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STATE OF VERMONT  
AGENCY OF NATURAL RESOURCES  
DEPARTMENT OF ENVIRONMENTAL CONSERVATION  
VERMONT POLLUTANT DISCHARGE ELIMINATION SYSTEM (VPDES)  
GENERAL PERMIT 3-9014 (202318)  
FOR STORMWATER DISCHARGES FROM REGULATED SMALL MUNICIPAL  
SEPARATE STORM SEWER SYSTEMS (MS4s) AND CERTAIN DEVELOPED LANDS



**TABLE OF CONTENTS**

**PART 1: PURPOSE AND AUTHORITY ..... 1**

1.1 Purpose..... 1

1.2 Authority ..... 1

**PART 2: COVERAGE UNDER THIS PERMIT ..... 1**

2.1 Applicability ..... 1

2.2 Eligible Discharges ..... 2

2.3 Limitations on Coverage..... 3

2.4 Limitations on Coverage Specific to New Dischargers from Non-Traditional MS4s Only..... 4

**PART 3: APPLICATION REQUIREMENTS ..... 6**

3.1 Submittal of NOI, Necessary Attachments, and Application Fee ..... 6

3.2 Deadlines..... 6

3.3 Contents of the Notice of Intent..... 6

3.4 Co-Permittees Submitting a Single SWMP ..... 7

3.5 Determination of Complete Application and Request for Additional Information ..... 7

3.6 Public Notice and Public Comments ..... 7

3.7 Authorization to Discharge..... 7

3.8 Amendments ..... 8

**PART 4: DISCHARGE REQUIREMENTS ..... 8**

4.1 Discharges..... 8

4.2 Discharges to Impaired Waters..... 8

4.3 Discharges to High Quality Waters; Anti-degradation..... 10

**PART 5: STORMWATER MANAGEMENT PROGRAM (SWMP) ..... ~~11~~10**

5.1 Comprehensive Plan for Covered Stormwater Discharges..... ~~11~~10

5.2 Reviewing and Updating Stormwater Management Programs..... ~~11~~10

**PART 6: MINIMUM CONTROL MEASURES..... ~~12~~11**

6.1 Requirements to Reduce Pollutants to the Maximum Extent Practicable ..... ~~12~~11

6.2 Minimum Control Measures ..... ~~13~~12

6.3 Sharing Responsibility ..... ~~22~~21

**PART 7: ASSUMPTION OF RESPONSIBILITY FOR PREVIOUSLY PERMITTED STORMWATER SYSTEMS ..... ~~23~~21**

**PART 8: TMDL IMPLEMENTATION ..... ~~23~~22**

8.1 Stormwater Flow Restoration Plan (FRP) ..... ~~23~~22

8.2 Lake Champlain Phosphorus Control Plan (PCP) Requirements..... ~~24~~23

8.3 Municipal Road Requirements .....	<del>2725</del>
<b>PART 9: MONITORING, RECORD KEEPING, AND REPORTING .....</b>	<del>3431</del>
9.1 Monitoring .....	<del>3431</del>
9.2 Recordkeeping .....	<del>3531</del>
9.3 Annual Report.....	<del>3531</del>
<b>PART 10: STANDARD PERMIT CONDITIONS .....</b>	<del>3632</del>
<b>PART 11: RIGHTS TO APPEAL TO THE ENVIRONMENTAL COURT .....</b>	<del>4137</del>
<b>PART 12: DEFINITIONS .....</b>	<del>4237</del>
<b>PART 13: EFFECTIVE DATE AND TERM OF GENERAL PERMIT .....</b>	<del>4743</del>
APPENDIX A – Lake Champlain TMDL Required Reductions per Lake Segment .....	i
APPENDIX B – Check Dam Installation Specifications .....	ii

## **PART 1: PURPOSE AND AUTHORITY**

### **1.1 Purpose**

This general permit (referred to as the “MS4 GP”) is for stormwater discharges from regulated small Municipal Separate Storm Sewer Systems (MS4s) in Vermont, and to the extent of the traditional municipalities’ boundaries, roads requiring permit coverage under 10 V.S.A. § 1264(c)(6), municipally owned or controlled impervious surfaces of three acres or greater requiring permit coverage under 10 V.S.A. § 1264(c)(7), and developed lands for which those municipalities have assumed full legal responsibility. This general permit incorporates the requirements from the previously issued MS4 GP and includes requirements to meet the EPA-approved Lake Champlain total maximum daily loads (TMDLs) for phosphorus. This general permit also includes ~~new~~ road stormwater management standards, identical to those included in the Municipal Roads General Permit (MRGP), to provide traditional municipalities subject to this general permit the ability to develop Phosphorus Control Plans (PCPs) that simultaneously meet the statutory requirements for municipal road stormwater management in addition to the requirements for other developed lands within the municipality.

This general permit meets the requirements of a Two-Step General Permit in accordance with the National Pollutant Discharge Elimination System (NPDES) MS4 GP Remand Rule, 40 C.F.R. § 122.28(d). In compliance with the Rule, applicants must submit a Notice of Intent (NOI) and complete Stormwater Management Program (SWMP), which shall be subject to review, public notice, and public comment.

### **1.2 Authority**

This general permit is issued in accordance with the following state and federal laws and rules: the Vermont Water Pollution Control statute, 10 V.S.A. chapter 47, including §§ 1258, 1259, and 1264; the Vermont Water Pollution Control Permit Regulations (Environmental Protection Rules, Chapter 13), including the rule governing general permits in Section 13.12; the federal Clean Water Act (CWA), as amended, 33 U.S.C.A. § 1251 *et seq.*, including 33 U.S.C.A. § 1342(p); and regulations of the United States Environmental Protection Agency (EPA), including 40 C.F.R. Part 122.

## **PART 2: COVERAGE UNDER THIS PERMIT**

### **2.1 Applicability**

Discharges of stormwater from the following regulated small MS4s, and to the extent of the traditional municipalities’ boundaries, municipalities’ roads requiring permit coverage under 10 V.S.A. § 1264(c)(6), municipalities’ municipally owned or controlled impervious surfaces of three acres or greater requiring permit coverage under 10 V.S.A. 1264(c)(7), and municipalities’ developed lands for which the municipalities have assumed full legal responsibility, require coverage under this general permit: Burlington, Colchester, Essex, Essex Junction, Milton, the Town of Rutland, the City of St. Albans, the Town of St. Albans, Shelburne, South Burlington, Williston, Winooski, the University of Vermont, and the Burlington International Airport. This general permit may also provide coverage for discharges of stormwater from any additional

small MS4s designated by the Secretary pursuant to the “Procedure for Designation of Regulated Small MS4s” (dated May 16, 2016).

## 2.2 Eligible Discharges

The following discharges are eligible for authorization under this general permit, except as provided in Subpart 2.3:

1. Stormwater discharges. This general permit authorizes stormwater discharges to waters of the State from regulated small MS4s and developed lands subject to this permit, except as excluded in Subpart 2.3.
2. Non-stormwater discharges. This general permit authorizes commingled discharges from the following non-stormwater sources with discharges of stormwater from the regulated small MS4s and developed lands subject to this permit, provided that these sources are not substantial contributors of pollutants:
  - a) Water line flushings
  - b) Landscape irrigation and lawn watering, provided all pesticides, herbicides, and fertilizers have been applied in accordance with the approved labeling
  - c) Diverted stream flows
  - d) Rising ground-water
  - e) Uncontaminated ground-water
  - f) Uncontaminated pumped ground-water
  - g) Discharges from potable water sources
  - h) Foundation drains or footing drains where flows are not contaminated with process materials, and to which there are no floor drain, septic wastewater, or grey water connections
  - i) Uncontaminated condensate from air conditioners, coolers/chillers, and other compressors and from the outside storage of refrigerated gases or liquids
  - j) Irrigation water
  - k) Spring water
  - l) Uncontaminated water from crawl spaces
  - m) Flows from riparian habitats and wetlands

- n) Discharges from emergency/unplanned fire-fighting activities.
- o) Fire hydrant flushing
- p) Pavement and external building wash waters to which no detergents or other chemicals have been added
- q) Incidental windblown mist
- r) De-chlorinated swimming pool discharges

**2.3 Limitations on Coverage**

Any discharges not expressly eligible for authorization under this permit cannot become authorized or shielded from liability under CWA section 402(k) by disclosure to EPA, state, or local authorities after issuance of this permit via any means, including the NOI, the SWMP, or during an inspection. Except for those eligible discharges listed under Subpart 2.2, discharges of any material, including vehicle and equipment maintenance spills, fuels, wash water, construction debris, and oil and other hazardous substances, are not authorized by this permit.

- A. Discharges Mixed with Non-Stormwater. Stormwater discharges that are mixed with non-stormwater discharges are not eligible for coverage under this permit, except for those mixed with: allowable non-stormwater discharges listed in Subpart 2.2, a discharge authorized by a different NPDES permit, or a stormwater discharge that does not require NPDES authorization.
- B. Stormwater Discharges Associated with Construction Activity. Stormwater discharges associated with construction activity disturbing one acre or more, or that are part of a larger common plan of development or sale if the larger common plan will ultimately disturb one acre or more, are not eligible for coverage under this permit.
- C. Discharges Currently or Previously Covered by Another Permit. Unless the permittee has received written notification from the Agency specifically allowing these discharges to be covered under this permit, the following stormwater discharges are not eligible for coverage under this permit:
  - 1. Stormwater discharges associated with industrial activity as defined in 40 C.F.R. § 122.26(b)(14)(i)-(ix) and (xi);
  - 2. Discharges covered within five years prior to the effective date of this permit by an individual permit or alternative general permit where that permit established site-specific numeric water quality-based limitations developed for the stormwater component of the discharge; or
  - 3. Discharges from facilities where any NPDES permit has been or is in the process of being denied, terminated, or revoked by EPA or the State (this does not apply to the routine reissuance of permits every five years).

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- D. Endangered and Threatened Species and Critical Habitat Protection. Coverage under this permit is not available for discharges that are likely to result in a take of any species that are listed as threatened or endangered, or result in adverse impacts to or destruction of habitat that is designated as critical, under Vermont's Protection of Endangered Species Law, 10 V.S.A. §§ 5401-5410, unless the activity is authorized under a permit issued pursuant to 10 V.S.A. § 5408.
- E. Discharges to Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Sites. Discharges to a federal CERCLA site are not eligible for coverage under this permit, unless the Secretary determines the discharge is eligible for coverage under this permit. In determining eligibility for coverage under this Part, the Secretary may evaluate whether the permittee is implementing or plans to implement adequate controls or procedures to ensure the discharge will not lead to recontamination of aquatic media at the CERCLA Site such that the discharge will cause or contribute to an exceedance of a water quality standard. If it is determined that the permittee discharges to a CERCLA Site after it has obtained coverage under this permit, the permittee shall contact the Secretary and ensure that it either has implemented or will implement adequate controls or procedures to ensure that its discharges will not lead to recontamination of aquatic media at the CERCLA Site such that it will cause or contribute to an exceedance of a water quality standard. For the purposes of this permit, a permittee discharges to a federal CERCLA Site if the discharge flows directly into the site through its own conveyance, or a through a conveyance owned by others.

#### **2.4 Limitations on Coverage Specific to New Dischargers from Non-Traditional MS4s Only**

A "new discharger" is any building, structure, facility, or installation (a) from which there is or may be a discharge of pollutants; (b) that did not commence the discharge of pollutants at a particular site prior to August 13, 1979; (c) that is not a new source; and (d) that never received a finally effective NPDES permit for discharges at that "site." "Site" means the land or water area where any "facility or activity" is physically located or conducted, including adjacent land used in connection with the facility or activity.

Consistent with these definitions, a non-traditional MS4 is a "new discharger" if it discharges stormwater from a new facility with an entirely new separate storm sewer system that is not physically located on the same or adjacent land as an existing facility and associated system operated by the same non-traditional MS4.

- A. Eligibility for New Dischargers Based on Water Quality Standards. If there is a new discharger to which this permit is applicable, the new discharger shall not be eligible for coverage under this permit if the Secretary determines that the discharges will not meet an applicable water quality standard (i.e., the discharges will cause or contribute to an exceedance of a water quality standard). In such case, the Secretary may notify the new discharger that an individual permit application is necessary, or, alternatively, the Secretary may authorize coverage under this permit after the new discharger implements additional control measures so that the discharges will meet water quality standards.



