South Burlington, Vermont
Stormwater Utility

November 15, 2016

Presentation by:
David P. Wheeler, Assistant Stormwater Superintendent
South Burlington Department of Public Works

Last Updated: November, 2016
South Burlington, Vermont

- Population: ~18,000
- Area: 16.6 mi²
- Stormwater Infrastructure:
  - 6,210 Catch Basins (3,116 public)
  - 176 Miles of Pipe (91 miles public)
- Major Features:
  - Airport, Mall, University

<table>
<thead>
<tr>
<th>Town</th>
<th>Total CIP</th>
<th>Annual Operating Costs</th>
<th>Approximate Population</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bellingham</td>
<td>$29,700,000</td>
<td>$905,000</td>
<td>15,800</td>
</tr>
<tr>
<td>South Burlington</td>
<td>$24,000,000</td>
<td>$1,200,000</td>
<td>18,000</td>
</tr>
<tr>
<td>Franklin</td>
<td>$74,600,000</td>
<td>$1,839,000</td>
<td>32,000</td>
</tr>
<tr>
<td>Milford</td>
<td>$75,800,000</td>
<td>$1,061,000</td>
<td>27,600</td>
</tr>
</tbody>
</table>
Reason for Stormwater Utility:

- Most Vermont State SW permits (141)
- Most expired Vermont State SW permits (98)
- Most Stormwater Impaired watersheds (5)
  - Streams are impaired for “stormwater”, based on flow TMDL
- Most streams discharging into Lake Champlain (5)
  - Lake is impaired for phosphorous, based on nutrient TMDL
- Most annual housing starts (average of 250)
- Most CLF lawsuits in 5 year period (7)
Stormwater Utility Timeline

• Feasibility study – December 2003
• Public outreach and utility development – 2003 to 2005
• Sewer ordinance updated - March 2005
• First stormwater fees assessed - April 2005
• Stormwater Superintendent hired - May 2005
• Requirements for City take over of residential stormwater treatment systems – August 2006
Stormwater Utility Development Costs

- Stormwater Utility Feasibility Study - $70,000
- Development and Implementation of Stormwater Utility ~$330,000
  - Included five policy papers, a cost of services study, a credit manual, ordinance development, and public outreach
- The City took $1M loan to pay for this work.
  - Included design/construction of large stormwater treatment practice.
South Burlington
Revenue & Expenditures
South Burlington Stormwater Utility Revenue

Revenue from Stormwater Fees

Revenue Additional

FY12
FY13
FY14
FY15
FY16
FY17
FY18 (Proposed)
Stormwater Utility Expenditures

• Personnel:
  – 7 full time employees
  – Salary, OT, Health, Insurance, Pension, etc.

26% of FY17 Budget
Stormwater Utility Expenditures

- Administrative Services:
  - Office Supplies, Telephone, Utilities, Postage, Property Insurance, IT, Software, Printing, Building/Grounds, Billing

8% of FY17 Budget
Stormwater Utility Expenditures

• Equipment:
  – Trucks, Fuel, Vehicle Maintenance, Tools, etc.

9% of FY17 Budget
Stormwater Utility Expenditures

• Permit Requirements:
  – Permit Renewal, Water Quality Monitoring, Sediment Disposal, Education/Outreach, etc.

5% of FY17 Budget
Stormwater Utility Expenditures

• Engineering & Legal Services:
  – Residential Permit Coverage, Design Services, Flow Restoration Plan

2% of FY17 Budget
Stormwater Utility Expenditures

• Capital Improvement Projects:
  – Stormwater Treatment Practices, Storm Drain Repair, Culvert Upgrades, Construction Engineering

50% of FY17 Budget
South Burlington Stormwater Utility Expenditures

Expenditures Operating
Expenditures Capital

FY12
FY13
FY14
FY15
FY16
FY17
FY18 (Proposed)
Number of Stormwater Treatment Practices Maintained by the South Burlington Stormwater Utility by Year

Number of STPs Maintained

Stormwater Impaired Streams

• Five different Stormwater Impaired watersheds.
• Approximately 61% of land area in South Burlington.
• Lake Champlain is Phosphorous Impaired.
FRP Schedule

