



# EAST LONGMEADOW STORMWATER PROGRAM

**Town Council Meeting  
June 25, 2019**

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# PURPOSE OF THIS MEETING

- **Provide an update on East Longmeadow's ongoing stormwater management program**
- **Discuss the Town's Notice of Intent (NOI) and Stormwater Management Plan (SWMP)**
- **Solicit feedback on stormwater program**



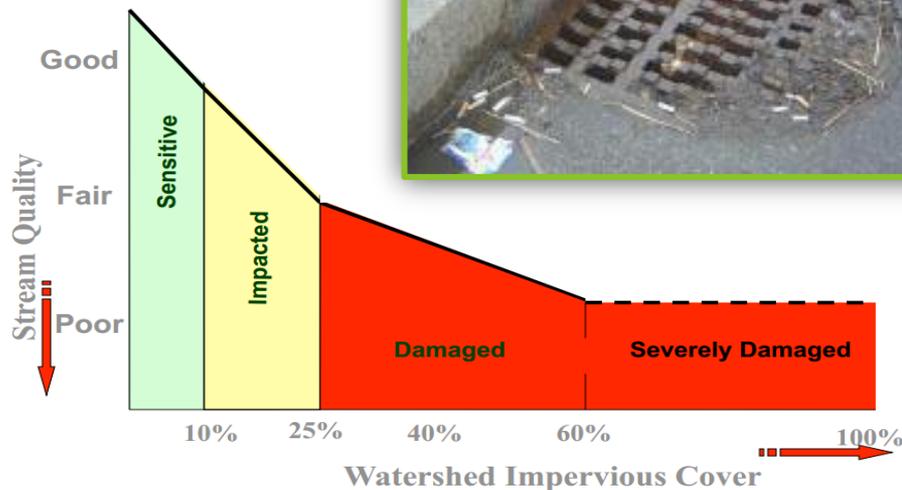
# WHAT IS STORMWATER?

Rainwater that falls on paved streets, lawns, parking lots, and sidewalks becomes polluted stormwater. The more impervious surface, the more stormwater runoff and impact to receiving waterbodies.



Runoff Discharges to Nearby Waters

*40% of known pollution to the nation's waters is caused by stormwater*

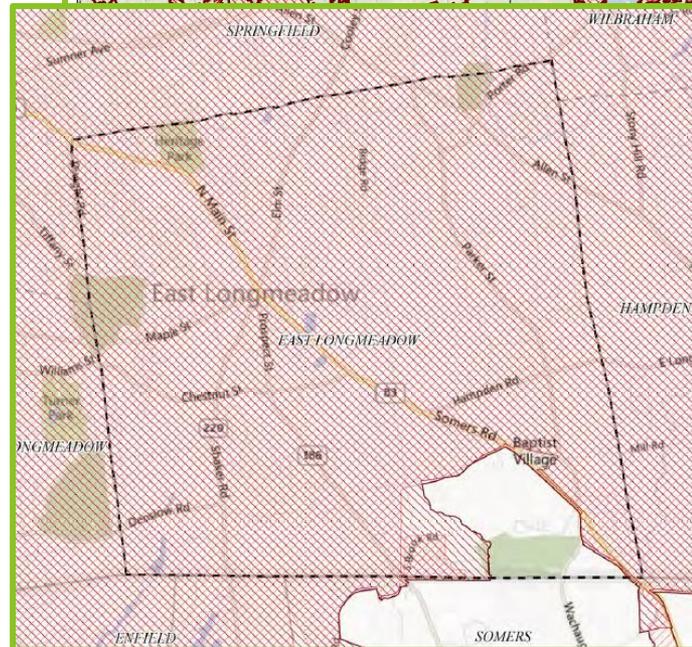
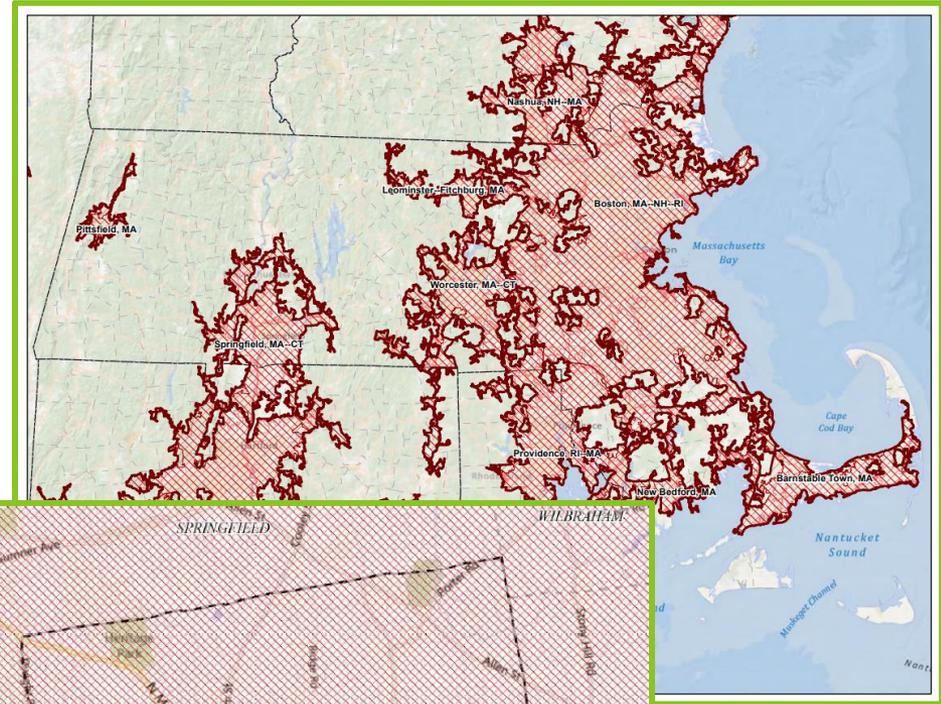


