

Programs that Protect and Restore Waters of Vermont

WATERSHED MANAGEMENT DIVISION – QUICKLINKS TO PROGRAM WEBPAGES .. 3

MONITORING AND ASSESSMENT PROGRAMS 3

Surface Water Monitoring & Assessment	3
Fluvial Geomorphic Assessments	4
Vermont Invasive Patrollers	4
Ambient Biomonitoring Network.....	4
Lake Assessment Program	4
Vermont Long-Term Monitoring (VLTM) of Acid Sensitive Lakes	4
Vermont Acid Precipitation Monitoring Program (VAPMP)	5
Lay Monitoring Program	5
Geologic Surveys & Information	5
Vermont Air Monitoring Network	5
Ambient Air Toxic Monitoring	5

REGULATORY AND TECHNICAL ASSISTANCE PROGRAMS..... 6

Agricultural Runoff Control Programs	6
Pesticide Management Programs.....	13
Silvicultural (logging) runoff control program.....	14
Effluent Limitations and Point Source Control Programs	15
River Management Program.....	18
Lakes and Ponds Management and Protection Program	21
Dam Program.....	22
Wetland Protection Programs	23
Groundwater Pollution Control Programs	24
Air Pollution Control Programs.....	25
Pollution Prevention and Restoration Programs.....	25
Land Use Programs	27
Road Maintenance Programs	29

FUNDING OPPORTUNITIES 31

Best Management Practices Cost-Share Program	31
The Nutrient Management Plan Incentive Grants (NMPIG) Program	31
The Farm Agronomic Practices (FAP) program	31
The Conservation Reserve Enhancement Program (CREP) program	31
The Vermont Agricultural Buffers Program (VABP) program.....	31
The Agricultural Management Assistance (AMA) program	32
The Conservation Reserve Program (CRP).....	32
The Conservation Security Program (CSP)	32
The Environmental Quality Incentives Program (EQIP).....	32
The Farm and Ranch Land Protection Program (FRPP)	32
The Grassland Reserve Program (GRP)	32
Sustainable Agriculture Research & Education Grants (SARE)	32
Municipal Pollution Control.....	33
Revolving Loan Fund.....	33

Statewide Surface Water Management Strategy - State, Federal and other programs that
Protect and Restore Waters September, 2013. 1

Brownfields Site Assessment grants.....	33
Environmental Contingency Fund.....	33
Hazardous Wastes Facility Grants.....	33
Landfill Closure Grants	33
Petroleum Clean-Up Fund.....	33
Solid Waste Implementation Grants.....	33
Solid Waste Assistance Grants.....	33
Underground Storage Tank Removal	33
Underground Storage Tank Replacement/Upgrade- Loans.....	34
Public Water System Planning and Design Loans	34
Water Source Protection Loans	34
Aquatic Nuisance Control Grant-in-Aid grant program.....	Error! Bookmark not defined.
Ecosystem Restoration Program.....	Error! Bookmark not defined.
FEMA Pre-Disaster Mitigation Planning Grants.....	Error! Bookmark not defined.
Laboratory Services Water Quality Monitoring Partnerships	Error! Bookmark not defined.
Nonpoint Source Pollution Reduction Grants	Error! Bookmark not defined.
Vermont Better Backroads Small Grants Program.....	Error! Bookmark not defined.
Vermont Watershed Grants- from Conservation License Plates	Error! Bookmark not defined.
Water Quality Planning Grants to Regional Planning Commissions	Error! Bookmark not defined.
Landowner Incentive Program	36
Trees for Local Communities.....	36
Recreation Trails Grants.....	36
Land & Water Conservation Fund.....	36
Local Transportation Funding and Transportation Enhancement Grants.....	37
Municipal Planning Grant program.....	37
Current Use Program.....	37
US Environmental Protection Agency Targeted Watershed Grants.....	37
Lake Champlain Basin Program Grants	38
National Resource Conservation Service administered federal funds.....	38
USFWS Partners for Fish and Wildlife Habitat Restoration Program	38
United States Geological Survey (USGS) Dedicated Research Funds.....	38
Connecticut River M & E funds.....	38
The Lake Champlain and Tributaries Restoration Fund.....	38
National Fish and Wildlife Foundation Grants.....	39
The Nature Conservancy Conservation Easements.....	39
Orton Family Foundation	39
Patagonia	39
Vermont Community Foundation.....	39
EDUCATION AND OUTREACH	40
Mercury Education & Reduction Campaign	40

This appendix contains brief program summaries for numerous monitoring and assessment, regulatory/technical assistance, funding, and education and outreach programs. In addition to these summaries, the Watershed Management Division Website contains detailed information pertaining to all Division programs.

WATERSHED MANAGEMENT DIVISION – QUICKLINKS TO PROGRAM WEBPAGES

[Monitoring, Assessment and Planning](#)

[Lakes and Ponds Management and Protection](#)

[River Management](#)

[Stormwater](#)

[Wetlands](#)

MONITORING AND ASSESSMENT PROGRAMS

Vermont Agency of Natural Resources, Department of Environmental Conservation (DEC)

DEC Watershed Management Division

Surface Water Monitoring & Assessment

The overall goal of the environmental monitoring and assessment program is to ensure that good science is used to develop an understanding of the attributes of, and the forces which affect, the physical, chemical, and biological characteristics of Vermont's aquatic ecosystems, and ensure that this information is available to be used as the basis for making, and evaluating the consequences of, environmental management decisions made or influenced by DEC. The specific objectives of this program include the following:

- Determine the present and future health of aquatic ecosystems in Vermont;
- Establish empirical limits of natural variation in aquatic ecosystems in Vermont;
- Diagnose abnormal conditions to identify issues in time to develop effective mitigation;
- Identify potential agents of abnormal change;
- Assess ecological changes resulting from the implementation of environmental management activities; and
- Identify risks to human health associated with the use of aquatic resources.

In order to accomplish these objectives, this program conducts activities to monitor and assess the chemical, physical, and biological components of aquatic ecosystems. Findings relate to both ecological and human health. Activities are conducted both in response to identified issues, activities, and potential problems; and in the framework of long-term environmental status and trends monitoring.

DEC's surface water monitoring and assessment program is guided by a standalone [Water Quality Monitoring Strategy](#).

Fluvial Geomorphic Assessments

Fluvial geomorphic (FG) assessment data provide the basis for stream alteration regulatory decisions, technical assistance for fluvial conflict resolution, stream corridor protection and restoration, flood hazard mitigation and water quality protection. The assessment data is critical to prioritization of riparian and fluvial process-related water quality restoration and protection projects, project design alternatives analyses, and project design criteria. FG assessment data provides insight into the social, economic and ecological interrelationships between people and fluvial systems and as such, it is also a valuable educational tool. Assessment data is compiled in the fluvial geomorphic assessment database, and the database is used to ensure that projects are implemented in a manner consistent with and complementary to equilibrium conditions.

Vermont Invasive Patrollers

A volunteer “watch” program was created by the Department of Environmental Conservation in 1987 to utilize volunteers to search for populations of Eurasian watermilfoil. This program has since grown to include other invasive aquatic plants and aquatic animals under the auspices of the “Volunteer Invasive Patroller” Program or VIPs. From 2007-2009 the Division held more than 20 workshops around the state, training approximately 300 volunteers to recognize and survey for aquatic invasive species. Certified VIPs documented 44 surveys on 14 water bodies during 2009.

Ambient Biomonitoring Network

The Ambient Biomonitoring Network (ABN) is the flagship monitoring program of the collection, processing and analysis of biological samples; the assessment of physical habitat features; the collection of chemical water quality samples; the assessment of monitoring data results to ensure that data are of the highest possible quality and that the assessment results are appropriately integrated into a wide variety of DEC management programs.

Lake Assessment Program

The program consists of a variety of monitoring projects that range from simple one-day site visits to long-term diagnostic studies. The results of these monitoring projects help the DEC characterize current water quality conditions, detect trends, and determine which lakes are supporting their designated uses. Ongoing special projects of basin-wide significance include a project to determine lakes most likely to exhibit mercury contamination in fish, and an effort designed to characterize expected biological communities in lakes of differing types, under varying degrees of human disturbance.

Vermont Long-Term Monitoring (VLTM) of Acid Sensitive Lakes

DEC has been monitoring the chemistry of low ionic strength lakes in Vermont since the winter of 1980. In 1983, the [US EPA Long-Term Monitoring Project](#) was initiated within the [National Acid Precipitation Assessment Program](#) (NAPAP). Since 1983, the VLTM project has been conducted in cooperation with the US EPA. This cooperative project consists of six federal/state agencies and universities in different regions of the U.S. and is managed by the US EPA's Environmental Research Laboratory in Corvallis, OR. (ERL-C). Currently, Vermont monitors the chemistry of 11 lakes. Each lake has been monitored under the current VLTM project from 16 to 20 years, making it one of the oldest lake monitoring programs designed specifically to assess acidification.

Vermont Acid Precipitation Monitoring Program (VAPMP)

The VAPMP was initiated in 1980 to monitor the pH of bulk precipitation on an event basis through volunteer monitors located throughout Vermont.

Lay Monitoring Program

Volunteers are equipped and trained to monitor lake water quality on a weekly basis during the summer months. The program enables the DEC to obtain detailed water quality information on a larger number of lakes than would otherwise be possible, while educating volunteers about lake ecology and lake protection. Participation ensures the DEC has long-term seasonal data on lakes in the Basin, and accordingly, emerging water quality problems can be caught more quickly.

DEC Facilities Engineering Division

Geologic Surveys & Information

The Geology program conducts surveys and research related to Vermont geology, topography, and mineral resources; provides information to the public, government, industry, and other institutions which request assistance; and maintains and publishes Vermont geological information. Geologic research can illuminate the nature of ground water and the interaction of ground and surface waters that maintains stream discharge and temperature during low flow periods. Erosion studies that focus on slope stability and the sources of sediment released to rivers have direct bearing on water quality.

HAZUS-MH (stands for FEMA's Mitigation Division powerful risk assessment software program for analyzing potential losses from floods, hurricane winds and earthquakes) will be used to not only to predict the potential damage from earthquake events but from flood events and the effects of riverine erosion.

DEC Air Pollution Control Division

Vermont Air Monitoring Network

[Vermont Air Monitoring Network](#) tracks air pollution concentrations in Vermont including NO₂/NO in Burlington and Rutland on an hourly basis.

Ambient Air Toxic Monitoring

APCD has been monitoring toxics in the ambient air at several locations in the state since 1993 (see [network map](#)). The toxics monitored include volatile organic compounds (VOCs), carbonyls, metals and semi-volatiles. Vermont APCD collects pressurized whole-air 24-hour integrated ambient air samples in SUMMA-treated stainless steel canisters for VOCs per TO-15 every 12 days. Currently four air toxic monitoring sites are in operation in Vermont. They are located in Brattleboro, Rutland, Burlington and Underhill.

