Burlington International Airport

STORMWATER MANAGEMENT PROGRAM
June, 2013

VOLUME 1: MS4 FLOW RESTORATION PLAN AND STORMWATER RUNOFF CONTROL MEASURES

Revised September 30, 2016

Prepared by: Stantec

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This document is the Stormwater Management Program as developed for the Burlington International Airport. The information contained within this document has been reviewed by BTV staff for accuracy and completeness. Stantec and the Burlington International Airport shall not be liable for the misuse or misrepresentation of the information contained within this document.

Volume 1 – MS4 Flow Restoration Plan and Stormwater Runoff Control Measures contains information on how BTV has implemented six minimum stormwater runoff control measures and intends to develop a Flow Restoration Plan as required by the MS4 permit. The six minimum control measures are as follows:

- Public Education and Outreach
- Public Participation/Involvement
- Illicit Discharge Detection and Elimination
- Construction Site Runoff Control
- Post-Construction Runoff Control
- Pollution Prevention/Good Housekeeping

The information and procedures contained in Volume 1 shall be used by BTV staff and representatives to comply with the Stormwater Rule. Failure to comply with the six minimum control measures may lead to enforcement action against BTV.

The information and procedures of Volume 1 shall be reviewed and updated annually by BTV staff and/or representatives.

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Executive Summary

In June 2003 and April 2008, the Burlington International Airport (BTV) submitted a Notice of Intent (NOI) for Stormwater Discharges from Small Municipal Separate Storm Sewer Systems (MS4) to the Vermont Agency of Natural Resources to meet the regulations associated with the Environmental Protection Agency Phase II Stormwater Rule.

The Vermont Department of Environmental Conservation (DEC) issued General Permit 3-9014 (2012) for Stormwater Discharges from Small Municipal Separate Storm Sewer Systems (MS4) on December 5, 2012. Designed to address pollution from stormwater runoff, the re-issued MS4 permit applies to thirteen municipalities and three institutional entities in the Lake Champlain watershed. Communities already subject to the 2003 MS4 General Permit include Burlington, Colchester, Essex, Essex Junction, Milton, Shelburne, South Burlington, Williston and Winooski, as well as the non-municipal or non-traditional entities including the Burlington International Airport, the University of Vermont, and the Vermont Agency of Transportation within the geographical boundaries of these municipalities.

In addition to the communities noted above, which need to meet the new requirements of the updated permit, the DEC has designated Rutland town and city, and St. Albans town and city as new MS4s subject to the requirements of the re-authorized General Permit 3-9014 (2012). The primary additional condition of General Permit 3-9014 (2012) is the requirement to develop and submit a Flow Restoration Plan (FRP) for the portion of each stormwater-impaired watershed located within a permittee's boundaries.

To satisfy the requirements of the MS4 permit, BTV has developed a Stormwater Management Program (SWMP) designed to reduce the discharge of pollutants from the airport, to protect water quality, and to satisfy the appropriate water quality requirements of the Clean Water Act.

The SWMP consists of three volumes:

Volume 1 – MS4 Stormwater Runoff Control Measures

Volume 1 – MS4 Flow Restoration Plan and Stormwater Runoff Control Measures contains information on how BTV has implemented six minimum stormwater runoff control measures and how BTV intends to develop a Flow Restoration Plan as required by the re-authorized MS4 permit. The six minimum control measures are as follows:

- Public Education and Outreach
- Public Participation/Involvement
- Illicit Discharge Detection and Elimination

- Construction Site Runoff Control
- Post-Construction Runoff Control
- Pollution Prevention/Good Housekeeping

The information and procedures contained in Volume 1 shall be used by BTV staff and representatives to comply with the Stormwater Rule.

Volume 2 – Stormwater Pollution Prevention Plan (SWPPP)

Volume 2 – Stormwater Pollution Prevention Plan describes the Burlington International Airport facility and its operations, develops an inventory of potential pollutant sources, identifies controls and best management practices (BMPs) for reducing the discharge of pollutants in stormwater runoff, and outlines measures for implementation and review of this plan. The Stormwater Pollution Prevention Plan was developed as a requirement of the Multi-Sector General Permit 3-9003 (MSGP).

The Stormwater Pollution Prevention Plan shall be used by BTV staff and representatives to comply with the Stormwater Rule.

Volume 3 – Stormwater Management Study, Final Report

Volume 3 – Stormwater Management Study – Final Report was completed to meet regulations associated with the Phase II Stormwater Rule issued in 2002 and the proposed Vermont Watershed Improvement Permits (WIP). The study components are as follows:

- Review existing BTv stormwater discharge permits
- Update existing airport drainage system mapping
- Evaluate existing stormwater discharge outlets
- Development of a stormwater management action plan

This study provides historical information regarding BTVs efforts to comply with the Federal Phase II rule and forms the basis for Volumes 1 and 2 of the SWMP.

Failure to comply with the information and procedures contained in the Stormwater Management Program may lead to enforcement action against BTV.

Volumes 1 and 2 of the Stormwater Management Program shall be reviewed and updated annually by BTV staff and/or representatives. Volume 3 is included for informational purposes only and does not require updates.

Burlington International Airport
Stormwater Management Program (SWMP)

Table of Contents – Volume 1: MS4 Flow Restoration Plan and Stormwater Runoff Control Measures

1 Introduction

In June 2003 and April 2008, the Burlington International Airport (BTV) submitted a Notice of Intent (NOI) for Stormwater Discharges from Small Municipal Separate Storm Sewer Systems (MS4) to the Vermont Agency of Natural Resources to meet the regulations associated with the Environmental Protection Agency Phase II Stormwater Rule.

To satisfy the requirements of the newly issued General Permit 3-9014 (2012) MS4 permit, BTV has developed a Stormwater Management Program (SWMP) designed to reduce the discharge of pollutants from the airport, to protect water quality, and to satisfy the appropriate water quality requirements of the Clean Water Act.

The SWMP consists of three volumes:

- Volume 1 – MS4 Flow Restoration Plan and Stormwater Runoff Control Measures
- Volume 2 – Stormwater Pollution Prevention Plan
- Volume 3 – Stormwater Management Study, Final Report

Volume 1 and 2 of the Stormwater Management Program will be updated on an annual basis. Volume 3 is a completed study, and therefore will not be updated.

Volume 1 – MS4 Stormwater Runoff Control Measures contains information on how BTV has implemented the six minimum stormwater runoff control measures required by the MS4 permit.

The six minimum control measures are as follows:

- Public Education and Outreach
- Public Participation/Involvement
- Illicit Discharge Detection and Elimination
- Construction Site Runoff Control
- Post-Construction Runoff Control
- Pollution Prevention/Good Housekeeping

In addition, as part of the re-authorized General Permit 3-9014 (2012) MS4 permit requirements, Volume 1 contains information related to discharges to impaired waters with approved Total Maximum Daily Loads (TMDL), and to impaired waters for which a

TMDL has not yet been approved by the Secretary of the Vermont Agency of Natural Resources (VT ANR) or the U.S. Environmental Protection Agency (EPA).
The information and procedures contained in Volume 1 shall be used by BTV staff and representatives to comply with the Stormwater Rule. Failure to comply with the discharges to impaired waters section and the six minimum control measures may lead to enforcement action against BTV.

2 Discharges to Impaired Waters (Flow Restoration Plan) (Revised September 30, 2016)

Impaired waters are those waters that the Secretary of the VT ANR has identified pursuant to Section 303(d) of the Clean Water Act as not meeting the Vermont Water Quality Standards. As part of the re-authorized General Permit 3-9014 (2012) MS4 permit requirements, each MS4 must evaluate, monitor, and develop plans for each discharge to an impaired water with approved Total Maximum Daily Loads (TMDL), and to impaired waters for which a TMDL has not yet been approved by the Secretary of the Vermont Agency of Natural Resources (VT ANR) or the U.S. Environmental Protection Agency (EPA).

BTV discharges stormwater runoff to three impaired waters of the State. Five outfalls (POO1, POO2, POO5, POO6, and POO7) discharge to Class 2 wetlands contiguous to Potash Brook; one non-point source discharge (CN001) flows to Centennial Brook; and one outfall (DO18) discharges to Muddy Brook. All three waterways are considered to be impaired. Two of these waterways have an approved TMDL, while the other waterway does not have an approved TMDL.

2.1 Discharges to Impaired Waters with an Approved TMDL

Potash Brook is an impaired water with a Total Maximum Daily Load (TMDL) that was approved by EPA on December 19, 2006. For the Potash Brook TMDL, it is stormwater runoff volume that is being limited overall and allocated among sources.

Table 1 below gives the overall Potash Brook TMDL allocation for the high flows only. EPA does not consider the low flow targets applicable to an allocation scenario, and thus they were not presented as such in the TMDL.

It is noted that even though the low flow targets are not part of the formal TMDL allocation, VT DEC remains committed to retaining these low flow targets within the overall remediation plan for the watershed.

Table 1 - Potash Brook TMDL High Flow Allocation at Q0.3%.

Wasteload Allocation	Stormwater reduction from current Urban/Developed areas	-14.6%	-16.5%
	Additional stormwater flow reduction from Urban/Developed areas to account for future growth	-1.9 %	
Load Allocation	Stormwater reduction from Agriculture/Open areas		-1.4%
Total Potash Brook watershed stormwater flow reduction allocation at Q0.3%			-17.9 %

BTV has five discharges that drain to a Class 2 wetland, contiguous with a tributary to Potash Brook. Potash Brook in turn drains to Lake Champlain. The outfall designations are PO01, PO02, PO05, PO06, and PO07 as depicted on the Storm Sewer System Map contained in Appendix D. These five outfalls are located at the southern end of the BTV property site. Discharge point PO05 is also a sampling point for Benchmark Monitoring as a condition of BTV's General Permit 3-9003 MSGP. It is noted that discharge point PO01 has been plugged and buried, and no longer serves as a discharge point for stormwater runoff.

Centennial Brook is an impaired water with a TMDL that was approved by EPA on September 28, 2007. For the Centennial Brook TMDL, it is stormwater runoff volume that is being limited overall and allocated among sources.

Table 1 below gives the overall Centennial Brook TMDL allocation for the high flows only. EPA does not consider the low flow targets applicable to an allocation scenario, and thus they were not presented as such in the TMDL.

Table 2 - Centennial Brook TMDL High Flow Allocation at Q0.3%.

Wasteload Allocation	Stormwater reduction from current Urban/Developed areas	-49.9%	-63.0%
	Additional stormwater flow reduction from Urban/Developed areas to account for future growth	-13.1 %	
Load Allocation	Stormwater reduction from Agriculture/Open areas		-0.4%
Total Centennial Brook watershed stormwater flow reduction allocation at Q0.3%			-63.4 %

Due to BTV acquisition of houses for removal, BTV has one non-point source discharge (CN001) to Centennial Brook. Centennial Brook in turn drains to Lake Champlain. The discharge location is depicted on the Storm Sewer System Map contained in Appendix D. Discharge CN001 is located at the edge of the overflow parking area located at the north end of Airport Drive.

Flow Restoration Plan

BTV will work with the City of South Burlington during development and implementation of BTV's Flow Restoration Plan (FRP).

The following Flow Restoration Plan (FRP) development and implementation schedule will apply to BTV. Actual milestone dates are calculated from the date of issuance of an authorization to discharge to BTV under General Permit 3-9014 (2012) MS4.

- **Month 3** - BTV will submit a plan for approval for meeting the requirements of subsection IV.C.1(e)(7) (flow monitoring plan) by January 2, 2014.

