



# Upper Charles River Regional Stormwater Finance Phase II Feasibility Study

Public Forum #1  
May 15, 2018



# Agenda

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## Welcome, Introductions and Project Overview

- Goals, scope, funding, and schedule
- Recommendations from 2011 Study and regulatory changes since 2011

## Stormwater Activities, Needs, and Costs

- Local stormwater management challenges
- Current stormwater services and costs
  - Franklin, Medway, and Milford
- 2016 MS4 permit – impacts and assumptions

### **Q&A on current program and regulatory requirements**

## Projected Future Stormwater Needs and Costs

- Projected future enhanced stormwater program services
- Projected future costs by community

### **Q&A on program impacts**

## Mitigating Impacts: Potential Regional Activities

- Potential regional/shared services – short and long term
- Financing options – Taxes and user fees

### **Q&A on potential regional approaches and financing**

## Wrap-up and Questionnaire



# Project Overview

## Summary and Goals

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### Summary:

As a follow-up to the 2011 *Sustainable Stormwater Funding Evaluation Study for the Upper Charles River Communities*, the Town of Franklin, with participating partners Milford and Medway, applied for a MassDEP 319 Grant to continue exploring the feasibility of implementing regional stormwater solutions. The grant was approved for \$76,000 in late 2016.

### Goals:

- Document the case that supports the development of a regional stormwater program;
- Outline a road map towards specific elements of a regional stormwater utility that can be implemented by Franklin and its immediate neighbors to provide more efficient stormwater services; and
- Demonstrate how the road map for regional implementation of stormwater services could potentially be applied locally, to downstream communities in the watershed, and across the Commonwealth.



# Project Overview

## Schedule

ID	Task Name	Mar	Apr	May	Jun
1	Update Stormwater Program and Costs	Draft Analysis			
2	Analysis of Future Stormwater Program and Costs	Draft Analysis			
3	Assess Benefits, Challenges, and Funding Sources for Regional Approach		Draft Analysis		
4	Develop Preliminary Legal Framework for Regional Approach			Draft Framework	
5	Engage Stakeholders and Meetings	Mtg. #1	Mtg. #2	Mtg. #3	
6	Engage the Public and Public Education Plan	Develop Plan	Stormwater education flyers	Public Forums	
7	Report			Draft Final Report	Final Report

Project must be completed by June 30, 2018.



# Project Overview

## Roles and Responsibilities

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### Community Representatives

- **Franklin:** Brutus Cantoreggi
- **Medway:** Dave Damico
- **Milford:** Scott Crisafulli and Mike Dean

### Consultant Team

- **Wood:** Rich Niles and Jean Haggerty
- **Dain, Torpy, Le Ray, Wiest & Garner, P.C.:** Hamilton Hackney
- **Kleinfelder:** Betsy Frederick

### Stakeholder Advisory Committee Members

- **Business leaders**
- **Residents**
- **Collaborative groups**
- **Environmental advocate and agency**



# Summary of Phase I Regional Stormwater Study

## Findings

- The future cost for stormwater management for the 3 communities studied (Franklin, Milford, and Bellingham) would be significantly higher (57-77% over 2010 expenditures) to meet projected stormwater needs for FY2012 - FY2016.
- The biggest drivers to increased costs were MS4 and TMDL (phosphorus reduction) requirements. These projections were based on the draft 2010 MS4 General Permit).
- The likelihood that each community's general fund could fund the future program needs was very low.

**Table E.4:** Summary of Future Annual Stormwater Program Operational Costs

Town	Existing	Future Operational Costs (2011 Dollars)				
		Year 1	Year 2	Year 3	Year 4	Year 5
Bellingham	\$232,000	\$872,000	\$1,029,000	\$879,000	\$799,000	\$879,000
Franklin	\$1,023,000	\$1,652,000	\$2,080,000	\$1,888,000	\$1,695,000	\$1,763,000
Milford	\$546,000	\$1,098,000	\$1,274,000	\$997,000	\$912,000	\$905,000

Total cost estimates are rounded to the nearest \$1,000 and include staff labor and direct costs for equipment, materials, disposal, supplies, etc.



