

## **Executive Summary**

The Vermont Clean Water Act requires the development of Tactical Basin Plans for each of Vermont's 15 river basins to be adopted on a five-year recurring cycle. These plans integrate watershed modeling, water quality monitoring, sector-specific pollution source assessments, and stakeholder input to document geographically explicit actions necessary to protect, maintain, enhance, and restore surface waters. The Agency of Natural Resources is assisted in the implementation of plan through a combination of State and federal funding sources, partner support (Appendix A) and for certain protection efforts, the public rulemaking process.

The Winooski River (Basin 8) Tactical Basin Plan focuses on the watershed of the Winooski River. DEC Basin 8 Water Quality Assessment Report provides background to support the Plan's actions including assessments of wetlands, lakes and rivers. The Plan's goal for Winooski River Basin and all of the surface waters in its drainage basin is the sustained ecological health and human use by meeting or exceeding Vermont Water Quality Standards.

The Plan also includes the Phase II content (Chapter 3) for the Lake Champlain Phosphorus TMDL, including setting of targets for phosphorus loading from the Winooski River to Lake Champlain. The Lake Champlain Phase I Implementation Plan and the TMDL both point to issuance of these plans as components of the accountability framework.

The Phase II content includes high-resolution phosphorus load modeling and projected phosphorus reductions for smaller sub-watersheds as well as by types of sources (waste water treatment plants, developed lands stormwater, roads, forestry and agricultural). The plan also describes strategies relating to the development of new regulations associated with the Vermont Clean Water Act. Future iterations of the Basin 8 Tactical Basin Plan will provide augmented specificity in regards to phosphorus reductions achieved, reductions planned, costs, and as appropriate, success stories documenting incremental water quality improvement. The surface waters in Basin 8 provide recreational opportunities, drinking water and support for wildlife habitat and plant communities. The health of the surface water is directly connected to these uses. Pollutants associated with basin 8 waterbodies include phosphorus, sediment, pathogens and toxins as well as aquatic invasive species.

The main sources of the elevated phosphorus, sediment and pathogen levels include agricultural, urban and road runoff, and eroding river channels due to a lack of

equilibrium in the river system. Many of the actions to address these stressors in the basin will also achieve required reductions in phosphorus loading to Lake Champlain (Phase II content in Chapter 3).

In Chapter 4, the plan also describes management goals for basin 8 surface waters and includes new classifications or candidates for reclassification (see Summary of Classification Opportunities below).

The heart of this plan is Chapter 5 and the Watershed Projects Database, which includes geographically explicit actions to protect or restore surface waters in the basin. The actions are supported by the following top objectives and strategies for priority watershed (and associated towns):

### Top Objectives and Strategies

**Protect river corridors and floodplains to increase flood resilience and allow rivers to reach equilibrium** through protection of river corridors with conservation easements and municipal adoption of appropriate bylaws, focusing on assisting towns to adopt corridor protection as well as implement VDEC river corridor plans.

**Increase knowledge of water quality conditions in the basin, including the identification of high quality lakes** through the establishment and/or continuation of short-term intensive and long-term monitoring programs.

**Implement agricultural Best Management Practices (BMPs)** in areas that are a significant source of phosphorus and where BMPs are best suited to conditions with a focus on areas of high phosphorus loading.

**Resolve E. coli impairments in along Winooski between Plainfield and Cabot, Huntington, Mad Rivers and Allen Brook** by addressing discernable bacteria sources from agriculture and residential sources to meet bacterial TMDL.

**Manage stormwater from developed areas through the development and implementation of stormwater master plans and Flow Restoration Plans in MS4 communities** (see Appendix C).

**Improve littoral zone habitat along Lake Champlain, and ponds in the Kingsbury Branch** through direct outreach with landowners to encourage participation in the Lake Wise Program that promotes implementation of lakeshore BMPs.

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

**Provide technical and as available, financial assistance to wastewater treatment facilities in meeting Lake Champlain Phosphorus TMDL goals.**

**Prioritize wetland and floodplain restoration projects** in appropriate locations for phosphorus retention and sediment attenuation with a focus on the watersheds X.

**Prioritize remediation of forest roads and log landings with high erosion risks**, including sugaring operations and areas of high phosphorus loading.

**Assist municipalities in identifying areas of landslide hazards for benefit of future development** including Jericho, Williston, Essex, Duxbury, Plainfield, Marshfield, and Barre Town.

In addition to the actions supported by priority objectives and the classification opportunities, the basin plan also includes actions for addressing stressed and impaired waters listed in Table 4 and actions relating to monitoring and assessment in Table 11.

The Vermont Agency of Natural Resources has prepared an online mapping tool, the ANR Natural Resources Atlas that allows the reader to identify the locations of many Basin features.