

Appendix 5. Protections - Water Quality

Water Quality Protections

Overview of Current Water Quality Protections

Recognizing existing protections of water quality and related natural resources at federal, state and town levels helps to identify gaps in protections that may threaten the outstanding resources in the Study area.

Federal and State laws generally govern the quality of surface waters (all lakes, ponds, rivers, streams and wetlands). A goal of the federal Clean Water Act (CWA) is that all U.S. waters be fishable and swimmable. To that end, the CWA establishes criteria to maintain or improve water quality in U.S. surface waters, including rivers. The Clean Water Act holds states independently responsible for upholding of the quality of their waters. In Vermont, local municipalities may place further protections on town waters, enabling towns to regulate the management of their own natural resources. All of the upper Missisquoi and Trout Rivers Study towns have adopted official town plans and zoning bylaws. Many of the town's bylaws regulate land use activities and natural resource management, specifically with respect to waterways.

The Wild and Scenic Study Committee has identified threats to each class of ORV in the Study area, some of which are of immediate concern because of gaps in existing water quality protections. To address these gaps in protection and threats to ORVs, the Study Committee has proposed voluntary recommendations for improving protection and enhancement of ORVs at the local level. The Committee encourages towns and villages in the Study area to make full use of the protection resources available at the State level, and any future Wild and Scenic funding, should designation occur, to maintain or improve the water quality within their municipality.

Federal Water Quality Protections

Clean Water Act

The [federal Clean Water Act](#)¹ (CWA) of 1972 is the over-arching statute that governs the quality of surface waters (lakes, ponds, rivers, streams and wetlands) in the United States. The purpose of the Clean Water Act is to provide a variety of tools that will help to reduce pollution of waterways from private and governmental sources.² These management tools may be either regulatory (pertaining to laws) or non-regulatory (voluntary programs, like landowner cost-sharing). The broader goal of the Act is to “restore and maintain the chemical, physical and biological integrity of the nation’s waters... to support the protection and propagation of fish, shellfish and wildlife and recreation in and on the water.”¹

Early CWA programs worked largely on point-source (traceable to a particular outflow ‘pipe’) pollutants, such as discharges from municipal waste water treatment plants and industrial facilities. The NPDES (National Pollutant Discharge Elimination System) requires the State of VT to issue permits for these point source discharges. The U.S. Construction General Permit (mandated by the U.S. EPA and administered by the U.S. DEP) requires practices to manage stormwater pollution, including implementation of [stormwater management plans](#) to reduce movement of sediment and contaminants from construction sites into waterways, to be implemented in construction projects of one acre or more.

Section 404 of the CWA regulates, through the Army Corps of Engineers, addition of fill or dredged materials to waterways. Programs in recent years have focused more on non-point sources of water pollution, such as stormwater runoff from roads and agricultural areas. Often these sources of pollution are more difficult to pinpoint and regulate. Many current CWA efforts involve a holistic, watershed-based approach to water quality protection. These programs focus on restoring or maintaining water quality by addressing issues that are specific to a particular watershed, such as the Missisquoi Basin Watershed Water Quality Management Plan written by the Vermont Agency of Natural Resources along with community involvement. Click [here](#)³ to read the entire text of the CWA.

Important Notes on the Clean Water Act

- ***The Vermont Agency of Natural Resources (ANR) is responsible for upholding the Federal Clean Water Act***
- ***ANR must provide the federal government with an assessment of the quality of all State waters, and identify waters that fail Vermont Water Quality Standards***
- ***The U.S. Environmental Protection Agency provides states with funding for the monitoring and assessment of surface waters***

Resource Conservation and Recovery Act (RCRA)⁴

The Resource Conservation and Recovery Act (RCRA) of 1976 addressed solid and hazardous waste management activities. A portion of the Act established the “cradle to grave” system, which governs the handling of waste from its point of origin to its disposal. RCRA is a federal statute, with oversight by the Environmental Protection Agency (EPA). The EPA has delegated the authority to implement the RCRA to nearly all 50 states. In Vermont, this is the responsibility of the Hazardous Waste Management Program, which is part of the Department of Environmental Conservation under the Agency of Natural Resources. RCRA requires any facility that creates, treats, stores or disposes of hazardous waste to obtain a permit from the governing body (here in Vermont, the Hazardous Waste Management Program). The permitting procedure requires that the applicant facility specify contingency plans, emergency procedures, recordkeeping and reporting requirements as well as other standard procedures to document the handling of these substances. There are also provisions within RCRA that govern cleanup of hazardous waste in the event of an unintended release. RCRA relates to rivers mostly through the management of solid wastes produced from wastewater treatment facilities or drinking water treatment plants. The Act also contains provisions to protect groundwater from leaking underground storage tanks.

Superfund

[Superfund](#) is the federal government's program, through the U.S. Environmental Protection Agency (EPA), to clean up U.S. hazardous waste sites. The Superfund cleanup process is complex. It involves the steps taken to assess sites, place them on the [National Priorities List](#), and establish and implement appropriate cleanup plans (the long-term cleanup process). EPA's Superfund Program attempts to get interested parties and other stakeholders involved. Meetings and town votes were recently held in Lowell and Eden about the Vermont Asbestos Group (VAG) mine site and the potential for it being placed on the National Priorities List (NPL), commonly known as the Superfund List. The Towns of Lowell and Eden voted not to pursue Superfund involvement in cleaning up the asbestos mine at this time. This site was considered for inclusion due to the asbestos-containing sediments which could infiltrate and negatively impact waterways and wetlands, and thus

potentially violate the Vermont Water Quality Standards and the federal Clean Water Act. There are no sites in the Study area that are currently on the National Priorities List.

State Water Quality Protections

This is an overview of the protections which exist at the State level for water quality. The most up-to-date information may be found on the Vermont Agency of Natural Resources' Watershed Management Division's website (http://www.vtwaterquality.org/wqd_mgtplan/swms_appA.htm). [Section 303](#)⁵ of the Federal Clean Water Act states that basic water quality protection and planning is the responsibility of individual states. In Vermont, these duties fall upon the Vermont Agency of Natural Resources (ANR) and the Vermont Agency of Agriculture, Food and Markets (VAAFAM).

