

Vermont Regulations Pertaining to Surface Water Management

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Water Quality Planning

Water Quality Planning – A Brief History and Overview of Federal Requirements

During the early 1900's water management efforts focused closely on efficiency for irrigation, drinking water, navigation and similar purposes. The Rivers and Harbors Act of 1899, considered the oldest piece of environmental legislation in this country, served the sole purpose of preventing pollution from interfering with the navigable waters of the United States¹. Legislation throughout the 1950's and 60's became increasingly focused on improvement of ambient water quality, and the Water Quality Act of 1965 introduced the first organized efforts to classify and inventory river basins, and develop basin plans for management. While this effort largely targeted interstate rivers, it was an important first step in states taking over individualized management strategies at the watershed level.

In 1972, the Federal Water Pollution Control Act Amendments established what we know today as the Clean Water Act (CWA or "the Act"). As the foundation of modern surface water quality protection in the United States, the CWA established a national goal "to restore and maintain the chemical, physical, and biological integrity of the Nation's waters²." The Act divided water pollution in the United States into two basic categories: point sources³ and nonpoint sources. Point sources have traditionally been considered to be "end of pipe" discharges such as wastewater treatment plant and industrial discharges, whereas nonpoint sources are typically considered to be more diffuse, precipitation-driven discharges such as stormwater runoff from urban, agricultural and silvicultural sources.

Upon passage of the CWA, large point sources became the first major target of regulatory agencies. Section 303(e) of the Act required states to prepare basin plans to address point source issues⁴. These plans helped to inventory dischargers, as well as water quality throughout the country. Point source dischargers were also now subject to a requirement to obtain a permit under the National Pollutant Discharge Elimination System (NPDES). Under NPDES, dischargers are required to obtain permits for treatment of their discharges based on technology-based effluent limitations, and in cases where stricter limits are necessary, based on water quality based effluent limitations.

River Basin Water Quality Management Plans (CWA §§303(e) and 208 and PL 92-500)

Amendments to the CWA brought about a number of fundamental changes in pollution policy in the United States, several of which were dependent heavily on watershed management. Section

¹ Ferrey, Steven. ENVIRONMENTAL LAW: EXAMPLES AND EXPLANATIONS, Fourth Edition. Page 244.

² 33 U.S.C. §1251(a)

³ "Point source" is defined in 33 U.S.C. §1362(14) as "any discernible, confined and discrete conveyance, including but not limited to any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation, or vessel or other floating craft, from which pollutants are or may be discharged. This term does not include agricultural stormwater discharges and return flows from irrigated agriculture."

⁴ United States Environmental Protection Agency. WATERSHED PROTECTION: A STATEWIDE APPROACH. 1995. Page 10.

303(e) of the Act required each state to prepare plans to achieve water quality standards for each watershed in the state, taking into account nonpoint sources of pollution from urban, agricultural, silvicultural, and mining activities as well as point sources of municipal and industrial pollution. Inclusion of nonpoint sources, widely distributed over the landscape and transported by stormwater runoff, increased the importance of watershed processes in pollution control strategies. Section 208 of the Act established area wide planning to embrace all municipal, industrial, and nonpoint sources of pollution in watersheds, particularly in metropolitan areas and other regions where point source controls alone were insufficient to satisfy water quality standards. Slow progress toward control of nonpoint sources led to inclusion of Section 319 in reauthorization of the Clean Water Act in 1987. That program established grants to states for reducing nonpoint source pollution on a watershed basis.

Comprehensive area-wide water quality management planning in Vermont was initiated with the promulgation of federal Public Law (PL) 92-500. These amendments to the Clean Water Act required that studies recommending specific solutions to water pollution problems be conducted before Federal monies are allocated for construction and management programs toward the improvement of water quality. These studies, known as the “303(e),” the “208 Areawide Plans”, and the “201 Plans,” consider federal, state and local objectives in the development of a comprehensive water quality management plan. The overall objective is to provide a planning, construction, and management process which will “restore and maintain” the quality of the nation’s waters.

Section 303(e) authorized the initial development of river basin plans that serve as a framework for subsequent plans that focus on more specific actions for known problems (e.g. the 208 Areawide Plans). The 208 Plan, as defined in Section 208 of PL 92-500, is required to propose implementable solutions to area-wide water quality and pollution problems, both from point and non-point sources.

Water Quality Management (WQM) Plans

The idea of managing water resources within watersheds is not a modern concept. According to EPA, the idea dates back as far as the late 19th century to the U.S. Inland Waterways Commission⁵. In 1908 the Commission, supported by President Roosevelt, reported to Congress that each river system from its headwaters to the coast is an integrated system, and must be managed accordingly⁶. There has been a considerable amount of legislation and regulation guiding watershed management since the Commission’s 1908 report.

The Water Quality Management (WQM) process described in the Clean Water Act provides the authority for a consistent national approach for maintaining, improving and protecting water quality while allowing States to implement the most effective individual programs. 40 C.F.R. §130.6 provides, in part:

(a) *Water quality management (WQM) plans.* WQM plans consist of initial plans produced in accordance with sections 208 and 303(e) of the Act and certified and approved updates to those plans. Continuing water quality planning shall be based upon WQM plans and water quality problems identified in the latest 305(b) reports. State water

⁵ United States Environmental Protection Agency. WATERSHED PROTECTION: A STATEWIDE APPROACH. 1995. Page 10.