- **Month 6** - BTV will submit a plan for approval for addressing expired state stormwater permits discharging to BTV's MS4 system by December 3, 2013. This plan may include a request to the Secretary to exercise its Residual Designation Authority (RDA) pursuant to Clean Water Act §§402(p)(2)(E) and (6) and 40 C.F.R § 122.26 (a)(9)(i)(C) and (D) to require NPDES permits for stormwater systems with expired state stormwater permits. BTV's plan for addressing the expired permits will insure that all permitted facilities demonstrate compliance with the existing expired permit, at a minimum, and insure that these facilities are incorporated into the FRP.

  The submitted plan will identify the process that BTV intends to use to meet the requirements of subsection IV.C.1 (development of FRP).

  As part of the April 1, 2014 submission, BTV will submit verification of implementation of flow monitoring, per subsection IV.C.1(e)(7).

- **Month 12** - BTV will submit a Semi-Annual Report by October 1, 2014 for VT. DEC review.

  The semi-annual report will provide information on the development and implementation of BTV's FRP. The report will address actions taken to implement all FRP components, including the extent of BMP implementation, an estimate of the extent of completion for remaining items, and an assessment of the ability to meet outstanding schedule items. The FRP report will include a written statement signed by a designer that any BMP built or implemented within the preceding 6 month period was constructed in compliance with the approved plans. BTV will include in each FRP report an estimate of any associated reductions in phosphorus loading that occur as a result of implementation measures undertaken by BTV to meet the flow reduction targets.

- **Month 18** - BTV will submit a Semi-Annual Report by April 1, 2015 for VT. DEC review.

  The semi-annual report will provide information on the development and implementation of BTV's FRP. The report will address actions taken to implement all FRP components, including the extent of BMP implementation, an estimate of the extent of completion for remaining items, and an assessment of the ability to meet outstanding schedule items. The FRP report will include a written statement signed by a designer that any BMP built or implemented within the preceding 6 month period was constructed in compliance with the approved plans. BTV will include in each FRP report an estimate of any associated reductions in phosphorus loading that occur as a result of implementation measures undertaken by BTV to meet the flow reduction targets.

  The semi-annual report will report the status of the BTV's development of the FRP, including a schedule for completion of the FRP.

- **Month 24** - BTV will submit a report by October 1, 2015 for VT. DEC review. The report will verify that all existing stormwater systems with expired permits are in compliance with the existing expired permit or subject to a NPDES RDA permit, including verification that all required maintenance has been performed.

  The MS4 General Permit (3-9014) requires that municipalities with small municipal separate storm sewer systems that discharge to stormwater impaired streams prepare Flow Restoration Plans (FRP) to meet the stormwater TMDLs and Water Quality Standards for those streams. As part of this process, BTV must submit plans for addressing those facilities with expired state stormwater permits discharging to their MS4 systems. BTV has two expired permits (#1-0839 & #1-1391). BTV may either request that the Secretary exercise Residual Designation Authority (RDA) and require NPDES permits for these facilities, **OR** they may incorporate ("take over") the expired facilities into their authorizations under the MS4 General Permit. A municipality's plan for addressing the expired permits must ensure that all permitted facilities demonstrate compliance with the existing expired permit, at a minimum, and ensure that these facilities will be incorporated into the FRP. BTV has chosen to incorporate the expired permits into their MS4 permit.

  A municipality may incorporate a facility with an expired permit into its authorization under the MS4 General Permit by updating its approved SWMP in accordance with Part IV.J.2 of the MS4 General Permit. Part IV. J.2 of the

permit, requires that the MS4 permittee notify the Secretary, in writing, of any changes adding components, controls, or requirements to the SWMP. The Stormwater Program will then prepare an MS4 Permit Amendment Form for the MS4 permittee to complete. The Program will review a completed form and, if the Program approves the changes, amend the municipality's authorization to discharge under the MS4 General Permit. The Program will provide notice of the Amendment Form and a public comment period of 30 days.

Facilities with expired permits may be incorporated into an authorization under the MS4 General Permit if, at a minimum, the system meets the standards of the expired permit. The municipality may also require that the system upgrade to comply with the 2002 Vermont Stormwater Management Manual.

A municipality shall add a new section in its SWMP for all expired state stormwater permits that it is taking over. See **Appendix G** for a listing of the permit name, permitted plans, and system status for BTV's expired Permit Nos. 1-0839 and 1-1391.

In February, 2013, BTV requested a credit from the South Burlington Stormwater Utility for many of its stormwater systems including BTV's expired Permit Nos. 1-0839 and 1-1391. As part of this submittal, all pertinent calculations were provided to support that both stormwater treatment practices (STP's) comply with the technical standards, sizing criteria, and/or restrictions stated in the Vermont Stormwater Management Manual, as amended. These calculations are being provided to the VT. DEC Stormwater Program for review as part of the MS4 amendment application dated September 30, 2015.

Going forward, BTV will report on the annual inspection and maintenance of both facilities in BTV's MS4 Annual Report, under *Minimum Control Measure 6, Good Housekeeping and Pollution Prevention.*

- **Month 30** - BTV will submit a Semi-Annual Report by April 1, 2016 for VT. DEC review.

  The semi-annual report will provide information on the development and implementation of BTV's FRP. The report will address actions taken to implement all FRP components, including the extent of BMP implementation, an estimate of the extent of completion for remaining items, and an assessment of the ability to meet outstanding schedule items. The FRP report will include a written statement signed by a designer that any BMP built or implemented within the preceding 6

month period was constructed in compliance with the approved plans. BTV will include in each FRP report an estimate of any associated reductions in phosphorus loading that occur as a result of implementation measures undertaken by BTV to meet the flow reduction targets.

- **Year 3** - BTV will submit a complete FRP by October 1, 2016 for VT. DEC review and approval.

  The Vermont Clean Water Act (Act 64) provides for MS4 communities to incorporate all operational Stormwater Discharge Permits under their MS4 Permit subsequent to the US EPA's authorization of the Lake Champlain TMDL. Required tasks are listed below:

  - Inspect and review the facilities to evaluate whether the systems were constructed and are operating and maintained, in accordance with the current permits.
  - Update the Stormwater Management Program (SWMP) including SWPPP to include the facilities as necessary.
  - Notify DEC's Stormwater Program (DEC) in writing of the changes, additions, and/or additional requirements to the SWMP.
  - Complete an MS4 Incorporation Form for State Issued Stormwater Permits. Completion of the form is required for each previously issued state operational Stormwater Discharge Permit that the MS4 plans to incorporate into the MS4 authorization. The stormwater management practices associated with the permit identified on the forms shall be listed in the MS4's Stormwater Management Program (SWMP) under Minimum Control Measure 5, Post-Construction Stormwater Management.
  - Submit a Designer's Statement of Compliance certification for each facility to ANR.
  - Submit an MS4 Notice of Intent - Amendment form as prepared by ANR.

  See Section 7.8 for a list of BTV's current operational stormwater permits proposed for incorporation into MS4 authorization September 30, 2016. These are contained in BTV's Semi-Annual Flow Restoration Report dated September 30, 2016, as well as listed here:

  - No. 3028-9010.A – BTV's Master Permit

- No. 3028-9010.2 – Taxiways ‘B’, ‘C’, ‘J’, and ‘G’ (Muddy Brook Watershed)
- No. 3028-INDS.AR – Taxiways 'B', 'C', 'J', and 'G' (Potash Brook Watershed)
- No. 3028-9010.1 – Reconstruct, Mark & Groove Runway 15-33
- No. 3845-9010 – Heritage Flight Aviation Campus Expansion
- No. 3028-9015.1 – Quarry Area Access Road
- No. 3028-INDS.3 – Aircraft Sewage Receiving Station
- No. 3028-9015.2 – Construct, Mark, and Light Taxiway ‘G’/’K’
- No. 3845-9015.1 – Heritage Aviation Parking Lot
- No. 3028-INDS.4 – BTV Consolidated Car Rental Facility

- **Month 42 and Every 6 Months Thereafter** - BTV will submit a Semi-Annual Report by April 1, 2017 for VT. DEC review.

  The semi-annual report will provide information on the development and implementation of BTV’s FRP. The report will address actions taken to implement all FRP components, including the extent of BMP implementation, an estimate of the extent of completion for remaining items, and an assessment of the ability to meet outstanding schedule items. The FRP report will include a written statement signed by a designer that any BMP built or implemented within the preceding 6 month period was constructed in compliance with the approved plans. BTV will include in each FRP report an estimate of any associated reductions in phosphorus loading that occur as a result of implementation measures undertaken by BTV to meet the flow reduction targets.

  BTV will continue to submit a Semi-Annual Report every six (6) months after April 1, 2017 for VT. DEC review.

- **Year 20** - BTV will complete implementation of the approved FRP by December 1, 2032.

2.2 *Discharges to Impaired Waters without an Approved TMDL*

BTV will comply with Part IV of General Permit 3-9014 (2012), and address in its SWMP and annual reports how any discharges that have the potential to cause or contribute to the impairment will be controlled so that they do not cause or contribute to the impairment.

BTV has one outfall discharging to Muddy Brook (DO18).

EPA approved Vermont’s 303(d) List of Waters dated May, 2014 in a letter to Commissioner Mears dated September 30, 2014. On page 7 of the letter, EPA

approved the delisting of Muddy Brook. Subsequently, the final 303(d) List was issued and dated September, 2014.

Part A of the newly issued 303(d) List indicates that only the '*Tributary #4 and Trib to Trib #4*' of Muddy Brook are impaired. These tributaries of Muddy Brook are currently listed due to their connectivity to the Commerce Street Plume, formerly Mitec Systems Corp. Previously, as identified in the 2010 303(d) List – Part A, Muddy Brook was impaired from the mouth to 7 miles upstream, as well as along an 'Unnamed Trib to Muddy Brook, below Alling Ind Park (2 Mi)'. Reference Waterbody ID's VT08-02-02 and VT08-02-03.

Muddy Brook is no longer listed as impaired, and therefore, MS4 requirements contained in this subsection no longer apply to BTV.

3 Public Education and Outreach (Minimum Measure #1)

The Burlington International Airport is a member of the Chittenden County Regional Stormwater Education Program (RSEP). The purpose of the RSEP is to educate the public on water quality issues and provide tips on how to keep pollutants out of stormwater. Please visit www.smartwaterways.org to learn more about how you can help improve water quality in Vermont.

For additional information on water quality issues in Burlington, please visit the following pages on the City of Burlington's website:

http://www.ci.burlington.vt.us/planning/cb/stormwater_management.html

http://www.dpw.ci.burlington.vt.us/stormwater/

These links, a link to the RSEP website, previous MS4 Annual Reports, and BTV's Stormwater Management Program are posted on the environmental page of the airport's website:

http://www.btv.aero/index.php/airport-guide/community-connection

4 Public Participation/Involvement (Minimum Measure #2)

BTV has implemented four (4) programs to encourage public participation and involvement in Vermont's water quality improvement efforts.

4.1 Chittenden County Stream Team

The Chittenden County Regional Planning Commission (CCRPC) has created the Chittenden County Stream Team (CCST). This Team has become the community outreach of the CCRPC related to stormwater issues. BTV is, and will continue to be, an active partner in the CCST mission.

