Sustainable Stormwater Funding for the Upper Charles River

Steering Committee Meeting #5
Municipal Center, Bellingham, MA
10 Mechanic Street
September 12, 2011

Agenda

1:00-1:10  Welcome and Introduction (EPA)
1:10-1:30  Draft Report Overview
          Review Sections 1 - 2: Introduction & Context
          Questions and discussion (Q&D) on Sections 1 - 2
1:30-2:00  Review Sections 3 - 4: Alternatives & Cost of Services
          Q&D on Sections 3 - 4
2:00-2:30  Review of Sections 5 - 6: Governance & Funding Options
          Q&D on Sections 5 - 6
2:30-2:50  Review of Sections 7 - 8: Billing Options & Recommendations
          Q&D on Sections 7-8
2:50-3:00  Next Steps (submital of comments and timing for completion of the final report)
Draft Report Content

- List of Acronyms
- Executive Summary
- Section 1: Introduction
- Section 2: Stormwater Context
- Section 3: Implementation Alternatives
- Section 4: Estimated Costs of Existing & Future Services
- Section 5: Governance/Admin
- Section 6: Funding Options/Revenue Alternatives
- Section 7: Billing Options
- Section 8: Recommendation
- Section 9: References
- 4 Appendices
  - Comments
  - Permit summaries
  - CMPP Assessment
  - Cost Spreadsheets
  - EPA Future Cost Memo

Section 1: Introduction

- Background and reference to Draft MS4 and RDA General Permits
- Purpose of the project and recommendations for funding options to manage stormwater runoff
- Benefits for the reader (e.g., better understanding of)
  - Permit requirements
  - Estimate of the cost of services
  - Program implementation options
- Steering Committee representation
Section 2: Stormwater Context in the Upper Charles River Watershed

- Impaired waters in each town
- Regulatory drivers (e.g., MS4 and RDA GPs)
- Loading reduction requirements:
  - Bellingham: 52%
  - Franklin: 52%
  - Milford: 57%

Designated Discharge Properties
Local Factors Influencing Program Implementation

- Land use
- Existing impervious cover
- Soils
- Existing BMPs
- Existing stormwater program capacity
- Other related programs (Sewer & Water)
- Governance structure

Sections 1 and 2: Q&D
Section 3: Stormwater Management Implementation Alternatives

Variables include:
- Timeframe for implementation (10, 15, 20 or 25 years);
- Funding mechanisms (Utility or not); and
- Management approach (town-by-town or regional cooperation).

Table 3.1: Stormwater Management Implementation Scenarios Evaluated in this Feasibility Report

Each Town Manages Stormwater Program Individually | Scenario 3 | Scenario 4
---|---|---
No Stormwater Utility | Town enacts Stormwater Utility – DDs fully participate in the program | Regional Stormwater Management Program – DDs fully participate

Funding Option: No Stormwater Utility (DDs on their own)

Advantages*
- No new entity or program;
- Residential property owners could possibly deduct additional expenses;
- Program completely within local control.

Disadvantages*
- Costs may exceed General Fund budgets; requiring Prop 2½ Overrides;
- Lacks equity among property owners;
- Shorter implementation timeframe for DDs with potentially higher costs;
- No opportunities for elimination of duplicative costs;
- No opportunities to apply financial incentives to modify behavior.

* From the perspective of the municipalities
### Funding Option: No Stormwater Utility (DDs part of a CMPP)

**Advantages**
- Longer timeframe for DDs to implement controls;
- Allows for P Trading to maximize reductions at the most cost effective sites;
- Centralized entity likely to a more structured approach; and
- Less fiscal impact to DDs

**Disadvantages**
- Time and expense to set up and manage CMPP; and
- May divert resources from other programs.

### Funding Option: Stormwater Utility on a Town-by-Town Basis

**Advantages**
- Equitable distribution of costs across all property owners;
- Consistent & independent funding;
- Longer timeframe for DDs to implement controls;
- P Trading allows for more cost effective implementation;
- Offers potential for fiscal incentives to modify behavior; and
- Compliance with MS4 GP more certain

**Disadvantages**
- Initial cost to set up and manage utility;
- No opportunities for elimination of duplicative costs;
- Payment of fees will established expectations of increased services;
- Payment of fees likely not deductible by residential property owners.
### Funding Option: Stormwater Utility on a Regional Basis

**Advantages**
- Cost savings for administrative and program elements;
- Cost saving potential for BMP implementation across town boundaries;
- Eliminates potential resource conflicts with other municipal programs; and
- Potential for further regionalization and cost savings.