⁶ *Id.*

quality planning should focus annually on priority issues and geographic areas and on the development of water quality controls leading to implementation measures. Water quality planning directed at the removal of conditions placed on previously certified and approved WQM plans should focus on removal of conditions which will lead to control decisions.

(b) *Use of WQM plans.* WQM plans are used to direct implementation. WQM plans draw upon the water quality assessments to identify priority point and nonpoint water quality problems, consider alternative solutions and recommend control measures, including the financial and institutional measures necessary for implementing recommended solutions. State annual work programs shall be based upon the priority issues identified in the State WQM plan.

(c) *WQM plan elements.* Sections 205(j), 208 and 303 of the Act specify water quality planning requirements . . .

40 C.F.R. §130.6 contains a list of plan elements (e.g. TMDLs, controls for nonpoint pollution, etc.) that shall be included in the WQM plan or referenced as part of the WQM plan if contained in separate documents when they are needed to address water quality problems. In March 2008, the EPA issued the Handbook for “Developing Watershed Plans to Restore and Protect Our Waters.” The handbook provides a comprehensive overview of how to develop and implement watershed plans at the state level. The handbook further explains the importance of management at the watershed level, and offers a framework for what EPA deems the most effective means of addressing water quality issues within these plans.

Nonpoint Source Pollution (CWA §§130 and 319)

Nonpoint sources were not comprehensively addressed in the CWA until it was amended in 1987. Now considered to be the most significant source of water pollution in the United States, nonpoint source pollution come from a variety of places. Some of the more common nonpoint sources of water pollution include agricultural and forestry runoff, storm water runoff, and atmospheric deposition of contaminants.

The basic planning and management aspects of the CWA were finalized in 1985. This CWA revision added §130, part of which called for the states to create and implement water quality management (WQM) plans. While other parts of the CWA required basin reports and water quality inventories, the purpose of §130 was to provide a more comprehensive planning strategy for states. In addition, the 1987 amendments added §319, under which states were required to identify navigable waters that would not meet water quality standards without control of nonpoint pollution⁷. Moreover, the states were required to identify the nonpoint sources, describe how they contribute to nonattainment of water quality standards, and design control programs to address the nonpoint sources contributing to nonattainment⁸.

Water Quality Planning – A Brief Overview of State Law Requirements

Section 303(e) of the federal Clean Water Act (Public Law 92-500) sets out the basic requirements for state water quality planning. The Agency of Natural Resources, the Vermont Water Resources Panel, and the Agency of Agriculture, Food and Markets (which share the

⁷ 33 U.S.C. §1329(a)(1)(A)

⁸ 33 U.S.C. §1329(a)(1)(B), (D)

administration of the federal Clean Water Act in Vermont) are empowered to carry out water quality planning and protection. The current federal rules implementing the 303(e) requirements are in 40 CFR 130. At the state law level, basin and watershed planning requirements are included in:

6 V.S.A. §4810 (which requires the Secretary of Agriculture, Food and Markets and the Secretary of Natural Resources to develop a memorandum of understanding describing how they will coordinate watershed planning activities to comply with Public Law 92-500 consistent with the Secretary's duties, established under the provisions of section 1258(b) of Title 10, to comply with Public Law 92-500);

6 V.S.A. §4813 (pertaining to the responsibility of the Secretary of Agriculture, Food and Markets to cooperate in preparing basin plans);

10 V.S.A. §1251 (which defines the term “basin plan”);

10 V.S.A. §1253(d) (which requires the Secretary to prepare basin plans and provide progress reports);

10 V.S.A. §1258(b) (which requires the Secretary to adopt a continuing planning process approvable under section 303(e) of Public Law 92-500), essentially, this Strategy.

Basin and watershed planning are also addressed in the Vermont Water Quality Standards in Section 29A-103(e). Reference to basin planning requirements are also found in Section D 1 (e) of Chapter 13.12 of the Department's rules governing general permits for direct discharges and in Section 13.4 b. 1. (d) (iii) of the Department's wastewater permitting rules (which requires discharge permits to comply with waste load allocations included in plans prepared under 303(e) of the Clean Water Act.

The implementation of this Surface Water Management Strategy and associated Tactical Basin Plans accomplishes the aforementioned Federal and State planning requirements.

Water Quality Monitoring and Reporting – CWA § 305(b) Integrated Report and §303(d) List

Under these Sections, the Clean Water Act requires that every state develop and submit to EPA two surface water quality-related documents. The documents, to be prepared every two years, arise out of two sections of the Act. Section 305b of the Act requires submittal of [a report that describes the quality of the State's surface waters](#) and that contains an analysis of the extent to which its waters provide for the protection and propagation of a balanced population of fish, shellfish and wildlife. This analysis is also referred to as the extent to which Vermont's waters achieve the Act's “fishable and swimmable” goals. The biennial Vermont Water Quality Assessment Report is commonly known as the “305b Report.”

The second document, developed in response to Section 303(d) of the Act, [is a listing of surface waters that:](#)

- 1) are impaired or threatened by one or more pollutants; and,
- 2) are not expected to meet Water Quality Standards within a reasonable time even after the application of best available technology standards for point sources of pollution or best management practices for nonpoint sources of pollution; and,

3) require development and implementation of a pollutant loading and reduction plan, called a Total Maximum Daily Load (TMDL), which is designed to achieve Water Quality Standards.

