Model Phase I Municipal Separate Storm Sewer System (MS4) Permit for the Chesapeake Bay Watershed: PREFATORY NOTE

This model permit for Phase I municipal separate storm sewer systems (MS4s) in the Chesapeake Bay watershed was developed by members of the Choose Clean Water Coalition's stormwater workgroup, who have many years of experience in the fields of stormwater permit advocacy and implementation. It is intended as guidance for local advocates, permit writers, reviewers, and others interested in developing strong and effective MS4 permits.

This model includes a collection of permit requirements and best practices that our groups support as the most effective means of controlling runoff pollution in the Chesapeake Bay watershed. The appropriateness of particular provisions may vary from jurisdiction to jurisdiction, but as a whole we consider this set of requirements to represent a strong, proactive approach to stormwater permitting that satisfies the mandates of the Clean Water Act. However, we intend for this model to set a "floor," not a "ceiling," and we support even more ambitious requirements where appropriate. Ultimately, every MS4 permit must meet the Clean Water Act's "maximum extent practicable" standard, which requires a case-by-case evaluation of each permittee's circumstances and capabilities, and must include any provisions necessary to attain local water quality standards.

The permit terms proposed herein are accompanied by rationale statements that set forth the legal basis for each provision along with practical reasons why it is recommended. In developing the model, we consulted a wide variety of sources including federal statutes and regulations, existing MS4 permits from inside and outside the Chesapeake Bay watershed, and the Environmental Protection Agency's MS4 Permit Improvement Guide.

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Part A: Discharges Authorized Under this Permit

Permit Area

This permit covers all discharges from the Municipal Separate Storm Sewer System (MS4) owned or operated by the permittee, as well as all areas within the jurisdictional boundary of the permittee served by, or otherwise contributing to discharges from, the MS4. This permit also covers all areas served by or contributing to discharges from MS4s owned or operated by other entities within the jurisdictional boundaries of the permittee unless those areas have separate National Pollution Discharge Elimination System (NPDES) MS4 permit coverage or are specifically excluded herein from authorization. Hereinafter these areas collectively are referred to as "MS4 Permit Area."

Rationale: It is important to clearly define the geographical areas subject to the requirements of the permit.

Authorized Discharges

This permit authorizes all stormwater point source discharges to waters of the United States from the permittee's MS4 that comply with the requirements of this permit. This permit also authorizes the discharge of stormwater commingled with flows contributed by process wastewater, non-process wastewater, or stormwater associated with industrial or construction activity provided such discharges are authorized under separate NPDES permits.

This permit authorizes the following non-stormwater discharges to the MS4 when appropriate stormwater activities and controls required through this permit have been applied and which are: (1) discharges resulting from clear water flows, roof drainage, dechlorinated water line flushing, landscape irrigation, ornamental fountains, diverted stream flows, rising ground waters, uncontaminated ground water infiltration to separate storm sewers, uncontaminated pumped ground water, discharges from potable water sources, foundation drains, air conditioning condensation, irrigation waters, springs, footing drains, lawn watering, individual resident car washing, flows from riparian habitats and wetlands, dechlorinated swimming pool discharges, wash water, firefighting activities, and similar types of activities; and (2) which are managed so that water quality is not further impaired and that the requirements of the federal Clean Water Act, 33 U.S.C. §§ 1251 et seq., and EPA regulations are met. All other non-stormwater discharges are prohibited.

Rationale: The permit should clearly define which types of discharges are authorized. This sample list can be modified to reflect the needs of a particular jurisdiction, but it should be limited as much as possible to keep authorized non-stormwater discharges to a minimum. Note that this section on "Authorized Discharges" operates in conjunction with the separate requirement for discharges to comply with water quality-based effluent limitations in Part E.

Part B: Legal Authority and Program Administration

Legal Authority

The permittee shall use its existing legal authority to control discharges to and from the MS4 in order to prevent or reduce the discharge of pollutants to achieve water quality objectives, including but not limited to applicable water quality standards. To be considered adequate, the permittee's legal authority must, at a minimum, authorize the permittee to carry out the activities listed in 40 C.F.R. § 122.26(d)(2)(i) as well as any other activities included in the Stormwater Management Program and Total Maximum Daily Load (TMDL) Implementation Plan.

The permittee shall review existing codes and ordinances to determine whether any changes are required in order to establish adequate legal authority. To the extent deficiencies in the permittee's legal authority can be addressed through regulation or other executive action, the permittee shall remedy such deficiencies within 120 days of the effective date of this permit. Deficiencies that can only be addressed through legislative action shall be remedied within 2 years of the effective date of this permit. Any changes to or deficiencies in the legal authority shall be explained in each Annual Report.

> Rationale: Permittees must have adequate legal authority to implement the requirements of the permit. Failure to possess the requisite legal authority does not excuse noncompliance. EPA regulations describe the specific activities that the permittee must have legal authority to carry out in 40 C.F.R. § 122.26(d)(2)(i); the permit can either list these activities or reference the regulations. A deadline should always be included for remedying deficiencies.

No later than 18 months following the effective date of this permit, the permittee shall update and implement local regulations to address the control of stormwater throughout the MS4 Permit Area. Such regulations shall be consistent with this permit, and shall be at least as protective of water quality as the federal Clean Water Act and its implementing regulations require. In addition, within 2 years following the effective date of this permit, the permittee shall review and revise, where applicable, building, health, road and transportation, and other codes and regulations to remove barriers to, and facilitate the implementation of the following standards: (1) standards resulting from issuance of local stormwater regulations required herein; and (2) performance standards required by this permit.

Fiscal Resources

The permittee shall provide adequate finances, staff, equipment and support capabilities to implement the Stormwater Management Program, TMDL Implementation Plan, and all provisions of this permit. Lack of funding does not constitute a justification for noncompliance with the terms of this permit. For the core program the permittee shall provide a dedicated funding source. Each Annual Report shall include a demonstration of adequate fiscal capacity.

Rationale: EPA regulations require permittees to perform a fiscal analysis of the resources necessary to comply with permit requirements. 40 C.F.R. § 122.26(d)(2)(vi). A requirement to maintain a dedicated funding source is preferred because it is less vulnerable to cuts and reappropriations.

Stormwater Management Program Administration/Permittee Responsibilities

The government of the [permittee's jurisdiction] is the permittee, and all activities of all agencies, departments, offices and authorities of the [jurisdiction] must comply with the requirements of this permit. The permittee has designated the [environmental/natural resources agency] as the agency responsible for managing the MS4 Stormwater Management Program and all activities necessary to comply with the requirements of this permit by coordinating and facilitating a collaborative effort among other local agencies and departments.

[optional: include a list of relevant agencies/departments]

Each named entity is responsible for complying with those elements of the permit within its jurisdictional scope and authorities. If the permittee relies on another party to implement portions of its stormwater program, both parties shall document the agreement in writing; however, responsibility for compliance with this permit shall remain with the permittee.

Rationale: A lack of coordination among local agencies/departments sometimes undermines the effectiveness of permit implementation activities. The permit should clearly state that all agencies/departments within the permittee's jurisdiction, not just the local environmental agency, are required to comply with the terms of the permit as applicable. One of these agencies (typically the environmental agency) should be specifically designated as the lead entity responsible for implementation and coordination.

<u>Part C: Reporting Requirements</u>

The permittee shall comply with the reporting requirements identified in this section, including but not limited to the deliverables identified in Table A below.