REGULATORY AND TECHNICAL ASSISTANCE PROGRAMS

Agricultural Runoff Control Programs

Vermont Agency of Agriculture, Food & Markets

Accepted Agricultural Practices (AAP)

Base level of management required for all farms in Vermont. Easy to implement, low-cost solutions for addressing water resource concerns. The AAPs were designed to reduce non-point pollutant discharges through implementation of improved farming techniques rather than investments in structures and equipment. State law requires that these practices must be technically feasible as well as cost effective for farmers to implement without governmental financial assistance.

www.vermontagriculture.com/ARMES/awq/AAP.html

Alternative Manure Management Program (AMM)

Provides funding to farmers interested in implementing new technologies dedicated to enhancing water quality and improving waste management. Projects funded through this program have included solid separation, nutrient removal, and waste treatment systems. Maximum cost share is limited to \$100,000 through the AMM program. Total VAAFMM payment is limited to 35% if the project is coupled with federal cost share.

www.vermontagriculture.com/documents/BMPApplication.pdf

Best Management Practices Program (BMP)

Provides cost share payments for installation of conservation practices to address water resource concerns. While farmers may realize an economic benefit from BMPs, it is unlikely that they will be affordable without governmental cost sharing. Commonly funded production area practices include waste storage facilities, silage leachate systems, milkhouse waste systems, and barnyard runoff collection. Production area practices are eligible for up to 80% cost share. Field practices, such as animal trails and walkways, are eligible for 50% cost share. If coupled with federal cost share, Agency cost share is limited to 35%. The yearly maximum payment for a single practice is \$50,000 and \$75,000 for two or more practices.

www.vermontagriculture.com/documents/BMPApplication.pdf

Conservation Reserve Enhancement Program (CREP)

In partnership with the USDA, encourages the installation of conservation buffers along waterways by providing land owners with a yearly rental payment and by covering the cost of planting the buffer. Additionally, CREP covers the cost of installing fencing and livestock watering systems where animals on pasture are excluded from waterways. Contracts are either 15 or 30 years in length and payment is dependent upon past land use and whether the buffer is comprised of either trees and/or grasses. Minimum buffer widths are 25 feet for grass and 35 feet for tree buffers. Buffers cannot be harvested under this program. Payments can cover up to 100% of practice costs (for fencing, watering systems and plantings) and include a signup incentive of \$2,005/acre and annual rental payments of \$266/acre/year.

www.vermontagriculture.com/ARMES/CREPwebsite/Home/Home.htm

Farm Agronomic Practices Program (FAP)

Provides farms with state financial assistance for implementation of soil-based practices that improve soil quality, increase crop production, and reduce erosion and agricultural waste discharges at up to \$5,000 per farm. FAPP will provide funding incentive for NMP update, implementation, and maintenance with the aim of improving outreach education on agricultural water quality impacts and regulations. Eligible practices are: Cover Cropping (\$30/acre); Nurse Crops (\$25/acre); Strip Cropping (\$25/acre); Conservation Crop Rotation (\$25/acre); Alternative Manure Incorporation (\$25/acre); Cross-Slope Tillage (\$10/acre); Conservation Tillage (\$12/acre); and Educational and Instructional Activities (up to \$1,000).

www.vermontagriculture.com/ARMES/awq/FAP.html

Large Farm Operations Program (LFO)

An individual permitting process for farms with more than 700 mature dairy cows, 1,000 beef cattle or cow/calf pairs, 1,000 youngstock or heifers, 500 horses, 55,000 turkeys, or 82,000 laying hens. Like the MFO program, the goal of this program is to provide large farms with a Vermont-based alternative to federal permitting while assisting those farms with maintaining economic viability. A LFO permit prohibits the discharge of wastes from a farm's production area to waters of the state and requires the farm to land apply manure, compost, and other wastes according to a nutrient management plan. Unlike the MFO Program, LFO permits are individual to each farm and also regulate odor, noise, traffic, insects, flies, and other pests.

www.vermontagriculture.com/ARMES/awq/LFO.html

Medium Farm Operations (MFO)

All dairies with 200-699 mature animals, whether milking or dry, qualify as a MFO. Other common MFOs include beef operations (300-999 cattle or cow/calf pairs), horse operations (150-499 horses), turkey operations (16,500-54,999 turkeys), and egg facilities (25,000-81,999 laying hens without liquid manure handling system). The MFO program provides a cost-effective alternative to a potentially burdensome federal permitting program by allowing medium sized farms to seek coverage under a single Vermont state General Permit. The General Permit prohibits discharges of wastes from a farm's production area to waters of the state and requires manure, compost, and other wastes to be land applied according to a nutrient management plan.

www.vermontagriculture.com/ARMES/awq/MFO.html

Nutrient Management Incentive Grant Program (NMPIG)

Provides for development of a nutrient management plan (NMP) and three additional years of updates. The initial payment to develop NMP is \$9 per acre, \$15 per soil test, and \$35 per waste storage facility test. Up to \$5,000 is available for plan updates for following three years (not to exceed \$14,000 total for NMPIG). Plans must meet state requirements for nutrient management, as explained in the General Permit for Medium Farm Operations, before receiving payment. Farms with NMP's that have completed the NMPIG or farms that developed their plans through alternate means can apply for annual update payments of \$3 per acre (up to \$1000). Funding is also available for Pre-sidedress Nitrate Tests (\$8 per test).

www.vermontagriculture.com/ARMES/awq/NMPIG.html

Vermont Agricultural Buffer Program (VABP)

The program offers a 5-year maximum rental contract for the installation of conservation grassed buffers on cropland. Unlike the CREP program, VABP consists of planting harvestable grassed

buffers. Areas in crop fields that are prone to erosion caused by flood events, which can be classified as flood chutes, are also eligible under this program to be planted into grass and harvested. Additional program details include that, No manure can be spread in the buffer area; Fertilizer can be used with soil test and nutrient recommendation; Payment of \$123/ac to cover the establishment costs of new filter strips in addition to the annual incentive payments of \$90 to \$150 per acre per year; Forage in buffer can be harvested between June 1st and September 1st only; and Most buffers are 25 feet wide unless a water quality concern deems the need for a larger buffer

www.vermontagriculture.com/documents/VABP.pdf

Local Government Programs

Agricultural Resource Specialist Program (ARS)

Offered by the Vermont Association of Conservation Districts and supported by funding from the VAAFM. Three main services are offered to farmers: AAPA, AEM and FWWT:

Accepted Agricultural Practices Assistance (AAPA) offers farmers free technical assistance and information to help them meet the requirements of VAAFM's AAP regulations. The ARS works with farmers on developing strategies specific to the farm, accommodating seasonal changes and soil characteristics. If strategies involve implementation costs, the ARS provides information and referrals for State and Federal cost-share programs.

Agricultural Environmental Management (AEM) is a statewide, voluntary program that assists farmers in environmental stewardship, protecting the quality of the farm natural resources as the foundation of the farmer's long-term economic viability. Assessments cover farmstead water supplies, nutrient management, pesticide use, and many other farm practices. Suggested actions are linked with technical resources for design and implementation and financial resources for cost-share opportunities.

Farm Well Water Testing (FWWT) is a free drinking water protection service for farms. Water testing for farm wells provides information on bacteria, nitrates and common pesticide levels. If a water quality problem is found, ARS staff will assist the landowner in trying to determine the cause of the contamination and to find the best solution.

Land Treatment Planners (LTP)

Assist farmers in developing land treatment plans, which provide detailed information on farm soil and water resources, recommendations for continued stewardship and compliance with state and federal regulations. Land treatment planning is the foundation of a nutrient management plan (NMP). Although LTP is not itself required for Vermont farms, it provides the core data needed to develop a NMP. A NMP, however, is required for all Medium and Large Farm Operations and is encouraged for Small Farm Operations (SFOs). This free program is provided to farmers through a partnership between the USDA NRCS, Conservation Districts, and VAAFM.

www.vermontagriculture.com/ARMES/awq/LTP.html

Federal Programs

Agricultural Management Assistance (AMA) program

Assists agricultural producers to manage risk and voluntarily address issues such as water management, water quality, and erosion control by incorporating conservation practices into their farming operations. Producers may construct or improve water management or irrigation structures; plant trees for windbreaks or to improve water quality; and mitigate risk through production diversification or resource conservation practices, including soil erosion control, integrated pest management, or transition to organic farming. An AMA plan of operations, developed with NRCS, is required. Participants are expected to maintain cost-shared practices for the life of the practice. Contracts are for 1-10 years. Applicants must own or control the land and comply with adjusted gross income limitation provisions. Eligible land includes cropland, rangeland, grassland, pastureland, non-industrial forestland, and other private land that produces crops or livestock where risk may be mitigated through operation diversification or change in resource conservation practices. Total payments shall not exceed \$50,000 per year.

www.nrcs.usda.gov/programs/ama

Conservation Reserve Program (CRP)

A voluntary program for agricultural landowners. Through CRP, you can receive annual rental payments and cost-share assistance to establish long-term, resource conserving covers on eligible farmland. Participants enroll in CRP contracts for 10 to 15 years. CRP protects millions of acres of American topsoil from erosion and is designed to safeguard the Nation's natural resources. By reducing water runoff and sedimentation, CRP protects groundwater and helps improve the condition of lakes, rivers, ponds, and streams. Acreage enrolled in the CRP is planted to resource-conserving vegetative covers, making the program a major contributor to increased wildlife populations in many parts of the country. Eligible producers must have owned or operated the land for at least 12 months prior. Eligible land must be either cropland that is planted to an agricultural commodity 4 of the previous 6 crop years or pastureland that is suitable for use as a riparian buffer or for similar water quality purposes. Payments include; Annual Rental Payments for establishing long-term, resource-conserving covers; Maintenance Incentive Payments for certain practices; and Cost-share Assistance at up to 50% of the participants' costs in establishing approved practices.

www.fsa.usda.gov/FSA/webapp?area=home&subject=copr&topic=crp

Conservation Stewardship Program (CSP)

A voluntary program that encourages agricultural and forestry producers to address resource concerns by (1) undertaking additional conservation activities and (2) improving and maintaining existing conservation systems. CSP provides financial and technical assistance to help land stewards conserve and enhance soil, water, air, and related natural resources on their land. CSP is available to all producers, regardless of operation size or crops produced. Eligible lands include cropland, grassland, prairie land, improved pastureland, rangeland, nonindustrial private forest land, and agricultural land under the jurisdiction of an Indian tribe. CSP pays participants for conservation performance—the higher the performance, the higher the payment. An annual payment is available for installing new conservation activities and maintaining existing practices. A supplemental payment is available to participants who also adopt a resource conserving crop rotation. NRCS makes payments for activities installed and maintained in the previous year. Contracts may not exceed \$40,000 in any year or \$200,000 in any five-years.

www.nrcs.usda.gov/programs/new_csp/csp.html

Environmental Quality Incentives Program (EQIP)

A voluntary conservation program that provides financial and technical assistance to farmers and ranchers who face threats to soil, water, air, and related natural resources on their land. NRCS develops contracts with agricultural producers to implement conservation practices to address environmental natural resource problems. Payments are made to producers once conservation practices are completed according to NRCS requirements. Persons engaged in livestock or agricultural production and owners of non-industrial private forestland are eligible for the program. Eligible land includes cropland, rangeland, pastureland, private non-industrial forestland, and other farm or ranch lands. An EQIP plan of operations, developed with NRCS, is required. NRCS provides conservation practice payments to landowners under these contracts that can be up to 10 years in duration. Program payments are limited to a person or entity to \$300,000 during any 6-year period.

www.nrcs.usda.gov/programs/eqip/

Farm and Ranch Lands Protection Program (FRPP)