Until recently, the [Vermont Water Resources Panel](#) (formerly the Water Resources Board) was the authority for the management and protection of Vermont's water resources. This Panel is under the Natural Resources Board along with the Land Use Panel which oversees Act 250 permitting and district environmental commissions.

Now, the Agency of Natural Resources exercises the authority for the management and protection of Vermont's water resources, including promulgation of Water Quality Standards (VWQS) and Rules for the Use of Public Waters. The VWQS⁶ provide a framework for the protection and management of Vermont's surface waters per the federal Clean Water Act. The VWQS are a set of regulations that classify each water body, establish designated uses (such as swimming and fishing) that must be protected, and set criteria for chemical, physical and biological attributes of State waters that must be attained in order to protect the designated uses.

The following water quality policy for Vermont is set forth in [10 V.S.A. § 1250](#)⁷ of the Vermont Statutes, and addresses the directive of the Clean Water Act that requires states to maintain and restore the "chemical, physical, and biological integrity of the Nation's waters" ([33 U.S.C. § 1250](#)).⁸

It is the policy of the State of Vermont to:

- 1) Protect and enhance the quality, character and usefulness of its surface waters and to assure the public health;*
- 2) maintain the purity of drinking water;*
- 3) control the discharge of wastes to the waters of the State, prevent degradation of high quality waters and prevent, abate or control all activities harmful to water quality;*
- 4) assure the maintenance of water quality necessary to sustain existing aquatic communities;*
- 5) provide clear, consistent and enforceable standards for the permitting and management of discharges;*
- 6) protect from risk and preserve in their natural state certain high quality waters, including fragile high-altitude waters, and the ecosystems they sustain;*
- 7) manage the waters of the State to promote a healthy and prosperous agricultural community, to increase the opportunities for use of the State's forest, park and recreational facilities, and to allow beneficial and environmentally sound development.*
- 8) It is further the policy of the State to seek over the long term to upgrade the quality of waters and to reduce existing risks to water quality.⁷*

The State of Vermont employs a variety of regulations to administer these policies. For example, there are prohibitions on discharges of waste and other materials into State waters ([10 V.S.A. §1259](#)). Another set of regulations specifically addresses one of the primary water quality issues in Vermont, and especially the Wild & Scenic Study area - excess phosphorus. Excess phosphorus in water can cause algal blooms, fish kills and critically low dissolved oxygen levels which can kill bottom-dwelling organisms and those that feed on them. (The Lake Champlain Basin Program (<http://www.lcbp.org/>) has great resources available on excess phosphorous issues and strategies for reduction). Discharge of phosphorus into Vermont surface waters is regulated by [10 V.S.A. §1266a](#), which places limits on the amounts and concentration of phosphorus allowable in discharges to waters that contribute to Lakes Champlain and Memphremagog. The application of phosphorus and nitrogen fertilizers to non-agricultural land is regulated by [10 V.S.A. §1266b](#). This provision (effective January 2012) regulates the application of phosphorus fertilizer to non-agricultural soils (or “turf”). Included in this provision, phosphorus fertilizer may not be applied to turf that is not deficient in phosphorus, to an impervious surface, to turf between October 15th and April 1st, to frozen turf, or to turf within 25 feet of State waters. More provisions related to water quality and pollution control (such as stormwater management, construction site maintenance, and allowable discharges) may be found in [Title 10, Chapter 47](#)⁹ of the Vermont Statutes.

The VT Water Quality Standards are used by the Agency of Natural Resources (ANR) and the Agency of Agriculture, Food and Markets (VAAFAM) to plan, manage and regulate programs to protect the quality of Vermont’s surface waters. For ANR, most of these duties fall to the sections of the [Watershed Management Division](#) (see Table A5.1. below).¹⁰ The purpose of this Division is to protect, maintain, enhance and restore the quality of Vermont's surface water resources. The Watershed Management Division is responsible for the water quality monitoring, assessing and planning for all lakes, ponds, rivers, streams and wetlands in Vermont. The management of stormwater and wastewater are dealt with in this Division as well. In the VAAFAM, the [Division of Agricultural Resource Management](#)¹¹ deals with water quality issues that are most relevant to agricultural land use. Programs within this Division are both regulatory (State law) and voluntary in nature and are designed to help Vermont farmers protect their environment. Please see the following tables for a breakdown of the programs at the VT ANR and the VAAFAM.

- ***The Vermont Agency of Natural Resources (ANR) and Vermont Agency of Agriculture, Food and Markets (VAAFAM) are charged with upholding the federal Clean Water Act, and have various policies and programs in place to do so. The Study Committee supports their efforts to protect and enhance the water quality in Vermont.***

A5.1. Breakdown of programs and program roles within the ANR/DEC/WMD. The Watershed Management Division is under the Department of Environmental Conservation in the Vermont Agency of Natural Resources. This table breaks down the programs within the Watershed Management Division.

| Program | Purpose |
|--|--|
| Watershed Management Division | The goal of the Watershed Management Division is to maintain and enhance the quality and quantity of Vermont's lakes, rivers and wetlands to support healthy ecosystems and appropriate public uses. |
| Monitoring, Assessment and Planning Program (MAPP) | Integrates three components of the Vermont water pollution control program. MAPP measures water quality indicators, evaluates these indicators in light of applicable standards or thresholds, and then develops watershed plans that target waters for protection or remediation. |
| Lakes & Ponds Management and Protection Section | Monitors the water quality of lakes, determines the causes of problems, and develops ways to solve them. Provides assistance regarding lake management and protection to municipalities, lake associations, and individuals. Administers permits for aquatic nuisance control activities and for encroachments into lakes. |
| Ecosystem Restoration Program | Takes action to accelerate the reduction of sediment and nutrient pollution, such as algae bloom-causing phosphorus, from uncontrolled runoff into our streams, rivers, ponds, wetlands, and lakes (Formerly Clean and Clear). |
| River Management Section | Supports and implements channel assessment and management practices that recognize and mitigate conflict around a stream's natural movement (migration and evolution). Provides regulatory review and technical assistance for protection, management, and restoration projects that affect streams and rivers. |
| Wetlands Section | Responsible for identifying and protecting wetlands and the functions and values they provide. Activities to achieve these goals include education, project review, and enforcement. |
| Stormwater Program | Provides regulatory oversight and technical assistance to ensure proper design and construction of stormwater treatment and control practices and construction-related erosion prevention and sediment control practices. |
| Wastewater Program | Provides technical assistance and educational opportunities to wastewater treatment facility operators and in cooperation with State, regional and national organizations. |

