ENVIRONMENTAL PROTECTION RULE
CHAPTER XX

COMBINED SEWER OVERFLOW RULE

State of Vermont
Agency of Natural Resources
Department of Environmental Conservation

Adopted Month Day, Year; Effective Month Day, Year

Subchapter 1. GENERAL PROVISIONS

§ XX-101 Effect

As of the effective date of this Rule, this Rule supersedes the state of Vermont's "Combined Sewer Overflow Control Policy," dated June 1990.

§ XX-102 Purpose

The purpose of this Rule is to protect public health and the environment by ensuring that all remaining Combined Sewer Overflows (CSOs) in the State are brought into compliance with the requirements of state and federal law, including the Vermont Water Quality Standards (VWQS). This Rule codifies, updates, and clarifies the technology-based and water quality-based requirements applicable to the CSOs within the State, consistent with state and federal law. Further, this Rule includes the processes through which the Agency of Natural Resources (Agency) will require municipalities to bring CSOs into compliance with the VWQS.

§ XX-103 Policy

CSOs adversely affect the quality of waters of the State and may create short-term public health concerns. Therefore, a primary goal of state and federal pollution control programs is to abate and control CSOs and bring them into compliance with water quality standards. However, the Agency also recognizes that CSO abatement and control is an iterative and costly process and that it will take time to bring CSOs into compliance with the VWQS.

§ XX-104 Authority

This Rule is adopted by the Agency pursuant to 10 V.S.A. §§ 1251a, 1259, and 1263.

Subchapter 2. DEFINITIONS

§ XX-201 Definitions

As used in this Rule:

(1) "5-year design storm" means a theoretical rainfall event, based on historical records for a given area, having a 5-year recurrence interval, or a 20% probability of happening in any year. The 5-year design storm values in Appendix A were calculated with data from Cornell's Northeast Regional Climate Center's (NRCC) Extreme Precipitation Analysis website.

(2) "Agency" means the Vermont Agency of Natural Resources.

(3) "The Clean Water Act" (CWA) means the federal Clean Water Act, as amended (33 U.S.C. § 1251, *et seq.*).

(4) "Combined sewer system" (CSS) means a collection system that was designed to convey sewage and stormwater through the same network of pipes to a treatment plant.

(5) "Combined sewer overflow" (CSO) means a discharge to waters of the State from a CSS outfall that results from a wet weather storm event. Such discharges include raw sewage and stormwater that may contain untreated human waste and pollutants from residential,

commercial, and industrial establishments as well as solids, metals, bacteria, viruses, and other pollutants washed from streets and parking lots.

(6) "Combined sewer overflow (CSO) outfall" means an overflow point from a CSS that allows for combined sewage and stormwater to discharge directly to surface waters prior to treatment.

(7) "Discharge" means the placing, depositing or emission of any wastes, directly or indirectly, into an injection well or into the waters of the State.

(8) "Dry weather flow" means flow in a CSS during periods of dry weather.

(9) "Green stormwater infrastructure" means a wide range of multifunctional natural and semi-natural landscape elements that are located within, around, and between developed areas, that are applicable at all spatial scales, and that are designed to control or collect stormwater runoff through detention or soil absorption.

(10) "Long Term Control Plan" (LTCP) means a comprehensive plan, including site-specific measures, to abate and control CSOs and bring them into compliance with the VWQS.

(11) "Municipality" means a city, town, borough, county, parish, district, association, or other public body created by or pursuant to state law and having jurisdiction over disposal of sewage, industrial wastes, or other wastes, or an Indian tribe or an authorized Indian tribal organization, or a designated and approved management agency under section 208 of the CWA.

(12) "National Pollutant Discharge Elimination System" (NPDES) means the national program for issuing, modifying, revoking and reissuing, terminating, monitoring, and enforcing permits, and imposing and enforcing pretreatment requirements under sections 307, 402, 318 and 405 of the CWA. The term includes an "approved program." The U.S. Environmental Protection Agency authorized Vermont as an "approved program" in 1974.

(13) "Preliminary Engineering Report (PER) format" means the format required by the Secretary of Natural Resources for a planning document required by the State as part of the process of obtaining financial assistance for planning and development of water pollution control infrastructure.