A voluntary program that helps farmers and ranchers keep their land in agriculture. The program provides matching funds to State, Tribal, or local governments and non-governmental organizations with existing farm and ranch land protection programs to purchase conservation easements. From 1996 through 2007, FRPP has enrolled over 533,000 acres in cooperation with more than 400 entities in 49 States. The program allows for long term agreements with cooperating entities. Such agreements may be 3-5 years in duration. The share of the easement cost must not exceed 50% of the appraised fair market value of the conservation easement. As part of its share of the cost of purchasing a conservation easement, a state, tribal, or local government or nongovernmental organization may include a charitable donation by the landowner of up to 25% of the appraised fair market value of the conservation easement. As a minimum, a cooperating entity must provide, in cash, 25% of the appraised fair market value or 50% of the purchase price of the conservation easement.

www.nrcs.usda.gov/programs/frpp/

Grassland Reserve Program (GRP)

A voluntary program for landowners and operators to protect grazing uses and related conservation values by conserving grassland, including rangeland, pastureland, shrubland, and certain other lands. The program emphasizes support for working grazing operations; enhancement of plant and animal biodiversity; and protection of grassland and land containing shrubs and forbs under threat of conversion. Eligible land includes privately owned or Tribal grasslands; land that contains forbs for which grazing is the predominant use; or land that is located in an area that historically has been dominated by grassland, forbs, or shrubland that has the potential to serve as wildlife habitat of significant ecological value. GRP rental contracts and easements prohibit crop production other than hay. A grazing management plan is required. GRP enrollment options include: Rental Contracts of 10-20 years, Permanent Easements or Restoration Agreements. USDA can also enter into cooperative agreements with entities to enable them to acquire easements.

www.nrcs.usda.gov/programs/GRP/

Partners for Fish and Wildlife Habitat Restoration Program (PFW)

Established in 1987 for on-the-ground wetland restoration projects on private lands. At the heart of the Service's mission are the conservation and management of the Federal Trust Species: migratory birds; threatened and endangered species; inter-jurisdictional fish; certain marine

mammals; and species of international concern. The Partners Program provides technical and financial assistance to private landowners and Tribes who are willing to work with us and other partners on a voluntary basis to help meet the habitat needs of our Federal Trust Species. The Partners Program can assist with projects in all habitat types which conserve or restore native vegetation, hydrology, and soils associated with imperiled ecosystems such as longleaf pine, bottomland hardwoods, tropical forests, native prairies, marshes, rivers and streams, or otherwise provide an important habitat requisite for a rare, declining or protected species. Locally-based field biologists work one-on-one with private landowners and other partners to plan, implement, and monitor their projects. Partners Program field staff help landowners find other sources of funding and help them through the permitting process, as necessary.

www.fws.gov/partners/

Rural Energy for America Program (REAP) Grants and Loan Guarantee funding

Available from USDA Rural Development's REAP to assist agricultural producers and rural small businesses with costs for the purchase and installation of renewable energy systems and energy efficiency improvements. Solar, wind, biomass, geothermal, and efficiency projects are eligible. The grants are awarded on a competitive basis and can be up to 25% of total eligible project costs. Grants are limited to \$500,000 for renewable energy systems and \$250,000 for energy efficiency improvements. Grant requests as low as \$2,500 for renewable energy systems and \$1,500 for energy efficiency improvements will be considered.

www.rurdev.usda.gov/rbs/busp/9006grant.htm

Watershed and River Basin Planning and Installation - Public Law 83-566 (PL566)

Technical and financial assistance is provided in cooperation with local sponsoring organizations, state, and other public agencies to voluntarily plan and install watershed-based projects on private lands. The purposes of watershed projects include watershed protection, flood prevention, water quality improvements, soil erosion reduction, rural, municipal and industrial water supply, irrigation management, sedimentation control, fish and wildlife habitat enhancement and create/restore wetlands and wetland functions. Technical and financial assistance can be provided for installation of works of improvement specified in the plans. Project sponsors get assistance in installing land treatment measures when plans are approved. Technical assistance is furnished to landowners and operators to accelerated planning and application of needed conservation on their individual units.

www.nrcs.usda.gov/programs/watershed

Wetlands Reserve Program (WRP)

A voluntary program that provides technical and financial assistance to private landowners and Tribes to restore, protect, and enhance wetlands in exchange for retiring eligible land from agriculture. Over 1.9 million acres are currently enrolled in WRP. Wetlands provide habitat for fish and wildlife, including threatened and endangered species; improve water quality by filtering sediments and chemicals; reduce flooding; recharge groundwater; protect biological diversity; and provide opportunities for educational, scientific, and limited recreational activities. Permanent Easements are paid at 100 % of the easement value and up to 100 % of the restoration costs. Thirty-Year Easements are paid at up to 75 % of the easement value and up to 75 % of the restoration costs. For both permanent and 30-year easements, USDA pays all costs associated with recording the easement in the local land records office, including recording fees, charges for abstracts, survey and appraisal fees, and title insurance. Restoration Cost-Share Agreements are established to restore or enhance the wetland functions and values without placing an easement

on the enrolled acres. USDA pays up to 75% of the restoration costs with payments not to exceed \$50,000 per year.

www.nrcs.usda.gov/programs/wrp/

Wildlife Habitat Incentive Program (WHIP)

A voluntary program for developing or improving high quality habitat that supports fish and wildlife populations of National, State, Tribal, and local significance. WHIP provides technical and financial assistance to landowners for the development of upland, wetland, aquatic, and other types of wildlife habitat. Land eligible for WHIP includes: Private agricultural land including cropland, grassland, rangeland, pasture, and other determined by NRCS to be suitable for fish and wildlife habitat development; Non-industrial private forest land including rural land that has existing tree cover or is suitable for growing trees; and Tribal land. Cost-share agreements for practices are 1-10 years. NRCS will reimburse up to 75% of the cost to install practices for priority fish and wildlife habitat. Participants are expected to maintain the cost-shared practices for their anticipated lifespans. For contracts with long-term cost-share agreements (15 years or longer), NRCS can pay up to 90% of the cost.

www.nrcs.usda.gov/programs/whip/

Additional Programs

Clean Energy Development Fund (CEDF)

A loan program available to fund a wide variety of clean and/or renewable energy projects. Eligible technologies include, but are not limited to: solar photovoltaic (PV); wind energy; farm, landfill, and sewer methane recovery; combined heat & power (CHP) systems; solar thermal, biomass thermal and geothermal generation systems; small hydroelectric systems; thermal energy efficiency; and emerging energy-efficient technologies. Eligible projects must be over 15 kW in AC rated capacity; over 1 million Btu per day for solar thermal or per hour for combustion ; or over 15 tons of capacity (geothermal). Loans cover up to 90% of project cost, require at least 10% to be financed with equity and a maximum award of \$750,000 per project.

publicservice.vermont.gov/energy/ee_cleanenergyfund.html

Farmland Access Program (FAP)

Provides farmers with opportunities to purchase or lease affordable farmland so that they can start up or expand agricultural businesses. Supporting local communities, local food production, and the long-term productive use of farmland are all objectives of this program. Gaining access to high quality, affordable farmland is one of the most difficult obstacles for beginning farmers and expanding agricultural operations. The challenge is especially acute for enterprises that depend on being near Vermont's economic growth centers—areas where land values remain strong even in the current economic climate.

Minimum qualifications require candidates to have 3 years of commercial farming experience, strong agricultural references, plans to develop an agricultural enterprise that would gross \$100,000 per year within 5 years of start up, and sufficient financial resources (or ability to be financed) for start-up expenses. Our focus is on farms producing food and fiber that would use at least 25 acres of land.

www.vlt.org/initiatives

Farmland Preservation Program (FPP)

Focused on retaining the state's quality agricultural land base in strong farming regions of the state. The purchase of conservation easements on farmland preserves Vermont's working landscape--the open farm fields, woodlands and farmsteads that comprise the third largest sector in the state's economy and draw visitors that make tourism the largest sector. Because of VHCB's investment in conservation easements, some of Vermont's most productive farmland will remain undeveloped and the best soils will remain available for farming in the future. Selling conservation easements enables a landowner to keep land in agricultural use and be compensated for potential development value of the land, recognizing the asset value of the land. The landowner retains title and agrees to terms of a conservation easement limiting future ability to subdivide and develop the land.

www.vhcb.org/conservation.html

Technical Assistance Programs (TAP) through Northeast Organic Farming Association

Free to farmers - made possible by grants from the VHCB's VFP and VAAF. Vegetable and Fruit Technical Assistance provides technical assistance to organic farmers in Vermont seeking production and financial assistance on small fruit and vegetable operations. Dairy and Livestock Technical Assistance provides Information, Services and Support for Vermont's Organic Dairy & Livestock Community.

www.nofavt.org/programs

Pesticide Management Programs

Agency of Agriculture, Food and Markets

The Agency of Agriculture, Food and Markets (AAF) has in-place a number of programs to ensure the proper application and disposal of pesticides, as described below.

Pesticide Certification and Training Program

The pesticide certification and training program was developed to provide a minimum standard of competency for pesticide applicators, and to educate applicators about the proper use, handling and disposal of pesticides. Standards of competency are developed to ensure the protection of human health and the environment from undue pesticide exposure. In this program, training and examination focuses heavily on the proper use of pesticides to prevent contamination of surface and groundwater resources, protection of endangered species and prevention of pesticide drift to non-target areas and wildlife.

Pesticide and Groundwater Monitoring Program (PMP)

Collects water samples from drinking water sources near agricultural lands to evaluate whether or not agricultural chemicals are reaching Vermont groundwater. The types of water supplies sampled by the PMP include: drilled, driven point or dug wells and springs, ponds or lakes used as drinking water supplies for human or livestock consumption and irrigation. The PMP tests wells in agricultural areas to help farmers learn about practices that prevent pesticide leaching and conserve the nutrients in fertilizers and manure in the soil. The water quality information provided by this program also helps farmers decide if tillage practices and crop rotations are working to reduce the amounts of nutrients and pesticides lost to groundwater or surface run-off.

Sharing this information with farmers, agricultural dealers, landowners, conservation organizations and other departments of state government helps to improve agricultural practices, protect groundwater, raise public awareness and provide for clean drinking water and a healthy environment in Vermont.

www.vermontagriculture.com/ARMES/pidagchem.htm

Waste Pesticide Disposal Program

AAFM coordinates with Vermont Solid Waste Districts to conduct pesticide disposal days for homeowners, farmers and businesses. The service is free and has resulted in the collection of over 150,000 pounds of waste pesticides that may have otherwise been improperly disposed.

Silvicultural (logging) runoff control program

Agency of Natural Resources, Department of Forests, Parks and Recreation

Vermont Acceptable Management Practices (AMP)

Acceptable Management Practices (AMPs) for maintaining water quality on logging jobs in Vermont became effective on August 15, 1987. Since adoption of the AMPs, the Department of Forests, Parks and Recreation (DFPR) has worked with the Vermont forest industry to support Agency of Natural Resources Enforcement Division in an effort to eliminate discharges resulting from logging operations.

In 1990, a Memorandum of Understanding between the Enforcement Division and the Department of Forests, Parks and Recreation was developed which establishes a process that the DFPR and the forest industry may use to assist loggers or landowners when there is a discharge while maintaining the legal enforcement responsibilities assigned the Enforcement Division.