Background Information:

In the fall of 2009, the MS4 communities began to explore a collaborative approach to fulfilling their Minimum Control Measure #2 (MCM) permit requirement. At the request of these MS4s, the Chittenden County Regional Planning Commission (CCRPC) applied for and received two grants totaling $22,500. Using these grants, CCRPC assisted the MS4s in developing a regional pilot project called the Chittenden County Stream Team (CCST). In its pilot year, CCST created a logo, launched a website and Facebook page, surveyed local residents, hosted a number of workshops, and completed a variety of local projects. The success of the pilot project lead to the formal adoption of the CCST program in 2011 by eleven of the MS4 communities including Burlington, South Burlington, Williston, Winooski, Shelburne, Milton, Essex, Essex Junction, the University of Vermont, VTrans and the Burlington Airport. The program was put out to bid and awarded to the Winooski Natural Resources Conservation District (WNRCD), a regional entity focused on natural resource protection and management. Under the guidance of the participating MS4s, the WNRCD completed a second successful year in fulfilling MCM2 requirement.

Current Status:

In 2012, the CCST template evolved to focus activities on three target towns per year. This year, they included Shelburne, Winooski, and Milton. A targeted approach aims to strengthen relationships in select areas and inspire greater involvement and capacity by volunteers. Similarly, they focused volunteer opportunities on four main categories in order to increase quality. They include: stream clean ups, Adopt-a-Rain Garden programming, water quality monitoring, and flow monitoring. Numbers of participants in activities were low in two of the targeted towns for 2012, Milton and Shelburne, though their participation in outreach was high. The time spent in 2012 doing much-needed outreach and cultivating community connections is paying off for the planning period of 2013 as they have already heard from a number of contacts in both Milton and Shelburne about an interest in partnering on stream

clean-ups, water quality monitoring and rain garden installations. Hence, they believe that town focus may be best achieved over a two-year rolling basis with the first year dedicated to general outreach and building connections and the second year allowing time to implement identified projects with a stronger volunteer base. Using this model, CCST would move into hands-on project phase with Milton and Shelburne in 2013 and increase outreach and community connections in Essex and Essex Junction in preparation for on-the-ground project implementation in those towns in 2014.

CCST Goals:

The program will engage citizens across an eight-town area in implementing programs to reduce non-point source pollution and stormwater volume at the local level to enable compliance by these MS4 permitees with MM#2. The program will utilize social networking tools to form a cadre of concerned citizens and professionals interested in hands-on activities to reduce the harmful effects of stormwater. The program will then organize a series of events and workshops to engage the Stream Team members and citizens at large in discussion and use of key Best Management Practices designed to address the negative effects of stormwater. The scope of services for the CCST is as follows:

1. <u>Regular Tasks:</u>
    - Maintain Facebook page with regular postings;
    - Maintain website with up to date information on stormwater related workshops and projects sponsored by CCST as well as other partners;
    - Recruit and maintain volunteers from member communities, recruit neighborhood leaders to help spread the word and build esprit de corps by articulating the mission and vision of CCST, staying in touch with volunteers and keeping it fun!
    - Organize quarterly Steering Committee meetings and communicate with members between meetings.
    - Build relationships with and leverage expertise from other organizations working on water quality issues (i.e. Friends of the Winooski, Winooski Natural Resources Conservation District, Lake Champlain Committee, Green Up Day, Lake Champlain Basin Program) including potential joint sponsorship of workshops and projects.

2. <u>Event-driven tasks</u>
    - Host a Spring kickoff event to get neighborhood leaders in touch with one another and excited about the upcoming field season;
    - Hold outreach events at spring farmers' markets or other spring/early summer events in three municipalities per year to continue to reach new volunteers;

- Complete three workshops or projects in each year with at least one event in each of the areas of the full members over the five year permit period;
- Provide guidance to volunteers on techniques and materials they can use to host their own projects or workshops.

3. Annual Tasks
    - Prepare an annual summary including the number of events, number of participants and other measureable quantities showing how CCST met the MM-#2 requirements that members can use in their annual reports to Vermont ANR.

4.2 Advertisement Space

BTV has designated advertisement space in the terminal building for public participation and involvement. Entities that can use the space include other traditional and non-traditional MS4 communities, the State of Vermont, the Lake Champlain Committee, Friends of the Winooski River, and any other groups dedicated to the storm water pollution prevention and water quality. In addition, a banner displaying the RSEP web address is hung in the baggage claim area.

4.3 Storm Drain Tagging Program

All publicly viewed storm drains have been tagged to inform the public as to where the drains lead to, and to discourage illegal dumping into the drains. The tags are inspected and replaced each year as necessary.

5 Illicit Discharge Detection and Elimination Plan (Minimum Measure #3)

As a permit condition, each MS4 must develop, implement and enforce a Stormwater Management Program (SWMP) designed to reduce the discharge of pollutants from the MS4, if it has not already done so. This section of the SWMP consists of a plan to detect and eliminate all illicit discharges at Burlington International Airport (BTV).

5.1 History

Burlington International Airport (BTV) completed a study to evaluate stormwater quality at outfall locations, evaluate existing stormwater discharge permits and establish a course of action for meeting State and Federal stormwater regulations. This study, entitled *Burlington International Airport Stormwater Management Study – Final Report*, was completed in December 2004, and is Volume 3 of the Stormwater Management Program.

As part of this study, a water quality monitoring program was undertaken by BTV to evaluate existing stormwater discharges at airport outfalls. The water quality monitoring program was undertaken from December 2002 to December 2003, and involved base flow and wet weather/storm event-based sampling. A total of ten individual sampling locations were designated at the various discharge points. Discharges sampled during the study included those occurring to Muddy Brook, a tributary to Potash Brook, and tributaries to the Winooski River. All outfall locations are shown on the Storm Sewer System Mapping contained in Appendix D. Sampling and analysis was conducted for hydrocarbons, trace metals, pathogens, sediment, nutrients and deicing products (urea, glycol). A total of three wet weather sampling events were conducted, representing fall/winter, spring, and summer. A second winter sampling event was conducted at the north end discharge point to evaluate discharge of deicing fluids. Dry weather sampling occurred during the fall/winter and summer.

The most significant result of the sampling program was the identification of deicing compounds or decay products at the north end outfall discharge to tributary of the Winooski River during the winter wet weather sampling event (December 2003). Elevated levels of propylene glycol, BOD_5, and COD were found, and attributed to a failure of the existing aircraft deicing pump system which directed aircraft deicing fluid to the South Burlington Airport Parkway Wastewater Treatment Facility. The airport implemented a temporary collection system for the remainder of the 2003-2007 winter seasons. A permanent underground aircraft de-icing fluid (ADF) treatment facility was constructed for the Main Terminal Apron and the NOTE2 Apron in 2007 and 2008. Two additional ADF treatment systems have been constructed since 2008 as well. The new, fully operational systems serve the Valley West Apron and the 890 Carge Ramp. Each of the three ADF treatment systems operate under Underground Injection Permits (UIC) and associated operational Stormwater Discharge Permits as noted below:

- UIC Permit No. 6-0075, Aircraft Deicing Fluid Treatment Facility, Main Terminal Apron and NOTE2.
- UIC permit #6-0084, South End Development, Phase 2 (Valley West Apron).
- UIC Permit #6-0117, Aircraft Deicing Fluid Treatment System, 890 Cargo Ramp.

At various sampling locations, elevated levels of ammonia nitrogen compounds were noted during certain sampling events during the 2002 – 2003 water quality monitoring program. These values were likely due to the use of urea as a surface deicer on runways and taxiways. The airport has discontinued use of urea and has relied solely on propylene glycol. Otherwise, the sampling results generally indicated slightly elevated levels of metals, sediment, nutrient and pathogens from the sampled discharge points. These values were generally consistent with, and on

the low end of the range of values typically observed from stormwater runoff from impervious surfaces. No significant detection of hydrocarbons was found at any of the sampling locations.

In addition to the illicit discharges discovered at the north outfalls, the study revealed that the rental car carwash facility was discharging to the storm drainage system. This was subsequently corrected by connecting the carwash discharge to the municipal sewer system.

5.2 Plan to Detect and Address Future Non-Storm Water Discharges

To evaluate the effectiveness of BTV's program, BTV has established an outfall monitoring schedule and illicit discharge elimination plan to protect the quality of water resources.

5.2.1 Outfall Monitoring Schedule

A monitoring schedule of BTV outfalls consisting of quarterly visual and smell tests, benchmark monitoring, and annual monitoring of outfalls to impaired waterways has been established, and is included in Volume 2 - Stormwater Pollution Prevention Plan (SWPP). All monitoring and reporting shall be conducted as outlined in the SWPP as provided in Volume 2.

5.2.2 Procedures for Tracking and Eliminating Illicit Discharges

Currently, all illicit discharges from BTV have been detected and eliminated. In the event future monitoring results reveal the presence of illicit discharges, BTV will establish a plan to track and eliminate the illicit discharge on a case-by-case basis.

5.3 Policy for Prohibiting Non-Storm Water Discharges

All non-stormwater discharges to the BTV storm sewer system other than those listed in Volume 2 – Stormwater Pollution Prevention Plan, Section 4 are strictly prohibited.

5.4 Outfall Monitoring Schedule

A monitoring schedule of BTV outfalls consisting of quarterly visual and smell tests, benchmark monitoring, and annual monitoring of outfalls to impaired waterways has been established, and is Volume 2 - Stormwater Pollution Prevention Plan, Section 7.

5.5 Staff and Tenant Training

BTV will conduct trainings annually to ensure that airport staff and tenants are following all rules and regulations. New employees will be trained within two weeks of hire. Topics included in the employee training are included in Volume 2 - Stormwater Pollution Prevention Plan, Section 6.2.

Construction Site-Runoff Control Plan (Minimum Measure #4)

As a permit condition, each MS4 must develop, implement and enforce a Stormwater Management Program (SWMP) designed to reduce the discharge of pollutants from the MS4, if it has not already done so. This section of the SWMP consists of a plan to prevent or reduce pollutants in construction site runoff.

5.6 Construction Site Runoff Control Policy

5.6.1 Introduction

All projects that result in earth disturbance at Burlington International Airport (BTV), with the exception of maintenance projects, are required to seek coverage under Construction General Permit (CGP) 3-9020(2008) or an Individual Construction Permit. The following procedures shall be used by airport staff, designers, contractors, or anybody else who is proposing to disturb earth, to ensure that all construction projects at BTV employ proper erosion prevention and sediment control (EPSC) practices, and are properly designed and permitted. Implementing these procedures will ensure that surface water pollution from construction site runoff at BTV is minimized. Failure to implement these procedures may lead to enforcement actions against BTV and other parties that maintain co-permittee status for state issued construction site runoff permits.

This policy was developed to satisfy the requirements of the Vermont Agency of Natural Resources (ANR) Small Municipal Separate Storm Sewer Systems (MS4) General Permit.

All documents referenced in the following procedure are contained in Appendix A.

5.6.2 Preliminary Reporting Procedures

The following steps describe the Preliminary Reporting Procedure that shall be completed before any earth disturbance activity occurs at Burlington International Airport. These steps are necessary to meet the reporting requirements set forth in the MS4 General Permit.

STEP 1: Complete the EPSC Project Summary Form

STEP 2: Prepare EPSC Project Summary Letter

STEP 3: Submit EPSC Project Summary Letter and Form to BTV Engineer for review

STEP 4: Submit EPSC Project Summary Letter and Form to ANR (Jurisdictional Projects only)

For "jurisdictional" projects, the Preliminary Reporting Procedure must be completed no less than 90 days prior to construction. For routine maintenance activities ("non-jurisdictional" projects), the Preliminary Reporting Procedure must be completed prior to the start of the project. The BTV Engineer has the right to waive the Preliminary Reporting Procedure for maintenance projects that require immediate attention.

