



# Littleton's Stormwater/ MS4 EPA Permit Update

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COREY GODFREY, LITTLETON WATER DEPARTMENT

EMILY SCERBO, TIGHE & BOND

REBEKAH LACEY, MIYARES AND HARRINGTON

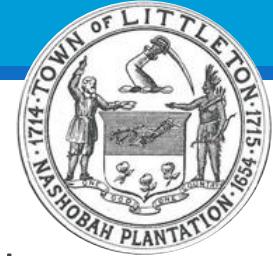
BOARD OF SELECTMEN MEETING

FEBRUARY 29, 2016 AT 6:30 PM



# Why is Stormwater Runoff a Concern?

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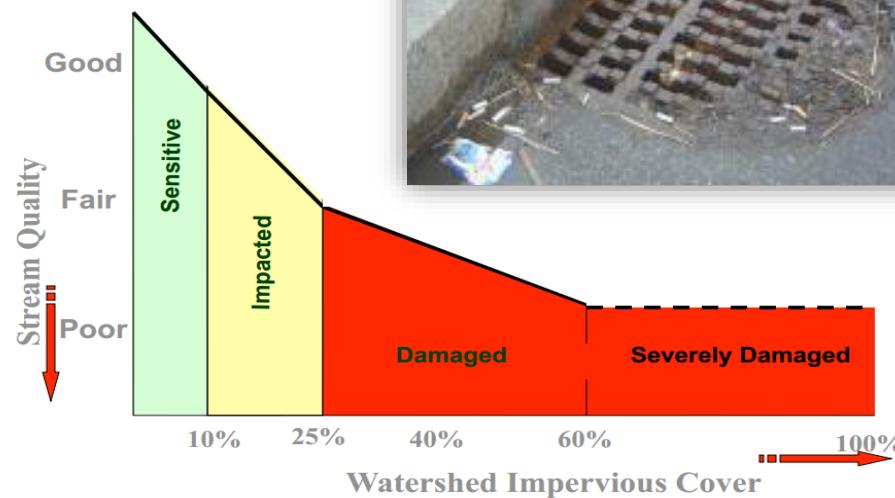
# Stormwater Runoff

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 water bodies.



Runoff Discharges to  
Nearby Waters

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



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

# Pollutants of Concern

Sediment

Nutrients (nitrogen and phosphorus)

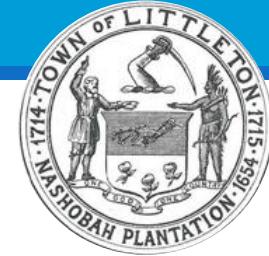
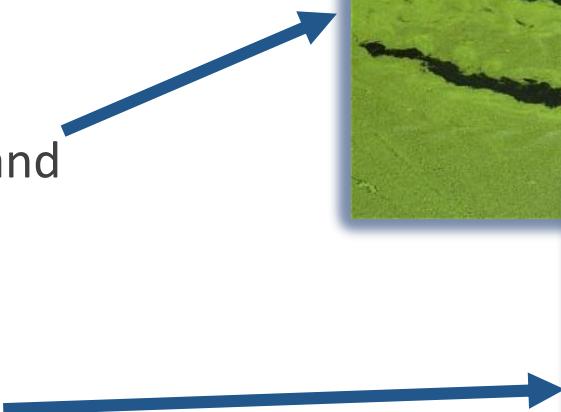
Oil and grease

