

AGENCY OF NATURAL RESOURCES
DEPARTMENT OF ENVIRONMENTAL CONSERVATION
WASTEWATER MANAGEMENT DIVISION
103 SOUTH MAIN STREET
WATERBURY, VERMONT 05671-0405

FACT SHEET

October 2007

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)
PERMIT TO DISCHARGE TO WATERS OF THE UNITED STATES

FILE NO.: 04-14

PROJECT ID NO.: EJ93-0009.01

PERMIT NO.: 3-1278

NPDES NO.: VT0100366

NAME AND ADDRESS OF APPLICANT:

City of South Burlington
575 Dorset Street
South Burlington, VT 05403

and the

Town of Colchester
PO Box 55
Colchester, VT 05446

NAME AND ADDRESS OF FACILITY WHERE DISCHARGE OCCURS:

Airport Parkway Wastewater Treatment Facility
1015 Airport Parkway
South Burlington, Vermont

RECEIVING WATER AND CLASSIFICATION: Winooski River: Class B with a waste management zone. Class B waters are suitable for bathing and recreation; irrigation and agricultural uses; good fish habitat; good aesthetic value; acceptable of public water supply with filtration and disinfection. A waste management zone is a specific reach of Class B waters designated by a permit to accept the discharge of properly treated wastes that prior to treatment contained organisms pathogenic to human beings.

I. Proposed Action, Type of Facility, and Discharge Location

The above named applicants have applied to the Vermont Department of Environmental Conservation for an amendment and renewal of their permit to discharge into the designated receiving water. The facility is engaged in the treatment of domestic wastewater from the City of South Burlington and the Town of Colchester. The discharge is from the Airport Parkway Wastewater Treatment Facility outfall to the Winooski River.

II. Description of Discharge

This permit authorizes the discharge of 2.3 MGD of treated and disinfected municipal wastewater to the Winooski River. Upon completion of the upgrade and expansion of the

facility, the permit will authorize the discharge of 3.3 MGD of treated and disinfected municipal wastewater.

The wastewater treatment facility receives wastewater from the City of South Burlington and the Town of Colchester. The treatment system is considered advanced treatment of wastewater and after the upgrade and expansion of the treatment facility the system will consist of a conventional activated sludge process followed by clarification and rotating cloth filters for phosphorus removal. Disinfection currently consists of chlorination followed by dechlorination prior to discharge. After the upgrade and expansion disinfection will be done by ultraviolet light.

III. Limitations and Conditions

The effluent limitations of the permit, the monitoring requirements, and any implementation schedule (if required), may be found on the following pages of the permit:

Effluent Limitations: Pages 2 and 3
 Monitoring Requirements: Pages 6, 7, and 8

IV. Permit Basis and Explanation of Effluent Limitation Derivation

History & Summary

On November 9, 2004, the City of South Burlington and the Town of Colchester submitted an application for upgrade and expansion of the Airport Parkway Wastewater Treatment Facility.

On September 28, 2007, the City of South Burlington and the Town of Colchester submitted an application for renewal of the existing discharge permit for the Airport Parkway Wastewater Treatment Facility.

The wastewater treatment facility provides wastewater treatment capacity for both existing residential and commercial properties and for new development, in areas that lie within the sewer service areas in the City of South Burlington and the Town of Colchester.

Having completed its review of these applications and the basis of final design for the upgraded and expanded wastewater treatment facility, the Department has made a tentative determination to issue a discharge permit for the renewal and proposed upgrade and expansion of the Airport Parkway Wastewater Treatment Facility. Following is a discussion of the specific factors considered in this permit.

Effluent Limitations

Flow

The draft permit authorizes the Airport Parkway Wastewater Treatment Facility (APWWTF) to discharge 2.3 MGD, annual average. This limitation is unchanged from the permit which currently authorizes this discharge. Upon completion of the upgrade and expansion of the APWWTF, the draft permit will authorize a discharge of 3.3, MGD, annual average. This flow limitation is based on the design capacity of the upgraded and expanded APWWTF.

Flow monitoring is required daily and the treatment facility will maintain a continuous discharge.

Phosphorus

The draft permit authorizes the APWWTF to discharge a phosphorus effluent concentration limit of 0.8 mg/l, monthly average, and a mass effluent limit of 4,201 total pounds, annual limitation. The concentration effluent limitation is based on the requirements of 10 V.S.A. 1266a. The mass annual effluent limitation is based on the Lake Champlain Phosphorus TMDL, effective November 4, 2002. The TMDL allocated 1.906 metric tons per year or 4,201 pounds per year to the APWWTF. These limitations are unchanged from the permit that currently authorizes this discharge.

Upon completion of the upgrade and expansion of the APWWTF the phosphorus limitations will not change and the permittee will be required to meet the concentration limitation or the mass limitation, whichever is more restrictive.

The annual total pounds are the total of the twelve monthly totals which are calculated by multiplying the total monthly flow x the monthly average phosphorus concentration x 8.34. The annual total must be submitted with the December monthly monitoring report.