Upon completion of the Preliminary Reporting Procedure, the following Construction Site Runoff Control Procedures shall be followed based on the type of project, "non-jurisdictional" or "jurisdictional", as determined from the EPSC Project Summary Form completed in STEP 1.

5.6.3 Construction Site Runoff Control Procedures

5.6.3.1 Non-Jurisdictional Projects (Maintenance Activities)

Earth disturbance that is a normal part of the long-term use or maintenance of airport property (e.g. pipe and structure repairs, dirt road regrading, routine road and/or runway resurfacing) does not require coverage under the CGP-3-9020(2008) or Individual Construction Permit. The practices included in the *The Low Risk Site Handbook for Erosion Prevention and Sediment Control* shall be implemented when necessary and as directed by the BTV Engineer.

5.6.3.2 Jurisdictional Projects

All earth disturbances that are not considered maintenance activities will require coverage under the CGP-3-9020 or an Individual Construction Permit. A Risk Evaluation (Appendix A of CGP-3-9020 (2008)) must be completed to determine if the proposed activities constitute Low-risk construction activities, Moderate-risk construction activities, or construction activities that require an Individual Permit.

Low-Risk

For projects that are determined to be Low-Risk the following procedure shall be followed. Earth disturbances covered under the following procedure shall also comply with the general conditions outlined in the Construction General Permit and the project specific conditions outlined in the Authorization issued by ANR. In the event of a conflict, the permit conditions shall take precedent over the following procedure.

STEP 1: No less than 70 days prior to Contract Plans Submittal, the following shall be submitted to the BTV Engineer for review and approval:

- CGP-3-9020(2008) Notice of Intent (NOI)
- Risk Evaluation (Appendix A of CGP-3-9020)

These forms shall be completed in accordance with Part 2 of CGP-3-9020(2008).

STEP 2: No less than 60 days prior to bid letting and upon approval by the BTV Engineer, the NOI, Appendix A, and the application fee shall be submitted to ANR. A copy of the NOI shall be submitted to the South Burlington City Clerk and a copy of the entire submittal shall be submitted to the BTV Engineer.

STEP 3: Upon issuance of Authorization from ANR, the following shall be included in the Contract Documents:

- Erosion Prevention and Sediment Control Plan Specification
- Completed Notice of Intent
- Completed Risk Evaluation (Appendix A of CGP-3-9020)
- ANR's authorization
- Notice of Addition of Co-Permittee
- Discharge Report

STEP 4: Once the contract has been awarded, the following shall be submitted to the BTV Engineer for approval. Upon approval, the information shall then be submitted to ANR:

- Completed Notice of Addition of Co-Permittee, if necessary, in accordance with Part 7.2 of CGP-3-9020.

- Contact information and qualifications of the On-Site Coordinator

- Any risk re-evaluations, permit amendments, NOI forms, fees, EPSC plans, etc. that are required as a result of “minor” or “major” changes to the project as defined in Part 5 of CGP-3-9020(2008).

STEP 5: During construction, the On-Site Coordinator shall implement all applicable erosion prevention and sediment control measures and conduct site inspections in accordance with *The Low Risk Site Handbook for Erosion Prevention and Sediment Control* and Part 6.1 of CGP-3-9020(2008).

STEP 6: Upon final, permanent stabilization of the construction site, all temporary erosion prevention and sediment control measures shall be removed.

Moderate-Risk

For projects that are determined to be Moderate-Risk the following procedures shall be followed. Earth disturbances covered under the following procedure shall also comply with the general conditions outlined in the Construction General Permit and the project specific conditions outlined in the Authorization issued by ANR. In the event of a conflict, the permit conditions shall take precedent over the following procedure.

STEP 1: No less than 70 days prior to Contract Plans Submittal, the following shall be submitted to the BTV Engineer for review and approval:

- CGP 3-9020 Notice of Intent (NOI)

- Risk Evaluation (Appendix A of CGP-3-9020)

- Erosion Prevention and Sediment Control Plan

- EPSC Plan Summary Forms

The NOI and Appendix A forms shall be completed in accordance with Part 3 of CGP-3-9020(2008). The EPSC Plans shall be developed in accordance with Part 4 and Appendix B of CGP-3-9020(2008).

STEP 2: No less than 60 days prior to bid letting and upon approval by the BTV Engineer, the NOI, Appendix A, EPSC Plans and Summary Forms, and the application fee shall be submitted to ANR. A copy of the NOI shall be submitted to the South Burlington City Clerk and a

copy of the entire submittal shall be submitted to the BTV Engineer. The BTv Engineer shall file the submittal in the BTV records.

STEP 3: Upon issuance of Authorization from ANR, the following shall be included in the Contract Documents:

- EPSC Plan sheets
- *Erosion Prevention and Sediment Control Plan Specification*
- Completed CGP 3-9020(2008) Notice of Intent (NOI)
- Completed Risk Evaluation (Appendix A of CGP-3-9020(2008))
- ANR's authorization
- Notice of Addition of Co-Permittee
- Notice of Termination of Co-Permittee
- Notice of Termination for Portions of Ongoing Project
- Notice of Termination for Entire Project
- Notice of Winter Construction
- Notification of On-Site Plan Coordinator
- Minor Amendment Record
- Inspection Record
- Discharge Report

STEP 4: Once the contract has been awarded, the following shall be submitted to the BTV Engineer for approval. Upon approval, the information shall then be submitted to ANR:

- Completed Notice of Addition of Co-Permittee, if necessary, in accordance with Part 7.2 of CGP-3-9020(2008).
- Contact information and qualifications of the On-Site Coordinator
- Any risk re-evaluations, permit amendments, NOI forms, fees, EPSC plans, etc. that are required as a result of "minor" or "major" changes to the project as defined in Part 5 of CGP-3-9020(2008).

STEP 5: During construction, the On-Site Coordinator shall be responsible for ensuring that all applicable erosion prevention and sediment control measures are implemented and site inspections are conducted in accordance with the EPSC Plans, the EPSC Specification, ANR's Authorization, and Parts 6.2 – 6.5 of CGP-3-9020(2008).

STEP 6: Upon final, permanent stabilization of the construction site, all temporary erosion prevention and sediment control measures shall be removed, and a completed Notice of Termination shall be submitted to the BTV Engineer for approval. Upon approval, the Notice of Termination shall be sent to ANR.

Individual Construction Permit

An Individual Construction Stormwater Discharge Permit is required when a project scores out of the low and moderate risk classification in Appendix A or as required by the Secretary of ANR. It is a customized permit for discharges of stormwater from construction activities specifically tailored to the proposed construction project, and typically includes additional protective measures (e.g. the requirement for oversight by an Environmental Specialist and likely turbidity monitoring). Unlike a General Permit, which has already been through a public comment and appeal process, all Individual Permits require a 30-day public comment period and have a 30-day appeal period once they are issued.

The application process for an Individual Permit is similar to that of the CGP-3-9020(2008). Instead of a Notice of Intent, a Permit Application Form is filed, accompanied by an Erosion Prevention and Sediment Control Plan. The same general procedure described under Moderate Risk shall be employed.

5.7 Temporary Erosion Prevention and Sediment Control Specification

Technical Specification P-156 Temporary Erosion Prevention and Sediment Control shall be included in all construction contracts that have coverage under General Permit 3-9020(2008). Appendix C contains Technical Specification P-156.

5.8 Proper Disposal of Removed Waste

Procedures for proper disposal of removed waste are included in Volume 2 - Stormwater Pollution Prevention Plan.

6 Post-Construction Runoff Control Plan
(Minimum Measure #5)

As a permit condition, each MS4 must develop, implement and enforce a Stormwater Management Program (SWMP) designed to reduce the discharge of pollutants from the MS4, if it has not already done so. This section of the SWMP consists of a plan to prevent or reduce pollutants in runoff from post-construction sites.

6.1 Operations/Maintenance for Pollution Prevention and Reduction

Source protection best management practices (BMPs) have been implemented at BTV to prevent (preferable) or control pollutants in stormwater discharges from the site. Source protection BMPs are included in Volume 2 - Stormwater Pollution Prevention Plan, Section 5.

6.2 Compliance with ANR Stormwater Regulations

As part of the SWMP, the following procedures were developed to ensure compliance with ANR Stormwater regulations by identifying projects that require an operational stormwater discharge permit, and reporting these projects to the Secretary of ANR. All documents required for these procedures are contained in Appendix B.

1. Complete Post-Construction Site Runoff Control Project Summary Form

2. Select flowchart based on the Receiving Water for the project.

3. Determine if permit coverage is required from the selected flowchart using the information on the Summary Form.

4. If permit coverage is required, send the Post-Construction Site Runoff Control Project Summary Letter with the Summary Form and shaded plan sheets attached to the ANR Regional Environmental Analyst requesting determination of permit coverage required. Note that completion of the Summary Form will auto-fill values to be included in the Summary Letter.

Failure to properly report projects that require an operational stormwater discharge permit may lead to enforcement actions against BTV.

6.3 Best Management Practices for Projects that do not Require Permit Coverage

For all projects disturbing one (1) acre of land or more, but do not require an operational stormwater permit, nonstructural and vegetative best management

practices shall be employed in conformance with Section 5.0 of the "Burlington Guidelines for Stormwater Pollutant Reduction".

6.4 Stormwater Management System Certification

Specification D-755: Permitted Stormwater Management System Certification shall be included in all construction contracts that have permit coverage for operational stormwater management systems. This specification requires that a Professional Engineer inspect the stormwater management system to ensure compliance with the contract plans and specifications and the stormwater discharge permit issued for the project.

Appendix C contains Technical Specification D-755.

6.5 Inspection and Maintenance of Long Term Structural Best Management Practices

All permitted long-term structural best management practices (BMPs) at BTV will be inspected in accordance with the terms of the permit. All permits issued to BTV are contained in Appendix E. A master schedule summarizing inspection, maintenance and reporting requirements is also included as the first page of Appendix E. An operations and maintenance manual along with inspection, maintenance and reporting procedures are included for each permit. Operations and Maintenance Manuals are contained in Appendix F. Failure to comply with the inspection, maintenance and reporting schedule and procedures may lead to enforcement action against BTV.

6.6 Proper Disposal of Removed Waste

See Section 6.3.

6.7 Storm Sewer System Mapping

A comprehensive storm sewer system map of the airport was developed that shows locations of all outfalls and names and locations of receiving waters. The original comprehensive map is contained in Volume 3 - Stormwater Management Study, December 2004.

This mapping has been updated to include new development at the airport through September 30, 2016. Electronic files of the mapping are maintained to be compatible with Geographic Information System (GIS) software. The files will be updated once a year to include new developments or information. Appendix D contains a hard copy of the updated mapping. Electronic files are available upon request.

6.8 Current Operational Stormwater Permits

Following is a list of BTV's current operational stormwater permits proposed for incorporation into MS4 authorization September 30, 2016.

- No. 3028-9010.A – BTV's Master Permit
- No. 3028-9010.2 – Taxiways 'B', 'C', 'J', and 'G' (Muddy Brook Watershed)
- No. 3028-INDS.AR – Taxiways 'B', 'C', 'J', and 'G' (Potash Brook Watershed)
- No. 3028-9010.1 – Reconstruct, Mark & Groove Runway 15-33
- No. 3845-9010 – Heritage Flight Aviation Campus Expansion
- No. 3028-9015.1 – Quarry Area Access Road
- No. 3028-INDS.3 – Aircraft Sewage Receiving Station
- No. 3028-9015.2 – Construct, Mark, and Light Taxiway 'G'/'K'
- No. 3845-9015.1 – Heritage Aviation Parking Lot
- No. 3028-INDS.4 – BTV Consolidated Car Rental Facility

7 Pollution Prevention and Good Housekeeping Plan
(Minimum Measure #6)

As a permit condition, each MS4 must develop, implement and enforce a Stormwater Management Program (SWMP) designed to reduce the discharge of pollutants from the MS4. This section of the SWMP consists of a plan to ensure pollution prevention and good housekeeping.

