGROUND AND HISTORY

REGULATION OVERVIEW (40 CFR 122.26)

In addition to materials in this chapter, inspectors should be familiar with Chapter 1, “Introduction,” Chapter 2, “Inspection Procedures,” Chapter 12, “Combined Sewer Systems,” and Chapter 13, “Inspecting Green Infrastructure Controls.”

1987 Amendments to CWA	
Section 402(p) municipal and industrial stormwater discharges	
(1)	General Rule—prohibits permits for discharges composed entirely of stormwater prior to October 1, 1994 with some exceptions.
(2)	Exceptions—identifies five types of stormwater discharges that are to be permitted prior to October 1, 1994.
(3)	Permit Requirements—identifies permitting approach for industrial and municipal stormwater discharges.
(4)	Permit Application Requirements—identifies application requirements for industrial and municipal stormwater discharges.
(5)	Studies—identifies requirement for report to congress on other sources of stormwater discharges.
(6)	Regulations—requires regulations for permitting other types of stormwater discharges to protect water quality.

The 1972 amendments to the Clean Water Act (CWA) prohibited the discharge of any pollutants to navigable waters from a point source unless the discharge was authorized by a National Pollutant Discharge Elimination System (NPDES) permit. At the time of the 1972 amendments to the CWA, sewage treatment plant outfalls and industrial process wastewater were easily identified as point sources responsible for contributing to the degradation of water quality. However, as pollution control measures were instituted, it became evident that more diffuse sources, such as agricultural and urban stormwater runoff, were also contributing to the problem. In response to this concern, the Water Quality Act (WQA) of 1987 added section 402(p) to the CWA and required the Environmental Protection Agency (EPA) to establish a comprehensive two-phase approach to address stormwater discharges.

The 1987 WQA established new schedules for issuing NPDES permits to industrial and municipal stormwater dischargers. Industrial stormwater discharge permits must include requirements implementing Best Available Technology Economically Achievable (BAT) and Best Conventional Pollutant Control Technology (BCT) standards, as well as any more stringent requirements necessary to achieve water quality standards. Municipal separate storm sewer system (MS4) permits must require controls to reduce pollutant discharges to the maximum extent practicable (MEP), including management practices, control techniques and system design and engineering methods, and such other provisions as the Administrator deems appropriate for the control of such pollutants.

As required by section 402(p)(4) of the CWA, EPA promulgated Phase I Stormwater regulations on November 16, 1990 (Volume 55 *Federal Register* (FR) 47990). The regulations set forth permit application requirements, including definitions, for the five-point source stormwater

discharge categories subject to NPDES permit requirements under section 402(p)(2) of the CWA:

- A discharge subject to a NPDES permit before February 4, 1987.
- A discharge associated with industrial activity (including construction activities \geq 5 acres).
- A discharge from a municipal separate storm sewer system serving a population of 250,000 or more (large MS4s).
- A discharge from a municipal separate storm sewer system serving a population of 100,000 or more but less than 250,000 (medium MS4s).
- A discharge that an NPDES permitting authority determines to be contributing to a violation of a water quality standard or a significant contributor of pollutants to waters of the United States.

Pursuant to section 402(p)(6) of the CWA, EPA promulgated Phase II Stormwater regulations on December 8, 1999 (64 FR 68722). Section 402(p)(6) of the CWA required EPA to designate additional stormwater discharges not already covered by Phase I regulation, based on studies required under section 402(p)(5) of the CWA, to be regulated “to protect water quality.” The Phase II rule added certain small municipal separate storm sewers systems in urbanized areas (small MS4s) and small active construction sites (disturbing between 1 and 5 acres) as stormwater discharges subject to NPDES permitting requirements. The Phase II rule also established criteria for the permitting authority to designate additional small MS4s and previously unregulated stormwater discharges, and require NPDES permits for those discharges (residual designation authority).

The Phase I stormwater regulations are codified primarily in Title 40 of the *Code of Federal Regulations* (CFR) 122.26 and the Phase II regulations are primarily in 40 CFR 122.30-122.37. A summary of these sections is provided in Table 11-1. Stormwater discharged through combined sanitary and storm sewer systems are not covered by the stormwater regulations.

On November 25, 2014, EPA issued a memorandum noting revisions to the memorandum titled *Establishing Total Maximum Daily Load (TMDL) Wasteload Allocations (WLAs) for Storm Water Sources and NPDES Permit Requirements Based on Those WLAs* (EPA, 2014a). In the memorandum, EPA encouraged permit writers to include clear, specific, and measurable permit requirements and where feasible, numeric effluent limitations in NPDES permits for stormwater discharges. Additionally, permits should contain clear, specific, and measurable elements associated with the implementation of stormwater control measures (e.g., schedule for installation, frequency of a practice, or level of performance), as appropriate. The permit should be supported by documentation that implementation of selected stormwater control measures will result in achievement of water quality standards. Permitting authorities should also consider including numeric benchmarks for stormwater control measures and associated monitoring protocols for estimating stormwater control effectiveness in stormwater permits. Benchmarks can support an adaptive approach to meeting applicable water quality standards. While exceeding the benchmark is not generally a permit violation, exceeding the benchmark

would typically require the permittee to take additional action, such as evaluating the effectiveness of the stormwater control measures, implementing and/or modifying stormwater control measures, or providing additional measures to protect water quality.

Though industrial facilities, construction sites, and MS4s are distinct and are typically permitted separately, there is some crossover between these entities. Industrial facilities and construction sites often discharge to a regulated MS4 and are therefore subject to the local ordinances and requirements established by the MS4 pursuant to its NPDES permit, as well as the requirements of the specific facility or site's NPDES stormwater permit. Industrial facilities and construction sites that are regulated for stormwater are covered under their local MS4 and under either the EPA or state-issued Multi Sector General Permit (MSGP, for industrial) or the Construction General Permit (CGP). While the general permits issued by EPA can only apply to facilities in jurisdictions where EPA is the permitting authority, many states model their own general permits on EPA's general permits. For example, EPA's MSGP for industrial stormwater covers stormwater discharges associated with both industrial activity and some construction activity associated with certain mining and oil and gas facilities. For clarity, the remainder of this chapter discusses industrial, construction and municipal permitted entities separately. Table 11-2 contains a summary of Permitting Requirements under the NPDES Stormwater Program Regulations. EPA encourages inspectors to contact the permit writers and/or the permitting authority for clarification or concerns related to the permit specifications of sites being inspected.

Table 11-1. Summary of Stormwater Permitting Regulations

40 CFR Part 122—EPA Administered Permit Programs: The National Pollutant Discharge Elimination System	
122.1	Purpose and Scope
122.21	Application for a Permit
122.22	Signatories to Permit Applications and Reports
122.26(a)	Permit Requirements
122.26(b)	Definitions
122.26(c)	Application Requirements for Stormwater Discharges Associated with Industrial Activity and Stormwater Discharges Associated with Small Construction Activity
122.26(d)	Application Requirements for Large and Medium Municipal Separate Storm Sewer Discharges
122.26(e)	Application Deadlines
122.26(f)	Petitions
122.26(g)	Conditional Exclusion for "No Exposure" of Industrial Activities and Materials to Stormwater
122.28	General Permits
122.30	What are the objectives of the stormwater regulations for small MS4s?
122.31	As a tribe, what is my role under the NPDES stormwater program?

Table 11-1. Summary of Stormwater Permitting Regulations

40 CFR Part 122—EPA Administered Permit Programs: The National Pollutant Discharge Elimination System	
122.32	As an operator of a small MS4, am I regulated under the NPDES stormwater program?
122.33	If I am an operator of a regulated small MS4, how do I apply for an NPDES permit and when do I have to apply?
122.34	As an operator of a regulated small MS4, what will my NPDES MS4 stormwater permit require?
122.35	As an operator of a regulated small MS4, may I share the responsibility to implement the minimum control measures with other entities?
122.36	As an operator of a regulated small MS4, what happens if I don't comply with the application requirements in 122.33 through 122.35?
122.37	Will the small MS4 stormwater program regulations at 122.32 through 122.36 and 122.35 of this chapter change in the future?
122.42	Additional Conditions Applicable to Specified Categories of NPDES Permits
122.44	Establishing Limitations, Standards, and Other Permit Conditions
122.62	Modifications or Revocation and Reissuance of Permits
40 CFR Part 123—State Program Requirements	
123.25	Requirements for Permitting
123.35	As the NPDES permitting authority for regulated small MS4s, what is my role?
40 CFR Part 124—Procedures for Decision-making	
124.52	Permits Required on a Case-by-Case Basis
Appendix E	Rainfall Zones of the United States
Appendix F	Incorporated Places with Populations Greater Than 250,000 According to Latest Decennial Census by Bureau of Census
Appendix G	Incorporated Places with Populations Greater Than 100,000 and Less Than 250,000 According to Latest Decennial Census by Bureau of Census
Appendix H	Counties with Unincorporated Urbanized Areas with a Population of 250,000 or More According to the Latest Decennial Census by the Bureau of Census
Appendix I	Counties with Unincorporated Urbanized Areas Greater Than 100,000, but Less Than 250,000 According to the Latest Decennial Census by the Bureau of Census

Table 11-2. Summary of Permit Requirements Under the NPDES Stormwater Program Regulations

	Municipal Separate Storm Sewer Systems (MS4s) Regulations	Construction Activity General Permit	Industrial Activity General Permit
Phase I Requirements (November 16, 1990)	Medium and Large MS4s (122.26(d))	Category (x) Construction Activity (5+Acres)	Ten Categories of Industrial Activity (Categories (i)-(ix), (xi))
	<ul style="list-style-type: none"> • Establish adequate legal authority to control discharges to storm sewer, inspect, and enforcement. • Identify major stormwater sources and locations of outfalls, and provide characterization data of discharges. • Develop Stormwater Management Program: <ul style="list-style-type: none"> – Controls for residential and commercial activities. – Illicit discharge detection and elimination program. – Controls for municipal and industrial activities. – Construction site controls. • Assess controls and perform fiscal analysis. • Submit annual report. 	<p><u>CGP:</u></p> <ul style="list-style-type: none"> • Stormwater Pollution Prevention Plan (SWPPP): <ul style="list-style-type: none"> – Site description. – Description of control measures for erosion and sediment, post-construction stormwater management, and other controls. – Self-evaluation and recordkeeping. 	<p><u>MSGP:</u></p> <ul style="list-style-type: none"> • SWPPP: <ul style="list-style-type: none"> – Site evaluation. – Description of appropriate stormwater control measures. – Self-evaluation, monitoring, recordkeeping, and, in some circumstances, reporting. – If discharging into a medium or large MS4, notify the MS4 operator.
Phase II Requirements (December 8, 1999)	Regulated Small MS4	Small Construction Activity (≥ 1 and <5 acres)	Industrial
	<ul style="list-style-type: none"> • Stormwater Management Program: <ul style="list-style-type: none"> – Public education and outreach. – Public participation efforts. – Illicit discharge detection and elimination program. – Construction runoff control program for construction activity disturbing 1 acre or greater. 	<ul style="list-style-type: none"> • Generally similar to category (x) Construction Activity requirements above. • Small construction waivers requirement. 	Option for Conditional no exposure waiver if certain criteria are met.