Typical pollutants in stormwater are trash, oil, fertilizers, sediment, sand, and bacteria.



# EPA'S SMALL MS4 STORMWATER PROGRAM

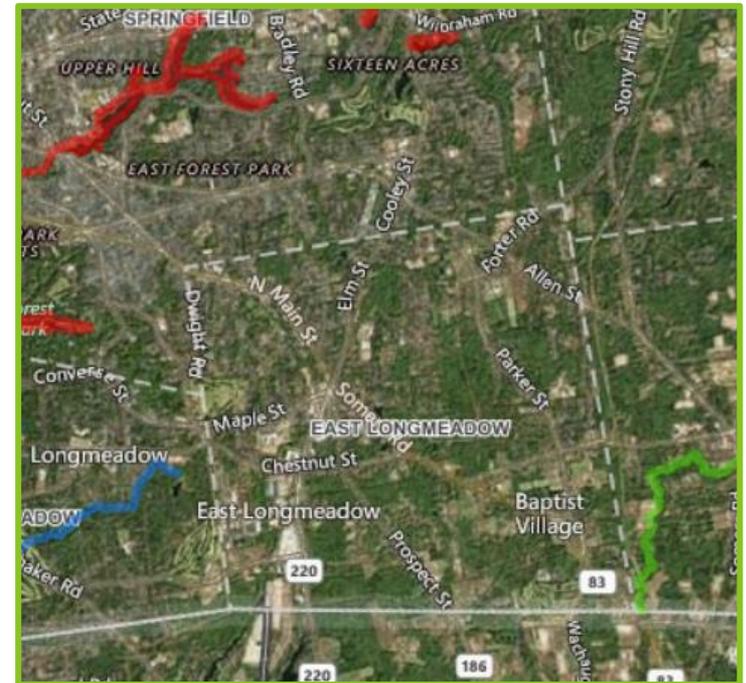
- **MS4 = Municipal Separate Storm Sewer System**
- **Jointly administered by EPA and MassDEP**
- **260 municipalities authorized in MA**
- **East Longmeadow's MS4 area includes all drainage within the "urbanized area"**



# EPA'S SMALL MS4 STORMWATER PROGRAM

- **Minimum Control Measures (MCMs):**

1. Public Education and Outreach
2. Public Involvement and Participation
3. Illicit Discharge Detection and Elimination (IDDE) Program
4. Construction Site Stormwater Runoff Control
5. Stormwater Management in New Development and Redevelopment
6. Good Housekeeping and Pollution Prevention