7.1 Operations/Maintenance for Pollution Prevention and Reduction

See Section 7.1.

7.2 Inspection and Maintenance of Long Term Structural Best Management Practices

7.2.1 Existing Best Management Practices

Operations and Maintenance Manuals contained in Section F are to be used to inspect, maintain and operate the structural BMPs on site that are listed in Volume 2 – Stormwater Pollution Prevention Plan, Section 5.5.

Inspection and maintenance procedures are included in the O&M manual for each BMP. A master schedule of inspection and reporting to ANR for each BMP in accordance with applicable permit conditions has been included as Appendix E of this SWMP. Failure to conduct scheduled inspections and report inspection results to ANR may lead to enforcement action against BTV.

Source protection, area specific and site-wide BMPs and procedures for spill response and vehicle/equipment washing are included in Volume 2 – Stormwater Pollution Prevention Plan, Section 5.

7.2.2 Future Best Management Practices

Operations and maintenance manuals must be provided by the design engineer for all future structural long-term BMPs constructed at BTV. The design engineer shall also be responsible for updating the master inspection and reporting schedule to include inspection/reporting requirements for the new BMP.

7.3 Proper Disposal of Removed Waste

Procedures for proper disposal of removed waste are included in Volume 2 - Stormwater Pollution Prevention Plan.

7.4 Staff and Tenant Training

See Section 5.5.

7.5 Storm Sewer System Mapping

See Section 6.7.

Appendix A Construction Site Runoff Control Policy Documentation

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Appendix B Post-Construction Runoff Control Plan Documentation

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October 3, 2016

Vermont Department of Environmental Conservation
Watershed Management Division
Stormwater Management Program
One National Life Drive, Main 2
Montpelier, VT 05620-3522

Reference: Burlington International Airport –

As a requirement of the Municipal Separate Storm Sewer System (MS4) General Permit, the Vermont Agency of Natural Resources is hereby notified that the above referenced project at the Burlington International Airport is proposed for construction. The project will consist of 0 acres (0 square feet) of expanded impervious area, 0 acres of redeveloped impervious area, and 0.00 acres of total impervious area. The project is located in the XXX watershed. The attached Project Summary Form provides a brief description of the project, and summarizes the project impervious areas that were used to determine permit coverage requirements.

Please advise on the need for either a General or Individual Discharge Permit for this project. If a permit is required, the appropriate Notice of Intent form and all necessary supporting documentation will be submitted to the Water Quality Division. Construction will not occur until authorization has been received by the Water Quality Division. If you have any questions or require additional information, please contact me.

Sincerely,

Burlington International Airport

Amanda Clayton, P.E.
Director Engineering and Environmental Compliance
Burlington International Airport
Tel: (802) 863-2874 x204
cell: (802) 338-8106
aclayton@btv.aero

Attachment: Project Summary Form

c.

Created on: April 13, 2007
Revised: September 30, 2016

Post-Construction Site Runoff Control
Project Summary Form

Date: October 3, 2016

Project:

A. What is the name of the receiving water(s)?

B. When was the Existing Impervious Surface created? (mm/dd/yyyy)

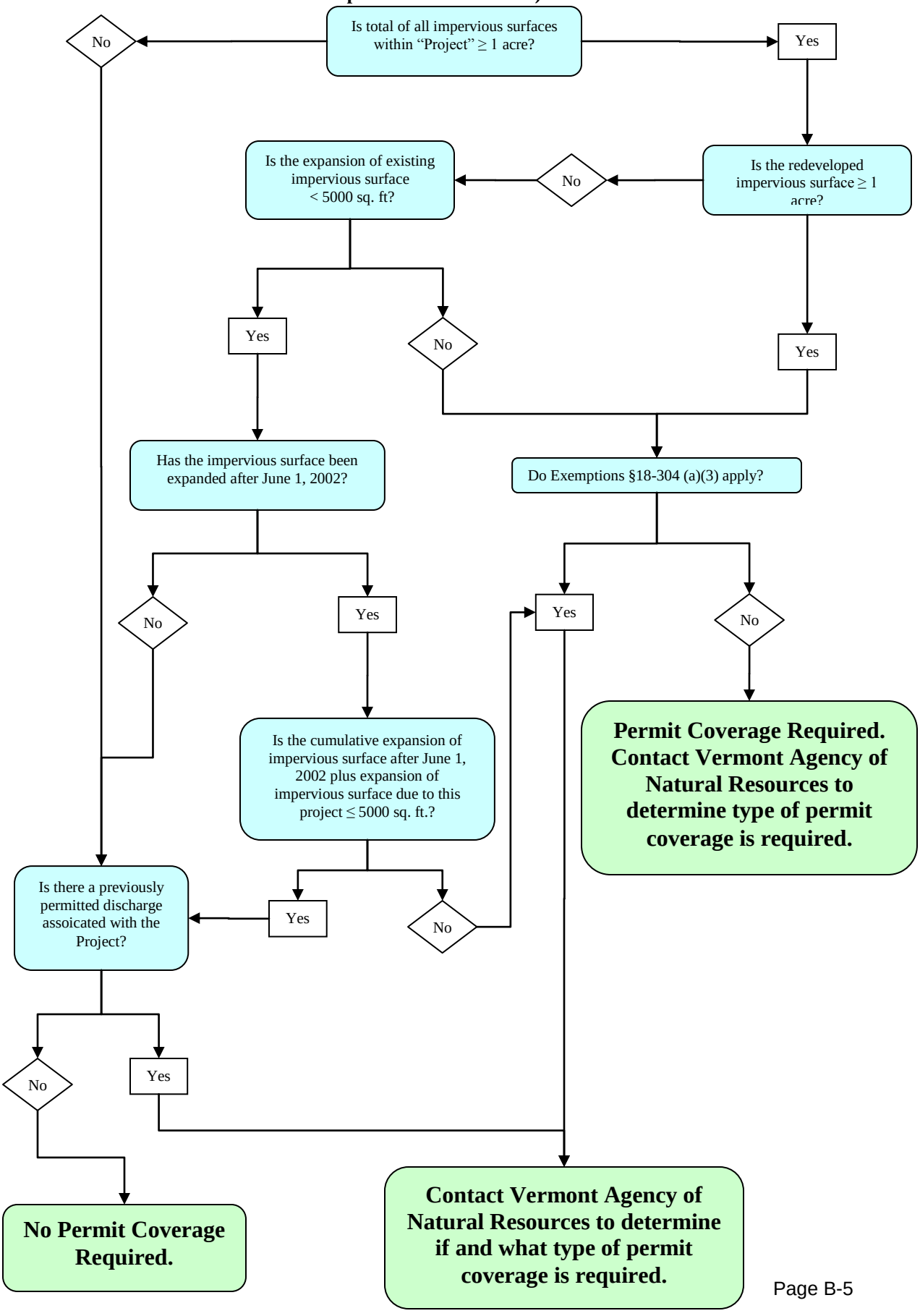
C. What is the Total Cumulative expansion of Existing Impervious Surface after June 1, 2002?
sq. ft

D. Calculate types of resulting post-construction impervious surface within the Project **(provide shaded plan sheet depicting areas below)**;

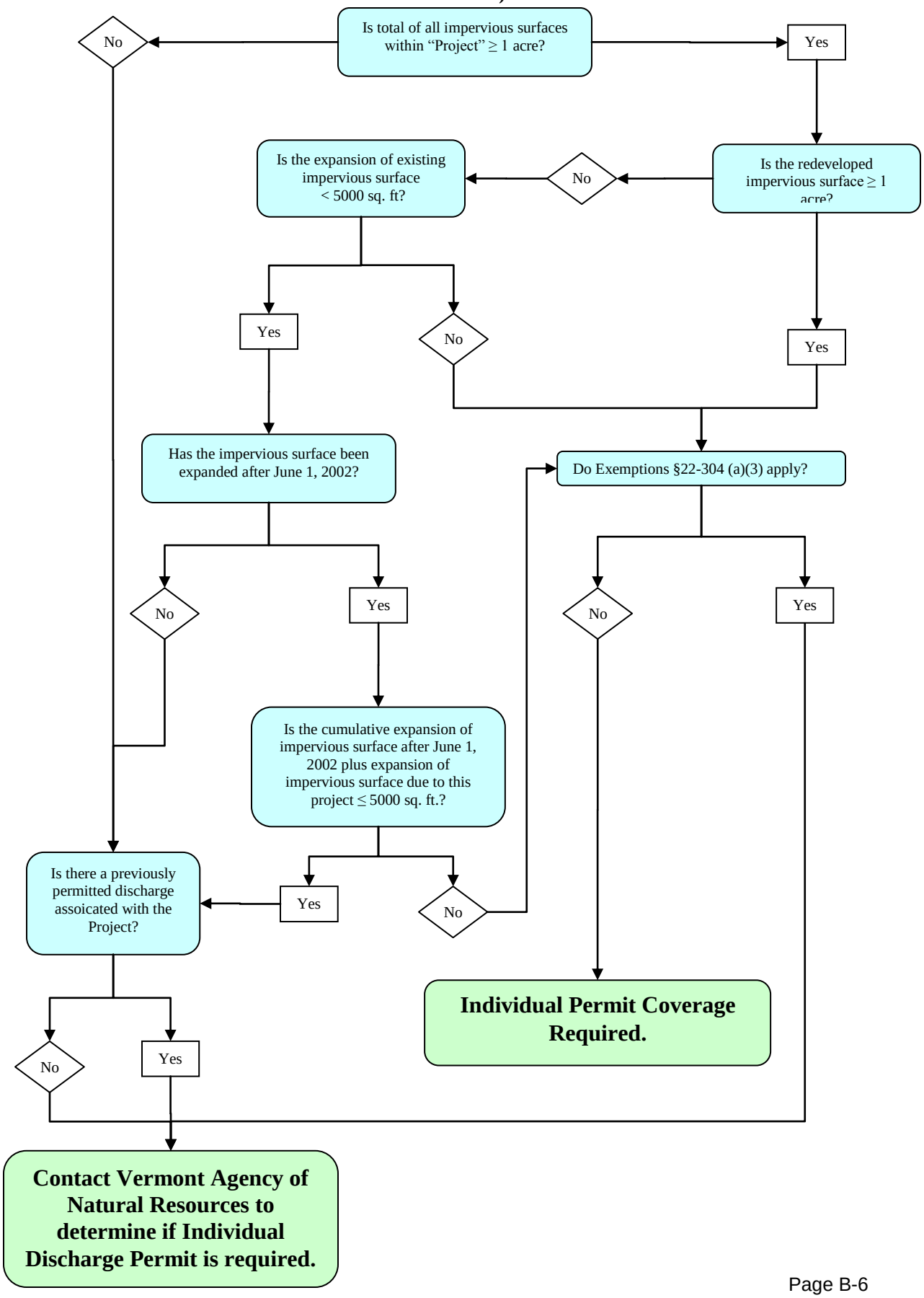
E.1 Expansion of Existing Impervious Surface	_____ acres
E.2 Redevelopment of Existing Impervious Surface	_____ acres
E.3 Impervious surface that is not expansion or redevelopment	_____ acres
E.4 Total of all impervious surfaces	0.00 acres

Created on: April 13, 2007
Revised:

Flowchart for Determining Need for Stormwater Discharge Permit Coverage for Projects Discharging to the Unnamed Tributary to the Winooski River Watersheds (Post-Construction Operational Stormwater)



Flowchart for Determining Need for Stormwater Discharge Permit Coverage for Projects Discharging to Muddy Brook or Potash Brook Watersheds (Post-Construction Operational Stormwater)



Appendix C Technical Specifications P-156 and D-755

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Appendix D Storm Sewer System Mapping

Appendix revised on September 30, 2016

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Stantec

Stantec Consulting Services Inc.
55 Green Mountain Drive
South Burlington VT U.S.A.
05403
Tel. 802.864.0223
Fax. 802.864.0165
www.stantec.com

Consultants

BURLINGTON INTERNATIONAL AIRPORT

Legend

- BTV APPROXIMATE PRINCIPAL BOUNDARY
- APPROXIMATE LEASE LINE(S) TO FEDERAL GOVERNMENT
- BTV APPROXIMATE RUNWAY SAFETY AREA

Notes

NOTES;

1. PROPERTY LINES SHOWN ARE FROM GIS MAPPING AND HAVE BEEN MODIFIED SLIGHTLY TO BETTER DEPICT THE BOUNDARY OF THE BURLINGTON INTERNATIONAL AIRPORT.

