

**United States Environmental Protection Agency (EPA)
National Pollutant Discharge Elimination System (NPDES)**

**GENERAL PERMITS FOR STORMWATER DISCHARGES FROM
SMALL MUNICIPAL SEPARATE STORM SEWER SYSTEMS
IN MASSACHUSETTS NORTH COASTAL WATERSHEDS**

**AUTHORIZATION TO DISCHARGE UNDER THE
NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM**

In compliance with the provisions of the Clean Water Act (CWA), as amended (33 U.S.C. §1251 *et seq.*), and the Massachusetts Clean Waters Act, as amended (M.G.L. Chap.21 §§ 26-53), any operator of a small municipal separate storm sewer system whose system

- Is located in the areas described in Part 1.1;
- Is eligible for coverage under Part 1.2 and Part 1.9; and
- Submits a complete and accurate Notice of Intent in accordance with Part 1.7.2 of this permit and receives written authorization from EPA

is authorized to discharge in accordance with the conditions and the requirements set forth herein.

The following appendices are also included as part of these permits:

Appendix A – Definitions, Abbreviations, and Acronyms;

Appendix B – Standard permit conditions applicable to all authorized discharges;

Appendix C – Areas covered by this permit;

Appendix D – Endangered Species Act Eligibility Guidance;

Appendix E – National Historic Preservation Act Eligibility Guidance;

Appendix F – Suggested Format and Required Information for the Notice of Intent (NOI);

Appendix G – Requirements for Small MS4s Subject to Approved TMDLs;

Appendix H – Analytical Methods for Impaired Waters Monitoring; and

Appendix I – Field Measurements, Benchmarks, and Instrumentation

These permits become effective on [insert date of FR publication].

These permits and the authorization to discharge expire at midnight, [insert date 5 years from the effective date].

Signed this day of

Stephen S. Perkins, Director
Office of Ecosystem Protection
United States Environmental Protection Agency
5 Post Office Square – Suite 100
Boston, Massachusetts 02109-3912

Glenn Haas, Director
Division of Watershed Management
Department of Environmental Protection
One Winter Street
Boston, Massachusetts 02108

Table of Contents

1.0 INTRODUCTION	4
1.1 AREAS OF COVERAGE	4
1.2 ELIGIBILITY.....	4
1.2.1 Small MS4s Covered.....	4
1.3 LIMITATIONS ON COVERAGE.....	5
1.4 NON-STORMWATER DISCHARGES.....	6
1.5 PERMIT COMPLIANCE.....	6
1.6 CONTINUATION OF THIS PERMIT.....	7
1.7 OBTAINING AUTHORIZATION TO DISCHARGE.....	7
1.7.1 How to Obtain Authorization to Discharge.....	7
1.7.2 Notice of Intent.....	7
1.7.3 Submission of Notice of Intent.....	8
1.7.4 Public Notice of NOI and Effective Date of Coverage.....	8
1.8 INDIVIDUAL PERMITS AND ALTERNATIVE GENERAL PERMITS	9
1.8.1 EPA Requiring Authorization under an Individual or Alternative General Permit	9
1.8.2 Permittee Requesting Authorization under an Individual Permit or Alternative General Permit.....	9
1.9 SPECIAL ELIGIBILITY DETERMINATIONS	10
1.9.1 Documentation Regarding Endangered Species.....	10
1.9.2 Documentation Regarding Historic Properties	10
1.10 STORMWATER MANAGEMENT PROGRAM (SWMP).....	10
1.10.1 Stormwater Management Program Availability	11
1.10.2 Contents of the Stormwater Management Program.....	11
1.10.3 Requirements for New Permittees	12
2.0 NON-NUMERIC EFFLUENT LIMITATIONS	12
2.1 WATER QUALITY BASED EFFLUENT LIMITATIONS	12
2.1.1 Requirements to Meet Water Quality Standards	12
2.2 DISCHARGES TO IMPAIRED WATERS	13
2.2.1 Discharge to Impaired Waters with an Approved TMDL	13
2.2.2 Discharge to Impaired Waters without an Approved TMDL	17
2.3 INCREASED DISCHARGES, NEW DISCHARGERS, AND ANTIDEGRADATION	18
2.3.1 Increased Discharges	18
2.3.1.1 Increased Discharges to Impaired Waters without an Approved TMDL.....	18
2.3.1.2 Increased Discharges to Impaired Waters with an approved TMDL	18
2.3.2 New Dischargers	19
2.3.2.1 New Discharger to Impaired Waters without an Approved TMDL.....	19
2.3.2.2 New Discharger to Impaired Waters with an Approved TMDL	19
2.3.3 Antidegradation	19
2.4 REQUIREMENTS TO REDUCE POLLUTANTS TO THE MAXIMUM EXTENT PRACTICABLE (MEP)	20
2.4.1 Control Measures.....	21
2.4.2 Public Education and Outreach	21
2.4.3 Public Involvement and Participation.....	24
2.4.4 Illicit Discharge Detection and Elimination (IDDE) Program.....	24
2.4.5 Construction Site Stormwater Runoff Control	37
2.4.6 Stormwater Management in New Development and Redevelopment (Post Construction Stormwater Management)	38
2.4.7 Good House Keeping and Pollution Prevention for Permittee Owned Operations	42
3.0 OUTFALL MONITORING PROGRAM.....	51
3.1 MONITORING FREQUENCY AND LOCATION	51
3.2 DRY WEATHER SCREENING AND ANALYTICAL MONITORING	52

3.3	WET WEATHER ANALYTICAL MONITORING	53
4.0	ADDITIONAL STATE REQUIREMENTS.....	53
4.1	PUBLIC DRINKING WATER SUPPLY REQUIREMENTS	53
4.2	GROUNDWATER RECHARGE.....	54
5.0	PROGRAM EVALUATION, RECORD KEEPING, AND REPORTING	54
5.1	PROGRAM EVALUATION.....	54
5.2	RECORD KEEPING.....	55
5.3	REPORTING.....	55
6.0	REQUIREMENTS FOR STATE AND FEDERAL NON-TRADITIONAL MS4S..	57
7.0	REQUIREMENTS FOR STATE TRANSPORTATION AGENCIES	57

1.0 Introduction

This document consists of three (3) general permits covering the areas listed in Part 1.1. Each general permit is applicable to a particular type of entity within an area. The permits contain some identical language and conditions that are applicable across all regulated entities, and therefore are presented just once in Parts 1 through 5 and Appendices A through F and Appendix H. Other conditions are applicable to a particular set of authorized entities; these terms and conditions are included in Part 6, Part 7, and Appendix G. Throughout the permit, the terms “this permit” or “the permit” will refer to all three general permits.

1.1 Areas of Coverage

This permit covers the identified small municipal separate storm sewer systems (MS4s) located in the areas listed in Appendix C. The permit applies to:

- Systems owned by cities and towns,
- Systems owned by a state, a county, or the United States; and
- Systems owned by state transportation agencies.

1.2 Eligibility

The MS4 shall meet the eligibility provisions described in Part 1.2.1 and Part 1.9 to be eligible for coverage under this permit.

1.2.1 Small MS4s Covered

This permit covers the discharge of stormwater from small MS4s as defined at 40 CFR § 122.26(b) (16). This includes MS4s described in 40 CFR §122.32(a) (1) and (a) (2). An MS4 is eligible for coverage under this permit if it is:

- A small MS4 within the permit areas listed in Appendix C of the permit;
- Not a large or medium MS4 as defined in 40 CFR §§122.26(b)(4) or (7);
- Located either fully or partially within an urbanized area as determined by the latest Decennial Census by the Bureau of Census (the 2000 Census); or
- Located in a geographic area designated by EPA as requiring a permit.

If the small MS4 is not located entirely within an urbanized area, only the portion of the MS4 that is located within the urbanized area is regulated under 40 CFR §122.32(a) (1).

A small municipal separate storm sewer system means all separate storm sewers that are:

- Owned or operated by the United States, a state, city, town, borough, county, parish, district, association, or other public body (created by or pursuant to state law) having jurisdiction over disposal of sewage, industrial wastes, stormwater, or other wastes, including special districts under state law such as a sewer district, flood control district or drainage district, or similar entity, or an Indian tribe or an authorized Indian tribal organization, or a designated and approved management agency under section 208 of the CWA that discharges to waters of the United States.
- Not defined as large or medium municipal separate storm sewer systems pursuant to 40 CFR § 122.26(b) (4) and (b) (7) or designated under 40 CFR § 122.26(a) (1) (v).
- This term includes systems similar to separate storm sewer systems in municipalities such as systems at military bases, large hospitals or prison complexes, and highways and other

thoroughfares. The term does not include separate storm sewers in very discrete areas, such as individual buildings.

1.3 Limitations on Coverage

This permit does not authorize the following:

- a. Stormwater discharges mixed with sources of non-stormwater unless such non-stormwater discharges are:
 - In compliance with a separate NPDES permit; or
 - A non-stormwater discharge as listed in Part 1.4.
- b. Stormwater discharges associated with industrial activity as defined in 40 CFR §122.26 (b) (14) (i)-(ix) and (xi).
- c. Stormwater discharges associated with construction activity as defined in 40 CFR §122.26(b) (14) (x) or (b) (15).
- d. Stormwater discharges currently covered under another permit, including discharges covered under other regionally issued general permits.
- e. Stormwater discharges or discharge related activities that are likely to adversely affect any species that are listed as endangered or threatened under the Endangered Species Act (ESA) or result in the adverse modification or destruction of habitat that is designated as critical under the ESA. The permittee shall follow the procedures detailed in Appendix D to make a determination regarding eligibility. The permittee shall certify compliance with this provision on the submitted NOI.
- f. Stormwater discharges whose direct or indirect impacts do not prevent or minimize adverse effects on any Essential Fish Habitat.
- g. Stormwater discharges, or implementation of a stormwater management program, which adversely affects properties listed or eligible to be listed on the National Register of Historic Places. The permittee shall follow the procedures detailed in Appendix E to make a determination regarding eligibility. The permittee shall certify compliance with this provision on the submitted NOI.
- h. Stormwater discharges to territorial seas, the waters of the contiguous zone, and the oceans.
- i. Stormwater discharges prohibited under 40 CFR § 122.4.
- j. Stormwater discharges to the subsurface subject to state Underground Injection Control (UIC) regulations. Although the permit includes provisions related to infiltration and groundwater recharge, structural controls that dispose of stormwater into the ground may be subject to UIC regulation requirements. Authorization for such discharges shall be obtained from Massachusetts Department of Environmental Protection, Bureau of Resource Protection, Drinking Water Program, Underground Injection Control, One Winter Street, Boston, MA 02108 – phone 617-

348-4014.

k. Stormwater discharges that cause or contribute to an instream exceedance of a water quality standard, including jeopardizing public and private drinking water sources.

l. New dischargers (as defined in 40 CFR § 122.2) to waters designated as tier 3 for antidegradation purposes under 40 CFR § 131.12 (a) (3).

1.4 Non-Stormwater Discharges

The following non-stormwater discharges do not need to be addressed unless the permittee, EPA or the Massachusetts Department of Environmental Protection (MassDEP) determines that they are significant contributors of pollutants to the MS4. These discharges are acceptable non-stormwater discharges unless identified by EPA, MassDEP or the permittee as significant contributors of pollutants to waters of the United States. If the permittee identifies these discharges as significant contributors of pollutants to the MS4, the permittee shall address them as part of the Illicit Discharge Detection and Elimination Program described in Part 2.4.4 of this permit

- a. Water line flushing
- b. Landscape irrigation
- c. Diverted stream flows
- d. Rising ground water
- e. Uncontaminated ground water infiltration (as defined at 40 CFR 35.2005(20))
- f. Uncontaminated pumped ground water
- g. Discharge from potable water sources
- h. Foundation drains
- i. Air conditioning condensation
- j. Irrigation water, springs
- k. Water from crawl space pumps
- l. Footing drains
- m. Lawn watering
- n. Individual resident car washing
- o. Flows from riparian habitats and wetlands
- p. De-chlorinated swimming pool discharges
- q. Street wash waters and
- r. Residential building wash waters without detergents

Discharges or flows from fire fighting activities are excluded from the effective prohibition against non-stormwater and need only be addressed where they are identified as significant sources of pollutants to waters of the United States.

1.5 Permit Compliance

Any non-compliance with the requirements of this permit constitutes a violation of the permit and the CWA and may be grounds for an enforcement action and may result in the imposition of injunctive relief and/or penalties.

1.6 Continuation of this Permit

If this permit is not reissued prior to the expiration date, it will be administratively continued in accordance with the Administrative Procedure Act and remain in force and effect for discharges that were authorized prior to expiration. If a small MS4 was granted permit authorization prior to the expiration date of this permit, it will automatically remain authorized by this permit until the earliest of:

- Authorization for coverage under a reissued general permit following timely and appropriate submittal of a complete and accurate NOI requesting authorization to discharge under the reissued permit; or
- Issuance or denial of an individual permit for the MS4's discharges; or
- Authorization or denial under an alternative general permit.

1.7 Obtaining Authorization to Discharge

1.7.1 How to Obtain Authorization to Discharge

To obtain authorization under this permit, a small MS4 shall:

- Be located in the areas listed in Appendix C of this permit;
- Meet the eligibility requirements in Part 1.2 and Part 1.9;
- Submit a complete and accurate Notice of Intent (NOI) in accordance with the requirements of Part 1.7.2; and
- Receive written authorization from EPA and MassDEP.

1.7.2 Notice of Intent

a. Operators of Small MS4s seeking authorization to discharge under the terms and conditions of this permit shall submit a Notice of Intent that contains the information identified in Appendix F.

b. The NOI shall be signed by an appropriate official (see Appendix B Subparagraph 11).

c. The NOI shall contain the following certification: *I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, I certify that the information submitted is, to best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.*

Print the name and title of the official, followed by signature and date.

d. Small MS4s not authorized by the May 1, 2003 small MS4 general permit (MS4-2003) shall use the form designated by the Massachusetts Department of Environmental Protection. MassDEP requires the use of this form. EPA does not require the use of this form, but will accept information submitted on this form. All signatures shall be originals. This form is available at: <http://www.mass.gov/dep/water/approvals/wm08.pdf>.

e. The NOI shall be submitted **within 90 days of the effective date of the permit**. If an MS4 is designated under 40 CFR §122.32(a) (2) or (b), the NOI shall be submitted within 180 days of receipt of notice unless granted a longer period of time by EPA.

1.7.3 Submission of Notice of Intent

a. All small MS4s shall submit a complete and accurate Notice of Intent to EPA-Region 1 at the following address:

United States Environmental Protection Agency
5 Post Office Square – Suite 100
Mail Code – OEP06-4
Boston, Massachusetts 02109-3912
ATTN: Thelma Murphy

b. All small MS4s shall also submit a copy of the NOI to the Massachusetts Department of Environmental Protection at the following address:

Massachusetts Department of Environmental Protection
One Winter Street -5th Floor
Boston, Massachusetts 02108
ATTN: Frederick Civian, Stormwater Coordinator

c. Late notification: A small MS4 is not prohibited from submitting a NOI after the dates provided in Part 1.7.2 (e). However, if a late NOI is submitted, authorization is only for discharges that occur after permit authorization is granted. EPA reserves the right to take enforcement actions for any unpermitted discharges.

1.7.4 Public Notice of NOI and Effective Date of Coverage

a. EPA will provide a public notice and opportunity for comment on the contents of the submitted NOIs. The public comment period will be a minimum of 30 calendar days. A small MS4 will be authorized to discharge under the terms and conditions of this permit upon written receipt of notice from EPA and MassDEP.

b. Based on a review of a small MS4's NOI or other information, EPA may grant authorization, extend the public comment period, or deny authorization under this permit and require submission of an application for an individual or alternative NPDES permit. (See Part 1.8)

c. If a small MS4 was authorized to discharge under the MS4-2003 and that authorization was effective as of May 1, 2008, authorization to discharge under the MS4-2003 is automatically continued on an interim basis for up to 180 days from the effective date of this permit. Interim coverage will terminate earlier than the 180 days when a complete and accurate NOI is submitted and coverage under this permit is either granted or denied. If the operator of an MS4 was previously authorized under the MS4-2003 and submits an accurate and complete NOI for this permit in a timely manner and if notification of authorization under this permit has not occurred within 180 days from the effective date of this permit, authorization under the MS4-2003 permit

will be automatically continued on an interim basis. Interim coverage will terminate after authorization under this permit or upon issuance or denial of an alternative permit or an individual permit.

