

Lamoille River Watershed Activities Update (November 26, 2001)

Lamoille Watershed Council Formation

A Watershed Council was formed representing a diverse mix of stakeholders within the watershed. Watershed Council members represent constituents from various backgrounds including farmers, foresters, loggers, business owners, municipal officials, anglers, local watershed organizations, environmental groups, teachers, utility companies, regional planners, and ski areas. The Watershed Council is guiding the development of the watershed plan and assist in the implementation of watershed restoration projects.

Public Forums

Eight public forums were held throughout the watershed to listen to residents concerns and visions regarding water quality in the Lamoille River watershed using the Nominal Group Process. The top issues of the forums are being used to direct the Watershed Council on developing strategies, securing funds, and recruiting technical advisors to improve water quality within the basin.

The Browns River Watershed Council in conducted 4 additional public forums to hear from watershed residents.

Assessments

Stream stability assessments have been completed for Lamoille, Caledonia, and Orleans Counties sponsored by FEMA Project Impact and the 4 Natural Resource Conservation Districts within the watershed. The assessments will be used to target unstable stream segments for flood remediation and infrastructure protection and to identify reference stream segments for protection.

A FEMA Project Impact sponsored stream stability assessment is underway in the Wild Branch watershed. The Vermont Geologic Survey is undergoing this assessment that will lead to the development of a non-flood plain hazard map for the Towns of Wolcott and Craftsbury for future town planning guidance.

Several municipal road improvement projects were inventoried and funding secured for restoration projects. Municipal road and bridge improvement projects have been completed in Johnson, Cambridge, and Hyde Park. Municipal infrastructure projects included stone and grass lining of road drainage ditches, culvert and bridge replacement, and the purchase of a hydro-seeder to encourage the revegetation of disturbed vegetation.

A stream reach was inventoried for possible sources of pollutants of an impaired tributary to the Brewster River in Cambridge.

Riparian Buffer Initiative

US Fish and Wildlife Service, Natural Resources Conservation Service, and the Lamoille County Conservation District to identify, assess, and implement streamside buffer programs through the *Trees for Streams*, *Conservation Reserve*, and *Partners for Fish and Wildlife* programs. New buffers were established on over 5 miles of streambank in the last 2 years.

Watershed Restoration Projects

A stream restoration project was completed using the Natural Channel Design concepts on Foot Brook in Johnson. This site was designated a high priority site for restoration due to its proximity to infrastructure in the *Stream Stability Assessment of Lamoille County*. This was a collaborative project which included FEMA Project Impact, Lamoille County Planning Commission, US Fish and Wildlife Service, Vermont Fish and Wildlife, VDEC River Management Section, USDA Natural Resources Conservation Service, Lamoille County Natural Resources Conservation District, Lamoille River Anglers Association, and local landowners.

The Vermont Youth Conservation Corps completed streambank restoration projects on 8 sites using soil bioengineering techniques.

Numerous site visits and meetings were held in a collaborative effort to identify and remediate non-point source pollutants to Deer Brook, which is an impaired stream in Georgia. Georgia and Milton town officials, Vermont Agency of Transportation, and VDEC technical staff from Wetlands, Stormwater, Planning, and Hydrology/Act 250 have been involved in this process.

Two ANR and USDA NRCS stream stability restoration projects have been identified and surveyed on the Lamoille River and Gihon River. These projects will be designed in the winter of 2001-2002 and implemented in spring of 2002.

Outreach and Education

Numerous newspaper and radio interviews were conducted and articles written on the Lamoille River Watershed Planning process including the *Stowe Reporter*, *News and Citizen*, *Hardwick Gazette*, *VNRC Newsletter*, and UVM's *Food for Thought* program.

Presentations and field workshops were conducted to several area high school and middle school classes as well as Johnson State College and Sterling College. Training was provided on stream stability assessment methodology to Sterling College students.

Several public meetings regarding the possible removal of Jackson Dam in Hardwick were sponsored by the Vermont Natural Resources Council and the Lamoille River Anglers Association.

Presentations were held on the Lamoille River planning process to the Vermont Planners Association, Arrowhead Mountain Lake Association, and Lamoille River Anglers Association.