2. DUE TO SOME DISTORTION IN THE PHOTOGRAPH BASE, SOME GIS PROPERTY LINES MAY NOT FIT THE PHYSICAL FEATURES SHOWN IN THE PHOTO.

3. A BASE PHOTO, FROM THE AUTUMN OF 2011, HAS BEEN USED AS A BASIS OF CALCULATING IMPERVIOUS AREAS. THE PHOTO DID NOT ADEQUATELY COVER THE AREA SHOWN BETWEEN AIRPORT PARKWAY AND THE WINOOSKI RIVER, THEREFORE, A PHOTO FROM 2006 HAS BEEN STITCHED IN TO SHOW THAT AREA.

4. THE DRAINAGE SYSTEM MAPPING SHOWN ON THIS DRAWING WAS ORIGINALLY PREPARED IN 1997 BY DONALD L. HAMLIN CONSULTING ENGINEERS, INC. THE HAMLIN DRAINAGE SYSTEM MAPPING WAS UPDATED BY STANTEC TO REFLECT NEW IMPROVEMENT PROJECTS COMPLETED THROUGH APRIL, 2013 AND A PARTIAL FIELD SURVEY PERFORMED IN THE SUMMER AND FALL OF 2011. THE UPDATED MAPPING DOES NOT INCLUDE DRAINAGE SYSTEM INFORMATION FOR THE ARMY AVIATION SUPPORT FACILITY LOCATED AT THE NORTH END OF THE AIRPORT.

Supplemental Legend

DRAINAGE DISCHARGE POINT

- AP__ FINAL DISCHARGE TO UNNAMED TRIBUTARY OF THE WINOOSKI RIVER
- CN__ NON-POINT SOURCE DISCHARGE TO CENTENNIAL BROOK
- D__ FINAL DISCHARGE TO MUDDY BROOK
- MU__ INTERNAL DISCHARGE TO MUDDY BROOK
- NG__ ALONG NATIONAL GUARD AVENUE
- PO__ TO POTASH BROOK
- Q__ TO UNNAMED TRIBUTARY OF WINOOSKI RIVER
- SW__ TO SO. BURLINGTON MUNICIPAL SEWER SYSTEM
- DO__ STORMWATER DISCHARGE SAMPLING POINT

BMP (BEST MANAGEMENT PRACTICE)

- BMP__ STORMWATER DETENTION BASIN
- BMP__ STORMWATER INFILTRATION CHAMBER
- BMP__ OIL/GREASE SEPARATOR
- BMP__ EXFILTRATING SAND FILTER
- BMP__ SWIRL CONCENTRATOR DEVICE

PPS (POSSIBLE POLLUTION SOURCE)

- PPS__ CONTAMINANT STORAGE
- PPS__ AIRCRAFT DE-ICING
- PPS__ GAS/FUEL PUMP OR STORAGE
- PPS__ OLD EQUIPMENT STORAGE
- PPS__ MATERIAL STOCKPILE LOCATION

35 BUILDING NUMBER, SEE TABLE 1 OF REPORT

DRAINAGE MANHOLE

DRAINAGE MANHOLE (NOT BTV RESPONSIBILITY)

CATCH BASIN

CATCH BASIN (NOT BTV RESPONSIBILITY)

S1.040.0 DRAINAGE STRUCTURE NUMBER

DIRECTION OF FLOW

0 200' 400'

Revision		By	Appd.	YY.MM.DD
6	FRP SUBMISSION	DDH	DMC	16.10.01
5	MINOR DRAWING CHANGES; UPDATE PERMIT NOS.	DDH	DMC	16.04.01
4	MS4 AMENDMENT FOR EXPIRED PERMITS	DDH	DMC	15.09.30
3	MINOR DRAWING CHANGES	DDH	DMC	15.04.01
2	UPDATE STRUCTURES, ADD SEWAGE STATION	DDH	DMC	14.04.01

Issued — By — Appd. — YY.MM.DD

File Name: Drainage Permit Map – 2013.dwg	Dwn.	Chkd.	Dsgn.	YY.MM.DD
	DDH	DMC	DMC	12.04.01

Permit-Seal

Client/Project

CITY OF BURLINGTON
BURLINGTON INTERNATIONAL AIRPORT

Title

MULTI - SECTOR GENERAL PERMIT (MSGP) SITE DRAINAGE MAP

Project No. 195310744

Scale 1" = 200'

Drawing No. 1

Sheet 1 of 1

Revision 6

Appendix E Master Inspection and Reporting Schedule for Long Term BMPs and All Previously Issued Permits

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Appendix F Operations and Maintenance (O&M) Manuals

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Appendix G Expired Stormwater Permits (Permit Nos. 1-1089 and 1-0839)

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APPENDIX E
SWMP – VOLUME 2 (SWPPP)

Burlington International Airport Stormwater Pollution Prevention Plan (SWPPP)

MSGP 3028-9003

Prepared for:

Burlington International Airport
South Burlington, Vermont

Prepared by:

Stantec Consulting Services, Inc.
55 Green Mountain Drive
South Burlington, VT 05403

April 1, 2012 and as amended
September 30, 2016

Table of Contents

1.0 INTRODUCTION

This Stormwater Pollution Prevention Plan (SWPPP) covers the operations at Burlington International Airport (BTV), located at 1200 Airport Drive #1, South Burlington, Vermont. It has been developed as required under Vermont's Multi-Sector General Permit (General Permit 3-9003). This SWPPP describes the BTV facility and its operations, develops an inventory of potential pollutant sources (PPS's), identifies controls and best management practices (BMP's) for reducing the discharge of pollutants in stormwater runoff, and outlines measures for implementing and reviewing this plan.

BTV's SWPPP, including site map and listing of Best Management Practices (BMP's), were updated in September 2016 for the following reasons:

- To include information regarding the Flow Restoration Plan (FRP) as required under BTV's Municipal Separate Storm Sewer System (MS4) General Permit 3-9014.
- To add information regarding Centennial Brook, a stormwater impaired watershed located within BTV's MS4 project area.

Construction projects at BTV for the 2015 reporting year include the following:

- Construct, Mark, and Light Taxiway G/K, Phase 1
- Rehabilitate a Portion of Terminal Apron, Phase 2
- Heritage Aviation Parking Lot Reconstruction
- Marcelino Project: Material to be removed from Marcelino Property and placed in the Airport Quarry.
- Housing Removal on Airport-Acquired Land.

Multi-Sector General Permit (MSGP) #3028-9003 was re-authorized on August 4, 2011.

A Notice of Intent (NOI) for coverage under the NPDES Multi-Sector General Permit (MSGP) 3-9003 for Stormwater Discharges Associated with Industrial Activity was submitted to the Vermont Agency of Natural Resources (VT ANR) for BTV on August 18, 2011. BTV was previously authorized under Permit Number 3028-9003 on December 4, 2006 which expired on August 18, 2011.

General Permit 3-9014 (2012) for Stormwater Discharges from Small Municipal Separate Storm Sewer Systems (MS4) was issued by VT ANR on December 5, 2012. A Notice of Intent (NOI) for coverage under the NPDES General Permit 3-9014 (2012) MS4 was submitted to the VT ANR for BTV on May 31, 2013. Authorization for coverage under General Permit 3-9014 (2012) MS4 was issued on October 1, 2013.

Update of the Stormwater Management Program (SWMP) was a requirement of the NOI submission for General Permit 3-9014 (2012) MS4. The updated SWMP was dated June, 2013. The updated SWMP was submitted to VT ANR for review along with the MS4 NOI. Primary revisions to the SWMP included development of a Flow Restoration Plan as required under the newly authorized General Permit 3-9014 (2012) MS4.

The Stormwater Management Program (SWMP), Volume 1, was updated September 30, 2015 as part of a Notice of Intent for General Permit 3-9014 (2012) MS4 Amendment to incorporate expired Permit Nos. 1-0839 and 1-1391 into MS4 authorization. Volume 1 updates included new information on the Flow Restoration Plan, revisions to the Storm Sewer Mapping, and documentation of the expired permits.

The SWMP Volume 1 was updated again September 30, 2016 as part of a new NOI for General Permit 3-9014 (2012) MS4 Amendment to include new information on the Flow Restoration Plan, new information on stormwater-impaired Centennial Brook, revisions of the site drainage mapping, and documentation to incorporate ten (10) existing Operational Stormwater Permits into MS4 authorization.

This SWPPP includes the inactive quarry formerly operated by SD Ireland on airport property. However, this SWPPP does not include the portions of the airport that are currently leased by the Army National Guard and the Air National Guard, as these entities have submitted separate SWPPPs for their own operations.

2.0 POLLUTION PREVENTION TEAM

The Pollution Prevention Team (PPT) will be in charge of developing, implementing, and revising the SWPPP and ensuring that it is in compliance with the general permit.

Leader: Gene Richards III Office Phone: (802) 863-2874

Title: Director of Aviation

Cell Phone: (802) 434-9909

Responsibilities:

- Identify potential pollutant sources and risks
- Conduct annual compliance evaluation
- Perform routine inspections
- Coordinate monitoring tasks, including quarterly visual monitoring, benchmark monitoring, and annual effluent limitation monitoring
- Report and record keeping
- Establish pollution prevention team
- Coordinate initial site assessment
- Identify potential pollutant sources and risks
- Conduct employee training
- BMP Maintenance

- Evaluate the effectiveness of the designated BMP's and SWPPP on a regular basis
- Modify the SSWPPP as dictated by site activities and conditions

Member: Jon B. Leinwohl, P.E. Office Phone: (802) 864-0223

Title: Professional Engineers Cell Phone: (802) 734-0446

Responsibilities:

- Identify potential pollutant sources and risks
- Coordinate initial site assessment
- Modify the SSWPPP as dictated by site activities and conditions
- Coordinate monitoring tasks, including quarterly visual monitoring, benchmark monitoring, and annual effluent limitation monitoring
- Conduct annual compliance evaluation
- Perform routine inspections

3.0 SITE DESCRIPTION

3.1 FACILITY INFORMATION

Street Address: 1200 Airport Drive, #1

City: South Burlington State: VT Zip: 05403

Latitude: 44° 28' 08" Longitude: 73° 09' 17"

SIC Code(s): 4581 MSGP Sector: S

Phone: (802) 863 - 2874 Fax: (802) 863-7947

E-mail: grichards@btv.aero

3.2 NARRATIVE SITE DESCRIPTION

BTV consists of the airport terminal, runways, taxiways, parking areas, aircraft storage and maintenance buildings, airport businesses, operations, and storage facilities. This area has undergone changes in recent years, including runway and taxiway expansion, South End Development, Heritage Flight Campus Expansion, and related stormwater improvements.