(14) "Sewage" means domestic, commercial, and industrial wastewater conveyed by a collection system.

(15) "Stormwater" means precipitation and snowmelt that does not infiltrate into the soil, including material dissolved or suspended in it.

(16) "Vermont Water Quality Standards" (VWQS) means the rules adopted by the Agency to achieve the goals of the Vermont Water Quality Policy (10 V.S.A § 1250) as well as the objectives of the CWA.

(17) "Wet weather flow" means dry weather flow combined with stormwater in a CSS.

(18) "Wastewater treatment facility" means a pollution abatement facility, including the treatment plant, collection system, and pump stations, permitted by the Agency for the purpose of treating sewage.

Subchapter 3. APPLICABILITY

§ XX-301 Applicability

(a) This Rule applies to all municipalities with CSO outfalls that discharge as a result of wet weather flows and to all discharges from CSO outfalls that are generated as a result of wet weather flows.

(b) This Policy does not apply to:

(1) overflows from a collection system during dry weather flows, or

(2) upsets or bypasses within a wastewater treatment facility during dry weather or wet weather conditions, which are due primarily to factors not related to wet weather flows, such as a blockage in a sewer line or a malfunction of a pump station.

(c) Overflows, upsets, and bypasses, which are not the result of wet weather flows, are subject to the enforcement provisions of 10 V.S.A. §§ 1274 and 1275 and 10 V.S.A. Chapter 201, unless the permittee applies for and obtains an Emergency Pollution Permit pursuant to 10 V.S.A. § 1268.

Subchapter 4. REQUIREMENTS

§ XX-401 General Requirements

(a) During the NPDES discharge permit application and renewal process, municipalities with CSSs shall identify their CSO outfalls.

(b) All NPDES discharge permits issued to municipalities with CSO outfalls shall contain conditions, including the conditions required by this Rule, requiring compliance with the technology-based and water quality-based requirements of state and federal law, including the VWQS.

(c) CSO controls shall be implemented in a two-phased process.

(1) During Phase I, as a condition of a NPDES discharge permit, a municipality shall be required to:

(A) Implement the technology-based minimum controls and document that these requirements have been met. The technology-based requirements of this Policy are the "Minimum Controls", which incorporate the Nine Minimum Controls outlined in the U.S. Environmental Protection Agency's 1994 Combined Sewer Overflow Control Policy and include best management practices prescribed by the Agency. The Minimum Controls are set forth in §XX-402 of this Rule.

(B) Comply with the water quality-based requirements of state law, including the VWQS. If a municipality is not in compliance, the Agency shall, concurrent with issuance of the NPDES discharge permit, issue an order pursuant to 10 V.S.A. § 1272, or another legally enforceable mechanism, requiring the municipality to develop or update a Long Term Control Plan (LTCP), subject to review and approval by the Agency, to abate and control its CSOs and provide for the attainment of the VWQS. The minimum requirements for LTCPs are set forth in §XX-403 of this Rule. The Agency encourages municipalities to evaluate and implement green

stormwater infrastructure for stormwater runoff and sewer overflow management to the greatest extent possible when developing their LTCPs.

(2) During Phase II:

(A) As a condition of a NPDES discharge permit, a municipality shall continue implementing the Minimum Controls.

(B) Once the Agency has approved a municipality's LTCP, the Agency shall issue an order pursuant to 10 V.S.A. § 1272, or another legally enforceable mechanism, containing a compliance schedule by which the municipality shall implement the CSO controls identified in its Agency-approved LTCP. Compliance schedules shall reflect the shortest reasonable time to bring the CSO(s) into compliance.

(3) Phase II may span several NPDES permit cycles until all CSO controls in the LTCP have been constructed and implemented.

(d) The Agency, outside of the typical NPDES discharge permit renewal process, may issue an order pursuant to 10 V.S.A. § 1272, or use another legally enforceable mechanism, containing conditions, including the conditions required by this Rule, requiring CSOs to come into compliance with the technology-based and water-quality based requirements of state and federal law, including the VWQS. If an accurate estimate of the scope of work necessary to bring the CSOs into compliance is not known, then the order or other legally enforceable mechanism shall require a preliminary engineering report and the Agency shall issue a compliance schedule, in an order issued under 10 V.S.A. § 1272 or another legally enforceable mechanism, once the true extent of the correction work is known.