[insert Table A summarizing all reporting requirements and deadlines contained in the permit]

Discharge Monitoring Reports

The permittee shall annually provide Discharge Monitoring Reports, as required by Part F of this permit, containing the results of all monitoring activities performed each year under the permittee's approved Comprehensive Monitoring Program.

Annual Reporting

The permittee shall submit an Annual Report to [permitting agency] on or by the yearly anniversary of the effective date of the permit for the duration of the permitting cycle. At the same time the Annual Report is submitted, it shall also be posted on the permittee's website at an easily accessible location (including any appendices). If the annual report is subsequently

modified with [permitting agency] approval, the updated report shall be posted on the permittee's website.

The Annual Report shall follow the format of the permit as written, summarize the activities undertaken to comply with each permit requirement, and also include the following elements:

1. A review of the status of program implementation and compliance (or noncompliance) with all provisions and schedules of compliance contained in this permit, or contained in permittee-developed plans approved under the permit, including documentation as to compliance with performance standards and other provisions and deliverables contained herein;
2. A narrative summary describing the results and analyses of monitoring data and any trends in receiving water quality and estimated cumulative annual pollutant loadings, including progress toward attaining TMDL wasteload allocations (WLAs) and applicable water quality standards;
3. An assessment of the effectiveness of controls established by the stormwater management program (SWMP) and TMDL implementation activities, with a description of the methodology used to develop the assessment;
4. An assessment of the projected cost of SWMP implementation for the upcoming year (or longer) and a description of the permittee's budget for existing stormwater programs, including: (i) an overview of the permittee's financial resources and budget, (ii) overall indebtedness and assets, (iii) sources for funds for stormwater programs; and (iv) a demonstration of adequate fiscal capacity to meet the requirements of this permit;
5. A summary describing the number and nature of enforcement actions, inspections, and public education programs and installation of control systems;
6. Results of any modeling performed in connection with permit implementation and its use in planning installation of control systems and maintenance and other activities;
7. An assessment of the amount of impervious cover within the MS4 Permit Area, in total and as compared to the previous year, within each of the major watersheds within the Permit Area;
8. The percentage of effective impervious cover reduced annually, including the square footage of drainage managed by practices that meet the performance standard in Part D;
9. A summary of the activities to be undertaken in the coming year; and
10. An assessment of any program modifications needed to meet the requirements of this permit and any milestones contained in an approved TMDL Implementation Plan. Such modifications shall be made within six months of approval of the annual report.

Rationale: The list of Annual Report contents should be tailored to reflect the requirements of the permit, if they differ from those of this model permit, or other locally relevant concerns.

Annual Report Meeting

Within 12 months of the effective date of this permit, the permittee shall convene an annual report meeting with [permitting agency] to present annual progress and plans for the following year. The permittee shall allow members of the public to observe the meeting or, alternatively, shall hold a separate public meeting at which the permittee shall present the same information.

Annual Report Revisions

Each Annual Report may be revised with written approval by [permitting agency]. The revised Report will become effective after its approval.

> Rationale: The permit should limit the ability of permittees to modify their reports after-the-fact.

Approval

In reviewing any submittal identified in Table A, [permitting agency] may approve or disapprove each submittal. If [permitting agency] disapproves any submittal, [permitting agency] shall provide comments to the permittee. The permittee shall address such comments in writing within thirty (30) days of receipt of the disapproval.

MS4 Permit Application

The permittee shall develop a permit application, based on the findings of its Annual Reports, to be submitted six months prior to the expiration date of the permit. The permit application shall (i) include all information required by 40 C.F.R. § 122.26(d), (ii) summarize the permittee's implementation activities throughout the permit term and the pollutant load reductions achieved as a result of implementation, and (iii) propose objectives for the subsequent permit term with an analysis demonstrating how those objectives will be achieved. The objectives must include the attainment of interim milestones and annual benchmarks contained in a TMDL Implementation Plan approved under Part E of this permit, along with the strategies and controls that will be used to meet those deadlines.

> Rationale: The permit should encourage the MS4 to start thinking ahead to the next permit term and giving the permitting agency suggestions for what it would like to accomplish in the next five years. However, the permit should not suggest that the MS4 is developing its own permit terms; the permit application should be described as a "proposal," which the permitting agency will consider but not necessarily adopt in full, in order to avoid permittee self-regulation.

<u>Part D: Stormwater Management Program</u>

The permittee shall implement a Stormwater Management Program (SWMP) consisting of all of the controls, procedures, and practices described in this Permit. All existing and new strategies, elements, initiatives, schedules, or programs required by this permit must be documented in a written SWMP Plan. A current version of the Plan shall be posted on the permittee's website at an easily accessible location at all times.

Rationale: Permittees are required to develop a SWMP document that describes how they will meet the control requirements in the permit. 40 C.F.R. § 122.26(d)(2)(iv).

Strategies, elements, initiatives, and plans in the SWMP that must be submitted to [permitting agency] for review and approval are included in Table X.

[Table summarizing all the components of the SWMP Plan that require formal approval, along with any associated deadlines]

Rationale: MS4 permits, including this model permit, contain many different requirements for the permittee to develop plans and strategies that are subject to approval. It is prudent to include a summary of these requirements so that permittees will not lose track of any important components of their stormwater programs.

The SWMP Plan shall become effective and enforceable upon written approval by [permitting agency].

Updates and modifications to the SWMP Plan may be made during the permit term in accordance with the following procedures:

1. The permittee may add (without eliminating or replacing) components, controls, or requirements to the SWMP at any time. Additions shall be reported as part of the annual report.
2. The permittee may request to replace, modify, or eliminate without replacing any ineffective or infeasible strategies, policies, and best management practices. Such requests shall include the rationale for the proposed change, including a description of the ineffectiveness of the current practices and an analysis of how the replacement practices would better meet the goals of this Permit. Requests shall be made in writing to [permitting agency]. Modifications shall become effective only upon written approval from [permitting agency].

Rationale: Permittees should be allowed to change strategies if their programs are not as effective as they could be, but the permitting agency must always approve significant changes to ensure that the updated SWMP will continue to reduce the discharge of pollution to the maximum extent practicable under 33 U.S.C. § 1342(p)(2)(B)(iii). Note that changes meeting the criteria for a "major modification" under 40 C.F.R. § 122.62 would require the permit to be reopened and formally modified.

Post-Construction Runoff from Development and Redevelopment

The permittee must continue to implement a program to control stormwater discharges from new development and redevelopment sites that disturb at least 5,000 square feet, as well as major substantial improvement projects. The program must apply to private and public development sites, including roads.

As part of this program, no later than one year following issuance of this permit, the permittee must establish, implement, and enforce the following performance standard for all regulated development:

> **Option A**: [Insert the state's regulatory post-construction performance standard]
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> **Option B:** Stormwater controls must achieve the on-site retention of [design storm, e.g., 90th percentile storm, 1.2 inches of rainfall, or other appropriate standard] of stormwater through evapotranspiration, infiltration, and/or stormwater harvesting or use.

Rationale: MS4s are required to address new development and significant redevelopment through controls to reduce pollutants in stormwater discharge after construction is completed. 40 C.F.R. § 122.26(d)(2)(iv)(A)(2). This model permit provides two options for post-construction standards. The first option is for states that have already established post-construction standards through regulation at the state level. If those separately established standards are sufficiently strong to meet the Clean Water Act's maximum extent practicable (MEP) standard, the MS4 permit can simply incorporate them. This model permit recommends that the standards be incorporated rather than simply cross-referenced, so that if the state amends its regulations to weaken the standard, the MS4 permit's standard will not likewise be weakened.

