

# MS4 GENERAL PERMIT

## An Outline



# Municipal Separate Storm Sewer System

*from 40 CFR 122.26(b)(8)*

**A conveyance or system of conveyances**

- i. Owned or operated by public body
- ii. Designed or used for collecting/conveying stormwater
- iii. NOT a combined sewer
- iv. NOT part of Publicly Owned Treatment Works



# Storm Sewer System

Typically, stormwater is untreated and discharges directly into surface waters





# Background

Dense populations require measures be taken to ensure water quality, to...

- ▣ Prevent outbreaks of disease
  - 1800s: cholera, typhoid fever
  
- ▣ Maintain healthy ecosystems & economy
  - 1969: 26 million (fish) killed in Lake Thonotosassa, Florida, due to discharges from four food processing plants <https://www.pbs.org/now/science/cleanwater.html>



# **NOTICE.**

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## **PREVENTIVES OF**

# **CHOLERA!**

Published by order of the Sanitary Commission, under the sanction of the Medical Council.

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### **BE TEMPERATE IN EATING & DRINKING!**

*Avoid Raw Vegetables and Unripe Fruit.*

Abstain from **COLD WATER**, when heated, and above all from *Ardent Spirits*, and if habit have rendered them indispensable, take much less than usual.

[https://en.wikipedia.org/wiki/Cholera\\_outbreaks\\_and\\_pandemics](https://en.wikipedia.org/wiki/Cholera_outbreaks_and_pandemics)



# Federal Action

- ▣ 1970 - EPA is established
- ▣ 1972 - Clean Water Act (CWA)
  - National Pollutant Discharge Elimination System (NPDES)
    - ▣ Point Source Discharge via NPDES permit only

*“restore and maintain the chemical, physical, and biological integrity of our nation's waters” – CWA 1972*



# Impervious Surfaces

Runoff from stormwater impacts hydrology, and carries contaminants including

- ▣ Sediment
- ▣ Chloride (road salt)
- ▣ Suspended solids, oil & grease, metals
- ▣ Nutrients (phosphorous & nitrogen)
- ▣ Bacteria & pathogens

*EPA 1994 – Polluted runoff nation's top threat to water quality*

Arnold & Gibbons 1996



# Stormwater Program

## CWA Amendment (1987)

Stormwater addressed in two phases

### Phase I (1990)

Large & Medium MS4s

- ▣ Cities of 100,000 +
- ▣ Construction on 5+ acres
- ▣ Certain industrial activities

