

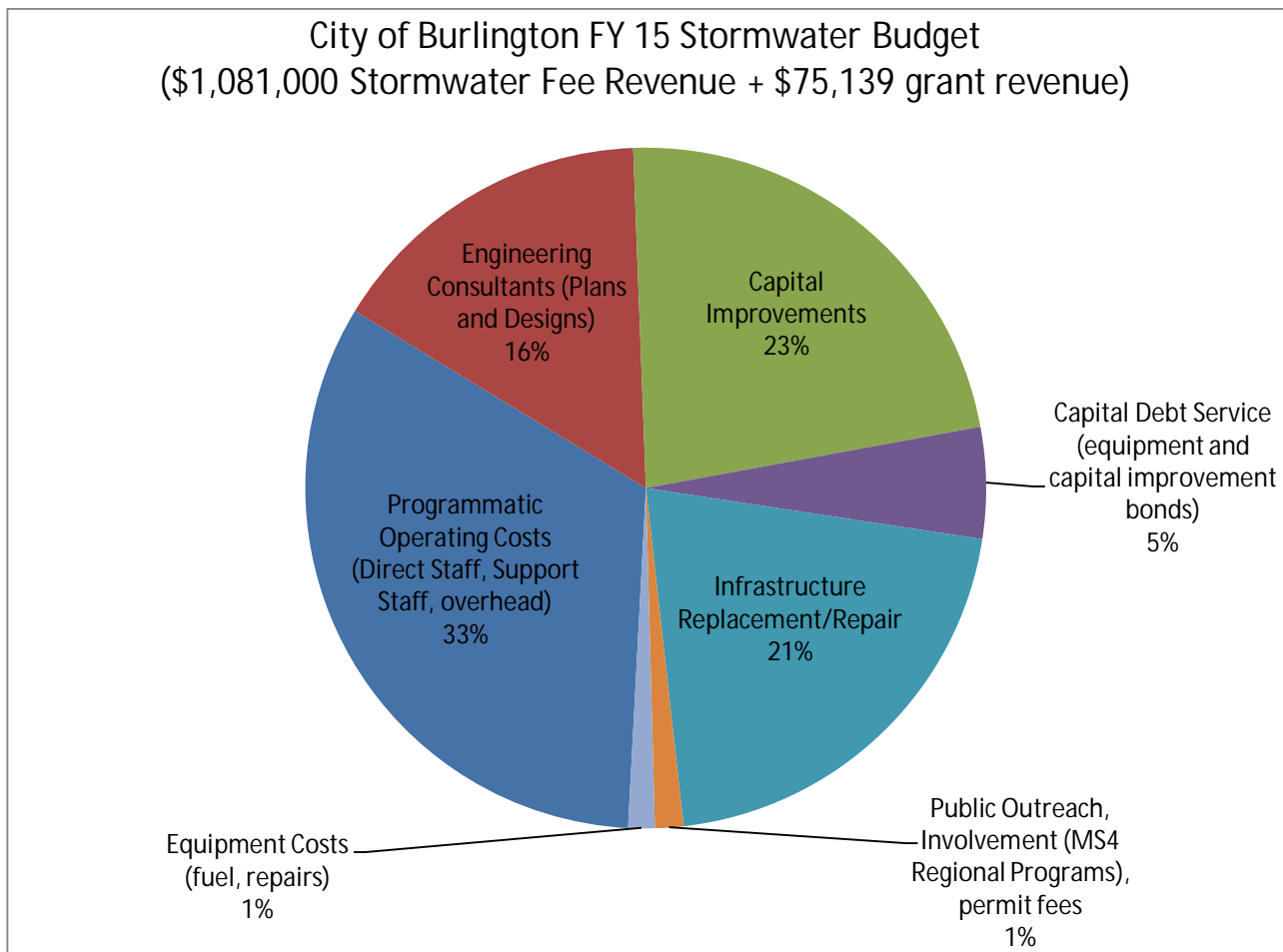
Burlington Stormwater Program Overview

- *Burlington Stormwater Landscape*
 - 60% of the City drains to a combined sewer system (stormwater and wastewater discharge to same pipe)
 - 3 Wastewater Treatment Plants (Main WWTP has highest % combined)
 - Significant sewer separation and improvements to the Main WWTP were made in the late 1980s
 - 40% of the City drains to over 100 separate stormwater outfalls which discharge to:
 - Englesby Brook (Impaired due to Stormwater and Bacteria)
 - Centennial Brook (Impaired due to Stormwater)
 - Potash Brook (Impaired due to Stormwater)
 - Lake Champlain (Impaired due to Phosphorus)
 - Small Tributaries to Lake Champlain
 - Winooski River
 - High imperviousness (~ 20 – 75%)