Appendix 5. Protections - Water Quality

Table A5.2 Agricultural and Conservation Groups working within our Study area in Vermont.

| Program | Purpose |
|---|---|
| USDA NRCS (Federal) | United States Department of Agriculture's Natural Resource Conservation Service's goals are to reduce soil erosion, enhance water supplies, improve water quality, increase wildlife habitat, and reduce damages caused by floods and other natural disasters. NRCS is offers financial and technical assistance to farmers in the Missisquoi Basin (currently through the American Great Outdoors funding). The Missisquoi Basin has been selected as a prioritized watershed in the Critical Source Areas (CSAs) computer model which identified phosphorus source areas to the Missisquoi Bay. |
| Vermont Chapter of the NRCS | The Study area falls under the jurisdiction of both the Northeast and Northwest VT regions. VT's NRCS Chapter provides technical assistance and funding to protect soils, water, air, plants and animals. |
| VACD (Non-governmental) | VT Association of Conservation Districts is a non-profit organization formed to conduct educational, scientific, charitable work concerning conservation, maintenance, improvement and development and use of land, soil, water, trees, vegetation, fish and wildlife and other natural resources in Vermont, and is made up of members from VT's Natural Resource Conservation Districts. These Conservation Districts were established to allow NRCS to be situated in local and regional offices, and to give federal employees the ability to work locally. |
| LCBP (Inter-governmental) | The Lake Champlain Basin Program works to coordinate and fund efforts which benefit the Lake Champlain Basin's water quality, fisheries, wetlands, wildlife, recreation, and cultural resources (including programs on private lands to reduce sediment and nutrient inputs in the Lake). |
| LCC (Non-governmental) | Lake Champlain Committee is dedicated to protecting Lake Champlain's environmental integrity and recreational resources for this and future generations through science-based advocacy, education and collaborative action. They support Best Management Practices for farms and the adoption of nutrient management plans to reduce phosphorus loading from agriculture, and helped establish numeric water quality standards for phosphorus levels in the lake. |
| MRBA (Non-governmental) | Missisquoi River Basin Association is a volunteer organization which mobilizes community members to conduct projects which improve water quality. On work days volunteers plant trees to create streamside buffers, line culvert outflows and ditches with rock, fence off livestock, and seed areas of bare soil. MRBA has recently begun the process of administering the Trees for Streams program on the Missisquoi through funds available from the Ecosystem Restoration Program. |
| Friends of Northern Lake Champlain (Non-governmental) | Works with projects on ag lands to clean and protect the waters of Northern Lake Champlain, and to reduce polluted land-use runoff into Lake Champlain. |
| FWA (Non-governmental) | The Franklin and Grand Isle Farmer's Watershed Alliance's mission is to insure environmentally positive solutions and enable the dairy industry through education and funding to better the soil, air, and water of the Lake Champlain Watershed while remaining economically viable. Secondly, to promote and defend dairy farming to further its future as one of the largest contributors to the State's economy. |
| VAAF/ARMES | The Division of Agricultural Resource Management works to assist farmers in protecting water resources with the following programs. |

Table A5.3. Voluntary and regulatory programs offered by the Division of Agricultural Resource Management and Environmental Stewardship (ARMES) under the Vermont Agency of Agriculture, Food and Markets (VAAFAM).

| VAAFAM - ARMES VOLUNTARY PROGRAMS | |
|---|---|
| Vermont BMP Program | Cost-sharing for NRCS approved BMP implementation on farms. |
| Nutrient Management Incentive Grant Program | Assists in development and 3 years of update payments for NMPs on farms. |
| LTP | Land Treatment Plan assesses soil and water resource management practices and provides information for stewardship. This is the basis for the NMP, and requires no cost from the farmer due to USDA NRCS, VT Conservation Districts, and VAAFAM funding. |
| FAP | VT's Agronomic Practices program reimburses farmers for field BMPs such as; cover cropping, no-till, ridge till, and rotation implementation. |
| AMM | Alternative Manure Management provides incentive dollars to implement new technologies aimed at improved water quality and waste management. |
| VABP | Vermont Agricultural Buffer Program pays farmers incentives to install and maintain grass or wooded buffers along State waterways. |
| CREP | Conservation Reserve Enhancement Program pays farmers incentives to install and maintain grass buffers along State waterways, and cost-shares for planting materials, fencing, watering facilities, animal walkways, and stream crossings. |
| Agricultural and Managed Forest Land Use Value Program or Current Use Program | Reduces the tax burden on productive farmlands. |
| VAAFAM - ARMES REGULATORY PROGRAMS | |
| AAP | Accepted Agricultural Practices - the minimum management required by law for VT farms. As of 2006 a 10-foot vegetated buffer is now required along surface water with an additional 15' for a total of 25' at points of runoff. |
| LFO | Large Farm Operations (including >700 dairy cows, 1,000 beef cattle, 500 horses, 55,000 turkeys or 82,000 chickens) have additional laws including waste storage and nutrient management plans. LFOs must have individual permits and cannot discharge waste into State waters. According to the ANR "there are four permitted LFOs in the Missisquoi River watershed having 950 or more "animal units." A dairy farm in North Troy in the Upper Missisquoi watershed, a dairy farm in Richford in the Mid Missisquoi watershed, a dairy farm in Enosburg in the Tyler Branch watershed, and a dairy farm in Sheldon in the Lower Missisquoi watershed are all considered large farms and regulated as such." |
| MFO | Medium Farm Operations (including 200-699 dairy cows, 300-999 beef cattle, 150-499 horses, 16,500-54,999 turkeys or 25,000-81,999 chickens) have a General Permit to prevent the discharge wastes into State waters and requires farms to have and implement a nutrient management plan. [Small Farm Operations (SFOs), <200 Mature Dairy Cows, are not required to have permit coverage. SFOs may seek general permit coverage, but it is optional.] |
| CAFO | Confined animal feedlot operation regulations are under development for VT, and are currently regulated under federal laws. |