**Disadvantages**
- Fair share of services debates;
- Potential for loss of control over basic services;
- Potential for new bureaucracy with unnecessary program elements;
- Potential for variable responsiveness.

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### Section 4: Cost Estimates for Existing and Future Stormwater Services

- Existing program annual operational costs;
- Future program annual operational costs;
- Future Capital Cost for Phosphorus Reduction; and
- Alternative methods for estimating capital costs.

*Existing costs as reported by municipality. Future estimates based on Draft MS4 permit requirements.*
Stormwater Program Cost Centers

- Administrative
- Billing and Finance
- Regulation/Enforcement
- Engineering/Master Planning
- Operations and Implementation
- Monitoring

Operations and Implementation (for example)

<table>
<thead>
<tr>
<th>Description</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operations and Maintenance Management</td>
<td>construction oversight, project bidding, etc</td>
</tr>
<tr>
<td>CIP/Infrastructure Implementation</td>
<td>construction costs (design and engineering in previous section); could be % of large road project (for example)</td>
</tr>
<tr>
<td>PCP implementation</td>
<td>retrofitting</td>
</tr>
<tr>
<td>Voluntary CMPP/RDA Implementation</td>
<td>retrofitting</td>
</tr>
<tr>
<td>IDDE</td>
<td>elimination of IDDEs</td>
</tr>
<tr>
<td>Storm Sewer and Culvert Maintenance/Repair</td>
<td>equipment, labor, transport and disposal</td>
</tr>
<tr>
<td>Inlet, Catch Basin, and Manhole Cleaning</td>
<td>equipment, labor, transport and disposal &amp; repair</td>
</tr>
<tr>
<td>Stormwater BMP Facility Maintenance</td>
<td>equipment, materials, labor, transport and disposal associated with maintenance and repair</td>
</tr>
<tr>
<td>Street Sweeping</td>
<td>equipment, labor, transport and disposal</td>
</tr>
<tr>
<td>Fall Leaf pickup</td>
<td>equipment, labor, transport and disposal</td>
</tr>
<tr>
<td>Maintenance/Repair/Installation of ESC practices</td>
<td>includes cleanup of sediment and repair of eroded areas</td>
</tr>
<tr>
<td>Stream Restoration/Stabilization</td>
<td>equipment, materials, labor, transport and disposal</td>
</tr>
<tr>
<td>Ditch and Channel Maintenance</td>
<td>equipment, labor, transport and disposal</td>
</tr>
<tr>
<td>Waterfowl &amp; Pet Waste Management Programs</td>
<td>equipment, labor, materials</td>
</tr>
<tr>
<td>Public Assistance Program</td>
<td>equipment, labor, materials for rainbarrel, disconnection, raingarden programs</td>
</tr>
<tr>
<td>Emergency Drainage Repairs</td>
<td>allowance for unexpected repairs</td>
</tr>
<tr>
<td>Land, Easement, and Rights Acquisition</td>
<td></td>
</tr>
</tbody>
</table>
Operational Costs for Existing Programs

- Bellingham: $232,000/year
- Franklin: $1,023,000/year
- Milford: $546,000/year

Future Cost Items
- Update written Stormwater Mgmt Plan
- Increased reporting/record keeping on annual reports
- Targeted public education (2 messages to 4 audiences) and report results
- Illicit discharge priority catchment assessments (including SSOs)
- Detailed outfall monitoring for both dry and wet weather
- Written IDDE program with mapping and prioritization of problem catchments
- Complete stormwater system mapping (all pipes/manholes/inlets/structures)
- Catch basin inspection/cleaning/inspection data
Future Cost Items (continued)

- Track # of site plan reviews, inspections, enforcement actions
- ID/rank retrofit opportunities for municipally-owned facilities
- Develop a SWPPP for municipally-owned facilities
- Complete a code review and report
- Impervious cover/DCIA tracking
- Street sweeping optimization (2 times/yr)
- Written O&M procedures for municipal activities for trash, pet wastes, leaf litter control, fertilizer use & yard wastes
- Pet waste & waterfowl mgmt plans
- Phosphorus Load Reduction to comply with TMDL targets

