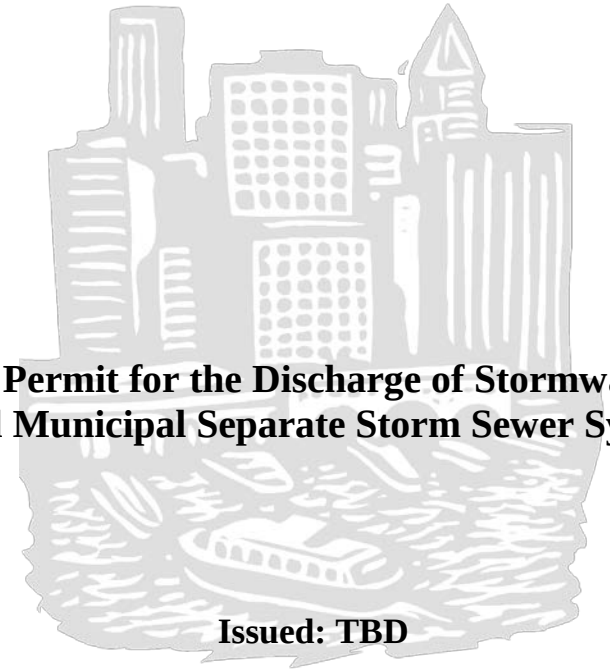
Connecticut Department of
Energy & Environmental Protection
Bureau of Materials Management & Compliance Assurance
Water Permitting & Enforcement Division



General Permit for the Discharge of Stormwater from Small Municipal Separate Storm Sewer Systems

Issued: TBD

General Permit for the Discharge of Stormwater from Small Municipal Separate Storm Sewer Systems

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Section 1. Authority

This general permit is issued under the authority of Section 22a-430b of the Connecticut General Statutes.

Section 2. Definitions

The definitions of terms used in this general permit shall be the same as the definitions contained in Sections 22a-423 of the Connecticut General Statutes and Section 22a-430-3(a) of the Regulations of Connecticut State Agencies. As used in this general permit, the following definitions shall apply:

"x-year, 24-hour rainfall event" means the maximum 24-hour precipitation event with a probable recurrence interval of once in the given number of years (i.e. x=2, 25 or 100), as defined by the National Weather Service in Technical Paper Number 40, "Rainfall Frequency Atlas of the United States," May 1961, and subsequent amendments, or equivalent regional or state rainfall probability information developed therefrom.

"Aquifer protection area" means aquifer protection area as defined in section 22a-354h of the Connecticut General Statutes.

"Best engineering practices" means the design of engineered control measures to control pollution to the maximum extent achievable using measures that are technologically available and economically practicable.

"Best Management Practices (*BMP*)" means schedules of activities, practices (and prohibitions of practices), structures, vegetation, maintenance procedures, and other management practices to prevent or reduce the discharge of pollutants to waters of the state consistent with state, federal or other equivalent and technically supported guidance. BMPs also include treatment requirements, operating procedures, and practices to control site runoff, spillage or leaks, sludge or waste disposal, or drainage from material storage.

"Coastal area" means coastal area as defined in Section 22a-93(3) of the Connecticut General Statutes.

"Coastal Jurisdiction Line" means the location of the topographical elevation of the highest predicted tide as defined in Section 22a-359(c) of the Connecticut General Statutes.

"Coastal waters" means coastal waters as defined in Section 22a-93(5) of the Connecticut General Statutes.

"Commissioner" means commissioner as defined in section 22a-2(b) of the Connecticut General Statutes.

"Control Measures" means any BMPs or other methods (including effluent limitations) used to prevent or reduce the discharge of pollutants to waters of the state.

"Department" means the Department of Energy & Environmental Protection.

"Directly Connected Impervious Area (DCIA)" means that impervious area from which stormwater runoff discharges directly to waters of the state or to a storm sewer system that discharges to waters of the state.

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"Effective Impervious Cover" is the total area of a site with a Rational Method runoff coefficient of 0.7 or greater (or other equivalent methodology) from which stormwater discharges directly to a surface water or to a storm sewer system.

"Fresh-tidal wetland" means a tidal wetland located outside of coastal waters.

"Grab sample" means an individual sample collected in less than fifteen minutes.

"Guidelines" means the 2002 Connecticut Guidelines for Soil Erosion and Sediment Control, as amended, established pursuant to Section 22a-328 of the Connecticut General Statutes.

"High Quality Waters" means those waters defined as high quality waters in the Connecticut Water Quality Standards pursuant to Section 22a-426-1(36) of the Regulations of Connecticut State Agencies.

"Illicit Discharge" means any unpermitted discharge to waters of the state that does not consist entirely of stormwater or uncontaminated ground water except those discharges identified in Section 3(a)(2) of this general permit when such non-stormwater discharges are approved, in writing, by the Commissioner as discharges that are not significant contributors of pollution to a discharge from an identified MS4.

"Impaired water(s)" means those surface waters of the state designated by the Commissioner as impaired pursuant to Section 303(d) of the federal Clean Water Act and as identified in the most recent State of Connecticut Integrated Water Quality Report within Categories 4 or 5, including any subdivisions of these categories.

"Individual permit" means a permit issued to a named permittee under Section 22a-430 of the Connecticut General Statutes.

"Inland wetland" means wetlands as that term is defined in Section 22a-38 of the Connecticut General Statutes.

"Low Impact Development" or *"LID"* means a site design strategy that maintains, mimics or replicates pre-development hydrology through the use of numerous site design principles and small-scale treatment practices distributed throughout a site to manage runoff volume and water quality at the source.

~~*"Maximum Extent Practicable" or "MEP"* is a technology-based standard established by Congress in the Clean Water Act Section 402(p)(3)(B)(iii). Since no precise definition of MEP exists, it allows for maximum flexibility on the part of MS4 operators as they develop their programs. (40CFR 122.2, See also: Stormwater Phase II Compliance Assistance Guide EPA 833-R-00-002, March 2000). When trying to reduce pollutants to the MEP, there must be a serious attempt to comply, and practical solutions may not be lightly rejected. If a covered entity chooses only a few of the least expensive methods, it is likely that MEP has not been met. On the other hand, if a covered entity employs all applicable BMPs except those where it can be shown that they are not technically feasible in the locality, or whose cost would exceed any benefit to be derived, it would have met the standard. MEP required covered entities to choose effective BMPs, and to reject applicable BMPs only where other effective BMPs will serve the same purpose, the BMPs would not be technically feasible, or the cost would be prohibitive.~~

Commented [CT DEEP1]: Moved to the SMP section.

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"Minimize", for purposes of implementing the minimum control measures in Section 6 of this general permit, means to reduce and/or eliminate to the MEP.

"Municipal separate storm sewer system" or *"MS4"* means conveyances for stormwater (including roads with drainage systems, streets, catch basins, curbs, gutters, ditches, man-made channels or storm drains) owned or operated by any municipality or by any state or federal institution and discharging to surface waters of the state.

"Municipality" means a city, town or borough of the state as defined in section 22a-423 of the Connecticut General Statutes.

"New or Increased Discharge" means new discharge or activity as defined in section 22a-426-8(b)(3) and increased discharge or activity as defined in section 22a-426-8(b)(2), as referenced to the Regulations of Connecticut State Agencies.

"Permittee" means any MS4 that initiates, creates, originates or maintains a discharge authorized by this general permit and that has filed a registration pursuant to Section 4 of this permit.

"Point Source" means any discernible, confined and discrete conveyance, including but not limited to, any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation, landfill leachate collection system, vessel or other floating craft from which pollutants are or may be discharged.

"Qualified professional engineer" means a professional engineer who has, for a minimum of eight years, engaged in the planning and designing of engineered stormwater management systems for (i) municipal separate storm sewer systems and (ii) residential and commercial construction projects in accordance with the Guidelines and the Stormwater Quality Manual including, but not limited to, a minimum of four years in responsible charge of the planning and designing of engineered stormwater management systems for such projects.

"Registrant" means a municipality or institution which files a registration pursuant to Section 4 of this general permit.

"Redevelopment" means any construction activity (including, but not limited to, clearing and grubbing, grading, excavation, and dewatering) within existing drainage infrastructure or at an existing site to modify or expand or add onto existing buildings or structures, grounds, or infrastructure.

"Registration" means a registration form filed with the Commissioner pursuant to Section 4 of this general permit.

"Retain" means to hold runoff on-site to promote vegetative uptake and groundwater recharge through the use of runoff reduction or LID practices or other measures. In addition, it means there shall be no subsequent point source release to surface waters from a storm event defined in this general permit or as approved by the Commissioner.

"Runoff reduction practices" means those post-construction stormwater management practices used to reduce post-development runoff volume delivered to the receiving water, as defined by retaining the volume of runoff from a storm up to the first half inch or one inch of rainfall in accordance with Sections 6(*a*)(5)(B) or 6(*b*)(5)(B), respectively. Runoff reduction is quantified as

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the total annual post-development runoff volume reduced through canopy interception, soil amendments, evaporation, rainfall harvesting, engineered infiltration, extended filtration or evapotranspiration.

"Sanitary Sewer Overflow" or *"SSO"* means a discharge of untreated sanitary wastewater from a municipal sanitary sewer.

"Small MS4" means any MS4 that is not already covered by the Phase I MS4 stormwater program (pursuant to 40CFR 122.26(a)(3)) including municipally-owned or –operated systems as well as state- and federally-owned systems, such as colleges, universities, prisons, and military bases. (Note: the Department of Transportation is authorized under a separate general permit.)

"Standard of care", as used in Section 3(*b*)(9), means to endeavor to perform in a manner consistent with that degree of care and skill ordinarily exercised by members of the same profession currently practicing under similar circumstances.

"State or Federal Institution" means any facility (including, but not limited to, state and federal prisons, office complexes, hospitals; university campuses, public housing authorities, schools, or other special districts) consisting of more than one building that is owned by an agency or department of the State of Connecticut (except the Department of Transportation) or a federal agency and has an average daily population of 1,000 people or more.

"Stormwater" means waters consisting of rainfall runoff, including snow or ice melt during a rain event.

"Stormwater Quality Manual" means the 2004 Connecticut Stormwater Quality Manual published by the Connecticut Department of Energy & Environmental Protection, as amended.

"Surface water" means those waters as defined in Section 22a-426-1(60) of the Regulations of Connecticut State Agencies.

"Tidal wetland" means a wetland as that term is defined in Section 22a-29(2) of the Connecticut General Statutes.

"Tier 1 Small MS4" means any municipally-owned or -operated Small MS4 (as defined above) including all those located partially or entirely within an Urbanized Area that have at least 1,000 residents in the Urbanized Area (as determined by the 2000 or 2010 census) and all state- and federally-operated Small MS4s and any other MS4s located outside an Urbanized Area as may be designated by the Commissioner. (Note: A list of Tier 1 municipalities is included in Appendix A1 of this general permit.)

Commented [CT DEEP2]: Clarification to account for EPA waiver criteria so munis with <1,000 in UA fall into Tier 2.

"Tier 2 Small MS4" means any municipally-owned or municipally-operated Small MS4 (as defined above) other than those designated as a Tier 1 Small MS4 or as may be designated by the Commissioner. (Note: A list of Tier 2 municipalities is included in Appendix A2 of this general permit.)

"Total Maximum Daily Load (*TMDL*)" means a water quality implementation plan established pursuant to Section 303 of the federal Clean Water Act.

"Urbanized Area (*UA*)" means the areas of the State of Connecticut so defined by the U.S. Census Bureau for the 2000 or 2010 census.

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"Water Quality Standards or Classifications" means those water quality standards or classifications contained in Sections 22a-426 -1 through 22a-426-9, inclusive, of the Regulations of Connecticut State Agencies and the Classification Maps adopted pursuant to Section 22a-426 of the Connecticut General Statutes, which together constitute the Connecticut Water Quality Standards., as may be amended.

"Water Quality Volume" or *"WQV"* means the volume of runoff generated by one inch of rainfall on a site as defined in the 2004 Connecticut Stormwater Quality Manual, as amended.

Section 3. Authorization Under This General Permit

(a) Eligible Activities

(1) This general permit authorizes the discharge of stormwater from or associated with a Tier 1 or Tier 2 Small MS4, provided the requirements of subsection (*b*) of this section are satisfied and the activity is conducted in accordance with the conditions listed in Section 5 of this general permit.

(2) This permit authorizes the following non-stormwater discharges provided they do not contribute to a violation of water quality standards and such discharges are documented in the Stormwater Management Plan and are not significant contributors of pollutants to any identified MS4:

- uncontaminated ground water discharges including, but not limited to, pumped ground water, foundation drains, water from crawl space pumps and footing drains;
- irrigation water including, but not limited to, landscape irrigation and lawn watering runoff;
- residual street wash water;
- discharges or flows from fire fighting activities (except training); and
- naturally occurring discharges such as rising ground waters, uncontaminated ground water infiltration (as defined at 40 CFR 35.2005(20)), springs, diverted stream flows and flows from riparian habitats and wetlands.

(b) Requirements for Authorization

This general permit authorizes the activity listed in the "Eligible Activities" section (Section 3(*a*)) of this general permit provided:

(1) Coastal Management Act

Such activity is consistent with all applicable goals and policies in Section 22a-92 of the Connecticut General Statutes, and must not cause adverse impacts to coastal resources as defined in Section 22a-93(15) of the Connecticut General Statutes.

(2) Endangered and Threatened Species

Implementation of the MS4's Stormwater Management Plan shall not threaten the continued existence of any species listed pursuant to section 26-306 of the Connecticut General Statutes as endangered or threatened and must not result in the destruction or adverse modification of habitat designated as essential to such species.

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(3) Aquifer Protection Areas

Such activity, if it is located within an aquifer protection area as mapped under section 22a-354b of the Connecticut General Statutes, must comply with regulations adopted pursuant to section 22a-354i of the Connecticut General Statutes.

(4) Discharge to POTW

The stormwater is *not* discharged to a Publicly Owned Treatment Works (POTW).

(5) Discharge to Groundwater

The stormwater is *not* discharged entirely to groundwater, meaning a stormwater discharge to a surface water will not occur up to a 100-year, 24-hour rainfall event.

(6) New or Increased Discharges to High Quality Waters

On or before thirty (30) days prior to the commencement of a new or increased discharge to a High Quality Waters from its MS4, the permittee must document compliance with the Connecticut Anti-Degradation Implementation Policy in the Water Quality Standards, as amended. Before commencing any new or increased discharge, the permittee shall identify in its Stormwater Management Plan ("Plan"), the control measures it will implement to ensure compliance with anti-degradation provisions and the terms of this Permit. At a minimum, the permittee shall evaluate and implement to the Maximum Extent Practicable practices which will prevent the discharge of the Water Quality Volume to a surface water body or other practices necessary to protect and maintain designated uses and meet standards and criteria contained in the Water Quality Standards.

(7) New or Increased Discharges to Impaired Waters

Any new or increased discharge to an impaired water will become authorized only if the permittee documents in the permittee's Stormwater Management Plan, before commencement of the discharge, that the control measures or other actions specified in Section 6(*a*) or 6(*b*) and Section 6(*l*) of this general permit will be implemented. This provision does not apply to routine maintenance and repair of the storm sewer system provided such work does not significantly increase the discharge from a given stormwater outfall.

(8) Certification Requirements for Registrants and other Individuals

As part of the registration for this general permit, the registrant and any other individual or individuals responsible for preparing the registration submits to the Commissioner a written certification which, at a minimum, complies with the following requirements:

(A) The registrant and any other individual or individuals responsible for preparing the registration and signing the certification has completely and thoroughly reviewed, at a minimum, this general permit and the following regarding the activities to be authorized under such general permit: (i) all registration information provided in accordance with Section 4(*c*)(2) of such general permit, (ii) the Stormwater Management Plan, and (iii) any plans and specifications and any Department approvals regarding such Stormwater Management Plan;

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(B) The registrant and any other individual or individuals responsible for preparing the registration and signing the certification pursuant to this general permit has, based on the review described in section 3(*b*)(8)(A) of this general permit, made an affirmative determination to: (i) comply with the terms and conditions of this general permit; (ii) maintain compliance with all plans and documents prepared pursuant to this general permit including, but not limited to, the Stormwater Management Plan; (iii) properly implement and maintain the elements of the Stormwater Management Plan; and (iv) properly operate and maintain all stormwater management measures and systems in compliance with the terms and conditions of this general permit to protect the waters of the state from pollution;

(C) Such registrant and any other individual or individuals responsible for preparing the registration certifies to the following statement:

"I hereby certify that I am making this certification in connection with a registration under the General Permit for the Discharge of Stormwater from Small Municipal Storm Sewer Systems, submitted to the Commissioner by [INSERT NAME OF REGISTRANT] for an activity located at or within [NAME OF MUNICIPALITY OR ADDRESS OF THE REGISTERED ACTIVITY] and that all terms and conditions of the general permit are being met for all discharges which have been created, initiated or maintained and such activity is eligible for authorization under such permit. I further certify that a system is in place to ensure that all terms and conditions of this general permit will continue to be met for all discharges authorized by this general permit at the site. I certify that I have personally examined and am familiar with the information that provides the basis for this certification, including but not limited to all information described in Section 3(*b*)(8)(A) of such general permit, and I certify, based on reasonable investigation, including my inquiry of those individuals responsible for obtaining such information, that the information upon which this certification is based is true, accurate and complete to the best of my knowledge and belief. I certify that I have made an affirmative determination in accordance with Section 3(*b*)(8)(B) of this general permit. I understand that the registration filed in connection with such general permit is submitted in accordance with and shall comply with the requirements of Section 22a-430b of Connecticut General Statutes, as amended by Public Act 12-172. I also understand that knowingly making any false statement made in the submitted information and in this certification may be punishable as a criminal offense, including the possibility of fine and imprisonment, under section 53a-157b of the Connecticut General Statutes and any other applicable law."

(9) Stormwater Management Plan Certification

As part of the registration for this general permit, the registrant submits to the Commissioner a written certification by a qualified professional engineer who has reviewed the Stormwater Management Plan (Plan) in accordance with the following requirements:

~~(A) The qualified professional engineer did not engage in any activities associated with the preparation, planning, designing or engineering of the Plan.~~

Commented [CT DEEP3]: Deleted per comments from CCM, COST and municipalities.

(A) The qualified professional engineer has, at a minimum, completely and thoroughly reviewed this general permit and the following regarding the discharges to be authorized under such general permit: (i) all registration information provided in

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accordance with Section 4(*c*)(2) of such general permit, (ii) the Stormwater Management Plan, and (iii) all non-engineered and engineered stormwater management measures and systems, including any plans and specifications and any Department approvals regarding such stormwater management measures and systems.

(B) Affirmative Determination

A qualified professional engineer signing the certification must have made an affirmative determination, based on the review described in section 3(*b*)(9)(~~B~~A) of this general permit and on best engineering practices, that the Plan and control measures therein are adequate to assure that the activity authorized under this general permit will comply with the terms and conditions of such general permit and all non-engineered and engineered stormwater management measures and systems: (i) have been designed in accordance with best engineering practices; (ii) will function properly as designed; (iii) are adequate to ensure compliance with the terms and conditions of this general permit; and (iv) will protect the waters of the state from pollution.

(C) The qualified professional engineer, as specified in section~~s~~ 3(*b*)(9)(A) ~~and (B)~~, above, shall certify to the following statement:

"I hereby certify that I am a qualified professional engineer, as defined in the General Permit for the Discharge of Stormwater from Small Municipal Storm Sewer Systems ~~and as further specified in sections 3(*b*)(9)(A) of such general permit~~. I am making this certification in connection with a registration under such general permit, submitted to the Commissioner by [INSERT NAME OF REGISTRANT] for an activity located at or within [NAME OF MUNICIPALITY OR ADDRESS OF THE REGISTERED ACTIVITY]. I have personally examined and am familiar with the information that provides the basis for this certification, including but not limited to all information described in Section 3(*b*)(9)(~~B~~A) of such general permit, and I certify, based on reasonable investigation, including my inquiry of those individuals responsible for obtaining such information, that the information upon which this certification is based is true, accurate and complete to the best of my knowledge and belief. I certify, based on my review of all information described in Section 3(*b*)(9)(~~B~~A) of such general permit and on the standard of care for such projects, that I have made an affirmative determination in accordance with Section 3(*b*)(9)(~~C~~B) of this general permit. I understand that this certification is part of a registration submitted in accordance with Section 22a-430b of Connecticut General Statutes, as amended by Public Act 12-172, and is subject to the requirements and responsibilities for a qualified professional in such statute. I also understand that knowingly making any false statement in this certification may be punishable as a criminal offense, including the possibility of fine and imprisonment, under section 53a-157b of the Connecticut General Statutes and any other applicable law."

(D) Nothing in this subsection shall be construed to authorize a qualified professional engineer to engage in any profession or occupation requiring a license under any other provision of the Connecticut General Statutes without such license.

(c) Registration

Pursuant to the "Registration Requirements" section (Section 4) of this permit, a Tier 1 or Tier 2 Small MS4 shall submit an electronic Registration Form (accessible from the DEEP website)

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to the Commissioner at least one hundred eighty (180) days prior to the effective date of this general permit. The electronic form will guide the registrant to submit the appropriate information.

Include any additional forms and information regarding compliance and/or consistency with the Coastal Management Act, National Historic Preservation Act, High Quality Waters, Impaired Waters (including TMDL requirements), Endangered and Threatened Species, and Aquifer Protection Areas that may be required pursuant to the "Requirements of Authorization" section (Section 3(*b*)).

(d) Geographic Area

This general permit applies throughout the State of Connecticut.

(e) Effective Date and Expiration Date of this General Permit

This general permit is effective TBD and expires on TBD.

(f) Effective Date of Authorization

An activity is authorized by this general permit: on the date the general permit becomes effective; on the date a complete registration meeting the requirements of Section 4(*c*) is submitted; for registrants that did not register as required by Section 3(*c*), on the date the authorized activity is initiated; or on another date approved by the Commissioner, whichever is latest.

~~(g) Redesignation of Authorization~~

~~A municipality designated as a Tier 1 Small MS4 may request a redesignation for authorization as a Tier 2 Small MS4 under this general permit if the population within the Urbanized Area portion of town, as determined by the 2000 and 2010 United States censuses, is less than 1000 people and the Commissioner issues such waiver in writing.~~

Commented [CT DEEP4]: Redundent with revised definition of Tier 1 MS4 in Section 2.

Section 4. Registration Requirements

(a) Who Must File a Registration

Any municipality or state or federal institution that initiates, creates, originates or maintains a discharge of stormwater from or associated with a Tier 1 or Tier 2 Small MS4 shall file with the Commissioner a registration form that meets the requirements of this section of this general permit. Such form shall be submitted along with the applicable fee within the timeframes and in the amounts specified in Sections 3(*c*) and 4(*c*)(1)(A), respectively.

(b) Scope of Registration

A registrant must register on one set of registration forms for all discharges that are operated by the registering MS4. A MS4 may not submit more than one registration under this general permit.

(c) Contents of Registration

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(1) Fees

(A) The registration fee for a Tier 1 or Tier 2 Small MS4 shall be $625 to be submitted with the registration form.

(B) The fees for municipalities shall be half of those indicated in subsection (A) above pursuant to section 22a-6(b) of the Connecticut General Statutes. State and Federal agencies shall pay the full fees specified in this subsection.

(C) The registration fee shall be paid electronically or by check or money order payable to the **Department of Energy & Environmental Protection**.

(D) No activity shall be authorized by this general permit until the registration fee has been paid in full.

(E) The registration fee is non-refundable.

(2) Registration Form

The registration shall be filed electronically in a form prescribed and provided by the Commissioner (available on the DEEP website) and shall include the following:

(A) Name of the MS4 and the name, title, address, telephone number, and email address of the chief elected official or principal executive officer.

(B) An indication of the status of the MS4 as either a Tier 1 or Tier 2 Small MS4 (see Appendices A1 and A2).

(C) Name, address, telephone number, and email address of the primary contact person for the MS4.

(D) Name, primary contact, address, telephone number, and email address of any consultant(s) or engineer(s) retained by the MS4 to prepare the registration,

(E) Name of receiving stream(s), watershed(s) or waterbody(s) (including waterbody ID number which can be identified at *www.**cteco**.uconn.edu*) to which the MS4 discharges and indication of whether or not a receiving stream is listed as an impaired water, with or without a TMDL, and including identification of the impairment in the most recent State of Connecticut Integrated Water Quality Report or identification of the receiving stream as a high quality water by the Commissioner as defined in the Connecticut Water Quality Standards.

(F) An electronic map or a paper copy of the relevant portion or a full-sized original of a United States Geological Survey (USGS) quadrangle map with a scale of 1:24,000, showing the MS4 boundaries and limits of its separate storm sewer system. If a paper copy of a map is submitted, identify the quadrangle name on the map and be sure to include the name of the MS4.

(G) Assurance that the Stormwater Management Plan for the MS4 is consistent with the following provisions of state statutes and regulations, as appropriate:

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(i) For sites within the Coastal Boundary, the MS4 must address all applicable goals and policies in Section 22a-92 of the Connecticut General Statutes, and must not cause adverse impacts to coastal resources as defined in Section 22a-93(15) of the Connecticut General Statutes.

