

**STATE OF VERMONT
AGENCY OF NATURAL RESOURCES
DEPARTMENT OF ENVIRONMENTAL CONSERVATION
1 NATIONAL LIFE DRIVE, MAIN 2
MONTPELIER, VT 05620-3522**

1272 ORDER - Discharge Permit Nos. 3-1331, 3-1245, 3-1247

IN THE MATTER OF:

City of Burlington, Permit Nos. 3-1331,
3-1245, 3-1247
City of Burlington
PO Box 878
Burlington, Vermont 05402

In accordance with the provisions of 10 V.S.A. § 1272 and the Combined Sewer Overflow Rule (Environmental Protection Rule, Chapter 34), the Secretary (Secretary) of the Vermont Agency of Natural Resources (Agency) makes the following findings of fact. The definitions in the Combined Sewer Overflow Rule shall apply to this Order.

FINDINGS OF FACT

- (1) The City of Burlington (Burlington) owns and operates the Burlington Main Wastewater Treatment Facility (Burlington Main WWTF) under Direct Discharge Permit No. 3-1331, the Burlington North Wastewater Treatment Facility (Burlington North WWTF) under Direct Discharge Permit No. 3-1245, and the Burlington East Wastewater Treatment Facility (Burlington East WWTF) under Direct Discharge Permit No. 3-1247. Each WWTF collects and treats both sewage and stormwater.

Burlington Main WWTF (Permit No. 3-1331)

- (2) The Burlington Main WWTF is authorized to discharge treated and disinfected wastewater into Lake Champlain under the terms and conditions of Discharge Permit No. 3-1331 through discharge point S/N 001.
- (3) Discharge Permit No. 3-1331 lists the following combined sewer overflow (CSO) outfalls within the collection system: CSO #1, S/N 003 (Manhattan Drive/Park Street) and CSO #2, S/N 004 (Manhattan Drive/North Champlain Street). During certain storm events, these CSO outfalls discharge untreated sewage to wetlands contiguous to the Winooski River. Such discharges may adversely affect the quality of waters of the State and create public health concerns.
- (4) In 2013, during routine maintenance, a CSO was discovered on Pine Street in Burlington. It was sealed at the time of discovery but caused flooding on Pine

Street in July 2015. The seal was removed in 2015 to reduce flooding at that location. It is now listed as CSO #3, S/N 005. The overflow is connected to a stormwater system that discharges to the Pine Street Barge Canal which subsequently discharges to Lake Champlain.

- (5) The discharges from these three CSO outfalls (S/N 003, S/N 004, and S/N 005) violate 10 V.S.A. Chapter 47, the Vermont Water Quality Standards (VWQS), and Discharge Permit No. 3-1331.
- (6) In 1986, Burlington contracted with the Engineering firm Metcalf & Eddy to evaluate portions of the Main WWTF collection system, including Manhattan Drive.
- (7) On June 1, 1989, Burlington and the Agency entered into Consent Order #722-89CNC, which established timetables for Burlington to complete sewer separation projects to alleviate overflows at the two Manhattan Drive CSOs (S/N 003 and S/N 004).
- (8) The first deadline was March 1, 1991. Nearly half of the combined sewer area was separated ahead of schedule as a result of the completed work.
- (9) In January 2006, Burlington verified that the work completed in early 1990 was effective in reducing overflows at S/N 003 and S/N 004.
- (10) Since 2006, Burlington has installed thirteen infiltration systems to remove stormwater input to the combined system upstream of S/N 003 and S/N 004 using both American Recovery and Reinvestment Act (ARRA) funds and Burlington funding. Burlington completed projects on Cedar Street, Manhattan Drive, Walnut Street, Luck Street, St. Mary's Street, Riverside Avenue, and North Willard Street. Burlington also completed two projects on each of the following streets: Bright Street, North Winooski Avenue and Archibald Street.
- (11) Discharge Permit No. 3-1331 lists the following combined sewer overflow treatment process within the Burlington Main WWTF: S/N 002, hereafter referred to as the Wet Weather Treatment System.
- (12) In the early 1990s, Burlington and Hoyle, Tanner & Associates, Inc. (HTA) proposed, and the Agency approved, the building of a wet weather primary treatment and disinfection system based on the 1987 EPA CSO policy. In 1994, Burlington constructed the Wet Weather Treatment System to treat wastewater and stormwater when combined flows exceed 13 million gallons per day (MGD) into the wastewater treatment plant due to rain events or snow melt, or both.
- (13) The Wet Weather Treatment System consists of mechanical screening, vortex separation for solids removal, and disinfection using a chlorine activated bromine

disinfection process. The system is designed to treat 75 MGD of combined sewage (stormwater and wastewater).