Total site area in acres: BTV is approximately 942 acres in size.

BTV is operational 24 hours per day, 365 days per year. Deicing occurs on a seasonal basis, ranging from approximately October 15 through April 15, depending on weather conditions.

Maintenance activities include aircraft cleaning, janitorial services, aircraft service and repair, vehicular maintenance, material handling, deicing of aircraft, and deicing of runways, taxiways, ramps and aprons.

There are thirty-four (34) buildings located within the BTV site. See the attached plan entitled *Burlington International Airport, Multi-Sector General Permit (MSGP) Site Drainage Map* dated April 1, 2012 with revisions dated April 1, 2013, April 1, 2014, April 1, 2015, and April 1, 2016 for locations of all buildings, BMP's and PPS's.

Constructed during 2013, the new Aircraft Sewage Receiving Station building is listed as Building No. 36 (note that two sheds, buildings 20 and 21, have been removed – the total number of buildings is 34). The new Aircraft Sewage Receiving Station building is physically located at 1148 Airport Drive, South Burlington, VT.

The table presented below provides a description and a corresponding function of each building.

Table 1: Airport Buildings

Bldg No.	Building Name	Building Function
01	Parking Garage	Passenger parking for vehicles
02	Rental Car (Hertz)	Car detailing, washing
03	FAA Air Traffic Control Tower	Air Traffic Control
04	FAA Air Traffic Control Administration	Air Traffic Control administration
05	Airport Terminal	Air operations, travel
06	Storage Building	Vehicle storage
07	North Hangar (misc. tenants)	Aircraft and equipment storage
08	Radar Facility	Radio/radar tower
09	Former Radar Facility	Storage
10	Heritage West - Office Building	FBO – office, terminal
11	Heritage West - maintenance hangar	Hangar, maintenance area
12	Heritage West - T-hangars	Airplane storage
13	FedEx Offices	Office, equipment storage
14	Snow Removal and Maintenance Building	Equipment maintenance and storage
15	Building 870	Vehicle maintenance and storage
16	Heritage Flight - Aviation Support Hangar	Aircraft maintenance and washing, general aviation terminal building
17	Heritage Flight – Building 890	Office, terminal, aircraft maint./storage
18	Carpentry shop	Wood, tools, storage
19	Aviatron building	Aircraft generator and hydraulic system maintenance
~~**20**~~	~~Storage Shed~~	Building removed from site. Building number retained in this list.
~~**21**~~	~~Storage Shed~~	Building removed from site. Building number retained in this list.
22	Pratt and Whitney	Aircraft maintenance – tenant
23	Vermont Flight Academy	Aircraft maintenance – tenant
24	Private hangar (rented)	Aircraft storage – tenant
25	Private hangar (rented)	Aircraft storage – tenant
26	Private hangar (rented)	Aircraft storage – tenant
27	Tech Aviation School	Aircraft maintenance – tenant
28	Private hangar (rented)	Aircraft storage – tenant
29	Avionics Repair	Communication equipment
30	Aircraft hangar	Aircraft maintenance and storage
31	FAA ILS Localizer Bldg.	Navigation equipment

Bldg No.	Building Name	Building Function
32	FAA Glide Slope Bldg.	Navigation equipment
33	FAA Glide Slope Bldg.	Navigation equipment
34	FAA ILS Localizer Bldg.	Navigation equipment
35	Heritage Aviation Fuel Storage	Storage of Jet-A fuel and AVGAS
36	Aircraft Sewage Receiving Station	Transfer sanitary waste to sewer system

There are many vehicles owned and operated by BTV on the site, including plows, sweepers, loaders, tractors, trucks and automobiles. Tenants also have many vehicles on the site similar in type to those owned by BTV. In addition, car rental companies have fleets of vehicles under their ownership. These vehicles are parked on the site in the parking garage when not rented. Therefore, the total number of vehicles on the site varies on any given day.

Outdoor activities and storage of materials:

Outdoor activities consist of aircraft operations, aircraft maintenance, and seasonal deicing activities. A listing of items stored at PPS areas is presented in *Table 4: Inventory of Site Areas and Activities Exposed to Stormwater*.

Number and location of stormwater outfalls to surface waters, ditches, or storm drains:

There are nineteen stormwater outfalls to surface waters or wetlands. The following list includes the numbering designations identifying outfalls as used in the previous SWPPP. (Note: each outfall has been listed with a second number in parenthesis, this number is the drainage structure number designation as shown on the attached "*Multi – Sector General Permit (MSGP) Site Drainage Map*," attached to this report. During the 2015 reporting year, many operational stormwater discharge permits were re-issued with new permit numbers. The descriptions below include the new permit numbers, where applicable, as well as the former permit numbers.

- Q001A (Structure Designation Number, S1.000) – This outfall discharges to an unnamed tributary of the Winooski River, which in turn drains to Lake Champlain. It is located at the northwestern end of the site, northerly of Airport Parkway. This discharge has two existing Stormwater Discharge Permits [3028–9010.1(formerly 3028-INDS.1) and 3028-9010.A], and is also a sampling location for benchmark monitoring.

- DO18 (S4.001) – This outfall discharges to Muddy Brook. Muddy Brook drains to the Winooski River, which in turn drains to Lake Champlain. This outfall is located at the southeastern end of the site, and is part of Permit 3028-9010.1 (formerly 3028-INDS.1). This outfall is also a sampling location for benchmark monitoring. Other permits that discharge to this outfall include: 3028-9010.2 (formerly 3028-INDS.A); 3845-9010 (formerly 3845-INDS.A); and 3028-9015.2.

- MU01 (S3.043), MU02 (S3.007), MU03 (S3.039), MU04 (S3.033), and MU05 (S3.023) – These five discharge points drain into a Class 2 wetland, contiguous to Muddy Brook. The points are located on Eagle Drive and along the western edge of the area known as "The Valley" located within the airport boundary. The wetland is conveyed to a closed drainage system with discharge to Muddy Brook at DO18. The discharge point designations MU0X are part of two Permits: 3845-9010 (formerly 3845-INDS.A) and 3028-9010.A, and 3845-9015.1.

- PO01 (S2.001), PO02 (S3.001), PO05 (S2.020), PO06 (S2.033), and PO07 (no number) – These five discharges drain to a Class 2 wetland, contiguous with a tributary to Potash Brook. Potash Brook drains to Lake Champlain. These outfalls are located at the southern end of the site, and are part of Permits 3028-INDS.AR (formerly 3028-INDS.A), 1-1391, and 1-0839, except discharge point PO02, which is covered under BTV's MS4 Permit. PO05 is also a sampling point for benchmark monitoring. It is noted that discharge point PO01 has been plugged and buried, and no longer serves as a discharge point for stormwater.

- NG001-P (S6.016), NG002-N (S6.008), NG003-O (S6.005.0), and NG004-M (S6.001) – these four stormwater outfalls discharge to an unnamed tributary of the Winooski River, which in turn discharges to Lake Champlain. They are located at the northern end of the site, near National Guard Avenue. These discharge points are part of Permit 3028-9010.1 (formerly 3028-INDS.1).

- SW001 – This outfall is located at an unnumbered drainage structure located at the easterly corner of Williston Road and Airport Drive, just outside the airport property. The stormwater exits S2.036 located within the airport, and enters the City of South Burlington stormwater system at the unnumbered catch basin. The discharge is associated with BTV's MS4 Permit.

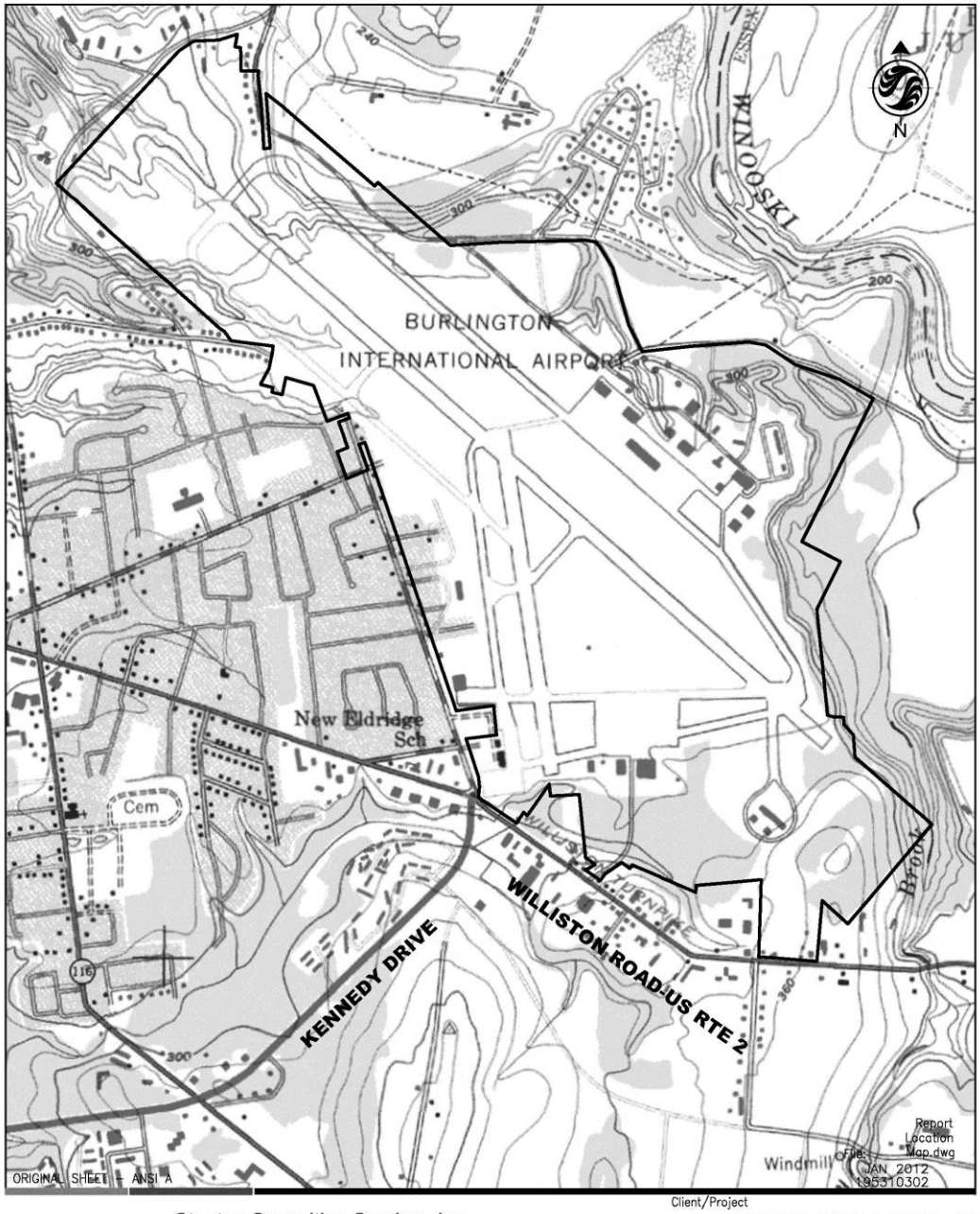
- AP700 – This outfall is located at 700 Airport Drive, outside of the airport fence. Stormwater from this location discharges to an unnamed tributary of the Winooski River.