According to the agreement, five AMP Technical Advisory Teams were created to directly assist any logger or landowner when there is a potential discharge, complaint or request for assistance. Enforcement would be pursued in instances where:

- there is substantial failure to comply with the AMPs which has resulted or is likely to result in substantial environmental degradation;
- efforts to obtain voluntary compliance have been unsuccessful; and
- there is a history of non-compliance with the AMPs coupled with discharges to State waters.

Vermont Heavy Cutting Law (Act 15)

The Vermont Legislature passed the so-called heavy cutting law in 1998. The purpose of the law is to monitor and regulate the amount and approach to heavy cutting being done in Vermont. Heavy cutting is defined as cutting below the “C” line in excess of forty acres or 80 acres in a two-mile radius. The “C” line is a silvicultural stocking level provided for in US Forest Service guidelines for managing various forest types. This level establishes the minimum stocking for stands of trees that would allow stands to return to a fully stocked condition. The AMPs (see above) are among the requirements of this law.

Portable Skidder Bridge Initiative

The goals of this initiative are three-fold.

(1) Inform loggers, landowners and foresters about the benefits of using portable skidder bridges through workshops and presentations, field demonstrations, informational brochures, static displays, video and web production, and news articles.

(2) Provide portable skidder bridges to loggers for purchase, loan and rental using a variety of means and partners.

(3) Provide assistance and support for existing and start-up businesses that would fabricate and sell portable skidder bridges.

Complete information about this expanding program is available at:

<http://www.vtfpr.org/watershed/initiative.cfm>

Effluent Limitations and Point Source Control Programs

Agency of Natural Resources, Department of Environmental Conservation

DEC Wastewater Management Division

The division provides technical assistance and educational opportunities to wastewater treatment facility operators and site technicians and in cooperation with State, regional and national organizations the division supports and/or co-sponsors opportunities that enhance the technical abilities of our regulated communities as well as our own engineering staff

Design/Engineering Program

Vermont municipalities need various wastewater treatment facility and conveyance system construction and improvement projects including: original treatment facility and collection line construction; enlargement and/or refurbishment of existing facilities; implementation of nutrient removal or sludge and septage treatment improvements at existing facilities; combined sewer overflow abatement; or collection line extensions. These projects enable the municipalities to meet the effluent limits in their NPDES permit in order to meet Vermont Water Quality Standards and comply with statute; provide for centralized treatment to replace problem individual on-site systems; and provide desired wastewater treatment capacity to enable municipal growth and development.

The municipalities desire to take advantage of the state and federal capital funds appropriated for municipal pollution control projects, administered by the Department of Environmental Conservation (DEC) Wastewater Management Division. The WWMD assists grant and loan recipients in developing capital planning and financing plans; assists in defining project scopes to meet the technical, regulatory, and funding requirements; assures the design of appropriate facilities; oversees facility construction; and monitors the first year's operation.

Discharge Program (directly to surface waters)

A. Permits:

A discharge permit is required whenever an individual, municipality or company wants to discharge waste directly to waters of the state. Some industries are also required to treat waste

before sending it to a municipal wastewater treatment facility. This section issues discharge permits and pretreatment permits. The permitting process involves a system evaluation and design being prepared by a consultant.

B. Operations and Management (O&M):

This group performs oversight functions of municipally owned wastewater treatment facilities, and of privately owned treatment and pretreatment facilities, in addition to providing certification and training programs, periodic discharge sampling for permit compliance checks, and laboratory evaluations. Assistance is also provided to operators and municipal officials in the proper operation, maintenance and budgeting of their wastewater facilities.

C. Combined Sewer Overflow (CSO) Elimination

During wet weather events, the combined volume of wastewater and stormwater runoff entering combined sewer systems often exceeds conveyance capacity. Most combined sewer systems are designed to discharge flows that exceed conveyance capacity directly to surface waters. Because CSOs contain untreated wastewater and stormwater, they can contribute microbial pathogens and other pollutants to waterways.

Indirect Discharge Permits (land disposal)

A. Land-based sewage treatment and disposal systems greater than 6,499 gallons per day, including septic tanks and leachfields and also treatment plants and spray disposal systems, all of which use soil as part of the waste treatment process. Following primary and/or secondary treatment, the soil provides final effluent renovation and polishing before it reaches groundwater and, eventually, surface water. This is in contrast to direct discharge systems, which may discharge through a pipe directly to surface waters.

B. Regional Office Permits -This section issues water supply and subsurface wastewater disposal permits required for all buildings other than single family homes and all permits for subdivisions, sewer line extensions, mobile home parks and campgrounds which have flows less than 6,500 gallons per day. If the subdivision involves 10 or more lots, Act 250 may take jurisdiction.

Engineers in five regional offices examine applications and approve permits including:

- Discharge of Sewage General Permit for Septic Systems

- Innovative and Alternative Systems

Innovative/Alternative systems and products may be authorized by the Secretary for General Use (§ 1-1001), Pilot Projects (§ 1-1002) or Experimental Designs (§ 1-1003) under the Wastewater System and Potable Water Supply Rules, Effective September 29, 2007 (Rules). The application process for approval of Innovative/Alternative systems and products is described in § 1-1004 of the Rules.

Residual Wastes Program

Permits are required for treatment, storage, disposal of septage and wastewater sludge and for the operation or construction of such facilities.

There are several regulatory requirements for the land application of sludge (biosolids) and septage that assist in protecting surface waters and groundwater, such as required set backs and separation distances, maximum allowed slope of site, nutrient management for site, among others. In 1998, the Solid Waste Management Rules were revised to include, along with other items, the

prohibition of land application of solid waste in the area of the 100-year floodway as another measure to assist in protecting surface water quality.

DEC Watershed Management Division

Stormwater Management

The [Stormwater Management](#) Section provides both technical assistance and regulatory oversight to ensure proper design and construction of stormwater treatment and control practices; and construction-related erosion prevention and sediment control practices - necessary to minimize the potentially adverse impacts of stormwater runoff to receiving waters throughout Vermont

DEC Waste Management Division

Solid Waste Management Program

The program regulates the treatment, storage and disposal of solid waste, with the exception of the land management (diffuse disposal) of biosolids and septage, which is regulated by the Wastewater Management Division. In order to receive a certification, a facility must demonstrate that it complies with applicable siting, design, operation, closure and post closure requirements and standards included in the Vermont Solid Waste Management Rules. The Solid Waste Management Program also assists the Enforcement Division in illegal dumping/disposal cases.

The protection of water related resources are specifically addressed in the Vermont Solid Waste Management Rules (“SWMR”), Vermont Groundwater Protection Rule and Strategy, and Agency Procedures applicable to solid waste management facilities (with the exception of biosolids or septage diffuse disposal). The following requirements are to be addressed in a solid waste facility application for certification and may be specifically addressed in the requirements of a certification issued by the Agency.

- Solid Waste Disposal Facilities must be in compliance with the Vermont Ground Water Protection Rule and Strategy and the Vermont Water Quality Standards to receive certification.
- The SWMR identifies various types of water related resources as prohibited areas for the siting of solid waste management facilities.
- Facilities must meet performance standards in order to assure that siting of the facility will have the least possible reasonable impact on the environment, including groundwater, surface water or waters of the state.
- Site characterization on which a facility is to be located must address groundwater and surface water
- Facilities must be designed and operated to protect the environment, including ground water and surface water
- Most landfills must be lined with leachate collection and off-site treatment and must control run-on and run-off .

Facilities are to be monitored as deemed appropriate to detect the discharge of contaminants to groundwater and surface water. For landfills, monitoring continues through the operational life of the landfill and the post closure period (20 years for unlined landfills that closed since 1989, 30 years for lined landfills which operated since 1994).

The Hazardous Waste Management Program

Establishes the regulatory framework for all hazardous waste generated in Vermont and provides a "cradle-to-grave" tracking system for these wastes. The program establishes the standards for proper management of hazardous waste while also addressing the environmental and human health problems that arise from the mismanagement of hazardous waste. Improper management of hazardous waste can pollute vast areas of land, rivers, streams and lakes, and can lead to unacceptable human exposure to these materials. The program is a prevention program -- when it is successful, these impacts occur less frequently and with less severity.

Underground Storage Tanks

Leaking underground storage tanks (USTs) pose a substantial threat to both human health and the environment, because substances leaked from these tanks are one of the most significant contaminants polluting ground and surface water supplies. In densely developed areas, releases from underground tanks pose an additional risk, since gasoline vapors can accumulate in basements and crawl spaces, posing health hazards as well as fire dangers.

The goal of the UST Program within DEC is to protect human health and the environment by eliminating releases of hazardous materials from underground storage tanks, and fostering proper management of underground tanks in Vermont. By regulating the installation, operation, and closure of USTs, the Underground Storage Program protects the state's water resources and prevents vapor impacts to buildings.

Sites Management Program

The Sites Management Section (SMS) provides state oversight for the investigation and cleanup of properties where a release of a hazardous material has contaminated the environment including soils, groundwater, surface water and indoor air. The primary authority for this oversight can be found in 10 V.S.A. Section 6615.

River Management Program

DEC Watershed Management Division

General

The goal of the River Management Program is to resolve conflicts between human investments and the dynamics of rivers in an environmentally and economically sustainable manner. The River Management Program supports and implements channel assessment and management practices that recognize the functions and value of floodplains, conservation flows, and stream in their equilibrium condition. The Program provides regulatory review and technical assistance for protection, management, and restoration projects that affect the flow and physical nature of streams and rivers. The objective is to guide and encourage projects that provide increased property and infrastructure protection and maintain or restore the ecological functions and economic values of the river system.

Stream Alteration Program

The RMP [Stream Alteration Program](#) provides regulatory review and technical assistance to landowners, municipalities, non-governmental organizations and other agencies to help determine the appropriate stream channel management practices necessary to resolve and avoid conflicts with river systems. The practices selected are designed to recognize and accommodate, to the

extent feasible, the stream's natural stable tendencies (equilibrium conditions). The conflicts are resolved with the recognition of a stream's long-term physical response to past and proposed management practices. The resulting work is intended to provide increased property and infrastructure protection and maintain or enhance the ecological functions and economic values of the river system. Regulation is conducted pursuant to 10 V.S.A., Chapters 41 and 32 and Section 401 of the Clean Water Act.

Stream Alteration Engineers are experienced in river dynamics, conflict resolution, and the environmental damage and human suffering that occur when projects fail during floods. It is their day-to-day field exposure to Vermont river systems and the people and communities that live along them that has created accountability back and forth between the service provider and the communities they serve and toward sustainable relationships at larger natural and economic scales. The number of stream alteration permits issued in a year is a small fraction of the field visits and face to face technical assistance provided to help project proponents understand the eventual river response and the risks they create to the environment, themselves, and their neighbors. On average, Vermont has experienced a flood disaster every year for the past twenty years, and it is the Stream Alteration Engineer who works with local officials for days, weeks, and often months putting things back together in a way that is better than before. The expert professional work in the field helping people and communities reduce both costs and risks is a basic tenet of the River Management Program.