# Summary of Phase I Regional Stormwater Study

## Findings: Phosphorus TMDL compliance costs

**Table E.5:** Recommended Capital Cost for Implementation of Structural Stormwater Controls to Achieve Compliance with Phosphorus Load Reductions (2011 Dollars)

Town	% Phosphorus Removal from Structural Controls <sup>1</sup>	Total Cost of Structural BMPs (Charles River Watershed) <sup>2</sup>
Bellingham	37%	\$29,700,000
Franklin	37%	\$74,600,000
Milford	42%	\$75,800,000

<sup>1</sup>Assumes 15% TP reductions in each community via non-structural controls  
<sup>2</sup>Estimated costs are based on a calibration against Spruce Pond Brook subwatershed and rounded to the nearest \$100,000

*Note: the 15% phosphorous reduction via non-structural controls was captured in the future operational costs.*

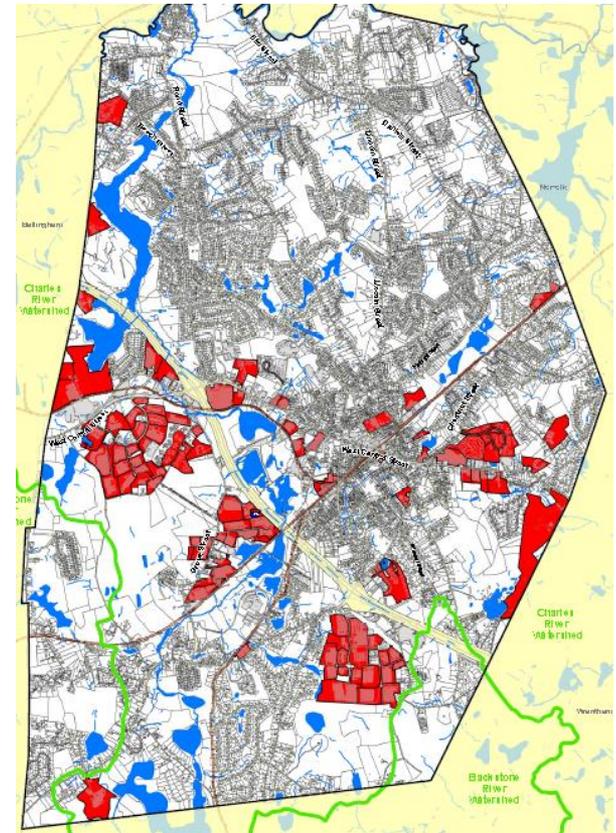




# Summary of Phase I Regional Stormwater Study

## Changes Since 2011

- 2010 draft MS4 Permit revised. Changes in the 2016 Permit:
  - Scaled back timing of several key compliance activities, such as phosphorus compliance plan development and BMP implementation (capital expenditures).
  - Adjusted TMDL targets, including required % removal.
  - Removed the proposed Residual Designation Authority (RDA) and Certified Municipal Phosphorus Program sections.
- 2016 permit has been legally challenged and EPA has extended the effective date to July 1, 2018 . . . . (pending).
- Bellingham decided not to participate in the Phase II study and Medway joined in their place..



# Summary of Phase I Regional Stormwater Study

## Changes Since 2011

### Phosphorous Reduction Requirements

	Existing Load (lbs/yr)	TMDL Allowable Load (lbs/yr)	% Reduction	Non-Structural BMPs %	Structural BMPs %	Structural BMPs Cost
<b>Town of Franklin</b>						
Upper Charles Study	5,428	2,600	52.1%	15%	37%	\$ 74,600,000
2016 MS4 Permit	5,169	3,365	34.9%	15%	20%	\$ 38,200,364

### Town of Medway\*

2016 MS4 Permit	2,344	1,652	29.5%	15%	15%	\$ 13,831,690
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\*\$/lb removed is based on the average cost for all 3 communities from the 2011 Upper Charles Study.

### Town of Milford

Upper Charles Study	3,851	1,656	57.0%	15%	37%	\$ 75,800,000
2016 MS4 Permit	3,552	2,090	41.2%	15%	26%	\$ 49,425,025

Upper Charles Study values were from the two TMDLs. Permit calculations were due to revisiting numbers from two TMDLs. Updated loading export rates for different land uses. Estimated connectiveness of IA, more accurate, matched to measured loads to calibrate. Took load out of certain land uses (commercial, industrial, residential) and 10% of load from illicit discharges. And subtracted DOT and DCR properties.