- *Program History and Summary*
 - Dedicated Program established in 2009
 - Oversight of stormwater discharges to both the separate and combined sewers system
 - Revised/strengthened Chapter 26 sewer ordinance to include more stringent stormwater standards for projects (see Programmatic functions below)
 - Link: <http://www.codepublishing.com/vt/burlington/?Burlington26/Burlington26.html>
 - Established dedicated funding stream
 - The fee structure provides for a flat fee assessment on residential properties (up to triplexes). This flat fee is based on the average amount of impervious surface for those types of properties.
 - All other properties (residential condos, commercial, industrial, institutional) are *directly assessed*, meaning we charge them for amount of impervious we measure on their parcel using remote sensing (aerial imagery and LIDAR).
 - Current Rates
 - Flat fee of \$4.50/month on single family homes (\$54/year)
 - Directly assessed fee of \$1.687/1000 sf of impervious coverage for non-residential properties
 - e.g. 10,000 s.f. commercial parcel pays \$16.87/month, \$202.44/year
 - Credits available currently for directly assessed customers
 - Current Staffing
 - Full time stormwater program manager/stormwater administrator
 - Full time Stormwater/GIS Technician
 - Funding supports activities of support staff:
 - Steve Roy, Public Works Engineer
 - DPW Customer Service and Billing Services
 - Right of Way group as construction crew and vector truck operators

Burlington Stormwater Program Overview

- *Programmatic Functions*
 - Administration of Chapter 26 ordinance*
 - *Chapter 26 mandates the review of projects that are well below the State's jurisdictional threshold (threshold = 400 s.f. of disturbance)*
 - Erosion Prevention Sediment Control (EPSC)
 - Review of all projects > 400 s.f. of disturbance
 - Required to prevent the discharge of sediment from construction sites into our system and/or water bodies
 - Post Construction Stormwater
 - 400 s.f. of disturbance triggers possible review if impervious is being redeveloped or increased.
 - Commercial projects required to fully mitigate the impact of stormwater runoff from new, and to the maximum extent practicable, redeveloped/existing impervious surfaces
 - Technical assistance and requirements to minimize connected impervious for single family/duplex expanding > 2500 sq.ft.
 - Ensure compliance with State stormwater regulations (MS4 permit)*
 - Public Education (via Regional Stormwater Education Program)
 - Public Outreach (via Chittenden County Stream Team and our own efforts)
 - Also see Adopt a Drain Program: <http://www.burlingtonvt.gov/DPW/ADOPT-A-DRAIN>
 - Construction Stormwater Management
 - Post Construction Stormwater Management
 - Illicit Discharge Detection and Elimination
 - Municipal Best Management Practices
 - Catch basin cleaning
 - Street sweeping
 - Ensure compliance with WWTP permit condition that "no new impervious be connected to the combined system" *
 - Management of Stormwater Collection System Asset
 - Oversight of maintenance and inspection activities for pipes, catch basins, manholes, outfalls, treatment systems (sand filters, infiltration systems, ponds, constructed wetlands)
 - Capital improvements
 - Manage GIS based mapping of collection system
 - Respond to customer complaints regarding puddles, flooding, basement flooding etc.
 - Management of State operational permit compliance for several "orphan" subdivisions, larger projects, and developments with a publically accepted road*
 - Stormwater improvement projects for separate and combined system
 - identification, grant writing and project management (see project list)



Recent Infrastructure/Planning Projects Related Specifically to Water Quality Improvements (2010 – 2015)