Phosphorus Control Cost Items

- Phosphorus control plan (PCP)
- Phosphorus control mapping of priority areas
- Certified Municipal Phosphorus Plan (CMPP)
- Increased/targeted public education on phosphorus control and increased public involvement
Future Program Costs for Operational Expenses

Estimated Stormwater Program Operational Costs (Current $)

Summary of Operational Costs Annual Average First Five Years

- Bellingham: $ 891,000/year
- Franklin: $ 1,815,000/year
- Milford: $ 1,037,000/year
Costs for Phosphorus Reduction Per TMDL Targets

Phosphorus removal requirements:
- Bellingham = 52%
- Franklin = 52%
- Milford = 57%
- DD sites = 65%

Note: DD phosphorus removal is nested within MS4 total removal.

Table 4.10: Phosphorus Load Reductions Required (Charles River Watershed)

<table>
<thead>
<tr>
<th>Town</th>
<th>Area (ac)</th>
<th>IA (ac)</th>
<th>Existing Load (lbs/yr)</th>
<th>TMDL Allowable Load (lbs/yr)</th>
<th>TMDL Required Load Reduction (lbs/yr)</th>
<th>% Load Reduction</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bellingham</td>
<td>6,122</td>
<td>922</td>
<td>2,132</td>
<td>1,028</td>
<td>1,104</td>
<td>51.8</td>
</tr>
<tr>
<td>Franklin</td>
<td>15,546</td>
<td>2,401</td>
<td>5,428</td>
<td>2,600</td>
<td>2,828</td>
<td>52.1</td>
</tr>
<tr>
<td>Milford</td>
<td>8,112</td>
<td>1,741</td>
<td>3,851</td>
<td>1,656</td>
<td>2,195</td>
<td>57.0</td>
</tr>
</tbody>
</table>

Sources: Impervious areas and loads from EPA spreadsheet derived from TMDL (Voorhees, 2011); areas for each town are from MassGIS shapefile for Charles River Watershed (2011).

Estimated Costs for Phosphorus Reduction

Assume 15% of Total P Load Reduction achieved through non-structural measures:
- Enhanced street sweeping (2% - already accounted for in operational costs);
- Bi-annual catch basin cleaning (2% - also already accounted for in operational costs);
- Organic Waste and Leaf Litter Control (1% - also already accounted for in operational costs); and
- Phosphorus ban on fertilizers (10% - assumed to have no implementation cost).
Spruce Pond Brook
Franklin, MA

1.1 Square Mile Watershed;

Mix of land use is representative of the Upper Charles Watershed;

Estimated cost to implement structural BMPs to remove 43.1% of P = $4.92M ($28,070/Imp Acre; $31,700/lb of P);

Results calibrated by land use and soil type to scale-up to entire Upper Charles within the 3 communities.

Spruce Pond Brook Subwatershed

- 51 catchments;
- 28 catchments with proposed control practices;
- 2 existing BMPs to be retrofitted
- Management units created based on land use and soil type
- Costs include land acquisition but not design & permitting
- Scaled up to target removals then added 35% for design, permitting and const admin.
### Land Use Distribution
**Spruce Pond Brook vs Upper Charles**

<table>
<thead>
<tr>
<th>Land Use</th>
<th>Spruce Pond Brook</th>
<th>Upper Charles (3 Towns)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Commercial:</td>
<td>6.1%</td>
<td>4.1%</td>
</tr>
<tr>
<td>Industrial:</td>
<td>3.0%</td>
<td>4.2%</td>
</tr>
<tr>
<td>HDR:</td>
<td>7.0%</td>
<td>4.2%</td>
</tr>
<tr>
<td>MDR:</td>
<td>32.1%</td>
<td>16.5%</td>
</tr>
<tr>
<td>LDR:</td>
<td>10.9%</td>
<td>7.9%</td>
</tr>
<tr>
<td>Ag:</td>
<td>0.8%</td>
<td>1.7%</td>
</tr>
<tr>
<td>Forest:</td>
<td>36.9%</td>
<td>56.4%</td>
</tr>
<tr>
<td>Open Land:</td>
<td>8.8%</td>
<td>1.4%</td>
</tr>
<tr>
<td>Highway:</td>
<td>2.4%</td>
<td>2.1%</td>
</tr>
</tbody>
</table>