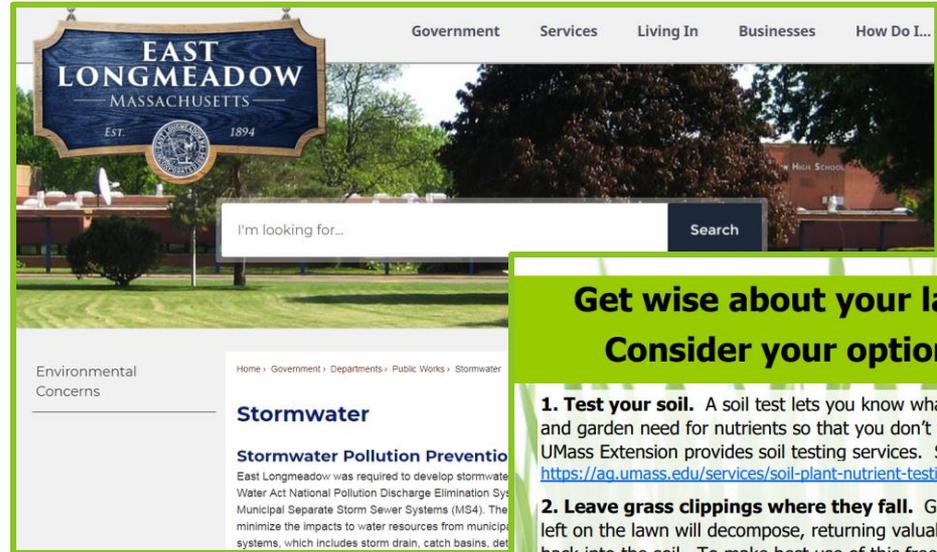


- **Total Maximum Daily Loads (TMDLs) and Impaired Waterbody Requirements**



# EAST LONGMEADOW'S STORMWATER PROGRAM

- **Educational materials**
  - Town website
  - At municipal buildings
- **Public participation**
  - Waste collection events
  - Local cleanups
- **Stormwater outfalls mapping**
  - All known outfalls mapped in GIS
- **Stormwater Management Bylaw**
  - Section 8.070 regulates construction site stormwater runoff and illicit connections
- **Member of the Connecticut River Stormwater Committee**



## Get wise about your lawn. Consider your options.

- 1. Test your soil.** A soil test lets you know what your lawn and garden need for nutrients so that you don't waste money. UMass Extension provides soil testing services. See: <https://aq.umass.edu/services/soil-plant-nutrient-testing-laboratory>
- 2. Leave grass clippings where they fall.** Grass clippings left on the lawn will decompose, returning valuable nutrients back into the soil. To make best use of this free, natural fertilizer: mow high (2 to 3"), do not remove more than 1/3 of the blade, and mow when grass is dry.
- 3. Choose the right fertilizer.** If a soil test shows your lawn needs nutrients, ask for natural organic slow-release fertilizers. These products more effectively deliver what plants need. Also, know how much and when and where to apply.

### Did you know?

Mowing to a 2 to 3-inch grass height is optimal. Mowing lower reduces the amount of grass leaf area available for photosynthesis and in turn may reduce plant vigor. As cutting height is reduced, lawns become less tolerant of environmental stresses and more prone to invasion by weeds than lawns maintained at 2 to 3 inches.

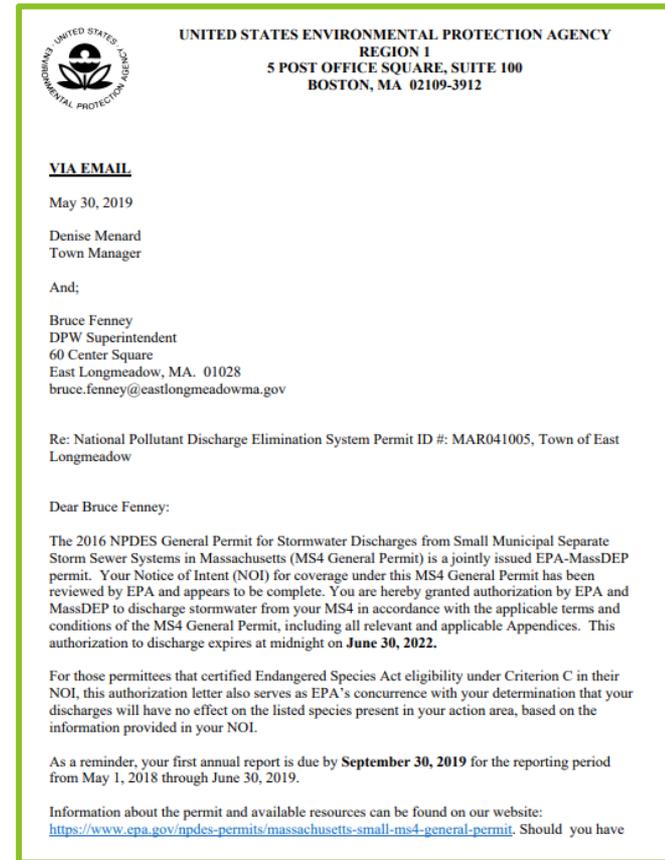
Source: UMass Extension

Connecticut River Stormwater Committee



# NOTICE OF INTENT (NOI)

- **NOI required to be submitted by October 1, 2018 for authorization to discharge stormwater under the 2016 MA Small MS4 General Permit**
- **NOI was submitted to EPA and MassDEP on September 26, 2018**
  - Presents East Longmeadow's strategy for meeting Permit requirements
  - Endangered Species & Historic Properties Eligibility
  - Regulatory authorities (by-laws and regulations)
  - 6 MCMs & TMDL requirements
- **Authorization letter received on May 30, 2019**



# STORMWATER MANAGEMENT PLAN (SWMP)

- **Written SWMP must be finalized by July 1, 2019**
- **SWMP contents:**
  - Regulatory background and summary of Town's existing program
  - Watershed resources and water quality in East Longmeadow
  - Best Management Practices (BMPs) to address the 6 MCMs
  - BMPs to address water quality issues
  - Record keeping and reporting

## 1.10.2. Contents and Timelines of the Stormwater Management Program for 2003 permittees

The following information must be included in the SWMP within one (1) year of the permit effective date and updated annually thereafter, as necessary:

- Identification of names and titles of people responsible for program implementation. If a position is currently unfilled, list the title of the position and modify the SWMP with the name once the position is filled;
- Documentation of compliance with part 1.9.1;
- Documentation of compliance with part 1.9.2;