The second option is for states that have not established post-construction standards, or whose separately established standards are not strong enough to meet MEP. In those states, MS4 permits should establish a performance standard based on the retention of stormwater volume, such as an established "water quality design storm" volume or the volume required to maintain/restore predevelopment hydrology at the site; and the standard should be met by using practices that rely on infiltration, evapotranspiration, and capture for reuse. The standard should apply equally to new development and redevelopment sites (with appropriate off-site mitigation provisions, discussed below). Some permits (such as the District of Columbia) have also included major substantial improvement projects (which need to be defined, e.g., the repair, alteration, addition, or improvement of a building or structure over the regulatory size threshold, the cost of which equals or exceeds 50 percent of the market value of the structure before the improvement or repair is started).

This type of standard, based on retention, achieves more pollution reduction than other types of standards based on peak flow rate or pollutant removal efficiencies, and because it has been shown to be practicable in many jurisdictions around the country, it satisfies the MEP requirement for MS4s.

For jurisdictions that have already adopted an appropriate performance standard, the permit should direct them to continue to enforce the standard, rather than the language provided above.

In implementing the performance standard, the permittee may include an option for off-site mitigation and/or fee-in-lieu payments to be utilized when projects cannot meet the performance standard on-site. If the permittee chooses to provide one or both of these options, the program shall include at a minimum:

1. Establishment of baseline requirements for on-site retention and for mitigation projects. On-site volume plus off-site volume (or fee-in-lieu equivalent) must equal no less than the total volume specified by the performance standard. Off-site mitigation projects and

projects funded by fee-in-lieu payments should be located within the same subwatershed as the regulated site.

2. Specific criteria for determining when compliance with the performance standard requirement for on-site retention cannot technically be met based on physical site constraints.
3. For a fee-in-lieu program, establishment of a system or process to assign monetary values at least equivalent to the cost of implementation of controls to account for the difference in the performance standard.
4. The necessary tracking and accounting systems to implement this section, including policies and mechanisms to ensure and verify that the required stormwater practices on the original site and appropriate required off-site practices stay in place and are adequately maintained.

Rationale: The permit should clearly specify the conditions under which an off-site mitigation and/or fee-in-lieu program may be adopted. Most off-site mitigation programs only allow off-site mitigation when full compliance with the performance standard is not technically feasible on-site. One requirement for off-site programs that this model permit recommends is for off-site practices to be built in the same subwatershed as the original regulated site. This requirement is needed to ensure that one watershed does not experience pollution reductions at the expense of another. It can also make water quality-based planning efforts (required later in this permit) more straightforward.

Within one year of permit issuance, the permittee must review and revise, as applicable, its stormwater, building, health, road and transportation, and other codes and regulations to remove barriers and facilitate the implementation of the performance standard for new development and redevelopment.

The permittee must establish, update, and/or maintain a formal process for site plan reviews and a post-construction verification process (e.g., inspections, submittal of “as-built” certifications) to ensure that the standard is properly implemented.

Retrofit Program for Existing Development

The permittee shall implement retrofits for stormwater discharges from a minimum of [size/area] of impervious surfaces during the permit term. Retrofits must be designed to meet the performance standard for post-construction stormwater management.

The permittee shall prioritize its implementation of retrofit projects based on the following factors: [list of factors important in your jurisdiction, such as impaired status of receiving water, pollutant removal achieved by the project, etc.]

The permittee shall track the number and type of retrofit projects, type of land use being retrofitted, and total area retrofitted. For each retrofit project, estimate the potential pollutant load and volume reductions achieved for each major waterbody ([list major water bodies in the jurisdiction]) for the following pollutants: [list important pollutants, such as bacteria (E. coli),

total nitrogen, total phosphorus, total suspended solids, cadmium, copper, lead, zinc, and trash]. These estimates shall be included in the annual report following implementation of each project.

> Rationale: In the words of EPA's MS4 permit improvement guide, "It is clear that we cannot protect the nation's waters without also addressing degradation caused by stormwater discharges from existing developed sites. For that reason stormwater programs must include substantive retrofit provisions. It is possible and reasonable to significantly improve water quality in many urban receiving waters. This requires more than just a new development and redeveloped sites program, however, which at best can only hold the line. To actually improve the quality of receiving waters it is necessary to mitigate discharges from existing developed sites, which generally means implementation of measures to bring about the retrofit the stormwater control measures at existing sites to retain most stormwater on site." Importantly, the Chesapeake Bay TMDL allocations were developed on the expectation of retrofit requirements in stormwater permits.
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> There are a few different options for structuring the retrofit requirement; it could apply to a certain acreage, square footage, or percentage of the jurisdiction's impervious area (if the latter, the permittee will need to assess its impervious area baseline first). The retrofitting obligation should be achievable but ambitious and should *not* be based on number of projects alone without a linkage to an actual performance outcome.
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> The requirement must have an associated performance standard that is clearly listed within the permit itself. It should require the use of green infrastructure/low impact development/environmental site design practices. Stream restoration projects should not be allowed for this purpose or should be given only partial credit; EPA's MS4 permit improvement guide recommends that upland retrofits should be accomplished first to restore the hydrologic regime before stream restoration projects can be effective. Finally, the permit should require projects to be prioritized based on relevant factors, other than cost, that are designed to ensure that retrofits achieve maximum pollution reductions. In any event, a requirement for a retrofit plan without any associated project implementation is not sufficient to meet the MEP standard.
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> Note that retrofitting will likely form a significant component of most MS4s' TMDL implementation plans, required separately by this permit. However, the core SWMP section must also include a requirement specifying a certain amount of retrofitting that must be done during the permit term, in order to meet MEP. This requirement should inform and feed into the longer term TMDL plan, as these requirements work in tandem.

The permittee shall achieve a minimum net annual tree planting rate of [number of plantings] annually within the MS4 area. The annual total tree planting shall be calculated as a net increase, such that annual mortality is also included in the estimate. The permittee shall ensure that trees are planted and maintained, including requirements for adequately designed and sized tree boxes, to achieve optimal stormwater retention and tree survival rate.

The permittee shall annually document the total trees planted and make an annual estimate of the volume of stormwater that is being removed from the MS4 in a typical year of rainfall as a result of the maturing tree canopy over the life of the MS4 permit.

> Rationale: Tree planting can have many long-term benefits for stormwater control, in addition to other environmental and social benefits.

Maintenance of Public and Private Stormwater Controls

All stormwater control measures installed and implemented to meet the post-construction performance standards or as part of a retrofit project must be maintained in perpetuity.

For privately owned stormwater controls, the permittee shall develop accountability mechanisms to ensure proper maintenance of such controls. Those mechanisms may include combinations of deed restrictions, ordinances, or maintenance agreements. Under any accountability mechanism, the owner or operator of any new development or redeveloped site subject to this Permit's post-construction performance standards must allow the permittee, or its designee, to conduct inspections of the stormwater controls. The mechanism must also allow the permittee, or its designee, to perform necessary maintenance or corrective actions, and bill or recoup costs from the property owner/operator when the owner/operator has not performed the necessary maintenance within thirty (30) days of notification by the permittee or its designee. The mechanism must also account for transfer of responsibility in leases and/or deeds.

The permittee shall conduct inspections of all public and private controls at least on a biennial basis to ensure continuing maintenance. If the results of any inspection reveal that a control requires maintenance, the permittee must perform such maintenance if the control is publicly owned or enforce applicable accountability mechanisms if the control is privately owned.

