Overview of the Massachusetts Stormwater MS4 Permit

North Suburan Planning Council
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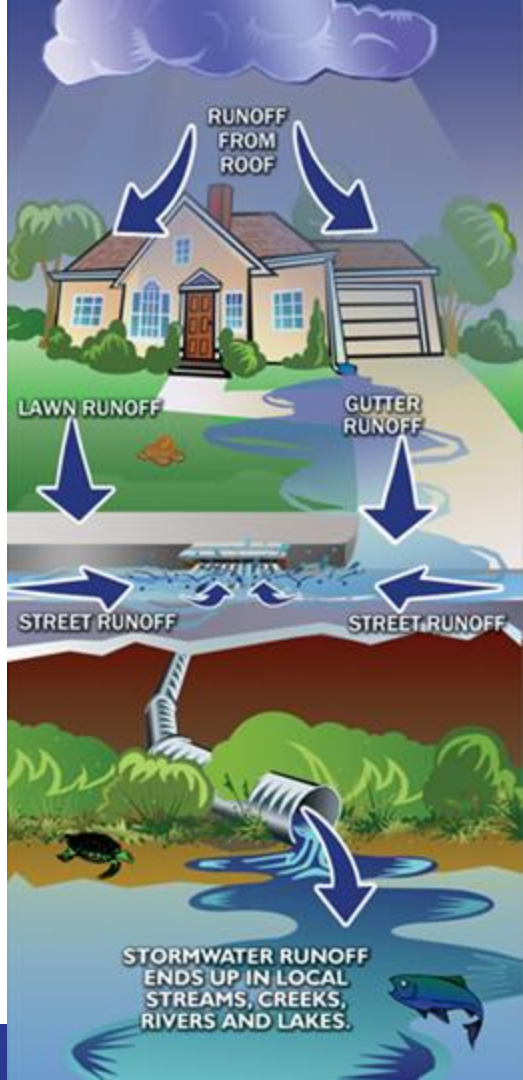
Overview of Stormwater

- Runoff from impervious surfaces: roadways, parking lots, roofs

- Washes off and conveys pollutants:
  - Nutrients (Phophorus, Nitrogen)
  - Bacteria and Pathogens
  - Sediments
  - Oils and Greases
  - Heavy Metals, Chlorides, Sodium

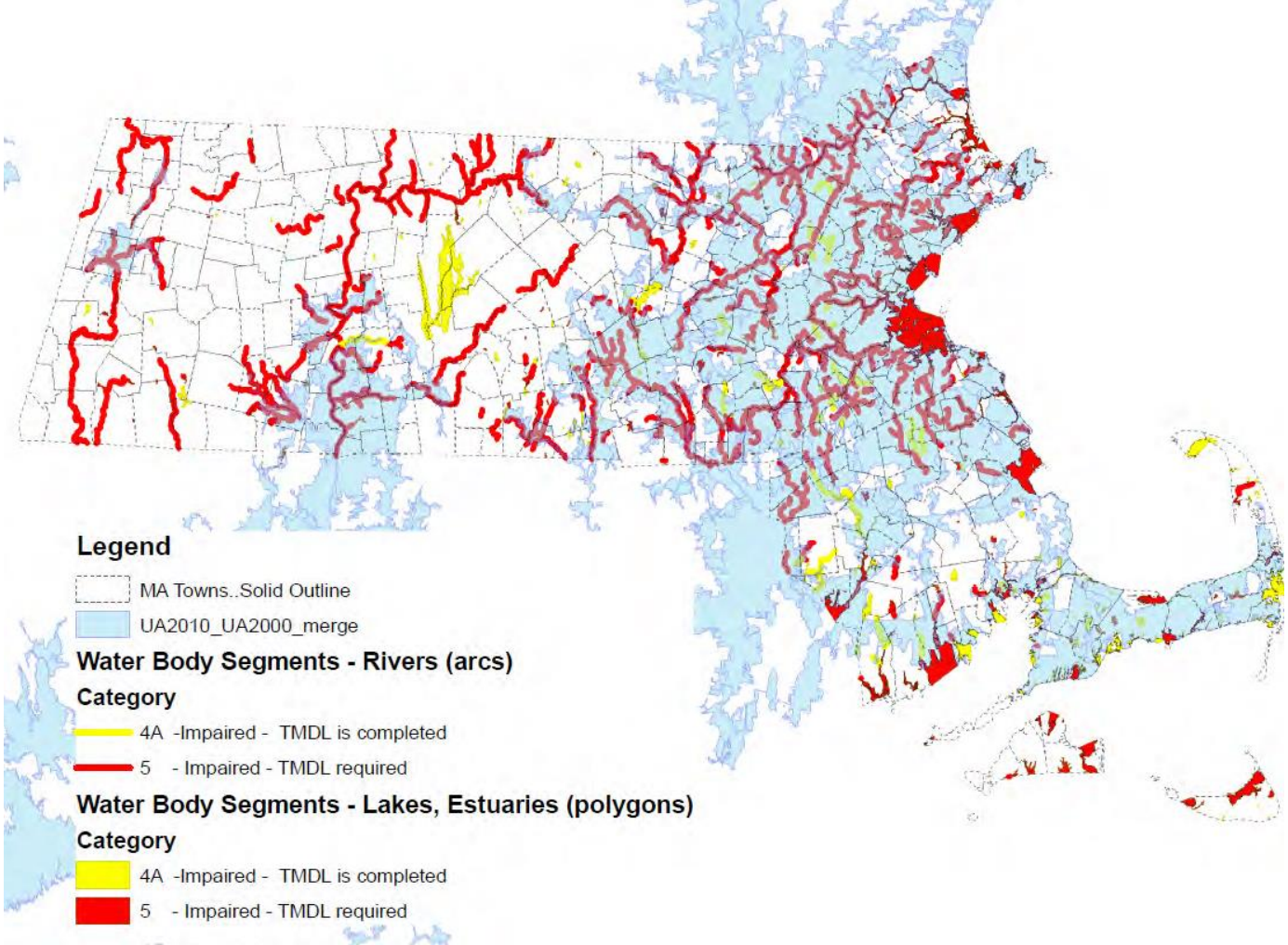
- Stormwater infrastructure is designed to *convey and discharge* to local water bodies with *little or no treatment*



