

Flow Restoration Planning for the Englesby Brook Watershed, Burlington, Vermont



Services / Expertise

Water Quality
MS4 General Permit
Stormwater Planning and Retrofit Design
Flow Restoration Plan
BMP-DSS Modeling

Markets

Local Government and Regional Planning
Commissions

Project Location

Burlington, Vermont

Date Completed

2015-2017

Project Owner

City of Burlington
Public Works Department



A stormwater treatment pond at the headwaters of Englesby Brook, on the University of Vermont campus.

ENGLESBY Brook's watershed is located in Chittenden County, primarily in the City of Burlington, Vermont. Englesby Brook was designated as a stormwater-impaired watershed on the 2006 Vermont 303(d) list due to multiple impacts associated with excess stormwater runoff. Working with the City of Burlington, Stone and an engineering partner developed a flow restoration plan for Englesby Brook. The plan laid out a long-term stormwater retrofit plan to reduce high stormwater flows and improve overall water quality in this urban stream. We took a stepwise approach to identifying potential BMP sites or upgrades with the fewest overall technical, regulatory, and operational constraints, in order to arrive at a practical and cost-effective suite of practices that achieve the flow targets. Our approach included:

- Verifying key model assumptions driving flow targets, including revised estimates for realistic future, non-jurisdictional growth provided by the City;
- Revising the VTBMPSDSS credit model to include all known BMPs in the watershed and addressing modeling deficiencies;
- Identifying opportunities to optimize detention time through increased storage capacity, reduced orifice sizes, or other modifications to existing BMPs;
- Identifying new opportunities for structural BMPs, green stormwater infrastructure approaches, and impervious disconnection or removal; and
- Using the VTBMPSDSS to quantify flows and document achievement under preferred implementation scenarios.

This Flow Restoration Plan was approved by Vermont DEC in December 2017: dec.vermont.gov/sites/dec/files/wsm/stormwater/docs/MS4/Englesby_FRP_report-120517.pdf