Table 11-2. Summary of Permit Requirements Under the NPDES Stormwater Program Regulations

	Municipal Separate Storm Sewer Systems (MS4s) Regulations	Construction Activity General Permit	Industrial Activity General Permit
	<ul style="list-style-type: none"> – Post-construction runoff control program for construction activity disturbing 1 acre or greater. – Good housekeeping/pollution prevention for municipal operations. • Conduct assessment of identified stormwater control measures and measurable goals for each minimum control measure. • Submit periodic program assessment reports. 		

B. STORMWATER DISCHARGES ASSOCIATED WITH INDUSTRIAL ACTIVITY (NOT INCLUDING CONSTRUCTION)

APPLICABILITY (WHO IS COVERED)

The stormwater regulations identify 11 categories of industrial facilities that are engaging in industrial activity that is regulated under the stormwater program (40 CFR 122.26(b)(14)(i)–(xi)). EPA defines these categories of industrial facilities using a combination of standard industrial classification codes and descriptions of facility activities. A description of these 11 categories is provided in Table 11-5. One of the 11 categories, category (x), is construction activity disturbing 5 acres or more. This category is discussed separately in Section 11.C because of the significant differences in site activities and requirements at construction sites compared to the other 10 industrial categories.

EPA estimates that nationwide more than 150,000 industrial facilities are required to obtain NPDES permit coverage for stormwater discharges associated with industrial activity.

The NPDES regulations, at 40 CFR 122.26(b)(14), define “stormwater discharges associated with industrial activity.” Specifically, the phrase means “the discharge from any conveyance that is used for collecting and conveying stormwater and that is directly related to manufacturing, processing or raw materials storage areas at an industrial plant.” For the 10 categories of industries identified in 40 CFR 122.26(b)(14)(i)–(ix), and (xi), the term includes, but is not limited to, stormwater discharges from the following:

- Industrial plant yards.
- Immediate access roads and rail lines used or traveled by carriers of raw materials, manufactured products, waste material, or byproducts used or created by the facility.
- Material handling sites.
- Refuse sites.
- Sites used to apply or dispose of process waste waters (as defined at 40 CFR Part 401).
- Sites used for storage and maintenance of material handling equipment.
- Sites used for residual treatment, storage, or disposal.
- Shipping and receiving areas.
- Manufacturing buildings.
- Storage areas (including tank farms) for raw materials and intermediate and finished products.
- Areas where industrial activity has taken place in the past and significant materials remain and are exposed to stormwater.

Material handling activities include storage, loading and unloading, transportation, or conveyance of any raw material, intermediate product, final product, by-product, or waste product. The term excludes areas located on plant lands separate from the plant's industrial activities, such as the office buildings and accompanying parking lots as long as the drainage from the excluded areas is not mixed with stormwater drained from any of the above described areas (40 CFR 122.26(b)(14)).

One of the first questions a stormwater inspector must consider is the applicability of the stormwater permitting regulations to a specific facility. The inspector should determine what types of industrial activities are performed by the facility, and which SIC codes may apply to the facility. Industrial categories covered by 40 CFR 122.26(b)(14) include:

- Facilities subject to stormwater effluent limitation guidelines (40 CFR chapter I, subchapter N).
- Industries defined by certain Standard Industrial Classification (SIC) Codes (e.g., lumber and wood products, primary metal industry).
- Mineral Industry.
- Hazardous waste treatment, storage, or disposal facilities.
- Landfills, including land application sites and open dumps.
- Facilities that recycle, reclaim, or salvage materials including scrap material.
- Steam electric power facilities.
- Transportation facilities that have vehicle maintenance shops, equipment cleaning operations or airport deicing operations.
- Sewage treatment plants.
- Construction activities.
- Light Industry classified by SIC Code.

Facilities within these industrial categories require a stormwater permit whenever any of the listed activities occur on-site, regardless of the facility's SIC code or other types of activity. See Table 11-5 for a more detailed description of these categories. As mentioned above, some of the covered industrial categories are defined by SIC code. Where multiple industrial activities are conducted at a site, with each activity having a distinct SIC code, the facility's primary SIC code generally determines whether a facility is regulated pursuant to one of the listed SIC codes. The primary SIC code is based on the primary industrial activity occurring at the site (see Table 11-4 for a list of primary SIC codes covered by the stormwater permitting requirements). EPA recommends comparing the value of receipts or revenues and/or number of people employed for each industrial activity to identify the primary activity of the facility. If the SIC code for this primary activity is identified in 40 CFR 122.26(b)(14), then the facility is subject to the stormwater permitting requirements. However, if the facility's primary activity is not included in 40 CFR 122.26(b)(14), the facility is not subject to the permitting requirements even if the facility conducts secondary activities that are identified therein (unless otherwise designated by the Director as needing a permit).

Some of the industrial categories are defined using a narrative description rather than SIC codes. In these instances, any facility engaging in an industrial activity that meets a narrative description is required to obtain permit coverage for those specific activities regardless of the facility's SIC code(s).

Exemption for Mining or Oil and Gas Facilities

Federal regulations at 40 CFR 122.26(c)(1)(iii) specify that stormwater discharges from oil or gas exploration, production, processing, treatment operations, or transmission, do not require NPDES permit coverage unless the facility has had a stormwater discharge that contained a reportable quantity of a designated hazardous substance for which notification is or was required (pursuant to 40 CFR 117.21, 40 CFR 302.6 or 40 CFR 110.6), or has had a stormwater discharge that contributes to a violation of a water quality standard.

Consistent with 40 CFR 122.26(c)(1)(iv), a discharge composed entirely of stormwater from a mining operation associated with oil or gas is not required to submit a permit application unless the discharge has contacted any overburden, raw material, intermediate products, finished product, byproduct, or waste products located on the site of such operations.

For more information on the applicability of stormwater regulations to oil and gas facilities, please visit <http://www.epa.gov/npdes/oil-and-gas-stormwater-permitting#undefined>.

No Exposure Conditional Exclusion

The Phase II No Exposure Conditional Exclusion significantly expands the scope of the original no exposure exclusion eligibility requirements. Under 40 CFR 122.26(g), operators of regulated industrial facilities in any of 10 categories of "stormwater discharges associated with industrial activity," may qualify for the exclusion if none of the facility's industrial materials or activities are exposed to stormwater. See 40 CFR 122.26(g)(1) for a list of qualification criteria. As long as the condition of "no exposure" exists at a qualified facility, stormwater discharges from the facility are excluded from the definition of "stormwater discharges associated with industrial

activity.” The facility operator must submit a no exposure certification exclusion to the permitting authority, EPA or the authorized state, once every five years and is subject to periodic inspections to determine compliance with the “no exposure” conditions. The no exposure certification replaces the previous “light industry” no exposure exemption included under the Phase I Stormwater Program. A no exposure certification form can be found in Appendix Q.

No exposure means all industrial materials and activities are protected by a storm-resistant shelter to prevent exposure to rain, snow, snowmelt, and/or runoff. Industrial materials or activities include, but are not limited to, material handling equipment or activities, industrial machinery, raw materials, intermediate products, byproducts, final products, or waste products (40 CFR 122.26(g)).

PERMIT APPLICATIONS FOR STORMWATER DISCHARGES ASSOCIATED WITH INDUSTRIAL ACTIVITY

Industrial facilities have two NPDES permit options for stormwater discharges—coverage under 1) a general permit or 2) an individual permit. Most industrial facilities have permit coverage under a general permit, which is developed for facilities sharing similar discharge characteristics. Individual permits are developed when a facility requires permit coverage but either the facility or the permitting authority does not believe a general permit is appropriate based on the discharge characteristics. Where EPA is the NPDES permitting authority, the Multi-Sector General Permit (MSGP) issued on June 4, 2015 (80 FR 34403), is the most recent general permit available to industrial facility operators. A copy of the 2015 MSGP and related documents are available at <http://www.epa.gov/npdes/stormwater-discharges-industrial-activities#msgp>.

The EPA MSGP covers 29 industrial sectors. Standard Industrial Classification (SIC) codes and narrative descriptions identify the categories of industrial facilities within each of the 29 sectors. Though the EPA MSGP is applicable only in areas where EPA is the permitting authority, similar general permits may be available in NPDES-authorized states. Information related to the EPA MSGP and individual permits is presented below.

General Permit/Notice of Intent

To apply for permit coverage under EPA’s or a state’s MSGP, a facility operator must complete and submit an electronic Notice of Intent (eNOI) form, or the applicable form used by the state NPDES permitting authority. Those facilities already covered under the prior MSGP are required to submit a new eNOI each time the MSGP is re-issued. The eNOI requests a variety of basic facility information, including latitude/longitude of the facility, and information related to the Endangered Species Act and the National Historic Preservation Act. Permit applicants have the option of either providing an internet link to their stormwater pollution prevention plan (SWPPP) or providing compliance information directly on the eNOI form including a description of industrial activities exposed to stormwater, a list of pollutants associated with each industrial activity exposed to stormwater, a description of the control measure that will be employed, a schedule for good housekeeping and maintenance, and a schedule for all required inspections.

The deadline for submission of an NOI to be covered under the 2015 EPA MSGP was September 2, 2015 for most existing sources.

Under EPA's 2015 MSGP, new facilities and facilities that change ownership or operators must generally submit an NOI at least 30 days prior to the commencement of discharge or change in ownership/operator.

EPA has developed the eNOI for industrial facilities that seek coverage under EPA's MSGP, which can be found on EPA's Electronic Multi-Sector General Permit Notice of Intent (eNOI) home page (<http://www.epa.gov/npdes/stormwater-discharges-industrial-activities#overview>). For the 2015 MSGP, permittees submit Notices of Intent (NOIs)—as well as Notices of Termination (NOTs), Annual Reports, and No Exposure Certifications—using the NPDES eReporting Tool for the MSGP (NeT-NSGP). Permittees that are required to submit DMRs use NetDMR to submit them electronically.

In rare circumstances the EPA Regional Office may grant facility operators an electronic reporting waiver when needed. In such cases, the operator mails the paper forms provided in the 2015 MSGP.

Individual Permits

There are circumstances when a general permit is either not available or not applicable to a specific industrial facility. A facility operator may obtain coverage under an individual permit instead, developed by the NPDES permitting authority specifically for that facility. An individual permit may be the only option when:

- The NPDES permitting authority requires a facility operator to apply for individual permit coverage.
- The facility operator is unable to certify eligibility with the conditions of the general permit, because the general permit does not adequately cover the regulated facility, process or discharge.

A summary of the permit application deadlines is presented in Table 11-3. The Transportation Act of 1991 modified the application deadlines for industrial activities owned or operated by municipalities (i.e., types of industrial activities covered by MSGP). The Phase II Rule required industrial activities operated by municipalities with populations less than 100,000 to obtain permit coverage by no later than March 10, 2003, (unless the NPDES permitting authority chooses to phase-in permit coverage on a watershed basis and establishes other deadlines). As such, all industrial activities defined in 40 CFR 122.26(b)(14) are now required to obtain coverage, unless waived.