One Resource Many Uses

Stormwater & Water Quality

STORMWATER DISCHARGES ARE CAUSING OR CONTRIBUTING TO **55% OF THE WATER QUALITY IMPAIRMENTS** IN MASSACHUSETTS' ASSESSED WATERS

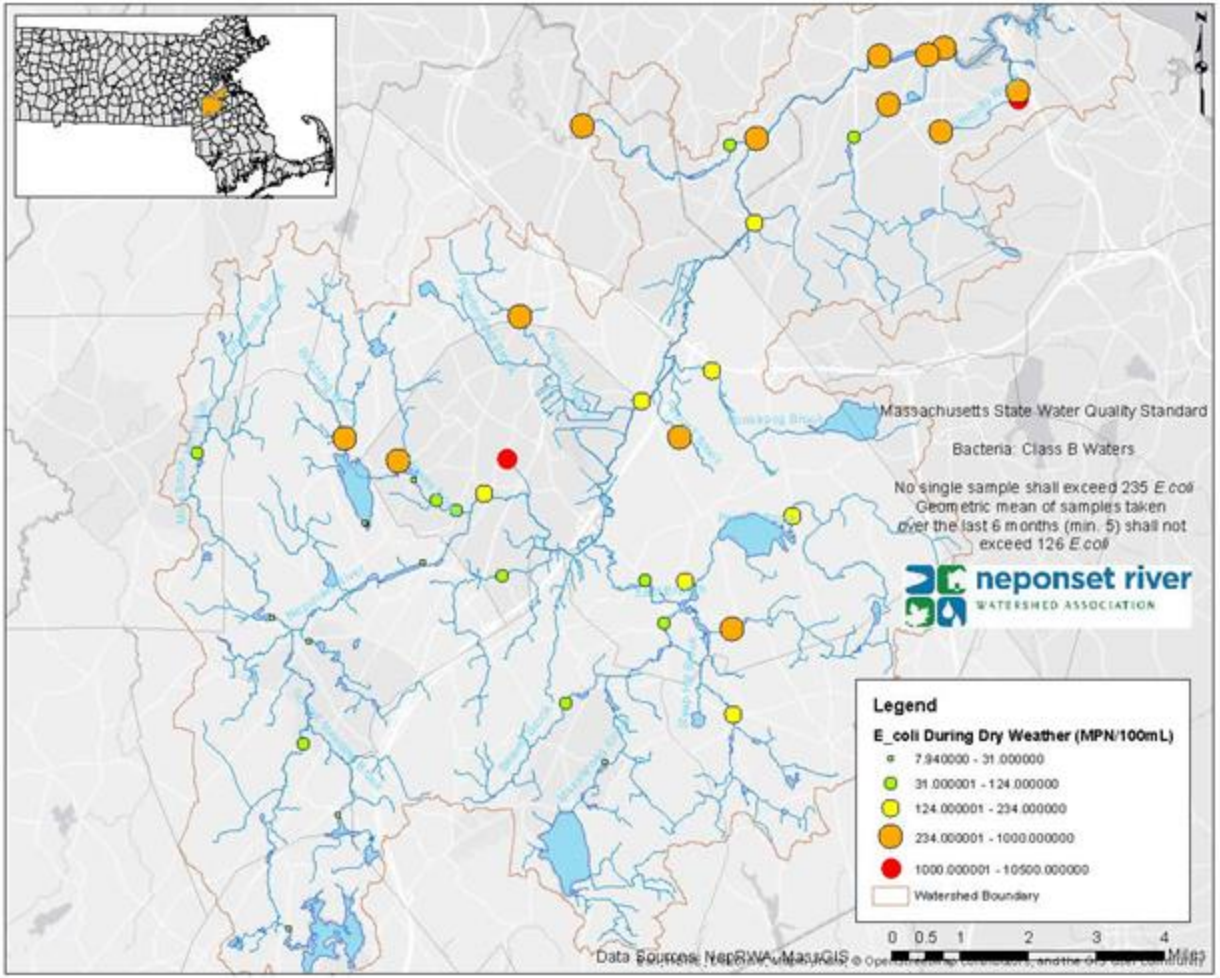


Example:
Stormwater Impacts on Water Quality, Neponset River

Dry Weather

(<0.1 inches of rain previous 72 hours)