1.8 Individual Permits and Alternative General Permits

1.8.1 EPA Requiring Authorization under an Individual or Alternative General Permit

a. EPA may require a small MS4 to apply for and obtain coverage under either an individual NPDES permit or an alternative NPDES general permit. Any interested person may petition EPA in accordance with the provisions of 40 CFR §122.26(f) to require a small MS4 to apply for and/or obtain coverage under either an individual NPDES permit or an alternative NPDES general permit. If EPA requires a small MS4 to apply for an individual or alternative NPDES permit, EPA will notify the small MS4 in writing that a permit application is required. This notification will include a brief statement of the reasons for this decision and will provide application information. In addition, if the small MS4 is an existing permittee authorized under this permit, the notice will set a deadline to file the application, and will include a statement that on the effective date of the individual NPDES permit, or the alternative general permit as it applies to the small MS4, authorization under this general permit will automatically terminate. EPA may grant additional time to submit the application following a request by the small MS4. If a small MS4 is authorized under this permit and fails to submit an individual NPDES or an alternative general permit application as required by EPA, then the authorization under this permit to the small MS4 is automatically terminated at the end of the date specified by EPA as the deadline for application submittal. EPA may take enforcement action for any subsequent unpermitted discharge.

b. When EPA issues an individual NPDES permit or a small MS4 is authorized to discharge under an alternative NPDES general permit, authorization under this permit will automatically terminate on the effective date of the individual permit or the date of authorization under the alternative general permit.

1.8.2 Permittee Requesting Authorization under an Individual Permit or Alternative General Permit

a. A small MS4 may request to be excluded from this general permit by applying for an individual permit or an alternate general permit. In such a case, a small MS4 shall submit an individual permit application in accordance with the requirements of 40 CFR §§122.33(b) (2) (i) or §122.33(b) (2) (ii), with reasons supporting the request, to EPA at the address listed in Part 1.7.3 of this permit. The request may be granted by issuance of an individual permit or authorization of coverage under an alternative general permit if EPA determines that the reasons stated by the small MS4 are adequate to support the request. (See 40 CFR § 122.28(b) (3))

b. When an individual NPDES permit is issued, or a small MS4 is authorized to discharge under an alternative NPDES general permit, authorization under this permit automatically terminates on the effective date of the individual permit or the date of authorization of coverage under the alternative general permit.

1.9 Special Eligibility Determinations

1.9.1 Documentation Regarding Endangered Species

The small MS4 shall certify eligibility regarding endangered species in the NOI required by Part 1.7.2. The Stormwater Management Program (SWMP) shall include documentation supporting the permittee's eligibility determination with regard to federal Endangered and Threatened Species and Critical Habitat Protection, including:

- Information on whether federally listed endangered or threatened species, or critical habitat are found in proximity to the MS4's stormwater outfalls or stormwater best management practices (BMPs);
- Whether such species or habitat are likely to be adversely affected by the stormwater discharges or stormwater discharge-related activities, e.g., BMP installation;
- Results of the Appendix D endangered species screening determinations; and
- If applicable, a description of the measures the small MS4 shall implement to protect federally listed endangered or threatened species, or critical habitat, including any conditions imposed by the U.S. Fish and Wildlife Service or the U.S. National Marine Fisheries Service (the Services). If a permittee fails to document and implement such measures, those discharges are ineligible for coverage under this permit.

1.9.2 Documentation Regarding Historic Properties

The small MS4 shall certify eligibility regarding historic properties on the NOI required by Part 1.7.2. The SWMP shall include documentation supporting the small MS4's eligibility determination with regard to Historic Properties Preservation, including:

- Information on whether the permittee's stormwater discharges, allowable non-stormwater discharges, or stormwater discharge-related activities would have an effect on a property that is listed or eligible for listing on the National Register of Historic Properties (NRHP);
- Where such effects may occur, any documents received by the permittee or any written agreements the permittee has made with the State Historic Preservation Officer (SHPO), Tribal Historic Preservation Officer (THPO), or other Tribal representative to mitigate those effects;
- Results of the Appendix E historic property screening investigations; and
- If applicable, a description of the measures the permittee shall implement to avoid or minimize adverse impacts on places listed, or eligible for listing, on the NRHP, including any conditions imposed by the SHPO or THPO. If the permittee fails to document and implement such measures, those discharges are ineligible for coverage under this permit.

1.10 Stormwater Management Program (SWMP)

- a. The permittee shall develop a written SWMP. The SWMP shall be signed in accordance with Appendix B, Subsection 11, including the date of signature. A signature and date is required for initial program preparation and for any significant revision to the program, which shall be in writing. The written SWMP shall be completed **within 120 days following the permittee's receipt of authorization from EPA** to discharge under the permit.

- b. Permittees authorized by the MS4-2003 shall modify or update their existing Best Management Practices (BMPs) and measurable goals to meet the terms and conditions of this permit within 120 days of the date of authorization. These modifications and updates shall be reflected in the written SWMP. Permittees authorized by the MS4-2003 shall continue to implement their existing SWMP until the program has been updated.
- c. The permittee is encouraged to maintain an adequate funding source for the implementation of this program. Adequate funding means that a consistent source of revenue exists for the program.

1.10.1 Stormwater Management Program Availability

- a. The permittee shall retain a copy of the current SWMP required by this permit at the office or facility of the person listed as the program contact on the submitted Notice of Intent (NOI). The SWMP shall be immediately available to representatives from EPA, MassDEP, or the Services at the time of an onsite inspection or upon request.
- b. The permittee shall provide a copy of the SWMP as soon as practicable to any member of the public who makes such a request in writing. A reasonable fee may be charged for copying. EPA encourages permittees to post the SWMP online.

1.10.2 Contents of the Stormwater Management Program

The SWMP shall contain the following:

- Identification of names and titles of people responsible for program implementation. If a position is currently unfilled, list the title of the position and modify the SWMP with the name once the position is filled;
 - Listing of all receiving waters, their classification under the applicable state water quality standards, any impairments, and number of outfalls that discharge to each water. In addition to the receiving water, the permittee is encouraged to document in the SWMP all public drinking water sources including both surface water and groundwater that may be impacted by MS4 discharges;
 - Documentation of compliance with Part 1.9.1;
 - Documentation of compliance with Part 1.9.2;
 - The map of separate storm sewer system required by Part 2.4.4.6;
 - Description of practices to achieve water quality requirements (Parts 2.1, 2.2 and 2.3, as applicable);
 - Description of practices to achieve stormwater control to the maximum extent practicable (MEP) (Part 2.4);
- For each permit condition in Part 2.4 identify:
- The person(s) or department responsible for the measure;
 - The BMPs for the control measure or permit requirement;
 - The measurable goal(s) for each BMP. Each measurable goal shall include milestones and timeframes for its implementation and have a quantity or quality associated with its endpoint. Each goal shall have a measure of assessment associated with it.
- Description of measures to avoid or minimize impacts to public drinking surface water and groundwater. The permittee is also encouraged to include provisions to notify public water supplies in the event of an emergency. (For more information or assistance,

contact: Massachusetts Department of Environmental Protection, Bureau of Resource Protection, Drinking Water Program, One Winter Street, Boston, MA 02108 – phone 617.292.5770).

- Documentation of compliance with Part 3.0;
- Documentation of compliance with Part 4.0;
- Annual program evaluation (Part 5.1). Update annually and maintain copies.

1.10.3 Requirements for New Permittees

Permittees not authorized by the MS4-2003 shall meet all deadlines contained in this permit except the following:

- Mapping requirement in Part 2.4.4.6 shall be completed within three (3) years of the effective date of the permit;
- Monitoring requirements in Part 3.0 shall commence by the beginning of year four (4) of the permit. If the map required by Part 2.4.4.6 is complete prior to the deadline specified above, the permittee shall begin monitoring within three (3) months of completion of the map; and
- The ordinances required by Parts 2.4.4, 2.4.5 and 2.4.6 shall be completed as soon as possible, but no later than the end of year four (4) of the permit.

2.0 Non-Numeric Effluent Limitations

2.1 Water Quality Based Effluent Limitations

Pursuant to Clean Water Act 402(p)(3)(B)(iii), this permit includes provisions to ensure that discharges from the permittee's small MS4 do not cause or contribute to an exceedance of water quality standards.

2.1.1 Requirements to Meet Water Quality Standards

a. Discharges shall not cause or contribute to an exceedance of applicable water quality standards (including numeric and narrative water quality criteria) for the receiving water. In the absence of information suggesting otherwise, discharges will be presumed to meet the applicable water quality standards if the permittee fully satisfies the provisions of this permit.

b. For each waterbody that receives a discharge from the small MS4, the permittee shall identify in the SWMP the following information: the water quality classification applicable to that waterbody, any identified impairments, and standards that are applicable to the water classification. Applicable water quality standards are compiled at <http://www.epa.gov/waterscience/standards/wqslibrary/>.

c. Except for discharges addressed by Part 2.2.1, if at any time the permittee becomes aware, or EPA or MassDEP determines, that a discharge causes or contributes to an exceedance of applicable water quality standards, the permittee shall within 60 days of becoming aware of the situation eliminate the conditions causing or contributing to the exceedance of water quality standards. If elimination within 60 days is infeasible, the permittee shall document in the SWMP measures and anticipated timeframe to eliminate the conditions causing or contributing to the exceedances. Within 30 days of eliminating the condition, the permittee shall document the measures used to correct the condition in the SWMP. The permittee shall comply with any

additional requirements or schedules established by EPA or MassDEP, including any requirement to submit additional information concerning the potential cause of the exceedance. EPA reserves the right to notify the permittee that an alternative permit or individual permit is necessary in accordance with Part 1.8 and to take any enforcement action allowed under the CWA.

2.2 Discharges to Impaired Waters

Impaired waters include those waters that MassDEP has identified pursuant to section 303(d) of the Clean Water Act as not meeting applicable state water quality standards. Impaired waters encompass both those with approved Total Maximum Daily Loads (TMDLs), and those for which TMDL development has been identified as necessary, but for which a TMDL has not yet been approved.

2.2.1 Discharge to Impaired Waters with an Approved TMDL

- a. “Approved TMDLs” for discharges from the permittee’s MS4 are TMDLs that have been approved by EPA as of the effective date of this permit.
- b. Appendix G of the permit identifies areas for which there are approved TMDLs applicable to small MS4s. It also identifies, by section, the provisions in this permit that contain TMDL-based requirements that the permittee shall implement to be consistent with the terms of the approved TMDL. In addition to those specific requirements, EPA may notify the permittee of the need to comply with additional requirements to achieve consistency with the waste load allocation (WLA). If EPA determines more stringent requirements are necessary to support achievement of the WLA, EPA will impose such requirements through a modification to this permit pursuant to 40 CFR §122.62 or by their inclusion into this permit upon reissuance. Alternatively, EPA may notify the permittee that an individual permit application is necessary in accordance with Part 1.8.
- c. For any discharge from its MS4 to impaired waters with an approved TMDL, the permittee shall comply with the specific terms of Part 2.1 of this permit. In addition where an approved TMDL establishes a WLA that applies to its MS4 discharges, the permittee shall implement the specific BMPs and other permit requirements identified in Appendix G to achieve consistency with the WLA. Permittees may be subject to requirements of more than one TMDL.
- d. Appendix G, Table G-1, lists the municipalities within the Charles River watershed that have regulated MS4s subject to approved TMDLs for phosphorus and pathogens. Permittees that operate regulated MS4s located within these municipalities that discharge to the Charles River or within its tributary watershed must reduce phosphorus loading to support achievement of the WLA included in the approved TMDLs for nutrients. For this purpose, the permittee shall develop a Phosphorus Control Plan (PCP) that describes measures necessary to reduce the amount of phosphorus in discharges from its MS4 to the Charles River and its tributaries to achieve consistency with the WLA for the phosphorous loadings published in the *Final TMDL for Nutrients in the Lower Charles River Basin* (June 2007, CN 301.1). Table 6-4 from the final TMDL document is reproduced in Appendix G as Table G-2 and indicates the estimated WLA

and respective percent phosphorus loading reductions required throughout each municipality to achieve the WLA.¹

- i. The permittee shall implement its PCP as soon as possible but no later than four (4) years from the effective date of this permit. The permittee shall complete implementation the PCP as soon as possible, but no later than ten (10) years from the effective date of this permit. The permittee shall meet interim milestones as specified in this permit.
- ii. At the beginning of PCP development, the permittee shall develop a priority ranking of areas and infrastructure for implementation of phosphorus control practices. The ranking shall be developed through the use of available screening and monitoring results collected pursuant to Part 3 of this permit and mapping required pursuant to Part 2.4.4.6. The permittee shall also include in this prioritization an analysis/assessment of site suitability for potential phosphorus control measures based on soil type and other factors. The permittee shall coordinate this activity with the requirement of Part 2.4.6.9(c). A description, method and the result of this priority ranking shall be included in the PCP.
- iii. The permittee shall describe the non-structural controls used for management of phosphorus. Non-structural controls generally include pollution prevention measures such as, but not limited to, public education and outreach, detection and elimination of illicit discharges, source control, and good housekeeping practices. The description of non-structural controls shall include a summary of non-structural controls the permittee currently implements and plans to implement to achieve consistency with the WLA for phosphorus loading to the Charles River. These include, but are not limited to, the measures required by this permit and referenced in Appendix G, Table G-1. This description of non-structural controls shall be included in the PCP.
- iv. The permittee shall describe the structural controls necessary for management of phosphorus. Structural control measures include methods such as reduction or disconnection of impervious areas, and systems that infiltrate, inject, or otherwise treat stormwater. The description of structural controls shall include a summary of structural controls the permittee currently implements and plans to implement to achieve consistency with WLA for phosphorus loading to the Charles River. Structural controls include, but are not limited to, reduction in impervious area (IA) and directly connected impervious area (DCIA) through the use of bioretention or other infiltration systems. The requirements of Part 2.4.6.9(c) should be included in this summary. This description of structural controls shall be included in the PCP.
- v. Although the phosphorus control measures need only be applied in those areas tributary to the regulated portion of the permittee's MS4 (see Part 1.2.1), EPA recognizes that the successful achievement of the basin wide phosphorus WLA will depend on alternative or additional loading reductions occurring in non-regulated tributary areas of the Charles River. Therefore, the

¹ The estimated loadings and required percent reductions presented in Table G-2 apply to the entire land area within each town that is tributary to the Charles River, and represent phosphorous loadings from regulated and unregulated stormwater discharges, nonpoint sources, and illicit discharges. Therefore, the permittee is not responsible for satisfying the entire reduction assigned to its municipality through implementation of its PCP controlling its MS4 discharges. Rather, the permittee's PCP shall support achievement of this reduction and the overall WLA in concert with phosphorus reductions achieved by others, both within and exclusive of EPA or state permitting programs.

permittee should consider implementation of measures in non-regulated areas, especially where such implementation requires little or no additional resources; or where such implementation would have a significant and demonstrable effect on phosphorus loading. EPA will consider all phosphorus control measures in both regulated and non-regulated areas when assessing the permittee's progress toward achieving the WLA. (For example, if a municipality plans to exceed its required phosphorus load reduction –see Table G-2 – in its non-regulated areas, it will have a lower phosphorus load reduction requirement in its regulated areas, consistent with footnote 1.)

vi. The permittee shall establish for the calendar year 2010, an estimate of the total annual phosphorus load (2010 Total Phosphorus Load) discharging from its entire municipality into the Charles River Basin or its tributaries and the total annual phosphorus load from land area tributary to its regulated MS4 (2010 MS4-Only Phosphorus Load) into the Charles River or its tributaries.

The permittee shall determine for its municipality the 2010 Total Phosphorus Load. The permittee shall take the estimated phosphorus loading from its municipality found in Table G-2 as a starting point (2000 Total Phosphorus Load), and adjust this number by subtracting from it reductions resulting from abatement measures implemented between January 1, 2000 and December 31, 2009 and adding to it increases in loadings due to new development or changes in practices during the same period. Where the permittee lacks sufficient information to factor in reductions and increases, the 2010 Total Phosphorus Load should be assumed to be equal to the 2000 Total Phosphorus Load. The 2010 MS4-Only Phosphorus Load shall be established by further subtracting the estimated contributory loading of phosphorus from any land area located outside of its regulated MS4 tributary area. The permittee shall utilize the mapping completed pursuant to Part 2.4.4.6 of this permit, available land use information, and respective loading factors published in the TMDL to calculate this estimate.