Vermont's Watershed Management Division – Management and Regulatory Programs for the Protection of Surface Waters

The primary mission of the Watershed Management Division is to protect, maintain, restore and enhance the overall quality of Vermont's surface-water resources. Inherent in this goal is the support of both healthy ecosystems as well as appropriate public uses in the 808 significant lakes and ponds, 7,100 miles of rivers and streams and over 300,000 acres of wetlands that exist within the State of Vermont. The Division's regulatory authorities are listed in the following.

Specifically, the Watershed Management Division:

- * Conducts chemical, physical and biological environmental monitoring and publishes assessments of streams, rivers, lakes and wetlands.
- * Provides guidance to citizen monitoring programs designed to evaluate the quality of the State's water resources and potential threats to that quality.
- * Assures that permitted effluent discharges, and stream flows below dams, water withdrawals and hydropower reservoirs meet water quality standards.
- * Issues grants and provides technical assistance to support local nonpoint source pollution management activities in lake and river watersheds.
- * Devises plans designed to both protect high quality waters and to bring impaired waters back into compliance with water quality standards.
- * Implements regulatory permitting programs for wetlands, floodplains, river corridors, stormwater runoff, erosion control, aquatic nuisance control, lakeshore encroachments, stream alterations, and the Vermont Water Quality Standards.
- * Administers an aquatic nuisance management program, a flood hazard area and river corridor protection program, and sponsors Water Education for Teachers (Project WET).
- * Prepares watershed plans for 17 major planning basins through a public-private collaboration that identifies water quality problems and develops and implements corrective strategies.

VT Water Quality Standards (2014, updated 2016)

The [Vermont Water Quality Standards](#) (VWQS) serve as a foundation for protecting Vermont's surface waters. The VWQS are regulations that establish uses (e.g. swimming and fishing) that must be protected, the classification to which the uses are managed (A1, A2, B1, or B2), and set minimum chemical, physical and biological criteria that must be met to support each use at its classification tier. The VWQS are promulgated by Watershed Management Division for the Agency of Natural Resources, and are used in planning, management and regulatory programs to protect Vermont's surface waters. The Water Quality Standards are required to be updated every three years pursuant to Federal requirements.

Aquatic Nuisance Species Control

Pursuant to 10 V.S.A. Chapter 50, the Watershed Management Division manages the Vermont Aquatic Nuisance Control Program. The goal of the Program is "to prevent or reduce the environmental and socio-economic impacts of nuisance (primarily non-native) aquatic plant and animal species." The Program administers permit and grant programs, and coordinates

management activities associated with both aquatic invasive and nuisance species. Many species are included.

Transport of aquatic plants and aquatic nuisance species (10 V.S.A. §1454)

(a) No person shall transport an aquatic plant or aquatic plant part, zebra mussels (*Dreissena polymorpha*), quagga mussels (*Dreissena bugensis*), or other aquatic nuisance species identified by the secretary by rule to or from any Vermont waters on the outside of a vehicle, boat, personal watercraft, trailer, or other equipment. This section shall not restrict proper harvesting or other control activities undertaken for the purpose of eliminating or controlling the growth or propagation of aquatic plants, zebra mussels, quagga mussels, or other aquatic nuisance species.

(b) The secretary may grant exceptions to persons to allow the transport of aquatic plants, zebra mussels, quagga mussels, or other aquatic nuisance species for scientific or educational purposes. When granting exceptions, the secretary shall take into consideration both the value of the scientific or educational purpose and the risk to Vermont surface waters posed by the transport and ultimate use of the specimens. A letter from the secretary authorizing the transport must accompany the specimens during transport.

A person who violates a requirement under 10 V.S.A. § 1454 shall be subject to enforcement under 10 V.S.A. chapter 201, provided that the person shall be assessed a penalty of not more than \$1,000.00 for each violation.

Aquatic Nuisance Control Permit (10 V.S.A. §1455)

An [Aquatic Nuisance Control Permit](#) is required to control nuisance aquatic plants, insects or other aquatic life (including lamprey) in Vermont waters. Some types of nuisance control activities are exempt. The use of chemical herbicides, benthic barrier materials or powered mechanical devices may also require a wetland permit. As required by [10 V.S.A., Chapter 47, Section 1263a\(i\)](#), the Secretary of the Agency of Natural Resources has adopted the revised [Public Review and Comment Procedures for Aquatic Nuisance Permit Applications and General Permits](#), effective January 30, 2003.

Aquatic Species Rapid Response General Permit (10 V.S.A. §1456)

The Secretary of the Agency of Natural Resources has new emergency permitting authority aimed at initiating a rapid response to a new invasive species invasion. An emergency rapid response general permit for both chemical and non-chemical methods with coverage is available to the commissioners of the Vermont Department of Environmental Conservation and the Vermont Department of Fish & Wildlife.

Multi-River, Multi-Treatment Aquatic Nuisance Control Permit

A new Aquatic Nuisance Control permit format was developed to address pesticide projects proposing multiple year treatments, multiple control methods and/or the treatment of more than one water body. Instead of individual permits, one permit decision could now cover multiple treatments, controls and water bodies.