2015 data

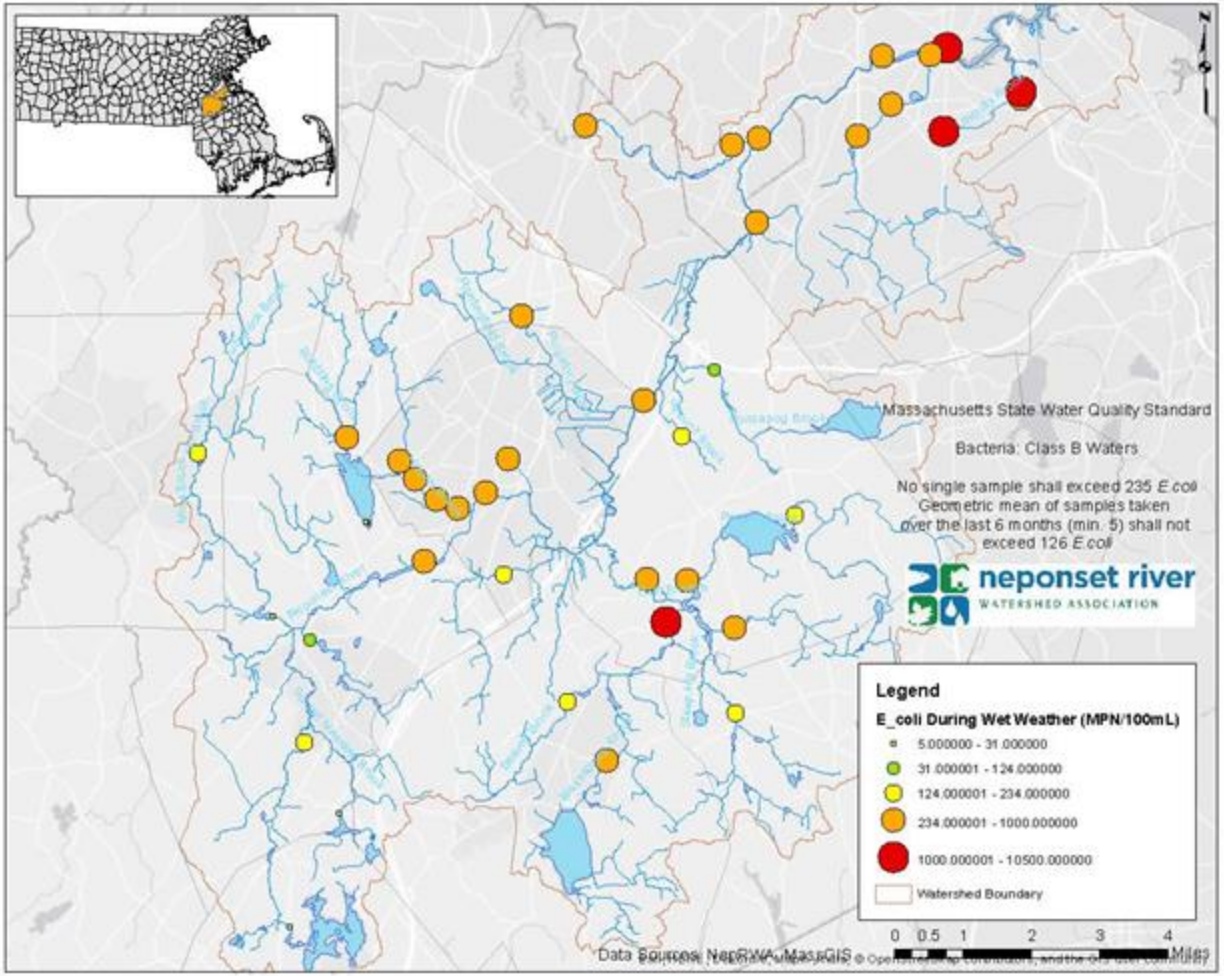


Example:
Stormwater Impacts on Water Quality, Neponset River

Wet Weather