In lieu of developing a 2010 MS4-Only Phosphorus Load, the MS4 may decide in the PCP to plan and implement municipality-wide phosphorus reductions in areas tributary to the Charles River to achieve consistency with its WLA. If so, this strategy must be clearly identified in the PCP.

vii. The estimated 2010 Total Phosphorus Loading and 2010 MS4-Only Phosphorus Loading shall be compared with the “TMDL Loading (kg/yr)” established for the permittee to yield revised “Percent Reduction Required” targets for phosphorus loading (see Table G-2). Permittees shall utilize these percent loading reduction estimates to calculate the phosphorus reduction required and to assist in development and implementation of its PCP. The permittee shall identify in its PCP measures it anticipates will be required to achieve the required percent reduction and the anticipated reductions that will be achieved.

viii. The permittee shall complete the development of its PCP as soon as possible but no later than four (4) years from the effective date of the permit. The PCP shall be a written document and a part of the SWMP. The permittee's PCP shall incorporate, to the extent allowable under state law, control measures that eliminate or reduce the contribution of phosphorus to and from its MS4. The PCP shall at a minimum contain the following elements:

- Legal Analysis: The permittee shall develop an analysis that identifies and describes changes to the MS4's bylaws and ordinances including the creation or amendment of financial and regulatory authorities that are needed to effectively implement the PCP.
- Incentives/Assistance: The permittee shall identify incentives or regulatory assistance or guidance that the permittee seeks from EPA or MassDEP to implement effectively the PCP. This should include an assessment of aspects of the PCP where its legal analysis indicates the exercise of state or federal law may assist implementation to the PCP. (Examples include use of EPA's residual designation authority to permit third-parties, watershed-based permitting approaches, trading mechanisms or offsets, and/or credits for pollution reduction).
- Mapping – completed pursuant to Part 2.4.4.6(d)(iii).
- Prioritization – as described in Part 2.2.1(d)(ii).
- Non-Structural Controls – as described in Part 2.2.1(d)(iii).
- Structural Controls – as described in Part 2.2.1(d)(iv).
- Phosphorus Loadings and Reductions – phosphorus loading and reductions estimated pursuant to Part 2.2.1(d)(vi) of this permit. This includes the 2000 Total Phosphorus Load, 2010 Total Phosphorus Load, 2010 MS4-Only Phosphorus Load, and estimated annual phosphorus reductions achieved since January 2000 and anticipated through the implementation of the permittee's PCP. The permittee shall record the estimated annual phosphorus loading reductions and increases beginning the effective date of this permit. This information must be reported in accordance with Part 2.2.1(d)(ix) and (d)(x).
- Design and Construction Schedule – the permittee shall establish as part of its PCP a design and construction schedule for any necessary structural controls identified by the permittee for implementation of the PCP.
- Funding Sources: The permittee shall estimate the cost for implementing its PCP and describe anticipated funding mechanisms. This may involve the creation of a storm water utility, user fees, or alternative mechanisms. The permittee shall describe the steps it will take to implement the financing plan such as conceptual development, outreach to affected parties, development of legal authorities and other significant steps.
- Third Party Implementers: The permittee shall identify the name of any third party that is responsible for implementing a portion of the PCP. The permittee shall describe what activities are being undertaken by the third party and document that the requirements of Part 2.4.1(b) have been met. This may include an entity managing off-site mitigation offsets and credits for pollution reduction. EPA has proposed to exercise its residual designation authority in three MS4 communities in the Charles River watershed and anticipates that it may designate additional stormwater discharges as needing permits in order to achieve the WLA of the phosphorus TMDL. The permittee is encouraged to coordinate the stormwater control efforts of these residually designated discharges as third party implementers to reach the phosphorus loading reductions.

ix. The permittee shall submit with its year 2 annual report the following additional information representing its progress in development of its PCP:

- Results from its funding sources assessment;
- Results from its legal analysis;

- The identification of anticipated incentives, assistance or guidance to be sought from EPA or MassDEP;
- Available initial estimates of loads and load reductions required by Part 2.2.1(b)(vi) of this permit;
- A listing of the measures that the permittee has instituted between January 1, 2000 and December 31, 2009 and is likely to consider in estimating its 2010 Total Phosphorus Load and 2010 MS4-Only Phosphorus Load;
- A listing of potential measures that the permittee is likely to include in the final PCP to reduce phosphorus loadings; and whether or not the permittee anticipates implementing such measure in non-regulated portions of its municipality;
- Information required by Part 2.4.6.8(c) – the inventory and priority ranking of MS4-owned property and infrastructure (including public right of way) that may have the potential to be retrofitted with measures designed to reduce the impervious area or directly connected impervious area tributary to its MS4 or the Charles River;
- Whether the permittee is contemplating an offsite mitigation credit system as part of its PCP, and if so, the type of program planned.

x. Beginning one (1) year after implementation of the PCP, the permittee shall estimate (in kg/yr and percent) the reduction in phosphorus loading from its municipality to the Charles River during the previous year. The permittee shall make the estimate in terms of the total land area of its municipality tributary to the Charles River and the land area tributary to the Charles River that is a part of the regulated MS4 only (i.e. urbanized area). The permittee shall base its estimate on quantifiable reductions attributable to implementation of its PCP, its overall SWMP, or other efforts.

e. Appendix G, Table G-3, lists the names of municipalities that have small MS4s located in the Neponset River Watershed that are subject to an approved TMDL for bacteria.

f. Appendix G, Table G-4, lists the names of municipalities that have small MS4s located in the Shawsheen River Basin that are subject to an approved TMDL for bacteria.

g. Permittees subject to Tables G-3 and G- 4 shall highlight in their annual report all control measures implemented during the reporting period or planned to be implemented in the upcoming reporting period to control the pollutants identified in the approved TMDLs. The permittee shall include in the annual report and the SWMP the basis supporting the permittee's determination that such controls are adequate to meet the waste load reductions required by the TMDL.

2.2.2 Discharge to Impaired Waters without an Approved TMDL

Discharges from the MS4 to impaired waters without approved TMDLs shall comply with Part 2.1.1 of this permit. The permittee shall address in its SWMP and annual reports how the MS4 discharges which contribute to pollutant loads and/or conditions identified as causing the impairment will be controlled such that they do not cause or contribute to the impairment. The permittee shall:

- a. Assess the potential for discharges from the MS4 to the impaired waters to contribute the pollutant(s) of concern;
- b. Identify BMPs in addition to or modified from those already existing in the SWMP to ensure that discharges do not cause or contribute to the impairment; and
- c. Implement identified additional BMPs and include a description of the appropriateness of each BMP in each annual report.

2.3 Increased Discharges, New Dischargers, and Antidegradation

2.3.1 Increased Discharges

For the purposes of this permit, an increased discharge is a discharge of stormwater directly into the MS4 or from the MS4 that commences after the effective date of this permit and is the result of the creation of one or more acres of new impervious surfaces.

2.3.1.1 Increased Discharges to Impaired Waters without an Approved TMDL

Increased discharges to impaired waters without an approved TMDL are not eligible for coverage under this permit unless the permittee:

- a. Identifies and estimates a load for each pollutant for which the water is impaired from each increased discharge;
- b. Implements additional BMPs to assure that the increased discharge is not causing or contributing to a water quality standards violation; and
- c. Identifies in its annual report those additional BMPs that the permittee has or will implement to assure that the increased discharge is not causing or contributing to a water quality standards violation and results in a net decrease in pollutant loadings to the impaired water through enhanced control of existing discharges or through offsets.

2.3.1.2 Increased Discharges to Impaired Waters with an approved TMDL

Increased discharges to impaired waters with an approved TMDL are not eligible for coverage under this permit unless the permittee:

- a. Identifies and estimates a load for each pollutant for which a TMDL exists from each increased discharge;
- b. Implements additional BMPs to assure that the increased discharge is not causing or contributing to a water quality standards violation and supports the achievement of the approved TMDL; and
- c. Identifies in its annual report those additional BMPs that the permittee will implement to assure that the increased discharge is not causing or contributing to a water quality standards violation and results in a net decrease in pollutant loading beyond that already required by the TMDL through enhanced control of an existing discharge or through offsets.

2.3.2 New Dischargers

A new discharger is any building, structure, facility or installation (a) from which there is or may be a ‘discharge of pollutants’ (b) that did not commence the ‘discharge of pollutants’ at a particular ‘site’ prior to August 13, 1979; (c) which is not a ‘new source’; and (d) which never received a finally effective NPDES permit for discharges at that ‘site.’

For purposes of this permit, the definition of “new discharger” as it applies to a city or town, “site” means the land area which is the jurisdictional boundaries of the MS4.

For purposes of this permit, the definition of “new discharger”, as it applies to a state-owned or federal-owned MS4, “site” means the land area where the MS4 is located as of the effective date of this permit; and the same or contiguous land if any new structure, facility or installation that is served by the MS4 is created there after the effective date of this permit

2.3.2.1 New Discharger to Impaired Waters without an Approved TMDL

New discharges from the MS4 to impaired waters without an approved TMDL are not eligible for coverage under this permit. The permittee must apply for an individual permit.

2.3.2.2 New Discharger to Impaired Waters with an Approved TMDL

New discharges from the MS4 to impaired waters with an approved TMDL are not eligible for coverage under this permit unless the permittee submits to EPA documentation before the date of authorization to discharge under this permit that:

- a. There are sufficient remaining pollutant load allocations in all TMDLs applicable to the discharges;
- b. The existing discharges to the waterbody are subject to compliance schedules designed to bring the waterbody into attainment with water quality standards; and
- c. Retains such documentation in the SWMP; or
- d. To the extent consistent with law and EPA policy, establishes an offset for the discharge of the pollutant identified in the TMDL. The permittee shall retain any relevant documentation with the SWMP and
- e. Receives an affirmative determination from EPA that the new discharger meets the requirements of this paragraph.

2.3.3 Antidegradation

For the purposes of assuring compliance with antidegradation requirements for new or increased discharges to unimpaired waters, the permittee shall notify EPA and MassDEP a minimum of sixty (60) days prior to commencement of a new or increased discharge with a description of the discharge and documentation demonstrating that the discharge will satisfy the anti-degradation provisions of the state water quality standards. The permittee shall take into account in its anti-degradation analysis that Massachusetts evaluates whether a water is a “high quality” water on a pollutant-by pollutant basis. Thus, for anti-degradation purposes, a water may be impaired for

some pollutants and unimpaired for other.

- a. For any new or increased discharges, including new or increased discharges to tier I waters as defined by 314 CMR 4.04, the permittee shall demonstrate that the level of water quality necessary to protect existing uses shall be maintained and protected.
- b. For discharges to tier II waters as defined by 314 CMR 4.04 the permittee shall demonstrate to the satisfaction of MassDEP that the discharge will cause no significant lowering of water quality by documenting one or more of the following:
 - i. The discharge is not significant because it is de minimis as defined by state policy;
 - ii. The discharge is not significant because it is temporary in nature and that upon completion of the discharge period the existing water uses and water quality will be equal to or better than that which existed prior to the commencement of the discharge;
 - iii. The discharge does not cause a significant lowering of water quality because the effluent will be of a quality equal to or better than the existing water quality of the receiving water; or
 - iv. Stormwater controls are designed such that there is no discharge of stormwater from the volume associated with a 1 inch storm event. The volume of stormwater to be controlled is determined by multiplying the amount of developed (impervious) area by 1 inch.
- c. EPA and MassDEP reserve the right to consider a discharge meeting the requirements above to be significant for reasons additional to or different from those relied upon by the permittee including where the cumulative effect of the discharge and previously or contemporaneously approved discharges produce a significant lowering of water quality.
- d. If the permittee cannot demonstrate and document that its new or increased discharge to a tier II water is insignificant according to the above criteria, it may attempt to obtain a variance from MassDEP pursuant to 314 CMR 4.04(4).
- e. A new or increased discharge to high quality water is not authorized under this permit unless MassDEP determines that the discharge satisfies the requirements of the Massachusetts anti-degradation requirements.
- f. New or increased discharges to outstanding resource waters are not authorized under this permit. Permittees must seek an individual permit for any such new or increased discharge.

2.4 Requirements to Reduce Pollutants to the Maximum Extent Practicable (MEP)

- a. The BMPs and control measures in this part are non-numeric effluent limitations.
- b. The permittee shall reduce the discharge of pollutants from the MS4 to the maximum extent practicable (MEP). MEP is generally a focus on pollution prevention and source control in combination with structural controls and treatment. MEP is not instantaneous but an iterative

process.

2.4.1 Control Measures

a. Permittees authorized under the MS4 2003 shall continue to implement their existing SWMPs while updating their SWMPs pursuant to the new permit. This permit does not extend the compliance deadlines set forth in the MS4-2003.

b. Implementation of one or more of the minimum control measures described in Parts 2.4.2-2.4.7 or other permit requirements may be shared with another entity or the other entity may fully implement the measure or requirement, if the following requirements are satisfied:

- The other entity, in fact, implements the control measure.
- The particular control measure or component of thereof, is at least as stringent as the corresponding permit requirement.
- The other entity agrees to implement the control measure on the permittee's behalf. A legally binding written agreement concerning this obligation is required. This acceptance may be in the form of a contract or other written documentation and it shall outline roles and responsibilities of each party. This document shall be included as part of the SWMP. If the other entity agrees to report on the control measure, the permittee shall supply the other entity with the reporting requirement contained in this permit under Part 5.3.
- The permittee remains legally responsible for permit compliance and implementation of the control measure if the other entity fails to implement.

c. Cooperation between operators of interconnected municipal separate storm sewer systems is strongly encouraged. The permittee shall identify all interconnections within the system. The permittee shall depict interconnections on the map required by Part 2.4.4.6.

2.4.2 Public Education and Outreach

Objective: The permittee shall implement an education program that includes educational goals based on specific stormwater issues within the small MS4 community. The program shall include a focus on pollutants of concern for impaired waters and priority waters within the MS4. Priority waters include beaches, shell fishing areas, and drinking water supplies. The ultimate goal of a public education program is to create a change in public behavior and knowledge so that pollutants in stormwater are reduced.

2.4.2.1 - The permittee shall continue to implement the public education program required by the MS4-2003 by distributing educational material to the MS4 community. The educational program shall express specific messages, define the targeted audience for each message, and identify responsible parties for program implementation. If appropriate for the target audience, materials may be developed in a language other than English. At a minimum, the program shall provide information concerning the impact of stormwater discharges on water bodies within the community, especially those waters that are impaired or identified as priority waters. The program shall identify steps and/or activities that the public can take to reduce the pollutants in stormwater runoff and their impacts to the environment.

a. The educational program shall include education and outreach efforts for the following four (4) audiences: (1) residents, (2) businesses, institutions, and commercial facilities, (3) developers (construction), and (4) industrial facilities.

b. Beginning the first year of the permit the permittee shall distribute a minimum of two (2) educational messages over the permit term to each audience identified in Part 2.4.2.1(a) (The permittee shall distribute at least eight educational messages). The distribution of materials to each audience shall be spaced at least a year apart. Educational messages may be printed materials such as brochures or newsletters; electronic materials such as websites; mass media such as newspaper articles or public service announcement (radio or cable); or poster displays in a public area such as town/city hall. The permittee may use existing materials if they are appropriate for the message the permittee chooses to deliver or the permittee may develop its own educational materials. The permittee may partner with other MS4s or groups to implement the education program.

c. The permittee shall at a minimum consider the topics listed in paragraphs 2.4.2.1 (c) (i – iv) when developing the outreach/education program. The topics are not exclusive and the permittee shall focus on those topics most relevant to the community.

i. Residential program: maintenance of septic systems; effects of outdoor activities such as lawn care (use of pesticides, herbicides, and fertilizers) on water quality; benefits of appropriate on-site infiltration of stormwater; effects of automotive work and car washing on water quality; proper disposal of swimming pool water; and proper management of pet waste. If the small MS4 has greater than 50 percent of its residents serviced by septic systems, the municipality shall include maintenance of septic systems as part of its education program.

- For MS4s located in areas listed in Appendix G, Table G-1, the residential education program must address the proper use of fertilizer, alternatives to traditional fertilizers containing phosphorus, alternatives to detergents containing phosphates, and septic system maintenance. The education material shall describe methods of recycling lawn clipping and yard waste as fertilizer and mulch, or its proper collection and disposal. The educational materials shall include information encouraging the use of alternative forms of fertilizers containing lower nutrient compositions, or slower releasing or less available forms of nutrients.
- For MS4s located in areas listed in Appendix G, Tables G-1, G-3 and G-4, the permittee shall disseminate educational materials to dog owners at the time of issuance or renewal of a dog license, or other appropriate time. Education materials shall describe the detrimental impacts of improper management of pet waste, requirements for waste collection and disposal, and penalties for non-compliance. The permittee shall address proper maintenance of septic systems.

ii. Business/Commercial/Institution program: proper lawn maintenance (use of pesticides, herbicides and fertilizer); benefits of appropriate on-site infiltration of stormwater; building maintenance (use of detergents); use of salt or other de-icing and anti-icing materials (minimize their use); proper storage of salt or other de-icing/anti-icing materials (cover/prevent runoff to storm system and contamination to ground water); proper storage of materials (emphasize

pollution prevention); proper management of waste materials and dumpsters (cover and pollution prevention); proper management of parking lot surfaces (sweeping); proper car care activities (washing of vehicles and maintenance); and proper disposal of swimming pool water (except de-chlorinated swimming pool water) by entities such as motels, hotels, and health clubs (discharges should be free from pollutants).

- For MS4s located in areas listed in Appendix G, Table G-1 the education program for this audience shall include information on the proper use of fertilizer, alternatives to fertilizers containing phosphorus, and the benefits of street/parking lot sweeping for control of phosphorus. The education material shall describe methods of recycling lawn clipping and yard waste as fertilizer and mulch, or its proper collection and disposal. The educational materials shall include information encouraging the use of alternative forms of fertilizers containing lower nutrient compositions, or slower releasing or less available forms of nutrients.

iii. Developers and Construction: proper sediment and erosion control management practices; information about Low Impact Development (LID) principles and technologies; and information about EPA's construction general permit (CGP). This education can also be a part of the Construction Site Stormwater Runoff Control measure detailed in Part 2.4.5.

iv. Industrial program: equipment inspection to ensure timely maintenance; proper storage of industrial materials (emphasize pollution prevention); proper management and disposal of wastes; proper management of dumpsters; minimization of use of salt or other de-icing/anti-icing materials; proper storage of salt or other de-icing/anti-icing materials (cover/prevent runoff to storm system and ground water contamination); benefits of appropriate on-site infiltration of stormwater runoff from areas with low exposure to industrial materials such as roofs or employee parking; and proper maintenance of parking lot surfaces (sweeping).