As evidenced by the tables above, there are already many programs working to improve water quality such as employing agricultural Best Management Practices in the State. The Study Committee supports the existing programs occurring in the Missisquoi and Trout Rivers watersheds (including the goals articulated in the Draft Missisquoi Basin Plan,¹² efforts to maintain or improve riparian buffers and the current efforts to support agricultural best management practices), and wants to work in tandem, rather than at odds with these programs. Federal funds and permits are currently utilized in many of the agriculture best management practice programs and water quality initiatives currently employed along the Missisquoi and Trout Rivers; it is hoped and expected that these efforts will continue after Wild and Scenic designation, if it occurs, and no additional review or approval requirement is anticipated as a result of Wild and Scenic designation. It is anticipated that volunteer efforts and funding from Wild and Scenic designation, if sought, could fill gaps left between these various programs; if designation occurs, Section 7 reviews of individual projects within these programs are not generally necessary.

Post-designation Wild and Scenic Advisory Committees tend to help with coordination and communication between the many available programs, agencies, community groups and funding sources for water quality initiatives. The post-designation Advisory Committee could be very useful in linking local, state, and federal resources, especially since it would be made up, like the Study Committee, of locally appointed representatives and partners from local, state and federal organizations committed to the health of the Missisquoi and Trout watersheds. This Advisory Committee would have a website, regular meetings, local contacts, and paid staff to facilitate communication and coordination of local efforts. Because the Advisory Committee resources (time, energy, funding, etc.) will be very flexible and controlled locally by Committee itself, it can seek to fill gaps not being served by other existing programs. It is of note that there is no cost share or other such requirement or 'strings attached' for towns or partner organizations which participate in programs with the Wild and Scenic Committee. Additionally, designation brings with it other potential federal funding sources, and the ability to leverage resources and apply competitively for grant funds for larger-scale projects. Please see Chapter I of this Management Plan for more information about what designation does and does not mean including a more thorough discussion of Section 7 review.

Municipalities in Vermont have the authority to set additional protections on water quality and natural resources at the local level. These laws are presented in [Title 24, Chapter 117](#)¹³ of the Vermont Statutes. Statute [24 V.S.A. §4401](#) states that all bylaws adopted under Chapter 117 must be consistent with goals established in law that includes the identification, protection and preservation of:

- significant natural and fragile areas;
- outstanding water resources (lakes, rivers, aquifers, shorelands, and wetlands);
- significant scenic roads, waterways, and views; and
- the quality of air, water, wildlife, and land resources¹⁴

Areas or features of geological significance in Vermont may be designated as "fragile areas", per [Title 10, Chapter 158](#) of the Vermont Statutes. A Fragile Area is defined as "an area of land or water which has unusual or significant flora, fauna, geological or similar features of scientific, ecological or educational interest" ([10 V.S.A. § 6551](#)). If the Fragile Area is on private land, the landowner receives a certificate and voluntary stewardship guidelines to protect and manage the features of the area. The Vermont Fragile Area Registry is a voluntary, non-regulatory program and therefore carries no legal provisions. The Registry is intended to: 1) provide a mechanism for identifying and documenting fragile areas, 2) provide information and assistance to owners of these areas so they will not be inadvertently destroyed and, 3) aid in state, regional and local

planning. Registration does not subject the area to public access.¹⁵ While designation of a feature as a “Fragile Area” bears no legal weight, inclusion of the area as a conservation priority in a town plan can protect the feature from development activities (per [24 V.S.A Chapter 117](#)).

The regulatory power of town plans in the protection of natural resources is discussed below; however, a full discussion of tools available to municipalities for conservation may be found in Chapter 7 of “Conserving Vermont’s Natural Heritage,” a publication of the Vermont Department of Fish and Wildlife.¹⁴

Other State-Level Environmental Protections and Programs

Basin Planning - Water Quality Management Plans, formerly known as [basin plans](#)¹⁶ and the basin planning process are required by Vermont Statutes ([10 V.S.A. §1253\(d\)](#), [VWQS §1-02D](#)) and Federal regulations ([40 CFR Part 130, §130.6](#)¹⁷). The Vermont Department of Environmental Conservation’s Agency of Natural Resources (ANR) has prepared a document entitled “Vermont Watershed Initiative - Guidelines for Watershed Planning” (2007) to assist the public in understanding the requirements of the planning process. Basin planning is an on-going process designed to be compatible with the Vermont Water Quality Standards and other applicable State and federal laws. In general, the planning process serves to integrate topics of special local concern with water quality issues of State importance, and make management recommendations on these topics. Basin planning falls under the [Statewide Surface Water Management Strategy](#) which focuses management, planning, regulatory and funding efforts on basin-specific stressors, which are identified and prioritized in a collaborative effort among all stakeholders – state and local governments, landowners, watershed associations and regional planning commissions. The Basin Plan for the Missisquoi River was first completed in 1974. Revisions were completed in the 1980s and 1990s with the most current (2004) version under revision with the assistance of the [Northwest Regional Planning Commission](#).¹⁸ The Draft Missisquoi Basin Water Quality Management Plan is currently being reviewed by the VT ANR,¹² and will likely be available for public comment in the fall of 2012. Once the plan is complete, it will provide a comprehensive list of the major water quality stressors in the basin, the issues surrounding those stressors, and management recommendations to enhance water quality in the watershed. The Wild and Scenic Study Committee will be able to use the recommendations in the basin plan to enhance water quality in the upper Missisquoi and Trout Rivers.