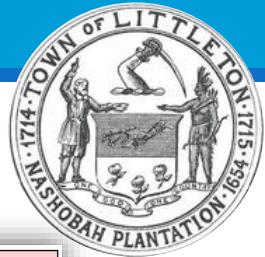
Bacteria and viruses

Metals

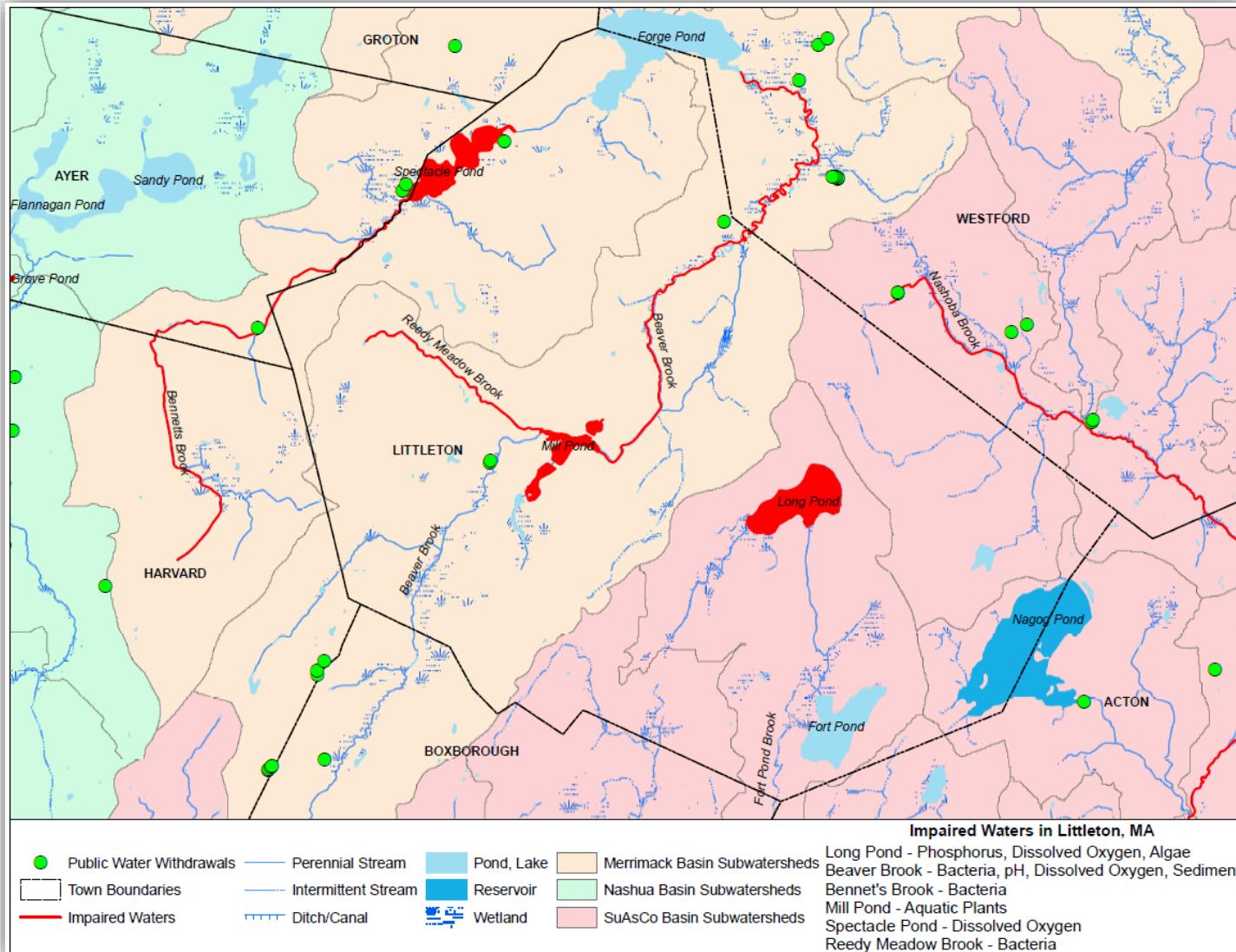
Pesticides

Mosquito, fly, and rodent production





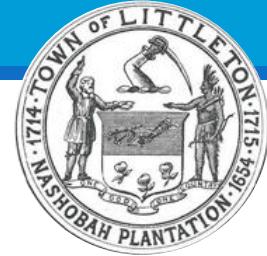
# Littleton's Impaired Waters





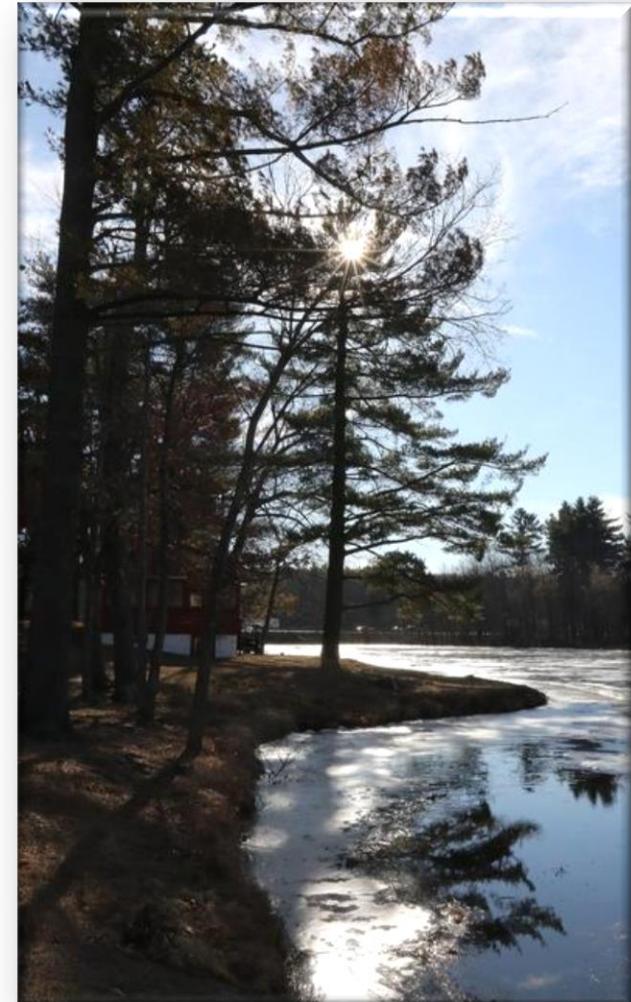
# Littleton's Stormwater Program Highlights

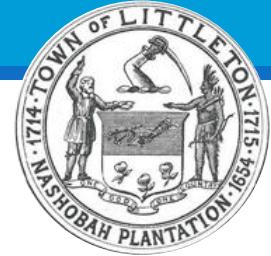
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# Stormwater Efforts

- Education
- Implementation of Best Management Practices (BMPs)
- Guidance to developers on proper stormwater management
- Water quality monitoring
- Lake restoration





# Annual LELWD Field Trip

Stormwater demonstration during a field trip for 4<sup>th</sup> graders

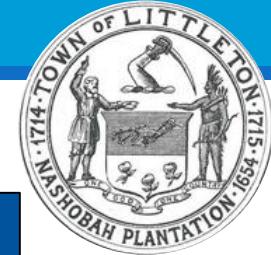




# Long Lake Stormwater Treatment Wetlands and Rain Gardens



# Low Impact Design Manual



**CDM**

 **LITTLETON**  
**LWD**  
WATER DEPARTMENT

Town of Littleton, Massachusetts

**Low Impact Design/Best Management  
Practices Manual**

May 2007



*Final Report*

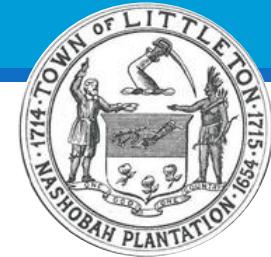


# EPA Small MS4 Permit

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# Small MS4 Permit Update

2003 General Permit and 2014 Update



NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)  
GENERAL PERMIT FOR STORM WATER DISCHARGES  
FROM SMALL MUNICIPAL SEPARATE STORM SEWER SYSTEMS

Authorization to discharge under the National Pollutant Discharge Elimination System

In accordance with the provisions of the Clean Water Act, as amended, (33 U.S.C. §1251 et. seq. (the Act) operators of small municipal separate storm sewer systems, located in the areas specified in Parts I.A.2., 3...and 4 are authorized to discharge in accordance with the conditions and requirements set forth herein.