- For MS4s located in areas listed in Appendix G, Table G-1, the education program for this audience shall include information on the proper use of fertilizer, alternatives to fertilizers containing phosphorus, and the benefits of street/parking lot sweeping for control of phosphorus. The education material shall describe methods of recycling lawn clipping and yard waste as fertilizer and mulch, or its proper collection and disposal. The educational materials shall include information encouraging the use of alternative forms of fertilizers containing lower nutrient compositions, or slower releasing or less available forms of nutrients.

2.4.2.2 - An effective program shall show evidence of focused messages and audiences as well as demonstration that the defined goal of the program has been achieved. The permittee shall define the specific messages for each audience. The permittee shall identify methods that it will use to evaluate the effectiveness of the educational messages and the overall education program. Any methods used to evaluate the effectiveness of the program shall be tied to the defined goals of the program and the overall objective of changes in behavior and knowledge.

2.4.2.3 - The permittee shall modify any ineffective messages or distribution techniques for an audience prior to the next scheduled message delivery.

2.4.2.4 - The permittee shall report on the messages for each audience; the method for distribution; the measures/methods used to assess the effectiveness of the messages, and the method/measures used to assess the overall effectiveness of the education program in the annual report.

2.4.3 Public Involvement and Participation

Objective: The permittee shall provide opportunities to engage the public to participate in the review and implementation of the permittee's SWMP.

2.4.3.1 - All public involvement activities shall comply with state public notice requirements (MGL Chapter 39 Section 23B). The SWMP and all annual reports shall be available to the public.

2.4.3.2 - The permittee shall annually provide the public an opportunity to participate in the review and implementation of the stormwater management program.

2.4.3.3 - The permittee shall report on the activities undertaken to provide public participation opportunities including compliance with Part 2.4.3.1. Public participation opportunities pursuant to Part 2.4.3.2 may include, but are not limited to, websites; hotlines; clean-up teams; monitoring teams; or an advisory committee.

2.4.4 Illicit Discharge Detection and Elimination (IDDE) Program

Objective: The permittee shall implement an IDDE program to systematically find and eliminate sources of non-stormwater from the separate storm sewer system and to implement defined procedures to prevent illicit connections and discharges.

2.4.4.1- Definitions and Prohibitions - The permittee shall prohibit discharges from sanitary sewer overflows (SSOs) and all other illicit discharges to its MS4 and require removal of such discharges consistent with Part 2.4.4.2 of this permit. An SSO is a discharge of untreated sanitary wastewater. SSOs are illegal and shall be eliminated. An illicit discharge is any discharge to a municipal separate storm sewer that is not composed entirely of stormwater. Exceptions to this definition are discharges pursuant to a separate NPDES permit (other than the NPDES permit for discharges from the municipal sewer system) and non-stormwater discharges listed in Part 1.4.

2.4.4.2 –Elimination of Illicit Discharges - Illicit discharges to the MS4 are prohibited, and any such discharge violates this permit and remains a violation until eliminated. Upon detection of an illicit discharge, the permittee shall eliminate an illicit discharge as expeditiously as possible. The small MS4 shall identify all responsible parties for such a discharge and require immediate cessation of improper disposal practices in accordance with its legal authorities. Where elimination of an illicit discharge within 30 days of its confirmation is not possible, the permittee shall establish an expeditious schedule for its elimination. No later than 6 months after its confirmation such discharge shall be eliminated or appropriate enforcement actions shall be initiated by the permittee against any party responsible for the discharge. At a minimum, the owner of the illicit connection shall be notified in writing about the illicit connection and

expected remedy of the situation. In the interim, the permittee shall take all reasonable and prudent measures to minimize the discharge of pollutants to its MS4.

2.4.4.3 – Continuation of MS4-2003 Requirements - During the development of the new components of the IDDE program required by this permit, permittees authorized by the MS4-2003 shall continue to implement the IDDE program required by the MS4-2003 to detect and address non-stormwater discharges to the separate storm sewer system (see Part II.B.3, Part IV B.3 and Part V B.3 of the MS4-2003) including illegal dumping.

2.4.4.4 – Non-Stormwater Discharges - The sources of non- stormwater listed in Part 1.4 of this permit need not be eliminated, provided that the permittee determines that these discharges are not significant contributors of pollutants to the MS4. The permittee shall evaluate the sources of non-stormwater discharges in Part 1.4 and determine whether these sources are significant contributors of pollutants to the municipal system. If the permittee determines these sources are significant, the permittee shall implement measures to control the sources so they are no longer significant contributors of pollutants or to prohibit the sources. The permittee shall document in the SWMP its determinations on each of the sources of non-stormwater discharges listed in Part 1.4.

2.4.4.5 – Sanitary Sewer Overflows - Discharges from SSOs to the MS4 are prohibited and any such discharge violates this permit and remains a violation until eliminated. Upon detection, the permittee shall eliminate SSOs immediately and take all interim mitigation measures to minimize the discharge of pollutants into and from its MS4 until elimination is completed.

a. The permittee shall identify all known SSOs that have not yet been eliminated or for which the underlying cause has not yet been identified or corrected. This shall include SSOs resulting, during dry or wet weather, from inadequate conveyance capacities, or where interconnectivity of the storm and sanitary sewer infrastructure allows for communication of flow between the systems. The permittee need not include SSOs resulting from isolated episodes of pipe blockages or collapses that have been eliminated and that have not since recurred. Within 60 days of the effective date of the permit, the permittee shall develop an inventory of all identified SSOs indicating:

- Location (approximate street crossing/address and receiving water, if any);
- Date(s) and time(s) (i.e., beginning and end of any known discharge);
- Estimated volume(s);
- Description of the occurrence indicating known or suspected cause(s);
- Mitigation and corrective measures completed with dates implemented; and
- Mitigation and corrective measures planned with implementation schedules.

The permittee shall maintain the inventory as a part of the SWMP and update the inventory annually. The permittee shall include a summary of this information in each annual report.

b. Upon becoming aware of an SSO not previously included in the inventory, the permittee shall provide written notice to EPA and MassDEP in accordance with Paragraph B.12 of Appendix B.

c. SSOs shall be eliminated immediately unless subject to a compliance schedule established pursuant to orders issued by EPA or MassDEP.

d. The permittee shall include in its annual report the status of mitigation and corrective measures implemented by the permittee to address each SSO identified pursuant to this part.

2.4.4.6 – System mapping - The permittee shall develop a map of the separate storm sewer system. The map of the separate storm sewer system shall be completed within two (2) years of the effective date of this permit. This permit does not provide additional time for completion of the map that was required by the MS4-2003.

a. The map shall include the entire separate storm sewer system, including pipes, catch basins, interconnections to other small MS4s, and treatment structures associated with the separate storm sewer system and other structures associated with the system. The map shall show outfalls and receiving waters. The map shall provide a comprehensive depiction of key infrastructure and factors influencing proper system operation and the potential for illicit sanitary sewer discharges. Mapping may include: key sanitary sewer infrastructure, monitoring data (if available), cleaning and repair activities, capital projects, water resources, and topographic features. The map must include the following unless indicated otherwise:

i. Infrastructure (required)

- Municipal separate storm sewer system (including inter-municipal and private connections where available)
- Municipal combined sewer system, if applicable
- Catchment delineations

Infrastructure (recommended)

- Representation of sewer material, size and age;
- Sewersheds or sewer alignments experiencing inadequate levels of service (LOS) with indication of cause(s)
- Area where the permittee's MS4 had been or could be influenced by septic system discharges (e.g., areas with poor soils, or high ground water elevations unsuitable for conventional subsurface disposal systems)

ii. Water Resources (required)

- Waterbodies identified by name

Water Resources (recommended)

- Seasonal high water table elevations impacting sanitary alignments
- Topography
- Orthophotography (if available)

iii. Operation and Maintenance, Investigations, Remediation (recommended)

- Alignments, dates and representation of work completed (with legend) of past illicit discharge investigations (e.g., flow isolation, dye testing, CCTV)
- Locations of suspected, confirmed and corrected illicit discharges (with dates and flow estimates)

b. The map may be hard copy or on a Geographic Information System (GIS). The required scale and detail of the map shall be appropriate to facilitate a rapid understanding of the system by the

permittee, EPA and MassDEP. In addition, the mapping shall serve as a planning tool for the implementation and phasing of the IDDE program, demonstration of the extent of complete and planned investigations and corrections. The permittee shall update the map as necessary to reflect newly discovered information, corrections or modifications, and progress made.

c. The permittee shall report on the progress towards the completion of the map required by this permit in the annual report.

d. For MS4s located in areas listed in Appendix G, Table G-1 of this permit, the permittee must develop a map with the elements detailed in paragraphs (a - c) above and the additional requirements detailed in this paragraph. To ensure legible mapping, the permittee shall group information appropriately and represent it thematically (e.g. by color) with legends or schedules where possible. The following information and features, as applicable to the permittee, shall be included on the map:

i. Infrastructure

- Sewer flow direction and flow type (e.g., pressure, vacuum, gravity)
- Select rim and invert elevations (for comparison with water table and vertical separation between systems)
- Separate storm sewer catchments, sanitary sewersheds, combined sewersheds,
- Common/twin-invert manholes or structures (i.e. structures serving or housing both separate storm and sanitary sewers)
- Sanitary and storm sewer alignments served by known or suspected underdrain systems
- Sewer alignments with common trench construction and major crossings representing high potential for communication due to water table influence
- Lift stations, siphons, and other key sewer structures

ii. Operation and Maintenance, Investigations, Remediation, and Capital Projects

- Sewer infrastructure cleaning and repair projects that have occurred or will occur within five years of the effective date of this permit
- Alignments and dates of past and planned infiltration/inflow (I/I) investigations and sanitary sewer remediation work
- Planned capital projects relative to utility and roadway rehabilitation or replacement
- Proposed phasing of future illicit discharge investigations
- Septic system information including locations and dates of Title 5 inspections, upgrades, and repairs (if available).

iii. Phosphorus Control Mapping Components

- The permittee shall develop mapping to facilitate implementation of its PCP required by Part 2.2. The mapping shall serve as a planning tool for prioritizing implementation of the permittee's PCP. The mapping shall complement and augment the mapping required by this Part. The required number, scale and detail of the maps shall be appropriate for the permittee to facilitate a preliminary understanding of factors influencing phosphorus loadings.

- The following specific information and features, as applicable to the permittee's municipality, shall be included in the mapping and updated as necessary to reflect significant changes:
 - Land use (available from MassGIS and EPA)
 - Impervious cover (available from MassGIS and EPA)
 - Soil types using the Massachusetts soil classification
 - Locations with excessive nutrient loadings as identified through investigations
 - Public and private parking lots (> 5,000 SF)
 - Public and private yard waste storage or composting facilities
 - Automotive wash and detailing establishments
 - Public and private parks, recreational fields, golf courses, and green space where turf is fertilized
 - Street alignments with extensive deciduous tree canopies
 - Areas with highly erodible soils or persistent erosion
 - Other areas with known or suspected significant sources of phosphorus (e.g., significant pet and waterfowl waste accumulation areas)
 - Public and private structural controls installed for, or capable of, phosphorus removal
 - Municipally-owned, abandoned, or vacant land available and suitable for implementation of structural phosphorus control best management practices including retrofits.

2.4.4.7 - Outfall Inventory – The purpose of the outfall inventory is to record the actual location of each outfall and to provide a characterization of its condition (size, material, flow, etc). The permittee shall conduct an outfall inventory for each stream mile within its regulated jurisdiction that receives a discharge from the MS4. The inventory shall begin in the catchments identified as priorities by the permittee based on prior knowledge or in catchments identified as priorities in the ranking and assessment required by Part 2.4.4.8 (c) of this permit. Each outfall shall be labeled in the field with a unique identifier. The following information shall be recorded for each outfall: dimensions, shape, material (concrete, PVC), spatial location (GPS), and physical condition. Additionally, any sensory observations shall also be recorded. Sensory observations include odor, color, turbidity, floatables, or oil sheen.

- a. The permittee shall complete an outfall inventory for 25 percent of the outfalls each year of this permit, beginning in year 2 of the permit (completion of 100 percent by end of permit term). An outfall means a point source as defined by 40 CFR § 122.2 as the point where the municipal separate storm sewer discharges to waters of the United States. An outfall does not include open conveyances connecting two municipal separate storm sewers or pipes, tunnels or other conveyances that connect segments of the same stream or other waters of the United States and that are used to convey waters of the United States.
- b. If the outfall is inaccessible or submerged, the permittee shall proceed to the first accessible upstream manhole or structure for the observation and sampling, if appropriate, as described in Part 2.4.4.8. The information on the outfall inventory shall indicate the identification of the upstream location and the proximity of the upstream location to the inaccessible outfall.

c. If flow is observed at the outfall during the inventory, a sample of the flow shall be collected. At a minimum, the permittee shall sample for the following parameters: conductivity, turbidity, pH, chlorine, temperature, surfactants (as MBAS), potassium, ammonia and *E.coli* or enterococcus (as appropriate depending on whether a discharge is to a fresh water or a marine water). The outfall sampling conducted as part of the outfall inventory may fulfill the requirements of the Dry Weather Outfall Screening requirements of Part 3.0 provided the appropriate conditions described in Part 3.0 have been met. If the flow is determined to be an illicit discharge, the permittee shall comply with Part 2.4.4.2.

d. If the permittee was authorized under the MS4-2003 and completed an Outfall Inventory consistent with the requirements of this part, the permittee shall document the information as part of the SWMP and annual reports. Any information required by this part, but not collected under the MS4-2003 shall be updated and documented in the SWMP and annual reports.

2.4.4.8 – Illicit Discharge Detection and Elimination Program –The IDDE program shall be a written document completed within one year from the effective date of the permit. The written IDDE program document is a part of the SWMP. The IDDE program shall include the elements described in Parts 2.4.4.8 (a-h). Part 2.4.4.8 (d) (vi) is only applicable to MS4 located in the areas listed in Appendix G, Table G-1. If the IDDE program does not contain all the elements listed in this Part, the IDDE program shall include written documentation or rationale as to why an element is not applicable to the permittee. The permittee shall maintain all records used to develop the IDDE program as described in Part 5.2.1.

a. –Legal Authority - The IDDE program shall provide that the permittee has adequate legal authority to accomplish the following tasks: prohibit illicit discharges; investigate suspected illicit discharges; eliminate illicit discharges, including discharges from properties not owned by or controlled by the MS4 that discharge into the MS4 system; and enforce the program. Adequate legal authority consists of a currently effective ordinance, by-law, or other regulatory mechanism. For permittees authorized by the MS4-2003, the ordinance, by-law, or other regulatory mechanism was a requirement of the MS4-2003 and was required to be effective by May 1, 2008. The written IDDE program shall include a reference or citation of the authority the permittee will use to implement all aspects of the IDDE program.

b. – Protocol for IDDE Program Responsibilities - The permittee shall establish a written protocol that clearly identifies responsibilities with regard to eliminating illicit discharges. The protocol shall describe who is responsible for eliminating identified illicit connections and other problems identified during investigations; the appropriate methods for elimination of the illicit connection or identified problem; the process for documentation and verification of removal of the connection or the discharge and a procedure for tracking progress towards the overall program goals. The written responsibility protocol shall be complete one (1) year from the effective date of the permit. The permittee shall report on the status of this protocol in the year 2 annual report.

c. – Assessment of Priority Catchments and Problem Catchments – For the purposes of this permit, a catchment is the area that is tributary to an individual outfall. The permittee shall assess the illicit discharge potential of all catchments of the MS4. This assessment will aid in the

identification of priority areas for beginning the systematic investigations for illicit discharges. The permittee may draw from existing information about the MS4 for initial characterization of the illicit discharge potential of all catchments of the MS4.

If the permittee has knowledge of drainage catchments or alignments with known or highly suspected contributions of illicit discharges or SSOs, the MS4 is not required to rank these catchments of the MS4 pursuant to Part 2.4.4.8.(c)(ii) and (iii). In the situation where there are known or suspected illicit discharges, the permittee shall identify these catchments as Problem Catchments. Once the permittee has identified a catchment as a Problem Catchment, the permittee shall continue, or initiate, the isolation and removal procedures for known illicit discharges and SSOs based on the permittee's procedure established pursuant to Part 2.4.4.8.d of this permit or, until these procedures are established, based on procedures the permittee developed under the MS4-2003.

i. The permittee shall delineate the MS4 area into catchments and evaluate each catchment for potential illicit discharges. These delineations shall be included on the map required by Part 2.4.4.6(a). Once delineated, each catchment shall be assessed based on currently available data to determine the potential for illicit discharges.