*These costs are preliminary and subject to change.*



# Current Stormwater Activities, Needs, and Costs

## Local Stormwater Program Challenges

- Aging stormwater infrastructure
- System maintenance needs
- Water quality impacts
- Flooding and drainage system capacity
- MS4 permit/regulatory requirements
- Mapping and condition assessment of the storm drain assets
- Increasing costs (staff and equipment)
- Backlog of capital improvements



# Current Stormwater Activities, Needs, and Costs

## Key stormwater assets and impacts

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	Franklin	Milford	Medway
Town area (sq. miles)	27.03	14.86	11.5
Miles of stormwater pipe	137	85	100
Number of catch basins	5835	3417	2163
Amount of sediment and trash disposed of from basin cleaning and street sweeping	800+ tons	350+ tons	150+ tons



# Stormwater Activities, Needs, and Costs

## Preliminary Cost of Services – Current Program Expenditures

### Updated (2017) Stormwater Cost of Services

Functional Area	Description of Services	Franklin	Milford	Medway
Program Administration	Budget, staff, and grant management, NOI and SWMP preparation, Public Ed/Outreach, Training, interagency coordination	\$62,000	\$20,100	\$9,320
Regulatory Compliance/ Enforcement	MS4 compliance and reporting, BMP and system inspections, IDDE program development, E&S oversight	\$59,800	\$28,900	\$10,200
Engineering & Master Planning	Master plans, stormwater design and permitting, Data management, field engineering support, Hazard Mitigation/FEMA updates	\$169,400	\$14,400	\$13,000
Operations and Implementation	Infrastructure O&M, catch basin and inlet cleaning/repairs, street and sidewalk sweeping, leaf pick-up, BMP facility maintenance, IDDE tracking/removal, infrastructure improvements, emergency repairs	\$829,000	\$536,700	\$172,000
Monitoring	Dry and wet weather monitoring	\$0	\$0	\$0
<b>Estimated 2017 Annual Costs</b>		<b>\$1,120,200</b>	<b>\$600,100</b>	<b>\$204,520</b>



# Stormwater Activities, Needs, and Costs

## Existing Major Expenditures

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### Franklin:

- Stormwater improvements (Capital Improvement) projects - \$267,000 (varies annually)
- Storm sewer and culvert maintenance - \$88,000
- Catch basin and inlet cleaning – \$110,000 (~1800 CBs per year)
- Street sweeping - \$109,000 (all streets once/year; downtown area twice/year)
- System Inspections - \$55,000 (infrastructure, post-construction BMPs, E&S controls)
- Stormwater design and permitting assistance - \$73,500 (~ 5 projects per year)

### Milford:

- Storm sewer and culvert maintenance - \$60,000
- Catch basin and inlet cleaning - \$70,000
- Street sweeping - \$221,000 (all streets and parking areas twice/year; sidewalks once/year)
- Leaf pick-up - \$96,000 (leaf collection, yard waste, and composting program)
- System Inspections - \$15,000 (MS4 requirements and new connections)



# Stormwater Activities, Needs, and Costs

## Existing Major Expenditures

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### Medway:

- Storm sewer and culvert maintenance - \$20,000
- Catch basin and inlet cleaning - \$47,000
- Street sweeping - \$50,000
- Leaf pick-up - \$30,000 (leaf collection, yard waste, and composting program)
- Emergency drainage repairs - \$15,000
- System Inspections - \$10,000 (MS4 requirements)



# Current Stormwater Activities, Needs, and Costs

## Q&A

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Questions on the Town's current stormwater services and costs



# Future Program Needs

## 2016 MS4 Permit Changes from Current Permit Requirements

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### Minimum Control Measure 1 – Public Education & Outreach

- Additional messaging requirements and measurable results

### Minimum Control Measure 2 – Public Participation

- No major changes

### Minimum Control Measure 3 – Illicit Discharge Detection & Elimination

- Detailed storm drain system mapping and catchment delineation
- Illicit Discharge Detection and Elimination (IDDE) Plan
- Development of investigation and monitoring procedures
- Screening and sampling of priority outfalls