Floodplain Management Program

The RMP [Floodplain Management Program](#) provides technical support to Act 250 and National Flood Insurance Program (NFIP) enrolled communities. In addition to providing general technical assistance, education, and outreach, staff provides floodplain development reviews in accordance 24 VSA Chap.117, Section 4424. Technical assistance is available to communities wishing to better protect riparian corridors from potential encroachments that will cause conflicts with stable channel functions and potentially increase future flood and erosion damages. In addition, the RMP provides support to the VT Division of Emergency Management, communities, watershed associations, Regional Planning Commissions and individuals to help plan for, design and implement flood hazard avoidance, reduction, mitigation and recovery planning and projects. River Management Program engineers, floodplain managers and scientists provide technical assistance and state funding, and use FEMA flood hazard and pre-disaster mitigation grants to assist non-government entities and municipalities with the planning and implementation of flood and erosion hazard mitigation projects. Mitigation projects and the program's assistance are increasingly used as leverage to get landowners and communities involved in greater river corridor and floodplain protection. FEMA pre-disaster mitigation planning funds in Vermont are also be used to help communities develop strategic hazard mitigation plans to restore, remove, or retrofit infrastructure likely to become damaged during or after floods. Recent Stafford Act amendments (44 CFR Part 201.6) required local governments to adopt Hazard Mitigation Plans in order to retain eligibility for certain FEMA (Federal Emergency Management Agency) grant programs. The State Hazard Mitigation Plan and 12 Regional (multi-jurisdictional) Hazard Mitigation Plans all set high priority on mitigation and avoidance of fluvial erosion hazards through riparian corridor protection. In this way, hazard mitigation planning is complementary to water quality objectives and can be a powerful local planning tool.

River Corridor Management and Protection Program

The [River Corridor Management and Protection Program](#) consists of regional scientists and the Fluvial Erosion Hazard Coordinator that assist Act 250 and municipalities in developing river

assessments and maps depicting river corridors, flood and sediment attenuation assets, and Fluvial Erosion Hazard (FEH) areas. The RMP, in cooperation with a host of planning organizations and the Vermont League of Cities and Towns, conducts outreach and education and annually reports on the status and impact of river corridor easements and zoning, including development of FEH mapping. The Program leverages state and federal funding to develop Phase 2 stream geomorphic assessment data and river corridor plans that identify river corridor and restoration projects consistent with the achievement of equilibrium conditions. The regional scientists, working with DEC Watershed Coordinators, educate communities about stream instability and fluvial erosion hazards, and provide incentives for their adoption and implementation of river corridor plans and fluvial erosion hazard zoning bylaws. The River Management Program has provided the RPCs and municipalities with a suite of Enhanced Model Flood Hazard Area Regulations including fluvial erosion hazard area protection. These Program activities are conducted pursuant to 10 V.S.A. Chapter 49 and 24 V.S.A Chapter 117 as amended by Act 110 (passed by the General Assembly in 2010).

A River Corridor Easement Program has been established by the RMP to conserve river reaches identified as high priority sediment and nutrient attenuation areas. The opportunity to purchase and sell river corridor easements was created to augment the state and municipal fluvial erosion hazard zoning which, if adopted, avoids future encroachment and flood damage, but does not restrict channelization practices. The key provision of a river corridor easement is the purchase of channel management rights. The program works closely with state and federal farm service agencies, the Vermont Housing and Conservation Board, and land trust organizations to combine corridor easements with other land conservation programs. The purpose of the river corridor easement is to allow the river to re-establish a natural slope, meander pattern, and access to floodplains in order to provide flood inundation and fluvial erosion hazard mitigation benefits, improve water quality through hydro-logic, sediment and nutrient attenuation, and protect riparian habitats and the natural processes which form them.

Streamflow Protection Program

The goal of the RMP [Streamflow Protection Program](#) is to maintain flows necessary to protect aquatic habitat and stream ecology. In addition to minimum flows, the Program addresses the timing, frequency, duration and magnitude of both high and low flow events and their influence on the physical and biological attributes of a stream or river.

The Program works with Vermont ski areas to protect streamflow at snowmaking water withdrawals. These projects usually include withdrawals designed to maintain conservation flows and construction of storage reservoirs so that water can be withdrawn during periods of high streamflow and used at other times when needed to make snow. The Agency of Natural Resources works closely with ski resorts to design systems that address the resorts' need for water while protecting the aquatic environment.

The Program is charged with ensuring that hydroelectric projects are operated so that the state's rivers and lakes continue to meet Vermont's water quality standards. In addition, the U.S. Army Corps of Engineers operates five flood control projects in Vermont on tributaries of the Connecticut River. The Program works closely with the Fish and Wildlife Department and federal resource agencies to ensure that water quality and aquatic habitat are protected at and below hydroelectric and Corps projects while they still serve their primary purpose of providing power generation or flood hazard mitigation.

Water withdrawals in both streams and lakes usually require a permit from the [U.S. Army Corps of Engineers](#) under Section 404 of the CWA. As with other projects requiring a federal permit, a Section 401 Water Quality Certification from the Agency is required before the permit is issued.

For most types of water withdrawals (except those for snowmaking), the Agency has adopted a [procedure](#) that defines the standards and process used by the Agency during its review of project proposals. The procedure defines how the Agency will determine the minimum streamflow that is necessary to meet [Vermont Water Quality Standards](#). For snowmaking water withdrawals, the Agency has developed [rules](#) as directed by [10 V.S.A. §§ 1031-1032](#). The rules serve the same purpose as the Agency procedure, but apply specifically to snowmaking projects.

Dam removal has in recent years been used as a tool to restore rivers while addressing the on-going problems of aging, and deteriorating, infrastructure. Of the 1,200 known dams in Vermont, many no longer serve a useful purpose and impose legal and financial burdens on their owners. The Program works with many partners to remove dams where it makes sense for economic, public safety, ecological or social reasons.

The Program administers a cooperative agreement with the U.S. Geological Survey (USGS) to maintain and operate a number of stream gages in Vermont. These gages provide important streamflow data that are vital to the Agency of Natural Resources, other agencies, and the general public.

Lakes and Ponds Management and Protection Program

DEC Watershed Management Division

General

The Lakes and Ponds Management and Protection Program monitors the water quality, aquatic biota, and aquatic habitat of Vermont lakes; seeks to prevent water quality problems or habitat degradation; determines the causes of problems that arise; and in collaboration with others, develops management or restoration plans to address problems. Technical and financial assistance is provided to municipalities, lake associations, and individuals to help them implement lake management and protection activities. The Program also administers permits for [aquatic nuisance control](#) activities and [encroachments into lakes](#), and assists other state programs with lake-related issues such as water level management, Act 250 review, point source discharge permitting, Use of Public Waters rulemaking by the Water Resources Board, and near-shore waterski course regulation by the Vermont State Police. Public information and education is an important part of the Lakes and Ponds Management and Protection Program, and educational materials for all ages on a wide variety of lake and watershed-related topics are available from the Program.

Aquatic Invasive Species Program

The goal of the [Aquatic Invasive Species Program](#) seeks to prevent or reduce the environmental and socio-economic impacts of nuisance (primarily non-native and invasive) aquatic plant and animal species. The Program is concerned with species currently found in Vermont (e.g. Eurasian watermilfoil, variable-leaf watermilfoil, water chestnut, zebra mussels, and purple loosestrife) and species from nearby states or Quebec with the potential to spread into Vermont. The Program's components include control technology research, environmental monitoring, control and spread prevention projects and technical assistance, a permit program, a grant-in-aid program for municipalities, and public information/education.

Public information and education is an essential part of the Aquatic Nuisance Control Program. It is critical that lake users understand the serious impacts that nuisance aquatic species can have on the state's aquatic resources and on people's use of those resources, and are aware of what can be done to prevent the spread of nuisance species to uninfested waterbodies. In the case of nuisance aquatic species, an ounce of prevention is truly worth a pound of cure.

Public Access Area Greeter Programs

These programs are one of the most effective methods for preventing the spread of invasive aquatic species to recreational waters. They educate boaters, anglers and other recreationists about invasive species, and encourage adoption of spread prevention methods. Courtesy boat and equipment inspections are offered and recreationists with contaminated boats/equipment are assisted with decontamination or urged to wash boats/equipment away from the water before launching. The Department of Environmental Conservation provides annual training for greeter programs. Greeter program “saves” are documented annually. For example, the Lake Seymour greeter program conducted 1,462 voluntary inspections and documented 23 saves in 2009 alone. Of the 23 saves, 22 were Eurasian watermilfoil and one was water chestnut.

Shoreland Management Program

The [Lake and Watershed Protection Program](#) provides technical assistance to local governments and volunteer groups for a wide variety of lake protection activities. Groups are provided information and guidance on shoreland best management practices to reduce the impact of shoreland landuses on the lake. Additionally, with coordination with basin planners, the program can assist with lake and watershed surveys to identify pollution sources and develop plans to correct problems found during surveys.

Shoreland Permit Program

Effective July 1, 2014, the Vermont Legislature passed the Shoreland Protection Act (Chapter 49A of Title 10, §1441 et seq), which regulates shoreland development within 250 feet of a lake’s mean water level for all lakes greater than 10 acres in size. The intent of the Act is to prevent degradation of water quality in lakes, preserve habitat and natural stability of shorelines, and maintain the economic benefits of lakes and their shorelands. The Act seeks to balance good shoreland management and shoreland development. Comprehensive information regarding the Shoreland Permit Program may be found at:

http://www.vtwaterquality.org/permits/htm/pm_shoreland.htm

Dam Program

DEC Facilities Engineering Division

Dam Safety Program

The Dam Safety Section administers the State Dam Safety program, and periodically inspects the 85 state-owned dams found throughout Vermont for their repair/improvement needs. The section operates a permit program for construction and alteration of non-hydroelectric dams (the Public Service Board regulates hydroelectric dams) to serve the public good and provide adequately for the public safety. A permit is required to alter any dam, pond or impoundment not related to generation of electric energy for public use or part of a public utility system which is or will be capable of impounding more than 500,000 cubic feet of water or other liquid, as measured to the top of the dam. Submittal of a completed application form, fee, plans and specifications and design data is required. A public information meeting may be required. The section inspects privately owned dams on a resources-available basis, maintains an inventory of dams, and provides technical assistance to dam owners.

Vermont Dam Task Force

In 2000, the Agency and other groups and individuals interested in restoring our rivers formed the Vermont Dam Task Force. Task force members are working with dam owners and local watershed groups to identify dams that are good candidates for removal or modification.

Wetland Protection Programs

DEC Watershed Management Division

Vermont Wetlands Protection

The [Vermont Wetlands Program](#) is responsible for identifying and protecting wetlands and the functions and values they provide. Activities to achieve these goals include education, project review, and enforcement. The Vermont Wetlands Section is responsible for the administration, implementation and informal interpretation of the Vermont Wetland Rules; for providing advisory recommendations on Act 250 projects with potential wetland impacts to the District Environmental Commissions; and for the review of wetland projects which fall under federal jurisdiction (Section 404 of the Clean Water Act) to ensure that State water quality standards are met. The overall goal of the program is to achieve no net loss of wetland functions and values. The program consists of three components: a regulatory component, a scientific component, and an education/outreach component. The regulatory aspects of the program include administering the Vermont Wetland Rules, making determinations of Water Quality Certification under the Clean Water Act and the Vermont Water Quality Standards, providing project review in Act 250 land use permitting, and assisting in compliance and enforcement. Inventories and scientific investigations are carried out as special grant projects and include both the Division biomonitoring section and biologists in the Fish and Wildlife Department, Nongame and Natural Heritage program. Education and outreach is provided through technical assistance and presentations to towns, stakeholder groups, conservation commissions, schools, and other Agency programs. The [Vermont Wetland Rules](#) were filed by the [Water Resources Panel](#) of the Vermont Natural Resources Board with the Secretary of State's office July 16, with an August 1, 2010 effective date. The new wetlands law, Act 31 of 2009, took effect 45 days later, September 15, 2010.

