Winooski Tactical Basin Plan Overview

presentation to CCRPC Board

September 19, 2018

Dan Albrecht, MA, MS, Senior Planner
Presentation Elements

1) Purpose & Content of Tactical Basin Plans (TBP)
2) Role of RPCs in TBP Development
3) Plan Content: Geography, Assessments, Stressors, Actions, Monitoring, Objectives
4) Implementation of the TBP
5) CCRPC comment & conformance letter
6) Next Steps
Purpose of Tactical Basin Plans (TBP)

The VT Department of Environmental Conservation (DEC) is responsible for preparing Tactical Basin Plans, a water quality management plan, for each of the basins and updating them every five years. The resulting plans meet the three goals of the Vermont Surface Water Management Strategy:

• to protect, maintain, enhance and restore the **biological, chemical, and physical integrity** of Vermont’s surface waters,

• to support **public use and enjoyment** of Vermont’s water resources, and

• to protect **public health and safety**.
Tactical Basin Plan Content

1. Planning Process & Watershed Description
2. Water Resource Assessments
3. Addressing Stressors and Pollutants through TMDLs and Regulatory Programs
4. Management Goals for Surface Waters
5. Implementation: Protection and Remediation Actions
Winooski TBP also includes:

- Phosphorus reduction targets for the Winooski River Basin to minimize inputs into Lake Champlain
Role of RPCs in TBP Development

Assistance to DEC by strengthening community participation

• Support Clean Water Advisory Committee
• Identify key water quality issues
• Catalog existing municipal zoning bylaws related to water quality
• Coordinate community comments during Plan development
• Promote public forum and host formal public meeting at RPC Board meeting
• Statute requires an RPC recommendation to the ANR Secretary on conformance with the Regional Plan
• Assist the Secretary in implementing a project evaluation process to prioritize water quality improvements
Geography of the Entire Winooski Basin

Land Cover of the Winooski River Watershed

Forested
Developed
Cultivated
Geography of the Winooski Basin in Chittenden Cty
Water Resource Assessments

The Vermont Surface Water Management Strategy identifies 10 major stressors that impact surface waters.

<table>
<thead>
<tr>
<th>Stressor</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Channel Erosion</td>
<td>Uses are supported, meets WQ standards and no known stressors</td>
</tr>
<tr>
<td>Encroachment</td>
<td>Uses are supported, meets WQ standards but WQ or habitat at risk or somewhat diminished</td>
</tr>
<tr>
<td>Land Erosion</td>
<td>Use(s) not supported, does not meet WQ standards and impacted by non-pollutant (invasive species, water quantity or flow)</td>
</tr>
<tr>
<td>Pathogens</td>
<td>Use(s) not supported, does not meet WQ standards and impacted by pollutant (TMDL needed, TMDL not needed, TMDL completed)</td>
</tr>
<tr>
<td>Acidity</td>
<td></td>
</tr>
<tr>
<td>Flow Alteration</td>
<td></td>
</tr>
<tr>
<td>Invasive Species</td>
<td></td>
</tr>
<tr>
<td>Nutrient Loading</td>
<td></td>
</tr>
<tr>
<td>Toxics</td>
<td></td>
</tr>
</tbody>
</table>

Full support – Uses are supported, meets WQ standards and no known stressors
Stressed – Uses are supported, meets WQ standards but WQ or habitat at risk or somewhat diminished
Altered – Use(s) not supported, does not meet WQ standards and impacted by non-pollutant (invasive species, water quantity or flow)
Impaired - Use(s) not supported, does not meet WQ standards and impacted by pollutant (TMDL needed, TMDL not needed, TMDL completed)
Water Resource Assessments

Sunnyside Brook: Impaired, Chlorides, TMDL in development
Water Resource Assessments

Shelburne Pond: Altered, Aquatic Nuisance Species, aid to community needed
Joiner Brook: Altered, Insufficient flow, review and protection needed
Phosphorus Base Load & Reduction Targets

WATER POLLUTION

Phosphorus concentration is currently 631 metric tons (MT/year), which does not meet EPA water quality standards.