Other Authorities to Control Aquatic Nuisance Species

Other entities also have authority to regulate aquatic nuisance species in Vermont. For example:

MINNOW NETS, TRAPS, TRANSPORTING and USE (10 V.S.A. § 122)

According to Vermont baitfish laws, anglers may harvest wild baitfish for personal use, provided they use them only on the same water where harvested and only species approved for use as baitfish. Anglers may NOT transport baitfish they harvest away from that waterbody, but may store them on that waterbody indefinitely.

When purchasing baitfish, anglers must purchase baitfish from a state-approved commercial bait dealer. At the time of purchase, a Baitfish Transportation Receipt will be issued, which is valid for 96 hours from time and date of sale. This means that when baitfish are purchased from a baitshop, anglers have 96 hours to transport and use said baitfish on the designated waterbody indicated on the receipt. These baitfish may NOT be transported to any waterbody other than the one indicated on your receipt.

The full law, as well as a list of approved species available for use as bait, is available [here](#).

PEST SURVEY, DETECTION and MANAGEMENT (6 V.S.A. § 1030-1040)

The Vermont Department of Agriculture, through the Commissioner, has regulatory authority over plant pests pursuant to Title 6, Chapter 84, Pest Survey, Detection & Management. Within this statute, the commissioner may conduct surveys, establish quarantines and eradicate plant pests.

A plant pest is defined as any living stage of: insects, mites, nematodes, slugs, snails, protozoa or any other invertebrate animals; bacteria, fungi, mycoplasma or other parasitic plants, weeds or reproductive parts thereof; viruses or any organisms similar to or allied with any of the foregoing; and any genetically modified organisms or biological control agents that may directly or indirectly injure or cause disease or damage to any beneficial organisms, plants, parts of plants, or plant products.

NOXIOUS WEED QUARANTINE #3

(Vermont Department of Agriculture, Food & Markets)

In general, this rule prohibits the sale, movement, distribution, and in some cases, possession or cultivation of certain species of plants that have been recognized as invasive in Vermont or adjacent States. The impacts of these plant species on native ecosystems outweigh their value as ornamental plants in the nursery and landscaping trades to the extent that the Agency of Agriculture has banned their sale to prevent their introduction into yet uninfested areas, or slow their further spread across the state through commerce.

Click [here](#) for more information.

CONTROL of FISH, GAME; POWERS of COMMISSIONER (10 V.S.A. § 4138)

The Vermont Department of Fish and Wildlife, through the Commissioner, "may take, permit, or cause to be taken at any time from any waters, and in any manner, fish which hinder or prevent the propagation of game or food fish and may take, permit, or cause to be taken at any time wild animals which are doing damage. Such removal or taking and the possession and disposition of such fish or wild animals shall be under such regulations as the Commissioner may prescribe. The Commissioner may take necessary measures to control, in public waters, aquatic vegetation, insects, or aquatic life, for the purpose of improving such waters as a habitat."

PLACING FISH in WATERS (10 V.S.A. § 4605)

The Vermont Department of Fish and Wildlife, through the Commissioner, has the authority to regulate the introduction of all live fish or the live spawn thereof, into any of the inland or

outlying waters of the state. The Department also may dispose of unlawfully imported fish as it may judge best, and the state may collect damages from the violator for all expenses incurred. In this regard, no person is to bring into the state to introduce into any of the public waters any live fish or eggs unless a permit is first obtained from the Department of Fish and Wildlife.

IMPORTATION, STOCKING WILD ANIMALS (10 V.S.A. § 4709)

The Vermont Department of Fish and Wildlife, through the Commissioner, has the authority to regulate the introduction of any live wild bird or animal of any kind. The Department may dispose of unlawfully imported wildlife as it may judge best, and the state may collect damages from the violator for all expenses incurred.

Management of Encroachments in or around Vermont Lakes

Construction in or near Lakes and Ponds

Any project that encroaches beyond the normal summer water level of a lake or pond that is a public body of water may require a [Lake Encroachment Permit](#). Encroachments include such projects as retaining walls or riprap to control shoreline erosion, commercial docks, large docks or docks involving concrete, dredging or filling, and repairs or replacements of existing encroachments. Some small projects may not require a permit, but it is best to check with the Watershed Management Division to be sure.

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. Any new development, redevelopment, or clearing of a property, may require a [Shoreland Permit or Registration](#).

A permit from the [U.S. Army Corps of Engineers](#) may be required for projects or activities which encroach beyond the ordinary high water mark of Lake Champlain or Lake Memphremagog, including seasonal docks, moorings, jetties, beach replenishment or grading, shoreline stabilization, and water intakes. A Corps permit also may be required for projects on other lakes and ponds in the state, if the project involves the discharge of dredged or fill material or mechanized clearing beyond the ordinary high water mark. Projects that require a Corps of Engineers permit for the discharge of dredged or fill material or mechanized land clearing also require a Section 401 [Water Quality Certification](#) from the Watershed Management Division before the Corps permit is issued.

Finally, some projects in lakes or ponds or within the buffer zone along the shoreline may require an [Act 250](#) Permit.

Docks.

Certain docks and other encroachments in Vermont Lakes must obtain a permit as provided in 29 V.S.A. §403.

§ 403. Encroachment prohibited

(a)(1) Except as provided in subsection (b) of this section, no person shall encroach on any of those waters and lands of lakes and ponds under the jurisdiction of the board without first obtaining a permit under this chapter.

