Basin Planning and Towns-
Working together to protect and restore
VT surface waters

Angie Allen
Watershed Planner
Monitoring, Assessment & Planning Program
DEC Watershed Management Division
Basins & Planning Cycle

- 15 Planning Basins
- 5 Planners
- Plans revisited ~ every 5 years
Tactical Basin Planning

- Review WQ Data and Impairments
- Compile and prioritize assessments
- Integrate water quality models
- Enter and prioritize projects into Watershed Data Portal/Watershed Projects DB
- Community involvement
- Implementation tracking
Purpose of Basin Planning

- Protect the Best
- Restore the Rest
**Reclassification**

**A(1) Most natural condition**
- All uses supported
- Excellent conditions
- All waters above 2500', few waters by petition

**B(1) Minor changes allowed**
- All uses supported
- Very Good conditions
- Only Minor changes from natural conditions allowed

**B(2) Moderate changes allowed**
- All uses supported
- Good conditions
- Moderate changes from natural conditions allowed

**Conditions:**
- Excellent
- Very Good
- Good
- Impaired Waters
Ripton Stream Reclassification

<table>
<thead>
<tr>
<th>Map ID</th>
<th>Stream Name</th>
<th>Criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Goshen Brook Trib 2</td>
<td>A1</td>
</tr>
<tr>
<td>2</td>
<td>Leicester Hollow</td>
<td>A1</td>
</tr>
<tr>
<td>3</td>
<td>Sugar Hollow Brook</td>
<td>A1</td>
</tr>
<tr>
<td>4</td>
<td>Little Brook</td>
<td>B1</td>
</tr>
<tr>
<td>5</td>
<td>Warren Brook</td>
<td>B1</td>
</tr>
<tr>
<td>6</td>
<td>Warren Brook</td>
<td>A1</td>
</tr>
</tbody>
</table>

Potential Aquatic Biota Reclassifications of **Otter Creek**

Meets criteria for Aquatic Biota Reclassification
Ripton Stream Reclassification

Goshen #2 (Tributary to the South Branch)

~ 3.5 sq. miles
- USFS land
- Midd Coll lands
- Concurrent with MC’s Surface Water and Ecological Protection Zones

Monitoring Site Summary - River/Stream
Goshen Brook Trib 2

Macroinvertebrate Assessment

Fish Assessment

Water Quality Measurements

Characteristic | Description | Trend | Max | Mean | Min
--- | --- | --- | --- | --- | ---
Chloride (mg/L) | Elevated values mostly from deicing | 2.0 | 1.4 | 0.3
Conductivity (umhos/cm) | Nutrient that may fuel algae blooms | 39.5 | 37.1 | 23.3
Nitrogen (mg/L) | Nutrient that may fuel algae blooms | 0.9 | 0.6 | 0.2
pH | Acidity | 7.4 | 7.0 | 6.7
Phosphorus (μg/L) | Nutrient that may fuel algae blooms | 25.8 | 12.0 | 5.9
Turbidity (NTU) | Measure of suspended sediment | 2.2 | 1.0 | 0.2

(For More Details)
Priorities for Water Quality Remediation

1. White River from Hartford to Bethel
2. First Branch from Royalton to Chelsea
3. Second Branch from Royalton to Randolph
4. Third Branch from Bethel to Randolph
5. Ayers Brook from Randolph to Brookfield
6. Hancock Branch & Robbins Branch in Hancock
7. Jericho Brook in Hartford
8. Sunset Lake in Brookfield
9. Silver Lake in Bamard
10. Smith Brook in Randolph
11. Kingsbury Brook in Randolph

Dashed lines represent the spatial extent of each remediation priority.
### Implementation Table