B. Eligibility for New Dischargers to Water-Quality Impaired Waters. If there is a new discharger to which this permit is applicable, the new discharger shall not be eligible for coverage under this permit to discharge to an impaired water unless it does one of the following:

1. Prevents all exposure to stormwater of the pollutant(s) for which the waterbody is impaired, and retains documentation of procedures taken to prevent exposure with the SWMP;
2. Provides to the Secretary information or other documentation demonstrating that the pollutant(s) for which the waterbody is impaired is not present at the site, and retains such documentation with the SWMP; or
3. Provides information to the Secretary, either data or other technical documentation, to support a conclusion that the discharge is expected to meet applicable water quality standards (i.e., that pollutants of concern will not be discharged at levels that will cause or contribute to an exceedance of a water quality standard), and retains such information with the SWMP. The information to be submitted must be sufficient to demonstrate:
  - a) For discharges to waters without an EPA-approved TMDL, that the discharge of the pollutant for which the water is impaired will meet water quality standards at the point of discharge to the water, or that the discharge will be offset; or
  - b) For discharges to waters with an applicable EPA-approved TMDL, that there are sufficient remaining wasteload allocations in the TMDL to allow the discharge and that existing dischargers to the waterbody are subject to compliance schedules designed to bring the waterbody into attainment with water quality standards (e.g., a reserve allocation for future growth).

C. Eligibility for New Dischargers to Outstanding Resource Waters.

1. New dischargers that discharge to waters designated by the State as Outstanding Resource Waters are not eligible for coverage under this permit. New dischargers to Outstanding Resource Waters must submit an application for an individual permit.

For the purposes of this permit, a discharge is to an Outstanding Resource Water if the first water of the State to which the permittee discharges is identified as an Outstanding Resource Water. For discharges that enter a separate storm sewer system prior to discharge, the first water of the State to which the permittee discharges is the waterbody that receives the stormwater discharge from the storm sewer system.

### PART 3: APPLICATION REQUIREMENTS

To apply for authorization to discharge under this permit, the applicant shall submit an NOI and SWMP in accordance with the deadlines in Subpart 3.2. After the Secretary has determined that the NOI and SWMP are administratively complete, the Secretary shall post the NOI and the SWMP on the Environmental Notice Bulletin (ENB) in accordance with Part 3.6 of this permit.

#### 3.1 Submittal of NOI, Necessary Attachments, and Application Fee

- A. An application for coverage under this permit shall consist of a completed NOI form, SWMP, and all necessary attachments. NOI forms shall be provided by the Secretary. If an electronic NOI submittal system is available, the applicant shall submit all application materials, including applicable fees, through the electronic NOI system. ~~If an electronic NOI system is not available, application materials shall be submitted on a CD/DVD by U.S. mail, or via other means specified by the Secretary. Unless full size paper copies of site plans are specifically requested by the Stormwater Program, electronic versions of site plans are preferred.~~
- B. At the same time that the applicant submits the NOI, SWMP, and all necessary attachments, the applicant shall pay the applicable fees. The applicable fees are included under 3 V.S.A. § 2822(j)(2).

#### 3.2 Deadlines

- A. If an applicant previously obtained coverage under the 2018~~2~~ MS4 GP, then it shall submit a ~~Notice of Intent (NOI) prior to July 27, 2023.~~ Applicants shall submit a revised SWMP, and all necessary attachments and updated Phosphorus Control Plans (PCPs) and Flow Restorations Plans (FRPs) or apply for an individual permit within 180 days of the effective date of this permit.
- B. If a small MS4 is designated by Secretary as an operator of a regulated small MS4 under the “Procedure for Designation of Regulated Small MS4s” (dated May 16, 2016) concurrent with or after the effective date of this permit, then it shall submit a NOI, SWMP, and all necessary attachments to the Secretary within 270 days of notice of designation.
- C. If a late NOI is submitted, authorization is only for discharges that occur after the date the permittee receives authorization to discharge. The Secretary reserves the right to take appropriate enforcement actions for any unpermitted discharges.

#### 3.3 Contents of the Notice of Intent

The Notice(s) of Intent must be signed in accordance with Subpart 10.8 of this permit and must include, at a minimum, the following information:

- ~~A.~~ The legal name of the traditional municipality or non-traditional MS4 and the mailing address and telephone number for the permittee.

~~B.A.~~

~~C.~~ The name of person responsible for overall coordination of the SWMP, and the mailing address, email, and telephone number of that individual.

~~D.B.~~

~~E.~~ The names of all known waters to which the small MS4 and all developed lands subject to this permit discharge. Please indicate which, if any, of these waters are impaired and the nature of the impairment. If available, indicate the number of outfalls to each water.

~~F.C.~~

~~G.D.~~ If an applicant is relying on another entity to satisfy one or more of the applicant's permit obligations, the identity of that entity(ies); the element(s) it will be implementing; and the mailing address, email, and telephone number for that entity.

### **3.4 Co-Permittees Submitting a Single SWMP**

An applicant may partner with other applicants under this permit to develop and implement its SWMP. Applicants may also jointly submit a SWMP. Each applicant must fill out a NOI form. The SWMP must clearly describe which entities are responsible for implementing each of the measures in the SWMP.

### **3.5 Determination of Complete Application and Request for Additional Information**

The Secretary reserves the right to return an application that is incomplete or inaccurate or does not meet the requirements of this permit. The Secretary may require the applicant to submit additional information that the Secretary considers necessary in order to make a decision on the eligibility for, or the issuance or denial of, an authorization to discharge pursuant to this permit. The Secretary may deny an authorization to discharge pursuant to this permit if the additional information requested is not provided to the Secretary within 60 days of the Secretary's request or if any additional information submitted is inadequate for the Secretary to make a decision on the eligibility for, or the issuance or denial of, an authorization to discharge pursuant to this permit.

### **3.6 Public Notice and Public Comments**

As required by 40 C.F.R. § 122.28(d)(2), because this is a Two-Step General Permit, public notice for the NOI, SWMP, and all attachments shall comply with the Type 1 public noticing requirements under 10 V.S.A. Chapter 170 and all rules adopted thereunder. Public notice of amendments shall also comply with the public noticing requirements for amendments under 10 V.S.A. Chapter 170 and the rules adopted thereunder.

### **3.7 Authorization to Discharge**

- A. A traditional municipality or non-traditional MS4 subject to this permit shall only be authorized to discharge under the terms and conditions of this permit upon receipt of a written authorization to discharge from the Secretary.
- B. The complete NOI and SWMP, including all attachments, shall be incorporated by reference and included in the terms of the permittee's authorization under this permit, and the permittee shall comply with all terms and conditions of this permit and its authorization issued hereunder. Failure to comply with the NOI, SWMP, and all attachments shall be deemed a violation of this permit and may be subject to enforcement action.

### **3.8 Amendments**

- A. Public notice of amendments shall comply with the public noticing requirements for amendments under 10 V.S.A. Chapter 170 and the rules adopted thereunder.
- B. Amendments considered to be "major amendments" under 10 V.S.A. Chapter 170 include:
  - 1. Submittal of TMDL and Water Quality Remediation Plan (WQRP) implementation plans, including Stormwater Flow Restoration Plans (FRP) and Phosphorus Control Plans (PCP), and submittal of phases or components of those plans.
  - 2. Modifications of the SWMP that require technical review.
  - 3. The incorporation of stormwater permits previously issued under 10 V.S.A. § 1264.
- C. At the same time that an NOI for an amendment is submitted, the applicant shall pay any fees required under 3 V.S.A. § 2822(j)(2).

## **PART 4: DISCHARGE REQUIREMENTS**

### **4.1 Discharges**

The permittee shall develop, implement, and enforce a program to reduce the discharge of pollutants from the regulated small MS4 to the maximum extent practicable, to protect water quality, and to satisfy the appropriate water quality requirements of the CWA and the Vermont Water Quality Standards.

### **4.2 Discharges to Impaired Waters**

Impaired waters are those waters that the Secretary has identified pursuant to Section 303(d) of the CWA as not meeting the Vermont Water Quality Standards. Impaired waters encompass both those with approved TMDLs or WQRPs, and those for which TMDL development has been identified as necessary, but for which a TMDL has not yet been approved by EPA.

- A. Discharges to Impaired Waters with an Approved TMDL

1. For any discharge covered by this permit to impaired waters with an approved TMDL, the permittee shall control discharges consistent with the assumptions and requirements of any wasteload allocation (WLA) applicable to the permittee in the TMDL. The permittee shall describe in the SWMP all measures that are being used to address this requirement. The Secretary may notify the permittee of the need to comply with additional requirements that are consistent with the assumptions and requirements of any applicable WLA or that an individual permit application is necessary in accordance with Part 10 of this permit.
2. If the applicable TMDL does not specify a WLA or other requirements either individually or categorically for the permittee's discharge and the permittee has complied with the terms and conditions of this permit, and has undertaken Secretary-approved measures and documented them in the SWMP to address the pollutant(s) of concern addressed by the TMDL, then compliance with these conditions will be presumed adequate to meet the requirements of this permit.
3. If the applicable TMDL specifies a WLA or other requirements either individually or categorically for the permittee's discharge, the permittee shall describe in its annual reports all control measures which have been or are planned to be implemented to control discharges consistent with the assumptions and requirements of the TMDL WLA. The permittee shall include in the annual reports and the SWMP the rationale supporting the permittee's assessment that such controls are adequate to meet the applicable TMDL requirements.
4. For discharges to stormwater-impaired waters with EPA-approved stormwater TMDLs, the permittee shall comply with the requirements in Subpart 8.1.
5. For discharges to Lake Champlain or the Lake Champlain watershed, the permittee shall comply with the requirements in Subpart 8.2.
6. If the Secretary determines that more stringent requirements are necessary to bring discharges into compliance with any future TMDLs or WQRPs, the Secretary shall impose such requirements through amendment of this permit or through the reissuance of this permit.

B. Discharges to Impaired Waters without an Approved TMDL

For any discharge covered by this permit, if the permittee discharges to an impaired water that is without an approved TMDL, but that is listed as impaired on the “State of Vermont 303(d) List of Impaired Waters, Part A – Impaired Surface Waters in Need of TMDL,” the permittee shall develop a response plan as part of its SWMP that addresses how any discharges, determined by the Agency to cause or contribute to the impairment, will be controlled to ensure compliance with the Vermont Water Quality Standards. The permittee may achieve an increased level of control through additional BMPs or enhancement of existing BMPs. The content of the response plan should reflect the magnitude and complexity of the impairment and the regulated discharge’s potential to contribute to the impairment. Permittees shall report on the implementation of their response plan in their annual reports. Pursuant to Subpart 10.17, the Secretary reserves the right to revoke authorization under this permit and require authorization under an individual permit, as necessary to ensure compliance with water quality standards.

#### **4.3 Discharges to High Quality Waters; Anti-degradation; Discharges to High Quality Waters**

The MS4 GP is adopted in conformance with the Vermont Antidegradation Policy in the Vermont Water Quality Standards and the Antidegradation Implementation Procedure. The primary goal of the Antidegradation Policy is to protect and maintain water quality and existing and designated uses. The Antidegradation Implementation Procedure is applied during the review of applications for any applicable permit for a new discharge to high quality waters in which compliance with the Vermont Water Quality Standards is evaluated. Authorizations issued under a general permit subject to the Antidegradation Implementation Procedure are exempt from subsequent review under this Rule unless the Secretary determines based on credible and relevant information and best professional judgment that the proposed activity, due to its potential impact to water quality, requires a site-specific Tier 2 analysis through the use of an individual permit.

High quality waters are those whose existing ambient water quality exceeds (i.e., is better than) the applicable minimum water quality criteria and indices for the class to which the waterbody is assigned. A waterbody is assessed as high quality on a parameter-by-parameter basis. The Secretary will presume that all waters are high quality for at least one criterion or index for some portion of the year. This presumption may be rebutted by credible and relevant information obtained by or provided to the Secretary.

Municipalities seeking coverage under the MS4 GP are required to develop a Stormwater Management Program (SWMP), which includes six minimum control measures that, when implemented together, are designed to reduce the discharge of pollutants from the regulated small MS4 to the maximum extent practicable, with a goal of improving water quality and stream channel stability, groundwater recharge, and flood protection. The six minimum control measures are achieved through the implementation of BMPs approved by the Agency.

The Antidegradation Policy and Antidegradation Implementation Procedure provide three tiers of water quality protection – Tier 3, protection of Outstanding Resource Waters (ORWs); Tier 2, protection of high quality waters; and Tier 1, protection of existing uses. A Tier 3 analysis is not applicable as new dischargers that discharge to waters designated by the State as ORWs are not eligible for coverage under the MS4 GP. A Tier 2 analysis, through which the allowable limited lowering of water quality is determined, and Tier 1, protection of existing uses, are not applicable as the MS4 GP does not authorize a lowering of water quality. Therefore, an antidegradation analysis is not required for the MS4 GP.