### Treatment Costs/Acre
*(calibrated from Spruce Pond Brook Watershed Plan)*

**Table 4.11: Management Unit Treatment Costs for Target Phosphorus Removal**

<table>
<thead>
<tr>
<th>Management Unit (Land Use and Soil Type)</th>
<th>Cost per IA for 37% TP Removal</th>
<th>Cost per IA for 42% TP Removal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agriculture A/B</td>
<td>$11,000</td>
<td>$14,000</td>
</tr>
<tr>
<td>Agriculture C/U</td>
<td>$19,000</td>
<td>$22,000</td>
</tr>
<tr>
<td>Commercial A/B</td>
<td>$49,000</td>
<td>$56,000</td>
</tr>
<tr>
<td>Commercial C/U</td>
<td>$74,000</td>
<td>$81,000</td>
</tr>
<tr>
<td>Freeway A/B</td>
<td>$20,000</td>
<td>$24,000</td>
</tr>
<tr>
<td>Freeway C/U</td>
<td>$30,000</td>
<td>$36,000</td>
</tr>
<tr>
<td>Industrial A/B</td>
<td>$34,000</td>
<td>$41,000</td>
</tr>
<tr>
<td>Industrial C/U</td>
<td>$54,000</td>
<td>$60,000</td>
</tr>
<tr>
<td>High Density Res A/B</td>
<td>$74,000</td>
<td>$80,000</td>
</tr>
<tr>
<td>High Density Res C/U</td>
<td>$128,000</td>
<td>$135,000</td>
</tr>
<tr>
<td>Medium Density Res A/B</td>
<td>$24,000</td>
<td>$30,000</td>
</tr>
<tr>
<td>Medium Density Res C/U</td>
<td>$46,000</td>
<td>$51,000</td>
</tr>
<tr>
<td>Low Density Res A/B</td>
<td>$20,000</td>
<td>$24,000</td>
</tr>
<tr>
<td>Low Density Res C/U</td>
<td>$30,000</td>
<td>$36,000</td>
</tr>
</tbody>
</table>
Remaining P Reduction Through Structural Controls

- Bellingham and Franklin = 37% of P Load
- Milford = 42% of P Load

Comparison to other methods/data:
- Optimization analysis from Tetra Tech studies (as modified by EPA/HW staff);
- Published cost for P removal per lb;
- Comparison to other studies/other regions/actual implementation plans.

Summary of Capital Costs for Target Phosphorus Reduction
(Based on Calibration against Spruce Pond Brook Subwatershed)

<table>
<thead>
<tr>
<th>Town</th>
<th>Target P Removal from Structural Controls</th>
<th>Capital Construction Costs in 2011 $1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bellingham</td>
<td>37%</td>
<td>$29,700,000</td>
</tr>
<tr>
<td>Franklin</td>
<td>37%</td>
<td>$74,600,000</td>
</tr>
<tr>
<td>Milford</td>
<td>42%</td>
<td>$75,800,000</td>
</tr>
</tbody>
</table>

1 Includes: Design, permitting, const. admin., land acquisition costs, & # of existing BMPs
Comparison to Optimization Costs

Milford

Estimated Construction Costs vs. Impervious Areas Treated to Achieve 42% Phosphorus Load Reduction in Charles River Watershed of Milford, MA

Comparison to Other Studies/Plans ($/Imp Acre Treated)

- **Mid-Atlantic Retrofit Costs: (Schueler, 2011)**
  - On-Storage Retrofits = $32,500
  - site LID Retrofits = $191,000

- **Long Creek Watershed, Maine (LCWM District - Tamara Lee Pinard)**
  - Centralized Retrofits (Maine Mall) = $82,000
  - Street-Level Retrofits = $137,000

- **15 North Main Street, Bellingham (HW, 2011 - 65% P removal)**
  - On-site LID Retrofits = $101,800

- **Milford Library Vicinity, Milford (HW, 2011 - 57% P removal)**
  - On-site LID Retrofits = $150,000
### Municipal Costs in the Context of the RDA