Documentation identifying the control practices inspected, the number of maintenance inspections, the results of those inspections, any follow-up inspections, the enforcement actions used to ensure compliance, the maintenance inspection schedules, and any other relevant information shall be submitted in the permittee's annual reports.

> Rationale: Operation and maintenance, required pursuant to 40 C.F.R. 122.26(d)(2)(iv)(A)(1), is critical for the continued performance of stormwater control measures. EPA has consistently noted the importance of operation and maintenance in regulatory guidance. In many cases, controls may be located on private property, and it is necessary to establish some provision to assure responsibility and accountability for the operation and maintenance of these controls.
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> Directing permittees to develop their own maintenance procedures is acceptable if the permitting agency approves any proposed procedures, but at the very least the permit should specify a minimum frequency of inspections and an obligation to implement and enforce maintenance requirements for any controls that fail inspections. Note that some states specify maintenance requirements through state regulations; MS4 permits should include requirements that are at least as stringent as what is separately established through regulations.

Management of Permittee-Owned and Controlled Areas

The permittee must develop, update, and maintain an inventory of municipally-owned or operated facilities, including but not limited to the following: [list of relevant facilities for your jurisdiction, including equipment/vehicle storage and maintenance facilities, hazardous waste disposal facilities, hazardous/solid waste handling and transfer facilities, incinerators, landfills,

storage yards, recycling facilities, street repair and maintenance sites, public parking lots, and significant public buildings (schools, police stations, etc.)]

On a map of the area covered by the MS4 permit, the permittee must identify where the municipally-owned or operated facilities and stormwater controls are located. The map must identify the stormwater outfalls corresponding to each of the facilities as well as the receiving waters to which these facilities discharge.

> Rationale: A comprehensive list and map of facilities will help staff responsible for stormwater compliance build a better awareness of their locations within the MS4 service area and their potential to contribute stormwater pollutants. The facility inventory will also serve as a basis for setting up periodic facility assessments and developing, where necessary, facility stormwater pollution prevention plans.

The permittee must develop and annually update a comprehensive assessment of all municipally-owned or operated facilities identified in the inventory for their potential to discharge pollutants in stormwater. Based on this comprehensive assessment, the permittee must identify as "high-priority" those facilities that have a high potential to generate stormwater pollutants. High priority facilities must include the permittee's maintenance yards, hazardous waste facilities, fuel storage locations, and any other facilities at which chemicals or other materials have a high potential to be discharged in stormwater.

Within one year of permit issuance, the permittee shall develop, update, and implement individual stormwater pollution prevention plans for high-priority facilities. Each plan must identify stormwater controls (i.e., structural and non-structural controls and operational improvements) to be installed, implemented, and maintained (with associated maintenance schedules) to minimize the discharge of pollutants in stormwater.

The permittee must perform weekly visual inspections of high-priority facilities to minimize the potential for pollutant discharge. The permittee must look for evidence of spills and immediately clean them up to prevent contact with precipitation or runoff. The weekly inspections must be tracked in a log for every facility, and records kept with the SWMP document. The inspection report must also include any identified deficiencies and the corrective actions taken to fix the deficiencies. Additionally, at least once per quarter, a comprehensive inspection of high-priority facilities, including all stormwater controls, must be performed. As part of quarterly inspections, the permittee must visually observe the quality of the stormwater discharges from the high-priority facilities. Any observed problems (e.g., color, foam, sheen, turbidity) that can be associated with pollutant sources or controls must be remedied within three days or before the next storm event, whichever is sooner. The quarterly inspection report must include any identified deficiencies and the corrective actions taken to fix the deficiencies.

> Rationale: Phase I regulations do not specifically require that MS4 permittees develop facility-specific stormwater management SOPs. However, they do require that permittees prevent or reduce pollutant discharge in stormwater from municipal facilities and activities. 40 C.F.R. 122.26(d)(2)(iv)(A). Developing and maintaining a site-specific pollution prevention plan for each facility will help to ensure

that employees responsible for facility operation are aware of the stormwater controls required for the site. The permit should contain more detailed requirements for particular types of facilities, such as fueling operations, vehicle maintenance yards, etc., but this model permit does not go into that level of specificity.

The permittee shall continue to maintain its stormwater infrastructure, including through the following activities:

- The permittee shall inspect and, if necessary based on the result of the inspections, clean [number or percentage] catch basins during the term of the permit.
- The permittee shall inspect [number or percentage] linear feet of the storm sewer system during the life of the permit and perform any necessary repairs.
- The permittee shall annually repair at least 10% of all stormwater outfalls needing repair.

Rationale: The purpose of catch basin, inlet, and storm drain cleanouts is to prevent blockages, flooding, and reduce pollution.

Street sweeping shall be conducted annually on no less than [number of acres of roadway/number of lane miles] within the MS4 area. The permittee shall ensure that excessive quantities of snow and ice control materials do not enter receiving water bodies. Materials utilized for deicing and sanding activities shall remain covered from precipitation until application.

Rationale: Roadways must be addressed under 40 C.F.R. 122.26(d)(2)(iv)(A)(3). A specific, numeric requirement should be included for the street sweeping component of the permit, rather than leaving it up to the permittee. A detailed schedule for different types of roads can be included in order to make sure the highest priority roads are swept more frequently.

Management of Commercial and Institutional Areas

The permittee shall establish and implement policies and procedures to reduce the discharge of pollutants in stormwater runoff from all commercial and institutional areas covered by this Permit.

The permittee shall maintain and annually update a watershed-based inventory or database of all commercial and institutional facilities within its jurisdiction that are significant sources of stormwater pollution. The permittee shall inspect each facility at least twice during the term of this Permit, with a minimum interval of one year between the inspections. Where the permittee determines that existing measures are not adequate to protect water quality, the permittee shall require additional site-specific controls sufficient to protect water quality.

Rationale: Commercial and institutional areas typically have significant amounts of impervious surface and therefore contribute large amounts of runoff pollution to MS4s. Federal regulations specifically mention measures to reduce pollutants from runoff from commercial areas at 40 C.F.R. 122.26(d)(2)(iv)(A). Permittees should track, inspect, and if necessary, apply more stringent requirements at these types of sites.

Management of Industrial Facilities

The permittee shall implement a program to monitor and control pollutants in stormwater discharged from industrial facilities located within the MS4 permit area. These facilities shall include all known industrial facilities that discharge to the MS4, including industrial facilities with NPDES permits. The permittee shall maintain and update a database of all such industrial facilities.

The permittee shall develop and implement procedures to govern the investigation of industrial facilities suspected of contributing pollutants to the MS4, including at a minimum: (i) a review, if applicable, of monitoring data collected by the facility pursuant to its NPDES permit; and (ii) wet weather screening (including collecting data on discharges from industrial sites). These procedures shall be submitted as part of each annual report.

The permittee shall implement a program to prevent, contain, and respond to spills that may discharge to the MS4, and report on such implementation submitted in each annual report. The spill response program may include a combination of spill response actions by the permittee and/or another public or private entity.

> Rationale: 40 C.F.R. § 122.26(d)(2)(iv)(C) requires MS4s to control pollutants from industrial facilities that the permittee determines are contributing a substantial pollutant loading to the MS4.