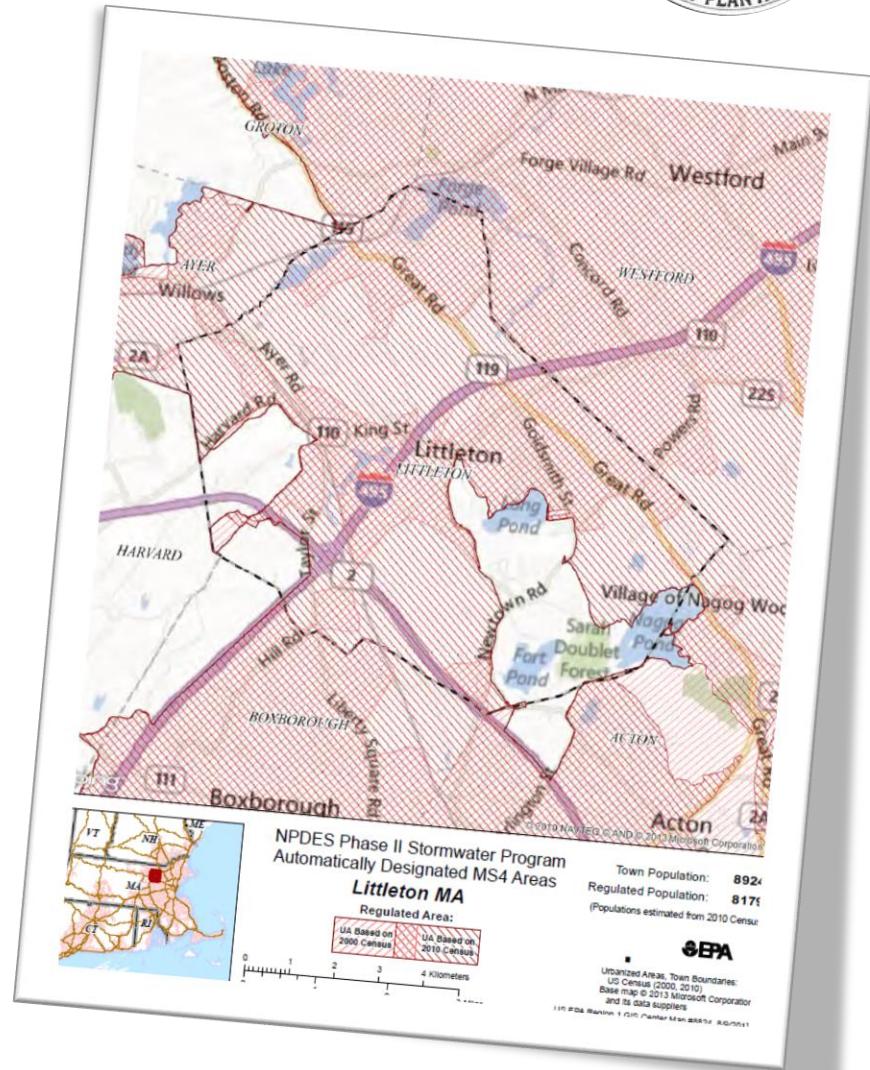
Only operators of storm water discharges from small municipal separate storm sewer systems in the general permit area who submit a Notice of Intent and a storm water management program in accordance with Part I.E. of this permit and obtain written authorization from EPA are authorized under this general permit.

This permit becomes effective on May 1, 2003.

This permit and authorization to discharge expire at midnight five years from the effective date.

Signed this 18 day of April 2003

Linda M. Murphy, Director  
Office of Ecosystem Protection  
United States Environmental Protection Agency  
One Congress Street - Suite 1100  
Boston, Massachusetts 02114





# Compliance Schedule

General Permit is Final

March 2016<sup>1</sup>

+ 3-6 months (?)