## MA MS4 General Permit

- Documentation of authorization of all new or increased discharges granted by MassDEP in compliance with part 2.1.2;
- Listing of all discharges identified pursuant to part 2.1.1 and description of response;
- Description of practices to achieve compliance with part 2.3 (MEP requirements) identified in the permittee's NOI and any updates to those BMPs within the first year;  
For each permit condition in part 2.3 identify:
  - The person(s) or department responsible for the measure;
  - The BMPs for the control measure or permit requirement;
  - The measurable goal(s) for each BMP. Each measurable goal shall include milestones and timeframes for its implementation and have a quantity or quality associated with its endpoint. Each goal shall have a measure of assessment associated with it;
- Sanitary Sewer Overflow (SSO) inventory including all of the information required in part 2.3.4.4.b;
- Written IDDE Program pursuant to part 2.3.4.6;
- Written procedures for site inspections and enforcement of sediment and erosion control procedures in accordance with part 2.3.5;
- Description of measures to avoid or minimize impacts to surface public drinking water supply sources. The permittee is also encouraged to include provisions to notify public water supplies in the event of an emergency. Massachusetts Department of Environmental Protection, Bureau of Resource Protection, Drinking Water Program, One Winter Street, Boston, MA 02108 – phone 617.292.5770.
- Description of activities to achieve compliance with part 3.0;
- Annual program evaluation (part 4.1). Update annually and maintain copies.



# MCM1 – PUBLIC EDUCATION AND OUTREACH

- **Annual messages to residents and businesses, institutions, and commercial facilities**
  - Spring: disposal of grass clippings, use of slow-release fertilizers
  - Summer: pet waste management
  - Fall: proper disposal of leaf litter
- **Two messages over permit term to developers and industrial facilities**
  - Proper erosion and sediment control
  - Town stormwater permit requirements
  - EPA CGP and MSGP programs
- **Coordination with PVPC CT River Stormwater Committee**

**Get wise about leaf litter.  
Consider your options.**

1. Mulch leaves in place with your lawn mower to put valuable nutrients back into your soil.
2. Gather leaves and other "yard waste" into a compost pile, let overwinter and decompose, and then use as fertilizer next growing season.
3. Offer your leaves to a neighbor who may be able to use them for composting.
4. Check in with your city or town hall to find out how to properly dispose of leaves locally.  
*(Some local resources are listed on reverse side.)*

**Did you know?**  
The combination of rainfall with leaves on our driveways, sidewalks, streets, and parking lots can produce stormflows into local rivers, streams, and lakes that are loaded with nutrients. Proper use or disposal of leaves will help to avoid these contaminated flows.

Connecticut River Stormwater Committee 



# MCM2 – PUBLIC INVOLVEMENT AND PARTICIPATION

- Final NOI was published on EPA MS4 website for public comment on April 1, 2019:  
<https://www3.epa.gov/region1/npdes/stormwater/ma/tms4noi/east-longmeadow.pdf>
- Draft SWMP is available to public at DPW office

**Notice of Intent (NOI) for coverage under Small MS4 General Permit** Page 1 of 23

**Part I: General Conditions**

**General Information**

Name of Municipality or Organization:  State:

EPA NPDES Permit Number (if applicable):

**Primary MS4 Program Manager Contact Information**

Name:  Title:

Street Address Line 1:

Street Address Line 2:

City:  State:  Zip Code:

Email:  Phone Number:

Fax Number:

**Other Information**

Stormwater Management Program (SWMP) Location (web address or physical location, if already completed):

**Eligibility Determination**

Endangered Species Act (ESA) Determination Complete?  Yes  No Eligibility Criteria (check all that apply):  A  B  C

National Historic Preservation Act (NHPA) Determination Complete?  Yes  No Eligibility Criteria (check all that apply):  A  B  C

Check the box if your municipality or organization was covered under the 2003 MS4 General Permit

**MS4 Infrastructure** (if covered under the 2003 permit)

Estimated Percent of Outfall Map Complete?  If 100% of 2003 requirements not met, enter an estimated date of completion (MM/DD/YYYY):

Web address where MS4 map is published:

If outfall map is unavailable on the internet an electronic or paper copy of the outfall map must be included with MS4 submission (see section 1 for submission options)