Stormwater Pollution Prevention Plan Requirements/Office Review

In most cases, operators must prepare a SWPPP for the industrial facility before submitting a Notice of Intent for permit coverage. The SWPPP must be signed by a responsible corporate official such as a president, vice president, or general partner as identified in the EPA MSGP. Under most permits, the SWPPP is to be kept at the facility at all times (or other local location

accessible to the EPA, a state, tribal, or territorial agency with jurisdiction over water quality protection; local government officials; or the operator of a MS4 receiving discharges from the site) and must be available for review when requested by EPA or by the operator of the MS4 when the facility discharges to a municipal separate storm sewer.

For large or complex facilities, it may be appropriate for the inspector to request a copy of the SWPPP prior to inspection to be more familiar with the facility during the inspection. Inspectors should check to see if the facility has posted their SWPPP on line. The eNOI for the 2015 MSGP gives permit applicants the option of either posting their SWPPP on line or providing additional information in their application, such as a description of industrial activities exposed to stormwater, a list of pollutants associated with each industrial activity exposed to stormwater, a description of the control measure that will be employed, a schedule for good housekeeping and maintenance, and a schedule for all required inspections. Otherwise, the inspector will need to obtain a copy of, and review, the SWPPP or at least parts of the SWPPP during the inspection. At a minimum, the inspector should review the site map prior to conducting the field inspection to understand the site and the existing/planned stormwater controls, and carry a copy of the site map during the inspection when possible. Depending on the time available for the inspection and the size of the SWPPP, the inspector may request a copy of the SWPPP for review after the inspection.

In reviewing the SWPPP, the inspector should evaluate whether it contains all the required elements specified in the applicable permit (e.g., the current EPA MSGP, the state General Permit in NPDES-authorized states, or an individual permit issued to the facility).

The 2015 EPA MSGP lists the following specific items that must be included in the SWPPP:

- **Stormwater Pollution Prevention Team** identifying individuals responsible for developing, implementing, maintaining, and revising the SWPPP.
- Description of industrial activities at the facility.
- General location map depicting the facility and location of receiving waters.
- Legible site map indicating:
 - Location of potential pollutant sources and significant materials exposed to precipitation.
 - Locations of all stormwater conveyances including ditches, pipes, and swales.
 - Direction of stormwater flow.
 - Location of existing control measures.
 - Location of all surface water bodies.
 - Location where major spills or leaks have occurred.
 - Locations of activity areas exposed to precipitation, including fueling stations, vehicle and equipment maintenance and/or cleaning areas, processing and storage areas, access roads, etc.
 - Locations of stormwater inlets, outfalls and outline of areas draining to such outfalls.

- Location and description of non-stormwater discharges.
- Location and source of runoff from adjacent property containing significant quantities of pollutants of concern.
- Summary of potential pollutant sources.
- Areas of spills and leaks during prior three-year period.
- Documentation of non-stormwater discharge evaluations.
- Location of salt storage areas.
- Summary of sampling data.
- **Stormwater controls** to include a description of existing and planned control measures.
- **Summary of schedules and procedures** pertaining to control measures, and monitoring and inspections.
- **Documentation to support eligibility considerations** for other federal laws such as those regarding endangered species or historic properties.

These items are detailed in Section 5 of the EPA's 2015 MSGP, which covers the general requirements for a SWPPP. In addition, the EPA MSGP contains sector-specific SWPPP requirements, which are found in Section 8 of the EPA 2015 MSGP. Finally, a state general permit may contain different and/or additional required items. The inspector should have the applicable state general permit for stormwater discharges associated with industrial activities.

Additionally, regulated small MS4s require post-construction stormwater management in new development and redevelopment projects. Post-construction stormwater management is required on projects that disturb greater than or equal to one acre, including projects less than one acre that are part of a larger common plan of development or sale, that discharge into a regulated small MS4. The permittee is required to develop, implement, and enforce a program to address stormwater runoff, including the development, implementation, and long-term operation and maintenance of best management practices (BMPs) appropriate for the community. Such BMPs may include stormwater detention structures, infiltration measures, or velocity dissipation devices installed in outfall channels to prevent erosion. Each state has developed its own program listing the criteria for post-construction BMPs to ensure water quality is maintained after the construction project has been completed. For a list of state programs, visit: https://www3.epa.gov/npdes/pubs/sw_state_summary_standards.pdf.

NOTE: As defined in 40 CFR 122.26(b)(12), significant materials include, but are not limited to: raw materials; fuels; materials such as solvents, detergents, and plastic pellets; finished materials such as metallic products; raw materials used in food processing or production; hazardous substances designated under section 101(14) of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA); any chemical the facility is required to report pursuant to section 313 of Title III of Superfund Amendments and Reauthorization Act (SARA) (<http://www2.epa.gov/epcra/consolidated-list-lists>); fertilizers; pesticides; and waste products such as ashes, slag, and sludge that have the potential to be released with stormwater discharges.

The SWPPP may incorporate or may be incorporated into other plans that the facility has prepared for other permits or programs, including spill prevention control and countermeasure (SPCC) Plans and BMP programs (specific practices or actions used to reduce or control impacts to water bodies).

SWPPP Implementation/In the Field

In the field, the inspector should verify that the map and description of potential pollutant sources in the SWPPP reflect current conditions. In addition, the inspector should verify that measures and controls described in the SWPPP are being implemented as described in the SWPPP. These measures and controls will include items such as:

- Good housekeeping or upkeep of industrial areas exposed to stormwater.
- Preventive maintenance of stormwater controls and other facility equipment.
- Spill prevention and response procedures to minimize the potential for and the impact of spills.
- Inspections of areas where industrial materials or activities are exposed to stormwater, including evaluation of existing control measures.
- Employee training on pollution prevention measures and controls and recordkeeping (described in detail below).
- Stabilization measures or structural controls to limit soil erosion.
- Traditional stormwater management measures (e.g., oil/water separators, vegetative swales, detention ponds) where they are appropriate for the site.

The inspector should ensure that, if corrective action is needed, the permittee immediately takes all reasonable steps necessary to minimize or prevent the discharge of pollutants until a permanent solution is installed and made operational, including cleaning up any contaminated surfaces so that the material will not discharge in subsequent storm events. Any corrective actions taken should be recorded and the documentation kept on-site with the SWPPP. Additionally, the inspector should verify that the permittee modifies the SWPPP as necessary, when a corrective action results in a change in the control measures implemented on-site.

The inspector should evaluate any SWPPP implementation schedules developed by the facility (e.g., dates for putting improved housekeeping measures into practice). The inspector should also determine whether appropriate individuals are assigned to implement the SWPPP and whether these individuals are aware of the implications of that designation. If the SWPPP calls for installation of structural controls, the inspector should verify that the controls are in place and in good working order, or that the facility is meeting its scheduled for installing control features. The inspector should ensure that facility management approves of the implementation schedule and strategy, and is aware of the SWPPP process. The inspector should document stormwater discharges observed during the inspection, taking photographs as necessary to record the observation. The inspector may use the NPDES Industrial Stormwater Investigation and Case Development Worksheet (Industrial), included in Appendix R, to record observations. The NPDES Industrial Stormwater Worksheet contains the components of the industrial stormwater program that should be evaluated during the inspection. The inspection

may use the Industrial Source Control BMP Questions sheet, located in Appendix S, as a resource for recording observations on the condition of on-site stormwater control measures.

In general, SWPPP implementation includes employee training on how to carry out the provisions of the SWPPP and how to implement control measures. In addition, employee training on the components and goals of the SWPPP must, if required by the permit, be performed at all levels of responsibility. The inspector should verify that there are training programs and that the training focuses on spill prevention and response, good housekeeping practices, materials management, and how to perform inspections. Site-specific control measures for industrial activities are summarized in Table 11-6.

MONITORING (INCLUDING SELF-INSPECTIONS)

Self-Inspections

Routine Facility Inspections

The SWPPP must, if required by the permit, have procedures for routine site inspections to be performed at least quarterly at the facility. These consist of examination of stormwater discharges and control measures, looking for indications of stormwater pollutants in the discharge and are intended to determine the need for additional maintenance, good housekeeping, or other control measures. During the quarterly site inspections, qualified personnel must examine the following:

- Industrial materials, residue, or trash that may have or could come into contact with stormwater.
- Leaks or spills from industrial equipment, drums, tanks and other containers.
- Off-site tracking of industrial or waste materials, or sediment where vehicles enter or exit the site.
- Tracking or blowing of raw, final, or waste materials from areas of no exposure to exposed areas.
- Control measures needing replacement, maintenance, or repair.

Quarterly Visual Assessment of Stormwater Discharges

In addition to routine inspections, the permittee must collect a stormwater sample from each outfall and conduct a visual assessment of each of the samples, looking for indications of stormwater pollutants in the outfall discharge. These samples must be collected in such a manner that the samples are representative of the stormwater discharge. During the quarterly visual assessment, qualified personnel must inspect the samples for:

- Color
- Odor
- Clarity (diminished)
- Floating solids
- Settled solids
- Suspended solids

- Foam
- Oil sheen
- Other obvious indicators of stormwater pollution

Both routine facility inspections and quarterly monitoring inspections must be documented and the documentation must be maintained on-site with the SWPPP.

Monitoring Requirements

There are several distinct categories of monitoring requirements and numeric effluent limitations that the facility may be subject to under the 2015 EPA MSGP: 1) quarterly benchmark monitoring, 2) annual effluent limitations guidelines monitoring, 3) state- or tribal-specific monitoring, 4) impaired waters monitoring, and 5) other monitoring required by the permit authority. The monitoring requirements, benchmark concentrations and numeric effluent limitations applicable to the facility depend on several factors, including 1) the type(s) of industrial activities generating stormwater runoff from the facility (i.e., the subsector); 2) the impairment status of the receiving waterbodies; and 3) the state, tribe, or territory where the facility is located. Depending on the facility's sector (identified in MSGP Section 1.1.2), different monitoring requirements and numeric limitations apply. The 2015 EPA MSGP includes specific benchmark monitoring requirements for certain classes of industrial sites based on the pollutants they potentially discharge. State NPDES permitting authorities may, if authorized by state law, include more stringent monitoring conditions (CWA section 510 preserves such authority). Therefore, the inspector should review the facility's permit to identify such requirements.

For specific monitoring requirements, the inspector should review EPA's most current MSGP (where applicable), the state NPDES permit, or the facility-specific individual permit. The permit will contain specific conditions as to the sample type, location, frequency, as well as the specific parameters that must be analyzed. If it is necessary for the inspector to collect samples, the inspector should refer to Chapter 5 of this manual and to EPA's *Industrial Stormwater Monitoring and Sampling Guide* (EPA, 2009) for specific details on sampling and analyses.