DD cost nested within total cost

<table>
<thead>
<tr>
<th>Town</th>
<th>Target P Removal from Structural Controls</th>
<th>Municipal Capital Costs in 2011 $¹</th>
<th>DD Capital Costs to Achieve 50% P Removal in 2011 $²</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bellingham</td>
<td>37%</td>
<td>$27,100,000</td>
<td>$2,600,000</td>
</tr>
<tr>
<td>Franklin</td>
<td>37%</td>
<td>$63,700,000</td>
<td>$10,900,000</td>
</tr>
<tr>
<td>Milford</td>
<td>42%</td>
<td>$64,700,000</td>
<td>$11,100,000</td>
</tr>
</tbody>
</table>

¹ Includes: Design, permitting, const. admin. & land acquisition costs
² Assumes cost efficiencies through participation in a CMPP

### Sections 3 and 4 Q&D

![Map of Sections 3 and 4 Q&D](image)
Section 5: Governance and Administration

- Governance Options
  - Regional Utility approach;
  - Multi-municipal approach (several examples of program sharing already exist); and
  - Independent municipality approach.

- Organizational Assessment Options
  - Governance and administration;
  - Organizational gap analysis;
  - Service area; and
  - Extent and level of service.

Existing Legislation & Legal Considerations

- MGL Ch 83 Sec.16 - Enabling Legislation for Stormwater Utility
  - Specifies uniform fee structure for residential properties;
  - Allows for a “system of credits.”

- MGL Ch 21, Sec. 28 - Water Pollution Abatement Districts

- MGL Ch 40, Sec. 4A - Inter-Municipal Agreements

- MGL Ch. 40N, Section 4 - Creation of Municipal Water & Sewer Commissions

- MGL Ch 83, Sec. 1A - Regional District for Nutrient Management
Section 6: Funding Options/Sources

- Resources/Money/Revenue
- Revenue options include:
  - Taxes;
  - Service Charges;
  - Exactions;
  - Assessments.
- Other Sources: Grants & loans, Permit fees, Ch 90 funds, bonds, cost sharing, etc.

Stormwater Utility (User Fee)
a type of service charge

- Rate structure options
- Rate modifiers and class exemptions
- Equivalent Residential Unit (ERU)
  - Values estimated for each town
  - Calculated using MassGIS data as modified based on analysis of Franklin data (more on this in a moment)
  - Total number of ERUs calculated for each town
  - Used as the basis to generate revenue
**How a Fee is Calculated**

“the more you pave the more you pay”

- A typical house pays $10.00/mo and is 3,200 SF IA.
- Therefore, it is 96,000 SF IA.
- 30 * $10.00/mo minus credit.

**DoubleTree Hotel Example**

- 266,000 sq feet = 84 ERU bucket
- Fee = 84 * $10.00 = $840.00/mo less any credit.
- Assume ERU = 3,200 sf.
- Fee = $10.00/ERU/mo.
Utility Funding Options

Table 6.2: Equivalent Residential Unit (ERU) Values for Each of the Three Towns

<table>
<thead>
<tr>
<th>Towns &amp; ERU Values in SF</th>
<th>Satellite ERU Value</th>
<th>Manual ERU Value*</th>
<th>Calculated ERU Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bellingham</td>
<td>2,693.6</td>
<td>-</td>
<td>3,260</td>
</tr>
<tr>
<td>Franklin</td>
<td>2,687.6</td>
<td>3,252.3</td>
<td>-</td>
</tr>
<tr>
<td>Milford</td>
<td>2,503.4</td>
<td>-</td>
<td>3,029</td>
</tr>
</tbody>
</table>

*The manually derived ERU for Franklin was used to reconcile discrepancies in the satellite ERU computations for Bellingham and Milford.

- Timeframe for implementation (10, 15, 20 or 25 years from initial permit);
- Inclusion and exclusion of DDs; and
- Delay in capital construction (i.e., “back-end loaded” construction program).