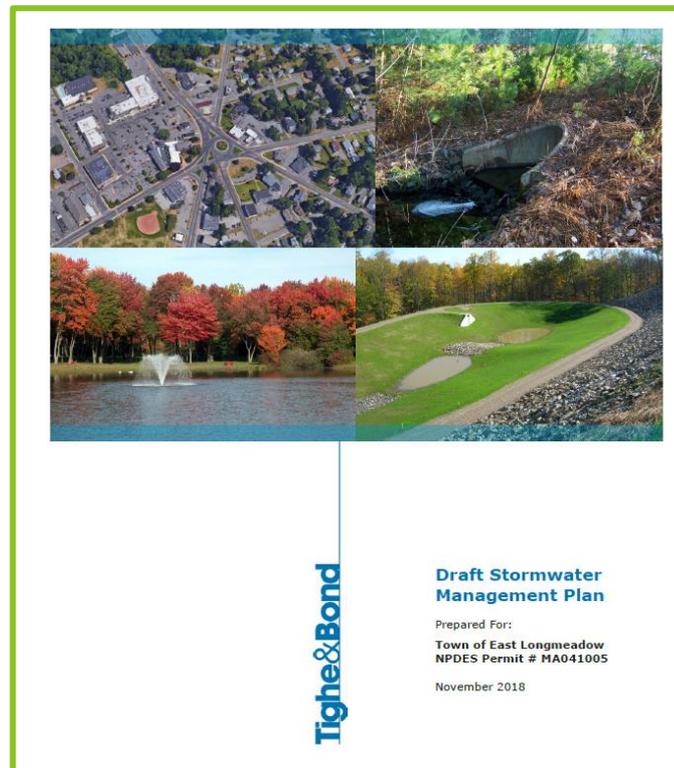
Copy of map is attached:

**Regulatory Authorities** (if covered under the 2003 permit)

Illicit Discharge Detection and Elimination (IDDE) Authority Adopted?  Yes  No Effective Date or Estimated Date of Adoption (MM/DD/YYYY):

Construction Erosion and Sediment Control (ESC) Authority Adopted?  Yes  No Effective Date or Estimated Date of Adoption (MM/DD/YYYY):

Post-Construction Stormwater Management Adopted?  Yes  No Effective Date or Estimated Date of Adoption (MM/DD/YYYY):



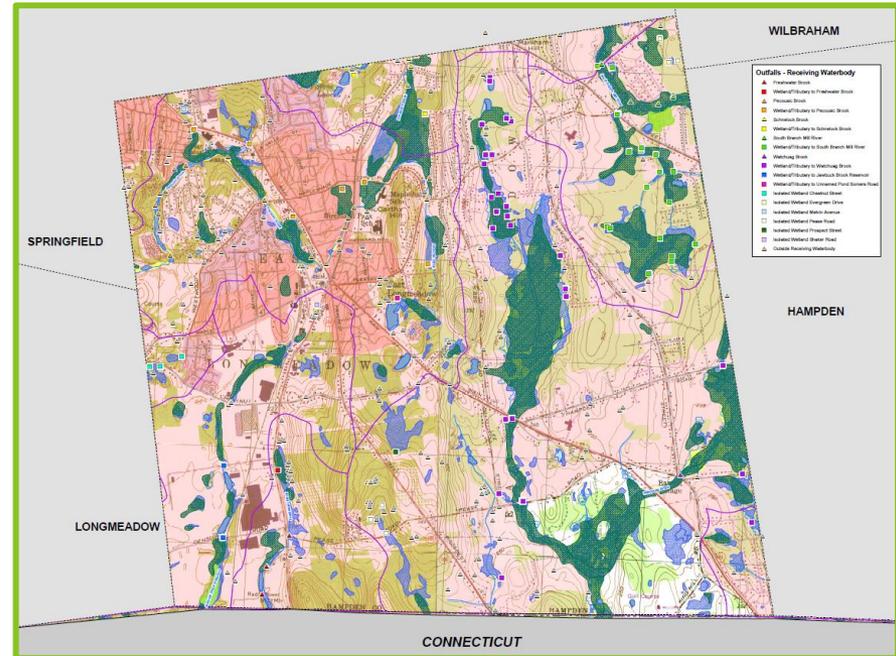
# MCM3 – IDDE PROGRAM

- Sanitary Sewer Overflow (SSO) inventory
- Updates to map of storm sewer system
- Written IDDE program

## 2.3.4.4. Sanitary Sewer Overflows

- Upon detection of an SSO the permittee shall eliminate it as expeditiously as possible and take interim mitigation measures to minimize the discharge of pollutants to and from its MS4 until elimination is completed.
- The permittee shall identify all known locations where SSOs have discharged to the MS4 within the previous five (5) years. This shall include SSOs resulting, during dry or wet weather, from inadequate conveyance capacities, or where interconnectivity of the storm and sanitary sewer infrastructure allows for communication of flow between the systems. Within one (1) year of the effective date of the permit, the permittee shall develop an inventory of all identified SSOs indicating the following information, if available:
  - Location (approximate street crossing/address and receiving water, if any);
  - A clear statement of whether the discharge entered a surface water directly or entered the MS4;
  - Date(s) and time(s) of each known SSO occurrence (i.e., beginning and end of any known discharge);
  - Estimated volume(s) of the occurrence;
  - Description of the occurrence indicating known or suspected cause(s);
  - Mitigation and corrective measures completed with dates implemented; and
  - Mitigation and corrective measures planned with implementation schedules.

The permittee shall maintain the inventory as a part of the SWMP and update the inventory annually, all updates shall include the information in part 2.3.4.4.b.1-7.