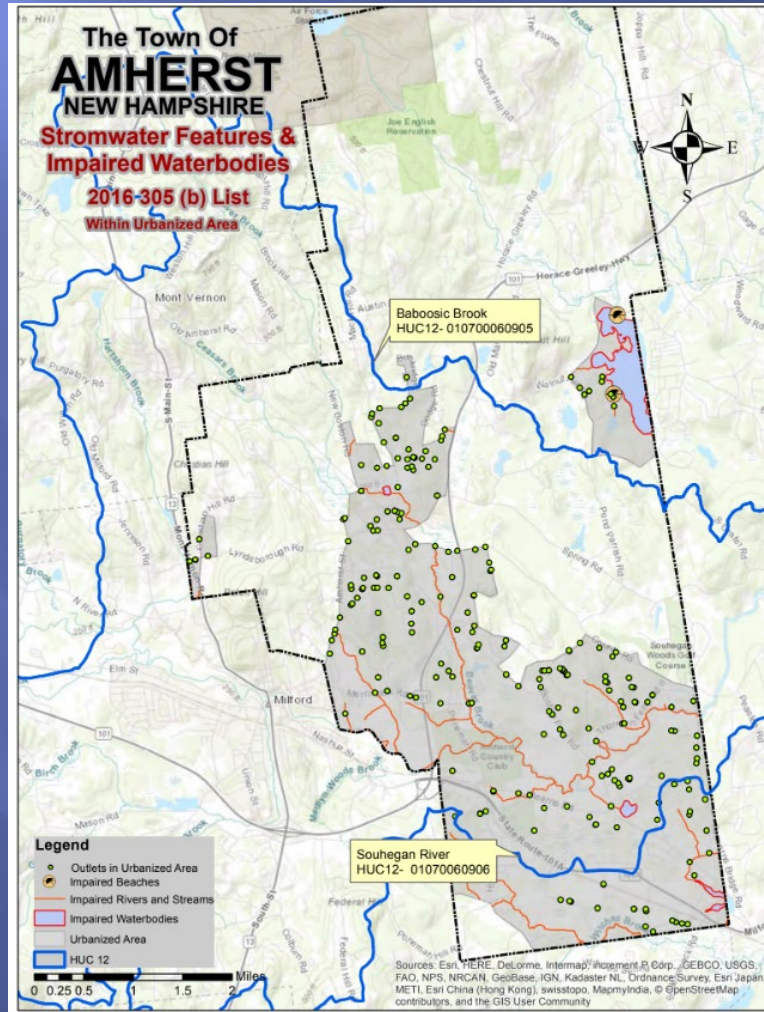




# Phase II (2003)

## Small MS4s in Urbanized Areas

An “urbanized area” (UA) designation is based on the latest decennial Census



# MS4 General Permit

## Conditions

*pursuant to Clean Water Act (CWA) section 402(p)(3)(iii)*

Ensure that pollutants from the MS4 are

- ▣ reduced to the Maximum Extent Practicable (MEP)
- ▣ Protect water quality
- ▣ Satisfy appropriate requirements of the CWA



# Dates

## New Hampshire

- ▣ Effective July 1, 2018
- ▣ Expires June 30, 2023

*On May 14, 2019 Amherst officially received permission from the EPA to discharge stormwater from the MS4 into waters of the United States, the first in a series of steps needed for full compliance*



# Requirements

*Town of Amherst must*

Develop, implement and enforce a program to reduce the discharge of pollutants from the MS4 to the maximum extent practicable

*Many of the components have been in place since 2003*





# Requirements

## Storm Water Management Program (SWMP)

A written document used to describe activities and measures implemented to meet the terms of the permit



# MCMs

## Minimum Control Measures

- 1) Public Education & Outreach
- 2) Public Involvement & Participation
- 3) Illicit Discharge & Detection Elimination Program
- 4) Construction Site Stormwater Runoff Control
- 5) Post Construction Stormwater Management
- 6) Good House Keeping & Pollution Prevention for Municipal Operations



# MCM #1

## Public Education & Outreach

**Objective:** Increase knowledge & change behavior to reduce stormwater pollutants

Includes...

- ▣ Distributing focused educational messages to four audiences
  - Residents
  - Businesses, institutions (private colleges, private schools, hospitals) and Commercial facilities
  - Developers (construction)
  - Industrial facilities



# MCM #1

## Example

*Audience:* Residents

*Topic:* Bacteria & Pathogens in stormwater

*Materials:* Brochures concerning

- ▣ Proper Management of Pet Waste
- ▣ Septic System Maintenance





# MCM #2

## Public Involvement & Participation

**Objective:** Provide opportunities to engage public to participate in the review and implementation of the SWMP

For Example...

*A Town Memo explaining the permit and encouraging residents to contact the Community Development Department for questions and information*



# MCM #3

## Illicit Discharge Detection & Elimination (IDDE)

**Objective:** Find & eliminate sources of non-stormwater discharges to the MS4, and implement procedures to prevent them

Includes...

- ▣ A written IDDE program
- ▣ Map of entire MS4



# MCM #4

## Construction Site Stormwater Runoff Control

**Objective:** Minimize or eliminate erosion & maintain sediment on construction sites so that it is not discharged through the MS4

Includes...

- ▣ An ordinance requiring sediment control at sites
- ▣ Written procedures for inspections & site plan review
- ▣ Requirements for operators to implement



# MCM #5

## Stormwater Management In New Development and Redevelopment

**Objective:** Minimize water quality impact from new development and reduce the impact of runoff from a redeveloped site

Includes...

- ▣ Stormwater Pollution Prevention Plan (SWPPP)
  - Required for maintenance garages, public works yards, transfer stations, other waste handling facilities where pollutants are exposed to stormwater





# MCM #6

## Good Housekeeping & Pollution Prevention for Municipal Operations

**Objective:** Implementation of a program designed to prevent or reduce pollutant runoff and protect water quality from all permittee operations

Including...

- ▣ Parks & open space
- ▣ Buildings & facilities
- ▣ Vehicles & Equipment