~~This permit is adopted in conformance with the Anti-Degradation Policy of the Vermont Water Quality Standards and the Department of Environmental Conservation's Interim Anti-Degradation Implementation Procedure (October 2010).~~

~~The BMPs required under this permit are established consistent with 40 C.F.R. § 122.44(k), and will be reviewed in cycles not to exceed five years, in conformance with the Department's plan, to ensure that the required practices provide the highest level of stormwater treatment. Where warranted based on this review, the Department will revise this permit to add, remove, or modify practices to ensure ongoing compliance with the anti-degradation requirements of the Vermont Water Quality Standards.~~

~~Application of the BMPs required under this permit will maintain and protect the higher quality of the State's high quality waters, will prevent limited reductions in the existing higher quality of those waters, and will minimize risk to the existing and designated uses of those waters.~~

~~Therefore, compliance with this permit affords a rebuttable presumption of compliance with the State's Anti-Degradation Policy. The overall presumption of compliance with anti-degradation requirements for projects and sites in conformance with this permit may be rebutted on a case-by-case basis if warranted by credible and relevant project or site specific information available to the Agency during the review of an application for a proposed discharge.~~

## **PART 5: STORMWATER MANAGEMENT PROGRAM (SWMP)**

### **5.1 Comprehensive Plan for Covered Stormwater Discharges**

The traditional municipality or non-traditional MS4 must amend or develop a written Stormwater Management Program (SWMP). The SWMP must be signed in accordance with Subpart 10.8 of this permit. The SWMP shall include the information required, as necessary, under Part 3; the information required under Part 4 to address discharges to impaired waters; the required elements under the six minimum control measures described in Part 6; the information required under Part 7 for stormwater systems for which the municipality has assumed full legal responsibility; and the Flow Restoration Plan (FRP) and Phosphorus Control Plan (PCP) developed in accordance with Part 8.

### **5.2 Reviewing and Updating Stormwater Management Programs**

- A. SWMP Review: The permittee shall perform an annual review of its SWMP in conjunction with preparation of the annual report required under Subpart 9.3.
- B. SWMP Update: When the permittee amends its SWMP during the life of this permit, the requirements of Subpart 3.8 shall apply.
- C. Transfer of Ownership, Operational Authority, or Responsibility for SWMP Implementation: When the permittee takes over ownership, operational authority, or SWMP implementation of impervious surfaces not under the ownership or control of the permittee at the time of the permittee's initial application for coverage under this permit, the impervious surface shall be subject to the requirements of this permit. If no amendments to the SWMP are necessary to comply with this permit, at a minimum the permittee shall notify the Secretary of this addition in its annual report submitted under Subpart 9.3.

**PART 6: MINIMUM CONTROL MEASURES**

**6.1 Requirements to Reduce Pollutants to the Maximum Extent Practicable**

- A. The permittee shall, for the regulated small MS4, develop, implement, and enforce the six minimum control measures, designed to reduce the discharge of pollutants from the regulated small MS4 to the maximum extent practicable (MEP), to protect water quality, and to satisfy the appropriate water quality requirements of the CWA. For purposes of the six minimum control measures, implementation of BMPs consistent with the provisions of the SWMP shall constitute compliance with the standard of reducing pollutants to the MEP.
- B. ~~Permittees, which were not covered under the 20182 MS4 GP, must develop and fully implement the six minimum control measures in accordance with this permit by the expiration date of this permit. Permittees that were previously covered under the 20182 MS4 GP,~~ shall continue ~~implementing to implement~~ the six minimum control measures as previously authorized and in conformance with the requirements of this permit. The SWMP shall include the following information for each of the six minimum control measures:
  - 1. The person or persons responsible for implementing or coordinating the SWMP and the BMPs for the SWMP.
  - 2. The BMPs that the permittee or another entity will implement for each of the six minimum control measures. EPA has provided a list of sample BMPs on its website: <https://www.epa.gov/npdes/national-menu-best-management-practices-bmps-stormwater#edu>~~https://www.epa.gov/npdes/national-menu-best-management-practices-bmps-stormwater~~
  - 3. The measurable goals for each of the BMPs including, as appropriate, the months and years in which the required actions will be undertaken, including interim milestones

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and the frequency of the action. When possible, the measurable goal should include outcome measures related to the BMP's impact on water quality, stream channel stability, groundwater recharge, and flood protection. EPA has provided guidance on developing measurable goals at the link above.

4. In addition to the requirements listed above, the permittee shall provide a rationale for how and why it selected each of the BMPs and measurable goals for the SWMP. The rationale shall describe: 1) the stormwater problems to be addressed by the BMPs, 2) the major alternative BMPs to the ones selected and why they were not adopted, 3) the behavioral and institutional changes necessary to implement the BMP, and 4) expected water quality outcomes.
5. If applicable, describe the process for consultation with and involvement of public water suppliers with source water protection zones within the regulated small MS4.

## **6.2 Minimum Control Measures**

### **1. Public Education and Outreach on Stormwater Impacts**

a) The permittee must implement a public education program reasonably designed to educate the community about the impacts of stormwater discharges on water bodies. The program shall include the steps that the public can take to reduce pollutants in stormwater runoff, including an explanation of the problem of stormwater runoff and solutions for reducing the amount of runoff reaching waters of the State.

b) The permittee shall document its decision process for the development of a stormwater public education and outreach program in accordance with Subpart 6.1.B.

c) The permittee shall include the following public education and outreach measures in its program:

(1) Maintain on its own or in cooperation with other regulated small MS4s a website with locally relevant stormwater management information and promote the website's existence and use,

(2) Maintain on its own or in cooperation with other regulated small MS4s a program to identify opportunities for and provide technical assistance to landowners in the implementation by landowners of low impact BMPs such as maximizing disconnection, maximizing infiltration of stormwater runoff, preventing and eliminating soil erosion, and preventing and eliminating the delivery of pollutants to stormwater conveyances,

(3) Participate in the regional stormwater education and outreach strategy described in the July 1, 2017 Stormwater Program Agreement between a group of MS4 permittees and the Chittenden County Regional Planning Commission, or subsequent amendment approved by the Secretary; or participate in another

regional stormwater education strategy approved by the Agency; or submit a plan based on the following EPA guidance documents:

Fact Sheet 2.3, Stormwater Phase II Final Rule, Public Education and Outreach Minimum Control Measure (January, 2000, revised December, 2005),  
<https://www3.epa.gov/npdes/pubs/fact2-3.pdf>;

National Menu of Best Management Practices for NPDES Stormwater Phase II,  
<https://www.epa.gov/npdes/national-menu-best-management-practices-bmps-stormwater>;

Measurable Goals Guidance for Phase II Small MS4s,  
<https://www3.epa.gov/npdes/pubs/measurablegoals.pdf>

d) If a permittee elects to formulate its own public education and outreach program rather than participating in a regional initiative, it must document its decision process for the development of a stormwater public education and outreach program. The rationale statement must address the overall public education program, the individual BMPs, the measurable goals, and the persons responsible for the program. The rationale statement must include the following information, at a minimum:

(1) How the permittee plans to inform individuals and households about the steps they can take to reduce stormwater pollution.

(2) How the permittee plans to inform individuals and groups on how to become involved in the stormwater program (with activities such as local stream restoration activities).

(3) A description of the target audiences for the education program who are likely to have significant stormwater impacts (including residential, commercial, industrial, and institutional entities) and why those target audiences were selected.

(4) What the target pollutants are and the pollutant sources the public education program is designed to address.

(5) What the behavioral changes are that the permittee seeks to achieve in order to reduce and eliminate stormwater pollution.

(6) What the outreach strategy is, including the mechanisms (e.g., printed brochures, newspapers, media, workshops, etc.) the permittee will use to reach the target audiences, how many people the permittee expects to reach, and what degree of behavioral change the permittee expects the outreach strategy to achieve over the permit term.

(7) Who is responsible for overall management and implementation of the stormwater public education and outreach program and, if different, who is

responsible for each of the BMPs identified for this program.

(8) How the permittee selected the measurable goals for each of the BMPs and how the permittee will evaluate the success of this minimum measure in achieving goals for behavioral change and water quality.

## 2. Public Involvement/ Participation

a) The permittee shall develop and implement a public involvement and participation program, and the program shall, at a minimum, comply with applicable state and local public notice requirements. Public notice of the SWMP concurrent with the NOI and public notice of SWMP amendments shall serve to ensure the public is included in the development and review of the SWMP.

b) The permittee shall post the SWMP and annual reports on the permittee's website at the same time they are submitted to the Agency.

c) The permittee shall document its decision process for the development of a stormwater public involvement and participation program in accordance with Subpart 6.1.B.

d) The permittee shall implement the following public involvement and participation activities:

(1) Participate in the regional stormwater public involvement and participation strategy described in the July 1, 2017 Stormwater Program Agreement between a group of MS4 permittees and the Chittenden County Regional Planning Commission, or subsequent amendment approved by the Secretary, or

(2) Participate in another regional stormwater public involvement and participation strategy approved by the Agency.

(3) If rather than participating in a regional stormwater public involvement and participation strategy, the permittee elects to implement another public involvement and participation program, the permittee's rationale statement, provided pursuant to Subpart 6.1.B, shall, at a minimum, include the following information:

- i. The plan to actively involve the public in the further development and implementation of the permittee's program.
- ii. The target audiences for the public involvement program.
- iii. The types of public involvement activities included in the program.

- iv. The structure of responsibility for the overall management and implementation of the stormwater public involvement and participation program and, if different, describe the responsible entities for each of the BMPs identified for this program.

### 3. Illicit Discharge Detection and Elimination

a) The permittee shall develop, implement, and enforce a program to detect and eliminate illicit discharges into the stormwater systems of the regulated small MS4. As a part of the permittee's program to detect and eliminate illicit discharges, the permittee shall:

(1) Develop, if not already completed, and maintain a storm sewer geographic information systems (GIS) or AutoCAD map of the regulated small MS4, showing the location of all outfalls and the names and location of all waters of the State that receive discharges from those outfalls. Permittees are encouraged to work with their regional planning commission and the Agency to acquire funding assistance for maintenance and updating of small MS4 maps.

(2) To the extent allowable under State and local law, effectively prohibit, through ordinance, or other regulatory mechanism, non-stormwater discharges into the regulated small MS4 and implement appropriate enforcement procedures and actions. Non-traditional MS4s shall adopt a policy prohibiting the discharge of foreign substances into storm drains and suitable means of enforcing it.

(3) Develop and implement a plan to detect and address non-stormwater discharges, with emphasis on outfalls in stormwater impaired watershed(s) and random illegal dumping to the system, such as the dumping of RV wastes, used oil, and paint. In developing the plan, the permittee should collect or utilize existing local or Agency data. The permittee may conduct such investigations itself, contract for investigation, coordinate with storm drain investigation activities of others, or any combination of these approaches. The plan shall:

- i. Include dry weather field screening for non-stormwater flows and field tests of selected chemical parameters as indicators of discharge sources,
- ii. Address on-site sewage disposal systems that flow into the storm drainage system,
- iii. Include procedures for locating priority areas likely to have illicit discharges, which include those areas with a higher likelihood of illicit connections (e.g., areas with older sanitary sewer lines),
- iv. Include procedures, including the specific techniques used, for tracing the source of an illicit discharge,
- v. Include procedures for removing the source of the illicit discharge,
- vi. Include procedures for program evaluation and assessment, and
- vii. Require documentation of the results of the program evaluation and assessment.

(4) Inform public employees, businesses, and the general public of hazards associated with illegal discharges and improper disposal of waste.

(5) Address the following categories of non-stormwater discharges, if the permittee identifies them as significant contributors of pollutants to the regulated small MS4: water line flushing; landscape irrigation and lawn watering, provided all pesticides, herbicides, and fertilizers have been applied in accordance with the approved labeling; diverted stream flows; rising groundwater; uncontaminated groundwater; uncontaminated pumped groundwater; discharges from potable water sources; foundation drains or footing drains where flows are not contaminated with process materials, and to which there are no floor drain, septic wastewater, or grey water connections; uncontaminated condensate from air conditioners, coolers/chillers, and other compressors and from the outside storage of refrigerated gases or liquids; irrigation water; spring water; uncontaminated water from crawl spaces; flows from riparian habitats and wetlands; discharges from emergency/unplanned fire-fighting activities; fire hydrant flushing; pavement and external building wash waters to which no detergents or other chemicals have been added; incidental windblown mist; and de-chlorinated swimming pool discharges.

(6) Provide the Secretary with an annual status report of monitoring activities conducted and corrective actions taken. The final annual report required by this permit shall summarize the monitoring activities and corrective actions taken during the course of this permit.

(7) Notify the Secretary as soon as practicable after discovery of unpermitted discharges to waters that may pose a threat to human health or the environment. The Secretary, in compliance with 10 V.S.A. § 1295, will post this unpermitted discharge on the Agency's website for public notice.

b) The permittee's rationale statement, provided pursuant to Subpart 6.1.B, shall, at a minimum, include the following information:

(1) How the permittee will maintain and improve the storm sewer map required under Subpart 6.2.3.a.(1), the sources of information the permittee used for the maps, and how the permittee plans to verify the outfall locations with field surveys.

(2) A copy of the ordinance (or other regulatory mechanism) or policy required under Subpart 6.2.3.a.(2).