If the boundaries of the catchment extend beyond the boundaries of the MS4, the permittee is encouraged to work with neighboring MS4s to ensure a complete and accurate assessment. Also see Part 3.1.3 of the permit regarding monitoring at points where there are interconnections between MS4s.

ii. The permittee shall rank each delineated catchment not designated as a Problem Catchment as "high," "medium", or "low" for its potential to have illicit discharges. The ranking shall be based on screening factors that are reflective of existing conditions of the MS4. The purpose of the ranking is to identify and prioritize areas in the MS4 with a high potential for illicit discharges as well as to identify areas where the impact of illicit discharges is already known. The permittee shall begin implementation of the systematic procedure for locating illicit discharges as required in Part 2.4.4.8.d of this permit in Problem Catchments or in areas of the MS4 identified as "high" or with the highest ranking based on the factors detailed below.

In ranking catchments, at a minimum, the permittee shall consider the following factors:

- Past Discharge complaints and reports – any area of the municipality that has a high frequency of complaints should be considered for high illicit discharge potential.
- Poor dry weather receiving water quality- the following guidelines are recommended to identify waters as having a high illicit discharge potential: exceeding fecal coliform or *E.Coli* water quality standards; ammonia-nitrogen levels between 0.30 mg/l and 0.50 mg/l; total phosphorus levels of 0.40 mg/l; surfactants levels of 0.25 mg/l; or any other available sources of dry weather water quality data including state agencies or watershed associations.
- Density of generating sites - Generating sites are those places, including institutional, municipal, commercial, or industrial sites, with a potential to generate pollutants that could contribute to illicit discharges. Examples of these sites include, but are not limited to, car dealers; car washes; gas stations; garden centers; industrial manufacturing areas; colleges and residential areas (septic systems, swimming pools, dumping).

- Stormwater outfall density – Stormwater outfall density is the number of stormwater outfalls per stream mile. Receiving waters with 20 or more outfalls in a stream mile may be considered to have a high illicit discharge potential.
- Age of surrounding development – Developments and buildings 50 years or older may have a high illicit discharge potential. Developments and buildings 20 years or younger will probably have a low illicit discharge potential.
- Sewer conversion – Catchments that were once serviced by septic systems, but have been converted to sewer connections may have a high illicit discharge potential.
- Historic combined sewer systems – Catchments that were once serviced by a combined sewer system, but have been separated may have a high illicit discharge potential.
- Presence of older industrial operations – Older industrial areas tend to have a high potential for cross connections. Older industrial areas are those area that are 40 years or older.
- Aging or failing sewer infrastructure – Sewer systems where the age of the system exceeds 50 years have a high illicit discharge potential.
- Density of aging septic systems – Septic systems 30 years or older are prone to have failures. Areas with older septic system density of 100 units per square mile may have a high illicit discharge potential.
- Culverted streams – any river or stream that is culverted for distances greater than a simple roadway crossing may be considered “high.”

The following is a list of water bodies that the permittee may consider as priorities for evaluation for illicit discharges, but are not necessarily indicators of the presence of illicit connections or discharges

- Water bodies that receive a discharge from the MS4 and are drinking water supplies, shell fishing areas, or beaches.
- Impaired water bodies that receive a discharge from the MS4 with the potential to contain the pollutant identified as the cause of impairment.
- Waters with approved TMDLs and a WLA applicable to the permittee.

The permittee shall consider all factors listed above, but not all factors may apply. The permittee shall include the results of the evaluation with these factors as part of its written IDDE program. The permittee may add additional relevant factors, including location- specific screening factors. If the permittee develops other factors, the permittee shall include the additional factors and the metric used for its evaluation in its written IDDE program. The permittee shall include the results of the evaluation of the factors as part of the IDDE program.

iii. For each factor relevant to the MS4 listed in Part 2.4.4.8 (c) (ii) above, the permittee shall rate each factor as “low”, “medium” or “high” for each catchment’s potential to have illicit discharges. The permittee shall then use the results of the factors to prioritize each catchment as “low”, “medium” or “high” for its overall illicit discharge potential. The permittee shall begin systematic implementation of the illicit discharge detection protocol as described in Part 2.4.4.8 (d) in Problem Catchments and in all catchments identified as priorities by the MS4 or with the highest ranking in the illicit discharge potential ranking. The permittee shall continue the systematic implementation of the illicit detection protocol described in Part 2.4.4.8(d) until the permittee has completed investigation of all catchments within the MS4. The permittee shall

retain the results of the prioritization as part of the written IDDE program. The permittee shall document in the SWMP and the annual reports the basis of any decisions not to implement the protocol in any catchment identified as a priority.

iv. The illicit discharge potential assessment and prioritization shall be completed within one (1) year from the effective date of the permit. The permittee shall document the results of the ranking in the SWMP and shall report the results of the ranking for each catchment in the annual report. The annual report shall also identify and provide all relevant information on Problem Catchments. For each Problem Catchment, the permittee shall identify in the annual report the basis for the Problem Catchment's designation and the progress the permittee has made in detecting and eliminating illicit discharges.

v. In the year 1 annual report, the permittee shall include an inventory of all Problem Catchments. The permittee shall remove all illicit discharges in each identified Problem Catchment pursuant to Part 2.4.4.2. The year 5 annual report shall detail these removals. The permittee shall provide the following information for each Problem Catchment:

- (1) All available documented evidence, including monitoring results of illicit discharges, SSOs, and pollutants causing impairments;
- (2) Completed, ongoing or planned corrective measures addressing the documented illicit discharges, SSOs and pollutants causing impairments; and
- (3) A schedule for completing and verifying measures correcting the documented illicit discharges, SSOs, and pollutants causing impairments.

d. – Systematic Procedure for Locating and Removing Illicit Connections - The permittee shall develop a written systematic procedure for locating and removing illicit connections. The procedure shall include (i) conducting dry weather outfall screening (see Part 3.0), (ii) conducting wet weather outfall monitoring (Part 3.0), (iii) determining the potential source of any illicit connections or discharges; and (iv) documenting the elimination of the illicit connection or discharge. Based on observations in the field, the permittee shall edit maps required in Part 2.4.4.6 to reflect actual field conditions. The permittee shall take into account any limitations regarding accessibility of the outfalls such as safety and access to private property when developing this procedure. The written systematic procedure shall be completed one (1) year from the effective date of the permit. The permittee shall report on the status of this procedure in the annual report. The permittee shall begin implementing the protocol upon its completion. Permittees authorized under the MS4-2003 shall continue implementation of their IDDE programs developed under the MS4-2003 prior to the use of the IDDE program developed pursuant to this part. Permittee shall comply with the requirements of Part 2.4.4.2.

i. The permittee shall begin systematic implementation of the illicit discharge detection procedure as described in Part 2.4.4.8 (d) in all Problem Catchments and catchments identified as priorities by the MS4 or with the highest ranking in the illicit discharge potential assessment. The permittee shall continue the systematic implementation of the illicit discharge detection protocol described in Part 2.4.4.8 (d) until the permittee has completed investigation of all catchments within the MS4. The permittee shall retain the results of the prioritization as part of the written IDDE program. The permittee shall document in the SWMP and the annual report

the basis of any decisions not to implement the protocol in any Problem Catchment or catchment identified as a priority.

ii. The systematic procedure to locate the presence and the source of an illicit discharge may either start from the outfall and work up the catchment; start from the upper parts of the catchment and work down the system; or be a combination of both practices. Whatever the starting point, the procedure shall, at a minimum, include an investigation of junction manholes within the MS4 as described in Part 2.4.4.8(d)(iv). The written systematic procedure shall describe which method for locating illicit discharges the permittee will use.

iii. The permittee shall begin systematically locating illicit discharges using the procedure developed in accordance with Part 2.4.4.8 (d) upon completion. In accordance with Part 2.4.4.2, the permittee shall address any illicit discharges identified prior to completion of the procedure.

iv. The systematic procedure for locating illicit discharges/connections shall include procedures for tracking and identifying the illicit source. The systematic procedure for locating illicit discharges and connections shall describe a storm drain network investigation which involves systematically and progressively observing, sampling (as necessary) and evaluating junction manholes in the MS4 to narrow the location of a suspected illicit connection or discharge to an isolated pipe segment between two manholes. For the purposes of this permit, a junction manhole is a manhole or structure with two or more inlets accepting flow from two or more MS4 alignments. Manholes with inlets solely from private storm drains, individual catch basins, or both are not considered junction manholes for these purposes. Prior to beginning the investigation, the permittee shall determine where in the system to begin investigations and what indicators will be used to determine if the manhole is clean (no illicits) or dirty (suspected illicits). Key junction manholes shall be opened and inspected for visual and olfactory evidence of illicit connections (e.g., excrement, toilet paper, gray filamentous bacterial growth, or sanitary products present). For the purposes of this part, key junction manholes are those junction manholes that can represent one or more junction manholes without compromising adequate implementation of the illicit discharge program.² If visual or olfactory evidence is present, the permittee shall identify the source in accordance with the procedure developed in Part 2.4.4.8(d). If flow is observed in a junction manhole, the permittee shall sample the flow at a minimum for ammonia and surfactants. If these pollutants are present above threshold levels, the permittee may sample for other indicators (e.g. bacteria) or continuously monitor flow, if necessary to identify the source. These indicators shall be included in the written systematic procedure. The permittee may use other methods such as caulk dams, dye testing, video testing, or smoke testing to locate the source.

v. When the source of an illicit discharge is identified and confirmed, the permittee shall record the following information: the location of the discharge and its source(s), a description of the discharge, the method of discovery, date of discovery, date of removal, repair, or enforcement

² In this context, adequate implementation of the illicit discharge program would not be compromised where exclusion of a particular junction manhole as a key junction manhole would not affect the permittee's ability to discern the possible presence of an upstream illicit discharge. Specifically, a permittee can exclude any junction manhole located upstream from another that is in the immediate upstream vicinity or that is serving a drainage alignment with no potential for illicit connections.

action; date, and estimate of the volume of flow removed. The illicit discharge shall be eliminated pursuant to Part 2.4.4.2. The permittee shall include this information as part of each annual report.

vi. For MS4s located in areas listed in Appendix G, Tables G-1, the systematic procedure must include the following elements:

(1) Infrastructure, Verification and Preparation. Infrastructure and junction manhole mapping, and catchment delineations, shall be verified in the field and corrected prior to investigations as necessary. Separate storm sewer infrastructure shall be evaluated for the need to be cleaned to remove debris or blockages that could compromise investigations. Such material shall be removed to the extent possible prior to investigation; however, some cleaning may occur concurrently with investigations.

(2) Dry weather criteria. In order to prevent or limit the influence of stormwater runoff on physical observations and sampling results made and acquired during the investigation, an antecedent dry weather period of 24 hours after cessation of a precipitation event greater than 0.1 inches will be observed prior to commencement of manhole inspections and field monitoring discussed in paragraphs (3) and (4) below. The duration of the antecedent period may be shortened or lengthened by the permittee as necessary or appropriate dependent upon rainfall depth or the relative extent, slope, storage and other influences on the particular catchment under investigation.

(3) Junction Manhole Inspection Methodology. Key junction manholes³ or structures serving the catchment shall be opened and inspected for visual evidence of illicit discharges during a period when the antecedent dry weather criterion has been satisfied (e.g. after 24 hours of dry weather). Inspections shall be completed in a logical progression, typically beginning with the most upstream junction manhole(s) in each catchment.

Where flow is observed in any junction manhole and through visual observation (e.g. presence of excrement, toilet paper, sanitary products) or field monitoring (see (4) below), and the flow indicates the presence of an illicit discharge, the contributing tributary storm sewer alignment shall be identified for investigations to isolate the source(s) in accordance with paragraph (5) below.

Where flow is not observed in a junction manhole, all non-flowing inlets to the structure shall be partially dammed for a 48 hour period when no precipitation is forecast. Inlets shall be dammed by blocking a portion (approximately 20 percent +/- depending on pipe slope) of the pipe diameter at the invert using sandbags, caulking, weirs/plates, or other temporary barriers. Manholes shall thereafter be re-inspected (prior to any precipitation or snow melt) for the capture of periodic or intermittent flows behind any of the inlet dams. The same visual observations and field testing shall be completed on any captured flow to identify alignments for isolation investigations. Though isolation investigations of multiple lateral alignments of a catchment can occur simultaneously, downstream investigations of mainline alignments (after the confluence

³ See Footnote 2

with lateral alignments) shall not proceed until any confounding influence of upstream illicit discharge or SSOs have been eliminated to the extent practicable. Where excessive non-sanitary nutrient loadings cannot be located or eliminated in a timely manner, downstream investigations may still proceed factoring into the observation the influence they may have on downstream screening and monitoring results. The permittee shall include the contributory tributary area in its Phosphorus Control Plan required by Part 2.2 of this permit.

(4) Field Monitoring. Where flow is observed in a junction manhole that does not demonstrate obvious visual or olfactory evidence of an illicit discharge or SSO, a sample shall be collected and analyzed with the field kits and instrumentation identified in Appendix I⁴. The permittee shall compare the measured values with benchmark values using the flow chart in Appendix I to determine the likely dominant source of the flow. Where surfactants are not detected above the benchmark concentration, a flow sample shall be analyzed for chlorine or fluoride to determine if the likely source is natural surface water, groundwater, a potable water source, a swimming pool or an industrial discharge. The permittee shall analyze for the presence of chlorine, fluoride or both as appropriate dependent upon whether the local water supply is chlorinated or fluoridated. However, the permittee shall be aware that the results of chlorine analysis may not always prove conclusive as the chlorine demand found in the storm sewer may diminish or eliminate any chlorine present. It may be necessary for the permittee to adjust benchmark values during the course of investigations after a comparison of measured concentrations with actual incidences of confirmed flow sources.

(5) Isolations and Confirmation of Illicit Discharges. Where physical evidence or field monitoring has identified storm sewer alignments to be influenced by sanitary flows, washwaters, or other illicit discharges, the permittee shall isolate the tributary area for implementation of more detailed investigations. Additional manholes along the alignment shall be inspected to refine the location of potential contamination sources (e.g. an individual home or block of homes). Targeted internal plumbing inspections, dye or smoke testing, CCTV inspections, or other methods consistent with the permittee's established procedures shall then be employed to confirm the flow source(s).

(6) Removal of Illicit Discharges. Where an illicit discharge is verified, the permittee shall exercise its authority as necessary to require its removal pursuant to Part 2.4.4.2 of this permit.

(7) Work Progression and Schedule. Since EPA recommends verification of illicit discharge removals prior to progressing to affected portions of downstream MS4 catchments, the permittee shall maintain, to the extent practical, capacity to mobilize investigation to other catchments or unaffected lateral alignments within the same catchment, to facilitate suitable progress while awaiting correction of illicit discharges or SSOs confounding downstream investigations. Since work progress may be further constrained by the persistence of precipitation and snow melts, the permittee shall provide, to the extent practical, for adequate staffing and equipment resources to perform concurrent investigations in multiple areas. The permittee must complete investigations for a 50 percent of the MS4 catchments by the end of year three (3) of the permit and 100 percent by the end of the permit term. The permittee shall track progress towards this requirement in

⁴ Instrumentation manufactures and models provide in this appendix are for information purposes only. Mention of specific products does not constitute or imply EPA endorsement of same.

annual reports.

(8) Reporting and Evaluation. The permittee shall document in its annual reports required by Part 5.3 the progress of implementing the provisions of this part of the permit, including the results and status of its outfall screening and monitoring, mapping and IDDE procedure implementation. The permittee shall evaluate its progress on implementing the IDDE program by tracking program milestones. Examples may include the number and percentage of MS4 catchment areas and outfalls screened and/or monitored, the percentage or number of structures inspected, and the footage or percentage of MS4 cleaned and inspected by CCTV.

(9) Modifications. Though the IDDE procedure is applicable to most storm sewers, modifications to methods and material may be required to address situations where groundwater or backwater conditions or other issues preclude adequate implementation as described herein. In such instances, the permittee shall make necessary modifications to the IDDE procedure in accordance with Parts 5.1.3 and 5.1.4 of this permit.

e. - Illicit Discharge Prevention Procedures - The permittee shall develop and implement mechanisms and procedures designed to prevent illicit discharges and SSOs. The following are examples that the permittee may use to prevent illicit discharges: spill response and prevention procedures including identification of spills, reporting procedures, containment procedures, and documentation; public awareness (this may be a part of the education program required by Part 2.4.2); reporting (hotlines) and training of public employees on ways to identify potential illicit discharges and SSOs.

f. – Indicators of IDDE Program Progress - The permittee shall define or describe indicators for tracking program success. At a minimum, indicators shall include measures that demonstrate efforts to locate illicit discharges, an elimination of pollutant sources and/or improvement to water quality, the number of illicit discharges found and removed, and the percent and area in acres of the MS4 evaluated using the systematic procedure. The permittee shall evaluate and report the overall effectiveness of the program based on the tracking indicators in the annual report.

g. – Required IDDE Program Milestones - The permittee shall complete investigations at a minimum of ½ (one-half) of the MS4 area served by Problem Catchments described in Part 2.4.4.8.c, and MS4 areas ranked as “high” or “medium by the end of year three(3) of the permit and 100 percent by the end of the permit term. The permittee shall complete investigations of the MS4 areas ranked as “low” as soon as possible, but no later than seven (7) years from the effective date of the permit. A complete investigation of a catchment means that the permittee has completed all steps in Part 2.4.4.8.d (i-v) and the resultant information recorded in the annual report. The permittee shall track progress towards this requirement in annual reports. Permittees subject to the requirements of Part 2.4.4.8.d (vi) shall meet the milestones specified in paragraph (7) of Part 2.4.4.8.(d) (vi).

h. The permittee shall, at a minimum, annually train employees about the IDDE program including how to recognize illicit discharges and SSOs. The permittee shall document in the

SWMP the training given to or received by employees. The permittee shall report on the frequency and type of employee training in the annual report.