Base Load 631 Metric Tons/Year

- Stream bank erosion: 130 MT/yr (21%)
- Agriculture: 261 MT/yr (41%)
- Developed: 114 MT/yr (18%)
- Forest: 110 MT/yr (16%)
- Waste-water treatment: 25 MT/yr (4%)

Target 415 Metric Tons/Year (-34%)

- Margin of error: 21 MT/yr (5%)
- Stream bank erosion: 73 MT/yr (18%)
- Agriculture: 123 MT/yr (30%)
- Developed: 90 MT/yr (22%)
- Forest: 77 MT/yr (18%)
- Waste-water treatment: 32 MT/yr (8%)

Source: Phosphorus TMDLs for Vermont Segments of Lake Champlain, August 14, 2015, Environmental Protection Agency
## Percent Reductions Needed to Meet TMDL

<table>
<thead>
<tr>
<th>Source</th>
<th>Category</th>
<th>Allocation category</th>
<th>Total allocation for basin (MT/yr.)</th>
<th>Percent reduction required for basin</th>
</tr>
</thead>
<tbody>
<tr>
<td>Forest</td>
<td>All lands</td>
<td>Load</td>
<td>30.90</td>
<td>5.0%</td>
</tr>
<tr>
<td>Stream Channels</td>
<td>All streams</td>
<td>Load</td>
<td>35.66</td>
<td>28.9%</td>
</tr>
<tr>
<td>Agriculture</td>
<td>Fields/pastures</td>
<td>Load</td>
<td>16.22</td>
<td>46.9%</td>
</tr>
<tr>
<td></td>
<td>Production Areas</td>
<td>Wasteload</td>
<td>0.43</td>
<td>80.0%</td>
</tr>
</tbody>
</table>

### Developed Land

<table>
<thead>
<tr>
<th></th>
<th>Summary</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>VTrans owned roads and developed lands</td>
<td>Wasteload</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Roads MRGP</td>
<td>Wasteload</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MS4</td>
<td>Wasteload</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Larger unregulated parcels</td>
<td>Wasteload</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wastewater</td>
<td>WWTF discharges</td>
<td>Wasteload</td>
<td>9.85</td>
<td>61.1%</td>
</tr>
<tr>
<td></td>
<td>CSO discharges</td>
<td>Wasteload</td>
<td>NA</td>
<td>NA</td>
</tr>
</tbody>
</table>
Estimated Phosphorus Export from Developed Lands (excluding roads)
Estimated Phosphorus Export from Roads

Estimated Road TP (average kg/yr)

Road TP (kg/yr)
- 0 - 14
- 15 - 34
- 35 - 64
- 65 - 105
- 106 - 164
- 165 - 267
- 268 - 471

Chittenden County RPC
Communities Planning Together
### Proposed monitoring & assessment needs

<table>
<thead>
<tr>
<th>Waterbody</th>
<th>Town</th>
<th>Assessment Goal</th>
<th>Existing data supporting goal</th>
<th>Monitoring needs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Joiner Brook</td>
<td>Bolton</td>
<td>Determine condition</td>
<td>check impact of development</td>
<td>Macroinvertebrate and fish data</td>
</tr>
<tr>
<td>Cobb Brook</td>
<td>Huntington</td>
<td>Determine Condition</td>
<td>Huntington Conservation Commission requested assessment</td>
<td>Macroinvertebrate and fish data</td>
</tr>
<tr>
<td>Huntington River</td>
<td>Huntington</td>
<td>Determine condition</td>
<td>Texas Hill Road is steep and could contribute sediment. Macroinvertebrates very good to excellent and fish good condition.</td>
<td>Macroinvertebrate and fish data</td>
</tr>
<tr>
<td>Muddy Brook</td>
<td>Williston</td>
<td>Determine condition</td>
<td>Land use suggests stressors beyond listed area</td>
<td>Macroinvertebrate and fish data</td>
</tr>
<tr>
<td>Blanchard Brook</td>
<td>South Burlington</td>
<td>Identify stressors</td>
<td>Will be listed for stormwater and temperature in 2018</td>
<td>Macroinvertebrate and fish data</td>
</tr>
<tr>
<td>Sand Hill Brook VT08-04</td>
<td>Essex</td>
<td>Confirm as Class B(1) for aquatic biota and wildlife</td>
<td>2015 macroinvertebrate =<em>Very Good</em>, fish=<em>Excellent</em></td>
<td>Macroinvertebrate and fish data</td>
</tr>
<tr>
<td>Mill Brook</td>
<td>Jericho</td>
<td>Explore for Class B1 for aquatic biota and wildlife</td>
<td>Based on macroinvertebrate/fish data</td>
<td>Macroinvertebrate and fish data</td>
</tr>
</tbody>
</table>
Top Objectives