- ***A revision of the Missisquoi’s Basin Plan is in process and may be used by towns and the Upper Missisquoi and Trout Rivers Wild and Scenic Study to better understand water quality issues and encourage management recommendations in the watershed***
- ***Information about ANR Basin Planning in the Missisquoi watershed may be found on the VT ANR [Missisquoi Basin Plan webpage](#)***¹⁹

Act 250

[Act 250](#) is Vermont’s development and control law. The law provides a public, quasi-judicial process for reviewing and managing the environmental, social and fiscal consequences of major subdivisions and development in Vermont through the issuance of land use permits. There are ten separate environmental criteria (with sub-criteria) that may cause a construction project to require issuance of an Act 250 permit, consequently making the project susceptible to both State and public review. Permitting activities which must be followed include review of land use permit applications for conformance with the Act’s ten environmental

criteria, issuance of opinions concerning the applicability of Act 250 to developments and subdivisions of property, monitoring for compliance with the Act and with land use permit conditions, and public education.²⁰ Environmental Criterion # 10 of Act 250 is of particular note to the Wild & Scenic Study towns. This Criterion states that to obtain a permit, an applicant must demonstrate that a project is “...in conformance with any duly adopted local or regional plan or capital program under [24 V.S.A Chapter 117].” This means that townships, through adoption of their town plans, have the ability to indicate that certain natural resources should be protected or conserved. In this case, any Act 250 project in conflict with the town plan would be in violation of Criterion 10, thereby giving towns regulatory power in the Act 250 process and greater involvement in the protection of natural resources.¹⁴ This will be discussed in greater detail in Appendix 9 of this document.

Franklin and Orleans Counties have different Act 250 permit review specialists. To find the specialist in your town, visit the DEC [Permit Specialist Locator](#)²¹ webpage.

- ***Criterion 10 of Act 250, which ensures projects adhere to adopted town plans, gives towns regulatory power in the permit review process.***

Act 110

[Act 110](#)²² was enacted by the Vermont State Legislature in 2011 ([10 V.S.A. Chapter 49](#) and [24 V.S.A. Chapter 11](#)) in order to place protections on river corridors and buffers. There were several reasons for this legislation, including maintaining the safety of waterways (such as mitigation of flood risk), protecting water quality, preserving habitat for fish and other aquatic life, regulating building sites to reduce flooding and property damage, and allowing for multiple uses of State waters for all Vermonters. The Act also promotes the protection of vegetated buffers along rivers, which help to prevent and control water pollution, aid in channel, bank and floodplain stability, reduce flooding, and preserve the habitat for both aquatic and terrestrial wildlife. Act 110 empowers municipalities to adopt bylaws to regulate zoning and development activity along river corridors, and adopt Best Management Practices (BMPs) for river corridor and buffer maintenance. Additionally, financial incentives will be available from the State of Vermont to municipalities that adopt and implement zoning regulations protecting river corridors and buffers. Act 110 is significant for Wild and Scenic Study area towns because it allows them to influence land uses within the river corridor and promote naturally vegetated buffers to protect the quality of the river and its surrounding natural and human environment from flood hazards.²²

- ***At the time of drafting this Management Plan, Act 110 has not yet been utilized in any of the ten towns and villages in the Study area. It is available, along with financial incentives, to protect floodplains and riparian areas.***
- ***Contact the VT DEC [River Management Section](#)²³ for more information on Act 110.***
- ***The Committee encourages towns to use Act 110, the National Flood Insurance Program and the Fluvial Erosion Hazard Program to address protection of river corridors and buffers the next time they revisit their town plans and town zoning bylaws. A [Fact Sheet](#) may be found on the ANR website.***

Vermont Wetland Rules

Vermont has a specific set of laws regarding the protections of wetlands, known as [Vermont Wetland Rules](#).²⁴ Wetlands in Vermont are placed into one of three Classes: I, II or III. Most mapped wetlands in Vermont (as part of the National Wetland Inventory) are Class II wetlands. Class I Wetland designation is reserved for those

wetlands that are “exceptional or irreplaceable in their contribution to Vermont’s natural heritage and merit the highest level of protection.”²⁴ Generally, the Vermont Wetland Rules require a 100 or 50 foot buffer zone for Class One and Class Two wetlands, respectively. These buffer distances are subject to review and may be adjusted for individual wetlands. These rules limit the activities that may occur within Class I and II wetlands and their buffer zones. State-issued [wetland permits](#)²⁵ are required for any development activity in Class I or II wetlands. Allowed land uses in these areas (provided there is no draining, dredging, filling, grading or alterations of water flow) include logging, agriculture, recreation and fish and wildlife management. The size of the buffer as well as the allowed land uses within a wetland and its adjacent buffer zone may be changed with a petition.

Vernal Pools are considered significant wetlands under wildlife habitat, Section 5.4 of the Vermont Wetland Rules. Typically considered Class II wetlands, they are required to have a 50 foot buffer. Jim Andrews, Coordinator of the [Vermont Reptile and Amphibian Atlas](#) promotes the following Best Management Practices for Vernal Pools and other important amphibian and reptile habitat:

- A 100 foot no-cut buffer with intact native vegetation of hardwoods or mixed hardwoods, and a 600 foot buffer with limited impact in up to 25% of area, while maintaining abundant coarse woody material, standing dead snags, native vegetation with an intact canopy and deep leaf litter. If logging occurs, winter is preferred under very dry conditions in the remaining 75% of this area
- A minimum 50 foot no-cut buffer in smaller 1st order streams and seeps to protect amphibian habitat
- A minimum 100 foot no-cut buffer for larger streams (with flexibility for crossings and 50 feet of penetration in some instances) and beaver flowages to protect amphibian habitat

The Vermont Center for Ecostudies and Arrowwood Environmental are conducting the ongoing [Vermont Vernal Pool Mapping Project](#). See the Project website for more information, and to submit details of the location of a vernal pool near you.

Class III wetlands are those wetlands that are not found to provide significant function and value according to the Vermont Wetland Rules. These wetlands are not protected by the Rules, and State Wetland Permits are not required for activities in these wetlands; however, Class III wetlands may be protected by other local, state or federal regulations.