General Permit is **Effective**

July – September 2016

+ 90 days

Submit NOI to EPA

Fall 2016

+ 30 days (minimum)

End NOI Public Comment Period

Winter 2016/2017

**EPA Grants Authorization**

**Spring 2017**



<sup>1</sup> Date is based on latest conversations with EPA permit writers and is subject to change



# Minimum Control Measures

## 6 MCMs

- Public Education and Outreach
- Public Involvement and Participation
- Illicit Discharge Detection and Elimination (IDDE) Program
- Construction Site Stormwater Runoff Control
- Stormwater Management in New Development and Redevelopment
- Good House Keeping and Pollution Prevention



## Total Maximum Daily Loads (TMDLs)

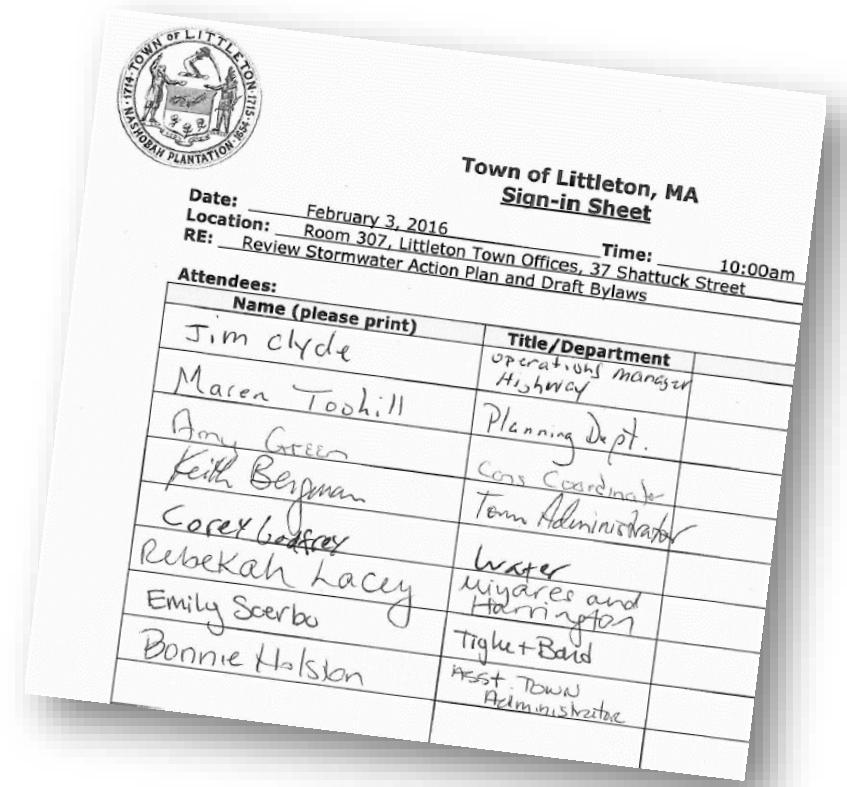


# Evaluation of Littleton's Stormwater Management Program



Tighe & Bond completed an evaluation of the Program with support from the following Town departments:

- Conservation Commission
- Highway Department
- Planning Department
- Town Administrator
- Water Department
- Town Counsel (Miyares and Harrington)