• Vermont MS4 Flow Restoration Plan Permit Requirements:
  – Submit a FRP to VTDEC by October 1, 2016.
  – Implement the FRP by December 5, 2032.
## FRP Projects & Cost

<table>
<thead>
<tr>
<th>Watershed</th>
<th>Number of BMPs in Flow Restoration Plan</th>
<th>FRP Cost</th>
<th>South Burlington’s “Share”</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bartlett Brook</td>
<td>18</td>
<td>$3,500,000</td>
<td>$3,450,000</td>
</tr>
<tr>
<td>Centennial Brook</td>
<td>27</td>
<td>$10,250,000</td>
<td>$6,694,000</td>
</tr>
<tr>
<td>Englesby Brook</td>
<td>5</td>
<td>$900,000</td>
<td>$128,700</td>
</tr>
<tr>
<td>Munroe Brook</td>
<td>3</td>
<td>$7,000,000</td>
<td>$48,000</td>
</tr>
<tr>
<td>Potash Brook</td>
<td>109</td>
<td>$17,000,000</td>
<td>$13,750,000</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>162</strong></td>
<td><strong>$38,650,000</strong></td>
<td><strong>$24,070,700</strong></td>
</tr>
</tbody>
</table>
Stormwater Utility Revenue

- Grants, GIS Services, Fees

20% of FY17 Budget
Stormwater Utility Revenue

- Stormwater User Fee:
  
  80% of FY17 Budget

  - Leveraged to obtain grants.
Stormwater Utility Revenue

• ERU = Equivalent Residential Unit
• In South Burlington, the average residential parcel has 2,700 square feet of impervious area
• 1 ERU = $6.54/month
Equivalent Residential Unit (ERU): An equivalent residential unit is the base billing unit that is established for the purpose of standardizing stormwater fees and allocating costs, based on impervious area, to different property types. One ERU is equal to the amount of impervious area (e.g., rooftops and paved areas) that can be found on a typical single-family residential property and was determined to be 2,700 square feet in South Burlington.
Stormwater Credits

• By installing stormwater treatment practices a facility can reduce its fees by up to 50%

<table>
<thead>
<tr>
<th>Treatment Standard or Criteria</th>
<th>Credit Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water Quality (WQₜ)</td>
<td>15%</td>
</tr>
<tr>
<td>Groundwater Recharge (Reₜ)</td>
<td>15%</td>
</tr>
<tr>
<td>Channel Protection (CPₜ)</td>
<td>15%</td>
</tr>
<tr>
<td>Overbank Flood (Qₚ10) or</td>
<td>10%</td>
</tr>
<tr>
<td>Extreme Storm (Qₚ100)</td>
<td></td>
</tr>
<tr>
<td>Non-structural practices</td>
<td>10%</td>
</tr>
</tbody>
</table>
Credit System - Lessons Learned

• Credit System not utilized as anticipated.
  – Planned for 10% of billable ERUs be credited.
  – Currently ~1.5% of billable ERUs are credit.
# Projected Annual Stormwater Fee