(ii) The MS4's Stormwater Management Plan will not threaten the continued existence of any species listed pursuant to section 26-306 of the Connecticut General Statutes as endangered or threatened and will not result in the destruction or adverse modification of habitat designated as essential to such species.

(iii) The implementation of the MS4's Stormwater Management Plan for any part of the MS4 located within an aquifer protection area (see Appendix C) as mapped under section 22a-354b of the Connecticut General Statutes will comply with regulations adopted pursuant to section 22a-354i of the Connecticut General Statutes. For any activity regulated pursuant to sections 8(c) and 9(b) of the Aquifer Protection Regulations (section 22a-354i(1)-(10) of the Regulations of Connecticut State Agencies), the Stormwater Management Plan must assure that stormwater run-off generated from the MS4 is managed in a manner so as to prevent pollution of groundwater.

(iv) The Stormwater Management Plan has been reviewed for consistency with state Historic Preservation statutes, regulations, and policies including identification of any potential impacts on property listed or eligible for listing on the Connecticut Register of Historic Places. A review conducted for an Army Corps of Engineers Section 404 wetland permit would meet this qualification.

(v) The Stormwater Management Plan appropriately addresses new or increased discharges to high quality waters, as specified in Section 3(*b*)(6).

(vi) The Stormwater Management Plan appropriately addresses new or increased discharges to impaired waters, as specified in Section 3(*b*)(7).

(H) For each of the Minimum Control Measures in Section 6(*a*), the following information shall be included:

(i) each Best Management Practice (BMP) to be implemented;

(ii) the person(s) responsible for implementing and maintaining each BMP;

(iii) the date by which each BMP will be implemented;

(iv) the measurable goal(s) by which each BMP will be evaluated.

(I) Provide an internet address (URL) where the Stormwater Management Plan required by Section 5(*b*) and the Annual Reports required by Section 6(*k*) are accessible for public review. Also provide a physical address where a paper copy of the Plan and Annual Reports are available for inspection. If the registrant claims that certain elements of their Plan constitute secure information (pursuant to Section 4(*d*)(2)(C)) or are otherwise exempt from the disclosure requirements of the state Freedom of Information Act (section 1-210 et seq of the Connecticut General Statutes, also called FOIA) as specified in that Act, the registrant shall follow the procedures provided in

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the registration form instructions for this general permit regarding information subject to FOIA requirements. The process of complying with the FOIA requirements does not exempt the registrant from the registration and Plan preparation deadlines of this general permit.

(J) The certification of the registrant and of the individual or individuals responsible for actually preparing the registration, in accordance with Section 3(*b*)(8).

(K) Certification (pursuant to the requirements and conditions of Section 3(*b*)(9)) that the Stormwater Management Plan has been reviewed by a qualified professional engineer (as defined in Section 2) licensed in the State of Connecticut.

(d) Availability of Registrations, Stormwater Management Plans and Annual Reports

(1) Registration and Plan Availability

Within thirty (30) days of receipt of a registration, the Commissioner shall post on the DEEP website a list of registrations submitted and identify the location where the Stormwater Management Plan is available for review.

On or before thirty (30) days from the date of posting of a registration by the Commissioner, members of the public may review the registration and Stormwater Management Plan and submit written comments to the Commissioner.

(2) Stormwater Management Plan Availability

A Regulated Small MS4 shall make its Stormwater Management Plan available, electronically and at a publicly available location, for public review and comment. In addition to the internet address (URL) required as part of the registration (pursuant to Section 4(*c*)(2)(I)), reasonable efforts to inform the public of this document shall be undertaken by the MS4. The Plan shall be made available at the MS4's main office, a local library or other publicly available location for public inspection and copying consistent with the federal and state Freedom of Information Acts. On or before thirty (30) days from the date of the availability of the Plan, members of the public may review the Plan and submit written comments on it to the Commissioner. The Plan shall be made available in accordance with the following:

(A) Re-Registrants

For a Regulated Small MS4 that was previously permitted under the General Permit for the Discharge of Stormwater from Small Municipal Separate Storm Sewer Systems issued January 9, 2004 and as subsequently reissued prior to the effective date of this general permit ("2004 MS4 permittee"), the Plan shall be made available at least one hundred eighty (180) days prior to the effective date of this general permit.

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(B) New Registrants

For a Regulated Small MS4 that was **not** previously permitted under the General Permit for the Discharge of Stormwater from Small Municipal Separate Storm Sewer Systems issued January 9, 2004a 2004 MS4 permittee ("new MS4 permittee"), the Plan

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shall be made available at least ninety (90) days prior to the effective date of this general permit.

(C) Secure Information

If the registrant claims that certain elements of their Plan constitute secure information subject to restrictions related to Homeland Security or other security issues otherwise exempt from the disclosure requirements of the state Freedom of Information Act (section 1-210 et seq of the Connecticut General Statutes, also called FOIA) as specified in that Act, they shall follow the procedures provided in the registration form instructions for this general permit regarding information subject to FOIA requirements. The process of complying with the FOIA requirements does not exempt the registrant from the registration and Plan preparation deadlines in this general permit.

Following the comment period specified above, the final Plan shall remain available for public inspection on-line and a paper copy made available at the location specified above during regular business hours.

(3) Annual Report Availability

At least forty five (45) days prior to submission of each Annual Report to the Department, pursuant to Section 6(*k*), each MS4 shall make available for public review and comment a draft copy of the complete Annual Report. Comments on the Annual Report may be made to the MS4 and are *not* submitted to the Department. Reasonable efforts to inform the public of this document shall be undertaken by the MS4. Such draft copies shall be made available electronically on the MS4 website and at the MS4's main office, a local library or other central publicly available location for public inspection and copying consistent with the federal and state Freedom of Information Acts. Following submission of the Annual Report (pursuant to Section 6(*k*)), a copy of the final report shall be made available for public inspection during regular business hours.

(e) Where to File a Registration

A registration shall be filed electronically with the Commissioner through the DEEP website.

In the event that electronic submission is not available, contact the DEEP's Stormwater Section at (860) 424-3025.

(f) Additional Information

The commissioner may require a registrant to submit additional information, which the commissioner reasonably deems necessary to evaluate the consistency of the subject activity with the requirements for authorization under this general permit.

(g) Additional Notification

For discharges authorized by this general permit to another Regulated Small MS4 or to the City of Stamford, a copy of the registration and all attachments thereto shall also be submitted to the owner and operator of that system.

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For discharges authorized by this general permit to a DOT separate storm sewer system, a copy of the registration and all attachments thereto shall also be submitted to the DOT upon request.

For discharges within a public drinking water supply watershed or aquifer area, a copy of the registration and the Plan described in subsection 5(*b*) of this general permit shall be submitted to the water company.

For discharges to river components and tributaries which have been designated as Wild and Scenic under the Wild and Scenic Rivers Act, a copy of the registration and the Plan described in 5(*b*) of this general permit shall be submitted to the applicable Wild and Scenic Coordinating Committee.

(h) Action by Commissioner

(1) The Commissioner may require that a permittee obtain an individual permit for any discharge authorized by this permit in accordance with Section 22a-430b of the Connecticut General Statutes.

(2) The Commissioner may reject without prejudice a registration if he or she determines that it does not satisfy the registration requirements (Section 4(*c*)) of this general permit. Any registration refiled after such a rejection shall be accompanied by the fee specified in the "Fees" section (Section 4(*c*)(1)) of this general permit.

(3) The Commissioner may disapprove a registration if he or she finds that the subject activity is inconsistent with the "Requirements for Authorization" section (Section 3(*b*)) of this general permit, or for any other reason provided by law.

(4) Disapproval of a registration under this subsection shall constitute notice to the registrant that the subject activity must be authorized by an individual permit.

(5) Disapproval of a registration shall be in writing.

Section 5. Requirements of this General Permit

The permittee shall at all times continue to meet the requirements for authorization set forth in Section 3 of this general permit. In addition, a permittee shall ensure that authorized activities are conducted in accordance with the following conditions:

(a) Conditions Applicable for Certain Discharges

(1) If the permittee initiates, creates, or originates a discharge of stormwater which is located less than 500 feet from a tidal wetland that is not a fresh-tidal wetland, such discharge shall flow through a system designed to retain the Water Quality Volume, as defined in Section 2.

(2) If the permittee wishes to initiate, create, or originate a discharge of stormwater below the coastal jurisdiction line into coastal, tidal, or navigable waters for which a permit is required under the Structures and Dredging Act in accordance with Section 22a-361(a) of the Connecticut General Statutes or into tidal wetlands for which a permit is required under the Tidal Wetlands Act in accordance with Section 22a-32 of the Connecticut General

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Statutes, the municipality shall obtain such permit(s) from the Commissioner prior to initiating, creating or originating such discharge.

(3) There shall be no distinctly visible floating scum, oil or other matter contained in the stormwater discharge. Excluded from this are naturally occurring substances such as leaves and twigs provided no person has placed such substances in or near the discharge.

(4) The stormwater discharge shall not result in pollution which may cause or contribute to acute or chronic toxicity to aquatic life, impair the biological integrity of aquatic or marine ecosystems, or result in an unacceptable risk to human health.

(5) The stormwater discharge shall not cause or contribute to an exceedance of the applicable Water Quality Standards in the receiving water.

(6) Any new stormwater discharge to high quality waters (as identified by the Commissioner consistent with the Water Quality Standards) shall be discharged in accordance with the Connecticut Anti-Degradation Implementation Policy in the Water Quality Standards manual. At a minimum, the permittee shall evaluate and implement to the Maximum Extent Practicable practices which will prevent the discharge of the Water Quality Volume to a surface water body or other practices necessary to protect and maintain designated uses and meet standards and criteria contained in the Water Quality Standards.

(7) Any stormwater discharge to the waters identified in Appendix D shall be managed for the Stormwater Pollutant of Concern identified in the appendix consistent with the requirements in Section 6 of this permit.

(b) Stormwater Management Plan

The permittee shall develop, implement, and enforce a stormwater management plan designed to reduce the discharge of pollutants from the Small MS4 to the maximum extent practicable, to protect water quality, and to satisfy the appropriate water quality requirements of the federal Clean Water Act. Maximum Extent Practicable (MEP) is a technology-based standard established by Congress in the Clean Water Act Section 402(p)(3)(B)(iii). Since no precise definition of MEP exists, it allows for maximum flexibility on the part of MS4 operators as they develop their programs. (40CFR 122.2, See also: Stormwater Phase II Compliance Assistance Guide EPA 833-R-00-002, March 2000). When trying to reduce pollutants to the MEP, there must be a serious attempt to comply, and practical solutions may not be lightly rejected. If a covered entity chooses only a few of the least expensive methods, it is likely that MEP has not been met. On the other hand, if a covered entity employs all applicable BMPs except those where it can be shown that they are not technically feasible in the locality, or whose cost would exceed any benefit to be derived, it would have met the standard. MEP required covered entities to choose effective BMPs, and to reject applicable BMPs only where other effective BMPs will serve the same purpose, the BMPs would not be technically feasible, or the cost would be prohibitive.

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Under this program, the permittee shall prepare a Stormwater Management Plan pursuant to Section 6 of this general permit, which plan must be completed by such time as specified in Section 4(*d*)(2) of this general permit. The permittee shall continue to implement the Stormwater Management Plan and all Minimum Control Measures required by this general permit throughout the entire term of the general permit. The permittee shall continue to provide for adequate staffing and economic resources for such implementation throughout the entire

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term of the general permit. If at any time the Commissioner finds that the Plan is not adequate to protect the waters of the state from pollution, the Commissioner may terminate authorization under this permit and require the MS4 to submit an individual permit application.

Section 6. Development of Stormwater Management Plan (the Plan)

The Plan shall address the Minimum Control Measures as indicated in this section. Section 6(*a*) contains the requirements for Tier 1 Small MS4s and section 6(*b*) contains the requirements for Tier 2 Small MS4s. These measures shall be implemented throughout the boundaries of the municipality or institution.

(a) Tier 1 Minimum Control Measures

For each Minimum Control Measure, the permittee shall: define appropriate BMPs; designate a person(s) and job title responsible for each BMP; define a time line for implementation of each BMP; where appropriate, identify the location, including the address and latitude and longitude, for each BMP; and define measurable goals for each BMP. The Minimum Control Measures in the Plan include, but are not limited to:

(1) Public education and outreach

(A) Implement a public education program to distribute educational materials to the community (i.e. residents, business and commerce, students, staff, contractors, etc.) or conduct equivalent outreach activities about the sources and impacts of stormwater discharges on waterbodies and the steps that the public can take to reduce pollutants in stormwater runoff. The education program shall include, but not be limited to, information on management of pet waste, application of fertilizers, herbicides, and pesticides, impervious cover and impacts of illicit discharges and improper disposal of waste into the MS4. Educational information may be developed and/or acquired from other MS4s, governmental agencies, academia, and/ or environmental advocacy organizations. Information may be disseminated with flyers, brochures, door hangers, television public service announcements, and web based tools. Each Annual Report shall summarize the types, sources, number of, and methods by which materials disseminated.

(i) ~~Municipalities regulated by the MS4 permit issued on January 9, 2004 and this permit~~Existing 2004 MS4 permittees shall begin implementation of this measure ~~upon the~~within the first year following the effective date of this permit and continue until permit expiration. Permittees shall utilize the materials developed under the 2004 MS4 permit and update or modify as necessary to acquire and/or develop the content of the outreach materials for this general permit.

(ii) ~~Municipalities and institutions newly regulated by this permit~~New MS4 permittees shall begin implementation of this measure within ~~6 months of~~ the second year following the effective date of this permit and continue until permit expiration. Permittees shall utilize the ~~6 month~~one year period following the effective date of this permit to acquire and/or develop the content of the outreach materials.

(B) To implement the public education and outreach program, the permittee shall develop or acquire current educational material that identifies the pollutants (such as pathogens/ bacteria, nitrogen, phosphorus, sediments, metals, oils & greases) associated with

stormwater discharges, the potential sources of the pollutants, the environmental impacts of these pollutants, and related pollution reduction practices.

(C) Additional measures for discharges to waters associated with a Stormwater Pollutant of Concern

(i) For waters for which **Phosphorus** is a Stormwater Pollutant of Concern, educational materials shall be specifically tailored and targeted to educate on the sources, impacts, and available pollution reduction practices from the following:

a. Septic systems
b. Fertilizer use
c. Grass clippings and leaves management
d. Detergent use
e. Discharge of sediment (to which Phosphorus binds) from Construction sites
f. Other erosive surfaces

(ii) For waters for which **Nitrogen** is a Stormwater Pollutant of Concern, educational materials shall be specifically tailored and targeted to educate on the sources, impacts, and available pollution reduction practices from the following:

~~1.~~a. Septic systems
~~2.~~b. Fertilizer use
~~3.~~c. Grass clippings and leaves management
~~4.~~d. Discharge of sediment (to which Nitrogen binds) from Construction sites
~~5.~~e. Other erosive surfaces

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(iii) For waters for which **Bacteria** is a Stormwater Pollutant of Concern, educational materials shall be specifically tailored and targeted to educate on the sources, impacts, and available pollution reduction practices from the following:

~~1.~~a. Septic systems
~~1.~~b. Sanitary cross connections
~~1.~~c. Waterfowl
~~1.~~d. Pet waste
~~1.~~e. Manure piles associated with livestock and horses

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(iv) For waters for which **Mercury** is a Stormwater Pollutant of Concern, educational materials shall be specifically tailored and targeted to educate on the sources, impacts and available recycling programs for elemental mercury and mercury-containing items such as:

~~1.~~a. Thermometers
~~1.~~b. Thermostats
~~1.~~c. Fluorescent lights
~~1.~~d. Button cell batteries

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(2) Public Involvement/Participation

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

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(A) Publish a public notice, which complies with state and local public notice and Freedom of Information requirements, to inform the public of the Plan and Annual Report required by Section 5(*k*) of this permit and ~~hold an annual public meeting to inform the public of the Plan and Annual Report information~~to solicit comments on the Plan and Annual Report. The notice shall provide a contact name (with phone number, address, and email) to whom the public can send comments and a publicly accessible location (such as the MS4's main office, a local library or other central publicly available location) and/or URL where the Plan and Annual Report are available for public review. Where state and local notice requirements are inconsistent, the notice provisions providing for the most notice and opportunity for public comment shall be followed. The public notice shall allow for a 30 day comment period, at a minimum. Municipalities and institutions shall publish this public notice annually no later than January 31. ~~The annual public meeting shall be held no later than February 28.~~

(B) The permittee is encouraged to enlist local organizations to help implement the elements of their SMP.

(C) No requirements in addition to those specified in subsections (A)-(B) above exist for discharges to waters impaired for Phosphorus, Nitrogen, Bacteria, or Mercury.

(3) Illicit discharge detection and elimination.

Within one (1) year of the effective date of this general permit for existing 2004 MS4 permittees and within two (2) years of the effective date of this general permit for new MS4 permittees, ~~T~~the permittee shall develop ~~an~~ a written Illicit Discharge Detection and Elimination (IDDE) program designed to: provide the legal authority to prohibit and eliminate illicit discharges (as defined in 40CFR 122.26(b)(2) except for those discharges noted in the Section 3(*a*)(2) of this permit) to the MS4; find the source of any illicit discharges; eliminate those illicit discharges; and ensure ongoing screening and tracking to prevent and/or eliminate future illicit discharges.

(A) IDDE Program Elements

(i) Illicit discharges to the MS4 are prohibited, and any such discharges are a violation of this permit and remain a violation until they are eliminated. The permittee shall prohibit all illicit discharges from entering its MS4. Upon detection, the permittee shall eliminate illicit discharges as soon as possible and require the immediate cessation of such discharges upon confirmation of responsible parties in accordance with its enforceable legal authorities established pursuant to subsection (B) below. Where elimination of an illicit discharge within ~~thirty (30)~~sixty (60) days of its confirmation is not possible, the permittee shall establish a schedule for its elimination~~; such schedule not to exceed six (6) months. No later than six (6) months after confirmation, such discharges shall be eliminated or the permittee shall initiate appropriate enforcement actions. If the source of the illicit discharge cannot be identified in 6 months, despite reasonable efforts, the permittee shall amend the Plan to provide an alternate timeframe, not to exceed one (1) year after confirmation of responsible parties~~. The permittee shall immediately commence actions necessary for elimination. The permittee shall diligently pursue elimination of all illicit discharges. In the interim, the permittee shall take all reasonable and prudent measures to minimize the discharge of pollutants to its MS4.

Commented [CT DEEP7]: Consistent with EPA per comments by CCM, COST and municipalities

Commented [CT DEEP8]: Follows EPA timelines per CFE, CCM and COST comments.

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(ii) The permittee shall implement outfall screening and an illicit discharge detection protocol pursuant to ~~subsections A and B of~~ **Appendix B** to identify, prioritize, and investigate separate storm sewer catchments for suspected illicit discharges of pollutants.

(iii) The permittee shall maintain a record of illicit discharge abatement activities including, at a minimum: location (identified with an address and latitude and longitude), description, method of discovery, date(s) of inspection, sampling data (if applicable), action(s) taken, date of removal or repair, responsible party(ies), costs associated with removal or repair, and estimated daily flow or total volume removed. This information shall be included in the permittee's Annual Report pursuant to the Section 6(*k*) of this permit.

(iv) Timelines – permittees shall implement IDDE program elements in accordance with the schedules ~~below:~~included in this section and in Appendix B.

		% of MS4				
MS4 Type	Population	Year 1	Year 2	Year 3	Year 4	Year 5
Old Muni	<15,000	-	25%	50%	75%	100%
	15,000-50,000	-	25%	30%	40%	50%
	>50,000	-	-	10%	-	20%
New Muni	<15,000	-	25%	50%	75%	100%
	15,000-50,000	-	25%	30%	40%	50%
	>50,000	n/a				
Institutions[2]	<15000	-	25%	50%	75%	100%
	15,000-50,000	-	25%	35%	40%	50%
	>50,000	-	-	10%	-	20%

[1] "Old Muni" means MS4s previously permitted by the MS4 general permit issued on January 9, 2004. "New Muni" means MS4s newly permitted under this general permit.
[2] The population of a state or federal institution is the average daily population including staff, residents and those receiving or providing services on-site.

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(B) Establish the necessary and enforceable legal authority by statute, ordinance, rules and regulations, permit, easement, contract, order and any other means, to eliminate illicit discharges.

(i) The legal authority shall:

a. prohibit illicit discharges to its storm sewer system and require removal of such discharges consistent with subsection (3)(A), above; and

b. control the discharge of spills and prohibit the dumping or disposal of materials including, but not limited to, residential, industrial and commercial wastes, trash, used motor vehicle fluids, pesticides, fertilizers, food preparation waste, leaf litter, grass clippings, and animal wastes into its MS4; and

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c. assess fines or penalties and/or recoup costs incurred by the permittee from anyone creating an illicit discharge or spilling or dumping as specified in subsection (3)(A), above.

(ii) ~~Municipalities regulated by the MS4 permit issued on January 9, 2004 and this permit~~Existing 2004 MS4 permittees must establish and implement this ordinance or regulatory mechanism ~~by~~ within one year of the effective date of this permit.

(iii) ~~Municipalities and institutions newly regulated by this permit~~New MS4 permittees must implement an ordinance or regulatory mechanism on or before ~~one (1)~~two (2) years of the effective date of this permit.

(C) Develop a list (spreadsheet or database) and map or series of maps at a minimum scale of 1"=2000' and maximum scale of 1"=100' showing all stormwater discharges from a pipe or conduit ~~with a diameter of 12" or greater (or equivalent cross-sectional area)~~ located within and owned or operated by the municipality or institution. The map(s) should, if possible, be developed in a GIS format.

(i) The list and map(s) shall include for each discharge:

a. Type, material, size, and location (identified with a latitude and longitude) of conveyance, outfall or channelized flow (e.g. 24" concrete pipe);

b. the name, water body ID and Surface Water Quality Classification of the immediate surface waterbody or wetland to which the stormwater runoff discharges;

c. if the outfall does not discharge directly to a named waterbody, the name and water body ID of the nearest named waterbody to which the outfall eventually discharges; and

d. the name of the watershed, including the subregional drainage basin number (available from CT ECO at www.cteco.uconn.edu) in which the discharge is located.

e. the spreadsheet or database should, if possible, be prepared in a format compatible with Microsoft Excel.

(ii) For ~~municipalities regulated by the MS4 permit issued on January 9, 2004 and this permit~~2004 MS4 permittees, this list and mapping must be completed ~~by~~ within one (1) year of the effective date of this permit.

(iii) For ~~municipalities and institutions newly regulated by this permit~~new MS4 permittees, this list and mapping must commence upon the effective date of this permit and be completed ~~in minimum increments of twenty-five percent (25%) no later than **2, 3, 4, and 5 years**, respectively,~~ within two (2) years from the effective date of this permit. The entirety of the municipal or institutional MS4 shall be mapped by the expiration date of this permit.

(D) For waters for which **Phosphorus**, **Nitrogen**, or **Bacteria** is a Stormwater Pollutant of Concern:

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Commented [CT DEEP13]: Timeline consistent with EPA per comments from CFE, CCM, COST and municipalities

Commented [CT DEEP14]: All outfalls to be consistent with EPA per CCM, COST and municipal comments.

Commented [CT DEEP15]: Optional based on comments from municipalities and consistent with EPA

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(i) To address septic system failures, the IDDE program shall prioritize the IDDE program in areas with a high potential to discharge bacteria, phosphorus, and nitrogen to the MS4. Such areas shall be identified based on assessment of the following criteria: historic on-site sanitary system failures, proximity to bacteria impaired waters, low infiltrative soils, and shallow groundwater. The Annual Report shall include a summary of the program, the number of areas identified with failing systems, actions taken by the permittee to respond to and address the failures, and the anticipated pollutant reduction.

(E) No requirements in addition to those specified in subsections (A) - (C) above exist for discharges to waters for which **Mercury** is a Stormwater Pollutant of Concern.

(4) Construction Site Stormwater Runoff Control

The permittee shall implement and enforce a program to control stormwater discharges (to its MS4) associated with land disturbance or development (including re-development) activities from areas with one half acre or more of soil disturbance, whether considered individually or collectively as part of a larger common plan. Such program shall include the following elements:

(A) Legal Authority

(i) The permittee shall establish an ordinance, bylaw, regulation, or other appropriate legal authority that requires or allows:

a. developers, construction site operators, or contractors to maintain consistency with the 2002 Guidelines for Soil Erosion and Sedimentation Control, as amended, the 2004 Connecticut Stormwater Quality Manual, as amended, and all stormwater discharge permits issued by the DEEP within the municipal or institutional boundary pursuant to CGS 22a-430 and 22a-430b,

b. the implementation of additional measures to protect/improve water quality (in addition to the above requirements) as deemed necessary by the municipality or institution.

c. the permittee to carry out all inspection, surveillance and monitoring procedures necessary to determine compliance with municipal regulations or institutional requirements related to the management of the permittee's MS4. Specifically, inspections shall be conducted to inventory the number of privately-owned retention ponds, detention ponds and other stormwater basins that discharge to or receive drainage from the permittee's MS4.

d. A long term maintenance plan and schedule to ensure the performance and pollutant removal efficiency of privately-owned retention ponds, detention ponds and other stormwater basins that discharge to or receive discharge from the permittee's MS4. Such authority will require the plan to specify short-term and long-term inspection and maintenance measures to be implemented by the private owner and measures to provide financial assurance to implement this plan.