### Minimum Control Measure 4 – Management of Construction Site Runoff

- Enhanced inspection and enforcement program



# Stormwater Activities, Needs, and Costs

## 2016 MS4 Permit Impacts

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### Minimum Control Measure 5 – Management of Post Construction Site Runoff

- Implement written procedures for site-plan review, inspections and enforcement
- Update regulations to require as-builts
- Report on local design standards affecting impervious area
- Report on local regulations for feasibility of green infrastructure

### Minimum Control Measure 6 – Good Housekeeping in Municipal Operations

- Increase street sweeping and waste disposal tracking
- Establish catch basin cleaning and inspection program to ensure catch basins do not exceed 50% full
- Develop and implement SWPPPs

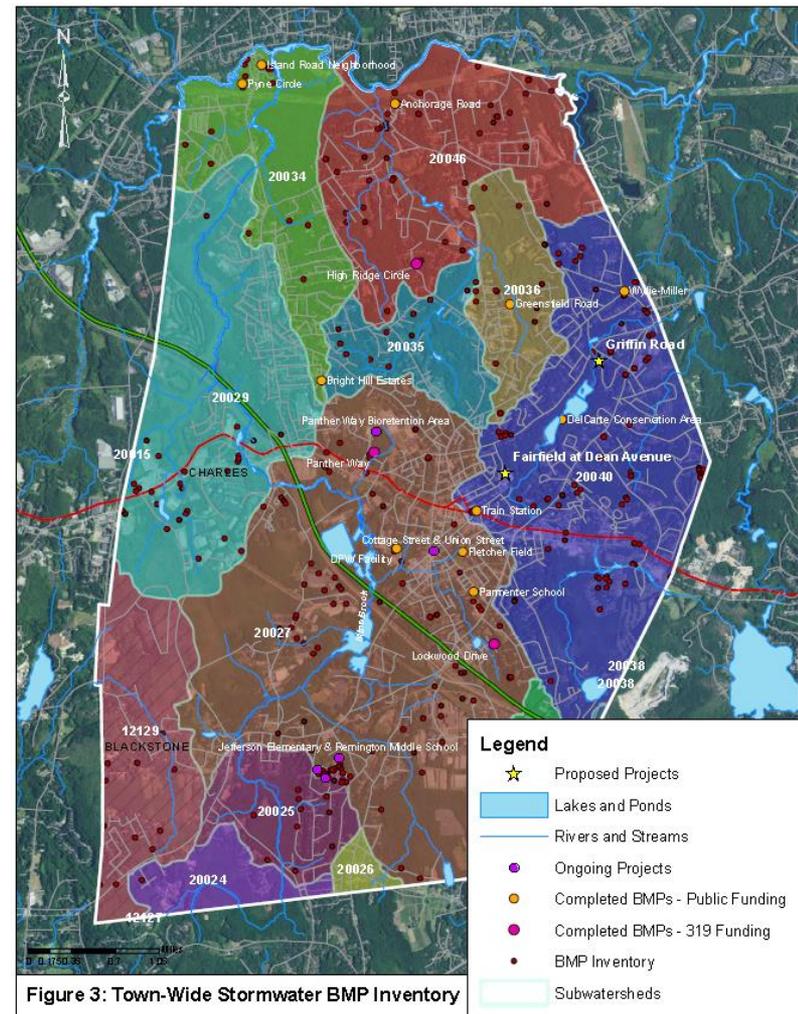


# Stormwater Activities, Needs, and Costs

## 2016 MS4 Permit Impacts

### Additional Requirements

- Detailed Stormwater Management Plan (SWMP) Development and Updates
- Develop Phase I of Phosphorus Control Plan (PCP)
- Perform increased permit compliance tracking and annual reporting



# What will additional requirements cost?

## Projected Future Stormwater Costs

Functional Category	5 year average (FY19-FY23)		
	Franklin	Milford	Medway
Program Administration	\$77,000	\$53,100	\$34,300
Regulatory Compliance/ Enforcement	\$98,700	\$40,700	\$45,500
Engineering and Master Planning	\$339,800	\$191,600	\$71,100
Operations and Implementation	\$1,074,500	\$610,200	\$280,000
Monitoring*	\$91,500	\$57,600	\$0
<b>Total</b>	<b>\$1,681,500</b>	<b>\$953,200</b>	<b>\$430,900</b>
% increase from 2017	<b>50%</b>	<b>59%</b>	<b>111%</b>

\*Note: monitoring costs for Medway are included under regulatory compliance/enforcement.