- Centennial Brook Flow Restoration Plan (~\$14,000)
 - Development of Flow Restoration Plan (locating of stormwater retrofits necessary to restore the flow regime of Centennial Brook)
- Stormwater Friendly Driveway Fact Sheets (Total Budget \$9500/LCBP Grant: \$7400)
 - Compilation of information related to the design, installation and maintenance of stormwater friendly driveways (pervious systems, strip driveways, use of non-coal tar based asphalt sealants)
- Silva Cell Project for Cherry Street (Total Budget: \$48,000/ 319 Grant: \$26, 215)
 - Design and installation of a tree-based stormwater filtration and detention system
- Update of Stormwater/Wastewater system mapping in GIS (Total Budget: \$105,000 / Grant : \$80,000)
 - Necessary for watershed/sewershed planning and for tracking and prioritizing maintenance
 - Development of asset management system (on-going)
- Blanchard Beach Water Quality Improvement Project (Total Budget: \$142,018 / ERP and LCBP Grant: \$70,000)
 - Stabilization of eroding roadside swale, installation of stormwater swirl separator (for sediment removal), restoration of urban wetland to enhance stormwater treatment capacity before water discharges to a public beach on Lake Champlain

Burlington Stormwater Program Overview

- DPW Wash Station Treatment System (Cost: \$35,000)
 - System to capture and filter the sediment, oils and greases from washing of vehicles in public works yard
- Beach Outfall Stabilization x 2 (~\$35,000)
 - Stabilization of outfall area for two beach outfalls
- Combined Sewer Stormwater Reductions (Total Cost: \$1.2 million / 50% loan forgiveness under ARRA, payment of bond over 20 years)
 - Manhattan CSO project:
 - Design and installation of subsurface infiltration systems at 13 locations in the Old North End neighborhood in the City ROW (underneath the road); these systems receive water from almost 3 acres of impervious that would have originally gone into the combined sewer system and instead infiltrate up to a 2.5" storm event into the sandy subsurface.
 - Disconnection of H.O. Wheeler Roof (0.58 ac) runoff from combined sewer
 - Design and install a pervious concrete system at a school (H.O. Wheeler) parking lot
 - Gazo CSO project
 - Disconnection of LC Hunt Roof (1.6 ac) runoff from combined sewer; installation of 20,000 gallon storage tank to allow for water reuse by school in the future for irrigation
 - Disconnection of CP Smith Roof (0.84 ac) runoff from combined sewer; installation of 32,000 gallon storage system with a controlled release to mitigate impacts on the separate storm sewer system.
- College Street Watershed Retrofit Plan (Total Cost: \$43,580 /ERP Grant:\$35,000)
 - Development of a Green Infrastructure Toolbox for the College Street (Downtown) watershed
 - Conceptual Engineering for Green Infrastructure practices to support sediment and phosphorus reductions at the College Street outfall
 - <http://www.burlingtonvt.gov/DPW/2013-College-Street-StormwaterShed-Retrofits-Green-Infrastructure-Plan>
- Englesby Brook Flow Restoration Plan [*Underway*] (Total Cost \$81,047 / VTRANS Grant \$63,249)
 - Development of Flow Restoration Plan (locating of stormwater retrofits necessary to restore the flow regime of Centennial Brook)
- Integrated Stormwater/Wastewater Planning [*Underway*] (EPA Technical Assistance Grant)
 - Initiation of a comprehensive evaluation of Burlington's various Clean Water Act obligations
 - Community outreach and development of criteria to be used in the prioritization of Clean Water projects (<http://www.burlingtonvt.gov/DPW/Stormwater/IMSWP>)

Staff Contact information:

Laurie Adams

Assistant Director of Water Quality (Wastewater, Stormwater, Drinking Water)

ladams@burlingtonvt.gov

802-863-4501

Websites:

<http://www.burlingtonvt.gov/DPW/Water> and <http://www.burlingtonvt.gov/DPW/Stormwater/Stormwater-Management>

Megan J. Moir, CPESC, CPSWQ

Burlington Stormwater Program Manager

mmoir@burlingtonvt.gov

802-540-1748 (direct)

Website: <http://www.burlingtonvt.gov/DPW/Stormwater/Stormwater-Management>