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e. the permittee to control through interagency or inter-jurisdictional agreements, the contribution of pollutants between the permittee's MS4 and MS4s owned or operated by others.

(ii) For ~~municipalities regulated by the MS4 permit issued on January 9, 2004 and this permit~~2004 MS4 permittees, within one (1) year from the start of the permittee's first fiscal year that begins after the effective date of this permit, the permittee shall implement, upgrade (if necessary) and enforce its land use regulations to meet the requirements of subsections 4(A)(i)a. – e. above.

(iii) For ~~municipalities and institutions newly regulated by this permit~~new MS4 permittees, within three (3) years from the start of the permittee's first fiscal year that begins after the effective date of this permit, the permittee shall implement, upgrade (if necessary) and enforce its land use regulations (for municipalities) or its construction requirements (for institutions) to meet the requirements of Sections 4(A)(i)a. – e. above.

(B) Interdepartmental Coordination

(i) The permittee will develop and implement a plan outlining how all municipal or institutional departments and boards with jurisdiction over the review, permitting, or approval of land disturbance and development projects within the MS4 will coordinate their functions with one another.

(ii) All municipalities and institutions shall implement this measure upon the effective date of this permit.

(C) Site Review and Inspection

(i) The permittee will conduct site plan reviews that incorporate consideration of stormwater controls or management practices to prevent or minimize impacts to water quality.

(ii) The permittee will conduct site inspection(s) and enforcement to assess the adequacy of the installation, maintenance, operation, and repair of construction and post construction control measures.

(iii) All municipalities and institutions shall implement this measure upon the effective date of this permit.

(D) Public Involvement

(i) The permittee will implement a procedure for receipt and consideration of information submitted by the public concerning proposed and ongoing land disturbance and development activities.

(ii) All municipalities and institutions shall implement this procedure upon the effective date of this permit.

(E) State Permit Notification

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(i) The permittee will implement a procedure for notifying developers (working in a municipality) or contractors (working for an institution) of their potential obligation to obtain authorization under the DEEP's General Permit for the Discharge of Stormwater and Dewatering Wastewaters Associated with Construction Activities ("construction general permit") if their development or redevelopment project disturbs one or more acres of land, either individually or collectively, as part of a larger common plan, and results in a point source discharge to the surface waters of the state directly or through the permittee's MS4. The notification shall include a provision informing the developer/ contractor of their obligation to provide a copy of the Storm Water Pollution Control Plan (required by the construction general permit) to the permittee upon request.

(ii) All municipalities and institutions shall implement this procedure upon the effective date of this permit.

(F) No requirements in addition to those specified in subsections (A)-(E) above exist for discharges to waters for which **Phosphorus**, **Nitrogen**, **Bacteria**, or **Mercury** is a Stormwater Pollutant of Concern.

(5) Post –construction stormwater management

(A) Legal Authority

(i) The permittee shall establish an ordinance, bylaw, regulation, or other appropriate legal authority that requires or allows the use of runoff reduction and low impact development ("LID") practices in its land use regulations or construction project requirements to meet the following standards: 1) for development or redevelopment of sites that are currently developed with an effective impervious cover of forty percent or more, retain on-site half the water quality volume for the site, or 2) for new development and redevelopment of sites with less than forty percent effective impervious cover, retain the water quality volume for the site, or 3) an alternate retention/ treatment standard as outlined in subsections 5(B)(i)-(ii) below. All permittees shall identify and eliminate existing local regulatory barriers to implementing LID and runoff reduction practices. These may include site planning requirements, zoning regulations, street design regulations, or infrastructure specifications that address minimal dimensional criteria for the creation of roadways, parking lots, and other impervious cover. If such barriers cannot be eliminated within the timeframe dictated by subsections 5(A)(ii) and (iii) below, the permittee shall provide in the Annual Report(s) required by Section 6(*k*) a justification and a revised schedule for implementation.

(ii) For ~~municipalities regulated by the MS4 permit issued on January 9, 2004 and this permit~~2004 MS4 permittees, the permittee shall implement this requirement within ~~two (2)~~four (4) years after the effective date of this permit.

(iii) For ~~municipalities and institutions newly regulated by this permit as Tier 1 MS4s~~new permittees, the permittee shall implement this requirement within ~~three (3)~~five (5) years after the effective date of this permit.

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(B) Runoff Reduction/ Low Impact Development ("LID") Measures

Pursuant to the requirements of subsection 5(A)(i) above, the permittee shall require the party responsible (i.e. a developer within a municipal boundary or a developer/contractor with the institution) for development and redevelopment projects within its MS4 to:

(i) For development or redevelopment of sites that are currently developed with an effective impervious cover of forty percent or more, retain on-site half the water quality volume for the site. In cases where this entire amount cannot be retained, the permittee shall require the responsible party to retain runoff volume to the maximum extent achievable using control measures that are technologically available and economically practicable and achievable in light of best industry practice. In such cases, additional stormwater treatment, to the maximum extent achievable using control measures that are technologically available and economically practicable and achievable in light of best industry practice, shall be required for sediment, floatables and nutrients for the volume above that which can be retained up to the water quality volume. In cases where the runoff retention requirement cannot be met, the developer/ contractor shall submit, for the permittee's review, a report detailing factors limiting the capability of achieving this goal. The report shall include: the measures taken to maximize runoff reduction practices on the site; the reasons why those practices constitute the maximum extent achievable; the alternative retention volume; and a description of the measures used to provide additional stormwater treatment above the alternate volume up to the water quality volume. In the case of linear redevelopment projects (e.g. roadway reconstruction or widening) for the developed portion of the right of way: (1) for projects that may be unable to comply with the full retention standard, the alternate retention and treatment provisions may also be applied as specified above, or (2) for projects that will not increase the effective impervious cover within a given watershed, the developer/ contractor shall implement the additional stormwater treatment measures referenced above, but will not be required to retain half of the water quality volume.

(ii) For all new development and for redevelopment of sites with less than forty percent effective impervious cover, retain the water quality volume for the site. If there are site constraints that would prevent retention of this volume on-site (e.g., brownfields, capped landfills, bedrock, elevated groundwater, etc.), documentation must be submitted, for the permittee's review and written approval, which: explains the site limitations; provides a description of the runoff reduction practices implemented; provides an explanation of why this constitutes the maximum extent achievable; offers an alternative retention volume; and provides a description of the measures used to provide additional stormwater treatment for sediment, floatables and nutrients above the alternate volume up to the water quality volume. Any such treatment shall be designed, installed and maintained in accordance with the Stormwater Quality Manual. In the case of linear projects that do not involve impervious surfaces (e.g. electrical transmission rights-of-way or natural gas pipelines), retention of the water quality volume is not required as long as the post-development runoff characteristics do not differ significantly from pre-development conditions.

(iii) Consider the limitation of turf areas to those areas necessary to construct buildings,

utilities, stormwater management measures, parking, access ways, reasonable lawn areas and contouring necessary to prevent future site erosion,

(iv) Maintain consistency with the Connecticut Stormwater Quality Manual (as amended), or if inconsistent, provide an explanation of why consistency is not feasible or practicable and information that the proposed plan of development is adequately protective.

(v) For ~~municipalities regulated by the MS4 permit issued on January 9, 2004 and this permit~~2004 MS4 permittees, the permittee shall implement this requirement within two (2) years after the effective date of this permit.

(vi) For ~~municipalities and institutions newly regulated by this permit~~new MS4 permittees, the permittee shall implement this requirement within three (3) years from the start of the permittee's first fiscal year that begins after the effective date of this permit.

(C) Impervious Cover

(i) Using mapping provided by the Commissioner (available at www.ct.gov/deep/stormwater), the permittee shall estimate the Directly Connected Impervious Area (DCIA) that contributes stormwater to each of its MS4 outfalls. In its SMP and initial annual report, the Permittee shall describe the methodology and assumptions used to estimate the DCIA. Each annual report shall document the progress of this task until its completion. The Permittee shall revise its DCIA estimate as development, redevelopment, or retrofit projects effectively add or remove DCIA to its MS4.

(ii) All municipalities and institutions shall implement measurement of DCIA upon the effective date of this permit and complete the DCIA estimate within four (4) years of the date of the effective date of this permit.

(D) Long Term Maintenance

(i) The permittee shall implement a maintenance plan for ensuring the long-term effectiveness of retention or detention ponds which discharge to, or receive stormwater from, its MS4. This shall include ponds that are owned by the permittee and all privately-owned ponds where the permittee maintains an easement or other legal authority pursuant to Section 6(*a*)(4)(A)(i) of this permit. At a minimum, the permittee shall annually inspect all such retention or detention ponds and remove accumulated sediment to restore full solids capture design capacity where found to be in excess of 50% design capacity.

(ii) The permittee shall implement a maintenance plan for ensuring the long-term effectiveness of stormwater treatment structures or measures (such as swirl concentrators, oil/ grit separators, water quality wetlands or swales, etc) installed within its MS4. This shall include structures that are owned by the permittee or those for which the permittee maintains an easement or other legal authority pursuant to Section 6(*a*)(4)(A)(i) of this permit. At a minimum, the permittee shall annually inspect all such structures/ measures and remove accumulated pollutants (such as sediment, oils, leaves, litter, etc) to restore full solids capture design

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capacity where found to be in excess of 50% design capacity.

(iii) For ~~municipalities regulated by the MS4 permit issued on January 9, 2004 and this permit~~2004 MS4 permittees, the permittee shall implement this requirement ~~upon~~ within one (1) year of the effective date of this permit.

(iv) For ~~municipalities and institutions newly regulated by this permit as Tier 1 MS4s~~new MS4 permittees, the permittee shall implement this requirement within two (2) years after the effective date of this permit.

(E) Additional measures for discharges to impaired waters (with or without a TMDL)

(i) For waters for which **Nitrogen, Phosphorus** or **Bacteria** is a Stormwater Pollutant of Concern:

To address erosion and sediment problems noted during the course of conducting the inspections required by subsection D above and identified by other means, the permittee shall develop, fund, implement, and prioritize a Retrofit program to correct the problem(s) in a specific timeframe and to establish short term and long term maintenance. Each annual report shall include which problem areas were retrofitted, the cost of the retrofit, and the anticipated pollutant reduction.

(ii) No requirements in addition to those specified in subsections (A)-(D) above exist for discharges to waters for which **Mercury** is a Stormwater Pollutant of Concern.

(6) Pollution Prevention/Good Housekeeping

The permittee shall implement an operations and maintenance program for permittee-owned or –operated MS4 systems that has a goal of preventing or reducing pollutant runoff and protecting water quality from all permittee-owned or -operated MS4 systems.

(A) Employee Training

The permittee shall continue a formal employee training program to increase awareness of water quality related issues in management of its MS4. In addition to providing key staff with topical training regarding standard operating procedures and other activities necessary to comply with the provisions of this permit, the training program shall include establishing an awareness of the general goals and objectives of the SMP; identification and reporting of illicit discharges and improper disposal; and spill response protocols and respective responsibilities of involved personnel. New MS4 permittees shall develop this program within two (2) years of the effective date of this general permit.

(B) Infrastructure Repair and Rehabilitation

The permittee shall repair and rehabilitate its MS4 infrastructure in a timely manner in order to reduce or eliminate the discharge of pollutants from its MS4 to receiving waters. Priority for repair and rehabilitation shall be based on the following:

(i) For ~~municipalities regulated by the MS4 permit issued on January 9, 2004 and this permit~~2004 MS4 permittees, the permittee shall utilize the information developed

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pursuant to Section 6(a)(6)(A)(v) of the 2004 ~~general~~ MS4 permit to fund and implement a program for repairing, retrofitting or upgrading the conveyances, structures and outfalls of the MS4. This program shall be updated based on new information on outfalls discharging pollutants, impaired waters, inspection observations or observations made during outfall mapping pursuant to Section 6(*a*)(3)(C) of this permit

(ii) For ~~municipalities~~ new MS4 permittees and institutions ~~newly regulated by this permit as Tier 1 MS4s~~, the permittee shall, within the first two (2) years following the effective date of this general permit, develop a program to identify conveyances, structures and outfalls in need of repairing, retrofitting or upgrading utilizing new and existing information on outfalls discharging pollutants, impaired waters, inspection observations or observations made during outfall mapping pursuant to Section 6(*a*)(3)(C) of this permit.

Commented [CT DEEP21]: Existing permittees already have this but new permittees will get extra time to implement per EPA permit.

(C) MS4 Property and Operations Maintenance

~~Streets/ road and associated rights-of-way, parking lots,~~Permittee-owned or -operated properties, parks, and other facilities that are owned, operated, or otherwise the legal responsibility of the permittee shall be maintained so as to minimize the discharge of pollutants to its MS4. Such maintenance shall include, but not be limited to:

Commented [CT DEEP22]: Modified due to reorganization of this subsection

(i) Parks and open space

The permittee shall optimize the application of fertilizers by municipal employees, institutional staff, or private contractors on lands and easements for which it is responsible for maintenance. Optimization practices considered shall include conducting soil testing and analysis to determine soil phosphorus levels are inadequate, the reduction or elimination of fertilizers, reduction of usage by adhering to the manufacturers' instructions, 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 storage and application practices (i.e. avoid impervious surfaces), application schedule (i.e., appropriate season or month) and timing (i.e., coordinated with climatic conditions to minimize runoff potential); develop and implement standard operating practices for the handling, storage, application, and disposal of pesticides and herbicides in compliance with applicable state and federal laws; evaluate lawn maintenance and landscaping activities to promote water quality (protective practices include reduced mowing frequencies, proper disposal of lawn clippings, and use of alternative landscaping materials like drought resistant and native plantings); and establish procedures for management of trash containers at parks (scheduled cleanings; sufficient number).

The permittee shall establish practices for the proper disposal of grass clippings and leaves at municipal owned lands. Clippings shall be composted or otherwise appropriately disposed. Clippings should not be enter the MS4 system or waters of the state.

(ii) Pet waste management

The permittee shall identify locations within its community/ institution where

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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 storm system and waters. In such areas, implement targeted management efforts such as public education 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).

(iii) Waterfowl management

Identify lands where waterfowl congregate and feeding by the public or institutional staff/ residents occurs. To raise awareness regarding the water quality impacts, the permittee shall install 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. 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 storm system and waters.

(iv) Buildings and facilities (schools under the jurisdiction of the permittee, 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; and ensure that all interior building floor drains are not connected to the MS4. This permit does not authorize such discharges; wastewaters from interior floor drains must be appropriately permitted.

(v) Vehicles and Equipment

Establish procedures for the storage of permittee-owned or -operated vehicles; require vehicles with fluid leaks to be stored indoors or in contained areas until repaired; evaluate fueling areas owned by the permittee and used by permittee-owned or -operated vehicles and 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; wastewaters from interior floor drains must be appropriately permitted.

~~(vi) Parking lots~~

~~Establish and implement procedures for sweeping and/or cleaning permittee-owned~~

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~~parking lots with a minimum frequency of once per year in the spring (following winter activities); establish a more frequent sweeping/ cleaning frequency of targeted areas determined by the permittee to have an increased pollution potential (based on inspections, pollutant loads, catch basin cleaning or inspection results, land use, impaired or TMDL waters or other factors established by the permittee); and report in each annual report the number of miles cleaned and the volume or mass of material removed. For new and redeveloped municipal parking lots, evaluate options from reducing stormwater runoff to surface waters and/ or the storm sewer system by the installing pervious pavements and/ or other measures to promote sheet flow of stormwater.~~

Commented [CT DEEP23]: Combined with street sweeping in subsection D, below

~~(vii)Snow Management Practices~~

Commented [CT DEEP24]: Moved to subsection E, below

~~a. Deicing Material Management~~

~~Develop and implement standard operating practices for the use, handling, storage, application, and disposal of deicing products such as salt and sand to minimize exposure to stormwater; explore means to minimize the use and optimize the application of chloride-based or other salts or deicing product (while maintaining public safety) and evaluate opportunities for use of alternative materials; for any exterior containers of liquid deicing materials installed after the effective date of this permit, provide secondary containment.; ensure that areas used for snow disposal will not result in discharges to waters; and maintain consistency with the DEEP's Best Management Practices for Disposal of Snow Accumulations from Roadways and Parking Lots, revised 2/4/11 and as amended (see link at: www.ct.gov/deep/stormwater).~~

~~b. Snow Removal~~

~~The permittee shall implement and refine its standard operating practices regarding its snow and ice control operations to minimize the discharge of pollutants. The permittee shall establish goals for the optimization of chemical application rates through the use of automated application equipment (e.g. zero-velocity spreaders), anti-icing and pre-wetting techniques, implementation of pavement management systems, and alternate chemicals. The permittee shall maintain records of the application of anti-icing and/ or de-icing chemicals to document the reduction of chemicals to meet established goals. The permittee shall ensure the proper training for deicing applications for municipal employees, institutional staff, or private contractors on lands and easements for which it is responsible for maintenance;~~

~~The permittee shall maintain consistency with the DEEP's Best Management Practices for Disposal of Snow Accumulations from Roadways and Parking Lots (Snow Disposal BMPs), as amended, for the stockpiling or disposal of post-plowing snow. The permittee shall not dispose of snow accumulations in waters of the state except as may be allowed for emergency purposes in the Snow Disposal BMPs document. In its Annual Report, the permittee shall document results of its snow removal program including, at a minimum: the type of staff training conducted on application methods and equipment, type(s) of deicing materials used; lane-miles treated; total amount of each deicing material used; type(s) of deicing equipment used; any changes in deicing~~

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practices (and the reasons for the change); and snow disposal methods.

(viii)Sweeping

a. Conduct a street sweeping program to remove sand, sediment and debris at a minimum frequency below in Table 1. Include methods for dust suppression while sweeping. If wet dust suppression is conducted, the use of water should be minimized such that a discharge of excess water to surface waters and/ or the storm sewer system does not occur.

b. Ensure the proper disposal of street sweeping in accordance with Department policies, guidance and regulations. Sweepings shall not be discharged back into the storm drain system and/or surface waters.

c. In its Annual Report, the permittee shall document results of its sweeping program including, at a minimum: curb miles swept, dates of cleaning, cubic yards of material collected, and method(s) of reuse or disposal.

(vi) Leaf CollectionManagement

All permittees shall conduct develop a town- or institution-wide annual leaf pickup management program annually on or before December 15. At a minimum, the permittee shall prohibit the dispositionsuch programThe permittee shall establish and implement procedures to prevent the deposition, by the permittee and/or its residents, of leaves onin catch basins, streets, parking lots, driveways, sidewalks or other paved surfaces that discharge to the MS4. Permittee shall ensure proper disposal or management of anySuch procedures shall also apply to yard wasteleaves collected by the permittee.

(x) Catch Basin Cleaning

The Permittee shall conduct routine cleaning of all catch basins. The Permittee shall track catch basin inspection observations. Utilizing information compiled through its inventory of catch basins, operational staff and public complaints, the Permittee shall optimize routine cleaning frequencies for particular structures or catchment areas as follows to maintain acceptable sediment removal efficiencies:

a. For the first two years of this permit, those catch basins serving catchment areas that discharge to a receiving water identified as impaired shall be inspected and cleaned, if necessary, at a minimum frequency of once every six (6) months in order to establish a cleaning frequency determined such that no sump shall become more than fifty percent (50%) full. Once this frequency has been determined, it shall be included in the SMP and noted in the Permittee's Annual Reports.

Commented [CT DEEP25]: Moved to subsection D, below

Commented [CT DEEP26]: Modified pursuant to comments by CCM, COST and municipalities

Commented [CT DEEP27]: Moved to subsection D, below

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			~~Table 1 - Sweeping Schedule [1]~~					
~~Municipal or institutional[2] population~~	~~Main line roads~~	~~Arteries to main line roads~~	~~Event gathering places~~	~~Commercial/ business district main roads~~	~~Commercial/ business district sidewalks~~	~~City wide residential~~	~~All other streets~~	~~Public or institutional parking lots~~
~~<15,000~~	~~Monthly~~	~~Monthly~~	~~Prior to event & within 48 hrs of event (or within 24 hrs if rain is forecast)~~	~~Monthly~~	~~Quarterly~~	~~Annually~~	~~Annually~~	~~Monthly~~
~~15,000-50,000~~	~~Monthly~~	~~Quarterly~~	~~Prior to event & within 48 hrs of event (or within 24 hrs if rain is forecast)~~	~~Twice monthly~~	~~Monthly~~	~~Semiannually~~	~~Annually~~	~~Quarterly~~
~~>50,000~~	~~Weekly~~	~~monthly~~	~~Prior to event & within 48 hrs of event (or within 24 hrs if rain is forecast)~~	~~Daily~~	~~Weekly~~	~~Quarterly~~	~~Twice annually~~	~~Monthly~~
	~~[1] Sweeping shall be conducted year-round, with the exception of winter months (Dec 1 – Mar 31). At least one sweeping event shall be conducted at the end of the winter season, between April 1-June 30. Street sweeping shall be conducted so as to minimize the amount of excess runoff of street sweeping water.~~ ~~[2] The population of a state or federal institution is the average daily population including staff, residents and those receiving or providing services on-site.~~							

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b. For all other catch basins, during the first two years of this permit, the Permittee shall inspect and, if necessary, clean these catch basins at least once to establish a cleaning frequency determined such that no catch basin sump is found to be more than fifty percent (50%) full during routine cleaning events. If any of these catch basins are found to be more than fifty percent (50%) full, such basins shall be cleaned and re-inspected within six (6) months to determine the appropriate cleaning frequency. Once this frequency has been determined, it shall be included in the SMP and noted in the Permittee's Annual Reports.

c. Following the establishment of appropriate cleaning frequencies pursuant to subparagraphs (i) and (ii) above, and notwithstanding 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 the excessive loading. The Permittee shall describe in its annual report actions taken or its plans to abate areas of persistent sedimentation (including a timeframe for the implementation of such actions), including stabilization practices, structural improvements or operational modifications. After implementation of these measures, if subsequent inspections continue to find the sump more than fifty percent (50%) full, cleaning frequency shall be increased as appropriate to maintain levels below fifty percent (50%). Such changes in frequency shall be included in the SMP and noted in the Permittee's Annual Report.

(vii)Interconnected MS4s

As part of interagency agreements established pursuant to Section 6(*c*)(3) of this permit, the Permittee shall coordinate with operators of interconnected MS4s (such as neighboring municipalities and DOT) regarding the contribution of potential pollutants from the storm sewer systems, contributing land use areas and stormwater control measures in the respective MS4s. This same coordination shall be conducted regarding operation and maintenance procedures utilized in the respective systems.

(viii)Sources contributing pollutants to the MS4

The permittee shall develop and implement a program to control the contribution of pollutants to its MS4 from commercial, industrial, municipal, institutional or other facilities, not otherwise authorized by permit issued pursuant to Sections 22a-430 or 22a-430b of the Connecticut General Statutes.

(D) Street, Parking & MS4 Maintenance

The permittee shall implement a program to provide for regular inspection and maintenance of permittee-owned or -operated streets, parking areas and other MS4 infrastructure.

Commented [CT DEEP28]: This section is relocated to subsection F, below, for clarity.

Commented [CT DEEP29]: This section is relocated to subsection G, below, for clarity.

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(i) Sweeping

a. Establish and implement procedures for sweeping permittee-owned or -operated streets and parking lots. All streets and parking lots, with the exception of rural uncurbed streets and parking lots with no catch basins, shall be inspected, swept and/or cleaned (as necessary) with a minimum frequency of once per year in the spring following the cessation of winter maintenance activities (i.e. sanding, deicing, etc.). The procedures shall also include more frequent inspections, cleaning and/or sweeping of targeted areas determined by the permittee to have increased pollutant potential based on the presence of active construction activity or other potential pollutant sources. The permittee shall identify such potential pollutant sources based upon surface inspections, catch basin cleaning or inspection results, land use, winter road deicing and/or sand application, impaired or TMDL waters or other relevant factors as determined by the permittee. If wet dust suppression is conducted, the use of water should be minimized such that a discharge of excess water to surface waters and/ or the storm sewer system does not occur.

For rural uncurbed streets and parking lots with no catch basins, the permittee shall either meet the minimum frequencies above, or develop and implement an inspection, documentation and targeted sweeping and/or cleaning plan within one (1) year of the effective date of the general permit, and submit such plan with its year one Annual Report. For new and redeveloped municipal parking lots, evaluate options from reducing stormwater runoff to surface waters and/ or the storm sewer system by the installing pervious pavements and/ or other measures to promote sheet flow of stormwater.

b. Ensure the proper disposal of street sweepings in accordance with Department policies, guidance and regulations. Sweepings shall not be discharged back into the storm drain system and/or surface waters.

c. In its Annual Report, the permittee shall document results of its sweeping program including, at a minimum: a summary of inspection results, curb miles swept, dates of cleaning, volume or mass of material collected, and method(s) of reuse or disposal. The permittee shall also include documentation of any alternate sweeping plan for rural uncurbed streets and any runoff reduction measures implemented.