*These costs are preliminary and subject to change.*



# Stormwater Activities, Needs, and Costs

## Major Future Expenditures (effort)

Program Effort	Franklin	Milford	Medway
Public Education and Outreach	X	X	X
Stormwater Master Planning		X	
System Mapping and Catchment Delineation	X	X	X
Illicit Discharge Detection and Elimination	X	X	X
Phosphorous Control Plan Development	X	X	X
Drainage System Inspection		X	
Outfall Screening and Monitoring	X	X	X
Catch Basin and Inlet Cleaning	X	X	
Street Sweeping	X		X
Drainage System Repairs			X



# Future Stormwater Needs

## Discussion of Priorities

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In addition to the MS4 compliance costs, there are other challenges and stormwater priorities specific to each community:

- Backlog of drainage system inspections and repairs
- Increased inspections of private development projects
- Engineering support for design and best practices
- Capital investment in new or expanded system components to address localized flooding and growth impacts



# Future Stormwater Activities, Needs, and Costs

## Q&A

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Questions on the Town's future stormwater challenges and costs



# Potential Ways to Mitigate Impacts

## Regional Approach

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As recommended during the 2011 Study, there were several suggestions for helping to manage the expected increased stormwater program increases:

- *Work with EPA to revise or extend the permit and TMDL requirements –*  
The permits were revised and some requirement target dates extended
- *Develop regional (or coordinated) watershed management plans -* this has not been done yet but is a key issue being considered as part of this study
- *Implement additional public education and engagement to build support for enhanced stormwater program requirements –* each town has committed to build more education opportunities (including websites, forums, public presentations, etc.)
- *Pursue the potential implementation of a stormwater utility at a regional (or individual municipal level) to address stormwater funding needs –* this has not been done yet but is being considered as part of this study



# Potential Regional Activities

## Benefits

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### Potential benefits from regionalization:

- Consistent regional voice and messages
- Minimize duplication of efforts (e.g., consistent standards)
- Cost savings from consolidated services and better economy of scale
- Coordinated planning (e.g., Phosphorus Control Plans)
- Greater access to sources of specialized expertise
- Increased ability to access outside sources of funding
- Engage the private sector to encourage and promote better stormwater management
- Other?



# Potential Regional Activities

## Challenges

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### Potential challenges and concerns:

- No established administrative or funding mechanisms
- Legal constraints for some activities
- Loss of control on priority setting
- Loss of control on decision making and response to local issues
- Ability to scale without legislative changes
- Other?