Assumed to include all ERUs within each town (both inside and outside the CR Watershed)
Town-wide vs CR Watershed Only

Table 6.3: Basic Revenue Capacity Information – ERUs within Each Town and Total for 3 Towns

<table>
<thead>
<tr>
<th>Town</th>
<th>DD ERUs</th>
<th>Other IA ERUs</th>
<th>Local Road ERUs</th>
<th>State/Fed Roadway ERUs</th>
<th>TOTAL ERUs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bellingham</td>
<td>3,594</td>
<td>11,205</td>
<td>5,642</td>
<td>748</td>
<td>21,189</td>
</tr>
<tr>
<td>Franklin</td>
<td>6,291</td>
<td>15,074</td>
<td>10,903</td>
<td>1,501</td>
<td>33,769</td>
</tr>
<tr>
<td>Milford</td>
<td>5,821</td>
<td>14,431</td>
<td>6,997</td>
<td>1,274</td>
<td>28,523</td>
</tr>
<tr>
<td>TOTALS</td>
<td>15,706</td>
<td>40,710</td>
<td>23,543</td>
<td>3,522</td>
<td>83,481</td>
</tr>
</tbody>
</table>

Table 6.4: Basic Revenue Capacity Information – ERUs (Charles River Watershed Only)

<table>
<thead>
<tr>
<th>Town</th>
<th>DD ERUs</th>
<th>Other IA ERUs</th>
<th>Local Road ERUs</th>
<th>State/Fed Roadway ERUs</th>
<th>TOTAL ERU</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bellingham</td>
<td>3,594</td>
<td>5,139</td>
<td>2,934</td>
<td>389</td>
<td>12,055</td>
</tr>
<tr>
<td>Franklin</td>
<td>6,291</td>
<td>14,182</td>
<td>9,889</td>
<td>1,361</td>
<td>31,724</td>
</tr>
<tr>
<td>Milford</td>
<td>5,821</td>
<td>12,715</td>
<td>6,004</td>
<td>1,093</td>
<td>25,633</td>
</tr>
<tr>
<td>TOTALS</td>
<td>15,706</td>
<td>32,036</td>
<td>18,827</td>
<td>2,843</td>
<td>69,412</td>
</tr>
</tbody>
</table>
### Final # of ERUs Used for Revenue Calculations (Roads Removed)

<table>
<thead>
<tr>
<th>Town</th>
<th>Total # of ERUs</th>
<th># of Road ERUs</th>
<th># of ERUs used for Revenue Calcs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bellingham</td>
<td>21,189</td>
<td>6,390</td>
<td>14,799</td>
</tr>
<tr>
<td>Franklin</td>
<td>33,769</td>
<td>12,404</td>
<td>21,365</td>
</tr>
<tr>
<td>Milford</td>
<td>28,523</td>
<td>8,271</td>
<td>20,252</td>
</tr>
</tbody>
</table>

Table 6.7: Basic Revenue Capacity Information within Each Town (with Roads Removed) – Annual Revenue for One Dollar/ERU/Mo Including DDs

<table>
<thead>
<tr>
<th>Town</th>
<th>DD $$</th>
<th>DD %</th>
<th>Other IA $$</th>
<th>Other IA %</th>
<th>TOTAL $$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bellingham</td>
<td>$43,128</td>
<td>24%</td>
<td>$134,460</td>
<td>76%</td>
<td>$177,588</td>
</tr>
<tr>
<td>Franklin</td>
<td>$75,492</td>
<td>29%</td>
<td>$180,888</td>
<td>71%</td>
<td>$256,380</td>
</tr>
<tr>
<td>Milford</td>
<td>$69,852</td>
<td>29%</td>
<td>$173,172</td>
<td>71%</td>
<td>$243,024</td>
</tr>
<tr>
<td>TOTALS</td>
<td>$188,472</td>
<td>28%</td>
<td>$488,520</td>
<td>72%</td>
<td>$676,992</td>
</tr>
</tbody>
</table>

Total Costs

Table 6.8: Estimated Operational and Capital Costs – Charles River Watershed (2011 dollars)

<table>
<thead>
<tr>
<th>Town</th>
<th>DD CIP</th>
<th>Town CIP</th>
<th>Total CIP</th>
<th>Operating Costs*</th>
<th>Billing and Admin Costs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bellingham</td>
<td>$2,600,000</td>
<td>$27,100,000</td>
<td>$29,700,000</td>
<td>$891,000</td>
<td>$14,000</td>
</tr>
<tr>
<td>Franklin</td>
<td>$10,900,000</td>
<td>$63,700,000</td>
<td>$74,600,000</td>
<td>$1,815,000</td>
<td>$24,000</td>
</tr>
<tr>
<td>Milford</td>
<td>$11,100,000</td>
<td>$64,700,000</td>
<td>$75,800,000</td>
<td>$1,037,000</td>
<td>$24,000</td>
</tr>
<tr>
<td>TOTALS</td>
<td>$24,600,000</td>
<td>$155,500,000</td>
<td>$180,100,000</td>
<td>$3,744,000</td>
<td>$65,000</td>
</tr>
</tbody>
</table>