(0.1 inches of rain previous 24 hours)

2015 data

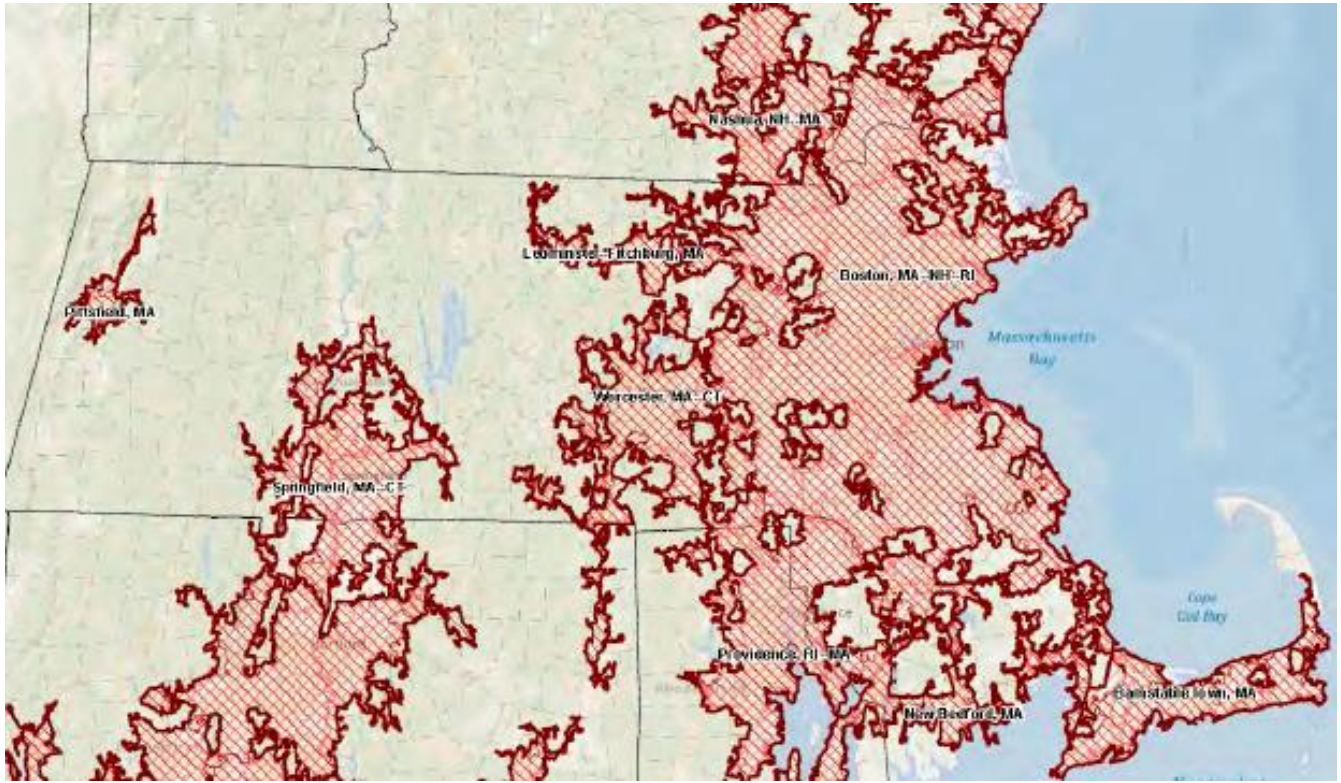


What Is an MS4 Permit?