This permit requires weekly monitoring of effluent composite samples for total phosphorus.

Ultimate Oxygen Demand (UOD) and Total Kjeldahl Nitrogen (TKN)

The draft permit establishes a UOD mass limitation of 2060 lbs/day, maximum day. This limitation is effective from June 1st through October 31st of each year. This limitation is based on the Lower Winooski River Waste Load Allocation Order effective September 9, 1988 and is unchanged from the permit that currently authorizes this discharge.

UOD is dependent on the quantity of biochemical oxygen demand (BOD₅) and total kjeldahl nitrogen (TKN) in a discharge, as specified in the following equation:

$$\text{UOD (lbs/day)} = [(\text{BOD}_5 \text{ (lbs/day)} \times 1.43) + (\text{TKN (lbs/day)} \times 4.57)]$$

Since receiving waters are the most sensitive to oxygen depleting wastes during periods of high water temperature and low flow, the Lower Winooski River Waste Load Allocation Order established UOD limitations which are in effect from June 1 - October 31 of each year. The UOD limitation ensures compliance with the dissolved oxygen criteria during this time period as specified in the Vermont Water Quality Standards. During the other months of the year, the Biological Oxygen Demand limitation is adequate to ensure compliance with the dissolved oxygen criteria.

Upon completion of the upgrade and expansion of the APWWTF the UOD limitation will not change.

Sampling will be required once per week from the period of June 1st through October 31st. TKN sampling will also be required weekly during the period in which the UOD limit is in effect. These sampling frequencies are unchanged from the current permit

Biochemical Oxygen Demand (BOD₅) and Total Suspended Solids (TSS)

The draft permit establishes BOD and TSS mass limitations of 575 lbs/day, monthly average, and 863 lbs/day, weekly average. These limitations are unchanged from the permit that currently authorizes this discharge

Upon completion of the upgrade and expansion of the APWWTF the BOD and TSS mass limitation will not change.

The draft permit establishes BOD and TSS effluent concentration limits of 30 mg/l, monthly average, and 45 mg/l, weekly average. These limitations are set in accordance with the limitations specified for secondary treatment in 40 CFR Part 133.102 and are unchanged from the permit that currently authorizes this discharge.

In addition, the permit contains a 50 mg/l, maximum day, BOD and TSS limitation. This is a limitation which the Agency implements to supplement the federal technology based limitations to prevent a gross one-day permit effluent violation to be offset by multiple weekly and monthly sampling events which would enable a discharger to comply with the weekly average and monthly average permit limitations. This limitation is unchanged from the permit that currently authorizes this discharge.

Upon completion of the upgrade and expansion of the APWWTF the BOD and TSS concentration limitations will not change and the permittee will be required to meet the BOD and TSS concentration limitations or the BOD and TSS mass limitations whichever are more restrictive.

The sampling frequency for BOD and TSS is once per week and is unchanged from the current permit.

The permit also requires that during the period of June 1st through October 31st, the permittee control the discharge such that the maximum day UOD limitation is not exceeded or the BOD concentration or the mass BOD limitations are not exceeded, whichever is more restrictive.

Escherichia coli bacteria

The *E. coli* limitation is 77/100ml, instantaneous maximum and is based on Section 3-04.B.3 of the Vermont Water Quality Standards. This limitation is unchanged from the current permit. Upon completion of the APWWTF this limitation will not change.

E. coli monitoring is required weekly.

Settleable Solids

The Settleable Solids limitation is 1.0 ml/l, instantaneous maximum and is established in support of the narrative standard in Section 3-01.B.5 of the Vermont Water Quality Standards. This limitation is unchanged from the current permit. Upon completion of the APWWTF this limitation will not change. Sampling is required once per day and is unchanged from the current permit.

Disinfection (Total Residual Chlorine & Ultraviolet Light)

The draft permit contains a Total Residual Chlorine (TRC) limitation of 0.1 mg/l, instantaneous maximum to ensure compliance with the instream water quality criteria for chlorine of 0.019 mg/l (acute) and 0.011 mg/l (chronic) specified in the Vermont Water Quality Standards. TRC sampling is required once per day. This limitation is unchanged from the permit that currently authorizes this discharge.

Upon completion of the APWWTF upgrade and expansion, the method of disinfection will be

changed to ultraviolet light. Therefore the TRC limitation and sampling requirements will be terminated.

Waste Management Zone

The current permit established a waste management zone in the Winooski River beginning at the outfall of the APWWTF and extending downstream for 1.2 miles. The draft permit will maintain this waste management zone and based upon the Agency's waste management zone model, this waste management zone can accommodate the discharge from the APWWTF upgrade and expansion.

Special Conditions Regarding the APWWTF Upgrade and Expansion

The following conditions have been included in the draft permit.

Condition I.A.4 requires the permittee to submit for review and approval, a plan of operation to ensure that the APWWTF will comply with all permit conditions during construction of the upgrade and expansion project.