(3) The plan to ensure through appropriate enforcement procedures and actions that the illicit discharge ordinance (or other regulatory mechanism) is implemented, as required under Subpart 6.2.3.a.(2).

(4) How the permittee plans to inform public employees, businesses, and the general public of hazards associated with illegal discharges and improper disposal of waste, as required under Subpart 6.2.3.a.(4), and how this plan will coordinate the public education minimum measure and the pollution prevention and good housekeeping minimum measures.

#### 4. Construction Site Stormwater Runoff Control

a) Pursuant to federal regulations at 40 C.F.R. § 122.34(b)(4), the permittee must develop, implement, and enforce a program to reduce pollutants in any stormwater runoff to the regulated small MS4 from construction activities that result in a land disturbance of greater than or equal to one acre. Reduction of stormwater discharges from construction activity disturbing less than one acre must be included in the program if that construction activity is part of a larger common plan of development or sale that would disturb one acre or more.

Because the State of Vermont is approved to implement the federal NPDES Program, the Secretary must regulate stormwater runoff from construction activities that result in a land disturbance of greater than or equal to one acre and stormwater runoff from construction activity disturbing less than one acre that is part of a larger common plan of development or sale. To satisfy this requirement, the Secretary has issued Construction General Permit 3-9020 for Stormwater Runoff from Construction Sites (CGP). If a construction project requiring a permit does not qualify for coverage under the general permit, then an individual permit from the Secretary is required. ~~The requirements of the Agency's construction stormwater program are at least as stringent as the requirements of 40 C.F.R. § 122.34(b)(4). Therefore, the Secretary has determined that the permittee is not required to develop a separate program. However, In conjunction with the State CGP, the permittee shall:~~

(1) Develop and implement procedures to assure that construction activities undertaken by the permittee are properly permitted and implemented in accordance with the terms of their stormwater construction permits.

(2) In conjunction with the review required by Subpart 6.2.5, review existing policies; planning, zoning, and subdivision regulations; and ordinances to determine their effectiveness in managing construction-related erosion and sediment and controlling waste such as discarded building materials, concrete truck washout, chemicals, litter, and sanitary waste at construction sites that may cause adverse impacts to water quality. The permittee shall also review its policies, regulations, and ordinances for their consistency with the requirements of the ~~Secretary's general permits for stormwater runoff from large and small construction sites and construction erosion guidelines for low impact development~~Construction General Permit. If the permittee's review indicates that its policies are inconsistent with the Secretary's permits, the permittee shall amend its policies to complement, at a minimum, or be more stringent than the requirements of the Secretary.

~~(3) Develop and implement an erosion control ordinance, or zoning or subdivision regulation, or other regulatory mechanism, or if a non-traditional MS4, a policy which, requires erosion and sediment controls, as well as sanctions to ensure compliance, at a minimum, regulates development activities not subject to state or federal erosion control requirements. At a minimum, the plan shall require implementation of the measures in the Low Risk Site Handbook for Erosion Prevention and Sediment Control.~~

**Commented [WC1]:** Flagged for EPA review. Is the MS4 required to regulate earth disturbances smaller than one acre? This statement was not in CFR, so we are proposing to delete.

**Commented [WC2]:** Flagged for EPA review. Propose to delete this paragraph. It is redundant with (2) above.

~~(4) Develop and implement procedures for site plan review which incorporate consideration of potential water quality impacts. For construction activities that disturb one or more acres, the MS4 may rely on the State Stormwater Program review of the CGP application. In these cases, the permittee shall provide the MS4 a copy of the CGP authorization.~~

~~(5) Develop and implement procedures for receipt and consideration of comments submitted by the public. For construction activities that disturb one or more acres, the MS4 may rely on the State Stormwater Program public notice of the CGP application. In these cases, the permittee shall provide the MS4 a copy of the CGP authorization.~~

~~(3)(6) Develop and implement procedures for site inspection and enforcement of control measures. The MS4 shall list, in the annual report, all ~~on~~-construction projects that were inspected and any enforcement actions taken in the annual report.~~

b) If the Secretary ceases to implement the Agency's stormwater construction permit program, this permit shall be reopened and modified, as necessary.

#### 5. Post-Construction Stormwater Management for New Development and Redevelopment

a) Pursuant to 40 C.F.R § 122.34(b)(5), the permittee shall develop, implement, and enforce a program to address post-construction stormwater runoff from new development and redevelopment projects that involve land disturbance of greater than or equal to one acre, including projects less than one acre that are part of a larger common plan of development, that discharge into the regulated small MS4. The program must ensure that controls are in place that would prevent or minimize water quality impacts.

Pursuant to 10 V.S.A. § 1264 and Agency rules and procedures adopted thereunder, the Secretary is required to regulate post-construction stormwater runoff from activities that result in creation of new or redevelopment of one-half acre or more of impervious surface and expansions of existing impervious greater than 5,000 ft<sup>2</sup> where the total resulting impervious is greater than 1-ac. However, there is a gap between what the Agency's post-construction stormwater management permit

program regulates and what the permittee must regulate to comply with this minimum control measure. This gap consists of activities that disturb one acre of earth or greater, but that do not trigger post-construction jurisdiction. Except for those activities falling within the gap and thus, not requiring a state permit, the requirements of the Agency's post-construction stormwater management permit program are at least as stringent as the requirements of 40 C.F.R. § 122.34(b)(5). Consequently, the permittee shall develop, implement, and enforce a program to reduce pollutants in any post-construction stormwater runoff from only those activities that result in a land disturbance of greater than or equal to one acre and that are not subject to regulation under the Agency's post-construction stormwater management permit program.

- b) If the Secretary ceases to implement the Agency's post-construction stormwater permit program, this permit shall be reopened and modified, as necessary.
- c) Traditional municipalities and non-traditional MS4s are encouraged to cooperate when stormwater runoff moves across MS4 jurisdictional boundaries.
- d) In conjunction with the review required by Subpart 6.2.4, the permittee shall review existing policies, planning, zoning and subdivision regulations, and ordinances to:
  - (1) Determine their effectiveness in managing stormwater runoff from new development and redevelopment projects to prevent adverse impacts to water quality;
  - (2) Determine their consistency with the requirements of the Secretary's rules and general permits regulating post-construction stormwater runoff;
  - (3) Assess whether changes can be made to such policies, regulations, and ordinances in order to support low impact design options (e.g. green roofs; infiltration practices, such as rain gardens, curb extensions, planter gardens, porous and pervious pavements, and other designs to manage stormwater using landscaping and structured or augmented soils; water harvesting devices, such as rain barrels and cisterns; and the use of stormwater for non-potable uses); and
  - (4) Assess whether changes can be made to current street design and parking lot guidelines and other local requirements that affect the creation of impervious surfaces to support low impact design options.

If the permittee's review indicates that its policies are inconsistent with the Secretary's permits, the permittee shall amend its policies to complement, at a minimum, or be more stringent than the requirements of the Secretary.

- e) The permittee shall develop and implement procedures to identify new development and redevelopment projects that disturb greater than or equal to one



acre, that are not subject to regulation under the Agency's post-construction stormwater management permit program.

f) For stormwater runoff that discharges from new development and redevelopment projects that disturb greater than or equal to one acre, and that are not subject to regulation under the Agency's post-construction stormwater management permit program the permittee shall adopt an ordinance, planning, zoning and subdivision regulation, or other regulatory mechanism, or if the permittee is a non-traditional MS4, a policy that:

(1) Prevents or minimizes water quality impacts from post-construction stormwater runoff from such developments,

(2) Utilizes a combination of structural, non-structural, and low impact BMPs (e.g. green roofs; infiltration practices, such as rain gardens, curb extensions, planter gardens, porous and pervious pavements, and other designs to manage stormwater using landscaping and structured or augmented soils; water harvesting devices, such as rain barrels and cisterns; and the use of stormwater for non-potable uses) which are appropriate, and

(3) Ensures adequate long-term operation and maintenance of BMPs.

g) For stormwater runoff that discharges from new development and redevelopment projects that disturb greater than or equal to one acre, that are not subject to regulation under the Agency's post-construction stormwater management permit program, the permittee shall:

(1) Develop and implement procedures for inspecting development and redevelopment projects for compliance with the conditions of the permittee's regulations. Traditional municipalities and non-traditional MS4s shall cooperate when stormwater runoff moves across MS4 jurisdictional boundaries.

(2) Develop and implement procedures to assure that development and redevelopment activities undertaken by the permittee, including road projects, are properly permitted, constructed, and maintained.

h) The permittee shall provide the foregoing plans, policies, and procedures as a part of its SWMP.

#### 6. Pollution Prevention and Good Housekeeping for Municipal Operations

a) The permittee shall develop and implement an operation and maintenance program that includes a training component and has the ultimate goal of preventing or reducing pollutant runoff to the regulated small MS4 from all operations of the permittee.

b) The program shall include the following:

(1) A list of the permittee's operations covered by the program, including activities such as park and open space maintenance, fleet and building maintenance, new construction and land disturbances, and stormwater system maintenance,

(2) A training component to prevent and reduce stormwater pollution from activities such as park and open space maintenance, fleet and building maintenance, new construction and land disturbances, and stormwater system maintenance,

(3) Controls for reducing or eliminating the discharge of pollutants from the regulated small MS4, and

(4) Procedures for compliance with applicable state and federal laws for the proper disposal of waste, including dredged spoil, accumulated sediments, floatables, and other debris.

c) Where lawn or garden fertilizers are used in the facility operation, the permittee shall prohibit the use of any phosphorus containing fertilizer, unless warranted by a current soil test. If a phosphorus fertilizer is used, a soil test shall be performed annually and a copy of the test submitted with the annual report. This requirement does not apply to community gardens intended for the growing of produce.

d) The permittee shall provide a list of industrial facilities that it owns or operates that discharge to its regulated small MS4 and are subject to an individual NPDES permit or the Agency's General Permit 3-9003, Multi-Sector General Permit for Stormwater Discharges Associated With Industrial Activity, including facilities covered by a "no exposure certification." Include the permit number for each facility.

e) The permittee shall provide a copy of its operation and maintenance program to prevent or reduce pollutant runoff from the permittee's operations as a part of its SWMP.

### 6.3 Sharing Responsibility

Implementation of one or more of the minimum measures or measures taken to implement a TMDL may be shared with another entity, or another entity may fully take over implementation of the measure. A permittee may rely on another entity only if:

- A. The other entity, in fact, implements the control measure;
- B. The particular control measure, or component of that measure, is implemented in such a way that it is at least as stringent as the corresponding permit requirement.

- C. The other entity agrees to implement the control measure on the permittee’s behalf. Written acceptance of this obligation is required. This obligation must be maintained as part of the SWMP. If the other entity agrees to report on the minimum measures or TMDL implementation activities, the permittee must supply the other entity with the reporting requirements contained in this permit. If the other entity fails to implement the control measure on behalf of the permittee, then the permittee remains responsible for compliance with permit obligations.

## **PART 7: ASSUMPTION OF RESPONSIBILITY FOR PREVIOUSLY PERMITTED STORMWATER SYSTEMS**

### **PART 7:7.1 Full Legal Responsibility**

A permittee may assume “full legal responsibility” for a stormwater system that was previously permitted under an operational stormwater permit. To assume “full legal responsibility” a permittee must have legal control of the stormwater system, including a legal right to access the stormwater system, a legal duty to properly maintain the stormwater system, and a legal duty to repair and replace the stormwater system when it no longer adequately protects waters of the State.

If a permittee has “full legal responsibility” for a stormwater system, it may apply to amend its authorization to incorporate the previously permitted systems in accordance with Subpart 3.8. The permittee shall list the incorporated systems and previous permit numbers in the SWMP, shall certify that it has “full legal responsibility” for such systems, and shall report on maintenance of the systems in the annual report.

All such systems for which a permittee has “full legal responsibility<sup>22</sup>”, and which have been incorporated under the permittee’s authorization shall be inspected, operated, and maintained so as to comply with the requirements of the operational stormwater permit issued most recently for the impervious surface.

### **7.2 Partial Legal Responsibility by Individual Operational Permit**

An MS4 may assume “partial legal responsibility” for a stormwater system if the system is covered by an individual permit where the MS4 is a co-permittee. The individual permit shall provide coverage for all impervious surface subject to an operational permit; describe the assignment of phosphorus credit to a PCP as described in Subpart 8.2; and describe legal responsibility for maintenance and inspection for each co-permittee.

## **PART 8: TMDL IMPLEMENTATION**

### **8.1 Stormwater Flow Restoration Plan (FRP)**

This Subpart 8.1 is only applicable to those regulated small MS4s that discharge to stormwater impaired waters.