# Potential Regional Activities

## Examples from Other Regions

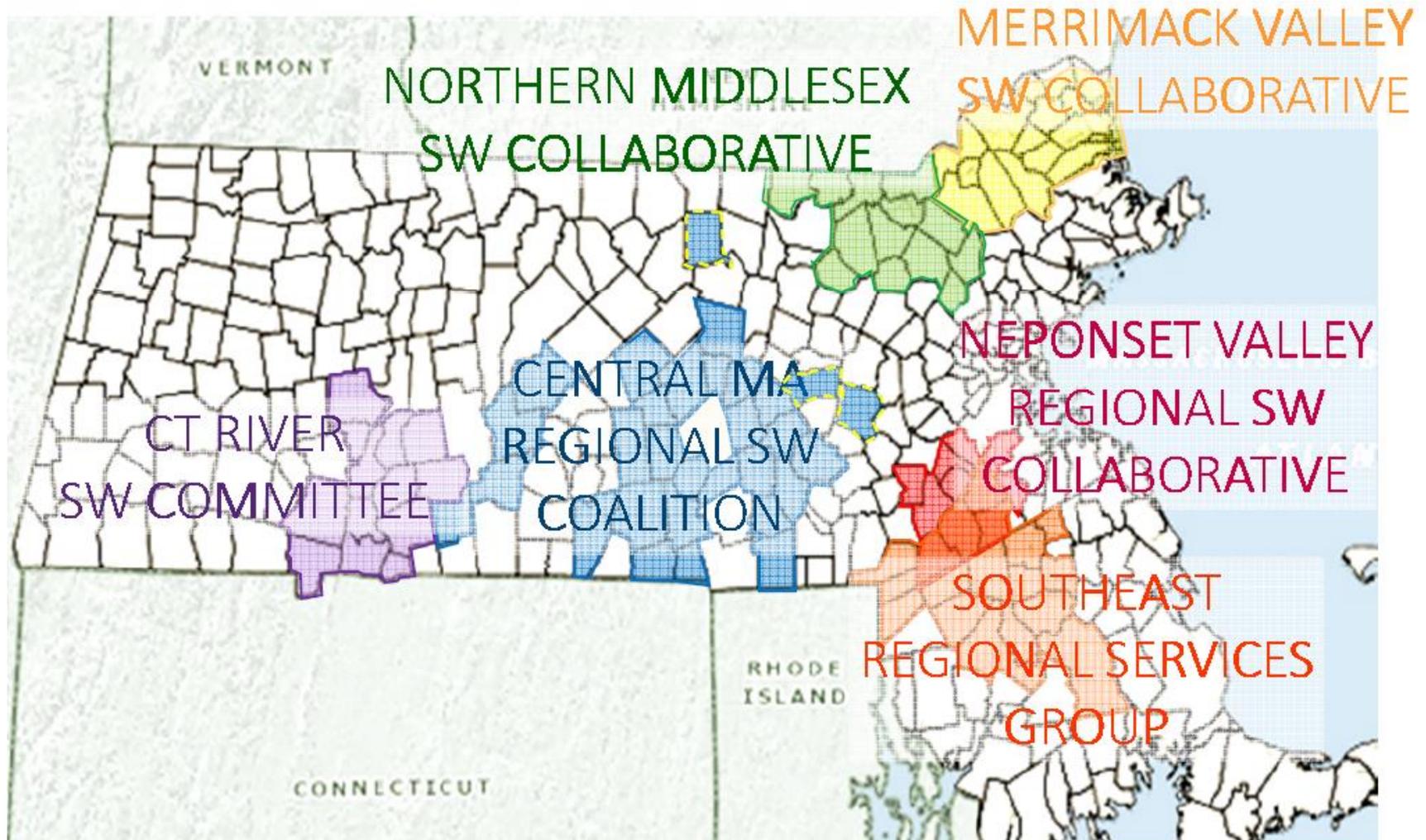
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- 30 community members
- Funded through grants and nominal fees from municipal members
- Monthly steering committee meetings facilitated by consultant
- Templates for planning documents
- Training programs/presentations
- SOPs for multiple activities
- Equipment rental and mapping assistance
- Joint review and comments on MS4 permit

# Potential Regional Activities

## Examples from Other Regions

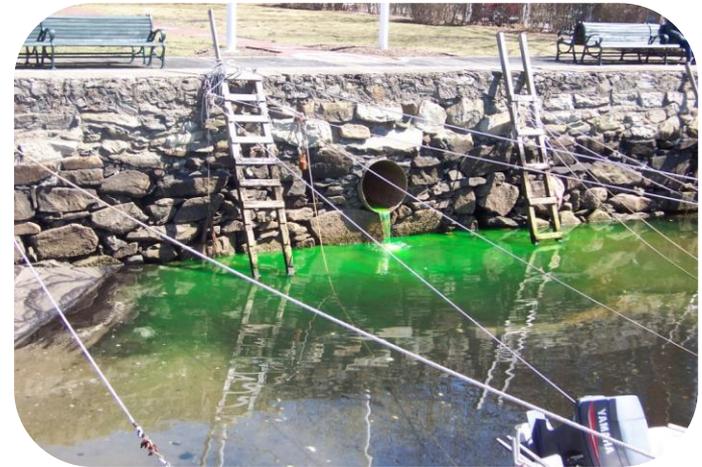


# Potential Regional Activities

## Discussion for Franklin, Medway, and Milford

### Short-term regional opportunities:

- Regular regional stormwater program meetings
- Public education materials
- Public outreach activities
- Annual employee training
- MS4 SWMP development
- Phosphorous Control Plan development
- Regional design standards and SOPs
- Asset management templates/processes
- Development of joint projects and grant applications
- Monitoring of outfalls and surface waters
- Sharing of monitoring equipment