Federal Programs

Federal Wetlands Protection

A U.S. Army Corps of Engineers permit is required for all work beyond ordinary highwater in or above navigable waters of the United States under Section 10 of the Rivers and Harbors Act of 1899 (33 U.S.C. 403). In New England, for the purpose of Section 10, navigable waters of the United States are those subject to the ebb and flow of the tide and a few major waterways used to transport interstate or foreign commerce. Permits are required under Section 404 of the Clean Water Act for those activities involving the discharge of dredged or fill material in all waters of the United States, including not only navigable waters of the United States but also inland rivers, lakes, streams and wetlands. In inland waters, Corps jurisdiction extends landward to the ordinary high water mark or the landward limit of any wetlands. The term "discharge" in this context may include the re-depositing of wetlands soils such as occurs during mechanized land clearing activities, including grubbing, grading and excavation.

The term "wetlands," used above, is defined by Federal regulations to mean "...those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions..." (33 C.F.R. Part 328.3 (b), as published in the November 13, 1986 Federal Register). Wetlands generally include swamps, marshes, bogs and similar areas. The term "fill material," used above, is defined by Federal regulations to mean "...any material used for the primary purpose of replacing an aquatic area with dry land or of changing the bottom elevation of a waterbody. The term does not include any pollutant discharged into the water primarily to dispose of waste..." (33 C.F.R. Part 323.2 (b), as published in the November 13, 1986 Federal Register).

Groundwater Pollution Control Programs

DEC Water Supply Division

Groundwater Protection

The Groundwater Protection Rule and Strategy is the groundwater management and protection strategy for the State of Vermont. The Rule outlines the principles, directives and goals relating to groundwater protection. The Rule also contains groundwater quality enforcement standards and outlines the four classes of groundwater. The Groundwater Coordinating Committee, an interagency committee, oversees the groundwater reclassification efforts and provides a forum for interagency coordination on groundwater issues. The DEC Water Supply Division provides administrative and technical support to the Committee. The program reviews weekly Act 250 applications for potential water supply and groundwater impacts. The Water Supply Division also serves as a clearinghouse on groundwater protection information. Through their regulatory and outreach programs, other divisions also protect groundwater and provide information on groundwater protection issues.

DEC Wastewater Management

Underground Injection Control (UIC)

This program within DEC regulates all non-sanitary sewage discharges to the groundwater. It is a federally delegated program. If the discharge receives a permit from another DEC program, the UIC permit is not required.

DEC Water Supply Division

Public Water Supply

The DEC Water Supply Division is responsible for the regulation of all public water systems in the state of Vermont. A public water system has fifteen connections or serves an average of twenty-five people at least sixty days a year. Examples of public water systems include municipalities, mobile home parks, schools, restaurants, motels. The major program functions involve permitting construction and operation, approving new sources of drinking water, review of monitoring data, technical and financial assistance, enforcement, source water protection, operator certification, enforcement, and inspections.

Well Driller Program

Any person who intends to engage in the business of drilling wells must obtain a license to do so. This includes both water well drillers and monitoring well drillers. Licensing is intended to protect public health and prevent degradation of groundwater quality through competent drillers appropriately applying industry standard well construction and abandonment procedures in their work. A license may be renewed if appropriate continuing education is demonstrated on a three-year basis.

Air Pollution Control Programs

DEC Air Pollution Control Division

Air Pollution Control

The Engineering Services Section is responsible for the implementation of two permit programs: Air Pollution Control Permits to Construct, and Air Pollution Control Permits to Operate. Each of these permit programs is further described in more detail on their respective web page links below.

[Air Pollution Control Permits to Construct](#)

[Air Pollution Control Permits to Operate](#)

The Air Pollution Control Division maintains up to date [Air Pollution Control Regulations](#) that comply with EPA's regulations issued under the Clean Air Act. These regulations confer to ACPD regulatory and permitting authority on several air emissions source types, both mobile and stationary, that have potential impacts to surface waters. APCD maintains Air Quality Standards that are used similarly to Water Quality Standards to limit emissions of air contaminants to safe levels. Depending on the volume emitted, individual permits may be required. APCD also issues a general permit for smaller emissions sources.

Pollution Prevention and Restoration Programs

DEC Environmental Assistance Division

Pollution Prevention Program

The focus of this program is to help businesses research and identify opportunities to reduce the amount of waste generated and the amount and toxicity of chemicals used in their operations. Technical assistance may be provided on-site at the facility's request. The program is also responsible for administering Vermont's Pollution Prevention Planning Requirement affecting over 100 businesses that generate hazardous waste and/or use certain listed toxic chemicals. The Program is located in the Environmental Assistance Division and shares a toll-free number with the Small Business Compliance Assistance Program that businesses and others can use to get answers to their environmental questions.

DEC Watershed Management Division

Section 319 Nonpoint Source Management

Water pollution control in Vermont, as well as in other states across the nation, has tended to focus on the larger, more obvious discharges referred to as point sources of pollution. Recently, much greater attention has been directed at the more diffuse, harder to quantify, more difficult to control pollution sources known as nonpoint sources of pollution. Pollution from nonpoint sources (NPS) is the major source of water use impairment to Vermont surface and ground water resources. NPS pollution is apparent in each of Vermont's seventeen river basins. The types and extent of water quality problems associated with these sources of pollution, however, exhibit a considerable degree of variation between and within basins. To a large extent, NPS pollution control and NPS pollution prevention centers about the watershed approach, land use and land management.

NPS implementation through Section 319 has been available to Vermont since federal fiscal year 1990, the first year funding was appropriated. Over twenty years of annual funding (FFY1990-2010), Vermont has been awarded about \$24.7 million, which has assisted close to 250 NPS projects. Projects have been completed or are underway by a variety of interests including several towns, watershed associations and state departments, the University of Vermont and many Natural Resources Conservation Districts. The Vermont NPS Program is involved in the following areas of concentration:

- coordination, oversight and administration of Section 319 funding including providing assistance to priority or demonstration projects;
- influence the direction and level of NPS planning and implementation arising from other programs or funding sources (e.g. US Department of Agriculture, Lake Champlain Basin Program, Connecticut River Joint Commissions);
- assist Vermont Agency of Agriculture, Food & Markets with various agricultural NPS responsibilities (as per Act 261 of 1992);
- distribution of Clean Water Act Section 604(b) pass-through planning funds to the 12 Vermont regional planning commissions; and,
- advocate the widespread adoption of certain land management practices (especially erosion/sediment control, phosphorus management and vegetated buffer strips).

Total Maximum Daily Load Program- (Vermont's Wasteload Allocation Process and Federal Requirements for TMDLs)

The primary goal of the Total Maximum Daily Load (TMDL) program is to develop solutions to restore those waters which do not meet Vermont Water Quality Standards and will not meet those standards even after all minimum required Best Practicable Treatment (BPT) alternatives are applied. In order to fulfill the requirements of the Clean Water Act, the program works in three phases and is dependent on several other programs within the Agency of Natural Resources to fulfill its goal. First, water quality monitoring data is gathered and analyzed to identify the condition of the State's waters. Those waterbodies that show a clear and documented violation of the Water Quality Standards substantiated by data collected through chemical, biological or physical monitoring are placed on the State's List of Impaired Surface Waters. The second phase is to develop TMDL plans for those waters that are Water Quality Limited Segments, defined as waters that will not achieve water quality standards even after BPTs are applied to all discharges. These plans essentially are a budget for the pollutant causing the impairment. Following investigations, all pollutant sources are identified that contribute to the impairment and each receives an allocation as to how much it can contribute to the total pollutant load. This is usually accomplished by determining from what sources reductions are necessary. The TMDL plans are structured in accordance with Clean Water Act regulations and EPA guidance. These plans involve public participation and ultimately need approval from EPA to verify their satisfaction of Statewide Surface Water Management Strategy - State, Federal and other programs that
Protect and Restore Waters September, 2013.

Clean Water Act requirements. The third phase is to implement the TMDL plan and conduct water quality monitoring in order to evaluate the effectiveness of implementation and document achievement of Water Quality Standards.

Land Use Programs

Agency of Natural Resources

Act 250

Act 250 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. Activities 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, monitoring for compliance with the Act and with land use permit conditions, and public education.

In an Act 250 application, applicants need to supply sufficient information for the District Commission to make findings on the ten environmental criteria. In so doing, certifications and/or approvals from other agencies and departments, utilities, regional planning commissions and local government may be necessary.

With regard to water pollution, Criterion 1 states that the project will not result in undue water or air pollution. This criterion deals with water and air pollution potential generally and such specific matters relating to water pollution as: (A) Headwaters; (B) Waste disposal; (C) Water Conservation; (D) Floodways; (E) Streams; (F) Shorelines; and (G) Wetlands.

Towns with assistance from Regional Planning Commissions and the Vermont League of Cities and Towns

Municipal Plans

Municipal plans adopted under 24 VSA Chapter 117 provide the legal basis for local land use regulation for water quality protection or other purposes. Municipal plans vary widely in level and scope of commitment to water quality protection and sustainability, and may not describe the means to attain water quality objectives.

Local Zoning

Through local zoning, municipalities can limit the impact of land development on water quality by concentrating development into designated areas. For example, local governments have clear legal authority under 24 VSA Chapter 117 to regulate riparian buffers. The Vermont League of Cities and Towns (VLCT) has produced a model riparian buffer ordinance for towns.

Other model ordinances are under development or available to municipal governments to support water quality protection and restoration including National Flood Insurance Program (NFIP) and Enhanced NFIP ordinances, Fluvial Erosion Hazard Overlay District Ordinance, Stormwater ordinance and Conservation subdivision ordinances.

The VLCT Water Quality Specialist, in conjunction with Vermont DEC, has reviewed the most current town zoning or other applicable regulations. VLCT is available to help towns navigate the process of including ordinances/bylaws related to stormwater management, riparian corridor protection and other local water quality protection measures.

Flood Hazard Area Regulations

The majority of municipalities are enrolled in the National Flood Insurance Program (NFIP) and have adopted regulations restricting development in mapped floodplains. However, local flood hazard area regulations are designed to prevent the loss of property and life in the event of a flood. In this regard, local flood hazard area regulations contribute little to the protection and restoration of water quality.

Fluvial Erosion Hazard mapping

Fluvial erosion hazard mapping consists of a data layer generated from fluvial geomorphic assessments and provides an overlay district that defines a corridor within which a stream can recover or maintain its equilibrium condition thus minimizing the production of sediment and nutrients and maximizing sediment and nutrient attenuation.