(ii) Catch Basin Cleaning

The Permittee shall conduct routine cleaning of all catch basins. The Permittee shall track catch basin inspection observations. Utilizing information compiled through its inventory of catch basins, operational staff and public complaints, the Permittee shall optimize routine cleaning frequencies for particular structures or catchment areas as follows to maintain acceptable sediment removal efficiencies:

d. ~~a.~~ Inspect all catch basins at least once by the end of the third year following the effective date of this general permit.

Commented [CT DEEP31]: Equivalent to EPA per comments by CCM, COST and municipalities.

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b. Prioritize inspection and maintenance for catch basins located near impaired waters and 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.

c. Establish a schedule that the frequency of routine cleaning will ensure that no catch basin at any time will be more than 50 percent full.

d. If a catch basin sump is more than 50 percent full during two consecutive routine inspections/cleaning events, the permittee shall document that finding, investigate the contributing drainage area for sources of excessive sediment loading, and to the maximum extent practicable, abate contributing sources. The permittee shall describe any actions taken in its Annual Report.

e. For the purposes of this subsection, 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.

f. The permittee shall document in the Plan and in the first Annual Report its plan for optimizing catch basin cleaning, inspection plans, or its schedule for gathering information to develop the optimization plan. 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 keep a log of catch basins cleaned or inspected.

g. The permittee shall report in each Annual Report the total number of catch basins, number inspected, number cleaned, and the volume or mass of material removed from each catch basin draining to water quality limited waters and the total volume or mass of material removed from all catch basins.

(E) Snow Management Practices

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i. Deicing Material Management

Develop and implement standard operating practices for the use, handling, storage, application, and disposal of deicing products such as salt and sand to minimize exposure to stormwater; explore means to minimize the use and optimize the application of chloride-based or other salts or deicing product (while maintaining public safety) and evaluate opportunities for use of alternative materials; for any exterior containers of liquid deicing materials installed after the effective date of this permit, provide secondary containment of at least 110% of the largest container or 10% of the total volume of all containers, whichever is larger, without overflow from the containment area.

Commented [CT DEEP34]: Maintains consistency with the industrial general permit.

ii. Snow and Ice Control Practices

The permittee shall implement and refine its standard operating practices regarding its snow and ice control to minimize the discharge of sand, anti-icing or de-icing

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chemicals and other pollutants. The permittee shall establish goals for the optimization of sand and/or chemical application rates through the use, where practicable, of automated application equipment (e.g. zero-velocity spreaders), anti-icing and pre-wetting techniques, implementation of pavement management systems, and alternate chemicals. The permittee shall maintain records of the application of sand, anti-icing and/or de-icing chemicals to document the reduction of chemicals to meet established goals. The permittee shall ensure the proper training for deicing applications for municipal employees, institutional staff, or private contractors on lands and easements for which it is responsible for maintenance.

The permittee shall manage and dispose of snow accumulations in accordance with DEEP's Best Management Practices for Disposal of Snow Accumulations from Roadways and Parking Lots, revised 2/4/11 and as amended (see link at: www.ct.gov/deep/stormwater). In its Annual Report, the permittee shall document results of its snow removal program including, at a minimum: the type of staff training conducted on application methods and equipment, type(s) of deicing materials used; lane-miles treated; total amount of each deicing material used; type(s) of deicing equipment used; any changes in deicing practices (and the reasons for the change); and snow disposal methods.

(F) Interconnected MS4s

As part of interagency agreements established pursuant to Section 6(*c*)(3) of this permit, the Permittee shall coordinate with operators of interconnected MS4s (such as neighboring municipalities, institutions and DOT) regarding the contribution of potential pollutants from the storm sewer systems, contributing land use areas and stormwater control measures in the respective MS4s. This same coordination shall be conducted regarding operation and maintenance procedures utilized in the respective systems.

(G) Sources contributing pollutants to the MS4

The permittee shall develop and implement a program to control the contribution of pollutants to its MS4 from commercial, industrial, municipal, institutional or other facilities, not otherwise authorized by permit issued pursuant to Sections 22a-430 or 22a-430b of the Connecticut General Statutes.

(H)Additional measures for discharges to impaired waters (with or without a TMDL)

(i) For waters for which **Nitrogen** or **Phosphorus** is a Stormwater Pollutant of Concern:

On ~~MS4~~ Permittee-owned or -operated lands, implement a turf management practices and procedures policy which includes, but is not limited to, procedures for proper fertilizer application and the planting of native plant materials to lessen the amount of turf area requiring mowing and the application of chemicals. Each Annual Report shall discuss the actions taken to implement this policy with an estimate of fertilizer and turf ~~area~~ reduction.

(ii) For waters for which **Bacteria** is a Stormwater Pollutant of Concern:

On ~~MS4~~ Permittee-owned or -operated lands with a high potential to contribute bacteria (such as dog parks, parks with open water, sites with failing septic systems), the permittee shall develop, fund, implement, and prioritize a retrofit or source management program to correct the problem(s) within a specific timeframe. Each Annual Report shall identify ~~which~~ problem~~s~~ areas ~~were retrofitted~~for which a retrofit or source management program were developed, the location of the closest outfall monitored in accordance with Section 6(*l*), the cost of ~~the~~ such retrofit or program, and the anticipated pollutant reduction.

On ~~MS4~~ Permittee-owned or -operated lands, prohibit the feeding of geese or waterfowl and implement a program to manage geese and waterfowl populations. Each Annual Report shall discuss the actions taken to implement this program.

(iii) No additional requirements in addition to those specified in subsections (A)-(C) above exist for discharges to waters for which **Mercury** is a Stormwater Pollutant of Concern.

(b) Tier 2 Minimum Control Measures

For each Minimum Control Measure, the permittee shall: define appropriate BMPs; designate a person(s) and job title responsible for each BMP; define a time line for implementation of each BMP; where appropriate, identify the location, including the address and latitude and longitude, for each BMP; and define measurable goals for each BMP. The Minimum Control Measures in the Plan include, but are not limited to:

(1) Public education and outreach

(A) ~~Within~~ On or before ~~1~~5 years ~~of~~ from the effective date of this permit ~~and continue until permit expiration~~, implement a public education program to distribute educational materials to the community (i.e. residents, business and commerce, students, staff, contractors, etc.) or conduct equivalent outreach activities about the sources and impacts of stormwater discharges on waterbodies and the steps that the public can take to reduce pollutants in stormwater runoff. To implement the public education and outreach program, the permittee shall develop and/or acquire current educational material that identifies the pollutants (such as pathogens/ bacteria, nitrogen, phosphorus, sediments, oils & greases) associated with stormwater discharges, the potential sources of the pollutants, the environmental impacts of these pollutants, and related pollution reduction practices. The education program shall include, but not be limited to, information on management of pet waste and yard waste, application of fertilizers, herbicides, and pesticides, and impacts of illicit discharges and improper disposal of waste into the MS4. Educational information may be developed or acquired from other MS4s, governmental agencies, academia, and/or environmental advocacy organizations. Information may be disseminated with flyers, brochures, door hangers, television public service announcements, and web based tools. ~~The permittee shall utilize the 12 year period following the effective date of this permit to develop the content of the outreach materials.~~ Each annual report shall summarize the types, sources, number of, and methods by which materials disseminated.

Commented [CT DEEP35]: Modified pursuant to municipal comments

~~(B) To implement the public education and outreach program, the permittee shall develop or acquire current educational material that identifies the pollutants (such as pathogens/ bacteria, nitrogen, phosphorus, sediments, oils & greases) associated with stormwater~~

~~discharges, the potential sources of the pollutants, the environmental impacts of these pollutants, and related pollution reduction practices.~~

Commented [CT DEEP36]: Inserted into subsection A, above, for clarity.

(B) Additional measures for discharges to waters associated with a Stormwater Pollutant of Concern

(i) For waters for which **Phosphorus** is a Stormwater Pollutant of Concern, educational materials shall be specifically tailored and targeted to educate on the sources, impacts, and available pollution reduction practices from the following:

~~1.~~a. Septic systems
~~1.~~b. Fertilizer use
~~1.~~c. Grass clippings and leaves management
~~1.~~d. Detergent use
~~1.~~e. Discharge of sediment (to which Phosphorus binds) from Construction sites
~~1.~~f. Other erosive surfaces

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(ii) For waters for which **Nitrogen** is a Stormwater Pollutant of Concern, educational materials shall be specifically tailored and targeted to educate on the sources, impacts, and available pollution reduction practices from the following:

~~1.~~a. Septic systems
~~1.~~b. Fertilizer use
~~1.~~c. Grass clippings and leaves management
~~1.~~d. Discharge of sediment (to which Nitrogen binds) from Construction sites
~~1.~~e. Other erosive surfaces

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(iii) For waters for which **Bacteria** is a Stormwater Pollutant of Concern, educational materials shall be specifically tailored and targeted to educate on the sources, impacts, and available pollution reduction practices from the following:

~~1.~~a. Septic systems
~~1.~~b. Sanitary cross connections
~~1.~~c. Waterfowl
~~1.~~d. Pet waste
e. Manure piles associated with livestock and horses

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(iv) No requirements in addition to those specified in subsection (A)-(B) above exist for discharges to waters for which **Mercury** is a Stormwater Pollutant of Concern.

(2) Public Involvement/Participation.

(A) On or before 5 years from the effective date of this permit, ~~Publish a public notice, which complies with state and local public notice and Freedom of Information requirements, of the Plan and Annual Report required by Section 6(*k*) of this permit and hold an annual public meeting to inform the public of the Plan and Annual Report information~~the Permittee shall make the Plan available for public review and comment. The ~~notice~~ Permittee shall provide a contact name (with phone number, address, and email) to whom the public can send comments. ~~and~~ Such Plan shall, at a minimum, be made available at a publicly accessible location (such as the MS4's main office, a local library or other central publicly available location), and~~/or URL~~ the Permittee's website ~~where the Plan and Annual Report are available for public review. Where state and~~

Commented [CT DEEP37]: Modified to eliminate public meeting and allow more time pursuant to municipal comments

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~~local notice requirements are inconsistent, the notice provisions providing for the most notice and opportunity for public comment shall be followed. The public notice shall allow for a 30 day comment period, at a minimum~~. The MS4 shall implement this measure annually, thereafter, between October 31 and January 31.

(B) The permittee is encouraged to enlist local organizations to help implement the elements of their SMP.

(C) No requirements in addition to those specified in subsection (A)-(B) above exist for discharges to waters for which Phosphorus, Nitrogen, Bacteria, or Mercury is a Stormwater Pollutant of Concern.

(3) Illicit discharge detection and elimination.

Illicit discharges to the MS4 are prohibited, and any such discharges are a violation of this permit and remain a violation until they are eliminated. The permittee shall prohibit all illicit discharges from entering its MS4. The permittee shall provide the legal authority to prohibit and eliminate illicit discharges (as defined in 40CFR 122.26(b)(2) except for those discharges noted in the Section 3(*a*)(2) of this permit) to the MS4.

(A) Establish the necessary and enforceable legal authority by statute, ordinance, rules and regulations, permit, easement, contract, order and any other means, to prohibit and eliminate illicit discharges. The legal authority shall:

~~(i) The legal authority shall:~~

~~a~~i. prohibit illicit discharges to its storm sewer system and require removal of such discharges; and

~~b~~ii. prohibit the dumping or disposal of materials including, but not limited to, residential, industrial and commercial wastes, trash, used motor vehicle fluids, pesticides, fertilizers, food preparation waste, leaf litter, grass clippings, and animal wastes into its MS4; and

~~c~~iii. assess fines or penalties and/or recoup costs incurred by the permittee from anyone creating an illicit discharge or spilling or dumping to the MS4.

~~(ii) The permittee must implement this ordinance or regulatory mechanism on or before three (3) years from the effective date of this permit.~~

(B) ~~Develop~~ The Permittee shall develop a means for citizen reporting of possible illicit discharges~~. Include in the Annual Report a summary~~ and maintain written documentation of such citizen reporting and investigative/ corrective actions by the permittee to respond to and address the complaints.

Commented [CT DEEP38]: Eliminate annual report requirements for IDDE reporting per municipal comments

(C) The Permittee shall prioritize the investigative and corrective actions taken under subsection (B), above, ~~F~~for waters for which **Phosphorus**, **Nitrogen**, ~~or~~ **Bacteria or Mercury** is a Stormwater Pollutant of Concern.~~:~~

Develop a program to address reports of illicit discharges with a high potential to discharge bacteria, phosphorus, and nitrogen to the MS4. The Permittee~~Annual Report~~ shall ~~include~~ maintain ~~a summary of~~written documentation summarizing the illicit

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discharge complaints received, and the investigative and corrective actions taken to identify and eliminate the illicit discharge, and the anticipated pollutant reduction.

~~(D) No requirements in addition to those specified in subsections (A) – (B) above exist for discharges to waters for which **Mercury** is a Stormwater Pollutant of Concern.~~

(E) The permittee must implement the provisions of subsections (A) – (C), above, on or before five (5) years from the effective date of this permit.

Commented [CT DEEP39]: Allowed more time pursuant to municipal comments

(4) Construction Site Stormwater Runoff Control

The permittee shall implement and enforce a program to control stormwater discharges (to its MS4) associated with land disturbance or development (including re-development) activities from areas with one half acre or more of soil disturbance, whether considered individually or collectively as part of a larger common plan. Such program shall include the following elements:

(A) Legal Authority

(i) The permittee shall establish an ordinance, bylaw, regulation, or other appropriate legal authority that requires or allows:

a. developers, construction site operators, or contractors to maintain consistency with the 2002 Guidelines for Soil Erosion and Sedimentation Control, as amended, the 2004 Connecticut Stormwater Quality Manual, as amended, and all stormwater discharge permits issued by the DEEP within the municipal boundary pursuant to CGS 22a-430 and 22a-430b,

b. the implementation of additional measures to protect/improve water quality (in addition to the above requirements) as deemed necessary by the municipality.

c. the permittee to carry out all inspection, surveillance and monitoring procedures necessary to determine compliance with municipal regulations related to the management of the permittee's MS4.

d. the permittee to control through interagency or inter-jurisdictional agreements, the contribution of pollutants between the permittee's MS4 and MS4s owned or operated by others.

(ii) Within three (3) years from effective date of this permit, the permittee shall implement, upgrade (if necessary) and enforce its land use regulations to meet the requirements of subsection 4(A)(i) above.

(B) Interdepartmental Coordination

(i) The permittee will develop and implement a plan outlining how all municipal departments and boards with jurisdiction over the review, permitting, or approval of land disturbance and development projects within the MS4 will coordinate their functions with one another.

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(ii) ~~All~~ The permittee shall implement this measure within ~~one (1)~~two (2) years of the effective date of this permit.

Commented [CT DEEP40]: Increase timeline per municipal comments

(C) Site Review and Inspection

(i) The permittee will conduct site plan reviews that incorporate consideration of stormwater controls or management practices to prevent or minimize impacts to water quality.

(ii) The permittee will conduct site inspection(s) and enforcement to assess the adequacy of the installation, maintenance, operation, and repair of construction and post construction control measures.

(iii) The permittee shall implement this measure within ~~one (1)~~two (2) years of the effective date of this permit.

(D) Public Involvement

(i) The permittee will implement a procedure for receipt and consideration of information submitted by the public concerning proposed and ongoing land disturbance and development activities.

(ii) The permittee shall implement this procedure within ~~one (1)~~two (2) years of the effective date of this permit.

(E) State Permit Notification

(i) The permittee will implement a procedure for notifying developers of their potential obligation to obtain authorization under the DEEP's General Permit for the Discharge of Stormwater and Dewatering Wastewaters Associated with Construction Activities ("construction general permit") if their development or redevelopment project disturbs one or more acres of land, either individually or collectively, as part of a larger common plan, and results in a point source discharge to the surface waters of the state directly or through the permittee's MS4. The notification shall include a provision informing the developer of their obligation to provide a copy of the Storm Water Pollution Control Plan (required by the construction general permit) to the permittee upon request.

(ii) The permittee shall implement this procedure within ~~one (1)~~two (2) years of the effective date of this permit.

(F) No requirements in addition to those specified in subsections (A)-(E) above exist for discharges to waters for which **Phosphorus**, **Nitrogen**, **Bacteria**, or **Mercury** is a Stormwater Pollutant of Concern.

(5) Post –construction stormwater management

(A) Legal Authority

(i) The permittee shall establish an ordinance, bylaw, regulation, or other appropriate legal authority that requires or allows the use of runoff reduction and low impact

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development ("LID") practices in its land use regulations or construction project requirements to meet the following standards:

a. for development or redevelopment of sites that are currently developed with an effective impervious cover of forty percent or more, retain on-site half the water quality volume (as defined in Section 2 of this general permit) for the site,

b. for new development and redevelopment of sites with less than forty percent effective impervious cover, retain the water quality volume for the site,

c. an alternate retention/treatment standard as outlined in subsection 5(B) below.

(ii) All permittees shall identify and eliminate existing local regulatory barriers to implementing LID and runoff reduction practices. These may include site planning requirements, zoning regulations, street design regulations, or infrastructure specifications that address minimal dimensional criteria for the creation of roadways, parking lots, and other impervious cover. If such barriers cannot be eliminated within the timeframe dictated by subsection 5(D) below, the permittee shall provide in the Annual Report(s) required by Section 6(*k*) a justification and a revised schedule for implementation

(B) Runoff Reduction/ Low Impact Development ("LID") Measures

Pursuant to the requirements of subsection 5(A)(i) above, the permittee shall require the party responsible (i.e. a developer) for development and redevelopment projects within its MS4 to:

(i) for development or redevelopment of sites that are currently developed with an effective impervious cover of forty percent or more, retain on-site half the water quality volume for the site. In cases where this entire amount cannot be retained, the permittee shall require the responsible party to retain runoff volume to the maximum extent achievable using control measures that are technologically available and economically practicable and achievable in light of best industry practice. In such cases, additional stormwater treatment, to the maximum extent achievable using control measures that are technologically available and economically practicable and achievable in light of best industry practice, shall be required for sediment, floatables and nutrients for the volume above that which can be retained up to the water quality volume. In cases where the runoff retention requirement cannot be met, the developer/ contractor shall submit, for the permittee's review, a report detailing factors limiting the capability of achieving this goal. The report shall include: the measures taken to maximize runoff reduction practices on the site; the reasons why those practices constitute the maximum extent achievable; the alternative retention volume; and a description of the measures used to provide additional stormwater treatment above the alternate volume up to the water quality volume. In the case of linear redevelopment projects (e.g. roadway reconstruction or widening) for the developed portion of the right of way: (1) for projects that may be unable to comply with the full retention standard, the alternate retention and treatment provisions may also be applied as

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specified above, or (2) for projects that will not increase the effective impervious cover within a given watershed, the developer/ contractor shall implement the additional stormwater treatment measures referenced above, but will not be required to retain half of the water quality volume.

(ii) for all new development and for redevelopment of sites with less than forty percent effective impervious cover, retain the water quality volume for the site. If there are site constraints that would prevent retention of this volume on-site (e.g., brownfields, capped landfills, bedrock, elevated groundwater, etc.), documentation must be submitted, for the permittee's review and written approval, which: explains the site limitations; provides a description of the runoff reduction practices implemented; provides an explanation of why this constitutes the maximum extent achievable; offers an alternative retention volume; and provides a description of the measures used to provide additional stormwater treatment for sediment, floatables and nutrients above the alternate volume up to the water quality volume. Any such treatment shall be designed, installed and maintained in accordance with the Stormwater Quality Manual. In the case of linear projects that do not involve impervious surfaces (e.g. electrical transmission rights-of-way or natural gas pipelines), retention of the water quality volume is not required as long as the post-development runoff characteristics do not differ significantly from pre-development conditions.

(iii) consider the limitation of soil disturbance to that necessary to construct buildings, utilities, stormwater management measures, parking, access ways, reasonable lawn areas and contouring necessary to prevent future site erosion,

(iv) maintain consistency with the Connecticut Stormwater Quality Manual (as amended), or if inconsistent, provide an explanation of why consistency is not feasible or practicable and information that the proposed plan of development is adequately protective.

(C) The permittee shall implement a maintenance plan for ensuring the long-term effectiveness of stormwater treatment structures or measures (such as swirl concentrators, oil/grit separators, stormwater treatment wetlands or swales, etc) installed within its MS4. This shall include structures that are owned and/or operated by the permittee or those for which the permittee maintains an easement or other legal authority. At a minimum, the permittee shall ~~annually~~ develop a program to inspect all such structures/measures at least once during the term of this general permit and remove accumulated pollutants (such as sediment, oils, leaves, litter, etc) to restore full solids capture design capacity where found to be in excess of 50% design capacity.

Commented [CT DEEP41]: Increase timeline per municipal comments

(D) The permittee shall implement the requirements of this subsection ~~within three (3)~~by the end of the third year~~s~~ after the effective date of this permit.

(E) Additional measures for discharges to impaired waters (with or without a TMDL)

(i) For waters for which **Nitrogen, Phosphorus,** or **Bacteria** is a Stormwater Pollutant of Concern**:**

~~1.~~a. To address erosion and sediment problems identified by MS4 staff, residents, and/or contractors, the permittee must develop, fund, implement, and prioritize a Retrofit program to correct the problem(s) in a specific timeframe and to

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establish short term and long term maintenance, as necessary. Each annual report shall identify which problems areas were retrofitted, the cost of the retrofit, and the anticipated pollutant reduction.

(ii) No requirements in addition to those specified in subsections (A)-(D) above exist for discharges to waters for which **Mercury** is a Stormwater Pollutant of Concern.

(6) Pollution Prevention/ Good Housekeeping

(A) Employee Training

The permittee shall implement a formal employee training program to increase awareness of water quality related issues in management of its MS4. In addition to providing key staff with topical training regarding standard operating procedures and other activities necessary to comply with the provisions of this permit, the training program shall include, at a minimum: establishing an awareness of the general goals and objectives of the SMP; identification and reporting of illicit discharges and improper disposal; winter road maintenance application procedures; deicing equipment maintenance and training, snow disposal and storage practices; and spill response protocols and respective responsibilities of involved personnel.

(B) Infrastructure Repair and Rehabilitation

The permittee shall repair and rehabilitate its MS4 infrastructure in a timely manner in order to reduce or eliminate the discharge of pollutants from its MS4 to receiving waters. Priority for repair and rehabilitation shall be based on existing information on outfalls discharging pollutants, impaired waters or inspection observations. This shall include refinement of the permittee's standard operating procedures and good housekeeping practices for management of its MS4.

(C) MS4 Property and Operations Maintenance

Streets/roads and associated rights-of-way, parking lots, parks, and facilities that are owned, operated, or otherwise the legal responsibility of the permittee shall be maintained so as to minimize the discharge of pollutants to its MS4. Such maintenance shall include, but not be limited to:

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(i) Parks and open space

The permittee shall optimize the application of fertilizers by municipal employees, or private contractors on lands and easements for which it is responsible for maintenance. Optimization practices considered shall include conducting soil testing and analysis to determine soil phosphorus levels are inadequate, the reduction or elimination of fertilizers, reduction of usage by adhering to the manufacturers' instructions, 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 storage practices and application practices (i.e. avoid impervious surfaces), application schedule (i.e., appropriate season or month) and timing (i.e., coordinated with climatic conditions to minimize runoff potential); develop and implement standard operating practices for the handling, storage, application, and disposal of pesticides and herbicides in compliance with applicable state and federal laws; evaluate lawn maintenance and

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landscaping activities to promote water quality (protective practices include reduced mowing frequencies, proper disposal of lawn clippings, and use of alternative landscaping materials like drought resistant and native plantings); and establish procedures for management of trash containers at parks (scheduled cleanings; sufficient number).

The permittee shall establish practices for the proper disposal of grass clippings and leaves at municipal owned lands. Clippings shall be composted or otherwise appropriately disposed. Clippings should not enter the MS4 system or waters of the state.

(ii) Pet waste management

The permittee shall 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 storm system and surface waters. In such areas, ~~implement~~ consider targeted management efforts such as public education and enforcement (e.g., increased patrol for violators). In municipally-owned recreational areas where dog walking is allowed, the permittee shall install educational signage~~,~~ and consider providing pet waste baggies, and disposal receptacles (or require carry-out).

Commented [CT DEEP42]: Allow flexibility per municipal comments

Commented [CT DEEP43]: Ditto

(iii) Waterfowl management

Identify lands where waterfowl congregate and feeding by the public occurs. To raise awareness regarding the water quality impacts, the permittee shall ~~install~~ consider 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. The permittee shall also ~~implement~~ consider practices that discourage the undesirable congregation of waterfowl in these areas, or otherwise isolate the direct drainage from these areas away from its storm sewer system and surface waters.

Commented [CT DEEP44]: Ditto

Commented [CT DEEP45]: ditto

(iv) Buildings and facilities (schools under the jurisdiction of the permittee, 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; and ensure that all interior building floor drains are not connected to the MS4. This permit does not authorize such discharges; wastewaters from interior floor drains must be appropriately permitted.