*Annual Average for first five years

Costs are rounded to the nearest $1,000 (totals may not add up due to round-off error)
ERU Rate Beginning in Year 5 of the Permit Phase (Entire Town - DDs Included)

Initial avg. rate first 5 years to cover operational costs:
- Bellingham: $5.10
- Franklin: $7.20
- Milford: $4.40

Bellingham ERU Rate Structure
4 Timeframes for Implementation (Uniform Expenditures)
Franklin ERU Rate Structure
4 Timeframes for Implementation (Uniform Expenditures)

Milford ERU Rate Structure
4 Timeframes for Implementation (Uniform Expenditures)
ERU Rate Beginning in Year 5 of the Permit Phase (DDs Excluded)

Initial Monthly Fees per Typical Residence
DDs Removed Option
Beginning in 2017

ERU Rate Beginning in Year 5 of the Permit Phase (Back-End Loaded Option)

Initial Monthly Fees per Typical Residence
Back-End Loaded Option
Beginning in 2017
Section 7: Billing Options

- Master Account File
- Billing System Options
  - Tax bill;
  - Public utility bill (water/wastewater);
  - Private utility bill;
  - New stand-alone bill.

Available Billing Data

- Bellingham
  - Already operates water & wastewater;
  - MassGIS derived impervious layer only;
  - Absolute parcel area not very accurate in GIS;
  - Parcel data contains numerous property ID errors.
- Franklin
  - Already operates water & wastewater;
  - Impervious area derived from aerial photo, but has some errors;
  - Absolute parcel area is relatively accurate in GIS;
  - Relatively few property ID errors.
Billing Data

- Milford
  - Water operated by Milford Water Co; town does billing with existing property database;
  - Operates a wastewater utility;
  - MassGIS derived impervious data only;
  - Absolute parcel area not very accurate.

Billing Considerations

- Feasible to add to existing water/wastewater bills;
- Will require linking billable land parcel data with existing utility accounts (address matching)
- Data and billing account maintenance - requires monitoring and updating changed information (e.g. new impervious cover, changes in fees, credits, etc.)
- Customer service considerations - billing questions, phone hotline, GIS manager, etc.
Conclusions:

1) Costs of future programs will be significantly higher than current costs;

2) Phosphorus reduction will require a combination of structural and non-structural controls, implemented over time through a comprehensive strategy; and

3) Likelihood that the towns’ general funds can support implementation is low.

Six General Recommendations

1. Implement a suite of non-structural controls (e.g., phosphorus ban, enhanced street sweeping, organic waste collection);

2. Periodically petition EPA to review and update P reduction values for non-structural credits;

3. Implement structural controls within the context of a watershed management plan, periodically petition EPA to review and update P removal efficiencies for structural controls;
Six General Recommendations (Continued)

4. Communities should seek EPA approval for a longer implementation timeframe than currently proposed in the draft General Permits;

5. Communities should seek EPA approval for a back-end loaded implementation approach; and

6. Pursue the implementation of a Stormwater Utility at the individual municipal level, but structured for expansion.

5 Short-Term Recommendations

1. Review and refine cost estimates and implementation options from this report;

2. Convene an inter-municipal working committee to document areas of agreement - decide to move forward together or separately;

3. Poll DD properties to gage interest in participation in CMPP and/or Utility;

4. Fund the development of a regional watershed management plan; and

5. Fund a public education and engagement project
Moving Forward

- Watershed Approach and Adaptive Management
- “The most equitable, adequate, flexible & stable source of funding...is a stormwater utility”
- Roadmap for utility implementation

Utility Implementation Flow Chart
Utility Implementation Steps

- Refined program development;
- Update cost of service;
- Updated financial funding analysis;
- Detailed credit analysis;
- Updated rate structural analysis;
- Budget & cash flow model;
- Final organization and governance;
- Final billing analysis;
- Public outreach/education;
- Ordinance/bylaw passage;
- Master account file & billing data; and
- Billing.

Sections 7 and 8 Q&D

Also:
Does the Executive Summary adequately convey the content of the report?

Do the appendices provide sufficient supporting information?