<table>
<thead>
<tr>
<th>Fiscal Year</th>
<th>Funding Scenario 1</th>
<th></th>
<th>Funding Scenario 2</th>
<th></th>
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</thead>
<tbody>
<tr>
<td>2018</td>
<td>$80.28</td>
<td>$1,364.76</td>
<td>$80.28</td>
<td>$1,364.76</td>
</tr>
<tr>
<td>2019</td>
<td>$82.44</td>
<td>$1,401.48</td>
<td>$82.08</td>
<td>$1,395.36</td>
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<tr>
<td>2020</td>
<td>$84.60</td>
<td>$1,438.20</td>
<td>$83.88</td>
<td>$1,425.96</td>
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<tr>
<td>2021</td>
<td>$87.12</td>
<td>$1,481.04</td>
<td>$85.68</td>
<td>$1,456.56</td>
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<tr>
<td>2022</td>
<td>$90.00</td>
<td>$1,530.00</td>
<td>$87.48</td>
<td>$1,487.16</td>
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<tr>
<td>2023</td>
<td>$93.24</td>
<td>$1,585.08</td>
<td>$89.28</td>
<td>$1,517.76</td>
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<tr>
<td>2024</td>
<td>$96.84</td>
<td>$1,646.28</td>
<td>$91.08</td>
<td>$1,548.36</td>
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<tr>
<td>2025</td>
<td>$100.80</td>
<td>$1,713.60</td>
<td>$92.88</td>
<td>$1,578.96</td>
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<tr>
<td>2026</td>
<td>$105.12</td>
<td>$1,787.04</td>
<td>$94.68</td>
<td>$1,609.56</td>
</tr>
<tr>
<td>2027</td>
<td>$109.80</td>
<td>$1,866.60</td>
<td>$96.48</td>
<td>$1,640.16</td>
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<tr>
<td>2028</td>
<td>$114.84</td>
<td>$1,952.28</td>
<td>$98.28</td>
<td>$1,670.76</td>
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<tr>
<td>2029</td>
<td>$119.88</td>
<td>$2,037.96</td>
<td>$100.08</td>
<td>$1,701.36</td>
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<tr>
<td>2030</td>
<td>$124.92</td>
<td>$2,123.64</td>
<td>$101.88</td>
<td>$1,731.96</td>
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<tr>
<td>2031</td>
<td>$129.96</td>
<td>$2,209.32</td>
<td>$103.68</td>
<td>$1,762.56</td>
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<tr>
<td>2032</td>
<td>$135.00</td>
<td>$2,295.00</td>
<td>$105.48</td>
<td>$1,793.16</td>
</tr>
</tbody>
</table>
Recognition

In 2008, the South Burlington Stormwater Utility received the following awards:

- EPA Merit Award for Environmental Excellence
- NEWEA Utility of the Year Award
The Town of
Shelburne
Vermont
Shelburne Overview

- Population: ~ 7,750
- Area: 24.3 mi²
- Catch Basins: 887
- Major Features:
  - Shelburne Museum
  - Shelburne Farms
  - Vermont Teddy Bear Factory
  - Fiddlehead Brewery

Chittenden County

Shelburne

Town of Shelburne, Vermont

CHARTERED 1763

P.O. BOX 88  5420 SHELBURNE ROAD  SHELBURNE, VT 05482
Current Annual Cost

• 12 Stormwater Permits $11,500
• South Burlington Contract $50,000
• MS4 Permit $5,133
  – Minimum Measures $11,800
  – Flow Restoration Plan $12,500
  – Flow Monitoring $12,200

• TOTAL ANNUAL COST $103,133
Shelburne & South Burlington SW Agreement

• Inter-Municipal agreement in place that allows Shelburne to obtain assistance from South Burlington SW Utility for specific tasks.
• Assistance limited to $50,000 for FY17.
• Includes both “field work” and “administrative work”.
• Storm drain cleaning and street sweeping have already been completed under this agreement.
Total Annual Stormwater Cost: $161,550*

*Doesn’t include costs associated with development or construction of stormwater treatment projects required by Flow Restoration Plans or expired permits. Does not include costs associated with stormwater billing or utility development.
Benefits of Inter-Municipal Agreement: South Burlington

• Allows us to more efficiently utilize our equipment.
  – Street sweepers are parked for much of the year.
• Helps us pay for our equipment.
  – Added line item for revenue.
• Allows us to hire additional staff.
• Watersheds cross political boundaries. Municipalities need to work together to find the most effective solutions.
• Allows us to share the expertise we’ve gained with others.
Benefits of Inter-Municipal Agreement: Shelburne

- Allows them to forego additional staffing & equipment
- Allows them to partner with an industry leader
- Allows them to retain local control
- Allows them one-stop shopping
  - Maintenance – equipment & manpower
  - Technical expertise – permitting & design review
  - Management – policies and potential stormwater billing
- Economy of scale
- Why reinvent the wheel?
Varying “Costs of Admission”

- State/Federal Regulations
- Local Concerns
- Location
- Age of Infrastructure
- Natural Conditions
- Development Rate
- Partnerships
Contact Information

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