§ XX-402 Minimum Controls

As a condition of a NPDES discharge permit or a legally enforceable mechanism issued pursuant to subsection (d) of section XX-401 of this Rule, a municipality shall implement the minimum technology-based requirements described below, which are designed to maximize pollutant capture and minimize impacts to water quality:

(1) Proper operation and regular maintenance programs for collection systems and CSO outfalls;

(2) Maximum use of the collection system for storage without endangering public health or property, or causing solids deposition problems;

(3) Review and modification of pretreatment requirements to assure that CSO impacts are minimized;

(4) Maximization of flow to the treatment plant for treatment consistent with an evaluation of alternative treatment options;

(5) Prohibition of CSOs during dry weather;

(6) Control of solid and floatable materials in CSOs;

(7) Establishment of pollution prevention programs to minimize contaminants in CSOs;

(8) Public notification to ensure that the public receives adequate notification of CSOs and CSO impacts, which shall include, at a minimum:

(A) The municipality shall mark each CSO outfall with a permanent sign, which identifies the outfall and warns of the potential threat to public health that may be posed by recreating in the waters at the outfall or downstream of the outfall during or after a CSO. The municipality shall periodically inspect and maintain each sign, and shall replace a sign if it is destroyed, removed, or no longer legible.

(B) The municipality shall use the Agency's on-line event reporting system to report CSOs as soon as possible, but no later than four hours from detection of the discharge, or if the discharge occurs between 9 PM and 5 AM, then by 10 AM that morning. If for any reason the on-line system is not operable, notice shall be provided to the Agency via phone or email within four hours of the discharge, or if the event occurs between 9 PM and 5 AM, then by 10 AM that morning. The municipality shall also provide notice to the local health officer within the same timeframe in which notice must be provided to the Agency;

(9) Monitoring to effectively characterize CSO impacts and the efficacy of CSO controls, which shall include at a minimum:

(A) The municipality shall define through monitoring, modeling, and other means, as appropriate, the sewer system, the response of the system to a range of precipitation events that encompasses the 5-year design storm, the characteristics of the overflows, and the water quality impacts that result from CSOs. To comply with the foregoing requirement, the municipality shall, at a minimum:

(i) Physically establish and maintain precipitation recording stations. These stations shall be located to record depth of precipitation specific to the collection system drainage area of each of the CSO outfalls. The network may consist of both new and existing stations, but must be designed in such a manner as to provide unique precipitation amounts specific to individual CSO subcatchments. Such a network does not necessarily demand a gage for each CSO outfall. Precipitation measurements shall be of liquid depth to the nearest 0.01 inches, continuous at a five minute interval over the duration of flow monitoring, and indexed to time and date. When establishing precipitation recording stations, the municipality shall work to minimize impacts of wind and surrounding trees and buildings that may hinder the catch efficiency of the rain gage.

(ii) Establish a CSO flow monitoring system. At a minimum, the municipality shall install a tell-tale block in each overflow structure and check the block after every precipitation/runoff event.

(B) The municipality shall submit to the Agency, by no later than January 31st of each year, a report on CSO control project(s) of the previous calendar year. The Agency will use the information from the report to monitor the progress on implementation of CSO control project(s). Municipalities shall report progress on:

(i) Compliance with the Minimum Controls;

(ii) The condition and operation of the CSS;

(iii) The frequency, duration, and magnitude of the precipitation events leading to CSOs from the system in the past year and a comparison to prior years;

(iv) The frequency, duration, and magnitude of all CSOs from the system in the past year and a comparison to prior years;

(v) The overall status of the LTCP; and

(vi) Key CSO control accomplishments, highlighting those that reduced the frequency and magnitude of CSOs; projects under design; and construction that occurred in the previous year;

(10) Prohibition of the connection of new sources of stormwater or wastewater to any CSS if such connection would result in a net increase of stormwater or wastewater to the CSS; and

(11) Immediate notification to the Agency and local health officer of sewage backing up into buildings or discharges of raw sewage onto the ground surface from surcharging manholes or pump stations. If there are documented, recurrent instances of sewage backups or discharges of raw sewage onto the ground surface, the municipality shall, upon receipt of written notification from the Agency, prohibit further connections within the service area of the backup that would increase the frequency or volume of the surcharges/backups.