MS4 = Municipal Separate Storm Sewer System
Jointly issued by EPA and DEP under the **FederalClean Water Act**
First Massachusetts permit was issued in 2003
New permit was issued April 2016
Schedule for permit implementation:

ORIGINAL EFFECTIVE DATE	**JULY 1, 2017**
1-YEAR DELAY, NEW EFFECTIVE DATE	**JULY 1, 2018**
NOTICE OF INTENT	**SEPT 29, 2018**
STORMWATER MANAGEMENT PLAN	**JULY 1, 2019**

MS4 Permit Coverage in Massachusetts



Overview of the MS4 Permit for Massachusetts

- Builds on requirements of 2003 permit
- The same 6 “Minimum Control Measures,” but with more detailed and rigorous requirements
- Extensive reporting places a premium on data collection and sharing among local departments
- Local requirements are affected by TMDL’s and Impaired Waters (Phosphorus, Nitrogen, Bacteria)

Overview the MS4 Permit for Massachusetts

Six Minimum Control Measures:

1. Public Education and Outreach
2. Public Participation
3. Illicit Discharge Detection and Elimination (IDDE)
4. Construction Site Runoff Control
5. New Development and Redevelopment Runoff Control
6. Good Houskeeping

1. Public Education and Outreach

- Four audiences get two messages over 5 years
  - Residents
  - Business/Commercial
  - Industry
  - Developers
- Define goals, audiences/messages, and evaluation
- Evaluate annually and modify accordingly
- Additional messages for TMDL's and Impaired waters

2. Public Participation

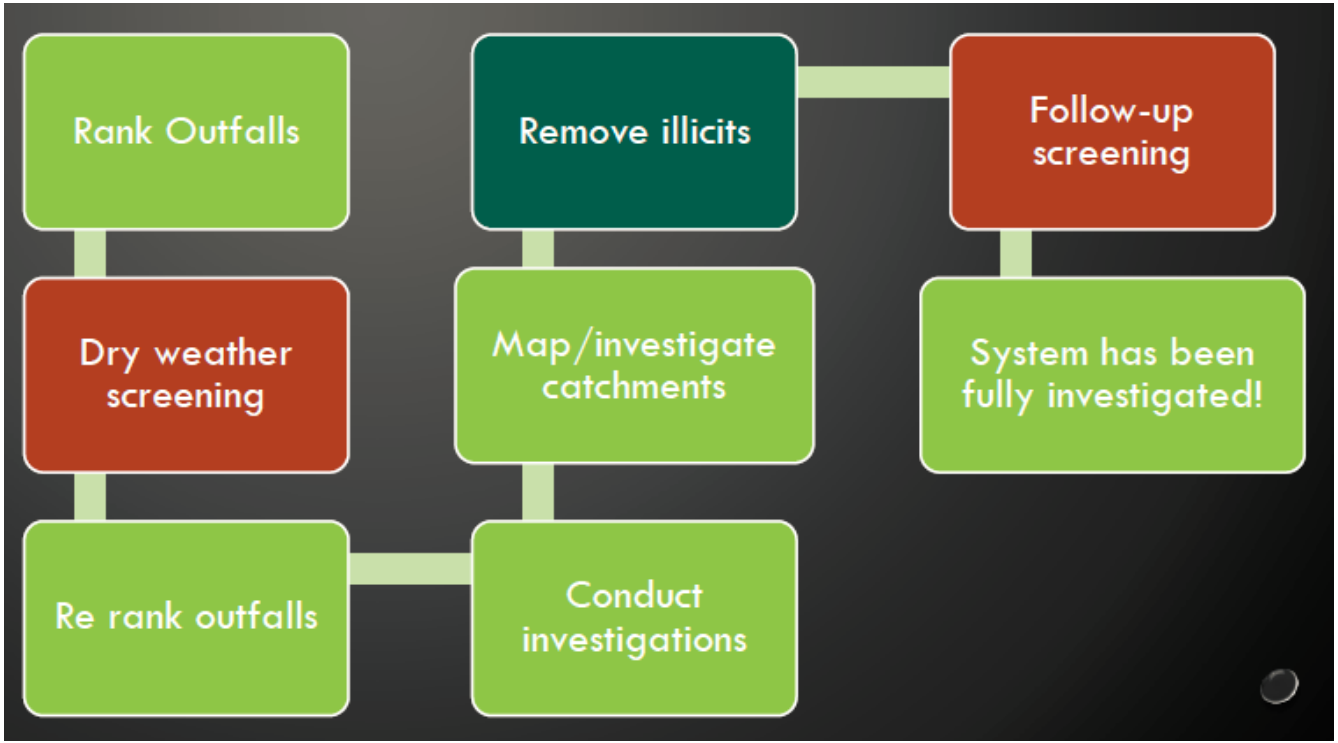
Make Storm Water Management Plan and annual reports available on town website

