Town of Millis & the NPDES MS4 General Permit

Betsy Frederick

August 1, 2016

KLEINFELDER
Bright People. Right Solutions.

NPDES Program Overview

- Clean Water Act - regulates point source discharge of pollutants to waters of the US
  - National Pollutant Discharge Elimination System (NPDES) Program is the regulatory permitting mechanism
  - Wastewater Treatment Plants
  - Industrial Sources
  - Stormwater Sources
  - Construction Activity

NPDES MS4 General Permit Program

- Municipal Separate Storm Sewer System (MS4)
  - General Permit allowing the discharge of stormwater to waterways via municipal drainage systems
- Existing 2003 – 2008 MS4 General Permit administratively extended & still valid
- April 2016 MS4 GP Effective Date July 1, 2017

NPDES MS4: Reduce Pollutants to the Maximum Extent Practicable (MEP)

- Six 'Minimum Control Measures'
  1. Public Education / Outreach
  2. Public Involvement / Participation
  3. Illicit Discharge Detection & Elimination (IDDE) Program
  4. Construction Site Runoff Control
  5. Stormwater Management in New/Re-development
  6. Good Housekeeping / Pollution Prevention

Water Quality Based Effluent Limitations

- Total Maximum Daily Loads (TMDL)
  - Specific pollutant ‘diet’ for certain receiving waters
  - Approved by EPA
- Other Impaired Waters
  - Water Quality Limited Waters (no approved TMDL)
- Requires Quantifiable Improvements ($)

MCWRS Proposed Appeal

- Narrow legal appeal specific to the definition of "Maximum Extent Practicable" and whether imposition of conditions to meet water quality standards goes beyond that definition
- Even if appeal were to be upheld, would not impact the MEP portions of the permit (the 6 MCMs)
- First 5 years of this permit term address planning rather than capital projects

Major Challenges of New MS4 Permit

- Major increase in data collection, management & reporting
- Increased operation & maintenance requirements
- Stormwater planning and assessment activities
- Compliance with TMDLs
- Major capital projects for stormwater improvements
- Significant increase in administrative costs

- *Many studies project at least 2X increase of program costs (Exclusive of Capital Improvements Required to meet TMDLs)*

Current Estimated O & M Costs Multiple Communities

Major Cost Centers	Bellingham	Franklin	Milford	Medway	Canton	Swampscott
	Population: 16,332 Road Miles: 91.28	Population: 31,635 Road Miles: 133.62	Population: 27,999 Road Miles: 109.55	Population: 12,752 Road Miles: 69.93	Population: 21,561 Road Miles: 91.57	Population: 13,787 Road Miles: 42.55
Administration	$18,421	$58,670	$18,335	$125,300	$19,134	$6,250
Regulation/Enforcement	$1,800	$51,396	$26,250	$2,900	$9,750	$1,250
Engineering & Master Planning	$17,000	$152,671	$13,100	$98,700	$135,100	$17,500
Operations and Maintenance	$194,918,	$759,978	$487,966	$144,200	$362,810	$100,000
Monitoring	--	--	--	--	--	--
Total Cost	**$232,139**	**$1,022,715**	**$545,651**	**$371,100**	**$526,794**	**$125,000***
Cost per Road Mile	**$2,543**	**$7,654**	**$4,981**	**$5,306**	**$5,753**	**$2,938**

*A gross cost estimate for Swampscott developed on an average program cost per road mile of $5,247.00 derived through comparison with communities shown would be approximately $223,000. Medway represents mean value at $5,306/mile. If mean value used, Swampscott estimated costs would be $225,770.

Key Comments on Draft MS4 Permit

- IDDE Investigations / Mapping:
  - Sewer system mapping / evaluation excessive (virtually unchanged in Final)
  - Wet weather monitoring relief not provided (minor changes with little practical difference)
  - Manhole inspections excessive (no difference)
  - SSO requirements redundant (still in permit)
  - Changes in Investigation Process and mapping deadline (mapping to coincide with catchment investigations)

Key Comments on Draft Permit

- Affordability / Integrated Planning:
  - Affordability should be a component of the program (this went unaddressed in Final – part of basis of MCWRS appeal)
- EPA / DEP inconsistency (partially addressed, but still some discrepancies)

Key Comments on Draft MS4 Permit

- Roadway projects – need an exemption from 1" rule (clarified that certain roadway projects are exempt)
- Good housekeeping cost assumptions flawed (unaddressed; new "costing tools" also appear less than conservative)
- Phosphorus Load Calculations / Assumptions (unaddressed)

Millis MS4 Challenges

- TMDLs – Charles River (and tributaries) & Bogastow Brook
  - Phosphorus
  - Bacteria
  - Obligatory Phosphorus Control Plan (3 Phases over 20 Years) to meet 26% (or 32% if only UA) reduction in P Discharges
- Annual Program Cost Projections*
  - Current: $260,000 Future: $560,000
  - Capital Projects for Phosphorus Control ~$22M

Phosphorus Reduction Target for Millis

- EPA's baseline load calc: approx. 2,136 lbs/yr
- EPA's proposed allowance: 1,590 lbs/yr
- Reduction Required: 547 lbs/yr
- What does that really mean?

Enhanced Street Sweeping TP Credit

- Sweep all 50 miles of Millis roadway (est. 121 acres)
- Sweep 2/year
- Low density residential land use
- Approx. 0.59 lbs/yr of phosphorus removal credited
- To reach target, structural controls will be necessary!

How is Millis Positioned for Pending MS4?

- Accomplishments
  - ✓Bylaws in place (will require tweaks)
  - ✓Substantive Mapping complete

How is Millis Positioned for Pending MS4?

- Challenges
  - ✓ Staff Resources are stretched
  - ✓ Much of the data management is manual
  - ✓ Funding limited, and no continuous revenue stream (unlike enterprise-funded utilities)