# MCM3 – IDDE PROGRAM

- **Outfall/interconnection inventory and ranking**
- **Catchment delineation and investigation**
- **Dry and wet weather outfall sampling**



# MCM4&5 – STORMWATER MANAGEMENT IN NEW DEVELOPMENT AND REDEVELOPMENT

- **Modify existing stormwater by-law**
- **Regulatory assessment – Low Impact Development**

## Section 8.070 STORMWATER MANAGEMENT

### 8.070.010 Definitions

The following definitions describe the meaning of the terms used in this by-law:

**Adverse Impact:** Harmful effect on waters or wetlands, including their quality, quantity, surface area, species composition, aesthetics or usefulness for human or natural uses which are or may potentially be harmful or injurious to human health, welfare, safety or property, to biological productivity, diversity, or stability or which unreasonably interfere with the enjoyment of life or property, including outdoor recreation.

**Best Management Practices (BMP):** Structural or biological devices that temporarily store or treat stormwater runoff to reduce flooding, remove pollutants, and provide other amenities. They can also be nonstructural practices that reduce pollutants at their source. Examples of BMPs are described in the Massachusetts Department of Environmental Protection's (MassDEP) stormwater design manual: Stormwater Management Handbook, Volume 2: Chapter 2: Structural BMP Specifications for the Massachusetts Stormwater Handbook (February 2008, MassDEP, as updated or amended).

**Board of Public Works:** The permitting and enforcement agency.

**Construction Activity:** Disturbance of the ground by removal of surface cover, grading, excavation, clearing or filling.

**Detention:** The temporary storage of storm runoff in a BMP, which is used to control the "peak discharge" rates, and which provides gravity settling of pollutants.

**Discharge of Pollutants:** The addition of a pollutant or combination of pollutants into a Municipal Separate Storm Sewer System (MS4) or into the waters of the Commonwealth from any source.

**Groundwater:** Water beneath the surface of the ground.

**Illicit Discharge:** Direct or indirect non-stormwater discharge to an MS4, except as specifically exempted in Illicit Stormwater Section 8.07.100. (D). The term does not include a discharge in compliance with a National Pollutant Discharge and Elimination System (NPDES) stormwater discharge permit or resulting from fire fighting or other municipal activities, not including Construction Activities.

**Illicit Connection:** Surface or subsurface drain or conveyance, which allows an illicit discharge into an MS4. Illicit connections include conveyances which allow a non-stormwater discharge to an MS4 including sewage, process wastewater or wash water and connections from indoor drains, sinks or toilets, regardless of whether said connection was previously allowed, permitted or approved before the effective date of this by-law.

**Infiltration:** The downward movement of water from the surface to the subsol.

**Municipal Separate Storm Sewer System (MS4):** The system of conveyances designed or used for collecting or conveying stormwater, including road or street with a drainage system, gutter, curb, inlet, piped storm drain, pumping facility, retention or detention basin, drain channel, reservoir, and other drainage owned or operated by the Town of East Longmeadow.

**National Pollutant Discharge Elimination System (NPDES) stormwater discharge permit:** A permit issued by the United States Environmental Protection Agency or jointly with the state that authorizes the discharge of pollutants to waters of the United States.

**Non-Stormwater Discharges:** Discharge to the MS4 not composed entirely of stormwater.

**Peak Discharge:** The maximum rate of flow during a storm.



## Benefits of Low Impact Development

### How LID Can Protect Your Community's Resources

LID Barrier Busters Fact Sheet Series

#### What Is Low Impact Development (LID)?

LID includes a variety of practices that mimic or preserve natural drainage processes to manage stormwater. LID practices typically retain rain water and encourage it to soak into the ground rather than allowing it to run off into ditches and storm drains where it would otherwise contribute to flooding and pollution problems (see [www.epa.gov/lid](http://www.epa.gov/lid)).

#### Why Should My Community Adopt LID?

##### LID Reduces Stormwater Runoff by Emphasizing Infiltration

As a community grows, so does the amount of surface area covered by parking lots, roads and rooftops (Figure 1). Rainfall cannot soak through these hard surfaces; instead, the rain water flows quickly across them—picking up pollutants along the way—and enters ditches or storm drains, which usually empty directly and without treatment into local waterways. Local streams in urban areas are overwhelmed by frequent urban flash flooding and stream habitats are smothered by sediments carried by the excessive flows.

Contrast this to an undeveloped watershed, where vegetation-covered soil soaks up rainfall rather than allowing it to run off the land (Figure 2). Water filters through the soil before reaching the groundwater table or being released slowly into streams. An undeveloped watershed provides clean, safe water.

Fortunately, by adding LID solutions, communities can help their watersheds act more like undeveloped watersheds—despite the ever-expanding numbers of roads and rooftops. LID practices such as natural or man-made swales, depressions and vegetated areas capture and retain water onsite, allowing time for water to soak into the soil where it is naturally filtered.