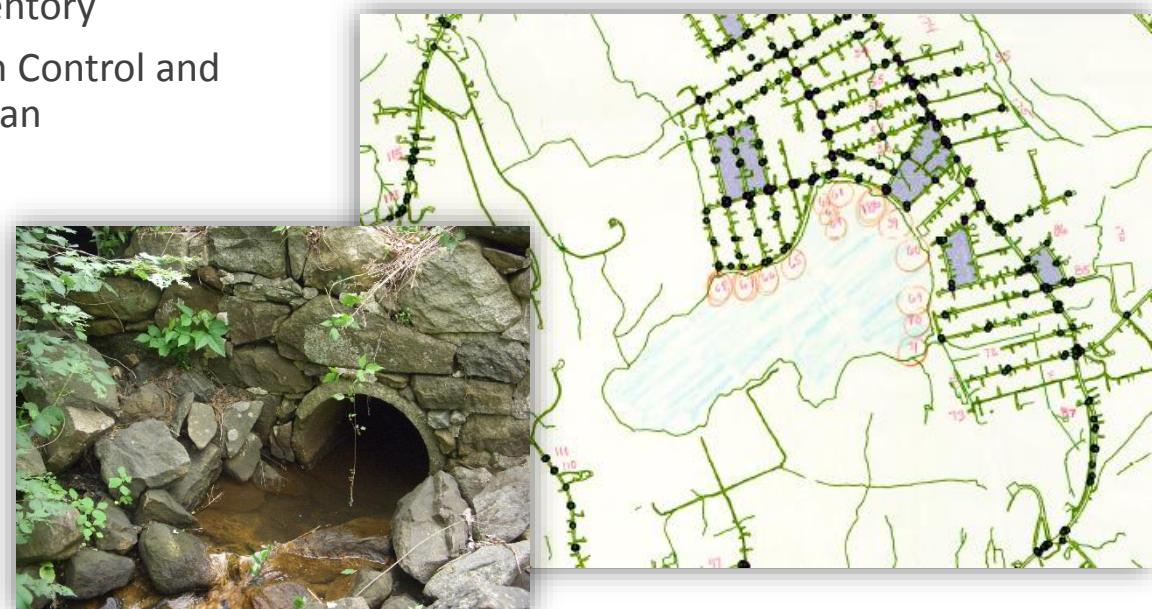
# Evaluation of Littleton's Stormwater Management Program

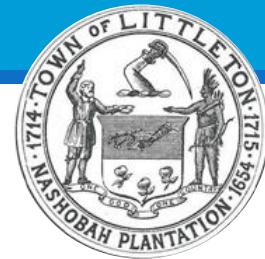
Corey already highlighted many program elements

## High Priority Recommendations to Complete Prior to New Permit

- Present *Article I, Illicit Connections and Discharges to Storm Drain System* Bylaw and *Article II, Stormwater Management and Erosion Control* Bylaw at Annual Town Meeting
- Confirm Mapping and Inventory
- Update Oil Spill Prevention Control and Countermeasure (SPCC) Plan

See handout





# Stormwater Management Action Plan

## Opinion of Probable Costs Based on the 2014 Draft MA General Permit Requirements – Years 1 Through 5

Note: This table is to be used to facilitate understanding about EPA's requirements and potential level of effort to comply. Costs presented will need to be further vetted once EPA finalizes the MS4 permit.