<table>
<thead>
<tr>
<th>Strategies</th>
<th>Waterbody</th>
<th>Purpose</th>
<th>Town(s)</th>
<th>Partners*</th>
<th>Funding (see Appendix D)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Strategies to address impaired waters - RESTORE</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Develop a Phase II SCA and River Corridor Plan for the Second Branch of the White River</td>
<td>Second Branch of White River</td>
<td>To identify projects that will identify and address nutrient and sediment inputs; implement bacterial TMDL</td>
<td>Royalton, Tunbridge, Chelsea</td>
<td>VDEC Rivers Program, WRP</td>
<td>ERP Grant</td>
</tr>
<tr>
<td>2. Identify, develop and rank a list of projects in the First Branch River Corridor Plan that will likely reduce bacteria, sediment and nutrient input to the river</td>
<td>First Branch of White River</td>
<td>To address bacterial inputs and encourage stream equilibrium; implement bacterial TMDL</td>
<td>Royalton, Tunbridge, Chelsea</td>
<td>VDEC Rivers, WRP, WRNRCD</td>
<td>ERP Grant</td>
</tr>
<tr>
<td>3. Identify, develop and rank a list of projects in the Third Branch River Corridor Plan that will likely reduce bacteria, sediment and nutrient input to the river</td>
<td>Third Branch of White River</td>
<td>To identify projects that will identify and address nutrient and sediment inputs; implement bacterial TMDL</td>
<td>Bethel</td>
<td>VDEC Rivers, WRP, WRNRCD</td>
<td>ERP Grant</td>
</tr>
<tr>
<td>4. Identify, develop and rank a list of projects on agricultural lands that will reduce agricultural runoff in areas where bacteria and nutrient levels are above the VT Water Quality Standards</td>
<td>First, Second and Third Branches</td>
<td>Identify and address sources of bacterial inputs; implement bacterial TMDL</td>
<td>Royalton, Tunbridge, Chelsea, Bethel, Randolph, Brookfield</td>
<td>AAFM, WRNRCD</td>
<td>AAFM</td>
</tr>
<tr>
<td>5. Continue WRP water quality study to analyze <em>E. coli</em> and nutrient levels above and below dams</td>
<td>First Branch, Second Branch</td>
<td>To identify potential bacterial sources; implement bacterial TMDL</td>
<td>Tunbridge, Royalton, Bethel</td>
<td>WRP, VDEC MAPP</td>
<td>LaRosa Monitoring Grant</td>
</tr>
<tr>
<td>6. Continue monitoring popular swimming areas for the protection of public health</td>
<td>First Branch, Second Branch, Third Branch</td>
<td>To protect water quality for public health; continue long-term monitoring to identify trends and sources</td>
<td>Royalton, Tunbridge, Chelsea, Bethel, Randolph</td>
<td>WRP</td>
<td>WRP Funding</td>
</tr>
</tbody>
</table>
# Funding Resources

## Ecosystem Restoration Grants
- Development and implementation of projects identified in tactical basin plans and listed in the Watershed Projects Database;
- Stormwater utility planning;
- Wetlands restoration projects;
- State agency identified high priority restoration activities

<table>
<thead>
<tr>
<th>Grant Size</th>
<th>Project Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>Minimum grant size: $20,000</td>
<td>Highgate Elementary School Stormwater Mitigation Project ($23,210)</td>
</tr>
<tr>
<td>Match: Points for project proposals that provide greater match (cash or in-kind)</td>
<td>Lyndon State College Gravel Wetland Final Design</td>
</tr>
<tr>
<td>Deadline: September 2018</td>
<td>Pearl Street Parking Lots Stormwater Retrofit Design</td>
</tr>
<tr>
<td></td>
<td>VT Fish and Wildlife Buffer Planting on the Barton River - Coventry</td>
</tr>
</tbody>
</table>

## Clean Water Partnership Grants
- Increase technical support and education; Eligible categories under this Partnership Grant include Work Crew Assistance and Technical Capacity Assistance.
- Support implementation across program priority areas including stormwater management, municipal road-related stormwater management, natural resource restoration, agriculture and forestry management.

<table>
<thead>
<tr>
<th>Grant Size</th>
<th>2017 $315,000 available; Awards:</th>
</tr>
</thead>
<tbody>
<tr>
<td>$5,000-$150,000</td>
<td>Vermont River Conservancy ($25,828 and $39,554)</td>
</tr>
<tr>
<td>Match: None</td>
<td>Memphremagog Watershed Association ($5,288)</td>
</tr>
<tr>
<td>Deadline: November 2018</td>
<td>Vermont Youth Conservation Corps ($150,000)</td>
</tr>
<tr>
<td></td>
<td>Northwoods Stewardship Center ($98,470)</td>
</tr>
</tbody>
</table>

## Municipal Roads Grants-in-Aid Pilot Project
- Implementation of road erosion control projects that bring hydrologically connected road segments into full compliance with the Municipal Roads General Permit standards.

<table>
<thead>
<tr>
<th>Disbursement formula based on municipal hydrologically connected road miles</th>
<th>Road Erosion Control</th>
</tr>
</thead>
<tbody>
<tr>
<td>$2.6 million statewide administered by NRPC</td>
<td></td>
</tr>
</tbody>
</table>
Georgetti Park Stormwater Mitigation Project, Rutland City

- Water Quality Data condition:

- East Creek impaired (nutrients, sediment, and pathogens from CSO, stormwater)

- Tenney Brook (tributary to East Creek) also stressed (nutrient enrichment, sedimentation, thermal modification)
TENNEY BROOK / EAST CREEK WATERSHED – STORMWATER MASTER PLAN

RUTLAND, VERMONT

FINAL REPORT
December 2014

GAP
Giorgetti Arena Parking Lot
Bioretention
Bioretention practice and vegetated filter strip conveyances will be created to manage SW runoff from parking lot and part of adjacent roadway.

Rutland Natural Resources Conservation District
VTDEC ERP funded Stormwater Design (2015)
ERP funded Implementation

VYCC crew plants the bio-infiltration basin
THANK YOU!