A green roof absorbs rainwater, reduces energy costs and offers wildlife habitat in urban Portland, Oregon.



30% Evapotranspiration  
55% Runoff  
10% Shallow Infiltration  
5% Deep Infiltration



40% Evapotranspiration  
10% Runoff  
20% Shallow Infiltration  
25% Deep Infiltration

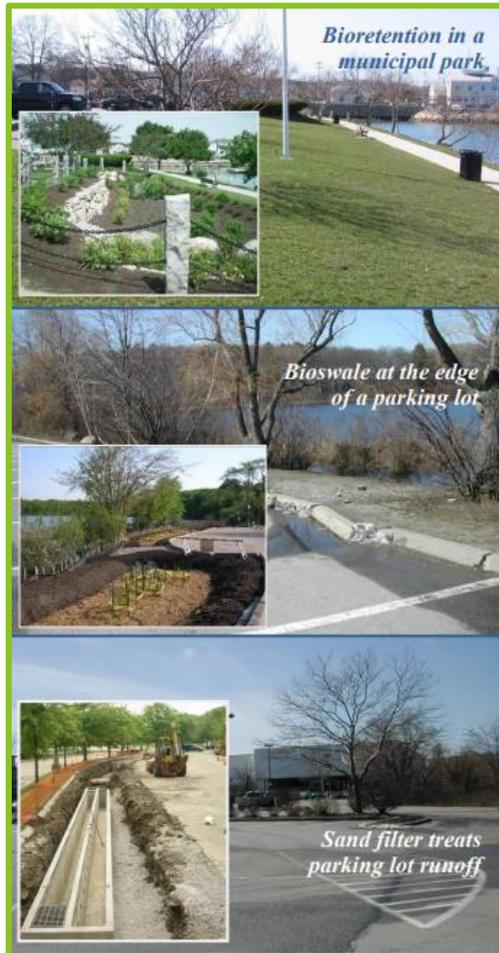
Figure 1. When roads, rooftops and parking lots cover much of the land, more than half of the rainfall runs off and flows directly into surface waters. In highly developed areas, such as in Seattle, Washington (above left), only 15 percent of rain water has the opportunity to soak into the ground.

Figure 2. When vegetation and natural areas cover most of the land, such as in Oregon's Upper Tillamook Bay watershed (above left), very little water (only 10 percent) runs off into surface waters. Nearly half of the rainfall soaks into the soil. The remaining water evaporates or is released into the air by vegetation.



# MCM4&5 – STORMWATER MANAGEMENT IN NEW DEVELOPMENT AND REDEVELOPMENT

- **Municipal stormwater retrofit inventory**
- **Regulatory assessment – green infrastructure**



# MCM6 – GOOD HOUSEKEEPING

- **Municipal Facilities O&M Program**

- Buildings and facilities
- Parks and open space
- Equipment and vehicles



- **MS4 Infrastructure O&M Procedures**

- Catch basin cleaning
- Street sweeping



- **Stormwater BMP O&M Procedures**

- Water quality swales
- Retention/detention basins
- Infiltration structures
- Proprietary treatment devices