Table 11-3. SIC Codes Regulated for Stormwater Discharges	
SIC	Description
MINING	
10	Metal Mining
12	Coal Mining
13	Oil and Gas Extraction
14	Mining and Quarrying or Nonmetallic Minerals, Except Fuels
MANUFACTURING	
20	Food and Kindred Products
21	Tobacco Products
22	Textile Mill Products
23	Apparel and Other Finished Products Made from Fabrics and Similar Materials

Table 11-3. SIC Codes Regulated for Stormwater Discharges

SIC	Description
24	Lumber and Wood Products, Except Furniture
2434	Wood Kitchen Cabinets
25	Furniture and Fixtures
26	Paper and Allied Products
265	Paperboard Containers and Boxes
267	Converted Paper and Paperboard Products, Except Containers and Boxes
27	Printing, Publishing, and Allied Industries
28	Chemicals and Allied Products
283	Drugs
285	Paints, Varnishes, Lacquers, Enamels, and Allied Products
29	Petroleum Refining and Related Industries
30	Rubber and Miscellaneous Plastic Products
31	Leather and Leather Products
311	Leather Tanning and Finishing
32	Stone, Clay, Glass, and Concrete Products
323	Glass Products, Made of Purchased Glass
33	Primary Metals Industry
34	Fabricated Metal Products, Except Machinery and Transportation Equipment
3441	Fabricated Structural Metal
35	Industrial and Commercial Machinery and Computer Equipment
36	Electronic and Other Electrical Equipment and Components, Except Computer Equipment
37	Transportation Equipment
373	Ship and Boat Building and Repairing
38	Measuring, Analyzing, and Controlling Instruments; Photographic, Medical and Optical Goods; Watches and Clocks
39	Miscellaneous Manufacturing Industries
TRANSPORTATION, COMMUNICATIONS, ETC.	
40	Railroad Transportation
41	Local and Suburban Transit and Interurban Highway Passenger Transportation
42	Motor Freight Transportation and Warehousing
4221	Farm Product Warehousing and Storage
4222	Refrigerated Warehousing and Storage
4225	General Warehousing and Storage
43	United States Postal Service
44	Water Transportation
45	Transportation by Air
WHOLESALE TRADE	
50	Wholesale Trade—Durable Goods
5015	Motor Vehicle Parts, Used
5093	Scrap and Waste Material
51	Wholesale Trade—Nondurable Goods
5171	Petroleum Bulk Stations and Terminals

Table 11-4. Industrial Categories Associated with Industrial Activity

The 11 categories engaging in industrial activity are described below. Descriptions of SIC codes applicable to the stormwater regulations are provided in Table 11-4.

- (i) Facilities subject to stormwater effluent limitations guidelines, new source performance standards, or toxic pollutant effluent standards under 40 CFR chapter I, subchapter N (except facilities with toxic pollutant effluent standards that are exempted under category (xi) below.
- (ii) Facilities classified as SIC 24 (except 2434), 26 (except 265 and 267), 28 (except 283), 29, 311, 32 (except 323), 33, 3441, and 373.
- (iii) Facilities classified as SIC 10 through 14 (mineral industry) including active or inactive mining operations (except for areas of coal mining operations no longer meeting the definition of a reclamation area under 40 CFR 434.11(l) because the performance bond issued to the facility by the appropriate SMCRA authority has been released, or except for areas of non-coal mining operations that have been released from applicable state or federal reclamation requirements after December 17, 1990) and oil and gas exploration, production, processing, or treatment operations, or transmission facilities that discharge stormwater contaminated by contact with or that has come into contact with, any overburden, raw material, intermediate products, finished products, byproducts or waste products located on the site of such operations; (inactive mining operations are mining sites that are not being actively mined, but which have an identifiable owner/operator; inactive mining sites do not include sites where mining claims are being maintained prior to disturbances associated with the extraction, beneficiation, or processing of mined materials, nor sites where minimal activities are undertaken for the sole purpose of maintaining a mineral claim).
- (iv) Hazardous waste treatment, storage, or disposal facilities, including those that are operating under interim status or a permit under subtitle C of RCRA.
- (v) Landfills, land application sites, and open dumps that receive or have received any industrial wastes (waste that is received from any of the facilities described under this subsection) including those that are subject to regulation under subtitle D of RCRA.
- (vi) Facilities involved in the recycling of materials, including metal scrap yards, battery reclaimers, salvage yards, and automobile junkyards, including but not limited to those classified as SIC 5015 and 5093.
- (vii) Steam electric power generating facilities, including coal handling sites.
- (viii) Transportation facilities classified as SIC 40, 41, 42 (except 4221-25), 43, 44, 45, and 5171 that have vehicle maintenance shops, equipment cleaning operations, or airport deicing operations. Only those portions of the facility that are either involved in vehicle maintenance (including vehicle rehabilitation, mechanical repairs, painting, fueling, and lubrication), equipment cleaning operations, airport deicing operations, or that are otherwise identified under paragraphs (i)–(vii) or (ix)–(xi) of this section are associated with industrial activity.
- (ix) Treatment works treating domestic sewage or any other sewage sludge or wastewater treatment device or system, used in the storage, treatment, recycling, and reclamation of municipal or domestic sewage, including land dedicated to the disposal of sewage sludge that are located within the confines of the facility, with a design flow of 1.0 million gallons a day (MGD) or more, or required to have an approved pretreatment program under 40 CFR Part 403.

Table 11-4. Industrial Categories Associated with Industrial Activity

Not included are farm lands, domestic gardens or lands used for sludge management where sludge is beneficially reused and that are not physically located in the confines of the facility, or areas that are in compliance with section 405 of the CWA.

- (x) Construction activity including clearing, grading and excavation activities except: operations that result in the disturbance of less than five acres of total land area that are not part of a larger common plan of development or sale. Note—this category of industrial activity is typically covered under a construction stormwater general permit, and not an industrial stormwater general permit.
- (xi) Facilities under SIC 20, 21, 22, 23, 2434, 25, 265, 267, 27, 283, 285, 30, 31 (except 311), 323, 34 (except 3441), 35, 36, 37 (except 373), 38, 39, 4221–4225, (and which are not otherwise included within categories (i)–(x)).

Table 11-5. Examples of Site-Specific Industrial Stormwater Control Measures

Flow Diversion Practices: Flow diversion channels stormwater away from industrial activities to prevent stormwater contact with industrial pollutants. Additionally, flow diversion may be used to channel polluted stormwater directly to a treatment facility.

Flow diversion practices include stormwater conveyances (e.g., channels, gutters, drains, and sewers), diversion dikes, and graded areas and pavement.

Exposure Minimization Practices: Exposure minimization eliminates or minimizes the contact of stormwater with industrial activities and its pollutants. If contact of stormwater with pollutants can be minimized, the costs of collecting and treating and stormwater and the environmental releases that occur will be reduced.

Exposure minimization practices include containment diking, curbing, drip pans, collection basins, sumps, covering, vehicle positioning, and loading and unloading by air pressure or vacuum.

Mitigative Practices: Mitigation cleans up or recovers a substance (i.e., potential pollutant) before it contacts stormwater. Mitigation is a second step after pollution prevention.

Mitigative practices include sweeping, shoveling, excavation practices, vacuum and pump systems, sorbents, and gelling agents.

Other Preventative Practices: Other preventative practices can be taken to limit/prevent the exposure of stormwater to industrial activities. These practices may be either structural or procedural measures taken to reduce/eliminate exposure.

Other preventative practices include preventative monitoring practices, dust control (land disturbances and demolition areas), dust control (industrial activities), signs and labels, security, area control procedures, and vehicle washing.

Sediment and Erosion Prevention Practices: Sediment and erosion prevention can be accomplished using seven general practices: vegetate the site, minimize soil exposure to stormwater, keep runoff

Table 11-5. Examples of Site-Specific Industrial Stormwater Control Measures

from disturbed areas, stabilize disturbed soils, slow down runoff, provide drainage ways for runoff, and remove sediment from the runoff before it leaves the site.

Sediment and erosion prevention practices include vegetative practices, structural erosion prevention, and sediment control practices.

Infiltration Practices: Infiltration practices are measures that increase the infiltration of stormwater runoff into the ground using very porous soils. Infiltration practices may also reduce the velocity of stormwater, thereby minimizing erosion potential of the runoff.

Infiltration practices include vegetated filter strips, grassed swales, level spreaders, infiltration trenches, and porous pavements/concrete grids and modular pavements.

For more examples of industrial stormwater control measures, visit <https://www.epa.gov/npdes/stormwater-discharges-industrial-activities#overview>

C. STORMWATER DISCHARGES ASSOCIATED WITH CONSTRUCTION ACTIVITY

APPLICABILITY (WHO IS COVERED)

Stormwater discharged from construction sites is a significant contributor of sediment to our surface waters. Sediment-laden construction stormwater discharges can result in aquatic habitat destruction and detrimental changes to hydrologic patterns, including increased stream flows and flooding. Total suspended solids (TSS) concentrations from uncontrolled construction site discharges can be more than 150 times greater than the concentration of TSS from stormwater discharges on undeveloped land.

Large Construction Activity

As mentioned earlier, the Phase I Rule identifies eleven categories of industrial activity in the definition of “stormwater discharge associated with industrial activity” that must obtain a NPDES stormwater discharge permit (see Section 11.B). Category (x) of this definition includes construction activity (including clearing, grading, and excavation) that results in a total land disturbance of 5 acres or greater. Disturbances of less than 5 acres are also regulated under category (x) if they are part of a “larger common plan of development of sale” with a planned disturbance of 5 acres or greater. Phase I construction activity is commonly referred to as “large” construction activity. The Phase I rule requires all operators of large construction activity to obtain a NPDES stormwater discharge permit before discharging stormwater runoff to a municipal separate storm sewer system or waters of the United States.

Construction activities can include road building, construction of residential houses, office buildings, industrial sites, or demolition.

Land disturbance can include exposed soil due to clearing, grading, or excavation activities.

Larger common plan of development or sale describes a situation in which multiple construction activities occur in a contiguous area.

An operator is a person that has either operational control of construction project plans and specifications, or day-to-day operational control of activities necessary to ensure compliance with stormwater permit conditions.

Small Construction Activity

Under Phase II stormwater regulations, stormwater discharges from construction site activities that result in a land disturbance equal to or greater than 1 acre and less than 5 acres are regulated as “stormwater discharges associated with small construction activity” (see 40 CFR 122.26(b)(15)). Construction activities disturbing less than 1 acre are also included in Phase II of the NPDES stormwater program if they are part of a larger common plan of development or sale with a planned disturbance of equal to or greater than 1 acre and less than 5 acres, or if they are designated by the NPDES permitting authority.

Small Construction Waivers

Small construction activity does not require permit coverage when the construction operator can certify one of two waivers (see 40 CFR 122.26(b)(15)(i)(A) and (B)). Under the Phase II Rule, NPDES permitting authorities have the option to provide a waiver from Phase II coverage and requirements when the operator certifies to one of two conditions:

1. Low predicted rainfall potential (i.e., activity occurs during a negligible rainfall period), where the rainfall erosivity factor (“R” in the Revised Universal Soil Loss Equation (RUSLE) would be less than 5 during the period of construction activities).
2. A determination that stormwater controls are not necessary based on either:
 - a. A “total maximum daily load” (TMDL) that address the pollutant(s) of concern⁸ for construction activities.
 - b. An equivalent analysis for non-impaired waters that determines allocations are not needed to protect water quality based on consideration of in-stream concentrations, expected growth in pollutant concentrations from all sources, and a margin of safety.