# Potential Regional Activities

## Discussion for Franklin, Medway, and Milford

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### Long-term regional activities:

- Joint contracting services
- Sharing of high-cost capital equipment (e.g., vector truck)
- Management of street sweepings and catch basin cleanings (e.g., BUD)
- Shared funding and credits for optimal phosphorous reduction across communities (priority for soils, available land, planned redevelopment)
- Public/private partnerships to construct stormwater BMP retrofits
- Award of stormwater funding on a regional basis for private entities
- Establish regional entity (board or commission)
- Establish regional funding (utility)
- Pursue co-permittee status for MS4 permit



# Updated list of Potential Regional Activities

## Organized by Categories

Identified regional options were assigned to one of eight (8) categories to make discussion and review easier.

<p><b>1. Informal Collaboration</b></p>	<p><b>2. Formal Collaboration</b></p>	<p><b>3. Purchasing in Bulk</b></p>	<p><b>4. Shared Technical Services contracts</b></p>
<p>Sharing best practices, coordinating regulatory responses</p>	<p>Co-sponsoring outreach, regional training, sharing cost of public ed. materials</p>	<p>Larger purchases of pipes, manholes, inlets, computers, vehicles, parts</p>	<p>Shared design services, planning (SWMP, PCP), mapping, monitoring, inspections</p>
<p><b>5. Shared O&amp;M Service Contracts</b></p>	<p><b>6. Shared Resources</b></p>	<p><b>7. Capital Projects</b></p>	<p><b>8. Regional Organization</b></p>
<p>Contracts for catch basin cleaning, pipe repairs, waste management</p>	<p>Equipment – CCTV, sweepers, vac trucks Personnel – operators, laborers, planners</p>	<p>Shared funding for phosphorus controls, credit trading, P3 projects</p>	<p>Creating coalition, formal relationship with existing regional group, regional authority</p>



# Preliminary Benefits, Concerns, & Priorities

## Evaluation criteria

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To help assess which options should be recommended for implementation, benefits, concerns, and priorities were examined.

Benefits can include direct financial savings:

- Economies of scale for work and equipment or buying in bulk means lower local operating costs.
- Direct savings on producing public education materials or performing group training.

Or provide more indirect positive impacts:

- Increased efficiency and consistency in watershed planning for water quality protection and flood mitigation.
- Increased access to professional stormwater resources that can provide technical support.
- More opportunity to develop public/private partnerships



# Preliminary Review of Options

## Legal Analysis

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### Summary of Massachusetts' General Laws that authorize municipal stormwater management initiatives:

- *Most activities being contemplated are already authorized under existing Massachusetts statutes that cover:*
  - *Three types of Inter-municipal agreements (IMA) to perform services jointly*
    - *Formal contracts – typically used for personnel sharing*
    - *Joint service agreements – can be used for jointly owning equipment or delivery of service across municipal boundaries*
    - *Service exchange agreements – lending services, usually without payment*
  - *Setting of stormwater charges (user fees and enterprise funds)*
- *There are some restrictions and limitations on each authority. For example, for IMA's:*
  - *Agreements must be approved by the city council, mayor, or board of selectman*
  - *The term cannot exceed 25 years*
  - *Maximum financial liabilities of each party must be specified*
  - *Recording keeping, audits, and other financial controls required*