# MCM6 – GOOD HOUSEKEEPING

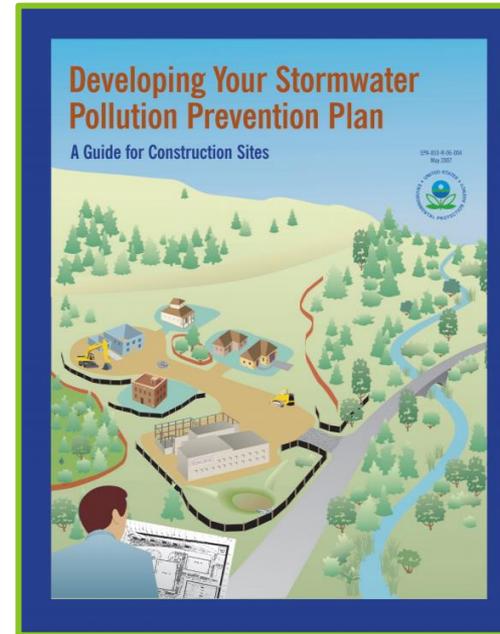
- **Winter Road Maintenance**

- Procedures for use and storage of salt and sand
- Minimize use of salts



- **SWPPPs**

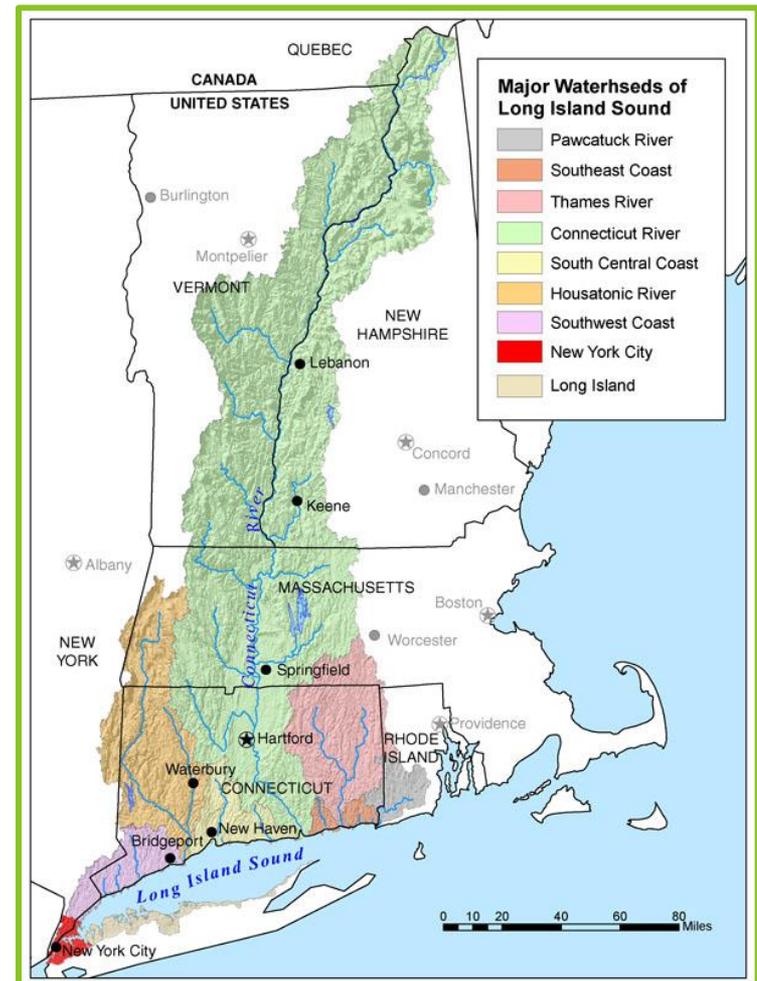
- Prepare and implement SWPPPs for transfer station & DPW facility



# WQ/TMDL – LONG ISLAND SOUND NITROGEN TMDL

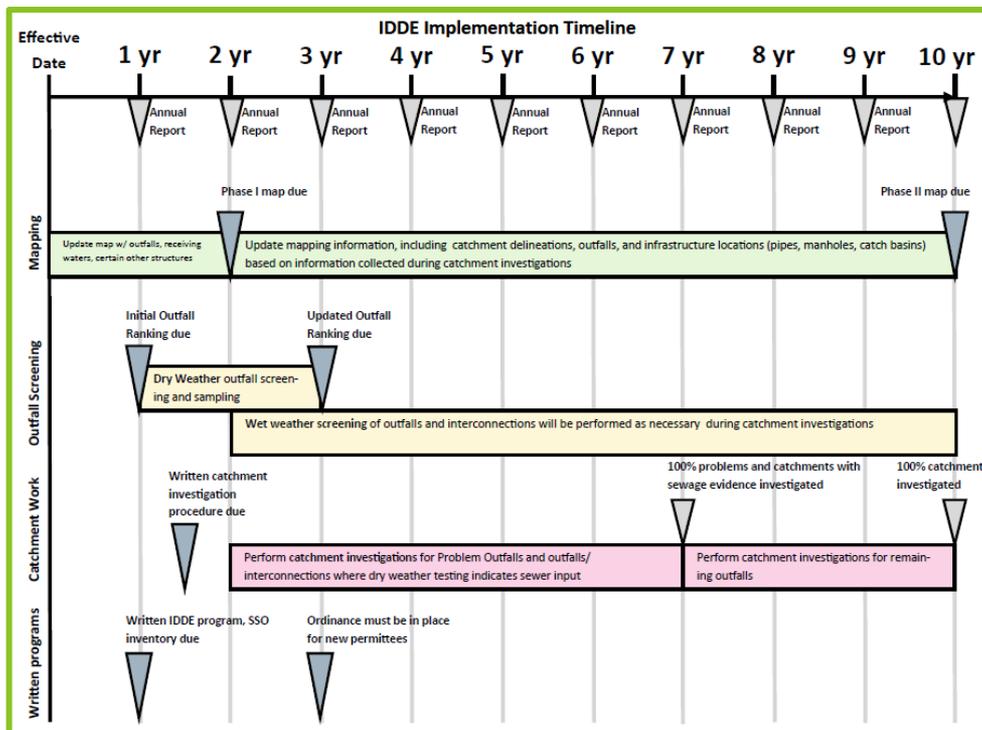
- **Supplemental BMPs**

- Public education and outreach messages
- Amend stormwater by-law to optimize nitrogen removal
- Use of slow-release fertilizers on Town-owned property
- Street sweeping twice annually
- Nitrogen Source Identification Report
- Evaluate installation of nitrogen-reduction structural BMP on Town-owned property



# SUMMARY

- East Longmeadow is actively meeting MS4 requirements
- 5 year permit
- Compliance extends 10 years out





# QUESTIONS AND DISCUSSION