Management of Construction Activities

The permittee shall implement a construction site runoff control program to reduce discharges of pollutants from public and private construction activity within the MS4 area. "Construction activity" for this permit includes, at a minimum, construction involving a total land disturbance of 5,000 square feet at a single construction site or as part of a plan of common development. The program must include the following elements:

- Adopt, implement and enforce an ordinance or other regulatory mechanism that requires erosion prevention and sediment controls to be designed, implemented, and maintained to prevent adverse impacts from construction activities. The ordinance must require controls to eliminate pollutants in stormwater discharges and to prevent non-stormwater discharges. The ordinance must be consistent with [insert locally relevant erosion/sediment control laws, construction site permits, etc.].

- Maintain an inventory of all active public and private construction activities. The inventory must be continuously updated as new projects are permitted and projects are completed. The inventory must contain contact information, the size of the project and area of land disturbance, whether the project has obtained coverage under [name of applicable NPDES construction general permit], and the date of approval for the project's erosion and sediment control plan.

- Review and approve sediment and erosion control plans for construction activity. The permittee must require the submittal of a stormwater control plan for the permittee's review and written approval prior to the disturbance of land and prior to issuance of a municipal permit for the construction project. The permittee shall not approve any plan unless it contains appropriate site-specific construction site control measures that meet the minimum requirements of the permittee's ordinance. The permittee shall document its review of each plan using a checklist or similar process.

- Inspect construction sites to ensure compliance with erosion and sediment control plans and requirements. The permittee shall inspect each construction site: (1) before land disturbance begins, to ensure all necessary erosion and sediment controls are in place; (2) during active construction on a monthly basis; and (3) at the conclusion of the project, to ensure that all graded areas have reached final stabilization and that all temporary control measures are removed. Inspections must include disturbed areas of the site, material and waste storage areas, stockpile areas, construction site entrances and exits, sensitive areas, discharge locations to the MS4, and, if applicable, discharge locations to receiving waters. The permittee shall document inspections, including photographs and monitoring results as appropriate.

- Develop and implement an enforcement response plan describing the enforcement response procedures the permittee will implement when violations are detected through inspections or other means. The enforcement response plan must address repeat violations through progressively stricter responses as needed to achieve compliance.

- Provide training and educational materials to construction site operators to promote compliance with plans and ordinances. The permittee shall conduct trainings for construction site operators at least twice annually, with a requirement for construction operators to attend a training at least once every three years. The permittee shall also provide guidance materials and technical publications to construction companies at least once annually.

- Report on the implementation of these requirements in the Annual Report, including a list of the activities added to the construction site inventory that year, the number and location of inspections, and a description of all violations and enforcement actions.

Rationale: Phase I regulations require MS4s to reduce pollutants in stormwater from construction sites. 40 C.F.R. § 122.46(d)(2)(iv)(D). The minimum size threshold for construction sites to be regulated is one acre, but this model permit recommends that smaller construction sites be included in the permittee's erosion and sediment control program.

Two key elements of these programs are reviews of site plans to ensure consistency with federal/state/local requirements and inspections to enforce erosion and sediment control measures once construction activity begins. Such inspections are critical because, according to EPA (in the fact sheet for the DC MS4 permit), "A significant cause of water quality problems caused by construction activities is the failure of construction site operators to comply with existing regulations." The permit should require inspections at a specific frequency to ensure that they occur on a regular basis.

Some states' permits require MS4s to adopt construction site programs in compliance with separately issued state regulations. All of the above recommended program elements should be required as permit conditions even if they are not included in the regulations.

Trash and Litter

Within one year of permit issuance, the permittee shall inventory and evaluate all current trash and recyclable pick-up operations, litter control programs, and public outreach efforts. The analysis shall identify opportunities for improving overall trash reduction efficiency. Opportunities the permittee shall consider include:

- Direct trash removal from water bodies (e.g., stream clean-ups, skimmers)
- Direct trash removal from the MS4 (e.g., catch basin clean-out, trash racks)
- Direct trash removal prior to entry to the MS4 (e.g., increased street sweeping)
- Prevention through disposal alternatives (e.g., public trash/recycling collection)
- Prevention through waste reduction practices, regulations, and/or incentives (e.g., bag fees)

Within one year after the analysis is completed, the permittee shall propose a schedule (subject to [permitting agency] review and approval) to implement the opportunities identified in the analysis, with associated trash reduction benchmarks.

Rationale: The model permit is written for a jurisdiction discharging into waterways that do not have a trash TMDL. MS4s discharging into waters with trash TMDLs should be required to develop and implement plans to achieve the trash reductions assigned to them under the TMDL.

Illicit Discharge Detection and Elimination

The permittee shall implement an ongoing program to detect illicit discharges and prevent improper disposal into the MS4. Such program shall include at a minimum the following elements:

- Effectively prohibit, through adoption and enforcement of an ordinance or other regulatory mechanism, non-stormwater discharges to the MS4. Prohibited discharges should include sewage, wash water, motor vehicle fluids, household hazardous wastes, grass clippings, leaf litter, and animal waste.

- Within one year of permit issuance, develop and/or update an inventory and map (organized by watershed) of the storm sewer system, including all MS4 outfalls and the drainage areas contributing to those outfalls. The map shall include all reported and documented illicit discharges or illicit connections. The map must be updated annually.

- Develop and implement a written dry weather field screening and analytical monitoring procedure to detect and eliminate illicit discharges. Such procedures must include annual field screening of at least 150 outfalls. The outfalls must be geographically dispersed across the MS4 and must represent all major land uses in the MS4. In addition, the permittees must ensure that dry weather screening includes, but is not limited to, screening of outfalls discharging to impaired water bodies. Sampling must be performed after at least 72 hours of dry weather. At a minimum, the permittee must collect grab samples for analysis of the following constituents: [list locally relevant pollutants, including pH, chlorine, detergents, copper, fecal coliform bacteria, and turbidity]. Samples must be analyzed consistent with the procedures required by 40 C.F.R. Part 136.

- Establish procedures for soliciting and responding to public reports of illicit discharges. The permittee must maintain a telephone number and email address for public reporting of illicit discharges. The permittee shall conduct inspections in response to complaints as soon as possible, but no later than within two working days, and shall enforce any violations that are detected according to established procedures.

- Develop and implement procedures for investigating the source of illicit discharges that are identified as a result of complaints or as a result of dry weather inspections. Investigations must occur within 5 days of detection. The permittee shall take necessary action to address the source of the ongoing illicit discharge within 30 days of detection.

- Develop written enforcement response procedures that the permittee will implement when an illicit discharge investigation identifies a responsible party.

- Develop and implement procedures to prevent, contain, and respond to spills that may discharge into the MS4.

- Report on the implementation of these requirements in the Annual Report, including updates to the outfall inventory/map, the results of all dry weather screening inspections, and the number of enforcement actions taken.

Rationale: The Clean Water Act, 33 U.S.C. § 1342(p)(3)(B)(ii), requires MS4 permits to "effectively prohibit non-stormwater discharges into the storm sewers." MS4 permits must require permittees to *proactively* seek out illicit discharges and activities that could result in discharges. Many MS4 permits include very detailed requirements for IDDE programs, and in particular regarding the parameters of dry

weather screening programs. This model permit does not go into that level of detail, but rather focuses on the core elements that should be included in any MS4's IDDE program.

The number of outfalls to be screened may vary depending on the total number of outfalls in the permittee's MS4. All outfalls should be screened at least once during the permit term. If a jurisdiction has particular IDDE problem areas, the permit could require screening to focus more heavily on those areas.

Public Education and Outreach

The permittee shall implement an education and outreach program for the MS4 area. The program shall be designed to achieve measurable improvements in the target audience's understanding of stormwater pollution and steps they can take to reduce their impacts.