# Preliminary Review of Options - Benefits

<b>Category</b>	<b>Potential benefits</b>	<b>Potential savings*</b>
<b>1. Informal Collaboration</b>	Supports consistent stormwater approaches and sharing of information and best practices	More efficient use of resources (staff time)
<b>2. Formal Collaboration</b>	Increases opportunities for cost sharing - material development, training, SOPs - and supports consistent outreach to a larger audience	Public ed.: 25% of \$31,000 = \$7,750; training - 30% of \$13,000 = \$3,900
<b>3. Purchasing in Bulk</b>	Pre-ordering and economy of scale can lower operating costs	Materials for mailings: 5% of \$25,000 = \$1,250
<b>4. Shared Technical Services Contracts</b>	Joint technical services contracts/larger combined projects will increase competition/shave costs	Planning services: 5-10% of \$110k = \$5,500 – \$11,000
<b>5. Shared O&amp;M Service Contracts</b>	Can leverage combined needs/economy of scale to negotiate lower service costs and/or improved services/benefits	Catch basin cleaning: 10% of \$306k = \$30,600; pipe/system repairs: 10% of \$193k = \$19,300
<b>6. Shared Resources</b>	Coordinated approach to meeting operational needs; maximizes use of available resources; less need to purchase equipment/hire personnel or contractors	Franklin vector truck = \$400K investment, used ~25% annually; defray capital cost through service with reduced rates to nearby towns
<b>7. Capital Projects</b>	Implementation of structural phosphorus control measures can maximize loading reductions in the most cost effective locations; set precedent for working with P3s across the region	Projected phosphorous reduction costs - \$100M total; 5-10% savings of \$5-\$10M over 25 years
<b>8. Regional Organization</b>	Combines administrative and programmatic elements that eliminate duplicative efforts and spread costs over a larger base; provides structure for SW utility	Centralized management and administration; opportunity for others to join in the future



# Funding Options

## Basic Funding Approaches

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No matter the funding approach taken, the cost of the public stormwater programs will be borne by property owners in each town. Using a regional approach can help defray some of those costs and the consideration of alternative funding can distribute the costs in a more equitable manner.

Stormwater funding typically comes from one of three primary sources:

- Taxes – most Massachusetts communities fund stormwater from their General Fund, which is primarily supported by real property taxes. No particular relationship is necessary between tax revenues and the activities or improvements that they fund. Budgets are set annually based on available tax dollars and limited by Prop. 2½.
- Service charges or utility fees are tied to the cost of providing services. The charge to the rate payer must relate to that ratepayer’s impact, or “use” of the service.
- Assessments are fees levied to pay for specific improvements or activities of direct and special benefit to those who are being charged.



# Funding Options

## Regional Stormwater Utility

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Goals of this effort: assess the option of implementing a regional stormwater utility by examining potential legal structure, services provided, cost distribution, and approval authority.

- Legal structure: legislatively-approved special District or pursue under Municipal Home Rule Authority?
- Regional services: limited to regional priorities, specific services, or total program?
- Cost distribution: % impervious; % of services provided?
- Authority: approval of special district and by-laws/ordinance by governing body of each town. Include administrative structure, setting and collection of fees, responsibility and liability of each community, delivery of service

This can be an option that grows over time through regional collaboration . . . .



# Funding Options

## Local Regional Wastewater Example

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The most familiar example of a regional entity is the Charles River Pollution Control District (CRPCD) located in Medway, MA. The CRPCD treats wastewater and domestic septage from 8 communities: Bellingham, Dover, Franklin, Medway, Millis, Norfolk, Sherborn and Wrentham.

- The CRPCD was created by the Massachusetts Department of Environmental Management under Massachusetts General Law (MGL) Chapter 21, Section 28 “water pollution abatement districts; establishment; dissolution; enlargement or consolidation”.
- Towns are assessed fees for capital and operating costs of the facility based on % capacity and metered flows. Fees are incorporated into the rate structure for each community based on specific needs and operation/maintenance costs for the collection system.
- This approach for management of wastewater by a regional entity is similar to one that could be used for stormwater; however, with slightly different advantages and disadvantages due to the decentralized nature of stormwater management. For example, fees for stormwater are typically based on impervious area and can be more complex than wastewater.



# Preliminary Recommendations

## “Look and Feel” of the Regional Stormwater Program

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### Preliminary Feedback from the Town staff and SAC

Key Element	Recommendation
Legal Framework	<i>Use Inter-municipal agreements</i>
Funding Approach	<i>Keep in local: Individual by Town (general fund taxes)</i>
Governance Framework	<i>Managed by Town staff with support from planning agency, non-profit coalition, and professional support</i>



# Potential Regional Approaches

## Q&A

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Questions on the potential pursuit of regional approaches

# Wrap-up

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- Fill out Forum Questionnaire
- Next steps with this study
  - Another Public Forum on May 23rd
  - Stakeholder Advisory Committee (SAC) Meeting #3 at end of May
  - Development of Draft and Final Reports including comments from the SAC and the Public Forums

Thank you for your attendance and input!