2.4.5 Construction Site Stormwater Runoff Control

Objective: The objective of an effective construction stormwater runoff control program is to minimize or eliminate erosion and maintain sediment on site so that it is not transported in stormwater and allowed to discharge to the MS4 directly or indirectly to a water of the U.S.

Although there may be regulatory overlap, the construction site stormwater runoff control program required by this permit is a separate and distinct program from EPA's stormwater construction permit program. (<http://cfpub1.epa.gov/npdes/stormwater/cgp.cfm>)

2.4.5.1 – Permittees authorized under the MS4-2003 shall continue to implement and enforce a program to reduce pollutants in any stormwater runoff discharged to the MS4 from construction activities that result in a land disturbance of greater than or equal to one acre. The permittee's program shall include disturbances less than one acre if that disturbance is part of a larger common plan of development or sale.

2.4.5.2 - The permittee does not need to apply its construction program requirements to projects that receive a waiver from EPA under the provisions of 40 CFR § 122.26(b) (15) (i).

2.4.5.3 - The construction site runoff control program shall include the elements in Paragraphs (a) through (e) of this Part:

- a. An ordinance or regulatory mechanism that requires the use of sediment and erosion control practices at construction sites. Development of an ordinance or other regulatory mechanism was a requirement of the MS4-2003 (See Part II.B.4 and Part III.B.4). The ordinance or other regulatory mechanism required by the MS4-2003 shall have been effective by May 1, 2008.
- b. The construction site stormwater runoff control program shall include written procedures for site inspections and enforcement of sediment and erosion control measures at construction sites. If not already existing, these procedures shall be completed within one (1) year from the effective date of the permit. The procedures shall clearly define who is responsible for site inspections as well as who has authority to implement enforcement procedures. The permittee shall have the authority to the extent authorized by law to impose sanctions to ensure compliance with the local program. These procedures and regulatory authorities shall be documented in the SWMP.
- c. The construction site stormwater runoff control program shall require construction site operators performing land disturbance activities within the MS4 jurisdiction that result in stormwater discharges to the MS4 to implement a sediment and erosion control program that includes BMPs appropriate for the conditions at the construction site. The program may include references to BMP design standards in state manuals, such as the Massachusetts Stormwater Handbook⁵, or design standards developed by the MS4. EPA supports and encourages the use of

⁵ The handbook is available at: <http://www.mass.gov/dep/water/laws/policies.htm#storm>

design standards in local programs. Examples of appropriate sediment and erosion control measures for construction sites include local requirements to:

- i. minimize the amount of disturbed area and protect natural resources;
- ii. stabilize sites when projects are complete or operations have temporarily ceased;
- iii. protect slopes on the construction site;
- iv. protect all storm drain inlets and armor all newly constructed outlets;
- v. use perimeter controls at the site;
- vi. stabilize construction site entrances and exits to prevent off-site tracking;
- vii inspect stormwater controls at consistent intervals; and
- viii. size stormwater controls to control or manage a specific volume of runoff (e.g. design sediment and erosion control measures to manage 1 inch of runoff or a specific rain event such as the 2 year 24-hour rain event).

d. The construction site stormwater runoff control program shall require construction site operators within the MS4 jurisdiction to control wastes, including but not limited to, discarded building materials, concrete truck wash out, chemicals, litter, and sanitary wastes. These wastes may not be discharged to the MS4.

e. The construction site stormwater runoff control program shall have written procedures for site plan review. If not already existing, the procedure for site plan review shall be completed within one (1) year from the effective date of the permit. Site plan review shall include a review of the site design, the planned operations at the construction site, planned BMPs during the construction phase, and the planned BMPs to be used to manage runoff created after development. The review procedure shall incorporate procedures for the consideration of potential water quality impacts; procedures for pre-construction review; and procedures for receipt and consideration of information submitted by the public. Site plan review procedure shall include evaluation of opportunities for use of low impact design and green infrastructure. When the opportunity exists, the permittee shall encourage project proponents to incorporate these practices into the site design. The permittee shall track the number of site reviews, inspections, and enforcement actions in the SWMP. This information shall be included as part of each annual report required by Part 5.3.

2.4.5.4 - EPA may notify a municipality that its local construction site stormwater runoff control program meets the requirement of a qualifying local program (QLP) (defined at 40 CFR 122.44(s)) or a municipality may ask EPA to make a determination that its program meets the requirements of a QLP. Being identified as a QLP means that the municipality's program can be referenced in EPA's Construction General Permit as being consistent with the terms of that permit. Construction projects in municipalities with a QLP would meet the requirements of the CGP by meeting the local requirements.

2.4.6 Stormwater Management in New Development and Redevelopment (Post Construction Stormwater Management)

Objective: The objective of this control measure is for the hydrology resulting from new development to mirror the pre-development hydrology of the site or to improve the hydrology of a redeveloped site and reduce the discharge of stormwater.

2.4.6.1 – Permittees authorized under the MS4-2003 shall continue to implement and enforce a program to address stormwater runoff from new development and redevelopment projects that disturb one or more acres and discharge into the municipal stormwater system.

2.4.6.2 - The new development/ redevelopment program shall include projects less than one acre if the project is part of a larger common plan of development or redevelopment which disturbs greater than one acre.

2.4.6.3. - The new development/redevelopment program shall include an ordinance or regulatory mechanism that regulates runoff from new development and redevelopment projects.

Development of an ordinance or other regulatory mechanism was a requirement of the MS4-2003 (See MS4-2003 Part II.B.5 and Part III.B.5). The ordinance shall have been effective by May 1, 2008.

2.4.6.4 – The ordinance or other regulatory mechanism shall be amended or modified, as appropriate, within two (2) years of the effective of the permit to contain the following provisions:

a. For new development of one or more acres, the MS4 shall require compliance with Standards 3, 4, 5, and 6 of the Massachusetts Stormwater Management Standards⁶, regardless of the proximity of the development to resource areas or their buffer zones under the Massachusetts Wetlands Protection Act.

- i. Standard 3 – Loss of annual groundwater shall be eliminated or minimized through the use of infiltration measures including environmentally sensitive site design, low impact development techniques, stormwater best management practices, and good operation and maintenance. At a minimum, the annual recharge from the post-development site shall approximate the annual recharge from pre-development conditions based on soil type. In an effort to facilitate implementation of the requirements in Part 2.2.1(c), if applicable, Part 2.4.6.8, and the goal of this part, the permittee is encouraged to require the capture of at least the 1 inch (90th percentile) storm event. The term “capture” includes practices that infiltrate, evapotranspire, and/or harvest and reuse rainwater. This means that 100 percent of the volume of water from events less than or equal to the 90th percentile event shall not be discharged. In Massachusetts, the 90th percentile is a 1 inch storm event.
- ii. Standard 4 – Stormwater management systems shall be designed to remove 80 percent of the average annual post construction load of Total Suspended Solids.
- iii. Standard 5 – For land uses with higher potential pollutant loads, source control and pollution prevention shall be implemented to eliminate or reduce the discharge of stormwater from such land uses.
- iv. Standard 6 – Stormwater discharges within the Zone II or Interim Wellhead Protection Area of a public water supply, and stormwater discharges near or to any other critical area, require the use of the specific source control and pollution prevention measures and the specific structural stormwater practices determined by MassDEP to be suitable for managing discharges to such areas.

⁶ The standards presented below are not exact wordings of the state standards. The standards are summarized at: <http://www.mass.gov/dep/water/laws/strmreg.pdf> and available at:<http://www.mass.gov/dep/water/laws/310c10p.pdf> and <http://www.mass.gov/dep/water/laws/314c9p.pdf>.

b. For redevelopment of one or more acres, the MS4 shall require compliance with Standard 7 of the Massachusetts Stormwater Management Standards regardless of the proximity of the development to resource areas or their buffer zones under the Massachusetts Wetlands Protection Act.

- i. Standard 7 – A redevelopment project is required to meet Standard 3 to the maximum extent practicable⁷; and the pretreatment and structural best management practices requirements of Standards 4, 5, and 6. A redevelopment project shall improve existing conditions.

c. For projects that are exempt from the MassDEP stormwater standards, the permittee's ordinance or other regulatory mechanism may apply the Massachusetts Stormwater Standards to the “maximum extent practicable”, as defined in the Massachusetts Stormwater Management Standards.⁸

2.4.6.5 – The permittee’s new development/redevelopment program shall have procedures to ensure that any stormwater controls or management practices for new development and redevelopment will prevent or minimize impacts to water quality. These procedures may include requirements to avoid development in areas susceptible to erosion and sediment loss; requirements to preserve areas in the municipality that provide important water quality benefits; requirements to implement measures for flood control; and requirements to protect the integrity of natural resources.

2.4.6.6 –The permittee shall require, at a minimum, the submission of as-built drawings within 90 days of completion of construction projects. The as-built drawings must depict all on site controls, both structural and non-structural, designed to manage the stormwater associated with the completed site (post construction stormwater management). The new development/redevelopment program shall have procedures to ensure adequate long-term operation and maintenance of stormwater management practices that are put in place after the completion of a construction project. This may include the use of dedicated funds or escrow accounts for development projects or the acceptance of ownership by the permittee of all privately owned BMPs. This may also include the development of maintenance contracts between the owner of the BMP and the permittee. The maintenance contract shall include verification of maintenance practices by the owner, allow the municipality to inspect the maintenance practices and perform maintenance if inspections indicate neglect by the owner. The procedures to require submission of as-built drawings and ensure long term operation and maintenance shall be a part of the SWMP. The permittee shall report in the annual report on the measures that the permittee has utilized to meet this requirement.

2.4.6.7 Within two (2) years of the effective date of this permit, the permittee shall develop a report assessing current street design and parking lot guidelines and other local requirements that affect the creation of impervious cover. This assessment shall be used to provide information to allow the permittee to determine if changes to design standards for streets and parking lots can be

⁷ The term “maximum extent practicable” is different than the term used in Part 2.4. A discussion of this is in the fact sheet for the permit.

⁸ See footnote 2

modified to support low impact design options. If the assessment indicates that changes can be made, the assessment shall include recommendations and proposed schedules to incorporate policies and standards into relevant documents and procedures to minimize impervious cover attributable to parking areas and street designs. The local planning board and local transportation board should be involved in this assessment. This assessment shall be part of the SWMP. The permittee shall report in each annual report on the status of this assessment including any planned or completed changes to local regulations and guidelines.

2.4.6.8 Within three (3) years from the effective date of the permit, the permittee shall develop a report assessing existing local regulations to determine the feasibility of making, at a minimum, the following practices allowable when appropriate site conditions exist:

- i. Green roofs;
- ii. Infiltration practices such as rain gardens, curb extensions, planter gardens, porous and pervious pavements, and other designs to manage stormwater using landscaping and structured or augmented soils; and
- iii. Water harvesting devices such as rain barrels and cisterns, and the use of stormwater for non-potable uses.

The assessment should indicate if the practices are allowed in the MS4 jurisdiction and under what circumstances are they allowed. If the practices are not allowed, the permittee shall determine what hinders the use of these practices, and what changes in local regulations may be made to make them allowable. The permittee shall report in each annual report on its findings and progress towards making the practices allowable.

2.4.6.9 – Directly Connected Impervious Area

a. The permittee shall estimate changes in the number of acres of impervious area (IA) and directly connected impervious area (DCIA) tributary to its MS4⁹ from the initial base line provided by EPA or determined by the permittee. If the permittee does not use the baseline provided by EPA, the permittee shall report the tabulated results and its estimation methodology in the first annual report. The permittee shall tabulate its estimates by sub-basins. EPA recommends that the sub-basins be those included in the <http://www.mass.gov/mgis/>. Alternatively, the permittee may tabulate its estimates by the catchments it has delineated pursuant to Part 2.4.4.8 (c)(iii) of this permit or an alternative delineation of sub-basins. To facilitate the permittee's implementation of this permit requirement, EPA will provide for the permittee's use initial estimates of IA and DCIA for each regulated small MS4.

For the purposes of this part, IA includes conventional pavements, sidewalks, driveways, roadways, parking lots, and rooftops. DCIA is the portion of IA with a direct hydraulic connection to the permittee's MS4 or a waterbody via continuous paved surfaces, gutters, pipes and other impervious features. DCIA typically does not include isolated impervious areas with an indirect hydraulic connection to the MS4 (e.g., swale or detention basin) or that otherwise drain to a pervious area.

⁹ At a minimum, the areas reported shall include those portions located within the urbanized area of the MS4, but may also include the total area within the relevant municipal boundaries.

- b. Beginning with the second year annual report and in each subsequent annual report, the permittee shall estimate for each sub-basin identified pursuant to Part 2.4.6.9(a) the number of acres of IA and DCIA tributary to its MS4 that have been added or removed during the prior year. The permittee shall include in its estimates the additions or reductions resulting from development, redevelopment, or retrofit projects undertaken directly by the permittee; or by private developers and other parties in a voluntary manner or in compliance with the permittee's regulations pursuant to Part 2.4.6.3 of this permit.
- c. Two (2) years from the effective date of this permit, the permittee shall complete an inventory and priority ranking of MS4-owned property and infrastructure (including public right-of-way) that may have the potential to be retrofitted with BMPs designed to reduce the frequency, volume, and peak intensity of stormwater discharges to and from its MS4. In determining the potential for retrofitting, the permittee shall consider factors such as the complexity and cost of implementation; access for maintenance purposes; subsurface geology; depth to water table; proximity to aquifers and subsurface infrastructure including sanitary sewers and septic systems; and opportunities for public use and education. The permittee may consider public safety when evaluating potential retrofits. In determining its priority ranking, the permittee shall consider factors such as schedules for planned capital improvements to storm and sanitary sewer infrastructure and paving projects; current storm sewer level of service; and control of discharges to impaired waters, first or second order streams, and critical receiving waters. For the purposes of this part, critical receiving waters include public swimming beaches, public drinking water supply sources, and shellfish growing areas. The permittee may also include in its inventory non-MS4 properties such as commercial or industrial parcels.
- d. Beginning with the third year annual report and in each subsequent annual report, the permittee shall report on those MS4 owned properties and infrastructure that have been retrofitted with BMPs designed to reduce the frequency, volume, and peak intensity of stormwater discharges as well as their pollutant loadings. The permittee may also include in its annual report non-MS4 owned property that has been retrofitted with BMPs designed to reduce the frequency, volume, and peak intensity of stormwater discharges.

2.4.7 Good House Keeping and Pollution Prevention for Permittee Owned Operations

Objective: The permittee shall implement an operations and maintenance program for permittee-owned operations that includes a training component and has a goal of preventing or reducing pollutant runoff and protecting water quality from all permittee-owned operations.

2.4.7.1 - Operations and Maintenance Programs

Within one (1) year from the effective date of the permit, the permittee shall develop written operations and maintenance procedures for the municipal activities listed below in Parts 2.4.7.1 (a–c). These written procedures shall be included as part of the SWMP.

Within six (6) months of the effective date of this permit, the permittee shall develop an inventory of all permittee owned facilities within the categories listed below and other facilities not in the categories listed, but owned or operated by the permittee. The permittee shall review this inventory annually and update as necessary.

a. Parks and open space: Establish procedures to address the proper use, storage, and disposal of pesticides, herbicides, and fertilizers including minimizing the use of these products and using only in accordance manufacturer's instruction. Evaluate lawn maintenance and landscaping activities to ensure practices are protective of water quality. Protective practices include reduced mowing frequencies, proper disposal of lawn clippings, and use of alternative landscaping materials (e.g. drought resistant planting). Establish procedures for management of trash containers at parks (scheduled cleanings; sufficient number), and for placing signage in areas concerning the proper disposal of pet wastes.

i. For MS4s located in the areas listed in Appendix G, Table G-1, the permittee shall evaluate alternatives to traditional fertilizers and incorporate, to the extent practicable, their use on permittee owned spaces. The permittee shall also address public green space care and municipal leaf litter collection and disposal according to the procedures described below.