(v) Vehicles and Equipment

Establish procedures for the storage of permittee-owned or -operated vehicles; require vehicles with fluid leaks to be stored indoors or in contained areas until repaired; evaluate fueling areas owned by the permittee and used by permittee-

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owned vehicles and 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; wastewaters from interior floor drains must be appropriately permitted.

(vi) Parking lots

Establish and implement procedures for sweeping and/or cleaning permittee-owned or -operated parking lots and their drainage systems. All parking lots shall be inspected ~~with a minimum frequency of once per year~~at least once during the first three years after the effective date of this general permit in the spring (following winter activities) to determine the necessary cleaning frequency. The permittee shall establish a ~~more frequent~~ sweeping/ cleaning frequency ~~of targeted~~based on these inspections and other considerations including areas ~~determined by the permittee to have an increased pollution potential (based on inspections, pollutant loads, catch basin cleaning or inspection results, land use,~~discharging to impaired or TMDL waters or other factors established by the permittee~~)~~. The permittee shall include ~~and report~~ in each ~~a~~Annual ~~r~~Report the number of parking lots cleaned, the approximate area of the lots and the volume or mass of material removed.

Commented [CT DEEP46]: Increased timeline pursuant to municipal comments

(vii)Deicing material & snow management practices

Develop and implement standard operating practices for the use, handling, storage, application, and disposal of deicing products such as salt and sand to minimize exposure to rainfall and stormwater runoff; for roadways and parking lots, explore means to minimize the use and optimize the application of chloride-based or other salts or deicing product (while maintaining public safety) and evaluate opportunities for use of alternative materials; for any exterior containers of liquid deicing materials installed after the effective date of this permit, provide secondary containment of at least 110% of the largest container or 10% of the total volume of all containers, whichever is larger, without overflow from the containment area; ensure that areas used for snow disposal will not result in discharges to waters; and maintain consistency with the DEEP's Best Management Practices for Disposal of Snow Accumulations from Roadways and Parking Lots, revised 2/4/11 and as amended (see link at: www.ct.gov/deep/stormwater).

Commented [CT DEEP47]: Maintain consistency with the industrial general permit.

(viii)Sweeping

a. ~~Conduct~~ Develop a street sweeping program to remove sand, sediment and debris from permittee-owned or -operated streets. ~~at a minimum frequency of once per year~~ This program shall include an inspection of all streets, with the exception of rural uncurbed streets with no catch basins, (conducted after snow melt but no later than June 30)~~.~~at least once during the first 3 years following the effective date of this general permit to determine a street sweeping schedule. This schedule shall be included in the permittee's SMP and documented in the Annual Report. Include methods for dust suppression while sweeping. If wet dust suppression is conducted, the use of water should be minimized such that a discharge of excess water to surface waters and/ or the storm sewer system does not occur.

b. Ensure the proper disposal of street sweeping in accordance with Department

policies, guidance and regulations. Sweepings shall not be discharged back into the storm drain system and/or surface waters.

c. In its Annual Report, the permittee shall document results of its sweeping program including, at a minimum: a summary of inspection results, curb miles swept, dates of cleaning, ~~cubic yards~~volume or mass of material collected, and method(s) of reuse or disposal.

(ix) Leaf ~~Collection~~Management

All permittees shall ~~conduct~~ develop a town-wide leaf ~~pickup~~ management program ~~annually on or before December 15~~. At a minimum, the permittee shall prohibit the deposition of leaves on streets, parking lots, driveways, sidewalks or other paved surfaces. Permittee shall ensure proper disposal or reuse of any leaves collected by the MS4~~leaves~~.

Commented [CT DEEP48]: Modified to leaf management pursuant to CCM, COST and municipal comments

(x) Catch Basin Cleaning

The permittee shall develop and implement a program for the routine cleaning of all catch basins and stormwater structures. The permittee shall inspect all catch basins and structures at least once ~~a year for the first two years~~before the expiration of the permit and track inspection observations. Catch basins identified as being more than fifty percent (50%) full during these inspections shall be cleaned. Utilizing information compiled through its inspection program and public complaints, the permittee shall develop a schedule for the routine cleaning of all catch basins and stormwater structures. The permittee shall document the number of inspections, number of structures cleaned, volume or mass of material removed from structures and cleaning schedule in their annual report.

Commented [CT DEEP49]: Increased timeline per municipal comments

(xi)Interconnected MS4s

As part of interagency agreements established pursuant to Section 6(*c*)(3) of this permit, the Permittee shall coordinate with operators of interconnected MS4s (such as neighboring municipalities, institutions and DOT) regarding the contribution of potential pollutants from the storm sewer systems, contributing land use areas and stormwater control measures in the respective MS4s. This same coordination shall be conducted regarding operation and maintenance procedures utilized in the respective systems.

(D) Additional measures for discharges to waters associated with a Stormwater Pollutant of Concern

~~1.~~(i) For waters for which **Nitrogen** is a Stormwater Pollutant of Concern:

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~~1.~~a. Implement a turf management practices and procedures policy which includes, but is not limited to, procedures for proper fertilizer application on lands owned by the permittee and the planting of native plant materials to lessen the amount of turf area requiring mowing and the application of chemicals. Each ~~a~~Annual ~~r~~Report shall discuss the actions taken to implement this policy with an estimate of fertilizer and turf area reduction.

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~~1.~~(ii) For waters for which **Bacteria** is a Stormwater Pollutant of Concern:

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~~1.~~a. On MS4-owned lands (such as dog parks, parks or areas with open water, sites with failing septic systems) with a high potential to contribute bacteria, the permittee shall develop~~, fund, implement, and prioritize a Retrofit~~ a source management program to correct the problem(s) within a specific timeframe. Each ~~a~~Annual ~~r~~Report shall identify ~~which problems~~ areas for which a source management program ~~were~~ was ~~retrofitted~~developed, the cost of ~~the~~ such ~~retrofit~~ program, and the anticipated pollutant reduction.

~~1.~~b. On ~~municipal~~ MS4-owned or -operated lands, prohibit the feeding of geese or waterfowl and ~~implement a program to manage goose populations~~ post a notice of the prohibition on these lands. Each ~~a~~Annual ~~r~~Report shall ~~discuss the actions taken to implement this program~~list the lands where these notices are posted.

(iii) No additional requirements in addition to those specified in subsections (A)-(C) above exist for discharges to waters for which **Phosphorus** or **Mercury** is a Stormwater Pollutant of Concern.

(c) Sharing Responsibility

(1) Qualifying Local Program

The permittee may satisfy the requirement to implement a BMP for a Minimum Control Measure by having a third party implement the BMP.

When a permittee is relying on a third party to implement one or more BMP(s), the permittee shall note that fact in the registration and annual report required in subsection (i) below. If the third party fails to implement the BMP(s), the permittee remains responsible for its implementation.

(Note: For example, if a local watershed organization performs an annual "river clean-up", this event may be used to satisfy a BMP for the Public Participation and/or the Pollution Prevention and Good Housekeeping Minimum Control Measure.)

(2) Qualifying State or Federal Program

If a BMP or Minimum Control Measure is the responsibility of a third party under another NPDES stormwater permit, the permittee is not required to include such BMP or Minimum Control Measure in its Stormwater Management Plan. The permittee shall reference this qualifying program in their Stormwater Management Plan. However, the permittee is not responsible for its implementation if the third party fails to perform. The permittee shall periodically confirm that the third party is still implementing this measure. If the third party fails to implement the measure, the Stormwater Management Plan may be modified to address the measure, if necessary.

In the case of a permitted municipal industrial activity that is covered by the General Permit for the Discharge of Stormwater Associated with Industrial Activity, the permittee may reference the activity's Stormwater Pollution Prevention Plan to address a portion of the permittee's Stormwater Management Plan.

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Commented [CT DEEP50]: Focus on source management instead of retrofit per municipal comments

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(Note: For example, the permittee may reference a regional mall's requirement to perform sweeping and catch basin cleaning under the General Permit for the Discharge of Stormwater Associated with Commercial Activity. This third party action may be used to address a portion of the permittee's requirement under the Good Housekeeping and Pollution Prevention Minimum Control Measure.)

(3) Coordination of Permit Responsibilities

Where a portion of the separate storm sewer system within a municipality is owned or otherwise the responsibility of another municipality, institution or a state or federal agency the entities shall coordinate the development and implementation of their respective Stormwater Management Plans to address all the elements of Section 6. A description of the respective responsibilities for these elements shall be included in the Stormwater Management Plan for each municipality.

(Note: For example, a storm sewer system within a municipality may be operated and maintained by the DOT. In cases such as these, the two entities shall coordinate their Stormwater Management Plans to address the Minimum Control Measures, particularly at the interface between the two storm sewer systems.)

(4) Co-Permitting

When a municipal Regulated Small MS4s is co-located within the corporate boundary of another Regulated Small MS4, the two may, at their discretion, submit a single registration and share a single Plan as co-permittees. In such a case, the Plan shall clearly indicate which MS4 is responsible for implementing each of the control measures and other elements of the Plan.

(Note: This provision currently applies only to the City of Groton within the Town of Groton and the Borough of Stonington within the Town of Stonington.)

(d) Proper Operation and Maintenance

The permittee shall at all times properly operate and maintain all facilities and systems of treatment and control, including related appurtenances, which are installed or used by the permittee to achieve compliance with the conditions of this permit. Proper operation and maintenance includes adequate laboratory controls and appropriate quality assurance procedures. Proper operation and maintenance requires the operation of backup or auxiliary facilities or similar systems, installed by a permittee when necessary to achieve compliance with this permit.

(e) Signature Requirements

The Plan shall be signed by the chief elected official or principal executive officer, as those terms are defined in Section 22a-430-3(b)(2) of the Regulations of Connecticut State Agencies. The Plan shall be retained by the chief elected official or principal executive officer and copies retained by MS4 officials or employees responsible for implementation of the Plan.

(f) Plan Review Fee

When submitting a Stormwater Management Plan as requested by the Commissioner pursuant to Section 6(*g*), below, the permittee shall submit a plan review fee of $375.

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(g) Keeping Plans Current

The permittee shall amend the Plan whenever; (1) there is a change which has the potential to cause pollution of the waters of the state; or (2) the actions required by the Plan fail to prevent pollution of the waters of the state or fail to otherwise comply with any other provision of this general permit; or (3) the Commissioner requests modification of the Plan. The amended Plan shall be completed and all actions required by such Plan shall be completed within a time period determined by the Commissioner.

The Commissioner may notify the permittee in writing at any time that the Plan does not meet one or more of the requirements of this general permit. Within 30 days of such notification, unless otherwise specified by the Commissioner in writing, the permittee shall respond to the Commissioner indicating how they plan to modify the Plan to address these requirements. Within 90 days of this response or within 120 days of the original notification, whichever is less, unless otherwise specified by the Commissioner in writing, the permittee shall then revise the Plan, perform all actions required by the revised Plan, and shall certify to the Commissioner that the requested changes have been made and implemented. The permittee shall provide such information as the Commissioner requires to evaluate the Plan and its implementation. If at any time the Commissioner finds that the Plan is not adequate to protect the waters of the state from pollution, the Commissioner may terminate authorization under this permit and require the MS4 to submit an individual permit application.

(h) Failure to Prepare or Amend Plan

In no event shall failure to complete or update a Plan in accordance with Sections 5(*b*) and 6 of this general permit relieve a permittee of responsibility to implement actions required to protect the waters of the state and to comply with all conditions of this general permit.

(i) Plan Review Certification

A copy of the Plan review certification made in accordance with Section 3(*b*)(9) shall be maintained with the Plan.

(j) Monitoring Requirements

Commented [CT DEEP51]: Entire monitoring program modified to eliminate general monitoring and focus on impaired waters to reduce costs significantly per CCM, COST and municipal comments. Modeled after EPA IDDE monitoring.

All Tier 1 MS4s shall comply with the screening and monitoring requirements in this subsection. Tier 2 MS4s are not required to comply with this subsection.

~~(1) In-stream Dry and Wet Weather Monitoring of Receiving Water Quality~~

~~In-stream dry and wet weather monitoring shall be conducted by the permittee in accordance with the provisions of this subsection. These in-stream samples shall be taken at a location representative, as much as possible, of the nature of the stream flow at the chosen location. Dry weather in-stream samples shall be taken at the same locations as the wet weather in-stream samples. The permittee should avoid sampling in close proximity to a stormwater outfall or any other location that could alter the representative nature of the in-stream sample. Each sample shall be a composite sample taken in accordance with Section 6(*j*)(4) below.~~

~~(A) Location~~

~~In-stream dry and wet weather monitoring shall be conducted at the number of~~

~~locations specified in the table below. Where feasible, these locations should be along the primary stem of the principal watercourse in separate subregional watersheds (as identified in mapping available at www.cteco.uconn.edu) that fall entirely or partially within the corporate boundaries of the MS4. Specific monitoring locations shall be established by the permittee through consideration of criteria that may include; location of significant development, nearby land-use, illicit discharge "hot spots", previous in-stream sampling locations, or other criteria as may be determined by the permittee. The location of these sampling points and the rationale for their location shall be included in the Stormwater Management Plan.~~

~~Municipal or Institutional[1] Population~~	~~Number of in-stream locations~~
~~<15,000~~	~~4~~
~~15,000 – 50,000~~	~~8~~
~~>50,000~~	~~12~~

~~[1] The population of a state or federal institution is the average daily population including staff, residents and those receiving or providing services on-site.~~

~~(B) Frequency~~

~~(i) Dry Weather Monitoring~~

~~The permittee shall perform dry weather in-stream monitoring once a year in the first and second years following the effective date of this general permit in accordance with the procedures in Section 6(*j*)(4) below. Dry weather monitoring shall be conducted between July 1 and September 30.~~

~~(ii) Wet Weather Monitoring~~

~~The permittee shall perform wet weather in-stream monitoring once a year in the third, fourth and fifth years following the effective date of this general permit. Monitoring must be conducted during a rain event in accordance with the stormwater monitoring procedures in Section 6(*j*)(4) below. Monitoring may be conducted at any time of year as long as the watercourse is accessible (i.e. not frozen or in a hazardous flooding condition) and there is no significant snow cover in the watershed.~~

~~(C) Institutions~~

~~Where an appropriate watercourse (as specified in Section 6(*j*)(1)(A), above) is not located within the corporate boundaries of the MS4, an institution authorized under this general permit is not required to conduct in-stream monitoring. In such a case, the institution shall monitor its outfalls in accordance with the wet weather outfall monitoring provisions of Sections 6(*j*)(2) below.~~

(1) ~~Wet Weather~~ Impaired Waters Outfall Investigation and Monitoring

~~The permittee shall monitor the number of outfalls specified in the table below that are twelve (12) inches or greater from the MS4 once in each year of this general permit. Different outfall locations shall be selected each year. The order in which outfall locations are monitored shall be prioritized, with discharges to impaired waters receiving the highest priority in accordance with Section 6(*j*)(6) below. Other criteria to be considered may include; location of significant development, nearby land-use, illicit discharge "hot spots",~~

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~~previous in-stream sampling locations, or other criteria as may be determined by the permittee. Monitoring may be conducted at any time of year when there is no significant snow cover in the watershed and shall be conducted in accordance with the procedures in Section 6(*j*)(4) below.~~

Regulated Small MS4s that discharge to impaired waters, as identified in Section 6(*l*) below, must create an inventory of all outfalls that discharge to impaired waters utilizing the list and mapping prepared pursuant to Section 6(a)(3)(C). The permittee shall then screen these outfalls for the pollutant identified as the pollutant of concern for the impairment in accordance with the following procedures. If the permittee has wet weather sampling data for an outfall pursuant to their sampling conducted under the 2004 MS4 permit, they may you use that data for their outfall screening and will not be required to screen that outfall under this general permit.

(A) Outfall Screening for Phosphorus and Nitrogen

The permittee shall screen outfalls from the MS4 that discharge to impaired waters for which phosphorus or nitrogen is the pollutant of concern. The permittee may take a sample at the outfall during any rain event that results in a discharge from the outfall in accordance with subsection (2), below. This screening shall be conducted for all such outfalls at least once during the term of this general permit in accordance with subparagraphs (i) and (ii) below.

(i) Nitrogen Screening

The permittee may use a portable nitrogen meter to take a field reading during the wet weather discharge. If the nitrogen reading exceeds the following threshold, the outfall shall be identified for follow-up investigation pursuant to subsection (D) below.

Total Nitrogen > 2.5 mg/l

(ii) Phosphorus Screening

The permittee may use a portable phosphorus meter to take a field reading during the wet weather discharge. If the phosphorus reading exceeds the following threshold, the outfall shall be identified for follow-up investigation pursuant to subsection (D) below.

Total Phosphorus > 0.3 mg/l

(B) Outfall Screening for Bacteria

The permittee shall screen outfalls from the MS4 that discharge to impaired waters for which bacteria is the pollutant of concern. The permittee may take a sample at the outfall during any rain event that results in a discharge from the outfall in accordance with subsection (2), below. The sample shall be analyzed for the following:

- E. coli and Total Coliform (col/100ml) (for discharges to Class AA, A and B surface waters)
- Fecal coliform and Entercocci (col/100ml) (for discharges to Class SA and SB surface waters)

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The outfall shall be identified for follow-up investigation pursuant to subsection (D) below if any of the following conditions apply:

- E. coli > 235 col/100ml for swimming areas and >410 col/100ml for all others, or
- Total Coliform > 500 col/100ml, or
- Fecal coliform > 31 col/100ml for Class SA and >260 col/100ml for Class SB, or
- Entercocci > 104 col/100ml for swimming areas and 500 col/100ml for all others.

If the permittee can document that bacteria levels at an outfall that exceed these levels are solely the result of natural sources of bacteria, they are not required to conduct a follow-up investigation for that outfall. Natural sources may include wildlife or runoff from undeveloped wooded areas but do not include pet waste or waterfowl congregating at parks, ponds or other attractive nuisance areas.

(C) Outfall Screening for Other Pollutants of Concern

The permittee shall screen outfalls from the MS4 that discharge to impaired waters for which pollutants other than phosphorus, nitrogen or bacteria are listed as the pollutant of concern. The permittee shall take a sample at the outfall and in-stream immediately upstream of the outfall. The sample may be taken during any rain event that results in a discharge from the outfall in accordance with subsection (2), below. These samples shall be analyzed for turbidity. The permittee may use a field turbidity meter for these analyses. If the outfall sample is more than 5 NTU greater than the in-stream sample, the outfall shall be identified for follow-up investigation pursuant to subsection (D) below.

(D) Follow-up Investigations

The permittee shall conduct follow-up investigations for the drainage areas associated with the outfalls identified as potentially contributing to an impairment as a result of the analyses conducted pursuant to subsections (A) – (C), above.

(i) Drainage Area Investigation

The permittee shall investigate activities within the drainage area contributing to each outfall identified for follow-up investigation pursuant to subsections (A) – (C), above. This investigation shall include factors potentially associated with the cause of the related stream impairment. Such factors may include: land use or development patterns; business or commercial activities; industrial activities; impervious cover; natural contributors; potential MS4 maintenance issues; residential activities; and any other activities identified by the permittee as potentially contributing to the related impairment.

(ii) Control Measure Implementation

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In each outfall drainage area identified for follow-up investigation pursuant to subsections (A) – (C), above, the permittee shall implement a BMP program focusing on the impaired waters provisions of each of the Control Measures in Section 6(*a*) of this general permit and on the findings of the drainage area investigation in subparagraph (i), above.

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(iii) Prioritized Outfall Monitoring

Once outfall screening has been completed for at least half of the outfalls identified pursuant to this section, the permittee shall utilize the screening results to select six (6) of the highest contributors of any of the pollutants of concern. These six outfalls shall be sampled annually for the appropriate pollutant of concern in accordance with the schedule in subsection (E), below. If more than one pollutant of concern is identified for any monitored outfall (i.e. more than one impairment), all of these pollutants shall be monitored. If fewer than six outfalls were identified for follow-up investigation, all of these outfalls shall be monitored, but no more than six.

(E) Schedule

(i) Impaired Waters Discharge Mapping

Inventory and mapping of discharges to impaired waters prepared pursuant to this section shall be completed within one (1) year from the effective date of this general permit for 2004 MS4 permittees and within two (2) years from the effective date of this general permit for new MS4 permittees.

(ii) Outfall Screening

Outfall screening pursuant to subsections (A) – (C) shall begin within one (1) year of the effective date of this general permit for 2004 MS4 permittees and two (2) years for new MS4 permittees. At least fifty percent (50%) of these outfalls shall be screened no later than the end of the third year following the effective date of this general permit for 2004 MS4 permittees and no later than the end of the fourth year for new MS4 permittees. All such outfalls shall be screened by the end of the term of this general permit (5 years).

(iii) Follow-up Investigations

The permittee shall commence follow-up investigations identified pursuant to subsection (D), above, no later than two (2) years following the effective date of this general permit for 2004 MS4 permittees and three (3) years for new MS4 permittees.

(iv) Prioritized Outfall Monitoring

The permittee shall commence annual monitoring of the six outfalls identified pursuant to subsection (D)(iii), above, no later than beginning of the fourth year following the effective date of this general permit for 2004 MS4 permittees and no later than the end of the fourth year for new MS4 permittees.

(F) Reporting

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The permittee shall report on the progress of their impaired waters investigation and monitoring program in their Annual Report beginning in the second year following the effective date of this general permit. The report shall include a listing of the outfalls screened during the year, the number of outfalls identified for follow-up investigation, the progress of drainage area investigations, a description of the control measure implementation for the different impairments, identification of the six outfalls to be monitored, and the results of the prioritized outfall monitoring.

~~(3) Monitoring Parameters~~

~~(A) General In-Stream Monitoring Parameters~~

~~The parameters to be monitored for in-stream and outfall dry and wet weather monitoring shall include:~~

~~pH (SU)~~
~~Temperature~~
~~Dissolved Oxygen (mg/l)~~
~~Hardness (mg/l)~~
~~Conductivity (umos)~~
~~Oil and grease (mg/l)~~
~~Chemical Oxygen Demand (mg/l)~~
~~Surfactants as MBAS (mg/l)~~
~~Chloride (mg/l)~~
~~Magnesium (mg/l)~~
~~Cyanide (mg/l)~~
~~Turbidity (NTU)~~
~~Total Suspended Solids (mg/l)~~
~~Total Phosphorous (mg/l)~~
~~Ammonia (mg/l)~~
~~Total Kjeldahl Nitrogen (mg/l)~~
~~Nitrate plus Nitrite Nitrogen (mg/l)~~
~~Total Copper (mg/l)~~
~~Total Lead (mg/l)~~
~~Total Zinc (mg/l)~~
~~E. coli and Total Coliform (col/100ml) (for Class AA, A and B surface waters)~~
~~Fecal coliform and Entercocci (col/100ml) (for Class SA and SB surface waters)~~

~~In addition to this list of parameters, uncontaminated rainfall pH shall be measured at the time the in-stream sample is taken.~~

~~(B) Additional In-Stream Monitoring Parameters~~

~~In addition to the parameters is subsection (A), above, the permittee shall also include the following parameter with their in-stream wet weather parameters:~~

~~Turbidity (NTU)~~

~~(C) Additional Outfall Monitoring Parameters~~

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~~In addition to the parameters is subsection (A), above, the permittee shall also include the following parameter with their wet weather outfall parameters:~~

~~Total Petroleum Hydrocarbons (mg/l)~~

~~The parameters to be monitored for wet weather outfall monitoring shall include:~~

~~pH (SU)~~
~~Temperature~~
~~Dissolved Oxygen (mg/l)~~
~~Hardness (mg/l)~~
~~Conductivity (umos)~~
~~Chloride (mg/l)~~
~~Magnesium (mg/l)~~
~~Cyanide (mg/l)~~
~~Surfactants as MBAS (mg/l)~~
~~Total Petroleum Hydrocarbons (mg/l)~~
~~Oil and grease (mg/l)~~
~~Chemical Oxygen Demand (mg/l)~~
~~Total Suspended Solids (mg/l)~~
~~Total Phosphorous (mg/l)~~
~~Ammonia (mg/l)~~
~~Total Kjeldahl Nitrogen (mg/l)~~
~~Nitrate plus Nitrite Nitrogen (mg/l)~~
~~Total Copper (mg/l)~~
~~Total Lead (mg/l)~~
~~Total Zinc (mg/l)~~
~~E. coli- and Total Coliform (col/100ml) (for Class AA, A and B surface waters)~~
~~Fecal coliform and Entercocci (col/100ml) (for Class SA and SB surface waters)~~

~~In addition to this list of parameters, uncontaminated rainfall pH shall be measured at the time the outfall sample is taken.~~

(2) Stormwater Monitoring Procedures

~~(A) In-Stream Dry Weather Monitoring~~

~~Dry weather monitoring shall be performed only when there has been no rain storm producing runoff to the stream for at least 48 hours prior to sampling. Monitoring methodology shall consist of collecting a minimum of four (4) separate grab samples spaced at a minimum interval of 5 minutes each. Grab samples will be combined into a single composite sample from each station, preserved, and delivered to the laboratory for analysis.~~

~~(A) In-Stream Wet Weather Monitoring~~

~~Samples shall be collected in-stream during any rain storm that produces runoff into the stream and occurs at least 48 hours after any previous storm event that produced runoff into the stream. In-stream monitoring shall be conducted no sooner than two (2) hours after the start of the rain event and no later than two (2) hours after cessation of rainfall. Composite samples shall be used for in-stream monitoring. Monitoring methodology will consist of collecting a minimum of four (4) separate grab samples spaced at a~~

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~~minimum interval of 5 minutes each. Grab samples will be combined into a single composite sample from each sampling location, preserved, and delivered to the laboratory for analysis. The uncontaminated rainfall pH measurement shall also be taken at the time sampling is conducted. At the time of sampling, the permittee shall record any observed erosion of stream banks, scouring, or sedimentation in streams, such as sand bars or deltas. Monitoring shall be consistent with guidance provided by DEEP (at www.ct.gov/deep/stormwater) on quality assurance protocols for required storm water sampling of surface waters and outfalls.~~

(A) Wet Weather Outfall Monitoring

Samples shall be collected from discharges resulting from any rain storm that produces a discharge from the outfall(s) being monitored and that occurs at least 48 hours after any previous rain storm that produced a discharge from the outfall. Runoff events resulting from snow or ice melt alone cannot be used to meet these monitoring requirements. However, monitoring may be conducted during a rain event that may include insignificant amounts of snow or ice melt. Monitoring shall consist of a single grab sample taken within the first six (6) hours of discharge from the outfall. ~~Monitoring shall be consistent with guidance provided by DEEP (at www.ct.gov/deep/stormwater) on quality assurance protocols for required storm water sampling of surface waters and outfalls.~~

(B) Rain Event Information

~~For monitoring conducted during a rain event (wet weather in-stream or wet weather outfall monitoring), t~~The following information shall be collected for the rain events during which monitoring is conducted ~~monitored~~:

(i) The date, temperature, time of the start of the discharge, time of sampling, and magnitude (in inches) of the rain event sampled.