To qualify for the Rainfall Erosivity Factor Waiver, the construction site operator must determine the value of the rainfall erosivity factor (R factor) in the RUSLE and then certify to the permitting authority that the factor is less than 5 during the period of construction. A construction site operator will need site-specific data to calculate the values for rainfall erosivity using RUSLE. Calculations may also be made online by going to the Low Erosivity

⁸ Pollutants of concern include sediment, parameters that address sediment (such as total suspended solids, turbidity, or siltation) and any other pollutant identified as a cause of impairment for a receiving waterbody.

Waiver (LEW) Calculator found at <https://www.epa.gov/npdes/rainfall-erosivity-factor-calculator-small-construction-sites>.

To qualify for the Water Quality Waiver, the operator of the construction site would need to certify that the facility's construction activity will take place, and the stormwater discharges will occur, within the area covered by the TMDLs or equivalent analysis. A certification form is provided by EPA or the NPDES permitting authority.

An inspector should verify that the construction project qualifies for a waiver. Small construction activities disturbing less than 1 acre previously designated by the permitting authority to need NPDES coverage are not eligible for these waivers.

PERMIT APPLICATIONS FOR STORMWATER DISCHARGES ASSOCIATED WITH CONSTRUCTION ACTIVITY

Operators of both small and large construction activities (with limited exceptions discussed above) must obtain coverage under a NPDES construction stormwater permit. Where EPA is the NPDES permitting authority, the EPA Construction General Permit (CGP), issued on February 16, 2017, was, at publication, the only general permit option available. The EPA CGP can be used for discharges from construction sites that will disturb one acre or more where EPA is the permitting authority. The permit and associated resources are located at <http://www.epa.gov/npdes/stormwater-discharges-construction-activities#overview>. In areas where a state is the NPDES permitting authority, construction site operators must obtain coverage under a state-issued permit. NPDES-authorized states typically issue their own CGPs. However, if an EPA or state-issued CGP is either not available or not applicable to a particular construction site, operators must apply for an individual permit. For a list of state construction general permits see <http://www.envcap.org/statetools/swrl/swrl.html> or <https://ofmpub.epa.gov/apex/aps/f?p=GPWI:HOME>.

General Permit/Notice of Intent

Much like the industrial facilities that apply for general permits, operators of construction sites that apply for permit coverage under an EPA or state-issued CGP must complete, certify, and submit to the appropriate NPDES permitting authority an NOI form or other applicable application form. The NOI requests a variety of information, including, for the EPA NOI form, information related to the Endangered Species Act and the National Historic Preservation Act (as described in the "NOI for Stormwater Discharges Associated with Industrial Activity" section earlier in this chapter). The key component of EPA and state-issued CGPs is the development and implementation of a construction SWPPP. For sites with multiple operators, EPA encourages but does not require these operators to develop one comprehensive SWPPP with specific requirements for each operator identified. Other requirements include conducting regular inspections and reporting releases of reportable quantities of hazardous substances. Operators may also be required to comply with local, state, or tribal construction runoff control programs as specified in the permit. To discontinue permit coverage, an operator of a construction activity must complete and submit to the appropriate NPDES permitting authority an NOT form upon satisfying the appropriate permit termination conditions described in the CGP. An example NOT form can be found in Appendix T.

NOIs must be submitted in the timeframe specified in the applicable general permit. For new projects and existing projects transferring to new operators covered under EPA's CGP, the deadline to submit an NOI is at least 14 days prior to commencement of construction. Electronic filing of NOI's (eNOI) is now available for operators where EPA is the permitting authority at <https://www.epa.gov/npdes/stormwater-discharges-construction-activities#ereporting>. The new project becomes covered under the permit 14 days after EPA acknowledges the receipt of the NOI.

EPA regulations allow permitting authorities to authorize discharges under a general permit for small construction sites without them submitting an NOI, when the permitting authority finds that NOIs would be inappropriate. While EPA does not currently implement this allowance, some states have opted to permit small construction that way (i.e., no NOI required to be covered under the state CGP). A brochure on stormwater pollution prevention for small construction sites can be found at <https://www.epa.gov/npdes/developing-stormwater-pollution-prevention-plan-swppp>

Individual Permit

In the event that an operator of a small or large construction activity chooses to apply for an individual permit, or if the NPDES permitting authority requires the operator to submit an individual NPDES permit application (based on information such as water quality data), or if any of the discharges of stormwater associated with small construction activity identified in 40 CFR 122.26(b)(15) are not authorized by the general permit, the operator is subject to the individual application requirements found at 40 CFR 122.26(c)(1)(ii).

Establishing Eligibility for Coverage under EPA's CGP

Endangered Species Act

EPA's CGP requires the construction site operator to certify their eligibility regarding the protection of threatened and endangered ("listed") species and their critical habitat. Permittees must meet the eligibility criteria that EPA developed in consultation under Section 7 of the Endangered Species Act (ESA) with the Fish and Wildlife Service (FWS) and the National Marine Fisheries Service (together, the Services). This certification is unique to EPA's NOI and is not a requirement of most NPDES-delegated states' NOIs. Permittees must follow the procedures in Appendix D of the 2017 CGP and should consult with the state or regional services offices when appropriate. Documentation supporting eligibility under this provision must be included in the facility's SWPPP.

NOIs require certification that the construction activity will not jeopardize endangered or threatened species protected under the ESA. As mentioned above, this NPDES certification requirement is unique to EPA's NOI. All dischargers applying for coverage must include in the application information on the NOI form: 1) whether listed species are in proximity to the stormwater or allowable non-stormwater discharges or discharge-related activity; 2) under which option of the CGP they claim eligibility for permit coverage, and 3) certification that their stormwater and allowable non-stormwater discharges and discharge related activities are not likely to jeopardize listed species, or are otherwise eligible for coverage due to a previous authorization under the ESA. The permittee should consult with applicable state or regional U.S.

Fish and Wildlife Service and/or National Marine Fisheries Service offices to make these determinations of eligibility.

National Historic Preservation Act

The National Historic Preservation Act (NHPA) requires federal agencies to consider the effects of federal undertakings, including EPA-issued NPDES general permits. Where operators install or modify control measures that involve subsurface disturbance, the area of potential effect (APE) for the activities performed to comply with the permit, for historic preservation purposes, is limited to the location and depth of the earth disturbance associated with the installation or modification of the stormwater control measures. NHPA eligibility procedures that permittees are required to follow are included in Appendix E of the 2017 CGP. Operators need only consider the APE when doing the historic properties screening procedures to determine their eligibility criteria in Appendix E. An electronic listing of the “National Register of Historic Places,” as maintained by the National Park Service, can be accessed at <http://www.nps.gov>.

Safe Drinking Water Act Underground Injection Control (UIC) Requirements for Certain Subsurface Stormwater Controls

The Safe Drinking Water Act (SDWA) requires that certain provisions be followed for the use of underground injection wells as a form of subsurface stormwater control. Such controls would generally be considered Class V UIC wells: Infiltration trenches (if stormwater is directed to any bored, drilled, driven shaft or dug hole that is deeper than its widest surface dimension, or has a subsurface fluid distribution system); Commercially manufactured pre-cast or pre-built proprietary subsurface detention vaults, chambers, or other devices designed to capture and infiltrate stormwater flow; and Drywells, seepage pits, or improved sinkholes (if stormwater is directed to any bored, drilled, driven shaft or dug hole that is deeper than its widest surface dimension, or has a subsurface fluid distribution system). The SWPPP must document any contact with the applicable state agency or EPA Regional Office responsible for implementing the requirements for underground injection wells in the Safe Drinking Water Act and EPA’s implementing regulations at 40 CFR Parts 144–147.

STORMWATER POLLUTION PREVENTION PLAN REQUIREMENTS

The SWPPP as required by the EPA or state-issued CGP must be prepared prior to submission of the NOI. The construction project should follow the provisions of the SWPPP throughout the construction period, as the SWPPP represents what the operator plans to do to meet the effluent limits in the permit. Under EPA’s 2017 CGP, the SWPPP must be signed by a responsible official such as the president, vice president, or general partner. The construction facility must keep the SWPPP on-site throughout the entire construction period or at an easily accessible location so that it can be made available at the time of an on-site inspection or upon request by EPA. The SWPPP must be submitted for review under EPA’s CGP only when requested by EPA, although some permitting authorities may require submission of the SWPPP along with the NOI.

For large or complex construction sites the inspector may want to request a copy of the SWPPP prior to inspection to ensure familiarity with the site during the inspection. Otherwise, the

inspector should obtain a copy of and review the SWPPP or at least parts of the SWPPP during the inspection. At a minimum, the inspector should review the site map prior to conducting the field inspection to understand the site and the existing/planned stormwater controls.

Depending on the time available for the inspection and the size of the SWPPP, the inspector may complete the remaining portion of the SWPPP review when he or she returns to the office.

In reviewing the SWPPP, the inspector should evaluate if it contains all the required elements specified in the permit (either the most current EPA CGP, the state CGP in NPDES-authorized states, or an individual permit issued for the site). The EPA CGP requires that the SWPPP identify potential sources of pollution that may reasonably be expected to affect the quality of stormwater discharges, and describe and ensure implementation of practices that the operator will use to reduce pollutants in its stormwater discharges. Reviewing the SWPPP implementation is covered in the next section. The following items, which are included in the EPA 2017 CGP, are typically required in all SWPPPs, although the inspector should always refer to the specific permit applicable to a particular construction site:

- **Identification of the stormwater team.**
- **A description of the nature of the construction activity.**
- **Emergency-related projects.**
- **Identification of other site operators.**
- **A sequence (schedule) of major construction activity.**
- **A site map** indicating construction area boundaries, locations of all surface waters, natural buffers, federally-listed critical habitat for endangered or threatened species, topography of site, existing vegetative cover, storm drain inlets, drainage patterns, discharge locations, potential pollutant-generating activities, stormwater control measures, and chemical use and storage areas.
- **Construction site pollutants.**
- **Non-stormwater discharges.**
- **Buffer documentation.**
- **Description of stormwater control measures** including the measures to be used, use of treatment chemicals, and stabilization practices.
- **Pollution prevention procedures** including spill prevention and response and waste management.
- **Procedures for inspection, maintenance, and corrective action.**
- **Staff training.**
- **Documentation of compliance with other federal requirements.**
- **SWPPP certification.**
- **Post-authorization additions to the SWPPP** including copies of the NOI, acknowledgement letter, and the permit.