(2) Except as provided in subsection (b) of this section, no person shall encroach on the following waters with a dock or pier without first obtaining a permit under this chapter:

(A) boatable tributaries of Lake Champlain and Lake Memphremagog upstream to the first barrier to navigation; and

(B) Connecticut River impoundments and boatable tributaries of such impoundments upstream to the first barrier to navigation.

(3) No permit shall be granted if the encroachment adversely affects the public good.

(b) A permit shall not be required for the following uses provided that navigation or boating is not unreasonably impeded:

(1) Wooden or metal docks for noncommercial use mounted on piles or floats provided that:

(A) the combined horizontal distance of the proposed encroachment and any existing encroachments located within 100 feet thereof which are owned or controlled by the applicant do not exceed 50 feet and their aggregate surface areas do not exceed 500 square feet; and

(B) concrete, masonry, earth or rock fill, sheet piling, bulkheading, cribwork, or similar construction does not form a part of the encroachment;

(2) A water intake pipe not exceeding two inches inside diameter;

(3) Temporary extensions of existing structures added for a period not to exceed six months, if required by low water;

(4) Ordinary repairs and maintenance to existing commercial and noncommercial structures;

(5) Duck blinds, floats, rafts, and buoys.

(c) Existing encroachments shall not be enlarged, extended, or added to without first obtaining a permit under this chapter, except as provided in subsection (b) of this section.

(d) This chapter shall not apply to encroachments subject to the provisions of chapter 43 of Title 10, concerning dams, or regulations adopted under the provisions of 10 V.S.A. § 1424 concerning public waters.

(e) This section shall not apply to the installation on lake bottoms of small filtering devices not exceeding nine square feet of disturbed area on the end of water intake pipes less than two inches in diameter for the purpose of zebra mussel control. (Added 1967, No. 308 (Adj. Sess.), § 3, eff. March 22, 1968; amended 1975, No. 162 (Adj. Sess.), § 3, eff. March 15, 1976; 1981, No. 222 (Adj. Sess.) § 41; 1993, No. 233 (Adj. Sess.), § 52, eff. June 21, 1994; 2009, No. 117 (Adj. Sess.), § 2.)

Drawdowns and Desilting Operations

Drawdowns of lakes or impoundments and sediment-removal operations can result in downstream discharges of sediment. The projects often do not require permits from any of the programs described above. The Agency of Natural Resources, however, has the authority to issue what is known as a [Section 1272 Order](#) (named for the statutory authority in [10 V.S.A. § 1272](#)) for activities that may result in a discharge that is not otherwise regulated or may potentially violate the Vermont Water Quality Standards or the [Vermont Wetland Rules](#).

Management of Wetlands

The Wetlands Program is responsible for the administration and implementation of the Vermont Wetland Rules, which require permitting for certain activities within wetlands or their buffer zone. Using the Vermont Wetland Rules as a guide, the program provides advisory recommendations on Act 250 projects with potential wetland impacts to the District Environmental Commissions; and review wetland projects that fall under federal jurisdiction (Section 404 of the Clean Water Act) to ensure that State Water Quality Standards are met. In 2012, Vermont Legislature passed Act 138, which transferred wetland rulemaking authority from the Natural Resources Board's Water Resources Panel to the Agency of Natural Resources' Department of Environmental Conservation. Now the Wetlands Program has the responsibility to administer the Vermont Wetland Rules ("the Rules") and receive petitions or internally initiate adoption, amendments, and repeal of the Rules. This includes the designation of wetlands to Class I status. The [Vermont Wetland Rules](#), first enacted in 1990, had amendments adopted September 15, 2010.

The Vermont Wetland Rules identify and protect 10 functions and values of "significant" wetlands and establish a 3-tier wetland classification system to identify such wetlands. Class I wetlands are identified on the Vermont Significant Wetlands Inventory (VSWI) maps and are protected under the Vermont Wetland Rules. Class II wetlands are often mapped on the VSWI maps but not all. The new Rules allow the Vermont Wetlands Program to evaluate unmapped wetlands and designate as Class II. Wetlands which are unmapped but frequently found significant include: wetlands over a half an acre in size, vernal pools, peatlands, wetlands adjacent to lakes and streams, and headwater wetlands over 2,500 feet in elevation. In addition, the buffer zones associated with these wetlands (typically a 100-foot buffer zone for Class I wetlands, and 50-foot buffer zone for Class II wetlands) are also protected under the Vermont Wetland Rules. Any activity within a significant wetland or buffer zone, unless specifically called out as exempt or an allowed use, requires a Vermont Wetlands Permit which are issued by the Wetlands Program in the Watershed Management Division. A permit may only be issued when it is determined that the proposed activity will not have undue adverse effects on the protected functions of a significant wetland. We recommend that anyone contemplating work in or near wetlands contact a [District Wetlands Ecologist](#) or [wetland consultant](#) early in the planning stage.

Other Wetland Regulatory Programs

Class III wetlands have been found by the Wetlands Program to be insignificant for providing the wetland functions when last evaluated. These wetlands are not protected by the Vermont Wetland Rules and a wetlands permit is not required for projects in Class III wetlands. Class Three

wetlands may, however, be protected by other federal or local laws and regulations, including those administered by the [U.S. Army Corps of Engineers](#). Projects that require a federal permit will also require a [Section 401 Water Quality Certification](#).