• Protect **river corridors and floodplains** to increase flood resilience and allow rivers to reach equilibrium

• Increase **knowledge of water quality conditions** in the Basin, including the identification of high quality lakes and streams

• Implement **agricultural Best Management Practices (BMPs)**

• **Resolve E. coli impairments** in the Winooski River between Plainfield and Cabot, as well as in the Huntington and Mad Rivers and Allen Brook

• Manage stormwater from developed areas through the development and implementation of **stormwater master plans and Flow Restoration and Phosphorus Reduction Plans**
Top Objectives

• Improve **littoral zone habitat** of ponds and lakes in the Kingsbury Branch watershed

• Inventory and prioritize **municipal road erosion** features that discharge into surface waters and implement high priority actions in existing road erosion inventoried sites

• Provide technical and, as available, financial assistance to **wastewater treatment** facilities

• Prioritize **wetland and floodplain restoration** projects

• Prioritize **remediation of forest roads and log landings** with high erosion risks

• Assist municipalities in **identifying areas of landslide hazards** for protection of future development
## Subbasin – Specific Strategies

<table>
<thead>
<tr>
<th>Subbasin Waterbody Name</th>
<th>Associated Tributaries to Winooski River</th>
<th>Priority Stressor/Concern</th>
<th>Priority Strategy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lower Winooski River mainstem</td>
<td>Urban development stressors and toxins, agriculture, chlorides</td>
<td>Support MS4 permit implementation, Education/Outreach (E/O) to encourage implementation of best practices by private landowners</td>
<td></td>
</tr>
<tr>
<td>Tributaries to Lower Winooski</td>
<td>Urban development stressors, chlorides, agriculture</td>
<td>Support MS4 permit implementation, stormwater management to reduce landslide, E/O, protect/enhance river corridors</td>
<td></td>
</tr>
<tr>
<td>Lower Mid-Winooski River mainstem - the confluence of Alder Brook to the confluence of the Little River</td>
<td>Temperatures sustained from smaller streams despite Bolton and Waterbury dam, road stormwater, agriculture</td>
<td>Protect/enhance River corridor, manage stormwater, agric. BMP</td>
<td></td>
</tr>
<tr>
<td>Tributaries to Lower Mid-Winooski</td>
<td>Roads, landslide activity, these streams currently protect temp. of main stem. Trout/salmon spawning habitat</td>
<td>Driveway E/O and Road management, Protect/enhance River corridor</td>
<td></td>
</tr>
<tr>
<td>Huntington River</td>
<td>Pathogens, temperatures (limit spawning habitat), geomorphic instability, agric. runoff, septic. Protect swimming holes</td>
<td>Driveway E/O, support town floodplain protection, Protect/enhance river corridor. Manage stormwater and streams to reduce landslide/gully</td>
<td></td>
</tr>
</tbody>
</table>
How are Strategies and Actions Implemented

- Individual actions to meet objectives and strategies are contained within DEC’s Watershed Projects Database
- Database is catalog of identified projects from conceptual to scoped to shovel-ready
- It is VDEC’s goal to prioritize staff time and direct internal and external grant funding opportunities towards the recommended actions.
Pending CCRPC Comment & Conformance Letter

10 VSA §1253
Requires an analysis and formal recommendation on conformance with the goals and objectives of applicable regional plans

3 out of the 8 ECOS Plan strategies support and move toward the same goals of the Winooski Tactical Basin Plan.
• #2. Develop in areas planned for growth;
• #3. Water Quality protection and restoration;
• #4. Rural lands and habitat protection.
Next steps

September 25
• Draft CCRPC Regional Plan conformance & comments letter to CWAC for pre-meeting review

October 2 - Clean Water Advisory Committee
• DEC staff attends to answer questions on TBP
• CWAC comments/edits conformance letter and forwards to full Commission

October 2 (6 p.m.) - Public Forum @CCRPC office
• Public Forum on draft Winooski TBP co-hosted by CCRPC and DEC

October 17 - Public Meeting at CCRPC Commission
• CCRPC Board holds meeting to obtain comments on draft Plan content
• CCRPC Board reviews and approves submission of conformance letter and final comments to DEC
Questions? Comments?

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