Additional water quality improvement workshops are being planned for winter and spring 2002.

Topics include:

- Construction site erosion control measures
- Stream instability and flooding
- Municipal road improvement demonstrations
- Alternatives to streamside storing of snow removal
- Development, sprawl and working landscapes

White River Watershed Activities Update (December 10, 2001)

Release of the White River Basin Working Draft

The first of 17 Basin Plans for the State of Vermont was prepared and released (as draft) in September 2001.

Third Branch Assessment Completed

The Agency's Geology and Water Quality Divisions and the White River Partnership will expand the work done by USDA to include fluvial geomorphological information on all of the 18 tributaries of the Third Branch. This work will be used to produce the following:

- a map of hazard areas including flood and erosion hazard areas; and
- a specific plan for channel protection, management, and restoration along the Third Branch.

A hazard map identifies areas of high risk for bank failure and erosion during flooding. With these maps, towns can clearly identify areas where development would be an unwise investment on the land. The Vermont Geologic Survey will produce a hazard map for the Third Branch of the White River Basin in 2002.

The hazard map will be beneficial to towns adjacent to the Third Branch in their planning efforts. The map could be used to help situate development to avoid property loss and to protect riparian corridors from unwise encroachments. The data collected to produce the map can also be used to develop a plan for channel protection, management, and restoration.

- The Agency will work with volunteers from the White River Partnership on the Third Branch to collect data on slope and river instability (fluvial geomorphological information). The use of volunteers will enable the data to be collected in a relatively short time-period.

Upper White River Restoration Project in Granville

The combined effects of historical efforts to increase channel capacity by gravel mining and a 1998 flood event destabilized a portion of the upper river channel in Granville. State and federal agencies, towns, landowners along the river and local interests, coordinated by the White River Partnership, initiated efforts to develop a channel restoration design for about 5,000 feet of the Granville section shortly after the event. The ensuing "natural channel" design called for a two-phase project. The first phase of the restoration, which involved some 1,000 feet of channel, was completed in August, 2000 and included the installation of a riparian buffer and a series of rock vanes and weirs (grade control structures) designed to create the type of natural "step-pool channel" found in steep mountain settings. The second project phase, involving 4,000 feet of river, was largely completed in August, 2001. This phase involved extensive earth work to restore the natural width, depth, meander pattern, and slope of a "riffle-pool" channel and floodplain. Rock vanes, root wads, rock revetments, and bio-engineering methods (consisting of logs and live vegetation) were used to enhance instream habitats and stabilize river banks. The banks will be further protected and restored with willow plantings in the fall of 2001 and a riparian buffer will be planted using native woody vegetation in the spring of 2002.

Public Forums

Four public forums in November/December 2000 on basin planning were held in various locations throughout the watershed. The forum drew over 125 people to discuss concerns that were used to develop objectives and strategies in the plan.

White River Partnership E.coli Monitoring Project

The White River Partnership began a volunteer monitoring program for the purpose of developing an overall picture of water quality in the watershed and educating citizens about pollutants. The Partnership has worked with River Network and the DEC BASS lab to develop a program to measure *E. coli* levels, turbidity, temperature and conductivity. The Partnership's first field season was in the summer of 2001.

White River Partnership Public Access Site Development

Watson Park in Hartford was surveyed on July 24, 2001, and the topography has been plotted and site features are currently being plotted. Design for a non-motorized access will begin shortly and we hope to have a copy of the plans to Tad Nunez, Hartford's recreation director, and others in the near future. The Vermont Agency of Transportation site was surveyed on Thursday, September 20, 2001 and we hope to have this plotted and designed shortly. The Sharon Dam site has not been assigned a date for survey as yet, however we are anticipating a survey for this site before winter. Once these designs are reviewed and comment has been received by all key individuals, the application process for any necessary permits should be pursued by the Town representatives and/or shared amongst WQD and FED as outlined in the Memorandum from the Watershed Coordinator as of June 25, 2001.

White River Partnership Erosion Survey

With the help of the Two Rivers-Ottawaquechee Regional Commission and a Clean Water Act Section 604(b) pass-through grant from the Agency, the Partnership began a project to survey erosion sites and rank the instability of sites in spring 2000. To date, the Partnership has completed the upper White River from Granville to Stockbridge. The Partnership would eventually like to create a basin-wide picture of erosion in the watershed that could help with prioritizing sites for their River Enhancement Projects.