In 1986, the Vermont Legislature passed an act that allowed for state and local protection of wetlands in Vermont. The law enables Vermont towns and cities to protect wetlands at the local level. This can be accomplished through the Town's municipal plan, zoning and subdivision regulations, shoreland protection bylaws, health ordinances and flood hazard regulations.

Stormwater Management

10 V.S.A. §§1258, 1264 and 1264a

The Watershed Management Division implements a stormwater permitting program consisting of two major components: 1) the issuance of stormwater permits pursuant to state law for the post-construction management of stormwater runoff pursuant to 10 V.S.A. §§1264 and 1264a ; and 2) the issuance of permits pursuant to an EPA-delegated federal "NPDES" program for construction site runoff, stormwater associated with industrial activities and stormwater discharges from municipal stormwater systems pursuant to 10 V.S.A. §§1258 and 1264. The Division may also issue NPDES stormwater permits for other point source stormwater discharges designated by the Secretary pursuant to 40 C.F.R. 122.26(a)(9)(i)(D) and stormwater discharges designated by the Secretary as requiring a NDPEs permit pursuant to 40 C.F.R 122.26(a)(9)(i)(C) to implement a TMDL.

The Division uses a combination of individual and general permits to authorize stormwater discharges. There are currently five distinct Federal and State permits which regulate the runoff of stormwater. A permit could be required for construction of impervious surfaces (roads, buildings, parking lots, etc), for restoration of [impaired waters](#) in a few select watersheds, for stormwater runoff from certain [industrial activities](#), for municipal management of stormwater in certain [large municipalities](#), and for [construction site runoff](#).

The Division has issued several stormwater rules governing the issuance of state stormwater permits for construction or operational stormwater runoff control from impervious surfaces. The specific rules and programs are listed as follows:

[Operational Permits](#)

[Construction Permits](#)

[Industrial Permits](#)

[Municipal Permits](#)

[Transportation Permit](#)

In addition to these permit programs, the Vermont Clean Water Act requires the development of a permit program to address stormwater discharges from impervious surfaces exceeding three-acres in size. In the Lake Champlain Watershed, the threshold may be smaller if necessary to comply with the wasteload allocations of the Lake Champlain TMDL. The so-called "Three-acre" developed lands permit will be issued by 12/31/2017.

River Management

Regulations, Permits, and Stream Crossing Approval

Most in-channel management activities and new projects like bridges, culverts or utility crossings require regulatory action by the River Management Program in the Watershed Management Division. State jurisdictional thresholds and guidance on permit application is provided within the documents below or by contacting the [Stream Alteration Engineer](#) in your area.

Construction in or near Rivers and Streams

Construction in a river or any perennial stream on or within the banks may require a [Stream Alteration Permit](#) if 10 or more cubic yards of material will be involved. There is an exemption for small-scale gravel removal by riparian landowners (up to 50 cubic yards), but any gravel removal above 10 cubic yards must be reported to the Agency prior to excavation and must be for personal use. The [Stream Alteration Rule](#) sets standards both non-emergency and emergency instream activities. Certain activities may be authorized under the [Stream Alteration General Permit](#). Any activity not directly related to addressing an imminent or next-flood threat to public safety must meet the equilibrium and connectivity performance standards established by Rule. New berms within floodplains and river corridors are no longer a permitted activities unless necessary to protect a habitable structure.

An [Act 250](#) Permit may be required for projects in rivers and streams or within a buffer zone along the bank. Projects in, under, or over any rivers and streams may require a permit from the [U.S. Army Corps of Engineers](#) and a Section 401 [Water Quality Certification](#) from the Watershed Management Division. We recommend that anyone contemplating work in or near rivers or streams contact a [stream alteration engineer](#) early in the planning stage.

Gravel Removal and Prospecting

Once a widespread commercial activity in Vermont's rivers, gravel removal is now restricted to maximum annual volumes for landowners use and for the maintenance or restoration of stream channel stability. As a commercial activity, gravel mining has proven to be extremely damaging to natural stable stream functions and has greatly increased flood and erosion damages in VT on stream systems that have experienced extensive mining in the past. Information on how to get assessment of potential stream sedimentation problems, approval for gravel removal projects and the effects of gravel removal on stream stability is provided in the documents below or by contacting the [Stream Alteration Engineer](#) in your area.

Mineral prospecting activities in Vermont streams are regulated under 10 V.S.A. 41, Section 1021(h)(1). Operation of suction dredges is prohibited. Operation of sluice boxes is allowed by permit. Hand panning is unregulated. Hand panning only is allowed on state owned lands. Written permission from property owners is required on private lands.

Streamflow Protection

Water Withdrawals

Water withdrawals in both streams and lakes usually require one or more permits. [Act 250](#), [Stream Alteration](#) (in rivers), or [Shoreland Encroachment](#) (in lakes and reservoirs) permits may be needed, as well as a permit from the [U.S. Army Corps of Engineers](#). As with other projects requiring a federal permit, a Section 401 Water Quality Certification from the Agency will be 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](#) (40 kb) 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.

Dams

Construction, reconstruction, alteration, modification, or removal of dams that can impound more than 500,000 cubic feet of water or other liquid require a [Dam Order](#) from the Department of Environmental Conservation. This program is managed by the Dam Safety Section of the Facilities Engineering Division. If the dam is associated with a hydroelectric project, it is regulated by the [Public Service Board](#) under the same statute ([10 V.S.A. Chapter 43](#)).