(ii) The duration between the rain event sampled and the end of the previous measurable (greater than 0.1 inch rainfall) rain event.

(C) Test Procedures

Unless otherwise specified in this permit, all pollutant parameters shall be tested according to methods prescribed in Title 40, CFR, Part 136 (1990). Laboratory analyses must be consistent with Connecticut Reasonable Confidence Protocols.

~~(5) Illicit Discharge Monitoring~~

~~The permittee must conduct monitoring in support of the Illicit Discharge Detection and Elimination (IDDE) program in Section 6(*a*)(3). Monitoring locations, frequency, parameters and methodology are included in that section.~~

~~(6) Water Quality Based Monitoring~~

~~Regulated Small MS4s that discharge to waters, as identified in Section 6(*l*) below, must monitor additional parameter(s) in the wet weather outfall monitoring required in Section 6(j)(2) above.~~

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~~(A) Discharges to Impaired Waters Without an Established Total Maximum Daily Load (TMDL)~~

~~If the permittee discharges to an impaired water without a TMDL, the permittee must include in their monitoring plan any indicator pollutants identified as contributing to the impairment (and for which a standard analytical method exists) in their wet weather outfall monitoring. Outfall(s) discharging to an impaired water shall be prioritized and sampled in accordance with Section 6(*j*)(2), above. Impaired waters monitoring priorities do not apply when a waterbody's biological communities are impaired but no pollutant, including indicator or surrogate pollutants, is identified as an indicator of the impairment, or when a waterbody's impairment is related to hydrologic modifications, impaired hydrology, or temperature.~~

~~(B) Discharges to Waters Included in a Total Maximum Daily Load (TMDL)~~

~~For stormwater discharges to waters for which Phosphorus, Nitrogen, Bacteria, or Mercury are stormwater pollutants of concern, outfall(s) discharging to an impaired water shall be prioritized and sampled in accordance with Section 6(*j*)(2) above. For other pollutants for which pollutant load reductions are identified within a TMDL, the permittee is not required to monitor for any indicator pollutant identified in the TMDL unless informed in writing by the commissioner, upon examination of the applicable TMDL and/or Waste Load Allocation (WLA), that the permittee is subject to such a requirement consistent with the assumptions of the applicable TMDL and/or WLA. The commissioner's notice will include specifications on which indicator pollutant to monitor and the required monitoring frequency. Following the first monitoring event:~~

~~(C) If the indicator pollutant is not detected in an outfall discharge sample, the permittee shall make note of this in the Annual Report and Stormwater Monitoring Report form.~~

(k) Reporting & Record Keeping Requirements

(1) The permittee shall keep records required by this permit for at least 5 years following its expiration or longer if requested by the Commissioner in writing. Such records, including the Stormwater Management Plan, shall be available to the public at reasonable times during regular business hours.

(2) Annual Report

By April 1 of the second year following the effective date of this general permit and annually thereafter by April 1, the permittee shall submit an Annual Report for the preceding calendar year electronically to the Department. The DEEP stormwater webpage (www.ct.gov/deep/stormwater) will provide guidance on Annual Report submittal. The Annual Report must be in Microsoft Word©, Adobe Acrobat© or other format acceptable to the Commissioner. In the event that electronic submission is not available or possible, please contact the Stormwater Section at (860) 424-3025.

The report shall include:

~~1.~~(A) The Annual Report review fee is $375.00.

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~~1.~~(i) The fees for municipalities shall be half of those indicated above pursuant to section 22a-6(b) of the Connecticut General Statutes. State and Federal agencies shall pay the full fees specified in this subsection.

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(B) A written discussion of the status of compliance with this general permit including, but not limited to:

(i) a listing and brief description (including, where appropriate, the address and latitude and longitude) of all BMPs within each Minimum Control Measure;

(ii) any reporting requirements enumerated in the controls measures sections 6(*a*) (Tier 1) and 6(*b*) (Tier 2) and their subsections;

(ii) an implementation schedule for each BMP and an indication of whether or not the BMP or any portion of the BMP was scheduled to be implemented during the year covered by the Annual Report;

(iii) the status of implementation for each BMP scheduled to be completely or partially implemented during the year covered by the Annual Report, including an assessment of the appropriateness of the BMP and progress towards achieving the implementation dates and measurable goals for that BMP;

(iv) for any portion of a BMP implementation scheduled for the year covered by the Annual Report that was *not* completed as scheduled, a discussion of the circumstances and reasons for non-implementation, a modified implementation schedule, and, if necessary, a modified or alternate BMP to replace the BMP not implemented including the rationale for such modification or alternate BMP;

(v) the overall status of each of the six categories of the Minimum Control Measures and an discussion of the effectiveness of each category in achieving its goals;

(vi) a discussion of any changes to personnel responsible for the Plan or BMP implementation;

(vii) a description of any new BMPs added to the Plan during the year including a description of the BMP, the reason or rationale for adding the BMP, the timeline for implementation, the party responsible for implementation and the measurable goal for the BMP and, where appropriate, the location for each BMP, including the address and latitude and longitude;

(viii) a discussion of the progress and status of the MS4's IDDE program (see Section 6(*a*)(3) for Tier 1 or 6(*b*)(3) for Tier 2) including outfall screening, mapping, drainage area evaluation and prioritization, illicit discharge tracking activities, IDDP field monitoring results, number and type of illicit discharges detected, and number of illicit discharges eliminated;

(ix) a discussion of measures included in the Plan for the control of discharges to impaired waters (see Section 6(*l*) below) including a list of BMPs in the Minimum Control Measures that are targeted for such discharges, progress in implementing these measures, any evaluation of the effectiveness of these measures in meeting the goals of the Plan's impaired waters program, and any new or modified BMPs to be added to the Plan to improve its effectiveness;

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(x) a discussion of the MS4's stormwater monitoring program describing the status of monitoring for the year of the report, the overall status of the monitoring program, a summary of the findings, any significant observations regarding the results, any modifications to the Plan as a result of the monitoring results;

(xi) a discussion of any planned BMP implementation in the coming year, including a discussion of any new or modified BMPs planned for future implementation;

(C) All monitoring data collected and analyzed pursuant to Section 6(*j*).

(D) All other information collected and analyzed, including data collected under the Illicit Discharge Detection Protocol (Appendix B), during the reporting period.~~;~~

(l) Discharges to Impaired Waters or Water bodies subject to a Pollutant Load Reduction within a TMDL

MS4s that discharge to impaired waters (with or without a TMDL), waters for which nitrogen, phosphorus, bacteria or mercury are stormwater pollutants of concern, or waters which have pollution load reductions specified within a TMDL are required to meet certain criteria identified in this section and other sections of this general permit.

(1) Existing Discharge to an Impaired Water without an Established TMDL

If the permittee discharges to an impaired water without an established TMDL, the permittee must follow:

(A) For waters for which Phosphorus, Nitrogen, Bacteria, or Mercury are stormwater pollutants of concern, the control measures in Section 6(*a*) (Tier 1) or 6(*b*) (Tier 2) and the ~~annual~~ screening and monitoring requirements of Section 6(*j*)(1~~6~~),

(B) For all other impairments, implement control measures to reduce the discharge of the pollutant(s) associated with the impairment and follow the requirements of Section 6(*j*)(1)(C), or as directed by the Commissioner.

(2) Existing Discharge to a Water with an Established TMDL or with a Pollutant Load Reduction specified within the TMDL

If the permittee discharges to a water included in a TMDL, the permittee must follow:

(A) For waters for which Phosphorus, Nitrogen, Bacteria, or Mercury is a stormwater pollutant of concern, the control measures in Section 6(*a*) (Tier 1) or 6(*b*) (Tier 2) and the ~~annual~~ screening and monitoring requirements of Section 6(*j*)(~~6~~1),

(B) For all other discharges subject to a pollutant load reduction contained within a TMDLs, implement control measures to be consistent with the Waste Load Allocation in the specific TMDL. The permittee must also conduct the appropriate screening and monitoring in accordance with Section 6(*j*)(~~6~~1).

(C) The permittee shall implement BMPs as necessary to achieve the Waste Load Allocation, Load Allocation or Water Quality Targets specified within the TMDL (see Appendix D).

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(3) New Discharge to an Impaired Water Without an Established TMDL

If a new discharge to an impaired water without a TMDL is authorized pursuant to the conditions of Section 3(*b*)(7), the permittee must implement and maintain any control measures or conditions on the site that enabled such authorization, and modify such measures or conditions as necessary to maintain such authorization. The permittee must also maintain compliance with this subsection and Section 6(*j*).

(4) New Discharge to a Water with an Established TMDL or with a Pollutant Load Reduction specified within the TMDL

If a new discharge to a water with a TMDL or with a pollutant load reduction established within the TMDL is authorized pursuant to the conditions of Section 3(*b*)(7), the permittee must follow the discharge consistent with the applicable Wasteload Allocations, Load Allocations or Water Quality Targets for that TMDL. The permittee must also conduct the appropriate screening and monitoring in accordance with Section 6(*j*)(~~6~~1).

Section 7. Additional Requirements of this General Permit

(a) Regulations of Connecticut State Agencies Incorporated into this General Permit

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The permittee shall comply with all laws applicable to the subject discharges, including but not limited to, the following Regulations of Connecticut State Agencies which are hereby incorporated into this general permit, as if fully set forth herein:

(1) Section 22a-430-3:

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Subsection (b) General - subparagraph (1)(D) and subdivisions (2),(3),(4) and (5)
Subsection (c) Inspection and Entry
Subsection (d) Effect of a Permit - subdivisions (1) and (4)
Subsection (e) Duty to Comply
Subsection (f) Proper Operation and Maintenance
Subsection (g) Sludge Disposal
Subsection (h) Duty to Mitigate
Subsection (i) Facility Modifications, Notification - subdivisions (1) and (4)
Subsection (j) Monitoring, Records and Report Requirements - subdivisions (1), (6), (7), (8), (9) and (11) (except subparagraphs (9) (A) (2) and (9) (c)
Subsection (k) Bypass
Subsection (m) Effluent Limitation Violations
Subsection (n) Enforcement
Subsection (p) Spill Prevention and Control
Subsection (q) Instrumentation, Alarms, Flow Recorders
Subsection (r) Equalization

(2) Section 22a-430-4

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Subsection (t) Prohibitions
Subsection (p) Revocation, Denial, Modification
Appendices

(b) Reliance on Registration

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In evaluating the permittee's registration, the Commissioner has relied on information provided by the permittee. If such information proves to be false or incomplete, the permittee's authorization may be suspended or revoked in accordance with law, and the Commissioner may take any other legal action provided by law.

(c) Duty to Correct and Report Violations

Upon learning of a violation of a condition of this general permit, a permittee shall immediately take all reasonable action to determine the cause of such violation, correct and mitigate the results of such violation and prevent further such violation. The permittee shall report in writing such violation and such corrective action to the Commissioner within five (5) days of the permittee's learning of such violation. Such information shall be filed in accordance with the certification requirements prescribed in Section 7(*e*) of this general permit.

(d) Duty to Provide Information

If the Commissioner requests any information pertinent to the authorized activity or to compliance with this general permit or with the permittee's authorization under this general permit, the permittee shall provide such information within thirty (30) days of such request. Such information shall be filed in accordance with the certification requirements prescribed in Section 7(e) of this general permit.

(e) Certification of Documents

Any document, including but not limited to any notice, information or report, which is submitted to the Commissioner under this general permit shall be signed by the chief elected official or principal executive officer of the municipality or institution, and by the individual or individuals responsible for actually preparing such document, each of whom shall certify in writing as follows:

"I have personally examined and am familiar with the information submitted in this document and all attachments thereto, and I certify that, based on reasonable investigation, including my inquiry of those individuals responsible for obtaining the information, the submitted information is true, accurate and complete to the best of my knowledge and belief. I understand that a false statement made in this document or its attachments may be punishable as a criminal offense, in accordance with Section 22a-6 of the Connecticut General Statutes, pursuant to Section 53a-157b of the Connecticut General Statutes, and in accordance with any other applicable statute."

(f) Date of Filing

For purposes of this general permit, the date of filing with the Commissioner of any document is the date such document is received by the Commissioner. The word "day" as used in this general permit means the calendar day; if any date specified in the general permit falls on a Saturday, Sunday, or legal holiday, such deadline shall be the next business day.

(g) False Statements

Any false statement in any information submitted pursuant to this general permit may be punishable as a criminal offense, in accordance with Section 22a-6, under Section 53a-157b of the Connecticut General Statutes.

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(h) Correction of Inaccuracies

Within fifteen days after the date the permittee becomes aware of a change in any information in any material submitted pursuant to this general permit, or becomes aware that any such information is inaccurate or misleading or that any relevant information has been omitted, the permittee shall correct the inaccurate or misleading information or supply the omitted information in writing to the Commissioner. Such information shall be filed in accordance with the certification requirements prescribed in Section 7(*e*) of this general permit.

(i) Other Applicable Law

Nothing in this general permit shall relieve the permittee of the obligation to comply with any other applicable federal, state and local law, including but not limited to the obligation to obtain any other authorizations required by such law.

(j) Other Rights

This general permit is subject to and does not derogate any present or future rights or powers of the State of Connecticut and conveys no rights in real or personal property nor any exclusive privileges, and is subject to all public and private rights and to any federal, state, and local laws pertinent to the property or activity affected by such general permit. In conducting any activity authorized hereunder, the permittee may not cause pollution, impairment, or destruction of the air, water, or other natural resources of this state. The issuance of this general permit shall not create any presumption that this general permit should or will be renewed.

Section 8. Commissioner's Powers

(a) Abatement of Violations

The Commissioner may take any action provided by law to abate a violation of this general permit, including but not limited to penalties of up to $25,000 per violation per day under Chapter 446k of the Connecticut General Statutes, for such violation. The Commissioner may, by summary proceedings or otherwise and for any reason provided by law, including violation of this general permit, revoke a permittee's authorization hereunder in accordance with Sections 22a-3a-2 through 22a-3a-6, inclusive, of the Regulations of Connecticut State Agencies. Nothing herein shall be construed to affect any remedy available to the Commissioner by law.

(b) General Permit Revocation, Suspension, or Modification

The Commissioner may, for any reason provided by law, by summary proceedings or otherwise, revoke or suspend this general permit or modify to establish any appropriate conditions, schedules of compliance, or other provisions which may be necessary to protect human health or the environment.

(c) Filing of an Individual Application

If the Commissioner notifies a permittee in writing that such permittee shall obtain an individual permit under Section 22a-430 of the Connecticut General Statutes if he wishes to continue lawfully conducting the authorized activity, the permittee shall file an application for an individual permit within thirty (30) days of receiving the Commissioner’s notice, or at such other date as the Commissioner may allow. While such application is pending before the Commissioner, the permittee shall comply with the terms and conditions of this general permit

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and the subject approval of registration. If the Commissioner issues an individual permit to a permittee under this general permit, this general permit, as it applies to such permittee, shall automatically terminate on the date such individual permit is issued. Nothing herein shall affect the Commissioner's power to revoke a permittee's authorization under this general permit at any time.

Issued: TBD

~~Macky McCleary~~Name
Deputy Commissioner

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Appendix A1 – Tier 1 Municipalities

Connecticut Municipalities with >1,000 People in Urbanized Areas		
Ansonia	Avon	Beacon Falls
Berlin	Bethany	Bethel
Bloomfield	Bolton	Branford
Bridgeport	Bristol	Brookfield
Brooklyn	Burlington	Canton
Cheshire	Chester	Clinton
Cromwell	Danbury	Darien
Deep River	Derby	Durham
East Granby	East Hartford	East Haven
East Lyme	East Windsor	Easton
Ellington	Enfield	Essex
Fairfield	Farmington	Glastonbury
Granby	Greenwich	Griswold
Groton (City)	Groton (Town)	Guilford
Haddam	Hamden	Hartford
Hebron	Killingly	Ledyard
Lisbon	Madison	Manchester
Marlborough	Meriden	Middlebury
Mansfield	Middlefield	Middletown
Milford	Monroe	Montville
Naugatuck	New Britain	New Canaan
New Fairfield	New Hartford	New Haven
New London	New Milford	Newington
Newtown	North Branford	North Haven
Norwalk	Norwich	Old Lyme
Old Saybrook	Orange	Oxford
Plainfield	Plainville	Plymouth
Portland	Prospect	Putnam
Redding	Ridgefield	Rocky Hill
Seymour	Shelton	Simsbury
Somers	South Windsor	Southbury
Southington	Sprague	Stonington (Town & Borough)
Stratford	Suffield	Thomaston
Thompson	Tolland	Trumbull
Vernon	Wallingford	Waterbury
Waterford	Watertown	West Hartford
West Haven	Westbrook	Weston
Westport	Wethersfield	Wilton
Willington	Windsor	Windsor Locks
Wolcott	Woodbridge	Woodbury

Appendix A2 – Tier 2 Municipalities

Connecticut Municipalities with <1,000 People in Urbanized Areas		
Andover	Ashford	Barkhamsted
Bethlehem	Bozrah	Bridgewater
Canaan	Canterbury	Chaplin
Colchester	Colebrook	Columbia
Cornwall	Coventry	East Haddam
East Hampton	Eastford	Franklin
Goshen	Hampton	Hartland
Harwinton	Kent	Killingworth
Lebanon	Litchfield	Lyme
Morris	Norfolk	North Canaan
North Stonington	Pomfret	Preston
Roxbury	Salem	Salisbury
Scotland	Sharon	Sherman
Stafford	Sterling	Torrington
Union	Voluntown	Warren
Washington	Winchester	Windham
Woodstock		

~~Appendix B~~
~~Illicit Discharge Detection and Elimination (IDDE) Program Protocol~~

~~(A) Outfall Screening for Illicit Discharges~~

~~The permittee shall screen its MS4 outfalls during dry weather conditions for physical, chemical, and biological indicators of the presence of illicit discharges.~~

~~(1) Known Illicit Discharges~~

~~Whether documented by the commissioner, the permittee, or others, outfalls from drainage areas with known or highly suspected contributions of illicit discharges may have already been identified. Screening of outfalls serving such portions of the MS4 is not required for the purpose of prioritization as required in subsection (c) below, and the permittee shall continue or initiate identification and removal procedures for illicit discharges in these areas based on the permittee's priority ranking established pursuant to subsection (c) below. Within one hundred eighty (180) days of the effective date of this permit, the permittee shall submit to the commissioner an inventory of all MS4 outfalls for which the permittee deems screening is not required pursuant to this subsection. For each such drainage area, the permittee shall provide:~~

~~(a) all available documented evidence, including monitoring results, of illicit discharges;~~

~~(b) completed, ongoing or planned corrective measures addressing the documented illicit discharges; and~~

~~(c) a schedule for completing and verifying measures correcting the documented illicit discharges.~~

~~(2) Priority Ranking of Outfall Screening~~

~~The permittee shall develop a priority ranking for the purpose of scheduling its outfall screening activities required by this part. The commissioner recommends that the permittee consider the current or intended designated uses of receiving waters, existence of impaired waters, and the relative likelihood of the presence of illicit discharges in the development of its priority ranking.~~

~~(3) Priority Ranking for IDDE Investigation~~

~~Screening of outfalls (in the priority ranking developed in subsection (b) above) shall be completed to facilitate the priority ranking of individual separate storm sewer drainage areas for investigation using the permittee's Illicit Discharge Detection Protocol ("IDDP") described in subsection (4) below. Analysis of screening results, including comparisons with benchmark values for parameters in Table 1 and Figure 1 in subsection (4)(d)(iv) below, shall support such prioritization. An additional round of screening of outfalls is required after implementation of the permittee's IDDP to verify that the correction of all illicit discharges has been completed. Such verification screening shall be completed no more than sixty (60) days after the permittee has verified removal of all such discharges contributing to the outfall's drainage area in accordance with subsection (4)(d)(vii) below.~~

~~(4) Methodology~~

~~Outfall screening shall proceed only when no more than 0.1 inches of rainfall has occurred in the previous 48-hour period. 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 drainage area served by the outfall. Screening shall be performed according to the following procedures:~~

~~(a) Locate the outfall, and take a photograph. At outfalls where photographs were previously taken, new photographs shall be taken from the same approximate orientation to facilitate comparison and determination of any changes.~~

~~(b) Collect data on physical condition of the outfall, including evidence of collapse and structural defects, and evidence of erosion or deposition in the vicinity of the outfall.~~

~~(c) Record any indicators of illicit discharges such as odors, oil sheen, discoloration, foaming, soap suds, slimes, or presence of sanitary floatables or solids.~~

~~(d) If the outfall is inaccessible or submerged, proceed to the first accessible upstream manhole or structure.~~

~~(e) Outfall observation~~

~~Observe the outfall for evidence of illicit discharge and proceed as follows:~~

~~(i) If no flow is observed and there is no evidence of an illicit discharge (e.g. a residue unrelated to a stormwater discharge), this outfall will be assigned a lower priority ranking and the screening shall proceed to the next outfall.~~

~~(ii) If flow is observed, estimate flow using the product of flow area and velocity or the quotient of volume discharged over time, perform the field analyses described in subparagraph (vi) below, and collect a grab sample for enumeration of *E.coli* indicator bacteria in the laboratory.~~

~~(iii) If the outfall is not flowing, but shows evidence of an illicit discharge, return in 4 to 24 hours and screen again, completing flow estimation, field analyses, and grab sampling for indicator bacteria analysis if flow is subsequently observed. If no flow is observed initially and upon return, make note of the outfall to prioritize for future investigation and proceed to the next outfall.~~

~~(f) Field analyses of dry weather flow samples shall include measurement of the following parameters:~~

~~Conductivity~~
~~Turbidity~~
~~Dissolved Oxygen~~
~~pH~~
~~Chlorine~~
~~Temperature~~
~~Surfactants as (MBAS)~~
~~Potassium~~
~~Ammonia~~

~~(B) Illicit Discharge Detection Protocol ("IDDP")~~

~~(1) Implementation~~

~~The permittee shall implement an IDDP according to the priorities developed pursuant to subparagraph (b) below, and consistent with the methodology described in subparagraph (d) below. The permittee shall complete implementation of its IDDP as outlined in the schedule in Section XX. The drainage areas investigated shall include the highest 20 percent of the priority areas as determined by subparagraph (b) below. The permittee shall eliminate all identified illicit discharges pursuant to the "IDDE Program Elements" section (Section 6(D)(1)(a)).~~

~~(a) Impaired Waters~~

~~If more than twenty (20) percent of the outfall drainage areas in the MS4 discharge to impaired waters, the permittee shall include in the Plan a discussion of the criteria by which those areas in the highest 20 percent of prioritized drainage areas were chosen. The remaining drainage areas to impaired waters that are not included in the highest 20 percent of prioritized areas shall receive highest priority for future investigation. If the permittee completes the initial 20 percent of highest priority areas ahead of the schedule in subsection (4)(a) above, the IDDP investigations shall proceed immediately to these remaining high priority areas discharging to impaired waters.~~

~~(2) Prioritization~~

~~The permittee shall use the results from its dry weather outfall screening required by Section 6(D)(3) to develop a priority ranking of outfall drainage areas for the purpose of scheduling its IDDP implementation. The commissioner recommends that the permittee consider the perceived severity of the pollution, the current or intended uses of receiving waters, impairment status, and any planned infrastructure improvements, in the development of its priority ranking. Drainage areas discharging to impaired waters will receive primary consideration when prioritizing.~~