As part of this program, the permittee shall distribute an education and outreach message to each target audience at least twice per year. Audiences and message topics shall include:

- General public
    - General impacts of stormwater on local water bodies
    - Impacts of impervious surfaces
    - Environmental stewardship best practices with regard to pet waste, vehicle maintenance, landscaping, and rainwater reuse
    - Management practices for use and storage of automotive chemicals
    - Impacts of illicit discharges and how to report them
    - Availability and importance of local recycling programs
- Residential homeowners
    - Proper management and disposal of household hazardous waste and yard waste
    - Use of low or no phosphorus fertilizers and alternative fertilizers
    - Yard care techniques that protect water quality
    - Proper use of ice/snow control substances
    - Best practices for residential car washing
- Landscapers and property managers
    - Use of low or no phosphorus fertilizers and alternative fertilizers
    - Landscape designs to reduce runoff and pollutant loadings
    - Use of native vegetation in landscape design
    - Landscape care techniques that protect water quality
    - Management practices for use and storage of pesticides and fertilizers
    - Stormwater pond maintenance
- Engineers, contractors, developers, and land use planners
    - Technical standards for construction site sediment and erosion control
    - Runoff reduction techniques, including site design, on-site retention, pervious pavement, alternative parking lot design, retention of forests and mature trees
    - Stormwater treatment and flow controls
    - Proper maintenance of stormwater controls

- Another audience and/or topic approved by [permitting authority]

The permittee shall measure the understanding and adoption of targeted behaviors among the targeted audiences, such as by conducting a statistically valid survey. The resulting measurements shall be used to direct education and outreach resources most effectively.

> Rationale: To ensure that the permittee is conducting sufficient public outreach and education, the permit should specify requirements that are as specific and measurable as possible (specific audiences, specific messages, particular frequency of outreach actions). The list of messages/topics can be tailored to the needs of the jurisdiction.

Public Participation

The permittee shall establish a citizen advisory group to participate in the development and implementation of the stormwater management program. The group must consist of a balanced representation of all affected stakeholders, including residents, business owners, and environmental organizations.

In addition, the permittee shall establish and implement a method of routine communication to groups such as watershed associations and environmental organizations in the region. Such communications shall provide updates on stormwater program activities and opportunities for direct involvement in stormwater program development and implementation.

The permittee shall create regular (at least semi-annual) opportunities for citizens to participate in the implementation of stormwater controls, such as stream clean-ups, storm drain stenciling, volunteer monitoring, and educational activities.

The permittee shall make drafts of all documents required under this permit (including TMDL implementation plans and monitoring plans) available to the public for review and comment. Public comment periods should last at least 30 days and be advertised on the permittee's website and in a local newspaper with wide circulation. When submitting documents to [permitting agency] for approval, the permittee shall describe how it addressed any comments that were received.

The permittee shall maintain a publicly accessible website that describes the stormwater management program activities. This permit, the current draft and approved SWMP, the last five Annual Reports (with supporting documentation), and any other reports generated in compliance with this permit shall be posted on the website. The permittee shall also include information and/or links regarding the impacts of stormwater pollution and the contact information for the relevant municipal staff. The website must be updated at least quarterly as new material becomes available.

> Rationale: Permits should include specific and measurable requirements for involving the public in stormwater programs; vague requirements are unlikely to result in meaningful involvement by stakeholders.

Training of Municipal Officials

The permittee shall implement an ongoing training program for those employees specified below, and any other employees whose job functions may impact stormwater program implementation. The training program shall address the importance of protecting water quality, the requirements of this permit, design, performance, operation and maintenance standards, inspection procedures, selecting appropriate management practices, ways to perform their job activities to prevent or minimize impacts to receiving waters, and procedures for tracking, inspecting and reporting, including potential illicit discharges. The permittee shall provide initial training within one year of permit issuance and follow-up/refresher training at a minimum of once every year thereafter, which shall include any changes in procedures, techniques or requirements.

The training program shall include, but is not limited to, those employees who work in the following areas: municipal planning; site plan review; design; construction; transportation planning and engineering; street/sewer construction and maintenance; water and sewer departments; parks and recreation; municipal water treatment; wastewater treatment; fleet maintenance; fire and police departments; building maintenance and janitorial; garage and mechanic crew; personnel responsible for answering questions about stormwater programs; and any other areas that may impact stormwater runoff.

> Rationale: The personnel and topics listed in this section should match up with the requirements listed elsewhere in the permit. Training should be required to occur at regular intervals, preferably at least annually.

<u>Part E: Water Quality Based Effluent Limitations</u>

Requirement to Meet Water Quality Standards

The permittee must implement and enforce a stormwater management program to meet the following requirements:

1. The permittee's discharges shall not cause or contribute to an exceedance of applicable water quality standards for any receiving water body.
2. The permittee shall attain all applicable wasteload allocations (WLAs) for each approved total maximum daily load (TMDL) for each receiving water body.
3. The permittee shall comply with all other provisions and requirements contained in this permit, and in plans and schedules developed in fulfillment of this permit.

Compliance with all the conditions of this permit, including milestones and final dates contained in TMDL Implementation Plans, shall constitute compliance with receiving water quality standards and any approved WLAs for this permit term.

Except where the permittee is complying with all requirements of this permit, if a discharge from the MS4 is causing or contributing to a violation of applicable water quality standards, the permittee shall, as expeditiously as possible, but no later than 60 days after becoming aware of the situation, eliminate the condition causing or contributing to an exceedance of water quality standards. If elimination of the conditions within 60 days is infeasible, the permittee shall submit a report that describes additional controls that will be implemented to come into compliance with all permit conditions. The permittee shall implement such additional controls upon notification of approval by [permitting agency]. If [permitting agency] has not disapproved the report within 6 months of submission, [permitting agency's] non-action shall constitute approval of the report.

In determining whether a discharge from the MS4 is causing or contributing to a violation of applicable water quality standards, available monitoring data, visual assessments, and site inspection reports may be considered.

> Rationale: The Clean Water Act and implementing regulations require that all National Pollutant Discharge Elimination System (NPDES) permits must include conditions adequate to "ensure compliance" with applicable water quality standards. 40 C.F.R. § 122.4(d); see also 33 U.S.C. §§ 1311(b)(1)(C), 1342(a). While the terms of the permit as a whole should work together to ensure such compliance, a narrative prohibition on violations of water quality standards serves as a backstop mechanism to enforce permittee noncompliance. A "safe harbor" provision can provide that compliance with permit terms may substitute for immediate compliance with water quality standards and TMDL WLAs, but only when the permit's conditions set out a clear and enforceable path toward attainment by a certain future date, such as through a compliance schedule or implementation plan. (If the permit's terms are not sufficient for this task, i.e. if they do not contain the provisions described in the following sections of this Model Permit, then the "safe harbor" provision should be omitted.) However, if a permittee is not in full compliance with the permit, then it should be held accountable for addressing and eliminating any water quality standards exceedances that are detected.
>
> The permit's Fact Sheet should include a statement that the "safe harbor" provision should not be construed as a determination as to what plans, milestones, or actions will constitute compliance with water quality standards for the following permit term.

Discharges to Impaired Waters With TMDLs

For all TMDL wasteload allocations assigned to the permittee's MS4 discharges, the permittee shall develop and submit to [permitting agency] for review and approval a consolidated TMDL Implementation Plan within 2 years of the effective date of this permit. [Permitting agency] will make a determination whether modifications to the proposed Plan are necessary prior to approval in order to ensure consistency with, and ultimate attainment of, WLAs. Following approval, the Plan, including milestones and final WLA attainment dates, will be incorporated into the permit as enforceable permit provisions through the major permit modification process. The permittee shall fully implement the Plan upon approval.