- A. All permittees, subject to stormwater TMDL implementation requirements, submitted Flow Restoration Plans (FRPs), pursuant to the requirements of “General Permit 3-9014 for Stormwater Discharges from Small Municipal Separate Storm Sewer Systems” (2012).
- B. A FRP that has been approved by the Secretary shall be a part of a permittee’s SWMP.
- C. Schedule of Compliance. As outlined in the FRP, the permittee shall implement all measures necessary to achieve the flow restoration targets in the stormwater TMDLs no later than December 5, 2032. The permittee shall submit a report on an annual basis on the development and implementation of the FRP. The reports shall be submitted annually ~~one~~ every April 1<sup>st</sup>. The report shall address actions taken to implement all FRP components, including the extent of BMP implementation, an estimate of the extent of completion for remaining items, and an assessment of the ability to meet outstanding schedule items. The FRP report shall include a written statement, signed by a designer acceptable to the Secretary, that any BMP built or implemented within the preceding ~~twelve~~ six-month period was constructed in compliance with the approved plans.
- ~~D. Flow Monitoring. The permittee shall implement, or otherwise fund, a flow and precipitation monitoring program, subject to approval by the Secretary, in its respective stormwater impaired watershed(s). The permittee may cost share with other regulated dischargers in the operation and maintenance costs of the gage(s) for each watershed into which it discharges.~~
- E-D. Stream Corridor Protection. The 2012 MS4 GP required that permittees report on the legal authorities or strategies that the permittee had adopted to protect and regulate development in the stream corridors of stormwater impaired waters and develop a plan for enhanced stream corridor protection. The permittee shall report on any updates to the plan and provide a link to relevant municipal ordinances or regulations.

## 8.2 Lake Champlain Phosphorus Control Plan (PCP) Requirements

- A. The permittee shall develop and implement a Phosphorus Control Plan (PCP), for approval by the Secretary, for developed land consistent with the Lake Champlain TMDLs.
  - 1. At a minimum, the PCP shall be designed to achieve a level of phosphorus reduction equivalent to the percent reduction target for developed land in the associated TMDL lake segment(s) as applied to municipally-owned<sup>1</sup> developed lands. The percent

<sup>1</sup> The term municipally-owned used in Part 8.2 includes developed lands owned by non-traditional MS4s.

reduction targets are included in Appendix A of this permit (See Table 8 of the Phosphorus TMDLs for Vermont Segments of Lake Champlain, June 17, 2016).

2. The PCP may include the treatment of non-municipally-owned developed lands.
3. The PCP may include, but is not limited to, reductions calculated from:
  - a) Implementation of the Municipal Road Standards (in Subpart 8.3),
  - b) Street sweeping and catch basin cleaning practices,
  - c) Retrofits to municipally owned properties,
  - d) Implementation of stormwater treatment practice upgrades or retrofits to treat existing impervious after the adoption of the 2002 Vermont State Stormwater Manual,
  - e) Implementation of stormwater treatment practices after July 1, 2010, on developed lands that are not subject to the state's operational stormwater permit.
  - f) Implementation of municipal ordinances or regulations to address sub-jurisdictional impervious surfaces.
4. The following conditions apply when calculating phosphorus reductions for application towards the PCP targets:
  - a) Where a PCP includes phosphorus reductions from non-municipally-owned developed lands that are otherwise subject to an operational stormwater permit that requires an upgrade of the stormwater treatment system pursuant to the Department's regulations, ~~for including~~ 3-acre sites, the PCP shall be designed to achieve, in aggregate, a level of phosphorus reduction equivalent to the lake segment target as applied to municipally-owned developed land, and a ~~35~~50% reduction<sup>2</sup> from the non-municipally-owned developed lands. The MS4 shall assume full legal responsibility for the stormwater systems as per Part 7.1.
  - b) Where a PCP includes phosphorus reductions from non-municipally-owned developed lands that are subject to an operational stormwater permit that does not otherwise require an upgrade of the stormwater system pursuant to the Department's regulations, the management of stormwater from these lands is creditable towards the phosphorus reduction target. The MS4 shall assume full legal responsibility for the stormwater systems as per Part 7.1.
  - c) Where a PCP includes phosphorous reductions from non-municipally-owned developed lands that are not otherwise subject to an operational stormwater permit, the management of stormwater from these lands is creditable towards the phosphorus reduction target. The MS4 shall establish a maintenance agreement with the property owner(s) to ensure long-term maintenance of the BMP(s). The maintenance agreement can be conditions in a local permit, or part of a municipally-approved plan.

<sup>2</sup>The 50% reduction target may change dependent on the standards adopted in the forthcoming Stormwater Rule.

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e)d) Where a structural treatment practice or retrofit that receives runoff from municipally-owned developed lands and non-municipally-owned developed lands that are otherwise subject to an operational stormwater permit that requires an upgrade of the stormwater treatment system pursuant to the Department’s regulations, including 3-acre sites, the MS4 may receive partial phosphorous credit towards their PCP if the stormwater treatment practice is covered under an individual operational permit where the MS4 is a co-permittee. Phosphorus credit may be assigned to the PCP through the individual operational permit for treatment of municipally owned land and to non-municipally owned land to the extent that Subparts 8.2.A.4.a-c are met.

Phosphorus credit to a PCP shall not include reductions from non-municipally owned lands that are otherwise subject to an operational permit if the MS4 permittee has not taken “full legal responsibility” for that portion of the system.

e)e) The PCP may include a component to address a reduction of future growth discharges of phosphorus from developed lands. The future growth component shall track the amount of development, and the level of stormwater management achieved by local ordinances or regulations, on future development. Future development is any development after July 1, 2010 that is not subject to a state operational permit.

B. The Secretary will evaluate the phosphorus reductions achieved through all of the developed lands regulatory tools to assess compliance, per lake segment, with the Lake Champlain TMDL reduction targets. This evaluation may result in the regulation of additional impervious surface to meet the phosphorus reduction requirements.

C. The submissions of the Road Erosion Inventory (REI) Reassessment through the Implementation Table Portal Road Stormwater Implementation Table (Implementation Table) and the final PCP shall be placed on public notice pursuant to Subpart 3.8. Upon approval by the Secretary, ~~these the REIs~~ shall become a part of the permittee’s SWMP.

C-D. A PCP that has been approved by the Secretary shall be a part of a permittee’s SWMP.

D-E. Schedule of Compliance. The permittee shall complete implementation of the PCP no later than June 17, 2036.

The permittee shall, according to the following schedule:

April 1, 202 <del>3</del> <sup>4</sup> and every year thereafter	- Submit Annual PCP Report
<u>April 1, 2028</u>	- <u>Submit reassessed-REI Reassessment</u>

No later than June 17, 2036	- Complete full implementation of the approved PCP
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~~E.F.~~ Pursuant to the foregoing table, the permittee shall submit a report ~~annually by every~~ April 1<sup>st</sup> on the ~~development and~~ implementation of the PCP. The reports shall address actions taken to implement all PCP components, including:

1. Extent of implementation of the Municipal Roads Standards and any necessary updates to the Implementation Table,
2. Extent of street sweeping and catch basin cleaning,
3. Extent of stormwater BMP implementation,
4. An estimate of the extent of remaining items requiring completion,
5. An assessment of the ability to meet outstanding schedule items, and
6. A written statement, signed by a designer acceptable to the Secretary, that any structural BMP built or implemented within the preceding ~~twelve-six~~ month period was constructed in compliance with the approved plans.

### 8.3 Municipal Road Requirements

A municipality shall complete and submit for Agency approval a Road Erosion Inventory (REI) Reassessment. The updated REI reassessment shall be submitted to the Implementation Table Portal (ITP) by the deadline defined in Part 8.2.D. The ITP shall be updated annually as part of the Annual Report.

#### A. Road Erosion Inventory for all municipal hydrologically-connected road segments

~~Each traditional~~ municipality shall complete ~~a Road Erosion Inventory (an REI)~~ reassessment of all hydrologically-connected road segments within the municipality.

~~The REI is intended to verify which municipal road segments are hydrologically connected, and identify which of those segments meet the operational standards required under this permit. The municipal road segments are broken down into the following three categories: Gravel and Paved, Open Drainage Roads with Ditches, Paved, Closed Drainage Roads with Catch Basins, and Class 4 Roads. A detailed procedure for conducting the REI reassessments can be found on the MRGP website\*.~~

Municipalities are required to use the DEC-developed REI Survey 123 form application (app) to conduct the REI re-assessment and segment upgrades. The DEC-developed REI

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Survey 123 form app, Collector Map app, and web-based Reporter for the MRGP tool can be found on the MRGP website\*.<sup>3</sup>

Results of the REI shall will be recorded in the Implementation Table and submitted by April 1, 2020. The REI forms can be found Portal (ITP). Road erosion scores will visible immediately when the REI is submitted through the Survey 123 app. A link to the ITP can be found on the MRGP website\*.<sup>4</sup>

Other similar map layer apps are allowed if approved by DEC.

\*Links to the Road Erosion Inventory (REI) Survey 123 app, Implementation Table Portal (ITP), and associated materials can be found on the MRGP website at: <http://dec.vermont.gov/watershed/stormwater/permit-information-applications-fees/municipal-roads-program> <https://dec.vermont.gov/watershed/stormwater/permit-information-applications-fees/municipal-roads-program>.

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## B. Hydrologically Connected Road Segment Determination

The REI reassessment shall include all hydrologically-connected municipal road segments. This includes all hydrologically-connected road segments that appear on the ANR Atlas at the time that the REI is conducted-, as well as all road segments likely to discharge to waters or wetlands. All hydrologically-connected road segments depicted on the ANR Atlas shall be field visited and evaluated using the REI Form. Additionally, the municipality applicant may propose to add road segments from to its REI based on an evaluation of the following criteria:

For paved closed drainage roads with catch basins: the catch basin outlet pipe is within 500 feet of a water of the State or wetland.

For all other municipal roads:

- i. The municipal road segment is within 100 feet of a water of the State or wetland;
- ii. The municipal road segment bisects any water of the State or wetland, or a defined channel;
- iii. The municipal road segment is uphill from, and drains to, a municipal road that bisects a water of the State or wetland, and should be included in the REI to accurately capture the extent of the stormwater watershed.

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<sup>3</sup> Links to the Road Erosion Inventory (REI) Survey 123 app, Implementation Table Portal (ITP), and associated materials can be found on the MRGP website at: <https://dec.vermont.gov/watershed/stormwater/permit-information-applications-fees/municipal-roads-program>.

<sup>4</sup> Id.



~~If a road segment appears on the ANR Atlas and none of the above conditions are observed in the field, permittees/municipalities may propose to re-classify a segment as not hydrologically connected. Alternately, if none of the above conditions are observed in the field, but the segment is likely to discharge to waters or wetlands, a permittee shall propose to add this segment to the inventory following a field evaluation.~~

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~~The addition or removal of any road segments not appearing on the ANR Atlas must be documented as part of the REI, and justification for the removal or addition shall be included in the Implementation Table.~~

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~~The Secretary may determine at any time that a road segment not identified on the ANR Atlas is hydrologically connected, based on the criteria listed above, as well as other site-specific factors that indicate the likelihood of a discharge, including slope, soil type, proximity to waters, etc. When the Secretary determines that an unmapped road segment is hydrologically connected and informs the municipality of its determination, the permittee shall include the segment in its Implementation Table as part of the next annual report.~~

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### C. Road Erosion Scoring

~~The REI shall include a road scoring methodology can be found on the MRGP website at: <https://dec.vermont.gov/watershed/stormwater/permit-information-applications-fees/municipal-roads-program>.~~

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~~Road segments will be scored automatically upon submittal of REI data through the DEC Survey 123 app. Road erosion “score” for each hydrologically connected road segment scores will visible immediately in the Implementation Table Portal (ITP) when the REI is submitted through the Survey 123 app.~~

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~~All road segments shall will be scored as “Fully Meets,” “Partially Meets,” or “Does Not Meet” the standards listed in Subpart 8.3.C Part 6 of this permit. A detailed procedure for scoring road segments is provided on the REI form. Road segments that score “Partially Meets” or “Does Not Meet” shall be upgraded to meet standards according to the municipality’s implementation schedule. Road segments that score “Fully Meets” do not require upgrades, but shall be maintained to ensure that they continue to meet standards. The REI scores and explanation of those scores shall be entered into the Implementation Table.~~

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### D. Implementation Table Portal (ITP)

~~Municipalities shall record the REI scoring information in the Implementation Table. In the Implementation Table, the municipality shall prioritize road segments for upgrades to meet the standards in Subpart 8.3.C. The municipality shall submit the Implementation Table on April 1, 2020. The Table shall include the planned road upgrades for the first permit term period. The Implementation Table shall be the~~

~~municipality's working document to track planned road stormwater improvements and implementation. Municipalities shall update the table with the segments that were brought up to standards in the previous year and segments planned for upgrades in the following calendar year as part of the Annual Report (Subpart 8.2.E). The Implementation Table is available on the Stormwater Program's website: <http://dec.vermont.gov/watershed/stormwater/permit-information-applications-fees/municipal-roads-program> Municipalities shall record the REI scoring information in the ITP. The ITP is available on the MRGP website at: <https://dec.vermont.gov/watershed/stormwater/permit-information-applications-fees/municipal-roads-program>~~

#### E. Road Stormwater Management Standards

The standards listed below constitute the minimum required Best Management Practices (BMPs) applicable to all "hydrologically-connected" municipal roads.