Provide an annual “opportunity to participate in the review and implementation” of the SWMP

3. Illicit Discharge Detection and Elimination

- Bylaw prohibiting illicit discharges
- Stormwater system map and catchment delineations
- Written IDDE plan and recordkeeping
- Assess and rank outfalls/catchments
- Dry weather outfall inspection / sampling
- Catchment investigations|
  Manhole inspection / sampling
  Wet weather outfall sampling
  Isolate and repair problems

3. Illicit Discharge Detection and Elimination (IDDE)



4. Construction Site Runoff Control

- Bylaw requiring erosion control BMPs
- Procedures for site inspection and enforcement
- Report on inspections and enforcement action annually

5. New Development and Redevelopment

- Update stormwater bylaw to reflect the **“1 inch rule,”** phosphorous optimization and off-site provisions
- Evaluate and report on changes to other bylaws (zoning, subdivision, etc)
- Inventory and rank 5 retrofit opportunities on town land
- Install at least one demonstration retrofit

Post Construction Runoff Control (the 1” rule)

NEW DEVELOPMENT:

• RETAIN THE FIRST **1 INCH** OF RUNOFF, **OR** DESIGN TREATMENT SUCH THAT:

90% OF TOTAL SUSPENDED SOLIDS (TSS) AND
60% OF TOTAL PHOSPHORUS
IS REMOVED PRIOR TO DISCHARGE

REDEVELOPMENT:

RETAIN THE FIRST **0.8 INCH** OF RUNOFF, **OR** DESIGN TREATMENT SUCH THAT:

80% OF TOTAL SUSPENDED SOLIDS (TSS) AND
50% OF TOTAL PHOSPHORUS
IS REMOVED PRIOR TO DISCHARGE

OFFSITE MITIGATION IS ALLOWED

6. Good Housekeeping

- “Optimize” catch basin cleaning (<50% full); report number and total volume
- Sweep twice annually; report miles and volume
- Implement “Storm Water Pollution Prevention Plan” for DPW yard and other sites for spill control, minimizing pollution, training, and inspections
- Inventory parks, buildings, parking; create O&M plan; train employees

Estimated Compliance Costs

- MS4 Costs are not tracked under a single line item in typical municipal budgets
- Costs can be distributed across multiple departments (eg, DPW, Planning, Conservation)
- Costs heavily depend on existing level of effort
- Few costs could potentially be covered by grants

Annual Costs as Estimated by Canton DPW

Category	Pre-MS4	Expected MS4
Operations and Maintenance	360,000	530,000
Regulatory Compliance	13,000	44,000
GIS Data Collection and Management	13,500	56,000
Administrative	19,000	24,000
Engineering and Master Planning	121,500	208,000*
Capital Improvement Projects	240,000	518,000**
Total Program Cost	**$767,000**	**$1,380,000**

*Master Planning costs are expected for 5 years and may or may not continue.

**Capital costs may vary from year to year, but this is an expected average

Annual Costs as Estimated by Dedham DPW

Category	**Estimated Annual Increase**
Administration	83,553
Regulation/Enforcement	13,500
Engineering & Master Planning	366,795
Operations and Implementation	575,113
Monitoring	17,650
Total Program Cost	**$1,056,661**

What is a Stormwater Management Fee?