Stormwater Utilities

Communities across the nation are increasingly examining the option of stormwater utilities to fund stormwater management. A stormwater utility charges fees to property owners who use the local stormwater management system. The revenue can be used to maintain and upgrade existing storm drain systems, develop drainage plans, construct flood control measures, and cover administrative costs. Stormwater utilities are seen as a fair way of collecting funds for stormwater management. The properties that contribute stormwater runoff and pollutant loads and, therefore, create the need for stormwater management, pay for the program. Stormwater utilities provide a predictable and dependable amount of revenue that is dedicated to the implementation of stormwater management. Over 400 communities in the United States have created stormwater utilities.

Act 109 (Vermont Legislature, spring 2002) gave Vermont municipalities the authority to create stormwater utilities. So far, only the City of South Burlington has created a stormwater utility. Each single family home pays an additional \$4.50 a month which goes to providing funds for the identification and management of stormwater problems, projects and infrastructure upgrades. Additionally, subdivisions with stormwater permits can apply to have their permit and systems taken over by the City of South Burlington. Overall, it is more efficient to have one entity managing the upkeep and maintenance of the stormwater management systems; rather than multiple groups having to contract out for the maintenance of their systems, the City can provide those services with its own equipment and technical resources. The City of Winooski reports on its website that it, too, is considering the formation of such a utility.

Conservation Plans

Local conservation plans tend to address water quality objectives in a general sense, recommending vegetated riparian buffers and wildlife corridors.

The Community Wildlife Program supported by the Department of Fish and Wildlife provides assistance and resources for professional and lay planners in Vermont. We help regional and municipal planning commissions and non-governmental organizations in their efforts to protect wildlife habitat and significant natural communities by providing them with the most up-to-date information on conservation science and help them with the implementation of their conservation projects.

We help towns identify their important wildlife habitat by providing data for GIS review as well as instruction in how to do field work and how to use these information sources. We help towns translate conservation goals that the community has agreed on into language suitable for the Town Plan and further assist with turning that language into appropriate zoning and subdivision regulations that bring these conservation goals into action. We help towns and organizations connect with other assistance organizations and finding funding in moving their goals forward

Road Maintenance Programs

Vermont Agency of Transportation (VTRANS)

Handbook for Local Officials

<http://www.aot.state.vt.us/maint/Documents/book.pdf> - document prepared by VTrans (2004) provides town road and bridge standards that can significantly reduce erosion and sediment production from municipal highway systems. These standards, however, do not address the secondary and cumulative effects of highway infrastructure expansion as that may influence land use conversion, hydrologic change, and the production of sediment and nutrients at a watershed scale.

Other

Better Backroads Program

Roads can be a significant source of sediment and phosphorus depending on how the roads are maintained and upgraded. The Vermont Better Backroads Program promotes the use of erosion control and maintenance techniques that save money while protecting and enhancing Vermont's lakes and streams. The program offers grants to towns to fix road erosion problems and to inventory and develop capital budgets for such projects. It also provides on-site technical assistance to towns. The Vermont Better Backroads Manual details cost-effective procedures towns can use to reduce the impact of their roads on streams, lakes and wetlands. Information and on the statewide grant program and technical assistance can be obtained from the Northern Vermont Resource Conservation and Development Council. Other partners include the VT Local Roads Program, VT Department of Environmental Conservation/Watershed Management Division, VT Agency of Transportation and the George D. Aiken Resource Conservation and Development Council

Vermont Local Roads Program

The Vermont Local Roads Program at Saint Michael's College is part of the Local Technical Assistance Program (LTAP), a nationwide effort financed jointly by the Federal Highway Administration and individual State Departments of Transportation. Its purpose is to provide road

and bridge know-how to municipal people involved with highways. Sponsored by the Vermont Agency of Transportation, the Vermont Local Roads Program provides information, training and technical assistance to cities, towns and villages in Vermont. The program also provides towns with strategies and standards to minimize and avoid significant contribution of sediment to surface waters from poorly constructed driveway access to private land [Highway Access Policy and Program Guidelines and Model Ordinance document prepared by the Vermont Local Roads Program (1997)].

NeighborWorks Alliance Septic Repair and Replacement Loans

The NeighborWorks Alliance of Vermont offers Septic Repair and Replacement Loans as part of their Home Improvement Loan program. At no charge, NeighborWorks Alliance will write job specifications, approve insured contractors, help coordinate and evaluate bids for the work, inspect the work, and manage payments to contractors. Loan eligibility is determined by income. Money for this program is provided by the Department of Housing and Community Affairs. Eligible applicants: Vermont homeowners.

Online: http://www.vthomeownership.org/home_improvement.html

Contact: There are five regional centers throughout Vermont. Refer to the following website to determine the center that serves your area: <http://www.vthomeownership.org/centers.html>.

FUNDING OPPORTUNITIES

Agency of Agriculture, Food and Markets

Please see Agricultural Runoff Programs under the Regulation and Technical Assistance section for additional information on the following programs.

Best Management Practices Cost-Share Program

The BMP program was created to provide state financial assistance to Vermont farmers in support of their voluntary construction of on-farm improvements designed to abate non-point agricultural waste discharges. The program makes maximum use of federal financial assistance and seeks to use the least costly methods available to accomplish the abatement required. The Vermont Agency of Agriculture, Food, and Markets (VAAFMM) grants are limited to a cap of 35 percent of the total actual costs of the system in cases where either the federal government or other entities cost share the system, or up 80 percent on projects with no other source of cost share assistance. Combined federal, state and other cost share participation may not exceed 85 percent of the eligible costs; ensuring grant recipients pay at least 15 percent of the total cost of each BMP. Once funding for BMP implementation has been awarded, the farm is required to operate and maintain the practice under contract or agreement for the design life of the practice, but not to exceed 10 years. Any farm in Vermont is eligible to apply for state BMPs cost-share dollars, and the program accepts applications on a rolling basis. All water quality related BMPs listed on the Vermont NRCS practice code list are available for state funding.

<http://www.vermontagriculture.com/ARMES/awq/bmp.html>

The Nutrient Management Plan Incentive Grants (NMPIG) Program

Provides for the development of a nutrient management plan (NMP) and three additional years of updating the plan.

The Farm Agronomic Practices (FAP) program

Provides financial assistance for the implementation of soil-based practices that improve soil quality, increase crop production, and reduce erosion.

The Conservation Reserve Enhancement Program (CREP) program

A partnership with the USDA, encourages the installation of conservation buffers along waterways by providing land owners with a yearly rental payment and by covering the cost of planting the buffer.

The Vermont Agricultural Buffers Program (VABP) program

Offers a 5-year maximum rental contract for the installation of conservation grassed buffers on cropland.

Federal Agricultural Programs

The Agricultural Management Assistance (AMA) program

Provides cost share assistance to agricultural producers to voluntarily address issues such as water management, water quality, and erosion control by incorporating conservation into their farming operations.

The Conservation Reserve Program (CRP)

A voluntary program that offers long-term rental payments and cost-share assistance to establish long-term, resource-conserving cover on environmentally sensitive cropland or, in some cases, marginal pastureland.

The Conservation Security Program (CSP)

Provides incentive payments to producers who adopt and/or maintain conservation practices on private working lands.

The Environmental Quality Incentives Program (EQIP)

Provides technical, educational, and financial assistance to eligible farmers and nonindustrial private forestland owners working to address soil, water, and related natural resource concerns on their lands in an environmentally beneficial and cost-effective manner.

The Farm and Ranch Land Protection Program (FRPP)

Provides matching funds to help purchase development rights to keep productive farm and ranchland in agricultural uses.

The Grassland Reserve Program (GRP)

Establishes a grassland reserve program for the purpose of restoring and conserving two million acres of grassland, rangeland, and pastureland.

Sustainable Agriculture Research & Education Grants (SARE)

The Northeast Sustainable Agriculture Research & Education Network offers grants to farmers, researchers and others in the agricultural community who are working on innovative and interesting approaches to sustainable agriculture. Farmer grants are offered at up to \$15,000. Farmer Grants are for commercial producers who have an innovative idea to test using a field trial, on-farm demonstration, or other technique. A technical advisor--often extension agent, crop consultant, or other service professional--is required as a project participant. Projects should seek results other farmers can use, and all projects must have the potential to add to our knowledge about effective sustainable practices.

www.nesare.org/get/farmers/

Agency of Natural Resources, Department of Environmental Conservation

Contact information and grant deadlines for following funding opportunities can be found at <http://www.anr.state.vt.us/dec/grants.htm> or by contacting the respective division.

DEC Facilities Engineering Division

Municipal Pollution Control

Provides grants to municipalities for wastewater treatment facility upgrades focused on phosphorus removal, pollution abatement, overflow abatement, sludge and septage projects.

Revolving Loan Fund

Provides loans to municipalities for planning and project implementation for sewage treatment, drinking water, waste management, and stormwater control.

DEC Waste Management Division

Brownfields Site Assessment grants

To assess the nature and extent of contamination on a site.

Environmental Contingency Fund

Provides alternative water supplies contaminated by hazardous wastes.

Hazardous Wastes Facility Grants

For municipalities to assess the impacts of a proposed hazardous waste management facility.

Landfill Closure Grants

For municipalities or solid waste districts to close unlined landfills.

Petroleum Clean-Up Fund

For the evaluation and cleanup of commercial and residential above-ground storage tanks.

Solid Waste Implementation Grants

For municipalities or solid waste districts to develop or enhance a solid waste facility.

Solid Waste Assistance Grants

For public and private entities to implement solid waste management projects in the areas of education, reduction and recycling, composting, household hazardous waste, and pollution prevention.

Underground Storage Tank Removal- Grants for removal of commercial, residential, and farm oil tanks.

Underground Storage Tank Replacement/Upgrade- Loans

For small retail stores and municipalities providing gasoline.

DEC Water Supply Division

Public Water System Planning and Design Loans

For municipalities and non-profits to plan and design water systems.

Water Source Protection Loans

For municipalities to purchase land or conservation easements.

DEC Watershed Management Division

AQUATIC NUISANCE CONTROL GRANT-IN-AID GRANT PROGRAM

This grant program assists municipalities in the control of aquatic nuisances (native and non-native) including spread prevention activities.

Eligible applicants: Municipalities are eligible to receive Grant-in-Aid Grants for work controlling or preventing the spread of aquatic nuisance species. Local interest groups such as lake associations must apply through the municipality in which the waterbody is located. If the waterbody is located in more than one municipality, affected municipalities may apply jointly.

Online: http://www.vtwaterquality.org/lakes/htm/lp_grantinaid.htm

Contact: Ann Bove, Watershed Management Division, 103 S. Main St, Waterbury, VT 05671 (802) 241-3782

ECOSYSTEM RESTORATION PROGRAM

As part of the Ecosystem Restoration Program's on-going efforts to reduce surface water pollution from phosphorus and sediment, the state budget has included capital funds to support ecosystem restoration projects. ERP seeks project pre-proposals annually during late spring to mid-summer. The typical project budgets have ranged between \$5,000 and \$50,000.

Eligible applicants: Vermont municipalities, local or regional governmental agencies, non-profit organizations, and citizen groups.

Online: <http://www.anr.state.vt.us/cleanandclear/>

Contact: Eric Smeltzer, Watershed Management Division, 103 South Main St., Waterbury, VT 05671, (802) 241-3792.