Citizens and community groups may petition to have wetlands reclassified in order to recognize their importance to communities and ecosystems, as well as establish greater protections for them. There are currently no Class I wetlands in the Upper Missisquoi and Trout Rivers Wild and Scenic Study area. For more information on Wetlands in Vermont, see the Vermont Agency of Natural Resources Watershed Management Division’s Wetlands Section [webpage](#).²⁶

- ***All mapped (Class II) wetlands in VT have at least a 50’ buffer zone that excludes development activity; “exceptional or irreplaceable” (Class I) wetlands generally have a 100’ buffer. The Vermont Wetland Rules regulate the allowable activities within these wetlands and their buffers.***
- ***There are currently no Class I wetlands in the Study area. Community members may petition to reclassify wetlands in the State.***

Towns & Villages (Local Water Quality Protections)

Each of the ten Wild & Scenic Study area towns and villages have adopted town plans and zoning bylaws. Additionally, all of the towns and villages describe water quality goals in their respective town plans. These town plan goals may be general or specific; however, only a few of the towns have regulatory bylaws that intend to protect the waterways or natural resources of the towns (Table A5.4).

The Northern Vermont Resource Conservation and Development Program (RC&D) provides grants for programs which inventory and mitigate road related erosion problems through their Better Backroads program “Clean Water You Can Afford” (<http://www.nvtrcd.org/bbr.html>). Several of the Study area towns have utilized these funds, though none in 2011. In 2010 Enosburgh and Richford received grants (see the 2010 Report http://www.nvtrcd.org/2010_BBR_Report.pdf). Berkshire, Enosburgh, Lowell, Montgomery and Richford have received technical assistance site visits since 2005. This is a great program that offers funds for projects which improve the water quality of the Missisquoi and Trout Rivers.

Berkshire

Only Berkshire and Enosburgh have zoning provisions regarding adequate treatment of stormwater runoff, which helps to mitigate the sediments and pollutants that wash off the land during storm events.

Most towns (all except for Lowell, Troy and North Troy) have bylaws regulating land use in designated Flood Hazard Areas (FHA), which are generally defined as the 100-year floodplain or as determined by the National Flood Insurance Program. Commonly, these provisions limit or prohibit construction of buildings in floodways and FHAs unless granted a special exception.

Berkshire and Montgomery allow land uses such as agriculture or forestry in the flood hazard areas, while most towns with FHA provisions have specific language prohibiting the placement of junkyards or storage of hazardous materials in the floodway (Westfield, Jay, Montgomery, Richford, Enosburgh and Enosburg Falls).

A number of the Study area towns and villages have bylaws establishing a building setback distance from waterways – a minimum allowable buffer between development and any river, stream, lake or pond (wetlands have their own set of applicable State laws, as detailed above). Berkshire has a static setback requirement of 100 feet (Table A5.4). Their zoning bylaws indicate that “In order to protect water quality in the Town of Berkshire, no new structures of any kind shall be built within one hundred (100) feet of any river, wetland, stream, lake, or pond.”

Enosburgh/Enosburg Falls

Only Enosburgh and Berkshire have zoning provisions regarding adequate treatment of stormwater runoff, which helps to mitigate the sediments and pollutants that wash off the land during storm events.

Most towns (all except for Lowell, Troy and North Troy) have bylaws regulating land use in designated Flood Hazard Areas (FHA), which are generally defined as the 100-year floodplain or as determined by the National Flood Insurance Program. Commonly, these provisions limit or prohibit construction of buildings in floodways and FHAs unless granted a special exception.

Most towns with FHA provisions have specific language prohibiting the placement of junkyards or storage of hazardous materials in the floodway (Enosburgh and Enosburg Falls, Westfield, Jay, Montgomery, and Richford).

A number of the Study area towns and villages have bylaws establishing a building setback distance from waterways – a minimum allowable buffer between development and any river, stream, lake or pond (wetlands have their own set of applicable State laws, as detailed above). Enosburgh and Enosburg Falls both have sliding scales of setback distances. In Enosburgh the setback distance depends on the slope of the land (Table A5.5, in Enosburgh Falls the distance is dependent upon the zoning district where the development is proposed (Table A5.6). The bylaws of Enosburgh and Enosburg Falls include requirements that the natural vegetation within the setback buffer be maintained. Enosburgh also includes stipulations that limit or prohibit destructive activities within the buffer, including the disruption of the natural vegetative buffer, storage of motor vehicles or other potential contaminating materials, presence of septic fields or tanks, excavating or disturbing the soil or dumping waste, among other exclusions.

Enosburgh has specific bylaws prohibiting a number of activities in the buffer around their waterways. This comprehensive list offers strong protections for maintaining water quality. The prohibitions include:

- a) No alteration of streambed or bank, except to reduce erosion, perform AAPs and maintenance of stream crossings for agricultural purposes;
- b) In general, disturbances to natural vegetation are prohibited. These include disturbances by tree removal, clearing, burning, and spraying. No pesticide use or storage;
- c) No septic fields in the buffer;
- d) No storage for motorized vehicles. No use of motorized vehicles except for approved maintenance and emergency use;
- e) No sewage disposal systems may be located within 300 feet of normal high water level of a water supply or within 200 feet of the banks of any stream that feeds into a water supply;
- f) No soil disturbance from grading, plowing, except with approved soil conservation and water quality plan;
- g) No mining or excavation, except existing uses, no dredging except as permitted by State law;
- h) No deposit or landfill or reuse, solid or liquid waste; fill allowed only as approved by the Army Corps of Engineers;
- i) No storage of materials;
- j) No dumping;
- k) No fill to expand development area.²⁷

Enosburgh and Enosburg Falls both have instituted progressive zoning districts that afford additional protections to natural resources in the towns. Of note, Enosburgh has a Natural Resources Overlay District ([§570 of Zoning Bylaws](#)), which includes

“significant geologic features, unusual or important plant and animal qualities of scientific, ecological, or educational interest make lands in this district unsuitable for intensive development because of their local, statewide, national and global significance. Included are steep slopes, rare and endangered species, waterways... and significant wildlife habitat. Designation of this district is intended to protect...scenic and natural resource values.”

Enosburgh and Enosburgh Falls both have Conservation Districts, which intend to add a layer of protection to areas found to be important for the value of their natural resources. The Enosburgh Falls Conservation District (§2.3 of Enosburgh Falls zoning bylaws) was established “...to protect the scenic and natural resource value of lands which lack direct access to public roads, are important for wildlife and wildlife habitat, and which are poorly suited for development.” These districts place strict protections on allowable land uses in natural areas deemed to be of environmental or recreational significance. Zoning districts such as these can help to further protect the Study area rivers and their surrounding environments.