The Plan shall address the following TMDLs: [list of TMDLs, or reference to an appendix containing the list]

The Plan shall include the following elements:

1. An estimate of current pollutant load discharges.
    a. This estimate shall serve as the baseline against which to measure pollutant load reductions achieved through implementation of this Plan.
2. A determination of the total pollutant load reductions necessary to attain all applicable WLAs.
3. A schedule for attainment of WLAs that includes final attainment dates and, where applicable, interim milestones and annual benchmarks.
    a. All deadlines must be consistent with the requirements of the Chesapeake Bay TMDL and any EPA-approved Watershed Implementation Plans (WIPs).
    b. Final deadlines for WLA attainment may extend beyond the five-year permit term, but each attainment date must lead to the attainment of each WLA as soon as possible. To satisfy this standard the permittee must demonstrate that all available options for accelerating the pace of implementation have been included.
    c. Interim milestones must be included where final attainment of any WLA requires more than five years. Milestone intervals will be as frequent as possible but will in no case be greater than five years. Milestones are enforceable components of the schedule and should be expressed as pollutant load reductions.
    d. Annual benchmarks are quantifiable goals or targets to be used to assess progress, such as a numeric goal for BMP implementation. Benchmarks are intended as an adaptive management aid and generally are not considered to be enforceable.
4. An associated narrative describing the strategies and controls (structural and nonstructural) that will be used to meet the schedule.
    a. The narrative must include dedicated funding sources and confirmation of both legal authority and fiscal capacity to carry out the controls.
    b. The narrative must also include a description of new sources expected or likely to be introduced during this permit term, including but not limited to permitted developments, and strategies to offset loads from such new sources that are not reflected in the Plan's baseline.
5. A demonstration using modeling that the chosen strategies and controls will lead to WLA attainment by the chosen date(s).
6. A description of how the permittee will track and evaluate the implementation of the Plan, and assess compliance with milestones and final attainment dates, using the monitoring program developed under Part F of this permit.

Unless and until an applicable TMDL is no longer in effect (e.g., withdrawn, reissued, or the water delisted), the Plan must include all of these elements for each TMDL as approved or established.

The permittee shall provide outreach to the public regarding the development and implementation of the Plan, including the following actions:

1. The permittee shall provide public notice, a minimum 45-day public comment period, and the opportunity for members of the public to request a hearing on the Plan before it is finalized and submitted to [permitting agency].
2. All supporting materials for the Plan shall be made available to the public. The public notice shall include a website link or other instructions for members of the public to obtain supporting materials.
3. When the permittee submits its Plan for approval, it shall describe how it addressed any public comments received on the draft Plan.
4. The permittee shall post the current version of the Plan on its website.
5. The permittee shall include a summary in each annual report of how the permittee has addressed comments or feedback from the public.

If any TMDLs are approved or revised subsequent to issuance of this permit which contain wasteload allocations to the permittee's MS4 discharges, the permittee shall revise its Plan to address these new or revised WLAs within one year of the TMDL's approval.

The permittee's annual reports must include a description of progress as evaluated against all implementation objectives, proposed strategies, milestones, benchmarks, and final attainment dates, as relevant. This assessment shall include a description of all completed structural and nonstructural controls, nonstructural programs, and other stormwater control initiatives, and the estimated pollutant load reductions the permittee has achieved.

If evaluation data, as outlined in the monitoring strategy developed under Part F of this permit, indicate that the permittee has failed to achieve any interim milestone or final WLA attainment date, or is making insufficient progress toward attaining any such milestone or attainment date, the permittee shall make appropriate adjustments to its programs within six months and document those adjustments in the TMDL Implementation Plan. The Plan modification shall include a reasonable assurance demonstration that the additional controls will achieve milestones and attainment deadlines.

> Rationale: Clean Water Act regulations require permits to contain requirements "consistent with the assumptions and requirements of any available wasteload allocation." 40 C.F.R. § 122.44(d)(1)(vii)(B). If WLA compliance cannot be achieved immediately, a "permit may, when appropriate, specify a schedule of compliance leading to compliance." 40 C.F.R. § 122.47(a). TMDL implementation plans are, in effect, compliance schedules, and they must meet the legal standard for such schedules, which is to achieve compliance "as soon as possible." 40 C.F.R. § 122.47(a)(1). It is critical to include the "ASAP" standard to ensure that permits do not result in implementation plans with unreasonably lengthy schedules.
>
> Implementation plans must be incorporated into permits through the permit modification process. These plans contain substantive requirements with which the permittee must comply; as such, they contain binding effluent limitations. 33 U.S.C. § 1362(11). When new effluent limitations are adopted following

permit issuance, the major permit modification process must be followed, including public notice and comment, an opportunity for a public hearing, and the right to appeal. 40 C.F.R. § 122.62.

The permit should clearly state all applicable WLAs to avoid confusion. It should also require plans to include specified elements that clearly demonstrate that the permittee will attain WLAs as soon as possible in accordance with the chosen schedule. Interim 5-year milestones are needed so that the permittee will be held accountable for meeting enforceable limits at least once per permit cycle.

If the previous permit term already required the development of a TMDL implementation plan, then the permit should require the plan to be reviewed and updated to adjust strategies to stay on pace. It should also require the permittee to incorporate all of the above-described elements into the plan if the previous permit failed to require them. The schedule can be accelerated in subsequent permit terms based on new technologies or strategies, but should never be lengthened or delayed.

Discharges to Impaired Waters Without TMDLs

Option A

If the permittee discharges to receiving waters listed as impaired, for which a TMDL has not yet been developed or a TMDL does not identify a WLA for the permittee, the permittee must reduce its discharge loads of all pollutants identified as causing the impairments (the pollutants of concern) by 10% by the end of the permit term, unless the permittee demonstrates that a lesser reduction is needed in order to meet water quality standards.

The permittee must incorporate controls into its SWMP that will be sufficient to achieve the required pollutant load reductions. The permittee's annual reports must include a description of progress toward attainment of this requirement. Ultimate compliance with this requirement must be demonstrated using data obtained through the monitoring strategy developed under Part F of this permit.

Option B

If the permittee discharges to receiving waters listed as impaired, for which a TMDL has not yet been developed or a TMDL does not identify a WLA for the permittee, the permittee must address in its SWMP how the discharge of pollutants identified as causing the impairments (the pollutants of concern) will be reduced such that they do not cause or contribute to the impairment. In light of the absence of a defined pollutant reduction target where no TMDL has been established, this permit defines an iterative approach to addressing such discharges that incorporates three phases over the course of the permit term:

1. Phase 1. During the first year of the permit term, the permittee shall evaluate its discharges to impaired waters, including an identification of the sources of pollutants of concern in the MS4 area draining to the impaired waters, and shall identify additional and/or modified BMPs that will ensure the permittee's discharges do not cause or contribute to the impairments, including a schedule for implementing those BMPs.

2. Phase 2. During the second and third years of the permit term, the permittee shall implement the additional and/or modified BMPs identified during Phase 1 in accordance with the proposed schedule.

3. Phase 3. During the fourth and fifth years of the permit term, the permittee shall assess the effectiveness of the implemented BMPs in eliminating the MS4's contribution to receiving water impairments, using data collected through the monitoring program developed under Part F of this permit and other information on BMP performance, as applicable. If the contributions to the impairments have not been eliminated, the permittee shall identify additional BMPs that will be implemented or modified to further reduce discharges of the pollutants of concern.