Typically, measures and controls should include the following:

- **Install erosion and sediment controls**—The permittee is required to complete installation of stormwater controls by the time each phase of earth-disturbance has begun, unless infeasible, and to install these controls according to good engineering practices. The permittee must also ensure that all erosion and sediment controls remain in effective operating condition during permit coverage and are protected from activities that would reduce their effectiveness.
- **Provide natural buffers or equivalent sediment controls**—The permittee is required to ensure that any discharges to surface waters through the area between the disturbed portions of the property and any surface waters located within 50 feet of the construction site are treated by an area of undisturbed natural buffer and/or additional erosion and sediment controls to achieve a reduction in sediment load equivalent to that achieved by a 50-foot natural buffer. If it is infeasible for the construction site to maintain a 50-foot natural buffer between earth disturbances and surface waters, erosion and sediment controls may be used. In this case, the permittee must first determine the estimated sediment removal efficiency of a 50-foot natural buffer for the construction site. Appendix G of the CGP contains sediment removal efficiency tables, which may be used to locate the sediment removal efficiencies of various buffer vegetation. Once the removal efficiency of a 50-foot natural buffer is determined, then the permittee should select stormwater controls that will provide an equivalent sediment load reduction.
- **Install perimeter controls**—The permittee must install sediment controls along those perimeter areas of the construction site that will receive stormwater from earth-disturbing activities. Sediment must be removed before it has accumulated to one-half of the above-ground height of any perimeter control.
- **Minimize sediment track-out**—The permittee must minimize the track-out of sediment onto off-site streets, other paved areas, and sidewalks from vehicles exiting the construction site.
- **Control discharges from stockpiled sediment or soil**—For any stockpiles or land clearing debris composed, in whole or in part, of sediment or soil, the permittee is required to:
 - a) locate the piles outside of any natural buffers,
 - b) protect from contact with stormwater (including run-on) using a temporary perimeter sediment barrier,
 - c) where practicable, provide cover or appropriate temporary stabilization to avoid direct contact with precipitation or to minimize sediment discharge,
 - d) do not hose down or sweep soil or sediment accumulated on pavement or other impervious surfaces into any stormwater conveyance (unless connected to a sediment basin, sediment trap, or similarly effective control), storm drain inlet, or surface water, and,
 - e) unless infeasible, contain and securely protect from wind.
- **Minimize dust**—To avoid pollutants from being discharged into surface waters, to the extent feasible, the permittee must minimize the generation of dust through the appropriate application of water or other dust suppression techniques.
- **Minimize the disturbance of steep slopes.**

- **Preserve topsoil.**
- **Minimize soil compaction**—In areas of the construction site where final vegetative stabilization will occur or where infiltration practices will be installed, the permittee must either restrict vehicle/equipment use or use soil conditioning techniques.
- **Protect storm drain inlets**—The permittee, where applicable, must install inlet protection measures that remove sediment from the discharge prior to entry into the storm drain inlet. The permittee is required to clean, or remove and replace, the protection measures as sediment accumulates, the filter becomes clogged, and/or performance is compromised.
- **Requirements applicable only to sites using these specific stormwater controls:**
 - Constructed stormwater conveyance channels—The permittee should design stormwater conveyance channels to avoid unstabilized areas on the site and to reduce erosion, unless infeasible.
 - Sediment basins—The EPA CGP requires that when a temporary/permanent sediment basin is installed, it must provide storage for either the calculated volume of runoff from a 2-year, 24-hour storm or 3,600 cubic feet per acre drained.
 - Treatment chemicals—Water treatment chemicals, such as polymers and flocculants, may be used as a form of erosion and sediment control. However, cationic treatment chemicals may not be used under the CGP unless the EPA office authorizes coverage under this permit after appropriate controls and implementation procedures are developed. The permittee should use conventional erosion and sediment controls prior to and after the application of treatment chemicals. Chemicals may only be applied where treated stormwater is directed to a sediment control (e.g., sediment basin, perimeter control) prior to discharge. Chemicals must be selected that are appropriately suited to the types of soils likely to be exposed during construction and discharged to locations where chemicals will be applied, and to the expected turbidity, pH, and flow rate of stormwater flowing into the chemical treatment system or area. Treatment chemicals and chemical treatment systems should be used in accordance with dosing specifications and sediment removal design specifications provided by the provider/supplier of the applicable chemicals, or document specific departures from these practices or specifications and how they reflect good engineering practice.
 - Dewatering practices—The permittee is prohibited from discharging ground water or accumulated stormwater that is removed from excavations, trenches, foundations, vaults, or other similar points of accumulation, unless such waters are first effectively managed by appropriate controls.
- **Stabilization requirements**—Practices must be included for interim and permanent stabilization for the site, including a schedule of when the practices will be implemented. According to the EPA CGP, when construction activities temporarily or

permanently cease on a portion of the site, stabilization measures must be initiated immediately for erosion control.

- **Pollution prevention requirements**—The permittee is required to design, install, and maintain effective pollution prevention measures to prevent the discharge of pollutants. All pollution prevention controls installed must remain in effective operating condition and be protected from activities that would reduce their effectiveness. Certain discharges are prohibited, these include: wastewater from concrete washout, fuels, oils, soaps, solvents, detergents, and toxic or hazardous substances. The following activities require compliance with pollution prevention standards in accordance with CGP Part 2.3: fueling and maintenance of equipment or vehicles; washing of equipment and vehicles; storage, handling, and disposal of construction materials, products, and wastes; and, washing of applicators and containers used for paint, concrete, or other materials.
- **Emergency spill notification**—Where a leak, spill, or other release containing a hazardous substance or oil in an amount equal to or more than a reportable quantity established under either 40 CFR Part 110, 40 CFR Part 117, or 40 CFR Part 302 occurs during a 24-hour period, the permittee must notify the National Response Center (NRC).
- **Fertilizer discharge restrictions**—The permittee is required to minimize discharges of fertilizers containing nitrogen or phosphorus.

The Construction and Development Effluent Guidelines require that sediment controls be designed, installed and maintained to minimize the discharge of sediment from the site. Therefore, certain types of sediment controls such as sediment basins must be adequately sized to retain or detain the appropriate volume of stormwater runoff. The inspector should refer to the particular site's NPDES stormwater permit for specific design requirements related to capacity or volume, as well as any other design standards. For example, as noted above, EPA's 2017 CGP requires that sediment basins provide, at a minimum, storage for either the calculated volume of runoff from a 2-year, 24-hour storm or 3,600 cubic feet per acre drained. To determine whether stormwater controls at a construction site have been designed and installed with adequate capacity, the inspection should consider the following factors: the expected amount, frequency, intensity, and duration of precipitation; the nature of stormwater runoff and run-on at the site, including factors such as expected flow from impervious surfaces, slopes, and site drainage features; and, the range of soil particle sizes expected to be present on the site. These factors all affect the nature and quantity of runoff from the construction site. For instance, soils with a very small particle size (clay, silt) has a very low infiltration, meaning the site will likely experience a higher quantity runoff and a higher sediment load in the runoff compared to a site with higher infiltration (sandy soils). The inspector should consider these factors to determine if the stormwater controls implemented at a construction site are sufficient.

Appendix U, "Typical 'C' Coefficients," lists typical runoff coefficient values that may be used to determine the typical infiltration and runoff a certain area (residential, parks, streets, etc.). Additionally, the inspector may refer to Appendix V, "Rain Zones of the United States," to

determine the typical amount of rainfall a region receives, as an aid in evaluating stormwater control measure adequacy. Alternatively, the inspector may refer to EPA's National Stormwater Calculator (SWC), a desktop application, to estimate the annual amount of rainwater and frequency of runoff from a specific site anywhere in the United States. Estimates are based on local soil conditions, land cover, and historic rainfall records. The stormwater calculator may be found at <https://www.epa.gov/water-research/national-stormwater-calculator>.

The SWPPP must also specify the operator personnel who is responsible for inspecting the construction site and the frequency of the inspections. The EPA 2017 CGP requires that the operator inspect at least once every seven days regardless of rainfall, or at least every 14 days and within 24 hours of each rainfall of 0.25 inches or more. To determine if a storm event of 0.25 inches or greater has occurred at the construction site, the permittee must either keep a properly maintained rain gauge on-site, or obtain the storm event information from a weather station that is representative of the construction site location. The EPA inspector should determine how the permittee monitors and records rainfall and if this method is representative of the rainfall at the site and credible. One potential source of rainfall data that the EPA inspector can access in preparation for an inspection is provided by the National Oceanic and Atmospheric Administration (NOAA) and can be found through the National Climate Data Center's (NCDC's) online climate datasets. NCDC online climate datasets may be found at <https://www.ncdc.noaa.gov/cdo-web/>. The inspector should use appropriate rainfall data, either the data maintained by the permittee or provided by another acceptable source, to ensure that the permittee is in compliance with the required schedule for site inspections. Additionally, if rainfall occurred during or prior to an inspection, these datasets can be used to verify the amount of precipitation that has fallen. The NOAA rainfall worksheet, available in Appendix W, may be used to document rainfall.

Some permits may allow reduced monitoring frequencies for portions of sites that have achieved final stabilization (as defined by the applicable permit), or for sites that are in arid (defined as less than 10 inches of rain per year in the EPA 2017 CGP) or semi-arid (defined as 10 to 20 inches of rain per year in the EPA 2017 CGP) areas. EPA's 2017 CGP requires that these areas be inspected at least once a month. The inspector must prepare a report documenting his/her findings on the conditions of the controls and stabilized areas. The inspector should verify that documentation of the routine inspections is included in the SWPPP.

Some permits require an increase in inspection frequency for sites that discharge to a sediment of nutrient-impaired water or to a water that is identified by the state, tribe, or EPA as Tier 2, Tier 2.5, or Tier 3 for antidegradation purposes (see EPA 2017 CGP Part 4.3). For these sites, inspections should occur once every 7 calendar days and within 24 hours of a storm event of 0.25 inches or greater. Again, the inspector should verify that documentation of the routine inspections is included in the SWPPP.

The worksheet provided in Appendix X, "NPDES Industrial Storm Water Investigation and Case Development (Construction)," can be used to evaluate specific elements of the Stormwater Pollution Prevention Plan for construction activities.

SWPPP IMPLEMENTATION/IN THE FIELD

Are They Doing What the SWPPP Indicates?

When conducting the field inspection of a construction site, inspectors should note several items:

- A current copy of the SWPPP must be kept at the site or at an easily accessible location so that it can be made available at the time of an on-site inspection, or upon request by EPA. Significant delays in producing the SWPPP or finding knowledgeable stormwater personnel may indicate compliance problems.
- The opening conference with the owner/operator is extremely important. Often at larger residential construction sites, there will be multiple builders working together as co-permittees, each responsible for one or more aspects of SWPPP implementation. It is important to identify the permittee and/or co-permittees and their respective responsibilities under the permit.
- It is good practice to review the site map before conducting the inspection because if the inspector does not know the site boundaries, it is difficult to identify and evaluate the runoff potential. The inspector can download aerial photos prior to the inspection to use along with the site map.
- The SWPPP should reflect current conditions and provide a record of past conditions. The inspector should review the construction sequence and BMP sequence given in the SWPPP and evaluate whether these have been met.
- The closing conference provides an opportunity to describe deficiencies found and identify areas of concern (e.g., parts of a SWPPP missing, inspections not being done, silt fence not installed or not installed correctly, discharge of sediment or other pollutants to a storm drain). Given the transient nature of most construction sites, it is good practice to share information with the site owner/operator as quickly as possible (e.g., prior to issuance of final inspection report) so that any environmental harm can be minimized and corrections can be made prior to the next storm event.