Some smaller dams may require a Stream Alteration Permit, if they would otherwise fall under the jurisdiction of that program. In addition, dams may require a Wetlands Permit, an Act 250 Permit, a permit from the U.S. Army Corps of Engineers and Section 401 Water Quality Certification, as well as local permits. Finally, any project that will obstruct the movement of fish requires authorization from the Commissioner of Fish and Wildlife.

Management of Lake Levels

Manipulation of water levels in lakes can have a direct impact on the physical and biological integrity of the littoral zone. Following the Hydrology Policy stated in the Vermont Water Quality Standards, the Watershed Management Division requires all lake dams to be set at one level. This allows lake levels and downstream flows to fluctuate naturally, protecting local natural communities and increasing their resiliency.

Flood Hazard Area and River Corridor Protection

Flood Hazard Areas and River Corridor Rules and Protection Procedures (10 VSA §§751, 752, 753, 6086 and 24 VSA § 4424)

Below is a summary of federal and state legislative actions, procedures, statutes, policies, and programs that form the basis for Watershed Management Division's flood and fluvial erosion hazard avoidance strategy and its Act 250 floodway determinations .

- Passage of Act 137. The 1998 legislative response to the magnitude of flood damages in the 1990s (\$60 million in recovery costs) was the passage of Act 137 whose overarching objective was to promote long-term river stability to provide both protection from flood damage and a healthy riverine function. Sec. 2 10 V.S.A §905b(3).
- Woodford Packers Decision. In 2003, the ANR Secretary, through the ANR General Counsel's Office, successfully appealed the District 8 Environmental Commission's Woodford Packers decision to the State Environmental Board. The Attorney General's office successfully defended the Environmental Board's Ruling before the State Supreme Court. These rulings and case law confirm and support the Agency's authority to determine floodways using both inundation and erosion hazard standards under Criterion 1(D). re Woodford Packers, Inc. (2002-056); 175 Vt. 579; 830 A.2d 100 2003 Vt 60.
- Acts 110, 138, 16, and 107. A series of statutory changes were made between 2010 and 2014 which established public policy and directives to the Agency to map flood hazard areas and river corridors (the latter to include buffers and help define fluvial erosion hazards), promote their protection in municipalities planning and zoning, establish state protective procedures, and regulate activities exempt from municipal regulation. Act 138 allowed that state standards may be more restrictive than federal (NFIP) standards and Act 107 explicitly called for the protection of river corridors (i.e., river meander belt plus buffer) in state regulations.
- State Hazard Mitigation Plan. With respect to Disaster Assistance, 44 CFR Chapter 1, Subchapter D, Part 200, Section §201.4, p. 402 and Section § 201.6 p. 405 describe state mitigation plans and local mitigation planning, respectively. These plans must be in place in order for the state or local municipalities to receive funds as part of the FEMA mitigation grant programs (specifically the Hazard Mitigation Grant Program (HMGP), the Pre-Disaster Mitigation Program (PDM), and the Flood Mitigation Assistance (FMA) grant programs). The purpose of these funds is to reduce the loss of life and property from future natural hazard events. Every five years, the State Hazard Mitigation Committee (SHMC), which is chaired by the Deputy Secretary of Administration, is responsible for developing the State Hazard Mitigation Plan. Upon receipt of FEMA approval, the Secretary of Administration officially adopts the state mitigation plan. The current state plan, updated in 2013, states that there is consensus of the SHMC agencies that hazard avoidance "...should remain a primary focus of the state's overall mitigation efforts," describes the state's goal to reduce flooding and fluvial erosion hazards, and serves as a bridge between the public policies established in Act 138 and the state adoption of a No Adverse Impact Standard in its Flood Hazard Area and River Corridor Rules and Protection Procedures.
- ANR Flood Hazard Area and River Corridor Rule (FHARC). In October 24, 2014, the State adopted the [Flood Hazard Area and River Corridor Rule](#) . The Department also issued a [General Permit](#) pursuant to [10 V.S.A. §754](#). The purpose of the Rule and general permit is to ensure that all activities are regulated efficiently and effectively in accordance with the requirements of [10 V.S.A. Chapter 32](#), which requires the Department of Environmental Conservation's Watershed Management Division to regulate activities exempt from municipal regulation in flood hazard areas and river corridors. These activities include state-owned and operated institutions and facilities, accepted agricultural and silvicultural practices, and power generating and transmission facilities regulated under 30 V.S.A. §§ 248 and 248a.