- (14) The Wet Weather Treatment System eliminated numerous CSOs located in Burlington's collection system that resulted from the filling of a ravine in the mid-1800s. Flow from this ravine was directed to an 8-foot by 10-foot box culvert which is now treated by the Wet Weather Treatment System. It is estimated that 170 million gallons per year are now being treated.
- (15) More recently, Burlington has completed two projects on Grant Street and one project on King Street, resulting in a reduction of stormwater flow directly to the Wet Weather Treatment System.
- (16) In 2016, Burlington began an Integrated Planning effort designed to identify Burlington's Clean Water Act obligations and prioritize actions to meet those obligations, including reducing phosphorus contributions to Lake Champlain to meet the Lake Champlain Total Maximum Daily Load (Lake Champlain TMDL). The Integrated Plan will consider, among other things, phosphorous optimization at the three Burlington WWTFs (Main, North, and East), stormwater best management practices, continued removal of impervious surfaces from the combined sewer systems (CSS), and sewer and roof drain separation projects throughout Burlington. The Integrated Plan will model several scenarios to prioritize a multitude of projects to reach the phosphorous reductions required by the Lake Champlain TMDL. The Integrated Plan study is expected to be completed in January 2020.
- (17) In 2018, Burlington began investigating source reduction through a City-operated pre-treater program for all high strength and industrial users. Burlington contracted with HTA to perform the study.
- (18) Discharge Permit No. 3-1331 requires that Burlington's Wet Weather Treatment System meet Vermont Water Quality Standards (VWQS) or permit limits with the allowable 80:1 dilution for Total Suspended Solids, Total Residual Oxidant, and E. coli. It has not been confirmed whether this system meets VWQS for Biological Oxygen Demand, pH, or Settleable Solids.
- (19) An annual Total Phosphorous allocation of 0.77 metric tons (1697 pounds) has been calculated for Burlington's Wet Weather Treatment System in the June 17, 2016, Phosphorous TMDLs for Vermont Segments of Lake Champlain, prepared by Region 1, U.S. Environmental Protection Agency.
- (20) Without the implementation of the requirements set forth in this Order, it can reasonably be expected that the overflows from the Burlington Main CSO outfalls (S/N 003, S/N 004, and S/N 005) will continue to create or cause a

discharge of untreated sewage to waters of the State in violation of 10 V.S.A. Chapter 47, the Vermont Water Quality Standards (VWQS), and Discharge Permit No. 3-1331.

Burlington North WWTF (Permit No. 3-1245)

- (21) The Burlington North WWTF is authorized to discharge treated and disinfected wastewater into the Winooski River under the terms and conditions of Discharge Permit No. 3-1245 through discharge point S/N 001.
- (22) Discharge Permit No. 3-1245 lists the following combined sewer overflow (CSO) outfall within the collection system: CSO #1, S/N 002 Gazo Avenue. During certain storm events, this CSO outfall discharges untreated sewage to the Winooski River. Such discharges may adversely affect the quality of waters of the State and create public health concerns.
- (23) The discharges from this CSO outfall (S/N 002) violate 10 V.S.A. Chapter 47, the Vermont Water Quality Standards (VWQS), and Discharge Permit No. 3-1245.
- (24) Over the past several years, Burlington has redirected roof drains from the CSS to a separate stormwater collection system. This has reduced the frequency of storm sewer overflow events at CSO outfall S/N 002.
- (25) Without the implementation of the requirements set forth in this Order, it can reasonably be expected that the overflows from the Burlington North CSO outfall (S/N 002) will continue to create or cause a discharge of untreated sewage to waters of the State in violation of 10 V.S.A. Chapter 47, the Vermont Water Quality Standards (VWQS), and Discharge Permit No. 3-1245.

Burlington East WWTF (Permit No. 3-1247)

- (26) The Burlington East WWTF is authorized to discharge treated and disinfected wastewater into the Winooski River under the terms and conditions of Discharge Permit No. 3-1247 through discharge point S/N 001.
- (27) Discharge Permit No. 3-1247 does not list the following combined sewer overflow (CSO) outfall within the collection system: CSO #1, S/N 002 Riverside Avenue. During certain storm events, this CSO outfall discharges untreated sewage to the Winooski River, immediately below the Winooski Falls. Such discharges may adversely affect the quality of waters of the State and create public health concerns.
- (28) The discharges from this CSO outfall (S/N 002) violate 10 V.S.A. Chapter 47, the Vermont Water Quality Standards (VWQS), and Discharge Permit No. 3-1247.