Jay

Most towns (all except for Lowell, Troy and North Troy) have bylaws regulating land use in designated Flood Hazard Areas (FHA), which are generally defined as the 100-year floodplain or as determined by the National Flood Insurance Program. Commonly, these provisions limit or prohibit construction of buildings in floodways and FHAs without special exceptions.

Most towns with FHA provisions have specific language prohibiting the placement of junkyards or storage of hazardous materials in the floodway (Jay, Westfield, Montgomery, Richford, Enosburgh and Enosburgh Falls).

A number of the Study area towns and villages have bylaws establishing a building setback distance from waterways – a minimum allowable buffer between development and any river, stream, lake or pond (wetlands have their own set of applicable State laws, as detailed above). Jay has a static setback requirement of 50 feet (Table A5.4).

The Town of Jay has a 50 foot setback for buildings from all waterways, including man-made ponds. There are no stipulations regarding maintaining vegetated buffers or specifics about alternate land uses. However, §402.01 of the Jay Bylaws state that “*Development will not result in the pollution of air, ground or surface waters*”, which may serve as a catch-all provision for activities that degrade water quality.

Lowell

Lowell has no zoning bylaws regulating land use in designated Flood Hazard Areas (FHAs).

Lowell has no zoning bylaws prohibiting development or other activity near waterways.

Montgomery

Most towns (all except for Lowell, Troy and North Troy) have bylaws regulating land use in designated Flood Hazard Areas (FHA), which are generally defined as the 100-year floodplain or as determined by the National Flood Insurance Program. Commonly, these provisions limit or prohibit construction of buildings in floodways and FHAs unless granted a special exception.

Montgomery and Berkshire allow land uses such as agriculture or forestry in the flood hazard areas, while most towns with FHA provisions have specific language prohibiting the placement of junkyards or storage of hazardous materials in the floodway (Westfield, Jay, Montgomery, Richford, Enosburgh and Enosburgh Falls).

Montgomery and Richford are the first towns in the Study area to include language for Fluvial Erosion Hazards and the National Flood Insurance Program in their Hazard Mitigation Plans.

A number of the Study area towns and villages have bylaws establishing a building setback distance from waterways – a minimum allowable buffer between development and any river, stream, lake or pond (wetlands have their own set of applicable State laws, as detailed above). Montgomery has no general setback requirements from water; however, they do have to comply with the FEMA flood maps which have restrictions for building if the property is located in a Flood Hazard Area. Montgomery is considering changes to their zoning bylaws which may include a setback (Table A5.4).

Montgomery has no zoning bylaws prohibiting development or other activity near waterways.

Richford

Most towns (all except for Lowell, Troy and North Troy) have bylaws regulating land use in designated Flood Hazard Areas (FHA), which are generally defined as the 100-year floodplain or as determined by the National Flood Insurance Program. Commonly, these provisions limit or prohibit construction of buildings in floodways and FHAs unless granted a special exception.

Most towns with FHA provisions have specific language prohibiting the placement of junkyards or storage of hazardous materials in the floodway (Richford, Westfield, Jay, Montgomery, Enosburgh and Enosburg Falls). Montgomery and Richford are the first towns in the Study area to include language for Fluvial Erosion Hazards and the National Flood Insurance Program in their Hazard Mitigation Plans.

Richford has no zoning bylaws prohibiting development or other activity near waterways.

Richford has size limit requirements for lots located in the Water Supply Zoning district (e.g., Stanhope Brook watershed) and Recreation/Conservation District (in village near river), but there are no requirements concerning buffers or distance from water to development.

Troy/North Troy

The Town of Troy and the Village of North Troy have a combined Town Plan (adopted 3/20/08) and Zoning Bylaws. No zoning bylaws exist in Troy or North Troy regulating land use in designated Flood Hazard Areas (FHAs).

Troy and North Troy have no zoning bylaws prohibiting development or other activity near waterways.

The Troy and North Troy Zoning Bylaws state that *“the intent of the Town is to conserve its rural character, its air and water quality, and its productive lands in a manner consistent with the purpose set forth herein and the Town Plan.”* It is worth noting that Troy and North Troy include these statements in their zoning bylaws, while statements like this one are typically only common in town plans in our Study towns. Only a few towns have developed language that specify measures taken by the towns to protect waterways and other natural resources (see Table A5.4 below). Segments of plans and zoning bylaws relevant to water quality protection for each of the Study towns may be found in this Appendix.

Appendix 5. Protections - Water Quality

Westfield

Most towns (all except for Lowell, Troy and North Troy) have bylaws regulating land use in designated Flood Hazard Areas (FHA), which are generally defined as the 100-year floodplain or as determined by the National Flood Insurance Program. Commonly, these provisions limit or prohibit construction of buildings in floodways and FHAs unless granted a special exception.

Most towns with FHA provisions have specific language prohibiting the placement of junkyards or storage of hazardous materials in the floodway (Westfield, Jay, Montgomery, Richford, Enosburgh and Enosburg Falls).

A number of the Study area towns and villages have bylaws establishing a building setback distance from waterways – a minimum allowable buffer between development and any river, stream, lake or pond (wetlands have their own set of applicable State laws, as detailed above). Westfield has a static setback requirement of 50 feet (Table A5.4). The bylaws of Westfield also include requirements that the natural vegetation within the setback buffer be maintained.

Table A5.4. Water quality protection in local planning and zoning in Upper Missisquoi and Trout River Wild and Scenic Study area towns.

| Municipalities | TOWN PLAN | LAND USE REGULATIONS (ZONING & SUBDIVISION) | | | | |
|----------------|----------------------|---|------------------------------------|----------------------------------|--|--------------------------|
| | Water Quality Goals? | Require Preservation of Natural Resources? | Include Stormwater Mgmt Standards? | Reference ANR Stormwater Manual? | Include Flood Hazard Area Regulations? | Require Setback/ Buffer? |
| Berkshire | Yes | Yes | Yes | Yes | Yes | Yes (100') |
| Enosburg Falls | Yes | Yes | Yes | Yes | Yes | Yes (50-100') |
| Enosburgh | Yes | Yes | No | No | Yes | Yes (25-110') |
| Montgomery | Yes | No | No | No | Yes | No* |
| Richford | Yes | No | No | No | Yes | No |
| Jay | Yes | No | No | No | Yes | Yes (50') |
| Lowell | Yes | No | No | No | No | No |
| North Troy | Yes | Yes | No | No | No | No |
| Troy | Yes | Yes | No | No | No | No |
| Westfield | Yes | No | No | No | Yes | Yes (50') |

* Montgomery is considering changes to their [zoning bylaws](#) which may include a setback.