- Public Green Space Care -Within 1 year of the effective date of this permit, the permittee shall optimize the application of fertilizers by municipal employees, private contractors, or property owners, on public lands and easements for which it is responsible for maintenance. Optimization practices considered shall include the reduction or elimination of fertilizers, and use of alternative fertilizers forms (i.e., products with reduced, slow-releasing, or insoluble phosphorus compositions). Additional optimization practices to be considered include proper application schedule (i.e., appropriate season or month) and timing (i.e., coordinated with climatic conditions to minimize runoff potential). The Permittee shall develop and implement standard operating practices for the handling, storage, application, and disposal of pesticides, herbicides, and fertilizers (PHFs) in compliance with applicable state and federal laws, including state-approved vegetation management plans (VMPs). The Permittee shall document in its SWMP and annual report its optimization and standard operating practices.
- Municipal Leaf Litter Collection and Disposal -The Permittee shall ensure the regular and timely collection of significant accumulations of leaves and organic detritus located on impervious portions of public lands and easements for which it is responsible for maintenance and that discharge directly or indirectly to its MS4. The permittee may coordinate its collections with its street sweeping activities, however, additional collections beyond regularly scheduled sweeping may be necessary to minimize excessive accumulations and the resulting potential for nutrients to leach from the litter, and be conveyed to the MS4 in stormwater runoff.

ii. For MS4s located in the areas listed in Appendix G, Tables G-1, G-3 and G-4, within 1 year of the effective date of this permit, the permittee shall undertake the following:

- Identify locations within its community where inappropriate pet waste management practices are immediately apparent and pose a threat to receiving water quality due to proximity and potential for direct conveyance of waste to its MS4. Within 2 years of the effective date of this permit, the permittee shall implement targeted management efforts in the identified areas. In neighborhood areas, management efforts shall include

additional public education (e.g., door hangers) and enforcement (e.g., increased patrol for violators). In municipally-owned recreational areas where dog walking is allowed, the permittee shall install educational signage, pet waste baggies, and disposal receptacles (or require carry-out).

- In order to measure the effectiveness of its pet waste management practices, the permittee shall document in its annual reports information regarding the scope and extent of its education, compliance, and enforcement efforts (including the number of violations pursued and fines levied).
- Identify public lands where waterfowl congregate and feeding by the public occurs. Within 2 years of the effective date of this permit, the permittee shall begin dissemination of educational materials to users of identified areas that pose a significant threat to receiving water quality due to proximity and potential for direct conveyance of waste to its MS4. The permittee shall accomplish this through the installation of signage or use other targeted techniques to educate the public about the detrimental impacts of feeding waterfowl (including the resulting feces deposition) and discourage such feeding practices. Within 3 years of the effective date of this permit, the permittee shall also implement practices that discourage the undesirable congregation of waterfowl in these areas, or otherwise isolate the direct drainage from these areas away from its MS4.

b. Buildings and facilities: This includes schools, town offices, police, and fire stations, pools, parking garages and other permittee-owned or operated buildings or utilities. Evaluate the use, storage, and disposal of both petroleum and non-petroleum products. Ensure, through employee training, that those responsible for handling these products know proper procedures. Ensure that Spill Prevention Plans are in place, if applicable, and coordinate with the fire department as necessary. Develop management procedures for dumpsters and other waste management equipment. Sweep parking lots and keep areas surrounding the facilities clean to minimize runoff of pollutants. Within 6 months of the effective date of the permit, develop an inventory of all floor drains within all permittee-owned buildings. The inventory shall be updated annually. The permittee shall ensure that all floor drains are not connected to the MS4.

c. Vehicles and Equipment: Establish procedures for the storage of permittee-owned vehicles. Vehicles with fluid leaks shall be stored indoors or in contained areas until repaired. Evaluate fueling areas owned by the permittee and used by permittee-owned vehicles. If possible, place fueling areas under cover in order to minimize exposure. Establish procedures to ensure that vehicle wash waters are not discharged to the municipal storm sewer system or to surface waters. This permit does not authorize such discharges.

d. Infrastructure Operations and Maintenance

i. The permittee shall establish within 6 months of the effective date of the permit a program to repair and rehabilitate its MS4 infrastructure in a timely manner to reduce or eliminate the discharge of pollutants from the MS4. If the permittee has an existing program to repair and rehabilitate its MS4 infrastructure in a timely manner to reduce or eliminate the discharge of pollutants from the MS4.

- ii. The permittee shall maintain permittee-owned streets, roads, and rights of way in such a manner as to minimize the discharge of pollutants from the MS4.
- iii. The permittee shall optimize routine cleaning and maintenance of catch basins such that the following conditions are met:
- Ensure that no sump shall be more than 50 percent full for catch basins serving catchments tributary to impaired waters.
 - Prioritize inspection and maintenance for catch basins located proximately to construction activities (roadway construction, residential, commercial, or industrial development or redevelopment). Clean catch basins in such areas more frequently if inspection and maintenance activities indicate excessive sediment or debris loadings.
 - Establish, for other catch basins, as a goal that the frequency of routine cleaning will ensure that no catch basin shall be more than 50 percent full.
 - If a catch basin sump is more than 50 percent full during two consecutive routine cleaning events, the permittee shall investigate the contributing drainage area for sources of excessive sediment loading, and to the extent practicable, abate contributing sources. The permittee shall describe any actions taken in its annual report.
 - For the purposes of this part, an excessive sediment or debris loading is a catch basin sump more than 50 percent full. A catch basin sump is more than 50 percent full if the contents within the sump exceed one half the distance between the bottom interior of the catch basin to the invert of the deepest outlet of the catch basin.
 - The permittee shall document in the SWMP and in the first annual report its plan for optimizing catch basin cleaning. Documentation shall include metrics and other information used to reach the determination that the established plan for cleaning and maintenance is optimal for the MS4.
 - The permittee shall report in each annual report the number of catch basins inspected, number cleaned, and the volume or mass of material removed from each catch tributary to impaired waters and the total volume or mass of material removed from all catch basins.
- iv. The permittee shall establish procedures for sweeping and/or cleaning streets, sidewalks, and permittee-owned parking lots. These areas shall be swept and/or cleaned a minimum of twice per year, once in the spring (following winter activities) and once in the fall (leaf clean up). The permittee shall report in each annual report the number of miles cleaned and the volume or mass of material removed.
- v. The permittee shall ensure proper disposal of the both catch basin cleanings and street sweepings.
- vi. For MS4s located in the areas listed in Appendix G, Table G-1

The permittee shall implement the following program for catch basin inspections and cleanings and street sweeping.

- Catch Basin Inspection & Cleaning: Within 1 year of the effective date of the permit, the

permittee shall implement a catch basin inventory program (“CBIP”) that utilizes a mapping element combined with record keeping to catalogue catch basin inspection, maintenance and management information. The permittee may use any available format it considers effective for accomplishing the requirements of this part. This may range from hand-drawn maps and well-maintained paper records, to an automated work-order system, to a geographic information system (“GIS”). Utilizing information compiled through its CBIP, operational staff and public complaints, the permittee shall optimize routine cleaning frequencies for particular structures or catchment areas to ensure that no sump shall become more than fifty-percent (50%) full by volume with any combination of sediment, debris, or floatables. For the purposes of this part, a sump is defined as the interior bottom portion of a catch basin, measured vertically as the distance between its finished bottom surface and the invert of its deepest outlet.

- Barring any extenuating circumstances (such as excessive erosion from an active construction site), if a catch basin sump is found to be more than fifty-percent (50%) full during each of two consecutive routine cleaning events, the permittee shall investigate the contributing drainage area for sources of excessive sediment loading, and to the extent practical, abate contributing sources through appropriate measures. Appropriate measures may include stabilization practices, drainage modifications, and increased frequencies of catch basin cleaning and street sweeping, and structural controls suitable for controlling excessive sediment loading. The permittee shall describe in its annual report actions taken or its plans to abate areas of persistent sedimentation, including stabilization practices, structural improvements or operational modifications.

The permittee shall establish the following procedures for street sweeping:

- Upon the effective date of the permit, the permittee shall, at a minimum, sweep twice per calendar year all paved municipal roadways and open-air parking lots with directly connected impervious area (DCIA) discharging to its MS4. For the purposes of this part, roadways and lots with DCIA discharging to the permittee’s MS4 include those served by catch basins, drop inlets, gutters, scuttle drains, or other appurtenances where stormwater is conveyed in a manner that is uninterrupted by vegetation or other pervious media.
- Within 1 year of the effective date of the permit, the permittee shall implement a sweeping optimization program (“SOP”) that utilizes mapping and record keeping elements to track street and parking lot cleaning statistics over time. At a minimum, the permittee shall begin to record cleaning dates/frequencies, equipment (e.g., rotary brush, vacuum) used, techniques (e.g., tandem cleaning) employed, and volume of material collected. The permittee shall use the information collected through its SOP to facilitate refinement of its sweeping frequencies and equipment used, to optimize its collection of accumulated dirt, detritus, trash, and other debris throughout the permit term. Refinements to be considered by the permittee include increased sweeping frequencies in targeted areas (with or without commensurate reduced frequencies in other areas) and use of high-efficiency sweepers in a targeted or some other capacity.

vii.. establish procedures for winter road maintenance including the use and storage of salt and

sand. Minimize the use of chloride and other salts, and evaluate opportunities for use of alternative materials. Ensure that areas used for snow disposal will not result in discharges to waters. See <http://www.mass.gov/dep/water/laws/snowdisp.htm>

viii. establish inspection and maintenance frequencies and procedures for the storm drain systems and for all structural stormwater BMPs such as swales; retention/detention basins or other structures. All permittee-owned stormwater structures shall be inspected annually at a minimum.

e. The permittee shall report in the annual report on the status of the inventory and any subsequent updates; the status of the O&M programs for the permittee owned facilities and activities in Parts 2.4.7.1(a – d) of this section; and the maintenance activities associated with each.

f. The permittee must keep a written record of all required activities including but not limited to maintenance activities, inspections and training required by Part 2.4.7.1. The permittee shall maintain, consistent with Part 5.2.1, all records associated with maintenance and inspection activities required by Part 2.4.7.1

2.4.7.2 - Stormwater Pollution Prevention Plan (SWPPP)

A SWPPP shall be developed and implemented for each of the following permittee-owned facilities: maintenance garages, public works facilities, transfer stations, and other waste handling facilities. If facilities are located at the same property, the permittee may develop one SWPPP for the entire property. The SWPPP is a separate and different document from the SWMP required in Part 1.10. A SWPPP does not need to be developed for a facility if the discharge from a permittee-owned facility is covered by a currently effective Multi-Sector General Permit or other NPDES permit.

a. One year from the effective date of the permit, the permittee shall develop and implement a written SWPPP for the facilities described above. The SWPPP shall be signed in accordance with the signatory requirements of Appendix B – Subparagraph 11.

b. The SWPPP shall contain the following elements:

i. Pollution Prevention Team

Identify the staff on the team, by name and title. If the position is unstaffed, the title of the position should be included and the SWPPP updated when the position is filled. The role of the team is to develop, implement, maintain, and revise, as necessary, the SWPPP for the facility.

ii. Description of the facility and identification of potential pollutant sources

The SWPPP shall include a map of the facility and a description of the activities that occur at the facility. The map shall show the location of the stormwater outfalls, receiving waters, and any structural controls. Identify all activities which occur at the facility and the potential pollutants associated with each activity including the location of any floor drains. These may be included as part of the inventory required by Part 2.4.7.1.

iii. Identification of stormwater controls

The permittee shall select, design, install, and implement the best available control measures to minimize or eliminate pollutants in the stormwater discharges from the permittee owned facilities.

The selection, design, installation, and implementation of the control measures shall be in accordance with good engineering practices and manufacturer's specifications. The permittee shall also take all reasonable steps to control or address the quality of discharges from the site that may not originate at the facility.

If the discharge from the facility is to an impaired water and the facility has the potential to discharge the pollutant identified as causing the impairment, the permittee shall identify the control measures that will be used to address this pollutant at the facility so that the discharge does not cause or contribute to a violation of a water quality standard.

iv. The SWPPP shall include the following management practices:

Minimize or Prevent Exposure: The permittee shall to the extent practicable either locate materials and activities inside, or protect them with storm-resistant coverings in order to prevent exposure to rain, snow, snowmelt and runoff (although significant enlargement of impervious surface area is not recommended). Materials do not need to be enclosed or covered if stormwater runoff from affected areas will not be discharged directly or indirectly to receiving waters or to the MS4 or if discharges are authorized under another NPDES permit.

Good Housekeeping: The permittee shall keep clean all exposed areas that are potential sources of pollutants, using such measures as sweeping at regular intervals (at a minimum monthly). Ensure that trash containers are closed when not in use, keep storage areas well swept and free from leaking or damaged containers; and store leaking vehicles needing repair indoors.

Preventative Maintenance: The permittee shall regularly inspect, test, maintain, and repair all equipment and systems to avoid situations that may result in leaks, spills, and other releases of pollutants in stormwater to receiving waters. Inspections shall occur at a minimum once per quarter.

Spill Prevention and Response: The permittee shall minimize the potential for leaks, spills, and other releases that may be exposed to stormwater and develop plans for effective response to such spills if or when they occur. At a minimum, the permittee shall have procedures that include:

- Preventive measures such as barriers between material storage and traffic areas, secondary containment provisions, and procedures for material storage and handling.
- Response procedures that include notification of appropriate facility personnel, emergency agencies, and regulatory agencies, and procedures for stopping,

containing, and cleaning up leaks, spills and other releases. Measures for cleaning up hazardous material spills or leaks shall be consistent with applicable Resource Conservation and Recovery Act (RCRA) regulations at 40 CFR Part 264 and 40 CFR Part 265. Employees who may cause, detect, or respond to a spill or leak shall be trained in these procedures and have necessary spill response equipment available. If possible, one of these individuals should be a member of the Pollution Prevention Team; and

- Contact information for individuals and agencies that shall be notified in the event of a leak, spill, or other release. Where a leak, spill, or other release containing a hazardous substance or oil in an amount equal to or in excess of 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 shall notify the National Response Center (NRC) at (800) 424-8802 in accordance with the requirements of 40 CFR Part 110, 40 CFR Part 117, and 40 CFR Part 302 as soon as the permittee has knowledge of the discharge. State or local requirements may necessitate reporting spills or discharges to local emergency, public health or drinking water supply agencies, and owners of public drinking water supplies. Contact information shall be in locations that are readily accessible and available.
- Notification of spills shall be in accordance with M.G.L c. 21E and the MCP.

Erosion and Sediment Control: The permittee shall use structural and non-structural control measures at the facility to stabilize and contain runoff from exposed areas and to minimize or eliminate onsite erosion and sedimentation. Efforts to achieve this may include the use of flow velocity dissipation devices at discharge locations and within outfall channels where necessary to reduce erosion.

Management of Runoff: The permittee shall divert, infiltrate, reuse, contain, or otherwise reduce stormwater runoff, to minimize or, to the extent achievable, eliminate pollutants in the discharges. The permittee shall implement stormwater runoff management practices, e.g., permanent structural control measures that are necessary to minimize or, to the extent achievable, eliminate pollutants in the discharge. Nothing in this permit relieves the permittee of the obligation to implement additional control measures required by other federal authorities, or by a State or local authority. Nothing in this permit relieves the permittee of the obligation to obtain appropriate permits from other such authorities. Structural control measures that inject stormwater below the surface of the ground may need to be registered or require an Underground Injection Control permit before the structural control measure will be authorized to operate. Structural control measures, which involve the discharge of dredge or fill material into any receiving waters (e.g., wetlands) may require a separate permit under section 404 of the CWA before installation.

Salt Storage Piles or Piles Containing Salt: In order to prevent exposure to precipitation, the permittee shall enclose or cover storage piles of salt or piles containing salt used for deicing or other purposes, including maintenance of paved surfaces. The permittee shall implement appropriate measures (e.g., good housekeeping, diversions, containment) to minimize exposure resulting from adding to or removing materials from the pile. Piles do not need to be enclosed or covered if stormwater runoff from the pile will not be discharged directly or indirectly to the

MS4 or if discharges from the piles are authorized under another NPDES permit. The permittee is encouraged to store piles in such a manner as not to impact surface water resources, ground water resources, recharge areas, and wells.

Employee Training: The permittee shall annually train all employees who work in areas where materials or activities are exposed to stormwater, or who are responsible for implementing activities identified in the SWPPP (e.g., inspectors, maintenance personnel), including all members of the Pollution Prevention Team. Training shall cover both the specific components and scope of the SWPPP and the control measures required under this Part, including spill response, good housekeeping, material management practices, any best management practice operation and maintenance, etc.

Maintenance of Control Measures: The permittee shall maintain all control measures, required by this permit in effective operating condition. The permittee shall keep documentation onsite that describes procedures and a regular schedule for preventative maintenance of all control measures and discussions of back-up practices in place should a runoff event occur while a control measure is off-line. Nonstructural control measures shall also be diligently maintained (e.g., spill response supplies available, personnel trained).

v. The permittee shall conduct the following inspections:

Routine facility inspection: Inspect all areas that are exposed to stormwater and all stormwater control measures. Inspections shall be conducted at least quarterly (i.e., once each calendar quarter). More frequent inspections may be required if significant activities are exposed to stormwater. Inspections shall be performed when the facility is in operation. At least one of the quarterly inspections shall occur during a period when a stormwater discharge is occurring.