Angie R. Allen
Watershed Planner
Angie.Allen@Vermont.gov

www.watershedmanagement.vermont.gov
See what we're up to on our blog.
Online Access to Information
Basin Plans
Clean Water Roadmap
Water Quality Data
Watershed Projects
Database
Reporting
## Summary Implementation Actions for the Basin 9 Tactical Basin Plan

<table>
<thead>
<tr>
<th>Strategies</th>
<th>Waterbody</th>
<th>Purpose</th>
<th>Town(s)</th>
<th>Partners*</th>
<th>Funding (see Appendix D)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Develop a Phase II SGA and River Corridor Plan for the Second Branch</td>
<td>Second Branch of White River</td>
<td>To identify projects that will identify and address nutrient and sediment inputs; implement bacterial TMDL</td>
<td>Royalton, Tunbridge, Chelsea</td>
<td>VDEC Rivers Program, WRP</td>
<td>ERP Grant</td>
</tr>
<tr>
<td>2. Identify, develop and rank a list of projects in the First Branch River</td>
<td>First Branch of White River</td>
<td>To address bacterial inputs and encourage stream equilibrium; implement bacterial TMDL</td>
<td>Royalton, Tunbridge, Chelsea</td>
<td>WRP, WRNRCD</td>
<td>ERP Grant</td>
</tr>
<tr>
<td>3. Identify, develop and rank a list of projects in the Third Branch River</td>
<td>Third Branch of White River</td>
<td>To identify projects that will identify and address nutrient and sediment inputs; implement bacterial TMDL</td>
<td>Bethel</td>
<td>VDEC Rivers, WRP, WRNRCD</td>
<td>ERP Grant</td>
</tr>
<tr>
<td>4. Identify, develop and rank a list of projects on agricultural lands that will reduce agricultural runoff in areas where bacteria and nutrient levels are above the VT Water Quality Standards</td>
<td>First, Second and Third Branches</td>
<td>Identify and address sources of bacterial inputs; implement bacterial TMDL</td>
<td>Royalton, Tunbridge, Chelsea, Bethel, Randolph, Brookfield</td>
<td>AAFM, WRNRCD</td>
<td>AAFM</td>
</tr>
<tr>
<td>5. Continue WRP water quality study to analyze <em>E. coli</em> and nutrient levels above and below dams</td>
<td>First Branch, Second Branch</td>
<td>To identify potential bacterial sources; implement bacterial TMDL</td>
<td>Tunbridge, Royalton, Bethel</td>
<td>WRP, VDEC MAPP</td>
<td>LaRosa Monitoring Grant</td>
</tr>
<tr>
<td>6. Continue monitoring popular swimming areas for the protection of public health</td>
<td>First Branch, Second Branch, Third Branch</td>
<td>To protect water quality for public health; continue long-term monitoring to identify trends and sources</td>
<td>Royalton, Tunbridge, Chelsea, Bethel, Randolph</td>
<td>WRP</td>
<td>WRP Funding</td>
</tr>
</tbody>
</table>
VT Green Stormwater Projects Story Map

https://arcg.is/1jmubL

VT Green Stormwater Projects

How to Find and Prepare Watershed Projects for Implementation
Online

- CWR: https://anrweb.vt.gov/DEC/CWR/cwr-tool.vbhtml
- Webinar: https://www.youtube.com/watch?v=-8j_bFMRt24k
Classification of Water Use (§ 29A-104)

Recommendations for use reclassification:
- are made during the TBP process
- Case by case basis by DEC
- Can be part of a written request to the Secretary

Designated Uses:
- Aquatic biota and wildlife
- Aquatic habitat
- Swimming (primary contact recreation)
- Boating (and related)
- Fishing (and related)
- Enjoyment of aesthetic conditions
- Public water source and irrigation
Modeling data (CWR) supports project
Help Protect Our Watershed

- Support sewage treatment plant and septic system upgrades.
- Businesses can use green practices that are protective of water quality.
- Encourage county to consider Green Infrastructure planning.
- Farmers can continue to add Best Management Practices (BMPs): plant cover crops and fence livestock out of streams.
- Learn more about and support conservation easements.
- Reduce fertilizer and pesticide use.
- Leave or plant tree buffers along streams.
- If you have a septic system, have it inspected and pumped regularly.
- Watch (and smell) for sewage overflows and contact your city or county.
- Install a rain barrel or rain garden and plant native species to encourage rainwater to soak into the ground.
- Discourage the feeding of geese and other waterfowl.
- Pick up your pet’s waste to keep your neighborhood clean.
- Volunteer with community watershed organizations such as the South Anna Monitoring Project and help monitor your local streams.
- Photo provided by NRCS Soil Health.
VT Water Quality Standards
Environmental Protection Rule
Chapter 29A

Tactical Basin Planning

- As part of the tactical basin planning process, public participation shall be sought to identify and inventory problems, solutions, high quality waters, existing uses and the quality of such uses, and significant resources of high public interest.

Plans are required to contain any recommended:

- Changes in classification
  - A(1), B(1), B(2)
- Designation of waters
  - Outstanding Resource Waters