- (29) The collection system for the Burlington East WWTF is primarily separated sanitary sewer.
- (30) Without the implementation of the requirements set forth in this Order, it can reasonably be expected that the overflows from the Burlington East CSO outfall (S/N 002) will continue to create or cause a discharge of untreated sewage to waters of the State in violation of 10 V.S.A. Chapter 47, the Vermont Water Quality Standards (VWQS), and Discharge Permit No. 3-1247.

ORDER

Based on the foregoing findings of fact, the Secretary issues the following Order, under 10 V.S.A. § 1272 and the Combined Sewer Overflow Rule, to ensure all existing CSOs in the Burlington Main, North, and East collection systems are brought into compliance with the applicable requirements of state and federal law, including the VWQS:

- (I) **Minimum Controls:** For Burlington Main, North, and East, Burlington shall implement the minimum technology-based requirements below, known as the “Minimum Controls,” 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 systems 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 WWTFs 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, at a minimum, comply with § 34-404 of the Combined Sewer Overflow Rule; and
 - (9) Monitoring to effectively characterize CSO impacts and the efficacy of CSO

controls, which shall include at a minimum:

- (A) Burlington shall define through monitoring, modeling, and other means, as appropriate, the sewer systems, the response of the systems 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, Burlington shall, at a minimum:
 - (i) Establish and maintain a precipitation monitoring system. The system must provide unique precipitation amounts specific to individual CSO subcatchments. Such a system does not necessarily demand a precipitation recording device for each CSO outfall. Precipitation measurements shall be to the nearest 0.01-inch, continuous at a five-minute interval over the duration of a storm event, and indexed to time and date. If establishing a physical precipitation monitoring system, Burlington shall work to minimize impacts of wind and surrounding trees and buildings that may hinder the accuracy of precipitation recording devices. If Burlington proposes to use a system other than a physical precipitation monitoring system, it shall get prior approval from the Secretary.
 - (ii) Establish a CSO flow monitoring system. At a minimum, Burlington shall install a tell-tale block in each overflow structure and check the block after every precipitation/runoff event.
- (B) Burlington shall submit to the Secretary, by no later than January 31st of each year, a report on CSO control project(s) of the previous calendar year. The Secretary will use the information from the report to monitor the progress of implementation of CSO control project(s). Burlington 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 CSS in the past year and a comparison to prior years;
 - (v) The overall status of the Long-Term Control Plan (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.
- (C) Within six (6) months of the date of this Order, Burlington shall submit to the Secretary a proposed two-year monitoring plan to assess the impact of the Pine Street CSO outfall (S/N 005) on the Pine Street Barge Canal. The two-year time frame may be modified by agreement with the Secretary. The plan shall include wet weather sampling at the outfall that discharges to the Pine Street Barge Canal and at a point of the Canal near its discharge to Lake Champlain. After approval, Burlington shall conduct the monitoring and submit a final report within three (3) months. Based on the outcome of this report, the Agency will consider issuing a 1272 Order for future work on the Pine Street CSO outfall (S/N 005).
- (II) **Long-Term Control Plan. Burlington shall create a Long-Term Control Plan (LTCP)¹ and submit it to the Secretary within 24 months of the date of this Order. The LTCP may be included as a part of the Integrated Plan under development by Burlington.** In developing a LTCP, Burlington 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 ratepayers, 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. Additionally, in developing LTCPs, the Agency encourages municipalities to evaluate and implement green stormwater infrastructure for stormwater runoff and sewer overflow management to the greatest extent possible. The LTCP shall, at a minimum, include:
 - (1) 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 WWTFs capacity;
 - (E) Adding screening and disinfection facilities for the overflow;