Document the following information for each routine facility inspection:

- The inspection date and time;
- The name of the inspector;
- Weather information and a description of any discharge occurring at the time of the inspection;
- Identification of any previously unidentified discharges from the site;
- Any control measures needing maintenance or repair; and
- Any failed control measures that need replacement.

Comprehensive Site Inspections: Annually inspect all areas of the facility affected by the requirements of this permit including the areas identified as potential pollutant sources, areas where materials or activities are exposed to stormwater, any control measures, and any areas where spills or leaks have occurred.

Document the following for each comprehensive site inspection:

- The date of the inspection;
- The name of the inspector;
- All observations relating to the implementation of control measures including: previously unidentified discharges; previously unidentified pollutant sources; control

- measure needing maintenance or repair; failed control measures that need replacement; and any additional control measures needed to address any condition requiring corrective action; and
- Any SWPPP changes required as a result of the inspection.

vi. If during the inspections, or any other event or observation, the permittee identifies control measures that are not operating effectively, the permittee shall repair or replace them before the next anticipated storm event if possible, or as soon as practicable following that storm event. In the interim, the permittee shall have back-up measures in place to ensure that the quality of the stormwater discharge is not diminished. There is no grace period for making repairs to any control measures.

c. The permittee shall report the information in Part 2.4.7.2. (b)(v) in the annual report.

d. The permittee must keep a written record of all required activities including but not limited to maintenance, inspections, and training required by Part 2.4.7.2. The permittee shall maintain all records associated with the development and implementation of the SWPPP required by this section consistent with the requirements of Part 5.2.1.

3.0 Outfall Monitoring Program

3.1 Monitoring Frequency and Location

3.1.1 - The permittee shall implement an outfall monitoring program that shall begin no later than the beginning of the second year of the permit unless otherwise indicated in the permit. The monitoring program shall begin with the outfalls in the catchments with the highest priority ranking as designated pursuant to Part 2.4.4.8.c to the extent practicable. The monitoring program detailed in this section is not required for outfalls identified as Problem Catchments in the IDDE program.

3.1.2 - The permittee shall conduct at least one dry weather screening and analytical monitoring and at least one wet weather analytical monitoring of each outfall within 5 years of the effective date of this permit, or in accordance with a permittee-specific monitoring plan in accordance with Part 3.1.4, attaining the schedule milestones described in Parts 3.2.1 and 3.3.2.

3.1.3 - In addition to conducting dry and wet weather screening and analytical monitoring of all outfalls as described in Part 3.2 and Part 3.3, the permittee shall also conduct field screening and analytical monitoring at locations where stormwater from the MS4 is transferred to another MS4. The interconnected monitoring shall occur at the first accessible location up-gradient of the MS4 jurisdictional boundary.

3.1.4 – The monitoring requirements in Part 3.3.1 and Part 3.3.2 to perform wet weather outfall sampling at all outfalls do not apply if the permittee develops within year one of the permit a permittee-specific monitoring plan that reduces the number of outfalls monitored based on one or more of the following conditions and implements the permittee-specific monitoring plan within 5 years of the effective date of this permit:

3.1.4.1 – The permittee completed outfall monitoring under the MS4-2003 consistent with Part 3.3.1 of the permit. The permittee must maintain documentation of the completed monitoring and results as part of the SWMP.

3.1.4.2 – The outfall is associated with a Problem Catchment designated by the permittee and defined in Part 2.4.4.

3.1.4.3 – The amount of impervious cover discharging through an outfall is less than 10 percent of the catchment area. The permittee must document this determination and maintain it as part of the SWMP.

3.1.4.4. – The catchment drains one acre or less of either low density residential or forest. The permittee must document this determination and maintain it as part of the SWMP.

3.1.4.5 – The permittee has conducted or will conduct in its permittee-specific monitoring plan wet and dry weather in-stream monitoring which is representative of one or more discharges to the same water body. The permittee must maintain documentation and monitoring results as part of the SWMP.

3.2 Dry Weather Screening and Analytical Monitoring

3.2.1 – Dry weather outfall screening shall proceed only when no more than 0.1 inches of rainfall has occurred in the previous 24-hour period. The permittee shall conduct dry weather screening on a minimum of 25 percent of the outfalls each year of the permit beginning in the second year of the permit with completion by the end of the permit term. When a flow is observed at an outfall, a sample of the flow shall be collected and analyzed as described in Parts 3.2.2 and 3.2.3. The permittee shall document the number of outfalls screened and any monitoring results each year in the SWMP and the annual report. Dry weather screening can be conducted at the same time the permittee conducts the outfall inventory required in Part 2.4.4.7.

3.2.2 - Dry weather discharges shall be analyzed for: ammonia, chlorine, conductivity; *E.Coli.* or enterococcus (as appropriate depending on whether a discharge is to a fresh water or a marine water); pH; potassium; surfactants (as MBAS); temperature and turbidity. The permittee shall identify the source of any dry weather discharge and shall identify any necessary follow-up actions consistent with the protocol required by Part 2.4.4.8(d).

3.2.3 - If the discharge is directly into an impaired water, or if the discharge is included in the waste load allocation in an approved TMDL as indicated in Appendix G, the permittee shall also monitor dry weather discharges for the pollutants identified as the cause of the impairment. The required analytical method for pollutants identified as causes of impairment in Massachusetts are provided in Appendix H. MS4 discharges with an approved TMDL are identified in Appendix G.

3.2.4 – If a pollutant not addressed by an approved TMDL is identified as the cause of the impairment, and it is present in the discharge, the permittee shall develop procedures for the control measure in Part 2.4 designed to minimize or eliminate the pollutant. The permittee shall also undertake efforts designed to identify the source(s) of the pollutant(s) and implement

measures to eliminate it. The permittee shall document the procedures in the SWMP and annual report.

3.2.5 - If no dry weather flow is observed at the outfall, the permittee shall record the location of the outfall, the condition of the outfall and other relevant information. See Part 2.4.4.7 of the permit. If no flow is observed, but evidence of flow exists, the permittee shall revisit the outfall during dry weather within one week of the initial observation, if practicable. The permittee shall identify in the SWMP and annual report any necessary follow-up provisions to identify the source flow.

3.3 Wet Weather Analytical Monitoring

3.3.1 - The permittee shall conduct wet weather analytical monitoring of all outfalls and at all interconnections with other MS4s. Wet weather monitoring does not require a minimum rainfall event. Monitoring can occur after any storm event of sufficient intensity to produce a discharge.

3.3.2 – The permittee shall conduct wet weather analysis on a minimum of 25 percent of its outfalls each year of the permit beginning in the second year of the permit term with completion by the end of the permit term. This 25 percent shall be the same outfalls that are monitored for dry weather to the extent practicable. If it is not practicable, the permittee shall explain why in the next annual report. The permittee shall document the number of outfalls monitored and monitoring results each year in the annual report.

3.3.3 – Wet weather flows shall be monitored for the following parameters: conductivity; *E.Coli* or enterococcus (as appropriate depending on whether a discharge is to fresh water or marine water); chlorine; potassium; ammonia; pH; surfactants (as MBAS); temperature; and turbidity.

3.3.4 - If the discharge is directly into an impaired water, or if the discharge is included in the waste load of an approved TMDL as indicated in Appendix G, the permittee shall also monitor wet weather discharges for the pollutants identified as the cause of the impairment. The required analytical method for pollutants identified as causes of impairment in Massachusetts are provided in Appendix H. Discharges with approved TMDLs are listed in Appendix G.

3.3.5 - If the pollutant is not addressed by an approved TMDL and is identified as the cause of impairment, but is present in the discharge, the permittee shall develop procedures for the control measures in Part 2.4 designed to minimize or eliminate the pollutant. The permittee shall also undertake efforts designed to identify the source(s) of the pollutant(s) and implement measures to eliminate it. The permittee shall document the procedures in the SWMP and report in the annual report.

3.4 – The permittee shall maintain all records associated with the monitoring program consistent with the requirements of Part 5.2.1.

4.0 Additional State Requirements

4.1 Public Drinking Water Supply Requirements

4.1.1-Permittees which discharge to public drinking water sources and their protection areas (Class A and Class B surface waters used for drinking water) should consider these waters a priority in the implementation of the SWMP.

4.1.2-Discharges to public drinking water supply sources and their protection areas should provide pretreatment and spill control capabilities to the extent feasible.

4.1.3-Direct discharges to Class A waters should be avoided to the extent feasible.

4.2 Groundwater Recharge

The permittee shall evaluate physical conditions, site design, and best management practices to promote groundwater recharge and infiltration where feasible in the implementation of the control measures of this permit. During the implementation of the stormwater management program, the permittee shall address recharge and infiltration for the control measures, as well as reasons for not electing to implement recharge and infiltration. Loss of annual recharge to groundwater should be minimized through the use of infiltration measures to the maximum extent practicable.

5.0 Program Evaluation, Record Keeping, and Reporting

5.1 Program Evaluation

5.1.1- The permittee shall annually self-evaluate its compliance with the terms and conditions of this permit. The permittee shall maintain the annual evaluation documentation as part of the SWMP.

5.1.2- The permittee shall evaluate the appropriateness of the selected BMPs in achieving the objectives of each control measure and the defined measurable goals. The permittee may change BMPs in accordance with the following provisions:

- Changes in adding (but not subtracting or replacing) components or controls may be made at any time upon written notification to EPA or MassDEP.
- Changes replacing an ineffective or infeasible BMP specifically identified in the SWMP with an alternative BMP may be requested in writing to EPA and MassDEP. Unless denied, changes proposed in accordance with the criteria below may be implemented 60 days from submittal of the request. If the request is denied, EPA or MassDEP will send a written explanation of the denial.

5.1.3 – BMP modification requests shall include the following information:

- An analysis of why the BMP is ineffective or infeasible;
- Expectations on the effectiveness of the replacement BMP; and
- An analysis of why the replacement BMP is expected to achieve the defined goals of the BMP to be replaced.

5.1.4 - Change requests or notifications shall be in writing and signed in accordance with the signatory requirements of Appendix B – Subparagraph 11.

5.1.5 - EPA or MassDEP may require the permittee to add, modify, repair, replace or change BMPs or other measures described in the annual reports as needed:

- To address impacts to receiving water quality caused or contributed to by discharges from the MS4;
- To satisfy conditions of this permit; and
- To include more stringent requirements necessary to comply with new state or federal legal requirements; or
- To include such other conditions deemed necessary to comply with the goals and requirements of the CWA.

Any changes requested by EPA or MassDEP will be in writing and will set forth the schedule for the permittee to develop the changes and will offer the permittee the opportunity to propose alternative program changes to meet the objective of the requested modification.

5.2 Record Keeping

5.2.1 – The permittee shall keep all records required by this permit for a period of at least five years. EPA may extend this period at any time. Records include information used in the development of any written program required by this permit, any monitoring results, copies of reports, records of screening, follow-up and elimination of illicit discharges; maintenance records; inspection records; and data used in the development of the notice of intent, SWMP, SWPPP, and annual reports. This list provides examples of records that should be maintained, but is not all inclusive.

5.2.2- Records other than those required to be included in the annual report, Part 5.3, shall be submitted only when requested by the EPA or MassDEP.

5.2.3 -The permittee shall make the records relating to this permit, including the written stormwater management program, available to the public. The public may view the records during normal business hours. The permittee may charge a reasonable fee for copying requests.

5.3 Reporting

5.3.1 The permittee shall submit an annual report. The reporting period will be from July 1 to June 30. The annual report due date is August 1.

5.3.2 - The annual reports shall contain the following information:

5.3.2.1 - A self-assessment review of compliance with the permit terms and conditions.

5.3.2.2 -An assessment of the appropriateness of the selected BMPs.

5.3.2.3- The status of the any plans or activities required by Part 2.2.1 and/ or Part 2.2.2.

5.3.2.4 - An assessment of the progress towards achieving the measurable goals and objectives of each control measure in Part 2.4 including:

- Evaluation of the public education program including a description of the targeted messages for each audience; method of distribution and dates of distribution; methods used to evaluate the program; and any changes to the program.
- Description of the activities used to promote public participation including documentation of compliance with state or tribal public notice regulations.
- Description of the activities related to implementation of the IDDE program including: status of the map; status and results of the illicit discharge potential ranking and assessment; identification of problem catchments; status of all protocols described in Parts 2.4.4 (program responsibilities and systematic procedure); number and identifier of catchments evaluated; number and identifier of outfalls screened; number of illicit discharges located and/or removed; identification of tracking indicators and measures of progress based on those indicators; and employee training.
- Evaluation of the construction runoff management including number of project plans reviewed; number of inspections; and number of enforcement actions.
- Evaluation of stormwater management for new development and redevelopment including status of ordinance development and review; status of the street design assessment; and information on directly connected impervious area reductions.
- Status of the O&M Programs required by Part 2.4.7.1.
- Status of SWPPP required by Part 2.4.7.2 including inspection results.
- Any additional reporting requirements in Part 4.0.

5.3.2.5 - Outfall monitoring data that has been collected and analyzed. This includes data collected as part of the outfall inventory required in Part 2.4.4 and as part of the outfall monitoring program describe in Part 3.0. The following information shall be submitted for each outfall sampled:

- results of dry weather outfall screening and analytical monitoring;
- results of dry weather outfall analytical monitoring associated with discharges to impaired waters;
- results of wet weather outfall screening and analytical monitoring; and
- results of wet weather outfall analytical monitoring associated with discharges to impaired waters.

5.3.2.6 – For discharges to impaired waters, identification of specific BMPs used to address the pollutant identified as the cause of impairment and the BMPs effectiveness at controlling the pollutant.

5.3.2.7 – Description of activities for the next reporting cycle.

5.3.2.9 – Description of any changes in identified BMPs or measurable goals.

5.3.2.10 – Description of activities undertaken by any entity contracted for achieving any measurable goal or implementing any control measure.

5.3.3 - Reports shall be submitted to both EPA and the Massachusetts Department of Environmental Protection at the following addresses:

United State Environmental Protection Agency
5 Post Office Square – Suite 100
Mail Code – OEP06-4
Boston, MA 02109-3912

Massachusetts Department of Environmental Protection
One Winter Street – 5th Floor
Boston, MA 02108
ATTN: Frederick Civian

6.0 Requirements for State and Federal Non-Traditional MS4s

State non-traditional MS4s are properties owned and operated by the Commonwealth of Massachusetts. All requirements and conditions of Parts 1 – 5 above apply to these MS4s with the following exceptions or adjustments:

6.1 Public education: For the purpose of this permit, the audiences for a state agency include the employees, visitors to the property, and any contractors working at the agencies facilities. The permittee may use some of the educational topics included in Part 2.4.2.1 (c) as appropriate, or may focus on topics specific to the MS4. The permittee shall document the educational topics for each target audience in the SWMP and annual reports.

6.2 Ordinances and regulatory mechanisms: State agencies may not have authority to enact an ordinance, by-law, or other regulatory mechanisms. These MS4s shall ensure that written policies or procedures are in place to address the requirements of Part 2.4.4.6(a), Part 2.4.5.3(a) and Part 2.4.6.3. They may rely on EPA or MassDEP for enforcement assistance.

6.3 Assessment of Regulations: The requirements of Part 2.4.6.7 and Part 2.4.6.8 do not apply. The permittee shall instead evaluate opportunities to include green infrastructure practices in new development and redevelopment at its facilities. The permittee shall evaluate opportunities to reduce the amount of impervious cover due to parking areas and walkways. The permittee shall report on these efforts in each annual report.

6.4 Federal Development and Redevelopment Projects

When a permittee is a federal agency, it must comply with §438 of the Energy Independence and Security Act, which provides as follows: “The sponsor of any development or redevelopment project involving a federal facility with a footprint that exceeds 5,000 square feet shall use site planning, design, construction, and maintenance strategies for the property to maintain or restore to the maximum extent technically feasible, the predevelopment hydrology of the property with regard to the temperature, rate, volume, and duration of flow.”

7.0 Requirements for State Transportation Agencies

A transportation agency is the state agency responsible for operation and maintenance of the state owned roadways (Massachusetts Department of Transportation). All requirements and conditions of this permit apply with the following exceptions and adjustments:

7.1 Public education: For the purpose of this permit, the audiences for a transportation agency education program include the general public (users of the roadways), employees, and any contractors working at the agency's facilities. The permittee may use some of the educational topics included in Part 2.4.2.1 (c) as appropriate, or may focus on topics specific to the agency. The permittee shall document the educational topics for each target audience in the SWMP and each annual report.

7.2 Ordinances and regulatory mechanisms: The transportation agency may not have authority to enact an ordinance, by-law or other regulatory mechanisms. The agency shall ensure that written agency policies or procedures are in place to address the requirements of Part 2.4.4.6(a), Part 2.4.5.3(a) and Part 2.4.6.3. These agencies may rely on EPA or MassDEP for enforcement assistance.

7.3 Assessment of regulations: The requirements of Part 2.4.6.7 and Part 2.4.6 .8 do not apply. The agency shall instead evaluate opportunities to include green infrastructure practices in new development and redevelopment at the facility. The agency shall evaluate opportunities to reduce the amount of impervious cover due to parking areas and walkways. The permittee shall report on these efforts in each annual report.