   Rationale: A variety of approaches have been taken in addressing impaired waters for which TMDLs have not yet been developed. This model permit presents two options that could be considered acceptable.

   For Option A, 10% has been included as the recommended pollutant load reduction, but any specific percentage greater than zero could be acceptable depending on conditions in local watersheds.

   For Option B, the permit could additionally identify specific BMPs to be deployed as part of the BMP-based iterative process designed to reduce pollutants of concern. Because of the large diversity of available BMPs, this model permit does not attempt to list examples.

Discharges to Waters in Good Condition

Any new or increased discharge (including increased pollutant loadings from existing discharges) through the MS4 to surface waters is subject to antidegradation regulations.

In order to satisfy antidegradation requirements, there shall be no new or increased discharge from the MS4 to high quality waters (waters in good condition) that would lower water quality or affect the existing or designated uses, except where [permitting agency] determines that the new or increased discharge complies with water quality standards.

<u>Part F: Monitoring</u>

Comprehensive Outfall and In-Stream Monitoring Program

Within 2 years of the effective date this permit the permittee shall develop, public notice, and submit to [permitting agency] for review and approval a comprehensive monitoring program that includes outfall and in-stream monitoring. The permittee shall fully implement the program upon approval. Following approval, the monitoring program will be incorporated into the permit as enforceable permit provisions through the major permit modification process.

The monitoring program shall meet the following objectives:

1. Make wet weather loading estimates of the parameters in Table A from the MS4 to all receiving waters. Number of samples, sampling frequencies, and number and locations

of sampling stations must be adequate to ensure data are statistically significant and interpretable. Qualifying wet weather events are storms with at least 0.1 inches of precipitation occurring at least 72 hours after the end of a previous event. All samples must be collected in such a manner that the sample is representative of the discharge.

> [Table A: the permit should contain a list of specific pollutants commonly found in stormwater that must be included in the monitoring program; this list should include nutrients, sediment, bacteria, BOD/COD, metals (copper, lead, and zinc), oil and grease, and trash.]

2. Derive and refine event mean concentrations (EMCs) for the pollutants in Table A for each land use within the MS4 service area.

3. Evaluate the health of the receiving waters, to include biological and physical indicators such as macroinvertebrates and geomorphologic factors as well as temperature and pH. Number of samples, frequencies, and locations must be adequate to ensure data are statistically significant and interpretable for long-term trend purposes (not variation among individual years or seasons).

4. Include any additional necessary monitoring for purposes of source identification and wasteload allocation tracking. To comply with this condition, the permittee must monitor all pollutants and all water body segments for which MS4 discharges have been assigned wasteload allocations (WLAs). This strategy must align with the Consolidated TMDL Implementation Plan required in Part E of this permit. Monitoring must be adequate to determine if relevant WLAs are being attained within specified timeframes in order to make modifications to relevant management programs, as necessary.

5. All chemical analyses shall be performed in accordance with analytical methods approved under 40 C.F.R. Part 136. When there is not an approved analytical method, the applicant may use any suitable method, but must provide a description of the method to be approved by [permitting agency] prior to use.

Utilization of the Monitoring Program

The permittee must use the information collected through the monitoring program to evaluate the quality of the stormwater program and the health of the receiving waters, at a minimum to include:

1. The permittee shall estimate annual cumulative pollutant loadings for pollutants listed in Table A and any other pollutants subject to WLAs. Pollutant loadings and, as appropriate, event mean concentrations, will be reported in DMRs and annual reports on TMDL implementation and will be used:

a. To track compliance with TMDL implementation milestones and benchmarks included in the TMDL Implementation Plan (see Part E); and
b. To assess the effectiveness of the permittee's stormwater management programs and controls, and make adjustments as necessary, as part of the Annual Report process (see Part C).

2. The permittee shall identify water quality improvement and/or degradation in receiving waters.

Following approval of the program, any changes to monitoring locations, frequencies, or methods shall be considered a major modification to the permit.

Dry Weather Monitoring

The permittee shall continue efforts to detect the presence of illicit connections and improper discharges to the MS4 pursuant to the SWMP (see Part D of this permit). As described in Part D, the dry weather screening program shall be sufficient to estimate the frequency and volume of dry weather discharges and their environmental impact.

Source Identification Program

The permittee shall continue to implement a program to identify, investigate, and address areas and/or sources within its jurisdiction that may be contributing excessive levels of pollutants to the MS4 and receiving waters, including but not limited to those pollutants identified in Table A and any pollutants for which the permittee has been assigned WLAs.

Post Construction BMP Monitoring

The permittee shall design and implement a post-construction BMP monitoring program for purposes of assessing the pollution and volume reduction effects of post-construction BMPs and will include at least one of each major type of BMP used for stormwater control within the MS4's jurisdiction (including bioretention, green roofs, filtration systems, ponds, and wetlands). Monitoring shall assess chemical parameters and/or flow reductions, as applicable. The results of this program shall be used in determining BMP implementation priorities.

Reporting of Monitoring Results

The permittee shall continue to report monitoring results annually in a Discharge Monitoring Report. Monitoring results obtained during the previous year shall also be summarized and reported in the Annual Report. [Include logical information for submitting these reports, such as a mailing address, email address, and/or website.]

Rationale: Phase I MS4s are required to conduct discharge characterization and field screening, to develop a monitoring program, and to conduct an assessment of controls. 40 CFR § 122.26(d)(1)(iii), (d)(2)(iii), (d)(2)(v). All NPDES permits must specify the type, intervals, and frequency of monitoring sufficient to

yield data which are representative of the monitored activity. 40 CFR § 122.48(b). Monitoring requirements must also be sufficient to determine compliance with permit limitations. 40 CFR § 122.44.

This model permit recommends a requirement that the permittee develop a comprehensive monitoring program that will yield representative data and that can be used to determine compliance with permit effluent limitations including TMDL Implementation Plan schedules and final attainment dates. If the permit requires monitoring in less than all watersheds/water body segments (contrary to this model permit's recommendation), it should at the very least require the permittee to demonstrate that the monitoring locations it has chosen are in fact sufficiently representative in order to be used for this purpose.

Rather than allowing the permittee to develop its own program, permits can be more prescriptive, as long as the included monitoring requirements meet the recommended criteria set forth in this model permit as well as all federal and state requirements (and it is the responsibility of the permitting agency to demonstrate that they do). This model permit does not attempt to recommend specific monitoring requirements, parameters, etc. because of the highly watershed-specific nature of stormwater monitoring.

The deadline for the monitoring program should be the same as for the TMDL Implementation Plan required in Part E so that they can be developed concurrently and inform each other. The permit should provide some guidance about the monitoring that permittees should perform in the interim period before the comprehensive program is developed, but this model does not attempt to include any such guidance for the reasons stated in the previous paragraph.

If the previous permit required a monitoring program, the renewed permit should require that it be updated to meet the criteria described in this model.

Aside from the comprehensive monitoring program, other types of monitoring (dry weather, BMP, etc.) should be catalogued in the monitoring section of the permit, even if described in more detail in other permit sections, so that all requirements are listed in one place, nothing gets lost, and all monitoring efforts are considered holistically.

The BMP monitoring section should list the specific types of BMPs that permittees must monitor. The model permit includes "bioretention, green roofs, filtration systems, ponds, and wetlands" as an example, but this list should be adapted as necessary to reflect the specific types and names of the BMPs used in the permittee jurisdiction.