Major Requirements	Details and Assumptions	Schedule Details	Year 1	Year 2	Year 3	Year 4	Year 5	Total
<b>PART 1.0 Introduction</b>								
Notice of Intent (NOI) and Stormwater Management Program (SWMP)	Assumes that the NOI and SWMP are prepared concurrently during careful planning.	Submit signed NOI to EPA and MassDEP within 90 days of the effective date of the permit. Develop and sign updated written SWMP within one (1) year of the effective date of the permit.	\$20,000	\$0	\$0	\$0	\$0	\$20,000
<b>PART 2.0 Non-Numeric Effluent Limitations Impaired Waterbody Requirements</b>								
Meet the Phosphorus Reduction Requirements for the Assabet River Watershed TMDL	<p><b>Public Education &amp; Outreach:</b> Distribute an annual message in the spring that encourages the proper use and disposal of grass clippings and encourages the proper use of slow-release and phosphorus-free fertilizers; in the summer encouraging the proper management of pet waste, noting any existing bylaws and regulations where appropriate; and in the fall encouraging the proper disposal of leaf litter.</p> <p><b>New Development:</b> Ensure BMPs are optimized for phosphorus removal.</p> <p><b>Good Housekeeping:</b> Properly manage grass cuttings and leaf litter on permittee property, increase street sweeping frequency.</p>	<i>See schedules and budgets for Part 2.3.2 Public Education, Part 2.3.6 Stormwater Management in New Development and Redevelopment, and Part 2.3.7 Good House Keeping and Pollution Prevention.</i>	<i>This budget was carried under Public Education and Outreach, Stormwater Management in New Development and Redevelopment, and Good Housekeeping and Pollution Prevention.</i>					
Meet Phosphorus Reduction Requirements for Impaired Waterbodies (Long Pond)	<p><b>Public Education &amp; Outreach:</b> Distribute an annual message in the spring that encourages the proper use and disposal of grass clippings and encourages the proper use of slow-release and phosphorus-free fertilizers; in the summer encouraging the proper management of pet waste, including noting any existing ordinances where appropriate; and in the fall encouraging the proper disposal of leaf litter.</p> <p><b>New Development:</b> Ensure BMPs are optimized for phosphorus removal.</p> <p><b>Good Housekeeping:</b> Establish procedures to properly manage grass cuttings and leaf litter on permittee property, increase street sweeping frequency to twice per year.</p> <p><i>This budget was carried under MCM #1, #5, and #6.</i></p> <p><b>Phosphorus Source Identification Report:</b> Develop a report detailing:           <ol style="list-style-type: none"> <li>Total MS4 area draining to phosphorus impaired waterbodies, catchments delineations</li> <li>Monitoring results completed during IDDE, including phosphorus</li> <li>Prioritization of catchments with high phosphorus loading</li> <li>List of potential retrofit opportunities for municipal buildings</li> </ol>           Budget for 1 and 2 included as part of MCM #3, budget for 3 included as part of MCM #5.             <i>Note that the Source Identification Report may be included as part of the MassDEP watershed grant work.</i> </p> <p><b>Potential Structural BMPs:</b> Evaluate permittee-owned properties for installation of BMPs. Consider planned projects, cost, permitting, feasibility, etc. Develop a list of locations and schedule for installation of structural BMPs. Install one "demonstration" BMP.</p>	<i>See schedules and budgets for Part 2.3.3 Public Education, Part 2.3.6 Stormwater Management in New Development and Redevelopment, and Part 2.3.7 Good House Keeping and Pollution Prevention</i> Note that because Littleton was selected for a MassDEP 319-funded Demonstration Project for NPDES MS4 Analysis, some of the listed requirements may be completed by the State's consultant. Within four (4) years of effective date of permit, develop the Phosphorus Source Identification Report, and submit to EPA. Within five (5) years of effective date of permit, evaluate all Town-owned properties for retrofit opportunities, and develop a list of planned BMPs and schedule. Budget includes coordination with Town projects, Townwide desktop screening, site visits to favorable parcels, conceptual designs for up to three BMPs, planning-level design for one BMP, identification of permitting needs, and development of next steps. Budget does not include survey or soil evaluation. Within six (6) years of effective date of permit, install one "demonstration" BMP to address phosphorus. <i>Note that this budget not presented as part of this plan.</i>	\$0	\$0	\$0	\$15,000	\$10,000	\$25,000



# Stormwater Management Action Plan

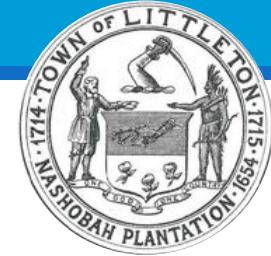
Opinion of Probable Costs Based on the 2014 Draft MA General Permit Requirements – Years 1 Through 5

- Total 5-year Program Cost Estimate: \$364,000
- Average Annual Cost: \$73,000
- Permit Year 1 should begin in Fiscal Year 2017

The most costly recommendations for Littleton (both staff time and direct expenditures):

- Outfall/Interconnection Inventory and Dry Weather Screening (\$50,000)
- Drainage System Mapping (\$90,000)

- *Actual costs may be lower if the Town elects to use in-house resources to complete some or all of the monitoring and data gathering requirements.*
- *Drainage system operation & maintenance, correction of illicit discharges and connections, and design and construction of stormwater management facilities are not included in this estimate.*



# Funding Options for Stormwater

Property Taxes/General Fund

Grants

Bonds/Loans

Development Review Fees

Stormwater Permit/Connection Fee(s)

Special Assessment/Betterment Fee

Massachusetts Water Infrastructure Investment Fund

Enterprise Fund (i.e., “Drainage Fee” via Stormwater Utility)

State Revolving Fund (SRF)

**Special Revenue/Revolving Fund (i.e., Spectacle Pond Cell Tower Clean Lakes Fund)**





# Funding Plan

## \$300,000 Spectacle Pond Cell Tower Clean Lakes Fund

Prioritization of activities to be completed each year to take advantage of the \$100,000 available in each of the first three years will be a key component of the *Stormwater Management Plan*.