It is the municipality's responsibility to maintain all practices after installation. Road segments not meeting these standards must implement the BMPs listed below in order to meet the required standards.

Refer to the VTrans Better Roads Manual for BMP sketches and descriptions at:

<https://vtrans.vermont.gov/sites/aot/files/highway/documents/ltf/Better%20Roads%20Manual%20Final%202019.pdf>

##### 1. Feasibility

Municipalities shall implement these standards to the extent feasible. ~~-In determining feasibility, municipalities may consider the following criteria: The implementation of a standard listed in SubpartPart 8.3.E of this general permit may be infeasible if it requires: does not require the acquisition of additional state or federal permits<sup>5</sup> or noncompliance with such permits, or noncompliance with any other state or federal law; or requires. The implementation of a standard does not require the condemnation of private property; impacts to significant environmental and historic resources, including historic stone walls, historic structures, ~~historic landscapes including structures registered on either the Vermont State Register of Historic Places or the National Register of Historic Places~~, or vegetation within 250 feet of a lakeshore; impacts to buried utilities; and excessive hydraulic hammering of ledge. Additionally, the implementation of any standard shall not be required if it would render the road unsafe for travel.~~

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<sup>5</sup>Self-verification under a non-reporting permit category does not constitute a permit for purposes of this section.

Municipalities shall document in the ~~Implementation Table, for approval by the Secretary, REI Reassessment~~ each instance where feasibility affects implementation of the standards.

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## 2. Standards for All Construction and Soil Disturbing Activities

Following construction and soil disturbance on a hydrologically-connected road segment, all bare or unvegetated areas shall be revegetated with seed and mulch, hydroseeded, or stone lined within 5 days of disturbance of soils, or, if precipitation is forecast, sooner. Projects authorized under the Construction General Permit (CGP 3-9020) or Individual Construction Stormwater Permit (INDC) shall instead comply with the terms and conditions of that permit.

### ~~1-3. Standards for Gravel and Paved Open Drainage Roads with Ditches (Not Class 4)~~ Baseline Standards for Gravel and Paved Roads with Ditches

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The following are the required standards for all ~~non-compliant~~ hydrologically-connected ~~gravel and paved municipal road segments with open drainage ditches, whether or not erosion is present. These roads. To maintain compliance with the requirements of this General Permit, municipalities shall apply these standards also~~ apply to all new construction, ~~general BMP maintenance~~, and significant upgrades of stormwater treatment practices. ~~-~~

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#### A. Roadway/Travel Lane Standards

##### 1. Roadway Crown

- a. Gravel roads shall be crowned, in or out-sloped:

Minimum: 1/4" per foot

Recommended: 1/4" – 1/2" per foot or 2% - 4%.

- b. Paved/ditched roads shall be crowned during new construction, redevelopment, or repaving where repaving involves removal of the existing paving.

Minimum: 1/8" per foot or 1%

Recommended: 1% - 2%.

##### 2. Shoulder ~~berms~~ Berms (also called Grader/Plow Berm/Windrows)

Shoulder berms shall be removed to allow precipitation to shed from the travel lane into the road drainage system. Roadway runoff shall flow in a distributed manner to the drainage ditch or filter area and there shall be no shoulder berms or evidence of a "secondary ditch". Shoulder berms may remain in place if the road crown is in-sloped or out-sloped to the opposite side of the road from berm side of road. The shoulder berm standard only applies to open drainage gravel roads ~~with drainage ditches~~.

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## ~~B.~~ Road Drainage Standards

### B.

Roadway runoff shall flow in a distributed manner to grass or a forested area by lowering road shoulders or conversely by elevating the travel lane level above the shoulder. Road shoulders shall be lower than travel lane elevation. If distributed flow is not possible, roadway runoff may enter a drainage ditch, stabilized as follows:

1. For roads with slopes between 0% and 5%:
  - a. At a minimum, grass-lined ditch, no bare soil. Geotextile and erosion matting may be used instead of seed and mulch. Alternatively, ditches may be stabilized using any of the practices identified for roads with slopes 5% or greater included in Sub-part B.2, below.
  - b. Recommended shape: trapezoidal or parabolic cross section with mild side slopes; two foot horizontal per one foot vertical or flatter and 2 foot ditch depth.
- ~~3.2.~~ For roads with slopes 5% or greater but less than 8%:
  - a. Stone-lined ditch: minimum 6"- 8" minus stone or the equivalent for new practice construction. Recommended 2-foot ditch depth from top of stone-lined bottom,
  - b. Grass-lined ditch with stone check dams<sup>4</sup>, or
  - c. Grass-lined ditch if installed with disconnection practices such as cross culverts and/or turnouts to reduce road stormwater runoff volume. There shall be at least two cross culverts or turnouts per segment disconnecting road stormwater out of the road drainage network into vegetated areas or spaced every 160'.
3. For roads with slopes of 8% or greater:
  - ~~—~~ Stone-lined ditch. Stone-lined ditches are not required if the toe of the ditch backslope is located outside of the town right-of-way.
  - a.
  - b. For slopes greater than or equal to 8% but less than 10%:
    - i. Minimum 6"-8" minus fractured stone or the equivalent for new construction.
    - ii. Recommended 2-foot ditch depth from top of stone-lined bottom.
  - c. For slopes greater than 10%:
    - i. Minimum 6-8" minus fractured stone. Recommended 12" minus fractured stone or the equivalent.
    - ii. Recommended 2-foot ditch depth from top of stone-lined bottom.
4. If appropriate, bioretention areas, level spreaders, armored shoulders, and sub-surface drainage practices may be substituted for the above road drainage standards.

## C. Drainage Outlets to Waters & Turnouts

Roadway drainage shall be disconnected from waterbodies and defined channels, since the latter can act as a stormwater conveyance, and roadway drainage shall flow in a distributed manner to a grass or forested filter area. Drainage outlets and conveyance areas shall be stabilized as follows:

1. Turn-outs - all drainage ditches shall be turned out to avoid direct outlet to surface waters, ~~whenever possible~~.
2. There must be adequate outlet protection at the end of the turnout, based upon slope ranges below. Turnout slopes shall be measured on the bank where the practice is located and not based on the road slope.
  - a. For turnouts with slopes of 0% or greater but less than 5%: stabilize with grass at minimum. Alternatively, stabilize using the practices identified in Sub-parts (b)-(c), below, ~~when possible~~.
  - b. For turnouts with slopes 5% or greater: stabilize with stone.
  - c. For slopes greater than 5% but less than 10%: minimum 6"-8" minus ~~fractured~~ stone or the equivalent for new construction.
  - d. For slopes greater than 10%: minimum: 6-8" minus ~~fractured~~ stone or equivalent for new construction. Recommended 12" minus fractured stone or the equivalent.

~~Standards if Rill or Gully Erosion is Present on Gravel and Paved Roads with Ditches~~

~~The following are the required standards for all gravel and paved roads with ditches where rill or gully erosion is present. These standards also apply to new construction and significant upgrades of stormwater treatment practices.~~

~~D. Municipal Cross Culverts and Intermittent Stream Culverts~~

- ~~(a)1. All municipal culverts- Culvert end treatment or headwall required for areas with slopes 5% or greater, if erosion is due to absence of these structures. End treatment or headwall is required for new construction on road segment slopes 5% or greater.~~
1. ~~All municipal culverts - Stabilize outlet such that there will be no scour erosion, if erosion is due to absence or inadequacy of outlet stabilization. Stone aprons or plunge pools required for new construction on road segment slopes 5% or greater.~~
2. ~~Cross culverts- Upgrade to 18" culvert (minimum), if erosion is due to inadequate size or absence of structure.~~
- ~~(b)3. In some instances, where intermittent streams enter the municipal road drainage network, and in these cases, the Secretary recommends requires culvert sizing based on in-field and mapping techniques described in the Intermittent Stream Crossing Sizing Guidance, found on the Stormwater Program's website, at: <http://dec.vermont.gov/watershed/stormwater/permit-information-applications-fees/municipal-roads-program>.~~
- ~~(e)4. Drainage culverts conveying perennial waters are subject to coverage under the DEC Stream Alteration General Permit. Municipal road standards MRGP Standards do not apply to culverts conveying perennial waters.~~

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~~(4)~~5. A French Drain (also called an Under Drain) or French Mattress (also called a Rock Sandwich) sub-surface drainage practice may be substituted for a cross culvert.

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E. Driveway Culverts within the municipal ROW

1. Culvert end treatment or headwall required for areas with road segment slopes of 5% or greater, if erosion is due to absence of these structures. End treatment or headwall is required for new construction.
2. Stabilize outlet such that there will be no scour erosion, if erosion is due to absence or inadequacy of outlet stabilization. Stone aprons or plunge pools required for new construction.
3. Upgrade to minimum 15” culvert, 18” recommended, if erosion is due to inadequate size or absence of structure.
4. Intermittent streams may enter the municipal road drainage network, and in these cases, the Secretary recommends-requires culvert sizing based on in-field and mapping techniques described on the Stormwater Program’s website: <http://dec.vermont.gov/watershed/stormwater/permit-information-applications-fees/municipal-roads-program>.
5. Driveway culverts conveying perennial waters are subject to coverage under the DEC Stream Alteration General Permit.

4. Standards for Paved Closed Drainage Roads with Catch Basins

Catch Basin Outlet Stabilization: All hydrologically-connected catch basin outlets shall be stabilized to eliminate all rill and gully erosion. Catch basin outlet stabilization practices include: stone-lined ditches ditch, stone aprons apron, check dams, and culvert header/headwalls headwall, and green stormwater infrastructure practices such as bioretention practices, when appropriate.

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5. Standards for Connected Class 4 Roads

Stabilize any areas of gully erosion identified in the REI with the practices described above or equivalent practices. Disconnection practices such as broad-based dips and water bars may replace cross culverts and turnouts.

**PART 9: MONITORING, RECORD KEEPING, AND REPORTING**

**9.1 Monitoring**

- A. When the permittee conducts monitoring of illicit discharges pursuant to Subpart 6.2.3, all records of monitoring information shall include:
  1. The date, exact place, and time of sampling or measurements;
  2. The names(s) of the individual(s) who performed the sampling or measurements;

3. The date(s) analyses were performed;
  4. The names of the individuals who performed the analyses;
  5. The analytical techniques or methods used; and
  6. The results of such analyses.
- B. The Agency may require the permittee on a case-by-case basis to undertake water quality monitoring at an individual stormwater discharge point if there is evidence of an unusual discharge or if it is necessary to verify the effectiveness of BMPs and other control measures in the permittee's SWMP.

### **9.2 Recordkeeping**

- A. The permittee shall retain all records required by this permit, including records of all monitoring information, copies of all reports required by this permit, a copy of its authorization and amended authorizations under this permit, and records of all data used to complete the application (NOI) for this permit, for a period of at least three years from the date of the sample, measurement, report, or application. This period may be extended by request of the Secretary at any time.
- B. The permittee shall submit its records to the Secretary when specifically asked to do so. It must retain a copy of the SWMP required by this permit, and a copy of the permit language, at a location accessible to the Secretary. The permittee shall make its records, including the NOI and SWMP, available to the public, if requested to do so in writing.

### **9.3 Annual Report**

The permittee shall submit an annual report that shall evaluate the permittee's compliance with the minimum control measures. The permittee shall submit its annual reports to the Department of Environmental Conservation, Watershed Management Division, Stormwater Management Program by April 1st each year, and upon receipt, the Department shall post each annual report on its website. FRP and PCP reports shall be included with the annual report. In addition to any FRP and PCP reporting requirements, the annual report shall include all annual reporting requirements under Parts 4, 5, and 6 of this permit as well as:

- A. The status of the permittee's compliance with permit conditions, an assessment of the appropriateness of the identified BMPs, progress towards achieving implementation of BMPs necessary to meet TMDL requirements, and progress towards achieving the goal for the six minimum measures of reducing the discharge of pollutants to the MEP and the measurable goals for each of the minimum control measures and TMDL implementation measures. If the permittee determines that an individual BMP is not meeting the measurable goals established for that BMP, the permittee shall amend its SWMP to address the ineffective BMP,
- B. Results of information collected and analyzed, if any, during the reporting period,

C. A summary of the stormwater activities to be undertaken during the next reporting cycle,

D. A change in any identified BMPs or measurable goals for any of the minimum measures, ~~and~~

D.E. A summary of inspections performed on previous permitted operational stormwater systems that the permittee has assumed full legal responsibility for, and

E.F. Notice that the permittee is relying on another entity to satisfy some of its permit obligations, if applicable.