~~(3) Mapping~~

~~Through a geographic information system or other methods, the permittee shall, within three years of the effective date of this permit, prepare mapping to facilitate implementation of its IDDP. Mapping shall provide a comprehensive depiction of key infrastructure and factors influencing proper system operation and the potential for illicit discharges. Mapping themes shall include: key storm sewer infrastructure (including a latitude and longitude), investigation and study findings, monitoring data, cleaning and repair activities, capital projects, and water resource and topographic features. The required number, scale and detail of the maps shall be appropriate to facilitate a rapid understanding of the system by the permittee or the commissioner. In addition, the mapping shall serve as a planning tool for the implementation and phasing of the IDDP, a demonstration of the extent of complete and planned investigations and corrections, and other related capital projects. Mapping shall proceed at a rate that will not impede implementation of the IDDP. To ensure legible mapping, information shall be grouped appropriately and represented thematically (e.g. by color) with legends or schedules where possible. Mapping shall be updated as necessary to reflect new information, corrections or modifications, and progress made. The following information and features, where currently available, shall be included in the mapping:~~

~~(a) Infrastructure~~

~~(i) Municipal separate storm sewer system (including inter-municipal and private connections where available)~~

~~(ii) Thematic representation of sewer material, size, and age~~

~~(iii) Storm sewer flow direction~~

~~(iv) Select rim and invert elevations~~

~~(v) Aerial delineations of MS4 outfall drainage areas~~

~~(vi) Areas served by on-site subsurface disposal systems~~

~~(vii) Storm sewer alignments to which known or suspected underdrain systems may discharge~~

~~(b) Water Resources and Topographic Features~~

~~(i) Water bodies and watercourses identified by name and water quality classification~~

~~(ii) Impaired waters (including type of impairment)~~

~~(iii) Inland wetlands~~

~~(iv) Tidal wetlands~~

~~(v) Topography~~

~~(vi) Orthophotography~~

~~(c) O&M, Investigations, Remediation, and Capital Projects~~

~~(i) Alignments, dates, and thematic representation of work completed (with legend) of past illicit discharge investigations (e.g. flow isolation, dye testing, closed-circuit television (CCTV))~~

~~(ii) Locations of suspected, confirmed, and corrected illicit discharges (with dates and flow estimates)~~

~~(iii) Water quality monitoring locations with representation of water quality indicator concentrations~~

~~(iv) Recent and planned storm sewer infrastructure cleaning and repair projects~~

~~(v) Planned capital projects relative to utility and roadway rehabilitation or replacement~~

~~(vi) Proposed phasing of future illicit discharge investigations~~

~~(4) IDDP Methodology~~

~~The IDDP shall utilize methodologies described in this subsection to perform a thorough investigation of MS4 outfall drainage areas that relies on results from visual observation, field test kits, and portable instrumentation during dry weather conditions to isolate areas or alignments with likely illicit discharges. 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 illicit and non-stormwater flow sources.~~

~~(a) Notification~~

~~Prior to beginning an IDDP investigation that may involve smoke testing in a given drainage area, the permittee shall notify all residents, businesses and all other property owners or occupants within that drainage area of the impending testing.~~

~~(b) Infrastructure Verification and Preparation~~

~~Infrastructure mapping and drainage area delineations shall be verified in the field and corrected, as necessary, prior to investigations. MS4 infrastructure shall be evaluated for the need to be cleaned to remove debris or blockages that could compromise investigations. Such material shall be removed prior to investigation, where possible. However, some cleaning may occur concurrently.~~

~~(c) Dry Weather Criteria~~

~~In order to prevent or limit the influence of stormwater runoff during the investigations, inspections and field monitoring shall not begin for at least 24 hours after any previous storm event greater than 0.1 inches. The duration of this dry weather 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 drainage area under investigation.~~

~~(d) Storm Sewer Inspection Methodology~~

~~Visually inspect outfalls in dry weather conditions to determine the possible presence of dry weather flows. Depending on the findings, conduct one of the procedures below. Table 1 indicates which analytes will be used for the determination of illicit discharges.~~

~~(i) **No Dry Weather Flow**: If no dry weather flow is observed at an outfall and there is no evidence of one (color, algae, etc.), no further inspection of the outfall is required during the term of this permit.~~

~~If there is no dry weather flow but there is evidence of one (color, algae, etc.), proceed as follows:~~

~~a. Partially dam the outfall when no rain is forecast for at least 48 hours;~~

~~b. Re-inspect the outfall within 24 to 48 hours of damming (prior to any precipitation or snow melt) for evidence of the capture of periodic or intermittent flows behind the inlet dam. If, upon reinspection, there is no evidence of dry weather flows, re-inspect within six months. If, upon re-inspection, there is evidence of dry weather flows, visual observations and field testing pursuant to the procedures below shall be completed on any captured flow to identify alignments for additional inspections.~~

~~(ii) **Groundwater Dry Weather Flow**: If a dry weather flow is observed, test the flow for the analytes in Table 1 (pursuant to subsection (iv) below) and inspect the flow for~~

~~evidence of an illicit discharge (color, odor, sheen, etc). If discharge is determined to be groundwater:~~

~~a. Inspect upstream manholes to determine the source of the groundwater infiltration. For all inlets to upstream manholes, follow the procedures of this subsection for determination of dry weather flows. Take samples at the most upstream manhole which has flows to ensure the flow is only groundwater;~~

~~b. Go to the next upstream manholes including those on tributary lines. Ensure that there is no evidence of dry weather flow, including discoloration or other indications that there may have been a dry weather flow at one time. Once the next upstream manhole exhibits no dry weather flow or evidence of one, no further upstream inspection of that alignment is required.~~

~~c. Document all observations, take photographs and include test results as part of the documentation. Indicate on a map which manholes have been inspected. The map will also be part of the permanent documentation.~~

~~d. Re-inspect within six months.~~

~~(iii) **Contaminated Dry Weather Flow**: If a dry weather flow is observed and testing or visual inspection indicates that the discharge is other than groundwater:~~

~~a. Inspect next upstream manhole(s) to determine which ones show signs of dry weather flow. There may be several manholes depending on the tributaries;~~

~~b. For any tributary that shows signs of dry weather flow, continue to follow that upstream using the procedures of this subsection, inspecting every manhole including sub-tributaries until no manholes show any indication of dry weather flow;~~

~~c. Repeat for all tributaries that show signs of dry weather flow.~~

~~d. Take samples whenever possible. Document all observations, take photographs and include test results as part of the documentation. Indicate on a map which manholes have been inspected. The map will also be part of the permanent documentation.~~

~~e. For alignments that indicate an illicit discharge, the next step is to smoke test the area to determine the source of the discharge following the notification procedures.~~

~~f. If the location is identified, appropriate corrections will be made to stop the illicit discharge.~~

~~g. If no location is determined, dye testing of potential upstream sources shall be conducted and then the violation corrected.~~

~~h. If no location is still identified, the area will be monitored twice per month to establish the cause of this illicit discharge.~~

~~(e) Field Monitoring~~

~~Where flow is observed that does not demonstrate obvious physical or olfactory evidence of the type and source of an illicit discharge, a sample shall be collected and analyzed with the field kits and instrumentation as identified in Table 1. The permittee shall compare the measured values with benchmark values using the flow chart in Figure 1 to determine the likely source of the flow. Where surfactant concentrations are measured in the flow above the benchmark, ammonia and potassium shall be measured and results used in a ratio analysis to determine if the flow is likely to be governed by a sanitary or wash water component. Where surfactants are not detected above the benchmark concentration, a flow sample shall be analyzed for chlorine in an attempt to determine if the likely source is natural surface water or groundwater; or possibly a potable water source, a swimming pool, or an industrial discharge. However, the results of this analysis may not always prove conclusive as the chlorine demand found in the storm sewer may diminish or eliminate any chlorine present. The permittee may need to adjust benchmark values found in Table 1 during the course of investigations after a comparison and calibration of data with actual incidences of observed flow sources.~~

~~If the results of field monitoring are not conclusive or additional data is needed to confirm that the source of an illicit discharge is human-generated, alternate parameters for Pharmaceutical and Personal Care Products (PPCP) may be monitored as indicated in Table 2. Any or all of these parameters may be analyzed. These samples must be analyzed by a laboratory with the appropriate capability. Advance notice to the lab may be required. Levels of these parameters above the Reporting Limit indicate the presence of human-generated contamination.~~

~~Table 1 – Field Measurements, Benchmarks, and Instrumentation~~

~~Analyte~~	**~~Benchmark~~**	**~~Instrumentation~~**[1]
~~Surfactants (as MBAS)~~	~~>0.25 mg/L~~	~~MBAS Test Kit (e.g. CHEMetrics K-9400)~~
~~Potassium (K)~~	~~NH3/K > 1.0~~	~~Portable Ion Meter (e.g. Horiba Cardy C131)~~
~~Ammonia (NH3)~~		~~Portable Colorimeter or Photometer (e.g. Hach DR/890, CHEMetrics V-2000)~~
~~Chlorine~~	~~>0.1 mg/L~~	~~Portable Colorimeter or Photometer (e.g. Hach DR/890, CHEMetrics V-2000)~~
~~Temperature~~	~~Abnormal~~	~~Thermometer~~
~~pH~~	~~Abnormal~~	~~pH Meter~~

[1] ~~Instrumentation manufacturers and models provided for informational purposes only. Mention of specific products does not constitute or imply DEEP endorsement of same.~~

~~Table 2 – Compounds for Pharmaceutical and Personal Care Products Analysis~~

~~Compound~~	~~Major Use~~	~~Reporting Limit (ng/L)~~
~~Caffeine~~	~~Natural Stimulant~~	~~5.0~~
~~1,7 DMX~~	~~Metabolite of caffeine~~	~~2.5~~
~~Acetaminophen~~	~~Pain reliever~~	~~2.5~~
~~Carbamazepine~~	~~Anti-depressant, Anti-convulsant~~	~~0.5~~
~~Primidone~~	~~Anti-epilepsy drug~~	~~5.0~~
~~Atenolol~~	~~Beta blocker, high blood pressure medicine~~	~~2.5~~
~~Cotinine~~	~~Metabolite of nicotine~~	~~0.5~~
~~Urobilin~~	~~By-product of hemoglobin breakdown~~	~~5.0~~
~~Azithromycin~~	~~Antibiotic~~	~~1.6~~

~~Figure 1. Flow Chart – Determining Likely Source of Discharge (Adapted from Pitt, 2004)~~

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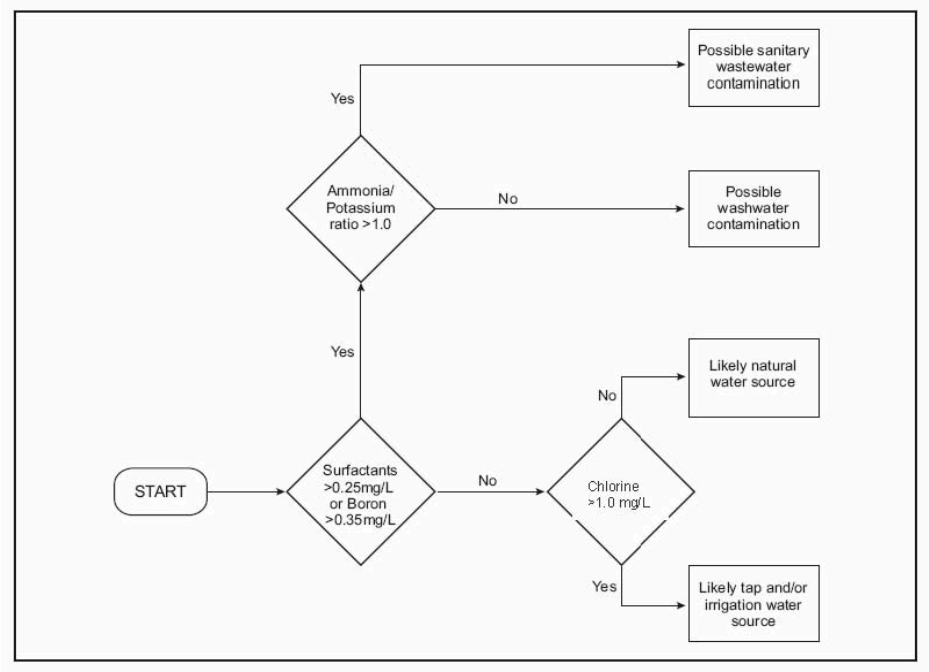

~~(f) Isolation and Confirmation of Illicit Discharges~~

~~Where physical evidence or field monitoring has identified storm sewer alignments influenced by illicit discharges, the permittee shall isolate the tributary area for implementation of more detailed investigations. Additional manholes and/or catch basins 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 employed to confirm the flow source(s).~~

~~(g) Removal of Illicit Discharges~~

~~Where an illicit discharge is verified, the permittee shall exercise its authority as necessary to require its removal pursuant to Sections 6(D)(1)(a) and 6(D)(2) of this permit, including prompt notification and any appropriate cost-sharing arrangements.~~

~~(h) Verification of Illicit Discharge Removals~~

~~After completing the removal of all illicit discharges from a particular alignment or portion of an MS4 outfall drainage area, the permittee shall verify that no illicit discharges remain. Depending on the extent and timing of corrections made, verification monitoring may be accomplished at the original junction structure or the closest downstream MS4 structure to each correction. Verification shall be accomplished by using the same visual inspection, field monitoring, and/or damming techniques as described in subparagraphs (iii) through (v) above. Investigation of those portions of any other alignments confounded by the identified illicit discharge(s) shall not proceed until removal or elimination has been verified.~~

~~(i) Verification of IDDP Completion in MS4 Drainage Areas~~

~~A completed verification at the outfall (or the first accessible upstream structure from an inaccessible MS4 outfall) of an MS4 outfall drainage area shall serve to demonstrate that the IDDP has been fully implemented for that entire drainage area. This drainage area verification shall include both the techniques described in subparagraphs (iii) through (v) above, as well as completion of the dry weather screening methodology described in Section 6(D)(3)(e).~~

~~(j) Work Progression & Schedule~~

~~Since the IDDP requires verification of illicit discharge removals prior to progressing to affected portions of downstream MS4 drainage areas, the permittee shall maintain capacity to mobilize investigations to other drainage areas or unaffected lateral alignments within the same drainage area, to facilitate suitable progress while awaiting correction of illicit discharges confounding downstream investigations. Since work progress may be further constrained by the persistence of precipitation and snow melt events, the permittee shall provide for adequate staffing and equipment resources to perform concurrent investigations in multiple areas as necessary to complete all investigations, as specified in subsection (4)(a) above, within **two (2) years** from the effective date of this permit.~~

~~(k) Reporting and Evaluation~~

~~The permittee shall document in the Annual Reports required by Section 8 its progress implementing the provisions of Section 6(D)(4), including the results and status of its outfall screening and monitoring, mapping, and IDDP implementation. The permittee shall evaluate its progress by tracking, at a minimum, the percentage of MS4 outfall drainage areas or outfalls screened and/or monitored, percentage of structures inspected, and the footage or percentage of MS4 cleaned and inspected by CCTV.~~

~~(l) Modifications~~

~~Though the IDDP is applicable to most storm sewers, modifications to methods and materials 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 IDDP in accordance with Section 6(B)(6)(b) of this permit.~~

Appendix B
Illicit Discharge Detection and Elimination (IDDE) Program Protocol

(A) Illicit Discharge Detection and Elimination (IDDE) Program

Commented [CT DEEP56]: IDDE protocol replaced with EPA process for Mass. MS4 program per comments by CFE, CCM and COST

Objective: The permittee shall implement an IDDE program to systematically find and eliminate sources of non-stormwater discharges to its municipal separate storm sewer system and implement procedures to prevent such discharges.

During the development of the new components of the IDDE program required by this permit, permittees previously authorized by the permit issued January 9, 2004 must continue to implement their existing IDDE program required by that permit to detect and eliminate illicit discharges to their MS4.

(1) Definitions and Prohibitions

The permittee shall prohibit illicit discharges and sanitary sewer overflows (SSOs) to its MS4 and require removal of such discharges consistent with subsections (2) and (4), below.

An SSO is a discharge of untreated sanitary wastewater from a municipal sanitary sewer.

An illicit discharge is any discharge to a municipal separate storm sewer that is not composed entirely of stormwater, *except*:

(a) discharges authorized under a separate NPDES permit that authorize a discharge to the MS4

(b) non-stormwater discharges allowed by Section 3(a)(2) of this general permit

(2) Elimination of Illicit Discharges

(a) Upon detection of an illicit discharge, the permittee shall eliminate the illicit discharge as expeditiously as possible. The MS4 shall identify and notify all responsible parties for any such discharge and require immediate cessation of improper disposal practices in accordance with its legal authorities. Where elimination of an illicit discharge within 60 days of its identification as an illicit discharge is not possible, the permittee shall establish an expeditious schedule for its elimination and report the dates of identification and schedules for removal in the permittee's annual reports. The permittee shall immediately commence actions necessary for elimination. The permittee shall diligently pursue elimination of all illicit discharges. In the interim, the permittee shall take all reasonable and prudent measures to minimize the discharge of pollutants to and from its MS4.

(b) The period between identification and elimination of an illicit discharge is not a grace period. Discharges from an MS4 that are mixed with an illicit discharge are not authorized by this general permit and remain unlawful until eliminated.

(3) Non-Stormwater Discharges

The permittee may presume that the sources of non-stormwater listed in Section 3(a)(2)of this permit need not be addressed. However, if the permittee identifies any of these sources as significant contributors of pollutants to the measures to control these sources so they are no longer significant contributors of pollutants, and/or eliminate them entirely, consistent with this appendix.

(4) Sanitary Sewer Overflows

(a) Upon detection of an SSO the permittee shall eliminate it as expeditiously as possible and take interim mitigation measures to minimize the discharge of pollutants to and from its MS4 until elimination is completed.

(b) The permittee shall identify all known locations where SSOs have discharged to the MS4 within the previous five years. 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. Within 120 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);
- A clear statement of whether the discharge entered a surface water directly or entered the MS4;
- Date(s) and time(s) of each known SSO occurrence (i.e., beginning and end of any known discharge);
- Estimated volume(s) of the occurrence;
- 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 Plan and update the inventory annually.

(c) The permittee shall provide written notice to the Commissioner within five (5) days of becoming aware of the SSO occurrence and shall include the information in the updated inventory. The notice shall contain all of the information listed in subsection (b), above.

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

(e) The period between identification and elimination of a discharge from the SSO to the MS4 is not a grace period. Discharges from an MS4 that are mixed with an SSO are not authorized by this general permit and remain unlawful until eliminated.

(5) Outfall/Interconnection Inventory

The permittee shall develop an outfall and interconnection inventory that identifies each outfall and interconnection discharging from the MS4, records its location and condition, and provides a framework for tracking inspections, screenings and other activities under the permittee's IDDE program.

(a) An outfall means a point source as defined by 40 CFR § 122.2 and in Section 2 of this general permit as the point where the municipal separate storm sewer discharges to waters of the state. 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 state and that are used to convey waters of the state. However, it is strongly

recommended that a permittee inspect all accessible portions of the system as part of this process. Culverts longer than a simple road crossing shall be included in the inventory unless the permittee can confirm that they are free of any connections and simply convey waters of the United States.

An interconnection means the point where the permittee's MS4 discharges to another MS4 or other storm sewer system, through which the discharge is conveyed to waters of the state or to another storm sewer system and eventually to a water of the state.

(b) The permittee shall complete its outfall and interconnection inventory no later than one (1) year from the effective date of the permit and shall include the inventory in each annual report. The inventory shall be updated annually to include data collected in connection with the dry weather screening under subsection (7(d), below, and other relevant inspections conducted by the permittee. The permittee shall physically label all MS4 outfall pipes (excluding interconnections) with their unique identifier by the end of the permit term.

(c) The inventory shall include the following information: unique identifier, receiving water, date of most recent inspection, dimensions, shape, material (concrete, PVC), spatial location (latitude and longitude with a minimum accuracy of +/-30 feet, physical condition and indicators of potential non-stormwater discharges (including presence or evidence of suspect flow and sensory observations such as odor, color, turbidity, floatables, or oil sheen) as of the most recent inspection.

(6) System mapping

The permittee shall develop a revised and more detailed map than was required by the previous permit issued January 9, 2004. This revised map of the MS4 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 mapping that was required by the previous permit.

(a) The mapping shall include a depiction of the permittee's separate storm sewer system in the permit area. The mapping is intended to facilitate the identification of key infrastructure and factors influencing proper system operation, and the potential for illicit sanitary sewer discharges. The map shall include the required infrastructure and water resources information as indicated in subparagraph (i), below, and shall include the information in subparagraph (ii), below, where available. The Commissioner also recommends the inclusion of additional items as indicated in subparagraph (iii), below.

(i) Required mapping elements

- Municipal separate storm sewer system
  - outfalls and receiving waters (required by previous permit)
  - pipes
  - open channel conveyances (swales, ditches, etc)
  - catch basins
  - manholes
  - interconnections with other MS4s and other storm sewer systems
  - municipally-owned stormwater treatment structures (e.g., detention and retention basins, infiltration systems , bioretention areas, water quality swales, gross particle separators, oil/water separators, or other proprietary systems)

- Catchment delineations. For the purpose of this permit, a catchment is the area that drains to an individual outfall or interconnection, for use in priority rankings required in subsection (7)(c), below, or prioritizing BMP retrofits.
- Waterbodies identified by name and indication of all use impairments as identified on the most recent Integrated Water Quality Report pursuant to Clean Water Act section 303(d) and 305(b)..

(ii) Elements required where available

- Municipal sanitary sewer system;
- Municipal combined sewer system, if applicable

(iii) Recommended elements

- Storm sewer material, size and age.
- Sanitary sewer system material, size and age
- Where a municipal sanitary sewer system exists, properties known or suspected to be served by a septic system, especially in high-density urban areas
- Area where the permittee's MS4 has received or could receive flow from septic system discharges (e.g., areas with poor soils, or high ground water elevations unsuitable for conventional subsurface disposal systems)
- Seasonal high water table elevations impacting sanitary alignments
- Topography
- Orthophotography
- 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 mapping may be produced by hand or through computer-aided methods (e.g. GIS). The required scale and detail of the map shall be appropriate to facilitate a rapid understanding of the system by the permittee and the Commissioner. In addition, the mapping shall serve as a planning tool for the implementation and phasing of the IDDE program and demonstration of the extent of complete and planned investigations and corrections. The permittee shall update the mapping as necessary to reflect newly discovered information and required corrections or modifications.

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

(7) Written Illicit Discharge Detection and Elimination Program

The IDDE program shall be recorded in a written document. The IDDE program shall include each of the elements described in subsections (a) – (h), below, unless the permittee provides a written explanation within the IDDE program as to why a particular element is not applicable to the permittee.

Notwithstanding the permittee's explanation, the Commissioner may at any time determine that a particular element is in fact applicable to the permittee and require the permittee to add it to the IDDE program. The written IDDE program shall be completed within one (1) year of the effective

date of the permit. The permittee shall implement the IDDE program in accordance with the goals and milestones set forth in subsection (8), below.

(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 tMS4MS4 system; and implement appropriate enforcement procedures and actions. Adequate legal authority consists of a currently effective ordinance, by-law, or other regulatory mechanism. For permittees authorized by the previous permit issued January 9, 2004, the ordinance, by-law, or other regulatory mechanism was a requirement oMS4that permit and was required to be effective by January 8, 2009. 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) Statement of IDDE Program Responsibilities

The permittee shall establish a written statement that clearly identifies responsibilities with regard to eliminating illicit discharges. The statement shall identify the lead municipal agency(ies) or department(s) responsible for implementing the IDDE Program as well as any other agencies or departments that may have responsibilities for aspects of the program (e.g., board of health responsibilities for overseeing septic system construction; sanitary sewer system staff; inspectional services for enforcing plumbing codes; town counsel responsibilities in enforcement actions, etc.). Where multiple departments and agencies have responsibilities with respect to the IDDE program specific areas of responsibility shall be defined and processes for coordination and data sharing shall be established and documented.

(c) Assessment and Priority Ranking of Catchments

The permittee shall assess and priority rank the catchments, delineated as required by subsection (6)(a)(i), above, in terms of their potential to have illicit discharges and SSOs and the related public health significance. This ranking will determine the priority order for screening of outfalls and interconnections pursuant to subsection (d), below, catchment investigations for evidence of illicit discharges and SSOs pursuant to subsection (e), below, and provides the basis for determining permit milestones pursuant to subsection (8), above.