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

- (F) Incorporating green stormwater infrastructure to reduce stormwater flow into the CSSs to the greatest extent feasible and practical; and
 - (G) Providing for disinfection of CSOs at the outfall and discharge to an approved waste management zone.
- (2) 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. Projects shall be prioritized based on the relative importance of adverse impacts upon water quality, including impacts on designated and existing uses. Burlington shall give the highest priority to bringing overflows to “sensitive areas” into compliance with the VWQS. “Sensitive areas” means designated Outstanding Resource Waters, designated National Marine Sanctuaries, waters with threatened or endangered species and their habitat, waters where primary contact recreation occurs, public drinking water intakes or their designated protection areas, and shellfish beds.
 - (3) Documentation showing that the Burlington Main Wet Weather Treatment System meets the Combined S/N 001 and S/N 002 wet weather permit limits for: Total Suspended Solids, Total Residual Oxidant, E. coli.; the dry weather permit with the 80:1 dilution for, Biological Oxygen Demand, pH, and Settleable Solids; and the dry weather permit limits for pH. Documentation of historical pounds of Total Phosphorous discharged from Combined S/N 001 and S/N 002 outfall. Burlington has been monitoring for all these parameters for over two decades.
 - (4) A strategy to ensure that new sources of stormwater and wastewater to the CSS do not increase the volume, frequency, or duration of CSO events through implementation of control measures, such as making reductions in existing sources of stormwater or wastewater to the CSS, creating or increasing storage capacity within the collection system, or other measures approved by the Secretary.
 - (5) Measures to address and prevent any documented, recurrent instances of sewage backups or discharges of raw sewage onto the ground surface.
 - (6) A financing plan to design and implement the CSO control projects identified pursuant to subsection (II)(2) of this Order.
 - (7) A proposed schedule to bring Burlington’s CSOs into compliance with the VWQS. The Agency recognizes CSO abatement and control is a costly process and anticipates plans will take an iterative approach to lessen the number and quantity of CSO events and improve their quality. As such, the schedule may include interim CSO controls as a step in the process of bringing CSOs into compliance with the VWQS. Interim CSO controls should be evaluated and designed based on storms with a theoretical 5-year recurrence

interval (also known as the 5-year design storm). The 24-hour and 1-hour extreme precipitation depths at the 5-year recurrence interval for each CSO municipality are listed in Appendix A of the Combined Sewer Overflow Rule.

(III) **General Conditions.**

- (1) The plans and information required by this Order shall be submitted in electronic format to ANR online.
- (2) The Secretary reserves the right to amend this Order at any time as necessary to protect water quality and to comply with state and federal law.
- (3) The State of Vermont and the Secretary reserve continuing jurisdiction to ensure future compliance with all statutes, rules, and regulations applicable to the facts and violations set forth above.
- (4) Nothing in this Order shall be construed as having relieved, modified, or in any manner affected Burlington's on-going obligation to comply with all other federal, state, or local statutes, nor does it relieve Burlington of the obligation to obtain all necessary federal, state, and local permits.
- (5) Nothing in this Order shall be construed to absolve Burlington of any violation that has occurred in the past or that may occur in the future. The Secretary reserves the right to initiate a proceeding under 10 V.S.A. Chapter 201 or 211 for any past or future violation of 10 V.S.A. Chapter 47, Burlington's permits 3-1331, 3-1245 and 3-1247, or this Order.
- (6) This Order does not grant any exclusive rights or privileges, which would impair any rights possessed by riparian or littoral owners of the State of Vermont. It does not grant any right, title, or easement to or over any land, nor does it authorize any damage to private property or invasion of private rights or the violation of federal, state, or local laws or regulations.
- (7) The Secretary, in issuing this Order, accepts no legal responsibility for any damage, direct or indirect, of whatever nature and by whoever suffered, arising out of the activities described.
- (8) This Order is not a resolution of any enforcement action that may be pending, contemplated, or initiated in this matter.
- (9) Burlington shall allow access to Agency representatives, upon the presentation of proper credentials, to inspect the subject site or systems and sample any discharge or receiving waters as necessary to assess compliance with this Order and applicable state laws related to water quality.
- (10) Pursuant to 10 V.S.A. Chapter 220 and the Vermont Rules for Environmental

Court Proceedings, any appeal of this Order must be filed with the clerk of the Environmental Division of the Superior Court within 30 days of the date of this Order. The address of the Environmental Court is Vermont Superior Court, Environmental Division, 32 Cherry Street, 2nd Floor, Suite 303, Burlington, VT 05401 (Tel # (802) 951-1740). The filing of an appeal does not stay this Order. The Notice of Appeal must specify the parties taking the appeal and the statutory provisions under which each party claims party status; must state the act or decision appealed from; must name the Environmental Division; and must be signed by the appellant or their attorney. In addition, the appeal must give the address or location and description of the property, project, or facility with which the appeal is concerned and the name of the applicant or any permit involved in the appeal. The appellant must also serve a copy of the Notice of Appeal in accordance with Rule 5(b)(4)(B) of the Vermont Rules for Environmental Court Proceedings. For further information, see the Vermont Rules for Environmental Court Proceedings, available online at www.vermontjudiciary.org.

- (11) This Order shall be effective upon the date of signing and shall remain in effect until such time as the activities governed under this Order are completed or until such time as the Agency rescinds this Order or issues a subsequent Order, whichever occurs first.

Emily Boedecker, Commissioner
Department of Environmental Conservation

By: Mary L. Borg
Mary L. Borg, Deputy Director
Watershed Management Division

Date: 2/19/19