## **PART 10: STANDARD PERMIT CONDITIONS**

### **10.1 Duty to Comply**

A permittee shall comply with all conditions of this permit and all discharges authorized by this permit shall be consistent with the terms and conditions of this permit. Any permit noncompliance, including the submission of false, incomplete, or inaccurate information, constitutes a violation of 10 V.S.A. Chapter 47 and the rules adopted thereunder and is grounds for enforcement action; for permit termination, suspension, revocation and reissuance, or amendment; or for denial of a permit renewal application.

### **10.2 Penalties for Violations of Permit Conditions**

Violations of the terms and conditions of this permit are subject to civil and criminal penalties pursuant to 10 V.S.A. §§ 1274 and 1275 and administrative enforcement pursuant to 10 V.S.A. § 1272 and Chapters 201 and 211, and EPA retains authority to enforce violations of the CWA pursuant to section 309 of the CWA. Penalties include:

A. 10 V.S.A. § 1275(a) provides that:

Any person who violates any provision of this subchapter or who fails, neglects or refuses to obey or comply with any order or the terms of any permit issued in accordance with this subchapter, shall be fined not more than \$25,000.00 or be imprisoned not more than six months, or both. Each violation may be a separate offense and, in the case of a continuing violation, each day's continuance may be deemed a separate offense.

B. 10 V.S.A. § 8010(c) provides that:

(1) A penalty of not more than \$42,500.00 may be assessed for each determination of violation. In addition, if the Secretary determines that a violation is continuing, the Secretary may assess a penalty of not more than \$17,000.00 for each day the violation continues. The maximum amount of penalty assessed under this subsection shall not exceed \$170,000.00.

(2) In addition to any penalty assessed under subdivision (1) above, the Secretary may also recapture economic benefit resulting from a violation up to the \$170,000.00 maximum allowed under subdivision (1).



C. 10 V.S.A. § 1275(b) provides that:

Any person who knowingly makes any false statement, representation or certification in any application, record, report, plan, or other document filed or required to be maintained under this subchapter, or by any permit, rule, regulation or order issued under this subchapter, or who falsifies, tampers with, or knowingly renders inaccurate any monitoring device or method required to be maintained under this subchapter or by any permit, rule, regulation, or order issued under this subchapter, shall upon conviction, be punished by a fine of not more than \$10,000.00 or by imprisonment for not more than six months, or by both.

### **10.3 Duty to Reapply**

If an authorized stormwater discharge is to continue after the expiration date of its authorization to discharge, the permittee shall reapply for coverage under this permit prior to the expiration date of the authorization to discharge.

If the permittee has submitted an administratively complete application for coverage prior to the expiration date of its existing authorization, the existing authorization shall not expire until the application has been finally determined by the Secretary, and, in case the application is denied or the terms of the new permit limited, until the last day for seeking review of the Secretary's decision or a later date fixed by order of the reviewing court.

### **10.4 Need to Halt or Reduce Activity Not a Defense**

It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

### **10.5 Duty to Mitigate**

A permittee must take all reasonable steps to minimize or prevent any discharge in violation of this permit that has a reasonable likelihood of adversely affecting human health or the environment.

### **10.6 Duty to Provide Information**

A permittee must provide any new information that is requested to determine compliance with this permit or other information.

### **10.7 Other Information**

If a permittee becomes aware that it has failed to submit any relevant facts in its NOI or submitted incorrect information in the NOI or in any other report to the Secretary, it must promptly submit such facts or information.

### **10.8 Signatory Requirements**

All NOIs, reports, certifications, or required forms or information submitted to the Agency, or that this permit requires be maintained shall be signed by a principal executive officer, ranking elected official, or other duly authorized representative consistent with 40 C.F.R. §122.22 and certified as follows:

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

### **10.9 Property Rights**

This permit conveys no vested rights or exclusive privileges. This permit conveys no title to land, no property rights of any sort, nor authorizes any injury to public or private property nor any invasion of personal rights. This permit does not authorize any infringement of federal, state, or local laws or regulations nor does it obviate the necessity of obtaining such additional permits as may be required.

### **10.10 Proper Operation and Maintenance**

A permittee shall at all times properly operate as efficiently as possible and maintain in good condition all facilities and systems of treatment and control (and related appurtenances) which are installed or used to achieve compliance with the conditions of this permit and with the conditions of the SWMP. 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 only when the operation is necessary to achieve compliance with the conditions of the permit.

The condition of the permitted facilities and systems shall at no time contribute to a violation of the terms, conditions, requirements, limitations, and restrictions specified by this permit.

### **10.11 Inspection and Entry**

A permittee shall allow the Secretary or his or her authorized representative (including an authorized contractor acting as a representative of the Secretary) or the Regional Administrator or his or her authorized representative at reasonable times, upon presentation of credentials, to:

- A. Enter the premises where a regulated facility or activity is located or conducted or where records must be kept under the conditions of this permit;
- B. Have access to and copy, any records that must be kept under the conditions of this permit;

- C. Inspect any facilities or equipment (including monitoring and control equipment), practices, or operations regulated or required under this permit; and
- D. Sample or monitor, for the purposes of assuring permit compliance or as otherwise authorized by the CWA, any substances or parameters at any location.

#### **10.12 Permit Actions**

Authorization under this permit may be modified, revoked and reissued, or terminated for cause, including: violation of any terms or conditions of the permit, obtaining a permit by misrepresentation or failure to disclose fully all relevant facts, and a change in any condition that requires either a temporary or permanent reduction or elimination of the permitted discharge. The filing of a request for a permit modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance does not stay any permit condition.

#### **10.13 Permit Transfers**

Any permittee may transfer the authorization to discharge by submitting a notice of transfer to the Secretary. The Secretary may require modification or revocation and reissuance of a permittee's coverage under this general permit to change the name of the permittee and incorporate such other requirements as may be necessary. The notice shall be submitted at least 30 days prior to the proposed date of transfer and shall include the following:

- A. The name and address of the present permittee;
- B. The name and address of the prospective permittee;
- C. The name and daytime telephone number of the individual currently responsible for overseeing the administration of the permittee's authorization and SWMP;
- D. The proposed date of transfer; and
- E. A statement signed by the prospective permittee, stating that:
  - 1. The conditions of the operations that contribute to, or affect, the discharge will not be materially different;
  - 2. The prospective permittee has read and is familiar with the terms of the permit and agrees to comply with all the terms and conditions of the permit; and
  - 3. The prospective permittee has adequate funding or other means to effect compliance with all the terms of the permit.

#### **10.14 Anticipated Noncompliance**

A permittee shall give advance notice to the Agency of any planned changes that may result in noncompliance with this permit.

### **10.15 State Environmental Laws**

- A. Nothing in this permit shall be construed to preclude the institution of any legal action or relieve a permittee from any responsibilities, liabilities, or penalties established pursuant to any applicable State law or regulation under authority preserved by Section 510 of the CWA.
- B. No condition of this permit releases a permittee from any responsibility or requirements under other environmental statutes or regulations.

### **10.16 Severability**

The provisions of this permit are severable, and if any provision of this permit or the application of any provision of this permit to any circumstance is held invalid, the application of such provision to other circumstances, and the remainder of this permit shall not be affected thereby.

### **10.17 Requiring an Individual Permit or an Alternative General Permit**

- A. Request by the Secretary. The Secretary may require any permittee authorized by this permit to apply for and obtain either an alternative NPDES general permit or an individual NPDES permit in accordance with Agency's General Permit Rules, Section 13.12 D. Any interested person may petition the Secretary to take action under this paragraph. Where the Secretary requires an application for an individual NPDES permit, the Secretary will notify the entity in writing that a permit application is required. This notification shall include a brief statement of the reasons for this decision, an application form, a statement setting a deadline for filing the application, and a statement that on the effective date of issuance or denial of the individual NPDES permit or the alternative general permit as it applies to the individual permittee, coverage under this general permit shall automatically terminate. Applications must be submitted to the Secretary. The Secretary may grant additional time to submit the application upon request of the applicant. If an individual NPDES permit application is not submitted in a timely manner as required by the Secretary under this paragraph, then the applicability of this permit is automatically terminated at the end of the day specified by the Secretary for application submittal.
- B. Request by permittee. Any permittee authorized by this permit may request to be excluded from the coverage of this permit by applying for an individual permit. In such cases, an individual application must be submitted to the Secretary with reasons supporting the request. The request may be granted by issuance of any individual permit or an alternative general permit if the reasons cited are adequate to support the request.

### **10.18 General Permit Termination**

When an individual NPDES permit is issued to a permittee that would otherwise be subject to this permit, or a permittee that would otherwise be subject to this permit is authorized to discharge under an alternative NPDES general permit, the applicability of this permit to the individual NPDES permittee is automatically terminated on the effective date of the individual

permit or the date of authorization of coverage under the alternative general permit, whichever the case may be.

#### **10.19 Limitation**

Nothing in this permit shall be construed as having relieved, modified, or in any manner affected a permittee's on-going obligation to comply with all other federal, state, and local statutes, regulations, and directives applicable to the permittee in the operation of the permittee's activities, nor does it relieve the permittee of the obligation to obtain all other necessary state, local, and federal permits.

### **PART 11: RIGHTS TO APPEAL TO THE ENVIRONMENTAL COURT**

~~Pursuant to 10 V.S.A. Chapter 220, any appeal of this permit must be filed with the clerk of the Environmental Court within 30 days of the date of final permit issuance. The notice of appeal must specify the parties taking the appeal and the statutory provision under which each party claims party status; must designate the act or decision appealed from; must name the Environmental Division; and must be signed by the appellant or the appellant's attorney. In addition, the appeal must give the address or location and description of the property, project, or facility with which the appeal is concerned and the name of the applicant or any permit involved in the appeal. The appellant must also serve a copy of the notice of appeal in accordance with Rule 5(b)(4)(B) of the Vermont Rules for Environmental Court Proceedings. For further information, see the Vermont Rules for Environmental Court Proceedings, available online at: [www.vermontjudiciary.org](http://www.vermontjudiciary.org). The address for the Environmental Division is: 32 Cherry St.; 2<sup>nd</sup> Floor, Suite 303; Burlington, VT 05401 (Tel. # 802-828-1660).~~

Pursuant to 10 V.S.A. Chapter 220, an aggrieved person shall not appeal this permit or an authorization under this permit unless the person submitted to the Secretary a written comment during the applicable public comment period or an oral comment at the public meeting conducted by the Secretary. Absent a determination of the Environmental judge to the contrary, an aggrieved person may only appeal issues related to the person's comments to the Secretary as prescribed by 10 V.S.A. § 8504(d)(2).

Pursuant to 10 V.S.A. Chapter 220 and the Vermont Rules for Environmental Court Proceedings, any appeal of this permit or an authorization made pursuant to this permit, except for an appeal of an authorization for a renewable energy plant, must be filed with the clerk of the Environmental Division of the Superior Court within 30 days of the date of the decision. The notice of appeal must specify the parties taking the appeal and the statutory provision under which each party claims party status; must designate the act or decision appealed from; must name the Environmental Division; and must be signed by the appellant or the appellant's attorney. In addition, the appeal must give the address or location and description of the property, project, or facility with which the appeal is concerned and the name of the applicant or any permit involved in the appeal. The appellant must also serve a copy of the notice of appeal in accordance with Rule 5(b)(4)(B) of the Vermont Rules for Environmental Court Proceedings. For further information, see the Vermont Rules for Environmental Court Proceedings.

If an authorization under this general permit relates to a renewable energy plant for which a certificate of public good is required under 30 V.S.A. § 248, any appeal of such authorization must be filed with the clerk of the Public Utility Commission within 30 days of the date of such authorization; the appellant must file with the clerk an original and six copies of its appeal. The appellant shall provide notice of the filing of an appeal in accordance with 10 V.S.A. § 8504(e)(2), and shall also serve a copy of the notice of appeal on the Vermont Public Service Department. For further information, see the Rules and General Orders of the Public Utility Commission. This appeal process does not apply to a facility that is subject to 10 V.S.A. § 1004 (dams before the Federal Energy Regulatory Commission), 10 V.S.A. § 1006 (certification of hydroelectric projects), or 10 V.S.A. Chapter 43 (dams)

## **PART 12: DEFINITIONS**

As used in this permit, the following terms shall have the specified meaning, unless a different meaning is clearly intended by the context. If a term is not defined, it shall have its common meaning.

“Agency” means the Vermont Agency of Natural Resources.

“Armored shoulder” means a structure that reinforces existing road shoulder integrity and embankment area stability by reducing Stormwater-related overbank erosion. To construct an armored shoulder, road surface material and base material are excavated and removed and replaced with 12” minus stone 1-3’ in depth and top-dressed with processed road surface material.

“Bioretention area” means a vegetated surface depression, often referred to as a “rain garden,” with amended soils used to capture, slow, infiltrate, and treat runoff from impervious surfaces, including rooftops, roads, parking lots and driveways. The goal of this practice is to infiltrate stormwater runoff. Properly designed and installed bioretention area provide volume control, and groundwater recharge. This practice should only be installed on slopes less than 5%.