(i) The permittee shall classify each catchment into one of the following categories:

- Excluded catchments: Catchments with no potential for illicit discharges may be excluded from the IDDE program. This category is limited to roadway drainage in undeveloped areas with no dwellings and no sanitary sewers; drainage for athletic fields, parks or undeveloped green space and associated parking without services; cross-country drainage alignments (that neither cross nor are in proximity to sanitary sewer alignments) through undeveloped land.
- Problem Catchments: Catchments with known or suspected contributions of illicit discharges based on existing information shall be designated as Problem Catchments. This shall include any catchments where previous outfall/interconnection screening indicates sewer input based on olfactory/visual evidence or sampling results (ammonia ≥ 0.5 mg/l, surfactants ≥ 0.25 mg/l, and bacteria levels greater than the water quality criteria applicable to the receiving water; or ammonia ≥ 0.5 mg/l, surfactants ≥ 0.25

mg/l, and detectable levels of chlorine). Problem Catchments need not be screened pursuant to subsection (d), below, and shall be scheduled for catchment investigation pursuant to subsection (e), below. Problem catchments shall be identified during the initial ranking of catchments and subsequent rankings shall not add any catchments to the Problem Catchment category.

- High Priority Catchments: Catchments that have not been classified as Problem Catchments and that are discharging to an area of concern to public health due to proximity of public beaches, recreational areas, drinking water supplies or shellfish beds; catchments determined by the permittee as high priority based on outfall/interconnection screening under subsection (d), below, and catchment characteristics assessment under subparagraph (c)(ii), below. Any catchment where outfall/interconnection screening indicates sewer input based on olfactory/visual evidence or sampling results (ammonia ≥ 0.5 mg/l, surfactants ≥ 0.25 mg/l, and bacteria levels greater than the water quality criteria applicable to the receiving water; or ammonia ≥ 0.5 mg/l, surfactants ≥ 0.25 mg/l, and detectable levels of chlorine) shall be ranked at the top of the High Priority Catchments category and scheduled for catchment investigation pursuant to subsection (e), below.
- Low Priority Catchments: Catchments determined by the permittee as low priority based on outfall/interconnection screening under subsection (d), below, and catchment characteristics assessment under subparagraph (c)(ii), below.

(ii) The permittee shall priority rank catchments within each category (except for excluded catchments), based on screening factors. The permittee shall, at a minimum, consider the following screening factors:

- Past discharge complaints and reports.
- Poor dry weather receiving water quality- the following guidelines are recommended to identify waters as having a high illicit discharge potential: exceeding water quality standards for bacteria; ammonia levels above 0.5 mg/l; surfactants levels greater than or equal to 0.25 mg/l.
- 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; and industrial manufacturing areas.
- Age of surrounding development and infrastructure – Industrial areas greater than 40 years old and areas where the sanitary sewer system is more than 40 years old will probably have a high illicit discharge potential. Developments 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.
- Density of aging septic systems – Septic systems thirty years or older in residential land use areas are prone to have failures and 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 have a high illicit discharge potential.

The permittee may also consider as priorities for evaluation for illicit discharges, although 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, beaches or waters used for contact recreation.
- Water quality limited waterbodies that receive a discharge from the MS4 or waters with approved TMDLs applicable to the permittee, where illicit discharges have the potential to contain the pollutant identified as the cause of the water quality impairment.

The permittee may add additional relevant factors, including location-specific screening factors; if so, the permittee shall include the additional factors in its written IDDE program.

(iii) An initial illicit discharge potential assessment and priority ranking based on existing information shall be completed within one (1) year from the effective date of the permit. The permittee shall update its assessment and priority ranking annually based on catchment delineations pursuant to subsection (6), above, the results of screening pursuant to subsection (d), below, and other new relevant information. The permittee shall provide a listing of all catchments and the results of the ranking for each catchment in each annual report. For each catchment being investigated the permittee shall also provide in its annual report (1) a summary of evidence of known or suspected illicit discharges and SSOs; (2) completed, ongoing or planned corrective measures addressing confirmed illicit discharges and SSOs; and (3) a schedule for completing and verifying measures correcting the confirmed illicit discharges and SSOs.

(d) Outfall and Interconnection Screening and Sampling

The IDDE program shall include a written procedure for screening and sampling of outfalls and interconnections from the MS4 in dry and wet weather for evidence of illicit discharges and SSOs. This screening procedure shall be used for:

- baseline outfall and interconnection screening pursuant to subparagraph (iii), below (dry weather);
- confirmatory screenings pursuant to subsection (f), below (dry and/or wet weather depending on catchment characteristics);
- follow-up screening pursuant to subsection (g), below (dry and/or wet weather depending on catchment characteristics).

(i) The screening and sampling procedure shall include procedures for sample collection, use of field kits, storage and conveyance of samples (including relevant hold times).

(ii) If an outfall is inaccessible or submerged, the permittee shall proceed to the first accessible upstream manhole or structure for the observation and sampling and report the location with the screening results. If an interconnection is inaccessible or submerged, interconnection screening shall occur at the first accessible location within the permittee's system upgradient of the interconnection.

(iii) Dry weather screening and sampling shall proceed only when no more than 0.1 inches of rainfall has occurred in the previous 24-hour period. When a flow is observed, a sample of the flow shall be collected and analyzed for the parameters listed in subparagraph (v),

below. If no dry weather flow is observed, the permittee shall record the condition of the outfall and other relevant information. If no flow is observed, but evidence of dry weather flow exists, the permittee shall revisit the outfall during dry weather within one week of the initial observation, if practicable, to perform a second dry weather screening and sample any observed flow. The permittee shall identify in the annual report any other necessary follow-up actions to identify the source of any apparent intermittent flow not sampled.

(iv) Wet weather screening and sampling, which shall be conducted at an outfall and/or within the catchment area in accordance with subparagraph (e)(ii)b., below, shall proceed during or after a storm event of sufficient depth or intensity to produce a stormwater discharge but only during the spring (March to June) when groundwater levels are relatively high. The permit does not require a minimum rainfall event prior to wet weather screening. However, the purpose of wet weather screening and sampling under the IDDE program is to identify illicit discharges that may activate or become evident during wet weather. Permittees may incorporate provisions that assist in targeting such discharges, including avoiding sampling during the initial period of discharge ("first flush") and/or identifying minimum storm event intensities likely to trigger sanitary sewer interconnections.

(v) Samples shall be analyzed at a minimum for ammonia, chlorine, conductivity, salinity, *E. coli*. (freshwater receiving water) or enterococcus (saline or brackish receiving water), surfactants (such as MBAS), and temperature. All analyses with the exception of indicator bacteria can be performed with field test kits or field instrumentation. In addition, where the discharge is directly into a water quality limited water or a water subject to an approved TMDL, the sample shall be analyzed for the pollutants identified as the cause of the impairment. Sampling for pollutants of concern shall be conducted using the analytical methods found in 40 CFR §136, or alternative methods approved by the Commissioner in accordance with the procedures in 40 CFR §136. Other IDDE screening parameters shall be considered field screening and are not subject to 40 CFR Part 136 requirements.

(vi) Catchments where there is relevant information indicating sewer input to the MS4 or sampling results where ammonia ≥ 0.5 mg/l, surfactants ≥ 0.25 mg/l, and bacteria levels greater than the water quality criteria applicable to the receiving water (or alternatively, ammonia ≥ 0.5 mg/l, surfactants ≥ 0.25 mg/l, and detectable levels of chlorine) shall be considered highly likely to contain illicit discharges from sanitary sources, and such catchments shall be ranked at the top of the High Priority Catchments category for investigation.

(e) Catchment Investigation Procedure

The permittee shall develop a written systematic procedure for catchment investigation that includes (1) a review of mapping and historic plans and records for the catchment; (2) a manhole inspection methodology; and (3) procedures to isolate and confirm sources of illicit discharges, as set forth below.

(i) For each catchment being investigated, the permittee shall review relevant mapping and historic plans and records to the extent available, including but not limited to plans related to the construction of the storm drain and of sanitary sewers in the catchment, prior work performed on the storm drain or sanitary sewers, board of health or other municipal data on septic system failures or required upgrades, and complaint records related to SSOs, sanitary sewer surcharges, and septic system breakouts. This review shall be used to

identify areas within the catchment with higher potential for illicit connections and System Vulnerability Factors that indicate a risk of sanitary or septic system inputs to the MS4 under wet weather conditions. The permittee shall identify and record the presence of any of the following specific System Vulnerability Factors:

- History of SSOs, including, but not limited to, those resulting from wet weather, high water table, or fat/oil/grease blockages;
- Sewer pump/lift stations, siphons, or known sanitary sewer restrictions where power/equipment failures or blockages could readily result in SSOs;
- Inadequate sanitary sewer level of service (LOS) resulting in regular surcharging, customer back-ups, or frequent customer complaints;
- Common or twin-invert manholes serving storm and sanitary sewer alignments;
- Common trench construction serving both storm and sanitary sewer alignments;
- Crossings of storm and sanitary sewer alignments;
- Sanitary sewer alignments known or suspected to have been constructed with an underdrain system;
- Sanitary sewer infrastructure defects such as leaking service laterals, cracked, broken, or offset sanitary infrastructure, directly piped connections between storm drain and sanitary sewer infrastructure, or other vulnerability factors identified through Inflow/Infiltration Analyses, Sanitary Sewer Evaluation Surveys, or other infrastructure investigations.
- Areas formerly served by combined sewer systems;
- Any sanitary sewer and storm drain infrastructure greater than 40 years old in medium and densely developed areas;
- Widespread code-required septic system upgrades required at property transfers (indicative of inadequate soils, water table separation, or other physical constraints of the area rather that poor owner maintenance);
- History of multiple local health department or sanitarian actions addressing widespread septic system failures (indicative of inadequate soils, water table separation, or other physical constraints of the area rather that poor owner maintenance);

The permittee shall document the presence or absence of System Vulnerability Factors for each catchment, retain this documentation as part of its IDDE program, and report this information in Annual Reports. Where System Vulnerability Factors are present, the catchment shall be investigated pursuant to subparagraph (ii)b., below.

(ii) The manhole inspection methodology shall describe a storm drain network investigation that involves systematically and progressively observing, sampling (as required below) and evaluating key junction manholes in the MS4 to narrow the location of suspected illicit discharges or SSOs to an isolated pipe segment between two manholes, locate evidence of illicit discharges or SSOs that may not be evident at the outfall under all circumstances, and confirm or identify potential system vulnerability factors. The written catchment investigation procedures shall detail how the permittee will further isolate and identify potential illicit discharges as indicated by field kit detections equal to or greater than the threshold values listed in subparagraph (d)(vi), above. The permittee is responsible for selecting key junction manholes in a manner such that the distance between key junction manholes is appropriate to ensure a thorough assessment of its system.

The manhole inspection methodology may either start from the outfall and work up the system or start from the upper parts of the catchment and work down the system or be a combination of both practices. Either method must, at a minimum, include an investigation of each key junction manhole within the MS4, even where no evidence of an illicit discharge is observed at the outfall. The Catchment Investigation Procedure must describe the method the permittee will use.

a. Dry weather investigation

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). If flow is observed, the permittee shall sample the flow at a minimum for ammonia, chlorine and surfactants and can use field kits for these analyses. Additional indicator sampling may assist in determining potential sources (e.g. bacteria for sanitary flows, conductivity to detect tidal backwater, etc.). Where sampling results or visual or olfactory evidence indicate potential illicit discharges or SSOs, the area draining to the junction manhole shall be flagged for further investigation, through upstream junction manhole investigation and/or isolation and confirmation of sources pursuant to subsection (e)(ii), above.

Manhole inspections in all areas shall also include identifying System Vulnerability Factors including common (twin invert) manholes, directly piped connections between storm drains and sanitary sewer infrastructure, common weir walls, sanitary sewer underdrain connections and other structural vulnerabilities where sanitary discharges could enter the storm drain system during wet weather. Where present, such System Vulnerability Factors shall be investigated pursuant to paragraph (b) below.

b. Wet weather investigation

Where the review of mapping and historic plans and records and/or manhole inspections indicate the presence of one or more System Vulnerability Factors as listed in subsection (e)(i), above, the permittee shall also inspect and sample under wet weather conditions to the extent necessary to determine whether wet weather-induced high flows in sanitary sewers or high groundwater in areas served by septic systems result in discharges of sanitary flow to the MS4. The permittee shall conduct at least one wet weather screening and sampling at the outfall for any catchment where one or more System Vulnerability Factors are present. This sampling can be done upon completion of any dry weather investigation but must be completed before catchment investigation is marked as complete. All data shall be recorded and reported in each annual report.

(iii) Isolation and Source Verification Procedures

The permittee shall develop procedures to be used to isolate and confirm sources where manhole investigations or other physical evidence or screening has identified MS4 alignments to be influenced by illicit discharges or SSOs. These shall include isolation of the drainage area for implementation of more detailed investigations, inspection of additional manholes along the alignment to refine the location of potential contaminant sources, and methods such as caulk damns, targeted internal plumbing inspections, dye testing, video inspections, or smoke testing to isolate and confirm the sources.

(f) Removal and Confirmation

When the source of an illicit discharge or SSO is identified and confirmed, the permittee shall exercise its authority as necessary to require its removal pursuant to subsections (2) or (3), above. For each confirmed source the permittee shall include in the annual report 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 elimination, mitigation or enforcement action; and estimate of the volume of flow removed.

Within one year of removal of all identified illicit discharge and SSO sources within a catchment area, confirmatory outfall or interconnection screening shall be conducted. The confirmatory screening shall be conducted in dry weather unless System Vulnerability Factors have been identified in the catchment pursuant to subsection (e)(i), above, in which case both dry weather and wet weather confirmatory screening shall be conducted. If confirmatory screening indicates evidence of additional illicit discharges, the catchment shall be scheduled for additional investigation. Confirmatory screening is not required in catchments where no illicit discharges or system vulnerability factors have been identified and no previous screening indicated suspicious flows.

(g) Follow-up Screening

Upon completion of catchment investigation pursuant to subsection (e), above, and illicit discharge removal and confirmation (if necessary) pursuant to subsection (f), above, the catchment outfall or interconnection shall be scheduled for follow-up screening within five years, or sooner as determined by the permittee based on the catchment's illicit discharge priority. Follow-up screening shall consist of dry weather screening and sampling except that wet weather screening and sampling shall also be required in catchments where wet weather screening was required by subparagraph (e)(ii)b., above.

(h) Illicit Discharge Prevention Procedures

The permittee shall develop and implement mechanisms and procedures designed to prevent illicit discharges and SSOs, such as: 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 subsection (2), above); reporting (hotlines) and training of public employees involved in the IDDE program on ways to identify potential illicit discharges and SSOs.

(8) IDDE Program Implementation Goals and Milestones

The permittee shall implement the IDDE Program to meet the following goals and milestones:

(a) The permittee shall complete dry weather screening and sampling (where flowing) of every MS4 outfall and interconnection (except Excluded and Problem Catchments) no later than three years from the permit effective date. The permittee may rely on screening conducted under the previous permit issued January 9, 2004, pursuant to an enforcement action, or by the Commissioner to the extent that it meets the requirements of subsection (7), above. All data shall be reported in each annual report. Permittees that have conducted substantially equivalent monitoring to that required by subsection (7)(d), above, as part of an enforcement action can request an exemption from the requirements of subsection (7)(d), above, by submitting a

written request to the Commissioner and retaining exemption approval from the Commissioner as part of the Plan. Until the permittee receives formal written approval of the exemption from subsection (7)(d), above, from the Commissioner the permittee remains subject to all requirements of subsection (7)(d), above.

(b) The permittee shall begin investigations using the procedure developed in accordance with subsection (7)(d), above, within three months of investigation procedure finalization and no later than 15 months (1 year and 3 months) from the effective date of the permit and shall make continued progress each year toward meeting the milestones of subsection (8)(c), below, below. The permittee shall continue investigation, including Problem Catchments, using its existing IDDE program until such time as the procedure under subsection (7)(e), above, is developed.

(c) The permittee shall implement the Catchment Investigation Procedure in every catchment of the MS4, even where dry weather screening does not indicate evidence of illicit discharges. The permittee shall begin implementation of the procedure in Problem Catchments and those catchments with the highest ranking in the Assessment of Priority Catchments pursuant to subsection (7)(c), above, Implementation of the Catchment Investigation Procedure shall comply with the following milestones. For purposes of these milestones, a catchment investigation is considered complete if a permittee has completed all elements of subsection (7)(e), above.

i. The permittee shall complete the Catchment Investigation Procedure in a minimum of 80% of the MS4 area served by Problem Catchments within three years of the permit effective date and 100% of Problem Catchments within five years of the permit effective date.

ii. The permittee shall complete the Catchment Investigation Procedure in every catchment of the MS4 where information indicates sewer input including outfall/interconnection screening that indicates sewer input based on olfactory/visual evidence or sampling results (ammonia ≥ 0.5 mg/l, surfactants ≥ 0.25 mg/l, and bacteria levels greater than the water quality criteria applicable to the receiving water; or ammonia ≥ 0.5 mg/l, surfactants ≥ 0.25 mg/l, and detectable levels of chlorine) within five (5) years of the permit effective date.

iii. The permittee shall complete the Catchment Investigation Procedure in 40% of the area served by all MS4 catchments within five (5) years of the permit effective date, and in 100% of the area served by all MS4 catchments within ten (10) years of the permit effective date. The permittee may count the area of low priority catchments only if the Catchment Investigation has been started in all other MS4 catchments. For the purposes of this section, catchment investigations that have been started include those where provisions of subsections (7)(e)(i) and (ii), above, have been completed.

d. Where catchments do not contain junction manholes, the dry weather screening and sampling shall be considered as meeting the manhole inspection requirement. In these catchments, dry weather screenings that indicate potential presence of illicit discharges shall be further investigated pursuant to subsection (7)(e)(iii), above. Investigations in these catchments may be considered complete where dry weather screening reveals no flow; no evidence of illicit discharges or SSOs is indicated through sampling results or visual or olfactory means; and no wet weather System Vulnerability Factors are identified.

e. The permittee shall track progress towards these milestones in each annual report.

(9) 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, the number of SSOs and illicit discharges identified and removed, the percent and area in acres of the catchment area served by the MS4 evaluated using the catchment investigation procedure, and volume of sewage removed. The permittee shall evaluate and report the overall effectiveness of the program based on the tracking indicators in the annual report.

(10) Training

The permittee shall, at a minimum, annually provide training to employees involved in IDDE program about the program, including how to recognize illicit discharges and SSOs. The permittee shall report on the frequency and type of employee training in the annual report.

Appendix C
Aquifer Protection Guidance

AQUIFER PROTECTION AREAS AND OTHER GROUNDWATER

DRINKING SUPPLY AREAS GUIDANCE INFORMATION

The Pollution Control Plan ("the Plan") should consider measures to reduce or mitigate potential impacts to both ground water (aquifers) and surface waters, taking into consideration both quantity and quality of the runoff. The emphasis should be to minimize, to the extent possible, changes between pre-development and post-development runoff rates and volumes.

The basic stormwater principals for Aquifer Protection Areas (and other groundwater drinking supply areas) are to prevent inadvertent pollution discharges/releases to the ground, while encouraging recharge of stormwater where it does not endanger groundwater quality. Measures include:

- prevent illicit discharges to storm water, including fuel/chemical pollution releases to the ground;
- minimize impervious coverage and disconnect large impervious areas with natural or landscape areas;
- direct paved surface runoff to aboveground type land treatment structures – sheet flow, surface swales, depressed grass islands, detention/retention and infiltration basins, and wet basins. These provide an opportunity for volatilization of volatile organic compounds to the extent possible before the stormwater can infiltrate into the ground;
- provide necessary impervious pavement in high potential pollutant release areas. These "storm water hot spots" include certain land use types or storage and loading areas, fueling areas, intensive parking areas and roadways (see table below);
- only use subsurface recharge structures such as dry wells, galleries, or leaching trenches, to directly infiltrate clean runoff such as rooftops, or other clean surfaces. These structures do not adequately allow for attenuation of salts, solvents, fuels or other soluble compounds in groundwater that may be contained in runoff; and
- restrict pavement deicing chemicals, or use an environmentally suitable substitute such as sand only, or alternative de-icing agents such as calcium chloride or calcium magnesium.

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Infiltration of stormwater should be **restricted** under the following site conditions:

- ***Land Uses or Activities with Potential for Higher Pollutant Loads:*** Infiltration of stormwater from these land uses or activities (refer to Table 7-5 below), also referred to as stormwater "hotspots," can contaminate public and private groundwater supplies. Infiltration of stormwater from these land uses or activities may be allowed by the review authority with appropriate pretreatment. Pretreatment could consist of one or a combination of the primary or secondary treatment practices described in the Stormwater Quality Manual provided that the treatment practice is designed to remove the stormwater contaminants of concern.

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- ***Subsurface Contamination:*** Infiltration of stormwater in areas with soil or groundwater contamination such as brownfield sites and urban redevelopment areas can mobilize contaminants.

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- ***Groundwater Supply and Wellhead Areas:*** Infiltration of stormwater can potentially contaminate groundwater drinking water supplies in immediate public drinking water wellhead areas.

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Land Uses or Activities with Potential for Higher Pollutant Loads
Table 7-5 of the 2004 Stormwater Quality Manual

Land Use/Activities	
• Industrial facilities subject to the DEEP Industrial Stormwater General Permit or the U.S. EPA National Pollution Discharge Elimination System (NPDES) Stormwater Permit Program • Vehicle salvage yards and recycling facilities • Vehicle fueling facilities (gas stations and other facilities with on-site vehicle fueling) • Vehicle service, maintenance, and equipment cleaning facilities • Fleet storage areas (cars, buses, trucks, public works) • Commercial parking lots with high intensity use (shopping malls, fast food restaurants, convenience stores, supermarkets, etc.) • Public works storage areas	• Road salt storage facilities (if exposed to rainfall) • Commercial nurseries • Flat metal rooftops of industrial facilities • Facilities with outdoor storage and loading/unloading of hazardous substances or materials, regardless of the primary land use of the facility or development • Facilities subject to chemical inventory reporting under Section 312 of the Superfund Amendments and Reauthorization Act of 1986 (SARA), if materials or containers are exposed to rainfall • Marinas (service and maintenance) • Other land uses and activities as designated by the review authority

For further information regarding the design of stormwater collection systems in Aquifer Protection Areas, contact the Aquifer Protection Area Program at (860) 424-3020 or visit www.ct.gov/deep/aquiferprotection.

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Appendix D – Impaired Waters Guidance

Surface Waters and Associated Stormwater Pollutants of Concern			
Stormwater Pollutant of Concern	Waterbodies included within a TMDL or Waters Included in Pollution Control Strategy Developed by CT DEEP	Impaired waters without a TMDL	
		Impaired Designated Use	Cause
Phosphorus	Any water body subject to a TMDL pollutant load reduction for Phosphorus or any waterbody included in the Interim Phosphorus Reduction Strategy for Connecticut Freshwater Non-tidal Receiving Rivers and Streams Technical Support Document (2014 or as amended) , including but not limited to the Bantam River Watershed, Blackberry River Watershed, Factory Brook Watershed, Farmington River Watershed, Fivemile River Watershed, Hockanum River Watershed, Housatonic River Main Stem Watershed, Limekiln Brook Watershed, Naugatuck River Watershed, Norwalk River Watershed, PequabuckRiver Watershed Pomperaug River Watershed, Pootatuck River Watershed, Quinebaug River Watershed, Quinnipiac River Watershed, Shetucket River Watershed or Willimantic River Watershed	Habitat for Fish, Other Aquatic Life and Wildlife or Recreation	Phosphorus, Nutrient/ Eutrophication Biological Indicators, Dissolved Oxygen, Chlorophyll-a, or Excess Algal Growth
Nitrogen	Any water body subject to a TMDL pollutant load reduction for Nitrogen, including but not limited to the Long Island Sound TMDL for Dissolved Oxygen (entire state of CT)	Habitat for Marine Fish, Other Aquatic Life and Wildlife	Dissolved oxygen saturation, Nitrogen (Total), Nutrient / Eutrophication Biological Indicators, Oxygen, Dissolved
Bacteria	Any water body subject to a TMDL pollutant load reduction for Total Coliform, Escherichia coli, Fecal coliform or Enterococci	Recreation, Existing or Proposed Drinking Water, Commercial Shellfish Harvesting Where Authorized or Shellfish Harvesting for Direct Consumption Where Authorized	Total Coliform, Escherichia coli, Fecal coliform or Enterococci
Mercury	Any water body subject to a TMDL pollutant load reduction for Mercury (Entire state of Connecticut)	Habitat for Fish, Other Aquatic Life and Wildlife or Fish Consumption	Mercury

Water Quality Targets for Waters for Which Bacteria is a Stormwater Pollutant of Concern				
Water Quality Classification	**E.Coli (Freshwater Rec) (cols/100mls)**	**Enterococci (Marine Rec) (cols/100mls)**	**Fecal Coliform (Marine Shellfishing) (cols/100mls)**	**Total Coliform (Freshwater Drinking) (cols/100mls)**
AA	Instantaneous designated swimming 235 / Non designated Swimming 410 / All other Recreation 576 Geomean 126	N/A	N/A	Monthly Moving average <100 / Single Sample Maximum 500
A	Same as AA	N/A	N/A	N/A
B	Same as AA	N/A	N/A	N/A
SA (Direct Consumption)	N/A	Instantaneous Designated Swimming 104 / Instantaeous All other Uses 500 / Geomean 35	Geomean 14 / 90% of samples <31	N/A
SB (Indirect Consumption)	N/A	Same as SA waters	Geomean 88 / 90% of samples < 260	N/A