In the field, the inspector should: verify that the SWPPP reflects current site conditions including identification of potential pollutant sources and control measures; verify whether structural control measures are properly installed, adequately maintained and in effective operating condition; verify whether nonstructural control measures such as stabilization and good housekeeping are being implemented as required by the SWPPP, are timely and are adequate and appropriate; document all discharges of stormwater observed by the inspector as well as evidence of previous discharges such as accumulation of sediment (whether off-site or in waters, or on-site in gutters, on the street, within storm drains, etc.); and document any evidence of the discharge of other pollutants such as concrete washout or paint.

The inspector should ensure that, if corrective action is needed, the permittee immediately takes all reasonable steps necessary to minimize or prevent the discharge of pollutants until a permanent solution is installed and made operational, including cleaning up any contaminated surfaces so that the material will not discharge in subsequent storm events. Any corrective

actions taken should be recorded and the documentation kept on-site with the SWPPP. Additionally, the inspector should verify that the permittee modifies the SWPPP as necessary, when a corrective action results in a change in the control measures implemented on-site.

EPA's 2017 CGP requires facilities to implement control measures and train employees on how to carry out the provisions of the SWPPP. The inspector should evaluate any implementation schedules developed by the facility for carrying out the SWPPP (e.g., dates for putting improved housekeeping measures into practice; installation of structural controls). The inspector should also determine whether appropriate individuals have been assigned to implement the specific aspects of the SWPPP, and whether these individuals are aware of the implications of that designation. At a minimum, the appropriate personnel must be trained to understand: the location of all stormwater controls on the site, how they are maintained; the proper procedures to follow with respect to the permit's pollution prevention requirements; and, when and how to conduct inspections, record applicable findings, and take corrective actions.

Examples of deficiencies an inspector may observe during a construction site inspection include:

- Silt fences that are improperly located or installed (e.g., bottom not buried), falling over, containing an excessive amount of accumulated sediment (e.g., EPA's 2012 requires that sediment be removed before it has accumulated to over one-half of the above-ground height of the perimeter control), or ripped so that the fence is not functioning properly.
- Poor housekeeping such as oil stains on soil; overturned drums; uncovered pails containing liquids; cluttered equipment storage with leaking fluids; fuel tanks with no containment; litter and debris scattered around the site; streets in need of sweeping.
- Storm drain inlet protection that is missing or ineffective such as inlets covered with sediment/debris; ruptured gravel bags with loss of gravel into drain; sediment accumulation resulting in clogging of the filter or otherwise compromising performance; improperly installed inlet protection that leaves gaps.
- Track-out controls that are missing or ineffective such as track-out pads filled with soil or not constructed to the length specified in the SWPPP; dirt being tracked out onto the road.
- Sediment not removed from sediment basins or sediment traps before accumulating to more than ½ the design capacity.
- Lack of proper recordkeeping.

Appendix Y, "Construction Source Control BMP Questions," contains a worksheet that the inspector can use to aid in the evaluation of stormwater control measures. Site-specific control measures for construction activities are summarized in Table 11-6.

Table 11-6. Site-Specific Construction Stormwater Control Measures

Stabilization Practices: Stabilization, which entails protecting bare earth, reduces erosion potential in four ways: 1) by shielding the soil surface from direct erosive impact of raindrops, 2) by improving the soil's water storage porosity and capacity, 3) by slowing the runoff and allowing the sediment to drop out or deposit; and 4) by physically holding the soil in place with plant roots. Vegetative (e.g., grasses, trees, or shrubs) covers are the most common type of stabilization.

Stabilization practices include temporary seeding, mulching, geotextiles, chemical stabilization, permanent seeding and planting, buffer zones, preservation of natural vegetation, sod stabilization, stream bank stabilization, soil retaining measures, and dust control.

Structural Erosion and Sediment Control Practices: Structural erosion and sediment controls divert stormwater flows away from exposed areas, convey runoff to a sediment basin or similarly effective control, capture sediment or otherwise prevent sediments from moving off-site, and reduce the erosive forces of runoff waters.

Structural erosion and sediment control practices include, but are not limited to, earth dikes, drainage swales, interceptor dikes and swales, temporary stream crossing, temporary storm drain diversion, pipe slope drains, subsurface drains, silt fence, gravel or stone filter berm, storm drain inlet protection, sediment trap, temporary and permanent sediment basins, outlet protection, check dams, surface roughening, and gradient terraces.

D. STORMWATER DISCHARGES FROM MUNICIPAL SEPARATE STORM SEWER SYSTEMS

APPLICABILITY (WHO IS COVERED)

Stormwater discharges from municipal separate storm sewer systems (MS4s) were initially regulated under the Phase I stormwater regulations, which were finalized in 1990. There is a two-part stormwater permit application process for medium (serving a population of 100,000 or more, but fewer than 250,000) and large (serving a population of more than 250,000) MS4s described in 40 CFR 122.26(d), pursuant to sections 402(p)(2)(C)–(D) of the CWA. The regulations define medium and large MS4s as those in the 220 cities listed in Appendix F and Appendix G or in the counties listed in Appendix H and Appendix I of 40 CFR Part 122. An MS4 may also be designated as a Phase I MS4 on a case-by-case basis (see 40 CFR 122.26(b)(4)(iii) and 122.26(b)(7)(iii)). In addition to the counties and cities listed in Appendices F – I, other smaller interrelated entities may be regulated under the Phase 1 program such as smaller municipalities, sewer districts or flood control districts that are physically connected to a Phase I MS4. In some states, only the urbanized portions of the state highway systems are regulated, but other states have issued state-wide permits to their Departments of Transportation (DOTs). To date, a total of approximately 1,000 entities (cities, counties, flood control districts etc.) are covered under 270 Phase I permits nationwide. The universe of Phase I MS4s was established under the 1990 Phase I stormwater regulations. Additional MS4 entities cannot be added to the Phase 1 universe but may be regulated under the Phase II regulations discussed below.

The Phase II Final Rule, which was finalized in 1999, requires NPDES permit coverage for stormwater discharges from certain small MS4s. Only a select subset of small MS4s, referred to as “regulated small MS4s,” require a NPDES stormwater permit. Small MS4s are defined as any MS4 that is not a medium or large MS4 covered by Phase I of the NPDES Stormwater Program. Regulated small MS4s are small MS4s located in “urbanized areas” (UAs) as defined by the Bureau of the Census and as determined by the latest Decennial Census, and those small MS4s located outside of a UA that are designated by NPDES permitting authorities. Small MS4s include publicly owned or operated separate storm sewer systems that are similar to such systems within municipalities, such as military bases, large hospital or prison complexes, and highways (40 CFR 122.26(b)(16)(iii)). A small MS4 can be designated by the permitting authority as a regulated small MS4 in one of two ways. One, the small MS4 located outside of a UA is designated as a regulated small MS4 by the NPDES permitting authority because its discharges cause, or have the potential to cause, an adverse impact on water quality. Two, the small MS4 located outside of a UA contributes substantially to the pollutant loadings of a physically interconnected MS4 regulated by the NPDES stormwater program. Note: In authorized states, the NPDES permitting authority was required to designate small MS4s meeting the designation criteria by December 9, 2002, or by December 8, 2004, if a watershed plan is in place (40 CFR 123.35(b)).

Waivers

Permitting authorities may waive permit coverage requirements for small MS4s otherwise regulated under the rule if the MS4s meet the necessary criteria set forth in the regulations. Waiver options are available to operators of small MS4s if discharges do not cause, or have the potential to cause water quality impairment. The state permitting authority is required to periodically review any waivers granted to MS4 operators to determine whether any information required for granting the waiver has changed. At a minimum, such a review needs to be conducted once every five years.

PERMIT APPLICATIONS FOR STORMWATER DISCHARGES FROM MUNICIPAL SEPARATE STORM SEWER SYSTEMS

Permits are required for discharges from regulated large, medium, and small municipal separate storm sewer systems. The permitting authority may also designate stormwater discharges via its residual designation authority. The permitting authority may issue one system-wide permit covering all discharges from multiple permittees within an interrelated municipal separate storm sewer system or issue individual permits to each MS4 on a jurisdictional basis.

Unlike the Phase I MS4 program that primarily utilizes individual permits, the Phase II approach allows operators of regulated small MS4s to choose from as many as three permitting options: 1) general permits (if available), 2) individual permits, or 3) modification of an existing Phase I Individual Permit (Co-Permittee Option). It must be noted that the NPDES permitting authority reserves the authority to determine which options are available to the regulated small MS4s. Where a general permit is available, operators of regulated small MS4s in urbanized areas seeking coverage under the general permit must submit their NOIs within 90 days of permit

issuance. Operators of small MS4s that have been designated by the permitting authority must submit their permit applications within 180 days of notice. Small MS4s must develop and fully implement an MS4 stormwater management program within five years of initial permit issuance.

In contrast to the Phase I MS4 program, the Phase II MS4 program has been designed specifically to accommodate a general permit approach. General permits prescribe one set of requirements for all permittees, though general permits can also include some specific requirements for specific permittees covered by the permit. General permits are drafted by the NPDES permitting authority, then published for public comment before being finalized and issued. A regulated small MS4 operator seeking coverage under a general permit must submit an NOI. The NOI fields are determined by the permitting authority, but generally ask the operator to describe its stormwater management program, including stormwater control measures and measurable goals. The MS4 owner/operator develops an individualized stormwater management program (SWMP) in accordance with the requirements of the permit that addresses the characteristics and needs of its system, subject to review by the permitting authority. Permittees also can choose to share responsibilities for meeting the Phase II program requirements, as provided in 40 CFR 122.35 and further explained below. Unless the permit specifies that another governmental entity is responsible to carry out one or more of the permit requirements, the permittee remains legally responsible for compliance with the permit.

As stated above, individual permits are mostly used for Phase I medium and large MS4s, while general permits are more common for Phase II program implementation. Individual permits prescribe a set of requirements for a permittee or a group of co-permittees. Individual permits require the submission of a permit application, while an NOI submitted for coverage under a general permit is usually less extensive. Once an application for an individual permit is received, the permit is drafted by the NPDES permitting authority, then published for public comment before being finalized and issued. The Phase II rule allows a regulated small MS4 to apply for an individual permit under either the Phase II MS4 program (see 40 CFR 122.34) or the Phase I MS4 program (see 40 CFR 122.26(d)). The NPDES permitting authority may allow more than one regulated entity to apply for one individual permit (i.e., co-permittees), as it may also do for Phase I MS4s.

Under the Phase II Rule, there are two permitting options tailored to minimize duplication of effort among co-permittees. These can be incorporated into both a general permit and an individual permit by the NPDES permitting authority. First, as mentioned above, under 40 CFR 122.35, the permitting authority can recognize in the permit that another governmental entity or the permitting authority itself is responsible under a NPDES permit for implementing any or all minimum measures. Responsibility for implementation of the measure(s) would rest with the other governmental entity, thereby relieving the permittee of its responsibility to implement that measure(s). Second, the permittee may rely on another entity to satisfy the permittee's obligations to implement one or more of the minimum control measures if the other entity agrees to implement the control measures on the permittee's behalf and in fact implements the requirement(s).