“BMPs” or “best management practices” means a schedule of activities, prohibitions or practices, maintenance procedures, green infrastructure, and other management practices to prevent or reduce water pollution.

“Broad-based dip” means a drainage structure, similar to but wider than a waterbar, used on Class 4 roads where grades are less than or equal to 8 percent. These structures divert the surface water runoff into a filter area.

“Catch basin outlet” means the area that receives a stormwater discharge from a closed drainage system.

“Control measure” means any BMP or other method used to prevent or reduce the discharge of pollutants to waters.

“Conveyance area” means those areas located between the end of the road drainage and water resources.

“Culvert headwall” means stone structures that protect culverts from damage during grading, plowing and ditch cleaning, increase hydraulic efficiency, and prevent erosion around the culvert inlet and outlet. These structures may also be referred to as “headers” or “end treatments.” These structures may be installed using flat stone, rock riprap, or ditch stone around the culvert ends.

“CWA” or “Clean Water Act” means the federal Clean Water Act, as amended, 33 U.S.C. § 1251 *et seq.*

“Defined channel” means a drainage conveyance exhibiting channel dimensions such as width and depth. At culvert crossings, these characteristics are located both upstream and downstream of crossings.

“Designer” means any person whose qualifications are acceptable to the Secretary.

“Developed land” means impervious surface and associated open lands including lawns, golf courses, and other managed vegetated areas. Developed land does not include farms or forested areas and associated logging trails and logging roads.

“Discharge” means the placing, depositing, or emission of any wastes, directly or indirectly, into an injection well or into waters of the State.

“Driveway culvert” means a culvert under a driveway within municipal right-of-way.

“EPA” means the United States Environmental Protection Agency.

“Flow restoration targets” means the high and low flow targets as stated in the stormwater TMDLs for Allen Brook, Bartlett Brook, Centennial Brook, Englesby Brook, Indian Brook, Moon Brook, Morehouse Brook, Munroe Brook, Potash Brook, Rugg Brook, Stevens Brook, and Sunderland Brook.

“French drain/under drain” means a drainage practice installed under a road or road ditch to collect and transport subsurface waters. These buried perforated conduits are wrapped in geotextile fabric, which allows water to enter the conduit while keeping sediment out.

“French mattress/rock sandwich” means a structure under a road consisting of clean coarse rock wrapped in geotextile fabric through which water can pass freely. These structures are used in extremely wet areas, to support the road bed while allowing unrestricted water movement.

“Gully erosion” means a severe level of erosion. Gully erosion is equal to or greater than 12” in depth.

“Historic resource” means any building, structure, object, district, area, or site that is significant in the history, architecture, archaeology, or culture of this State, its communities, or the nation.

“Hydrologically-connected road segments” means a road segment, equal to 100 meters in length, where the Secretary has determined that road and drainage characteristics indicate a likelihood of discharges to surface waters or wetlands. This definition includes those road segments identified as hydrologically connected on the ANR Atlas. The Secretary has developed a hydrologically-connected road segment layer using GIS analysis of roadway distance to waters.

“Illicit connection” means any man-made conveyance connecting an illicit discharge directly to a municipal separate storm sewer system.

“Illicit discharge” means any discharge to a municipal separate storm sewer system that is not authorized by this permit or another discharge permit.

“Impervious surface” means those manmade surfaces, including paved and unpaved roads, parking areas, roofs, driveways, and walkways, from which precipitation runs off rather than infiltrates.

“Level spreader” means a rectangular or oval-shaped infiltration structure used to intercept and discharge water flow over a wide linear area. The construction of a level spreader involves the excavation and removal of soil and backfilling excavated area to the original grade with 3”-6” stone.

“MEP” or “maximum extent practicable” is the requirement set forth in 402(p)(3)(B)(iii) of the federal Clean Water Act (33 U.S.C. § 1342(p)(3)(B)(iii)) that permits for discharges from municipal storm sewers include controls to reduce the discharge of pollutants to the maximum extent practicable, including management practices, control techniques, and system, design and engineering methods, and such other provisions as the Secretary determines appropriate for the control of such pollutants. A discussion of MEP as it applies to small MS4s is found at 64 FR 68842, Dec. 8, 1999.

“MS4” or “municipal separate storm sewer system” means a conveyance or system of conveyances, including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, man-made channels, or storm drains: (i) Owned or operated by a State, city, town, borough, county, parish, district, association, or other public body (created by or pursuant to State law) having jurisdiction over disposal of sewage, industrial wastes, stormwater, or other wastes, including special districts under State law such as a sewer district, flood control district or drainage district, or similar entity, or a designated and approved management agency under Section 208 of the CWA that discharges to waters of the State; (ii) Designed or used for collecting or conveying stormwater; (iii) Which is not a combined sewer; and (iv) Which is not part of a Publicly Owned Treatment Works (POTW) as defined at 40 C.F.R. § 122.2.



“Municipal drainage/cross culvert” means culverts that convey road stormwater from one side of the road to another with no defined channel acting as a conveyance at the outlet. Outlets fan or sheet flow into grassed or forested areas and are not direct conveyances to waters.

“Municipal roads” means all town highways, classes 1-4, as defined under 19 V.S.A. Chapter 3, and their rights-of-way, as well as municipal stormwater infrastructure associated with town highways.

“Municipal stormwater infrastructure” means, for purposes of the definition of “municipal roads,” all stormwater conveyances and treatment and control systems, controlled by the municipality, that receive stormwater discharges from municipal roads.

“NOI” or “Notice of Intent” means the form required for authorization under this permit.

“Non-traditional MS4” means a subdivision of a state or local government that owns or operates an MS4, including the University of Vermont and the Burlington International Airport.

“Outfall” means a point source as defined by 40 CFR 122.2 at the point where a municipal separate storm sewer discharges to waters of the state.

“Plunge/splash pool” means a stone basin located at the outlet of drainage and intermittent stream culverts and used to consolidate and remove sediment from areas with concentrated flows and areas without adequate vegetated infiltration areas. Limited to areas with less than 10% slope.

“Pollutant” means dredged spoil, solid waste, incinerator residue, filter backwash, sewage, garbage, sewage sludge, munitions, chemical wastes, biological materials, radioactive materials (except those regulated under the Atomic Energy Act of 1954, as amended (42 U.S.C. § 2011 *et seq.*)), heat, wrecked or discarded equipment, rock, sand, cellar dirt, and industrial, municipal, and agricultural waste discharged into water. This term does not mean (A) “sewage from vessels” within the meaning of section 1322 of the Clean Water Act; or (B) water, gas, or other material which is injected into a well to facilitate production of oil or gas, or water derived in association with oil or gas production and disposed of in a well, if the well used either to facilitate production or for disposal purposes is approved by authority of the State in which the well is located, and if such State determines that such injection or disposal will not result in the degradation of ground or surface water resources.

“Pollutant of concern” means a pollutant which causes or contributes to a violation of a water quality standard, including a pollutant which is identified as causing an impairment in a State’s 303(d) list.

“Regulated small MS4” means an MS4 that, pursuant to 40 C.F.R. § 122.32(a)(1), is automatically designated because of its location within an [urban areas with a population of at](#)

~~least 50,000 urbanized area~~ or that is designated by the NPDES permitting authority for inclusion in the Phase II stormwater permitting program.

“Rill erosion” means a moderate level of erosion. Rill erosion is erosion rivulets greater than 1” but less than 12” in depth.

“Secondary ditch” means road travel lane or shoulder erosion due to the presence of a shoulder berm, prohibiting perpendicular flow of road stormwater off the road surface into the road drainage area.

“Secretary” means the Secretary of the Vermont Agency of Natural Resources.

“Sedimentation” means the deposition or accumulation of sediment. Sedimentation is often a symptom of erosion, and while rill and gully erosion are often concave in cross section, sedimentation is convex.

“Small MS4” or “small municipal separate storm sewer system” is defined at 40 C.F.R. § 122.26(b)(16) and refers to all separate storm sewers that are owned or operated by the United States, a State, city, town, borough, county, parish, district, association, or other public body (created by or pursuant to State law) having jurisdiction over disposal of sewage, industrial wastes, stormwater, or other wastes, including special districts under State law such as a sewer district, flood control district or drainage district, or similar entity, or a designated and approved management agency under Section 208 of the CWA that discharges to waters of the State, but is not defined as a large or medium municipal separate storm sewer system. This term includes systems similar to separate storm sewer systems in municipalities, such as systems at military bases, large hospital or prison complexes, and highways and other thoroughfares. The term does not include separate storm sewers in very discrete areas, such as individual buildings.

“Stone/rock apron” means a fan-shaped culvert outlet stabilization structure, designed to reduce water velocity, constructed of 12” minus stone. This structure should not be installed at perennial stream culvert outlets.

“Stormwater” or “stormwater runoff” means precipitation and snowmelt that does not infiltrate into the soil, including material dissolved or suspended in it, but does not include discharges from undisturbed natural terrain or wastes from combined sewer overflows.

“SWMP” or “Stormwater Management Program” means the comprehensive program to manage the quality of stormwater discharged from the municipal separate storm sewer system.

“TMDL” or “total maximum daily load” means the calculations and plan for meeting water quality standards approved by the EPA and prepared pursuant to [33 U.S.C. § 1313\(d\)](#) and federal regulations adopted under that law.

“Traditional municipality” means a municipality for which all or a portion of the municipality has been designated as a regulated small MS4, excluding non-traditional MS4s.

“Turn-out” means the extension of a drainage ditch that redirects or ‘turns away’ water into a vegetated buffer and disperses runoff before entering a water resource.

“Waters” and “waters of the State” include all rivers, streams, creeks, brooks, reservoirs, ponds, lakes, springs, and bodies of surface waters, artificial or natural, which are contained within, flow through or border upon the State or any portion of it. “Waters of the State” include all “waters of the United States” as defined at 40 C.F.R. § 122.2.

“Waterbar” means a type of berm or open culvert drainage structure constructed across the width of a Class 4 road that diverts the surface water runoff from ditches and road into a filter area.

“Wetlands” means those areas of the State that are inundated by surface or groundwater with a frequency sufficient to support significant vegetation or aquatic life that depend on saturated or seasonally saturated soil conditions for growth and reproduction. Such areas include marshes, swamps, sloughs, potholes, fens, river and lake overflows, mud flats, bogs, and ponds, but excluding such areas as grow food or crops in connection with farming activities.

**PART 13: EFFECTIVE DATE AND TERM OF GENERAL PERMIT**

This permit shall become effective upon signing and shall remain in effect for five years from the date of signing.

Signed at Montpelier, Vermont this ~~Day 27th day of Month July, 2023~~<sup>18</sup>.

~~John Beling~~<sup>Emily Boedecker</sup>, Commissioner  
Department of Environmental Conservation

By \_\_\_\_\_  
Peter LaFlamme, Director  
Watershed Management Division

**APPENDIX A – Lake Champlain TMDL Required Reductions per Lake Segment**

<b>Lake Segment</b>	<b>Developed Lands % Reduction</b>	<b>MS4s within Lake Segment</b>
01. South Lake B	21.1%	---
02. South Lake A	18.1%	---
03. Port Henry	7.6%	---
04. Otter Creek	15.0%	Town of Rutland
05. Main Lake	20.2%	Burlington, Burlington International Airport, Colchester, Essex, Essex Junction, Milton, Shelburne, South Burlington, University of Vermont, Williston, Winooski
06. Shelburne Bay	20.2%	Burlington, Burlington International Airport, Shelburne, South Burlington, University of Vermont
07. Burlington Bay	24.2%	Burlington, South Burlington, University of Vermont
09. Malletts Bay	20.5%	Colchester, Essex, Essex Junction, Milton
10. Northeast Arm	7.2%	<u>Milton</u> , Town of St. Albans
11. St. Albans Bay	21.7%	City of St. Albans, Town of St. Albans
12. Missisquoi Bay	34.2%	<del>Milton</del> , Town of St. Albans
13. Isle La Motte	8.9%	---

## APPENDIX B – Check Dam Installation Specifications

- Height: No greater than 2 feet. Center of dam should be 9 inches lower than the side elevation
- Side slopes: 2:1 or flatter
- Stone size: Use a mixture of 2 to 9 inch stone
- Width: Dams should span the width of the channel and extend up the sides of the banks
- Spacing: Space the dams so that the bottom (toe) of the upstream dam is at the elevation of the top (crest) of the downstream dam. This spacing is equal to the height of the check dam divided by the channel slope.

$$\text{Spacing (in feet)} = \frac{\text{Height of check dam (in feet)}}{\text{Slope in channel (ft/ft)}}$$

- Maintenance: Remove sediment accumulated behind the dam as needed to allow channel to drain through the stone check dam and prevent large flows from carrying sediment over the dam. If significant erosion occurs between check dams, a liner of stone should be installed.