Condition I.A.5 requires the permittee to submit for review and approval, design details for influent and effluent sampling locations at the upgraded and expanded APWWTF.

Condition I.A.6. defines the actions required to consider the upgrade and expansion of the APWWTF to be complete.

Condition I.A.13. addresses septage capacity. Specifically, the proposed APWWTF facility must conform to the provisions of 10 V.S.A. §1626a, regarding awards for wastewater treatment plants with a capacity of 250,000 gallons or more per day. Therefore the proposed expanded and upgraded facility must reserve capacity to receive, treat and dispose of septage in a quantity equivalent to the ratio of 4,000 gpd of septage for each 1 million gpd of facility hydraulic capacity. Thus the facility must reserve 13,200 gpd and its equivalent BOD organic capacity for septage receiving.

Condition I.A.14 requires maintenance of the ultraviolet light disinfection system.

Toxicity Testing and Additional Pollutant Testing

Previous Whole Effluent Toxicity (WET) tests conducted on this discharge have indicated that this discharge does not have a reasonable potential to cause an instream toxic impact.

However to ensure compliance with 40 CFR 122.21.j, at the time of permit renewal, a requirement (Condition I.E) to conduct WET testing has been included in the draft permit. This Condition requires a two species acute WET test to be done in the summer of 2009 and a two species acute WET test be done in the winter of 2011.

Total Copper and Total Zinc

In order to gather data on the discharge of copper and zinc into the lower Winooski River, a "monitor only" requirement has been included in the draft permit. Sampling for Total Copper and Total Zinc is required quarterly, specifically during the months of March June, September, and December.

Operation, Management, and Emergency Response Plan

Per the requirements of the revisions to 10 V.S.A. Sections 1263 and 1278, promulgated in the 2006 legislative session, Condition I.G. has been included in the draft permit. These statutory modifications required that each municipality develop an Operation, Management and Emergency Response Plan to prevent and mitigate any accidental releases of sewage.

Condition I.G requires the preparation and submission of the Operation, Management and Emergency Response Plan in two parts. First, an Operation, Management and Emergency Response Plan must be developed for the components at the wastewater treatment facility, the components at the pump/ejector stations and the stream crossings. Second, an Operation, Management and Emergency Response Plan must be developed for the sewage collection system.

The field work necessary for preparing an Operation, Management and Emergency Response Plan for the components at the wastewater treatment facility and the components at the pump/ejector stations and stream crossing is not extremely time consuming. Therefore, the draft permit requires submittal of an Operation, Management and Emergency Response Plan for the components at the wastewater treatment facility and the components at the pump/ejector stations and stream crossings by April 1, 2008.

The field work necessary for preparing an Operation, Management and Emergency Response Plan for the sewage collection can be extremely time-consuming and complex. Therefore, the draft permit requires submittal of an Operation, Management and Emergency Response Plan for the sewage collection system by June 30, 2010.

Engineering Evaluation

Since the APWWTF was constructed more than 20 years ago, Condition I.H. has been included in the draft permit. This condition requires that if construction of the upgrade and expansion project has not begun by March 31, 2012, an in-depth engineering evaluation/inspection of the facility must be conducted and a written report submitted to the Agency by September 30, 2012.

VI. Procedures for Formulation of Final Determinations

The public comment period for receiving comments on this draft permit is from October 9, 2007 through November 8, 2007 during which time interested persons may submit their written views on the draft permit. All written comments will be retained by the Department and considered in the formulation of the final determination to issue, deny or modify the draft permit. The period of comment may be extended at the discretion of the Department.

Written comments should be sent to:

Vermont Agency of Natural Resources
 Department of Environmental Conservation
 Wastewater Management Division - Sewing Building
 103 South Main Street
 Waterbury, VT 05671-0405

Comments may also be faxed to: 802-241-2596.

Any interested person or groups of persons may request or petition for a public hearing with respect to this draft permit. Any such request or petition for a public hearing shall be filed within

the public comment period described above and shall indicate the interest of the party filing such request and the reasons why a hearing is warranted.

The Department will hold a hearing if there is significant public interest in holding such a hearing. Any public hearing brought in response to such a request or petition will be held in the geographical area of the draft discharge or other appropriate area, at the discretion of the Department and may, as appropriate, consider related groups of draft permits. Any person may submit oral or written statements and data concerning the draft permit at the public hearing. The Department may establish reasonable limits on the time allowed for oral statements and may require the submission of statements in writing. All statements, comments, and data presented at the public hearing will be retained by the Department and considered in the formulation of the final determination to issue, deny, or modify the draft permit.

The complete application, draft permit, and other information are on file and may be inspected at the VTDEC, Wastewater Management Division, Waterbury Office. Copies will be made at a cost based on the previous Secretary of State Official Fee Schedule for Copying Public Records from 8:00 am to 4:00 pm, Monday through Friday.

The draft permit and this fact sheet may also be viewed on the Wastewater Management Division's web site at www.anr.state.vt.us/dec/ww/wwmd.cfm.