The operator of a regulated small MS4 could participate as a limited co-permittee in a neighboring Phase I MS4's stormwater management program by seeking a modification of the existing Phase I individual permit instead of seeking individual permit coverage under the Phase II rule. A list of Phase I medium and large MS4s can be obtained from the EPA Office of Wastewater Management (OWM), the EPA Region, or downloaded from the OWM web site at <http://www.epa.gov/npdes>. The MS4 must follow Phase I permit application requirements (with some exclusions).

STORMWATER MANAGEMENT PROGRAM (SWMP) DEVELOPMENT

Phase I MS4 SWMPs: Comprises Part of the Permit Application

Developing and implementing a stormwater management program (SWMP) is a key requirement of an MS4 permit. While existing structural and non-structural control measures for addressing discharges from MS4s must be described in Part 1 of the permit application, Part 2 of the application must set forth the proposed SWMP in accordance with 40 CFR 122.26(d)(2)(iv).

The discussion that follows provides a general description of SWMP requirements for MS4s. The inspector must review the MS4's permit for specific considerations. Each MS4 covered by a permit must develop a SWMP in accordance with the permit, tailored to system-specific conditions and designed to reduce the amount of pollutants in stormwater discharges from the system to the maximum extent practicable. The permitting authority has the right to review and request changes in the SWMP. Summaries of necessary components of these programs for MS4s are provided below for both large- and medium-size MS4s.

The SWMP must describe priorities for implementing controls and should be based on the following requirements:

1. Structural and source control measures to be implemented during the life of the permit to reduce pollutants from runoff from commercial and residential areas that are discharged from the MS4s. The SWMP must include an estimate of the expected reduction of pollutant loads and a proposed schedule for implementing such controls. At a minimum, the description in the SWMP must include:
 - Maintenance activities and a maintenance schedule for structural controls. The description should include priorities and procedures for inspections.
 - Planning procedures, including a comprehensive master plan, to develop, implement, and enforce controls to reduce discharges from areas of new development and significant redevelopment after construction is complete.
 - Practices for operating and maintaining public streets, roads, highways etc., and procedures for reducing the impact on receiving waters of discharges from MS4s, including pollutants discharged as a result of deicing activities.
 - Procedures to ensure that flood management projects assess the impacts on the water quality of receiving water bodies and that existing structural flood control

devices have been evaluated to determine if retrofitting is feasible for additional pollutant removal.

- Program to monitor pollutants in runoff from operating or closed municipal landfills or other treatment, storage, or disposal facilities for municipal waste, that identifies priorities and procedures for inspections and establishing and implementing control measures for such discharges.
 - Program to reduce, to the maximum extent practicable, pollutants in discharges from the application of pesticides, herbicides, and fertilizers. This may include educational activities, permits, certifications, and other measures for commercial applicators and distributors, and controls for application in public right-of-way and at municipal facilities.
2. A program to detect and remove (or to require the discharger to the MS4 to obtain a separate NPDES permit for) illicit discharges and improper disposal into the MS4, and to prevent such discharges. At a minimum, the proposed program must include descriptions of:
- Inspection procedures, to implement and enforce an ordinance, order, or similar means to prevent illicit discharges to the MS4 (note: there is a category of non-stormwater discharges or flows that shall be addressed where such discharges are identified by the owner/operator as sources of pollutants to waters of the United States (see 40 CFR 122.26(d)(2)(iv)(B)(1)).
 - Procedures to conduct ongoing field screening activities during the life of the permit.
 - Procedures to be followed to investigate where field screening or other information indicate a reasonable potential of illicit discharges or other sources of non-stormwater.⁹
 - Procedures to prevent, contain, and respond to spills that may discharge into the MS4.
 - Program to promote, publicize, and facilitate public reporting of the presence of illicit discharges or water quality impacts associated with discharges from MS4s.
 - Educational activities, public information activities, and other appropriate activities to facilitate the proper management and disposal of used oil and toxic materials.

⁹ For example, EPA has developed a draft New England Bacterial Source Tracking Protocol applicable to inspectors in Region 1. This protocol is appropriate under circumstances where the inspector suspects bacterial contamination. The protocol relies primarily on visual observations and the use of field test kits and portable instrumentation during dry and wet weather to complete a bacterial screening level investigation of stormwater outfall discharges or flows within the drainage system, in conjunction with sampling for pharmaceuticals and cosmetic to show a link with untreated illicit sewage discharges. The protocol can be found at: <https://www3.epa.gov/region1/npdes/stormwater/ma/2014AppendixI.pdf>

- Controls to limit infiltration of seepage from municipal sanitary sewers to MS4s where necessary.
3. Program to monitor and control pollutants in stormwater discharges to municipal systems from municipal landfills; hazardous waste treatment, disposal, and recovery facilities; industrial facilities that are subject to section 313 of SARA Title III; and industrial facilities that the municipal permit applicant determines are contributing a substantial pollutant loading to the MS4s. The program must include:
 - Priorities and procedures for inspections and establishing and implementing control measures for such discharges.
 - Monitoring program for stormwater discharges associated with industrial facilities identified above, to be implemented during the term of the permit, including the submission of quantitative data on constituents identified in 40 CFR 122.26(d)(2)(iv)(C)(2).
 4. Program to implement and maintain structural and non-structural best management practices to reduce pollutants in stormwater runoff from construction sites to the MS4. This program must include descriptions of:
 - Procedures for site planning that incorporate consideration of potential water quality impacts.
 - Requirements for non-structural and structural best management practices.
 - Procedures for identifying priorities for inspecting sites and enforcing control measures that consider the nature of the construction activity, the topography, and the characteristics of soils and receiving water quality.
 - Appropriate educational and training measures for construction site operators.

Phase II MS4 SWMP: Comprises Part of the Permit Application or Notice of Intent

The Phase II regulations require regulated small MS4s to develop SWMPs based on similar, but not identical, requirements as apply to medium/large MS4s. Small MS4 permits require at a minimum that the permittee develop, implement, and enforce a SWMP designed to reduce the discharge of pollutants from the MS4 to the maximum extent practicable, to protect water quality, and to satisfy the appropriate water quality requirements of the Clean Water Act. The Phase II requirements for SWMPs include the six minimum control measures described below:

1. Public education and outreach on stormwater impacts that distribute educational materials to the community or conduct equivalent outreach activities about the impacts of stormwater discharges on water bodies and the steps that the public can take to reduce pollutants in stormwater runoff.
2. Public involvement/participation on stormwater controls, at a minimum, complying with state, tribal and local public notice requirements.

3. Illicit discharge detection and elimination program that includes:
 - A storm sewer system map, showing the location of all outfalls and the names and location of all waters of the United States that receive discharges from those outfalls.
 - An ordinance or other regulatory mechanism (to the extent allowable under state law), that effectively prohibits non-stormwater discharges into the storm sewer system.
 - Appropriate enforcement procedures and actions.
 - A plan to detect and address non-stormwater discharges, including illegal dumping, to the system.
 - Outreach that informs public employees, businesses, and the general public of hazards associated with illegal discharges and improper disposal of waste.
4. Construction site stormwater runoff control program to reduce pollutants in any stormwater runoff to your small MS4 from construction activities that result in a land disturbance of greater than or equal to one acre (including construction activity disturbing less than one acre that is part of a larger common plan of development or sale that would disturb one acre or more). The program must include the development and implementation of, at a minimum:
 - An ordinance or other regulatory mechanism (to the extent allowable under state law) to require erosion and sediment controls, as well as sanctions to ensure compliance.
 - Requirements for construction site operators to implement appropriate erosion and sediment control best management practices.
 - Requirements for construction site operators to control waste such as discarded building materials, concrete truck washout, chemicals, litter, and sanitary waste at the construction site that may cause adverse impacts to water quality.
 - Procedures for site plan review that incorporate consideration of potential water quality impacts.
 - Procedures for receipt and consideration of information submitted by the public.
 - Procedures for site inspection and enforcement of control measures.
5. Post-construction stormwater management program in new development and redevelopment for projects that disturb greater than or equal to one acre, including projects less than one acre that are part of a larger common plan of development or sale, that discharge into the MS4. The controls must include strategies that include a combination of structural and/or non-structural best management practices (BMPs) appropriate for the community; use an ordinance or other regulatory mechanism to address

post-construction runoff from new development and redevelopment projects to the extent allowable under state, tribal or local law; and ensure adequate long-term operation and maintenance of control measures.

6. Pollution prevention/good housekeeping for municipal operations that includes a training component and has the ultimate goal of preventing or reducing pollutant runoff from municipal operations. Your program must include employee training to prevent and reduce stormwater pollution from activities such as park and open space maintenance, fleet and building maintenance, new construction and land disturbances, and stormwater system maintenance.

As part of the small MS4 NOI or individual permit application, the MS4 is required to identify the BMPs that will be implemented for each of the six minimum control measures listed above. In addition, the NOI or application must identify the measurable goals for each of the BMPs, including, as appropriate, the months and years in which the MS4 will take the required actions, including interim milestones, the frequency of the action, and the person or persons responsible for implementing or coordinating the SWMP.

SWMP IMPLEMENTATION/IN THE FIELD

The inspector should verify that the SWMP is being implemented as appropriate to meet the current circumstances in the municipality. Implementation of management programs requires the permittee to implement a variety of control measures, programs, and procedures that includes training of various individuals on how to carry out the goals of the program. The inspector should evaluate any implementation schedules specified in the permit or developed by the municipality for carrying out the program and determine whether appropriate individuals have been assigned to implement the specific aspects of the program and if these individuals are aware of the requirements of that designation. The inspector should evaluate the municipality's inspection and enforcement program for industrial facilities and construction sites. In addition, the inspector should verify whether the municipality's monitoring program and dry weather screening program is being implemented according to the permit schedule. If the program calls for the installation or maintenance of structural controls, the inspector should verify that the controls are in place and in good working order or that the facility is on an appropriate schedule for construction of the structural control measures. The inspector should ensure that the permittee is minimizing the discharge of pollutants in stormwater runoff. The inspector should document stormwater discharges and any dry weather discharges observed during the inspection, taking photographs as necessary to record the observation.

The inspection should consist of "in-office" and "in-field" activities. The purpose of the inspection is to evaluate the MS4's implementation of its permit and SWMP. In-office activities should include staff interviews and records review. Records review should be tailored to the MS4's permit and SWMP and can include review of annual reports, training materials, standard operating procedures for inspections and enforcement, inspection reports, and databases. Some of these records may be reviewed prior to or after the inspection. In-field activities should also be tailored to the MS4's permit and SWMP and can include visits to municipal facilities and yards, industrial facilities, municipal and private construction sites, and municipal

and private post-construction BMPs, as well as field screening. With the exception of municipal sites, the inspector should evaluate the effectiveness of the MS4 inspector, rather than leading the inspection during field activities. The inspector may refer to EPA's *MS4 Program Evaluation Guidance* (EPA, 2007) and EPA Region 3 Factsheet on *Evaluating the Effectiveness of Municipal Stormwater Programs* (EPA, 2008) for additional information on evaluating stormwater programs.

E. REFERENCES

The following is a list of resources providing additional information on stormwater.

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