Poultney- Mettowee Watershed Activities Update (December 28, 2001)

Mettowee River Assessment & Survey

The VDEC's watershed coordinator has been involved in many aspects of the Mettowee River Thermal Restoration Project. This includes the completion of a rapid habitat and geomorphic assessment of the mainstem and several tributaries. The assessment and survey work will contribute to the greater thermal modification project that will result in recommendations included in the basin plan for remediating the thermal impairment of the Mettowee River.

The survey work, including Total Maximum Daily Load studies, have taken place along 17 miles of the mainstem.

Stormwater Management Projects including a municipal road improvement project in Pawlet

The Town of Pawlet road crew recently installed two settling basins on Waite Hill Road. Settling basins are pre-cast concrete structures designed to catch silt and sand running off of roads before it reaches nearby rivers or streams. Left unchecked, this erosion causes a kind of water pollution called *sedimentation*. The basins are designed so that excavating equipment can clean out the gravel that gets caught and re-use it for road surfacing — with the potential of saving towns' road maintenance budgets. Funding for the six-basin Pawlet project came from the National Fish and Wildlife Foundation and the Vermont Better Back Roads Program. The Town of Pawlet provided in-kind and financial support.

The Pawlet road crew has removed two dump truck loads full of sediment from these basins already this year. With a 4-yard capacity each, that's 8 cubic yards of sediment, even in a (relatively) dry year.

Hubbardton River Watershed Initiative

The VDEC watershed coordinator has collaborated on the implementation of Hubbardton River Watershed Initiative – a demonstration Project based on the Poultney River Assessment Report done by The Nature Conservancy and Green Mountain College. A grant through the National Fish & Wildlife Foundation was awarded for the Hubbardton River Watershed Initiative, which includes a demonstration project on the mainstem of the River. Many landowners along the mainstem of the Hubbardton are participating in this unique restoration project, which will ensure a greater degree of success.

As a collaborative effort between the Partnership, state and federal agencies, this watershed restoration project will enhance streambank stabilization, riparian buffer establishment, and cattle exclusion of approximately 50 acres along the Hubbardton and Poultney Rivers.

Clean Water Act Section 604b Pass Through Project - Rutland Regional Planning Commission

The 1999 604b project summarizes and compares water quality sections of each of the town plans in the Rutland Region with the corresponding zoning and subdivision ordinances where applicable. There are 15 towns in Basin 2 where this assessment has occurred.

Wastewater treatment plant upgrades – VDEC Wastewater Management Division

The following municipal wastewater treatment plants have either recently undergone phosphorus removal projects (either through phosphorus reduction upgrade, advanced waste treatment, correction of CSOs, control of toxics, pollution prevention activities, and facility enlargements) or are in the process of doing so:

- **Castleton**, wastewater treatment plant expansion and upgrade, with addition of phosphorus removal.
- **Fair Haven**, wastewater treatment plant upgrade, with addition of phosphorus removal.
- **Fair Haven**, wastewater collection system rehabilitation, including abatement of Adams Street pump station overflow.
- **Poultney**, wastewater treatment plant expansion and upgrade, with addition of phosphorus removal.

Riparian Restoration Work

The U.S. Fish & Wildlife Service Partners for Wildlife Program together with the USDA Natural Resource Conservation Service (NRCS) and supported by the Nature Conservancy have implemented a number of livestock exclusion (fencing), buffer re-establishment (tree and shrub planting) and streambank stabilization projects along the Mettowee River, the Poultney River or tributaries to them. Between 1996 and 1999, there were 17 riparian restoration projects covering 67,650 bank feet or 12.9 miles.

Seven projects were in the Mettowee watershed which resulted in 23,500 feet (4.5 miles) of riparian zone restoration with 11 acres of upland and 20.5 acres of wetland restored or protected. Ten of the projects were in the Poultney watershed which resulted in 44,150 feet (8.4 miles) of riparian zone restoration with 38 acres of upland and 48.5 acres of wetland restored or protected.