Stormwater Retrofitting in Lamoille County, Vermont

Collaboration for Project Planning, Design, and Implementation

Presented at the 28th Annual Non-Point Source Pollution Conference
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Presented By:
Lamoille County Conservation District

Watershed Consulting Associates, LLC
Projects in Lamoille County, VT

- People’s Academy, Morrisville
  - Parking Lot Median Bioretention

- Morrisville Elementary School, Morrisville
  - Stormwater Outfall Infiltration Swale

- Depot Street, Hyde Park
  - Riparian Restoration, Swale Improvements, Infiltration Step-Pools

- Main Street, Hyde Park
  - Infiltration Swale

- Vermont Agency of Transportation Maintenance Garage, Morrisville
  - Infiltration Chambers
Location of Projects
Town of Morriston

Stormwater Mapping Project

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VTDEC – ECOSYSTEM RESTORATION PROGRAM WATERSHED MANAGEMENT DIVISION

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*See reverse for Overview and Project Summary
Assessment and Outreach—Start Small
Planning, Partner Buy-In, and Implementation
People’s Academy - Morrisville: Watershed

- Drainage Area: 0.79 acres
- Impervious Cover: 0.70 acres
- Issues: Headcutting at edge of parking lot, nuisance flooding downhill of lot caused by stormwater runoff.

Project Execution

- Town of Morrisville
- Lamoille CD
- School Supervisory Union
- Watershed Consulting
People’s Academy - Morrisville : Assess & Outreach
People’s Academy - Morrisville: Plans
People’s Academy - Morrisville: Plans
People’s Academy - Morrisville: Construction
People’s Academy - Morrisville : Post-Construction
People’s Academy - Morrisville: Lessons Learned

What Worked Well?
- Meeting the Project Goals for WQ
- Developing a visible model for GSI
- Town Participation – In Kind

What Were Project Challenges?
- Identifying Landowner Authority
- Experienced Excavation Company
- Long term Maintenance
Morrisville Elementary School – Morrisville: Assessment

- Drainage Area: 2.6 acres
- Impervious Cover: 2.2 acres
- Issues: Eroded, hazardous outfall area in school playground, Seasonal flooding, headcutting at outfall to brook
Morrisville Elementary School – Plans
Morrisville Elementary School – Morrisville: Construction
Morrisville Elementary School: Post Construction
Morrisville Elementary School – Morrisville: Lessons Learned

- What Worked Well?
  - Fix a School/Town Priority
  - Partner Participation

- What Were Project Challenges?
  - Budget
  - Youth Access/Erosion
  - Long term Maintenance
Depot Street – Hyde Park: Watershed

- Drainage Area: 19.9 acres
- Impervious Cover: 4.4 acres
- Issues: Severe erosion along drainage channels, plugged culverts, headcut at outfall, sedimentation to Centerville Brook.
- Collaboration Process:

Town & Village of Hyde Park
Lamoille CD
Private Landowners
Watershed Consulting
Project Execution
Depot Street – Hyde Park: Plans
Depot Street – Hyde Park: Channel Restoration
Depot Street – Hyde Park: Redirect Stormwater

Pre-Construction Photos

Post-Construction Photos

Shed Removed
Depot Street – Hyde Park: Bioretention
Depot Street – Hyde Park: Post-Construction
Depot Street – Hyde Park: Lessons Learned

What Worked Well?
- Engineered Solutions
- Municipal Participation
- Meeting the Goals for WQ

What Were Project Challenges?
- Site Constraints
- Landowner(s) Buy-in
- Identification of Additional Project
Main Street – Hyde Park: Watershed

- Drainage Area: 0.79 acres
- Impervious Cover: 0.70 acres
- Issues: Headcutting at edge of parking lot, stormwater runoff leading to flooding, property loss.

Project Execution

- Town & Village of Hyde Park
- State of Vermont Property
- Lamoille CD
- Watershed Consulting
- Five Private Landowners

NEIWPCC: 28th Annual Non-Point Source Pollution Conference
Main Street – Hyde Park: Assessment
Main Street– Hyde Park: Post-Construction
Main Street – Hyde Park: Lessons Learned

- What Worked Well?
  - Engineered Solutions
  - Municipal Participation
  - Meeting Landowner Goals

- What Were Project Challenges?
  - Landowner(s) Buy-in
  - Budget
  - Site Constraints
  - Experienced Construction Company
Morrisville VTrans Garage – Morrisville: Watershed

- Drainage Area: 1.3 acres
- Impervious Cover: 1.3 acres
- Issues: Minor storm water treatment, no MOU or long term plan for annual maintenance, partner resistance to replace or retrofit.
Morrisville VTrans Garage– Morrisville: Assessment
Morrisville VTrans Garage – Morrisville: Plans
Morrisville VTrans Garage – Morrisville: Construction
Morrisville VTrans Garage – Morrisville: Lessons Learned

- **What Worked Well?**
  - Engineered Solutions
  - Municipal Participation
  - Meeting Landowner Goals

- **What Were Project Challenges?**
  - Landowner(s) Buy-in
  - Budget
  - Working with State Government
The Bottom Line

- In-depth Assessments lead to better Outreach and Participation
- Involve landowners in Concepts to meet their goals & *then* develop construction plans to meet the project goals
- Signed Memorandum of Understanding with Maintenance Plan
- Work within budget with experienced contractors
- Continue the partnership and expand the work
Questions?

Ask – we just might have some answers!

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