Fee-based revenue equivilant to water & sewer

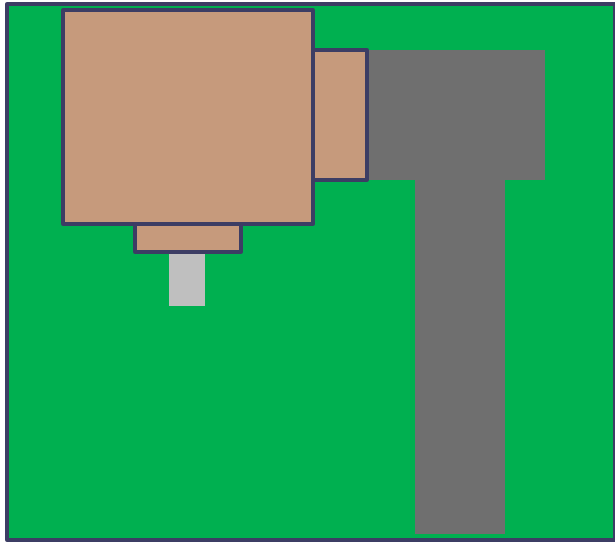
Allocates cost based on usage:

- Water fee: based on drinking water use
- Sewer fee: based on sewage volume
- Stormwater fee: based on stormwater volume as measured by impervious surface

What Counts as Impervious Surface?

Paved or built areas that prevent rainwater from soaking into the ground

Includes driveways, buildings, parking lots, patios, etc



Advantages of a Stormwater Fee

Predictable

Consistent revenue to meet ongoing O&M Obligations and Capital Improvements

Transparent

Revenues are used only for stormwater purposes; Can be used for some or all stormwater costs

Equitable

Allocates cost in proportion to impervious surface; applies to all properties, including tax exempt

Credits *may incentivize reduction of impervious cover*

Credit: MacNeil and Macintosh

A Proven Approach

Specifically authorized by MA law
Ch. 83 Sec.16 and Ch. 40 Sec. 1A

Works well for water & sewer

Used by more than 1,400
jurisdictions in 39 states

Used by 10+ communities in MA

Reading one of the first to adopt a
stormwater fee, in 2006

Image: Western Kentucky University

Example: Reading, MA

Uses an enterprise fund

Single-family and two-family properties pay a $40 annual fee

All other properties pay $40/year for each “Equivilant Residential Unit” (3,210 SF of impervious)

Nonprofit and other tax exempt properties pay the fee

Fee may be reduced up to 50% where infiltration practices are in place and verified by the Town

Stormwater Financing – MAPC Toolkit

1. Define needs: Stormwater & MS4 costs
2. Costs to be covered by fee vs. general fund
3. Conduct impervious area analysis by parcel
4. Determine fee structure for residential and other parcel categories
5. Community outreach and internal “inreach”
6. Consider fee credits for on-site recharge

Stormwater Financing/Utility Starter Kit

Funding provided by the U.S. Environmental Protection Agency and the U.S. Department of Housing and Urban Development Partnership for Sustainable Communities.

Prepared for:

The 101 Cities and Towns of Greater Boston

March 23, 2014

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MAPC

Public Education Resources

MAPC Stormwater Resource Library

www.mapc.org/stormwater-resource-library

Think Blue Massachusetts (Statewide campaign)

www.thinkbluemassachusetts.org

Stormwater Resource Library

This library supports municipal staff in developing municipal stormwater outreach and education initiatives. Examples in the library can give municipalities ideas for how they might engage different audiences in stormwater education. Templates in the library can be downloaded, modified and used in stormwater education campaigns.

FILTER BY RESET

Search

Target Audience

File Types

Stormwater Media Category

Author Organization

"Keep Gutters Clean for Those Downstream" School Poster

Author Organization: San Bernardino County Stormwater Program
File Type: pdf
Media Category: Educational Tool, Print Distribution
Target Audience: Kids

Download Resource or Link

Stormwater Activity Book

Author Organization: San Bernardino County Stormwater Program
File Type: pdf

THINK BLUE MASSACHUSETTS

Home About Stormwater 101 Residents Businesses Developers Industrial Facilities MS4 Communities

Welcome to Think Blue Massachusetts

Think Blue Massachusetts is a statewide educational campaign to help residents and businesses do their part to reduce polluted runoff and keep our state's lakes, rivers, and streams clean and healthy.

About Us