§ XX-403 Long Term Control Plan (LTCP)

As a condition of a legally enforceable mechanism issued pursuant to subsection (c)(1)(B) or (d) of section XX-401 of this Rule, a municipality shall create a LTCP according to the following requirements:

(1) If the municipality wishes to apply for funding from the State to assist in the creation or implementation of its LTCP, the municipality shall draft all reports, including associated planning documents, according to the PER format.

(2) In developing a LTCP, the municipality shall employ a public participation process that actively involves the affected public in the decision-making to develop and select the long-term CSO controls. The affected public includes rate payers, industrial users of the sewer system, persons who reside downstream from the CSO outfalls, persons who use and enjoy the downstream waters, and any other interested persons.

(3) The LTCP shall include an alternatives analysis that shall evaluate the costs and performance of multiple CSO control alternatives, such as:

(A) installing a flow metering system for each CSO outfall;

(B) reducing stormwater flows through the separation of combined stormwater and sanitary sewer lines;

(C) adding storage tanks or retention basins to hold overflow during storm events;

(D) expanding the treatment plant capacity;

(E) adding screening and disinfection facilities for the overflow; and

(F) incorporating green stormwater infrastructure to reduce stormwater flow into CSSs to the greatest extent feasible and practical.

(4) The LTCP shall include a detailed list of the selected CSO control projects necessary to bring the CSOs into compliance with the VWQS and a timeline for implementing the projects. The projects shall be prioritized based on the relative importance of adverse impacts upon water quality, including impacts on designated uses.

(5) The LTCP shall include a financing plan to design and implement the CSO control projects.

(6) The Agency recognizes that financial capability is a significant factor in abating and controlling CSOs and meeting water quality standards. Therefore, a LTCP's implementation schedule may include interim CSO controls as a step in the process of bringing CSOs into compliance with the VWQS. The Agency recommends that interim CSO controls are evaluated and designed based on storms with a theoretical 5-year recurrence interval, also known as the 5-year design storm. This means there is a 20% probability that rainfall depths for a given duration will be exceeded in any given year, and therefore a 20% probability of CSOs occurring in any given year. The Agency recognizes the significant spatial variability of precipitation across Vermont and has identified the 24-hour and 1-hour extreme precipitation depths at the 5-year recurrence interval for each CSO municipality (Appendix A).

APPENDIX A

Extreme precipitation depths[1] (inches) for 24 -hour and 1-hour durations with a 5-year return frequency calculated in GIS for each Vermont CSO municipality.

Town	24 hr	1 hr
Barton	2.7	1.1
Burlington	2.7	1.2
Enosburg	2.7	1.2
Fair Haven	3.0	1.3
Hartford	3.1	1.2
Middlebury	2.9	1.2
Montpelier	2.8	1.2
Newport City	2.6	1.1
Northfield	2.8	1.2
Richford	2.7	1.2
Rutland City	3.1	1.2
Springfield	3.3	1.2
St. Albans City	2.6	1.2
St. Johnsbury	2.8	1.1
Vergennes	2.8	1.2
Woodstock	3.1	1.2
1990 state-wide design standard[2] *(based on a 2-year design return frequency)*	2.5	1.07

[1] Extreme Precipitation data were downloaded from Cornell's Northeast Regional Climate Center's (NRCC) Extreme Precipitation Analysis website (http://precip.eas.cornell.edu/). This dataset provides depth-duration-frequency raster products for New York and the New England states. Town boundaries were downloaded from the State GIS server, and re-projected from NAD 1983 VT State Plane projected coordinate system into the geographic coordinate system of the NRCC's precipitation rasters (WGS 1972) for use in the analysis.

[2] The 1990 Policy established a wet weather design precipitation event criteria to be used in designing CSO control systems as follows: design flows for all minimum technology-based limitations were characterized as those flows generated by a 24 hour, 2.5 inch rainfall, and a peak flow derived from a precipitation event of greater than 1.07 inches in one hour. This design criteria approximated a 2-year storm.