Table A5.5. Setback distances for Enosburgh, based on the slope of the adjacent land and size/type of waterway. Distances are in feet. Town requires an undisturbed naturally vegetated buffer strip be maintained from the shores of lakes and ponds and from each bank of streams and rivers (measured from the ordinary high water mark).

| Slope of adjacent Land | Seasonal (intermittent) streams and permanent streams less than 10 ft in avg channel width | Lakes, Ponds, and streams greater than 10 ft in avg channel width |
|------------------------|--|---|
| 0-10% | 25 | 50 |
| 11-20% | 45 | 70 |
| 21-30% | 65 | 90 |
| 31-40%* | 85 | 110 |

Table A5.6. Setback distances for Enosburg Falls, based on the slope of the adjacent land. Distances are in feet.

| District | Minimum river/ stream setback distance |
|-----------------------------------|--|
| Agricultural/ Rural/ Residential | 50 |
| Central Business District | Avg of front yard setbacks of buildings adjacent to structure, never > 25 feet |
| Commercial District | 100 |
| Conservation District | The DRB may specify dimensional req'ts. |
| Flood Hazard Overlay District | Same as underlying District. |
| High Density Residential District | 50 |
| Industrial District | 100 |
| Low Density Residential District | 50 |
| Recreation District | 50 |

- *All towns except for Lowell, Richford, Troy and the Village of North Troy have zoning bylaws regulating land use in the Flood Hazard Areas (FHAs)*
- *Berkshire, Enosburg Falls, Enosburgh, Jay, Montgomery and Westfield have bylaws prohibiting development of areas near waterways. Lowell, Troy, North Troy and Richford do not..*
- *All Study towns except for Lowell, Richford, Troy and the village of North Troy have setbacks or buffers required by their zoning bylaws. Allowable activities within these buffers vary.*
- *The progressive zoning districts implemented by Enosburgh and Enosburg Falls may be a good model for all the Study area towns; however, standardized buffers may be easier to understand and enforce.*
- *Funding and assistance from ANR through Act 110 could help towns and villages decide on flood hazard mitigation and buffer language to include in their town plans and zoning bylaws.*

Endnotes

1. Federal Clean Water Act Summary: www.epa.gov/owow/watershed/wacademy/acad2000/cwa/index.htm
2. Ground water is not specifically addressed in the CWA. Drinking water is addressed directly in the Safe Drinking Water Act, which is overseen by the EPA [Office of Water](http://www.epa.gov/officeofwater/) and requires that states develop EPA-approved programs to carry out assessments of all sources of drinking water in the state.
3. www.epa.gov/lawsregs/laws/cwa.html
4. <http://www.epa.gov/agriculture/lrca.html#About>; <http://www.anr.state.vt.us/dec/wastediv/rcra/rcrahome.htm>
5. Section 303 of the CWA: water.epa.gov/lawsregs/guidance/303.cfm
6. Full text of the Vermont Water Quality Standards: www.state.vt.us/nrb/wrp/publications/wqs.pdf
7. The Vermont Statutes are referenced throughout. Find the complete statutes online: www.leg.state.vt.us/statutesmain.cfm
8. Chapter 33, Section 1250 of the U.S. Code: www.gpo.gov/fdsys/pkg/USCODE-2010-title33/pdf/USCODE-2010-title33-chap26-subchapl-sec1251.pdf
9. Vermont Statutes, Title 10, Chapter 47: www.leg.state.vt.us/statutes/sections.cfm?Title=10&Chapter=047
10. Watershed Management Division (formerly Water Quality Division) webpage: www.vtwaterquality.org/
11. ARMES Division Webpage: www.vermontagriculture.com/ARMES/awq/AWQ.html
12. Agency of Natural Resources, Draft Basin 6 [Missisquoi Basin Watershed] Water Quality Management Plan, dated November, 2012.
13. Title 24, Ch. 117 of the Vermont Statutes - "Municipal And Regional Planning And Development": www.leg.state.vt.us/statutes/sections.cfm?Title=24&Chapter=117
14. "Conserving Vermont's Natural Heritage" is a publication of the State of Vermont Department of Fish & Wildlife. Available online: www.vtfishandwildlife.com/library/maps/Community_Wildlife_Program/complete.pdf
15. Some text taken from Addison County, VT Regional Plan: http://www.acrpc.org/pages/publications/Reg_Plan/NR_2.htm
16. ANR Basin Planning homepage: www.vtwaterquality.org/planning.htm
17. Federal statute referring to basin planning: www.law.cornell.edu/cfr/text/40/130/6
18. Northwest Regional Planning Commission webpage: www.nrpcvt.com/
19. Missisquoi Basin Plan Information: www.vtwaterquality.org/planning/htm/pl_missisquoi.htm
20. Text taken directly from: www.anr.state.vt.us/dec/permit_hb/sheet47.pdf
21. VT DEC Permit Specialist Locator: www.anr.state.vt.us/dec/ead/pa/index.htm
22. VT DEC, River Management Program, Act 110 Summary Document: www.vtwaterquality.org/rivers/docs/rv_act110_rcmp_%20summary.pdf
23. VT DEC River Management Program: vtwaterquality.org/rivers.htm
24. Vermont Wetland Rules, full text: www.nrb.state.vt.us/wrp/publications/VWR%207-16-10.pdf
25. Wetland Permit Information: www.vtwaterquality.org/permits/htm/pm_cud.htm
26. VT DEC Wetlands Program: www.vtwaterquality.org/wetlands.htm
27. Enosburgh Zoning Bylaws: <http://enosburghvermont.org/Forms/Enosburgh%20Zoning%20Bylaws.pdf>