FEMA PRE-DISASTER MITIGATION PLANNING GRANTS

Vermont has 11 RPC's, 7 of which are currently undertaking FEH mapping and mitigation activities in cooperation with the River Management Program, funded FEMA Pre-Disaster Mitigation Planning Grants. A map showing the location of Vermont's RPC's with phone numbers and links to their websites can be found at: www.vpic.info/rpcs/

LABORATORY SERVICES WATER QUALITY MONITORING PARTNERSHIPS

The VTDEC Watershed Management Division (WSMD) collaborates with the R.A LaRosa Environmental Laboratory on a program to assist citizen monitoring groups statewide. Beginning in 2003, the WSMD and the laboratory initiated analytical services partnerships with volunteer organizations, based on a competitive proposal process. No funds are awarded, as grants are in the form of free analytical services to support water quality monitoring performed by local volunteer groups.

Eligible applicants: River, lake or watershed associations; municipal conservation commissions or water quality committees; and secondary-level education classes. Post-secondary-level institutions or statewide groups are eligible under certain circumstances.

Online: <http://www.anr.state.vt.us/dec/grants.htm>

Contact: Jim Kellogg, Environmental Scientist, Monitoring, Assessment and Planning Program. VTDEC. 103 South Main St., Waterbury, VT 05671 (802) 241-1366.

NONPOINT SOURCE POLLUTION REDUCTION GRANTS

Congress enacted Section 319 of the Clean Water Act in 1987 establishing a national program to abate non-point sources of water pollution. These grants, known as Section 319 Grants, are made possible by the federal funds provided to VTDEC by the USEPA, and are available to assist in the implementation of projects to promote restoration of water quality by reducing and managing non-point source pollution in Vermont waters.

Eligible applicants: Municipalities, other governmental agencies and non-profit organizations, schools, and universities.

Online: <http://www.anr.state.vt.us/dec//waterq/grants.htm>

Contact: Rick Hopkins, Watershed Management Division, VTDEC, 103 South Main St., Waterbury, VT 05671, (802) 241-3769.

VERMONT WATERSHED GRANTS- FROM CONSERVATION LICENSE PLATES

The Vermont Watershed Grants Program provides funding to water-related projects throughout the state. Half of the proceeds from the sale of the Vermont

Conservation License Plates fund this program. Projects include the protection and restoration of water quality, fish and wildlife habitat, the education of people about watershed resources, and the monitoring of water quality.

Eligible applicants: Municipalities, local or regional governmental agencies, nonprofits and citizen organizations.

Online:

http://www.anr.state.vt.us/dec//waterq/lakes/htm/lp_watershedgrants.htm

Contact: Rick Hopkins, Watershed Management Division, VTDEC, 103 South Main St., Waterbury, VT 05671, (802) 241-3769.

WATER QUALITY PLANNING GRANTS TO REGIONAL PLANNING COMMISSIONS
VTDEC is required to pass 40% of its annual federal Clean Water Act Section 604(b) allocation to "regional comprehensive planning organizations" to conduct a variety of water-related planning activities.

Eligible applicants: Vermont's 11 Regional Planning Commissions

Online: <http://www.vtwaterquality.org/WSMDhome.htm>

Contact: Rick Hopkins, Watershed Management Division, VTDEC, 103 South Main St., Waterbury, VT 05671, (802) 241-3769.

Agency of Natural Resources, Department of Fish and Wildlife

Landowner Incentive Program

Funds are used in Vermont to initiate a landowner incentive program that offers a variety of tools to landowners for conservation, which includes funds to purchase conservation easements.

http://www.vtfishandwildlife.com/Conservation_Assistance.cfm

Agency of Natural Resources, Department of Forest Parks and Recreation

Trees for Local Communities

Grants for local urban & community forestry programs. Contact: Danielle Fitzko (241-3673) or www.vtfpr.org

Recreation Trails Grants

Grants for trail related projects from maintenance to acquisition, etc. Contact:

Sherry.Winnie@state.vt.us (241-3690) or www.vtfpr.org

Land & Water Conservation Fund

Grants to create parks and acquire land that will be used for recreation. Contact:

Sherry.Winnie@state.vt.us (241-3690) or www.vtfpr.org

Vermont Agency of Transportation

Local Transportation Funding and Transportation Enhancement Grants

The Vermont Agency of Transportation provides transportation enhancement grants between \$10,000-300,000 dollars for the environmental mitigation of highway runoff. This category is for project-specific activities, rather than research and scoping studies. Activities include retrofitting a highway to reduce water pollution by creating a wetland to filter runoff, improving streams and drainage channels through landscaping to promote filtering and to improve the overall water quality conditions of receiving channel. This category is limited to projects that are in addition to current requirements and procedures for such mitigation and includes wetlands acquisition and restoration; detention and sediment basins, river clean-ups, and reconstruction of salt sheds that have a documented water pollution problem. Projects that demonstrate aesthetic and ecological methods for mitigation are encouraged. Funds may not be used to finance normal environmental mitigation work. State of Vermont standards regarding water pollution and aquatic habitat alteration should provide applicable definitions for water quality standards under this category.

<http://www.aot.state.vt.us/progdev/Sections/LTF/Enhancements%20Program/EnhancementsHomePage.htm>

An example of a project funded thru this program can be found at:
<http://www.sburlstormwater.com/projects/bbrook.pdf>

Other State Programs

Municipal Planning Grant program

Supports towns in municipal planning efforts (Vermont Department of Housing & Community Affairs <http://www.dhca.state.vt.us/>)

Current Use Program

Vermont's Agricultural and Managed Forest Land Use Value Program -- better known as the Current Use Program -- was created in the late 1970's as a companion to legislation that required towns to list property at 100 percent of fair market value. Because of escalating land values, it was clear that property taxes based on fair market value were placing a heavy property tax burden on owners of productive farm and forest lands.

The Current Use Program offers landowners use value property taxation based on the productive value of land rather than based on the traditional "highest and best" use of the land. In 2000, the current use value of the land in the program averaged about 20 percent of the full fair market value ([Vermont Department of Taxes](#), 2001).

The Current Use Program includes a Land Use Change Tax as a disincentive to develop land. The tax is 20 percent of the fair market value of a property, or, in the case of the sale of part of a property, a pro rata share of the fair market value of the entire property. The program is administered by the Vermont Department of Taxes.

<http://www.state.vt.us/tax/pdf.word.excel/pvr/currentuse-geninfo.pdf>

Federal Government

US Environmental Protection Agency Targeted Watershed Grants

Provided for watershed organizations towards project implementation. Deadline: May. Contact:

www.epa.gov/owow/watershed/initiative/

Statewide Surface Water Management Strategy - State, Federal and other programs that
Protect and Restore Waters September, 2013.

Lake Champlain Basin Program Grants

Funded through Environmental Protection Agency (EPA) for the implementation of Opportunities for Action. <http://www.lcbp.org/grantrfp.htm>

- Local Implementation Grants for non-profits, municipalities, schools
- Technical Program Grants for implementation of technical, demonstration, and research priorities.
- Cultural and Natural Heritage Grants for implementation of cultural and natural heritage priorities outlined in Opportunities for Action as well as implementation of the Champlain Valley Natural Heritage Partnership Plan.

National Resource Conservation Service administered federal funds

See also: <http://www.nrcs.usda.gov/programs/>

- Wetland Reserve Program - Restoration of wetlands converted prior to 1985, up to 100% cost share.
- Wildlife Habitat Incentives Program - Create a wildlife habitat development plan, up to 75% cost share
- Conservation Stewardship Program - Funding for undertaking additional conservation activities; and improving, maintaining, and managing existing conservation activities.
- Forest Land Enhancement Program - Develop and follow a forest management plan, up to 75% cost share

USFWS Partners for Fish and Wildlife Habitat Restoration Program

US Fish and Wildlife Service provides technical and financial assistance to private landowners interested in voluntarily restoring or otherwise improving native habitats for fish and wildlife on their lands. <http://www.fws.gov/partners/>

United States Geological Survey (USGS) Dedicated Research Funds

Approximately \$400,000 per year of congressional funding is allocated to the USGS, to support stream gauging and research and assessment priorities of the LCBP's technical program. These are not grant funds, but may be leveraged to conduct technical investigations in priority waters in the Lake Champlain Basin.

Additional Programs

Connecticut River M & E funds - Upper Connecticut River Mitigation and Enhancement Fund has been making grants since 2002 to local community organizations for river restoration, wetland protection and shoreland protection projects throughout the Vermont and New Hampshire reach of the watershed from the White River to the Connecticut Lakes.

<http://www.nhcf.org/>

The Lake Champlain and Tributaries Restoration Fund - established in 2009 as part of a comprehensive settlement agreement between the Central Vermont Public Service Corporation and the Agency of Natural Resources for the Lamoille River, Carvers Falls and Statewide Surface Water Management Strategy - State, Federal and other programs that Protect and Restore Waters September, 2013.

Silver Lake Hydroelectric Projects. In 2010 grant range request was for between \$5,000 –\$50,000 for total of \$50,000 to be distributed. Contact: rtorres@vermontcf.org

National Fish and Wildlife Foundation Grants

The National Fish and Wildlife Foundation conserves healthy populations of fish, wildlife and plants, on land and in the sea, through partnerships, sustainable solutions, and better education. The Foundation meets these goals by awarding challenge grants to projects benefiting conservation education, habitat protection and restoration, and natural resource management. Federal and private funds contributed to the Foundation are awarded as challenge grants to on-the-ground conservation projects. Challenge grants require that the funds awarded are matched with non-federal contributions, maximizing the total investment delivered to conservation projects. For every dollar that Congress provides, an average of \$3 in on-the-ground conservation takes place. The Foundation has made more than 4,400 grants, committing over \$165 million in federal funds, matched with non-federal dollars, delivering more than \$500 million for conservation.

<http://www.nfwf.org/programs.cfm>

The Nature Conservancy Conservation Easements

Easements allow land ownership multiple options: the right to occupy, lease, sell, develop, construct buildings, farm, restrict access or harvest timber, among others. A landowner can give up one or more right for a purpose such as conservation while retaining ownership of the remainder. Private property subject to a conservation easement remains in private ownership. Many types of private land use, such as farming, can continue under the terms of a conservation easement, and owners can continue to live on the property. The agreement may require the landowner to take certain actions to protect land and water resources, such as fencing a stream to keep livestock out or harvesting trees in certain way; or to refrain from certain actions, such as developing or subdividing the land. Conservation easements do not mean properties are automatically opened up to public access unless so specified in an easement. The terms of a conservation easement are set jointly by landowner and the entity that will hold easement.

<http://www.nature.org/aboutus/howwework/conservationmethods/privatelands/conservationeasements/>

Orton Family Foundation

Generally for planning initiatives that develop a model for use in other areas. Up to \$30,000
Contact: Helen Whyte (hwhyte@orton.org)

Patagonia

Focusing on root causes of problems. \$3000-\$8000 grants. www.patagonia.com

Vermont Community Foundation

www.vermontcf.org

Sustainable Communities- up to \$10,000 Deadline: May

Sustainable Future Fund- up to \$7500 Deadline: Feb1 and Aug 1

EDUCATION AND OUTREACH

Agency of Natural Resources (ANR)

In addition to information on websites, departments in the agency have numerous factsheets and brochures that are available in hard copy and electronically. Many can be found by visiting the webpages of the specific sections or programs.

ANR Department of Environmental Conservation

Mercury Education & Reduction Campaign

The campaign's focus is the prevention and cleanup of mercury pollution.

<http://www.mercvt.org/>