*With careful planning, strategic use of Town staff in partnership with consultants, and leveraging various State and Federal grant opportunities, the Town may be able to complete nearly all program requirements (excluding increased operation and maintenance and capital improvements) using the \$300,000 budget available.*



# Funding Plan

## \$300,000 Spectacle Pond Cell Tower Clean Lakes Fund

Prioritization of activities to be completed each year to take advantage of the \$100,000 available in each of the first three years will be a key component of the *Stormwater Management Plan*.

	Year 1	Year 2	Year 3
SWMP and NOI	\$20,000		
Public Education and Involvement	\$5,000	\$2,500	\$2,500
Develop IDDE Plan	\$1,000	\$1,000	\$1,000
Identify SSOs			
Outfall and Interconnection Inventory, Dry Weather Screening	\$5,000	\$500	\$500
Wet Weather Outfall Monitoring		\$2,000	\$7,000
Catchment Investigation		\$5,000	\$5,000
GIS Mapping	\$30,000	\$30,000	\$10,000
Town Staff Training		\$1,000	\$1,000
Regulatory Updates	\$1,000	\$500	\$4,000
Retrofit Inventory			\$10,000
Town-Owned Facilities Inventory	\$1,000		
SWPPP		\$16,000	\$1,000
Annual Report to EPA	\$5,000	\$5,000	\$5,000
<b>TOTAL</b>	<b>\$161,000</b>	<b>\$63,500</b>	<b>\$47,000</b>

**Delay Some Year 1 Activities**

**Expedite Some Year 4 & 5 Activities**



# Littleton's Stormwater Bylaws

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# 2003 General Permit Requirements

Prohibit **non-stormwater discharges** to the storm drain system

Require **sediment and erosion control** at construction sites disturbing an acre or more

Address **post-construction runoff** from new development and redevelopment projects disturbing an acre or more





# *Illicit Connections and Discharges to Storm Drain System Bylaw*

Prohibits non-stormwater discharges to Town storm drain system

Exceptions (partial list – see bylaw for others):

- Water line flushing
- Irrigation water (including lawn watering)
- Uncontaminated ground water (such as from sump pumps)
- Residential car washing
- Dechlorinated swimming pool discharges
- Street wash water
- Residential building wash waters without detergents
- Discharges from firefighting



Image: <http://www.cityofkokomo.org>

Enforced by Highway Department and Board of Health



# *Stormwater Management and Erosion Control Bylaw*

Addresses both construction and post-construction requirements of 2003 permit

Requires a “Stormwater Permit” from the Town for all construction, development, or redevelopment disturbing one acre or more

- Unless all stormwater management for project is already being reviewed by Conservation Commission

Planning Board is permitting authority

Permit process will be integrated with any other required Planning Board review (such as site plan review)



Image: <http://www.co.carver.mn.us>



# *Stormwater Management and Erosion Control Bylaw, cont.*

## Erosion and Sediment Control Plan

- Ensure soil does not run off construction site

## Stormwater Management Plan

- Ensure drainage design for project is appropriate

## Operation and Maintenance Plan

- Ensure drainage system is properly maintained over the long term

### **“THE HOMES AT KIMLOCH FARM”**

#### **STORMWATER MANGEMENT REPORT**

Stormwater Management Plan  
Erosion & Sediment Control Plan  
Stormwater Operation & Maintenance Plan  
Drainage Calculations & Report

# Questions and Discussion

Corey Godfrey  
[cgodfrey@lelwd.com](mailto:cgodfrey@lelwd.com)

Emily Scerbo  
[ejscerbo@tighebond.com](mailto:ejscerbo@tighebond.com)

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