- DEC Flood Hazard Area and River Corridor Protection Procedure. In December 5, 2014, the DEC adopted [a Flood Hazard Area and River Corridor Protection Procedure](#) that explains how the DEC will utilize the “no adverse impact” standard established in the FHARC Rule in providing technical assistance and regulatory recommendations to municipalities, Act 250, and other regulatory agencies. While NAI is the standard ANR has applied since 2004 in making Act 250 recommendations and under Criterion 1D for the NFIP floodway and the river corridor, it is a higher standard to be met in the flood hazard area outside of the NFIP floodway recommending measures of compensatory storage when necessary. The Procedures also explain how:
 - a) Flood hazard areas, river corridor, and Act 250 floodways are delineated;
 - b) Flood hazard area and river corridor maps are amended or revised by the Department and other parties;
 - c) Waivers from the NAI standard are used to encourage land use planning for infill, redevelopment, and the shadowing of other structures; and
 - d) Best practices may be used to promote stream and floodplain equilibrium conditions and the natural attenuation of flood sediments, heights, and velocities that influence flood inundation and fluvial erosion.
- State Land Use Planning Statute. Title 24 V.S.A. Chapter 117 section §4424 contains the authority for municipalities to adopt bylaws to address development in hazard areas. One of the purposes of this statute is to “minimize and prevent the loss of life and property, the disruption of commerce, the impairment of the tax base, and the extraordinary public expenditures and demands on public service that result from flooding, landslides, *erosion hazards* [emphasis added], earthquakes, and other natural or human-made hazards.
- Lake Champlain TMDL. 33 U.S.C.A. § 1313 (Federal Water Pollution Control Act FWPCA § 303(d) requires the establishment and U.S. Environmental Protection Agency (EPA) approval of a total maximum daily load (TMDLs) for impaired waters. The EPA had previously approved a TMDL for phosphorus loading into Lake Champlain and the associated implementation plan acknowledges the contribution of phosphorus loading from physically unstable river systems. These documents describe river corridor mapping and fluvial erosion hazard identification as an important strategy to identify the magnitude of river corridor necessary to maintain and restore stable riverine processes and the basis for local plans to address stream instability.

Watershed Management Division

- The Vermont League of Cities and Towns and Vermont Association of Planning and Development Agencies. The Vermont League and the Regional Planning Commissions are important partners in educating municipalities throughout the state about pro-active steps that towns can take to reduce flood and fluvial erosion hazards and improve water quality.

Wastewater Management

The Wastewater Management Program provides regulatory oversight for and technical assistance to Vermont's wastewater treatment facilities in cooperation with State, regional and national organizations. Municipal wastewater, originating from a combination of domestic, commercial, and industrial activities, is conveyed to a centralized wastewater treatment facility and treated to established standards and discharged into a receiving water.

Vermont's 92 municipal wastewater treatment facilities process more than 15 billion gallons of wastewater per year. These facilities are re-authorized on a five-year recurring basis, and at that time, the re-authorized permits are subjected to “Reasonable Potential Determinations” to ensure that the permits will not allow a wastewater pollutant to cause or contribute to a receiving water impairment.

- [National Pollutant Discharge Elimination System \(NPDES\) Permits](#)
- [Federal Pretreatment Permits](#)
- [General Permits for Discharges from Petroleum Related Remediation Activities](#)
- Wastewater [Regulations, Policies and Procedures](#)

Vermont Required Agricultural Practices

In December, 2016, the Vermont Agency of Agriculture Food and Markets revised the Required Agricultural Practices (RAPs) to include many augmented or new practices. See <http://agriculture.vermont.gov/water-quality/regulations> for the RAP’s, and related medium and large farm operation regulations.

Municipal Zoning

Municipal zoning bylaws may permit, prohibit, restrict, regulate, and determine land development, including the following:

- (1) Specific uses of land and shoreland facilities;
- (2) Dimensions, location, erection, construction, repair, maintenance, alteration, razing, removal, and use of structures;
- (3) Areas and dimensions of land to be occupied by uses and structures, as well as areas, courts, yards, and other open spaces and distances to be left unoccupied by uses and structures;
- (4) Timing or sequence of growth, density of population, and intensity of use;
- (5) Uses within a river corridor and buffer, as those terms are (now) defined in 10 V.S.A. §§ 1422 and 1427. 3

Provisions of zoning bylaws must be uniform for each class of use or structure within each zoning district, except that additional classifications may be made within any district to regulate, restrict, or prohibit uses or structures at or near any of the following:

- (A) Major thoroughfares, their intersections and interchanges, and transportation arteries.
 - (B) Natural or artificial bodies of water.
 - (C) Places of relatively steep slope or grade.
 - (D) Public buildings and public grounds.
 - (E) Aircraft and helicopter facilities.
 - (F) Places having unique patriotic, ecological, historical, archaeological, or community interest or value, or located within scenic or design control districts.
 - (G) Flood, fluvial erosion, or other hazard areas and other places having a special character or use affecting or affected by their surroundings.
 - (H) River corridors and buffers, as those terms are defined in 10 V.S.A. §§ 1422 and 1427.
- A municipality may define different and separate zoning districts, and identify within these districts which land uses are permitted as of right, and which are conditional uses requiring review and approval. The list of districts now includes:

River Corridors and Buffers A municipality may adopt bylaws to protect river corridors and buffers, as those terms are (now) defined in 10 V.S.A. §§ 1422 and 1427, in order to:

- protect public safety; prevent and control water pollution;
- prevent and control stormwater runoff;
- preserve and protect wetlands and waterways;
- maintain and protect natural channel, streambank, and floodplain stability;
- minimize fluvial erosion and damage to property and transportation infrastructure;
- preserve and protect the habitat of terrestrial and aquatic wildlife;
- promote open space and aesthetics; and
- achieve other municipal, regional, or state conservation and development objectives for river corridors and buffers.

River corridor and buffer bylaws may:

- regulate the design and location of development;
- control the location of buildings;
- require the provision and maintenance or reestablishment of vegetation, including no net loss of vegetation;
- require screening of development or use from waters; and
- reserve existing public access to public waters.