- CN001 – this is a non-point source discharge located at the edge of the overflow parking area located at the north end of Airport Drive. This area discharges to Centennial Brook.

Under the MSGP, the facility is categorized by Standard Industrial Classification (SIC) Code 4581 (Air Transportation Facilities) and falls under Sector S classification (Air Transportation).

As part of the facility's MSGP, MS4, UIC, and operational Stormwater Discharge Permit conditions, BTV continues to implement stormwater monitoring, groundwater monitoring, and drainage structure inspection programs.

3.3 GENERAL LOCATION MAP



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Client/Project
BURLINGTON INTERNATIONAL AIRPORT
MSGP PERMIT

Figure No.
1.0

Title
PROJECT
LOCATION MAP

3.4 BTV FACILITY SITE MAP

See the attached plan entitled *Burlington International Airport, Multi-Sector General Permit (MSGP) Site Drainage Map* dated April 1, 2012 with revisions dated April 1, 2013, April 1, 2014, April 1, 2015, and April 1, 2016 for locations of all labeled outfalls, water courses, wetlands, buildings, BMP's and PPS's.

3.5 DESCRIPTION OF RECEIVING WATERS

Receiving Water Name: Unnamed tributary to Winooski River and Muddy Brook

Discharge Points flowing to this receiving water: D018 (S4.001), Q001A (S1.001), NG001-P (S6.016), NG002-N (S6.008), NG003-O (S6.005.0), NG004-M (S6.001), and AP700.

Applicable Vermont Water Quality Standards for Class B Cold Water Fish Habitat:

- Turbidity: not to exceed 10 NTU
- Dissolved Oxygen: not less than 7 mg/l and 75% saturation at all times
- Escherichia coli: not to exceed 77 organisms/100 ml
- Total increase from ambient temperature: not to exceed 1.0 °F
- Phosphorus: not to exceed 0.01 mg/l
- Nitrogen: not to exceed 5.0 mg/l as NO_3-N at flows exceeding low median monthly flows
- pH: maintain within the range of 6.5 and 8.5
- All other applicable standards for Class B, cold water fish habitat waters

Receiving Water Name: Class 2 Wetland W1 (3.16 acre area) contiguous to Potash Brook, and Class 2 Wetland W2 (7.03 acre area) contiguous to Muddy Brook.

Discharge Points flowing to this receiving water: P001 (S2.001), P005 (S2.020), P006 (S2.033), P007 (S2.036), and MU01 (S3.043), MU02 (S3.007), MU03 (S3.039), MU04 (S3.033), MU05 (S3.023).

Applicable Vermont Water Quality Standards for Class B Warm Water Fish Habitat:

- Turbidity: not to exceed 25 NTU
- Dissolved Oxygen: not less than 5 mg/l and 60% saturation at all times
- Total increase from ambient temperature:

Ambient temperature	***Total allowable increase above ambient***
Above 66 °F	1.0 °F
63 to 66 °F	2. 0 °F
59 to 62 °F	3. 0 °F
55 to 58 °F	4. 0 °F
Below 55 °F	5. 0 °F

- Escherichia coli: not to exceed 77 organisms/100 ml
- Phosphorus: not to exceed 0.01 mg/l
- Nitrogen: not to exceed 5.0 mg/l as NO_3-N at flows exceeding low median monthly flows
- pH: maintain within the range of 6.5 and 8.5
- All other applicable standards for Class B, warm water fish habitat waters

Receiving Water Name: Centennial Brook

Discharge Points flowing to this receiving water: CN001, a non-point source discharge

Applicable Vermont Water Quality Standards for Class B Cold Water Fish Habitat:

- Turbidity: not to exceed 10 NTU
- Dissolved Oxygen: not less than 7 mg/l and 75% saturation at all times
- Escherichia coli: not to exceed 77 organisms/100 ml
- Total increase from ambient temperature: not to exceed 1.0 °F
- Phosphorus: not to exceed 0.01 mg/l
- Nitrogen: not to exceed 5.0 mg/l as NO_3-N at flows exceeding low median monthly flows
- pH: maintain within the range of 6.5 and 8.5
- All other applicable standards for Class B, cold water fish habitat waters

Impaired Status: According to the EPA Approval Documentation of the *State of Vermont 2014 303(d) List of Waters* (September 2014), Potash Brook, Centennial Brook, and Muddy Brook have been previously identified as impaired by DEC. Potash Brook and Centennial Brook, included in Part D of the list, are considered surface waters with a completed and approved TMDL, and therefore are now outside the scope of Clean Water Act Section 303(d). Muddy Brook, mouth to seven miles upstream (VT08-02), had been on the 303(d) List of Impaired Waters since 1996 for non-support of aquatic biota due to nutrients and temperature, and was listed as impaired for aquatic life. In 2014, this stream was proposed for delisting since biological monitoring rated the stream as "good" for three monitoring periods in a row (2003, 2010, and 2011), thereby indicating compliance with Vermont's water quality standards. Based on this information, EPA approved this delisting in September, 2014, and Muddy Brook is no longer considered an impaired water.

Unnamed tributaries of the Winooski River, located within the vicinity of BTV, are not designated as impaired. A summary of primary watersheds contained within the BTV site is presented in Table 2 below.

Table 2: Watershed Drainage Summary

Watershed Area	***Stormwater Flow Description***	***Total Area (acres)***	***Impervious surface area (%)***	***Runoff Coefficient***	***Drainage Discharge Point***	***Drainage Name***
AREA 1	Vermont Army National Guard Aviation Support Facility. SWPPP prepared by others, not part of this document.	0.0 BTV 29.2 VTARNG	46.6	High	Unnamed	Unnamed tributary to Winooski River
AREA 2	Sheet flow from runway and taxiways at the north end of the site and ditch flow to the stormwater inlets to NG001-P (S6.016), NG002-N (S6.008), NG003-O (S6.005.0) and NG004-M (S6.001).	50.4 BTV 52.1 VTANG	26.8 BTV	High	Groundwater & NG001-P (S6.016), NG002-N (S6.008), NG003-O (S6.005.0) and NG004-M (S6.001)	Unnamed tributary to Winooski River

Watershed Area	*Stormwater Flow Description*	*Total Area (acres)*	*Impervious surface area (%)*	*Runoff Coefficient*	*Drainage Discharge Point*	*Drainage Name*
AREA 3	Vermont Air National Guard installation. SWPPP prepared by others, not part of this document.	32.7 BTV 183.1 VTANG	19.0 BTV	High	Unnamed	Muddy Brook
AREA 4	Sheet flow from runway and adjacent grassed area to an on-site infiltration system.	2.4	25.0	High	Groundwater	N/A
AREA 5	Sheet flow from runway and adjacent grassed area to an on-site infiltration system.	10.4 BTV 5.9 VTANG	26.9 BTV	High	Groundwater	N/A
AREA 6	Parking area/Airport Terminal: sheet flow across paved areas to storm inlets to stormwater detention and infiltration systems, which discharge to Q001A or infiltrate. Sheet flow from runways and adjacent grassed areas infiltrate or discharge to stormwater system discharging to Q001A.	145.3	34.1	High	Groundwater & Q001A (S1.001)	Unnamed tributary to Winooski River
AREA 7	Sheet flow from runways and taxiways and adjacent grassed areas to two (2) on-site infiltration systems. No discharge.	13.1	48.9	High	Groundwater	N/A
AREA 8	Runoff from pervious areas between runways at the center of the site to infiltration areas. No discharge.	11.8	6.8	High	Groundwater	N/A
AREA 9	Stormwater runoff sheet flow, shallow concentrated flow and ditch flow from: - Building 35 and adjacent paved and grassed areas downslope to MU01 (S3.043) - Buildings 15, 16, 22, adjacent ramps,	155.4	34.2	High	MU01 (S3.043) MU02 (S3.007) Ret. Basin (S3.018.0)	Muddy Brook

Watershed Area	*Stormwater Flow Description*	*Total Area (acres)*	*Impervious surface area (%)*	*Runoff Coefficient*	*Drainage Discharge Point*	*Drainage Name*
AREA 9 Continued	other paved areas, and grassed areas to MU02 (S3.007) - Roof drainage flow from Building 17 and sheet flow from surrounding grassed areas to bio-retention basin (S3.018.0) - Sheet flow from the 890 Ramp to diversion structure, pump station, and infiltration field (S3.009.6.13) with overflow to MU02 (S3.007). - Sheet flow from the Valley West Apron to trench drain, pump station, and infiltration field (S3.021) with overflow to MU02 (S3.007). - Sheet flow from buildings 23 – 30 and adjoining ramps, taxiways, and grassed areas to MU3 (S3.039) and MU4 (S3.033) - Sheet flow from roads, parking lots, and buildings to MU05 (S3.023). - Sheet flow from runway, ramps, other paved areas, and along ditch lines to DO18 (S4.001) - Discharge points MU01 – MU05 exit the site through DO18.				Infiltra. Field (S3.021) Infiltra. Field (S3.009.6.13) MU02 (S3.007) Infiltra. Field (S3.021) MU02 (S3.007) MU03 (S3.039) MU04 (S3.033) MU05 (S3.023) DO18 (S4.001)	
AREA 10	Sheet flow from SD Ireland sand and gravel quarry, contained in the quarry with stone berms; no discharge	27.7	88.4	High	No discharge offsite	N/A
AREA 11	- Sheet flow from Carpentry Shop (Bldg 18)/Aviatron (Bldg 19) over bank to wetland - Sheet flow from runway, taxiway, and	70.3	48.9		Wetland W2 PO01 (S2.001)	Potash Brook

Watershed Area	*Stormwater Flow Description*	*Total Area (acres)*	*Impervious surface area (%)*	*Runoff Coefficient*	*Drainage Discharge Point*	*Drainage Name*
AREA 11 continued	other paved and grassed areas into two (2) infiltration chambers and to PO01 (S2.001) - Sheet flow from paved surfaces near Maintenance Shop (Bldg 14) to PO02 (S3.001) - Sheet flow from runway, taxiway, and other paved and grassed areas into an infiltration chamber and to PO05 (S2.020) - Sheet flow across the Heritage West apron to PO06 (S2.033) - Collection from unknown source(s) to PO07				PO02 (S3.001) PO05 (S2.020) PO06 (S2.033) PO07 (no number)	
AREA 12	Sheet flow from lawn area to City Stormwater System	0.5	7.1	High	City of South Burlington	Stormwater System
AREA 13	Sheet flow from concrete surfaces into a trench drain, to a swirl concentrator, to on-site discharge	2.9	96.6	High	Groundwater	N/A
AREA 14	Sheet flows from parking lot and roads, and adjoining grassed areas to City of South Burlington Stormwater System	0.9	66.7	High	City of South Burlington	Stormwater System
AREA 15	Sheet flows from parking lot, roads, buildings, and adjoining grassed areas to City of South Burlington Stormwater System	3.7	64.9	High	City of South Burlington	Stormwater System
AREA 16	Sheet flow from paved long term and employee parking areas to exfiltrating sand filter S1.016.2.1	5.9	88.1	High	Exfiltrating Sand Filter	N/A
AREA 17	Sheet flow from overflow parking at north end of Airport Drive, and residential house acquisition areas	24.7	2.4	High	CN001	Centennial Brook

Watershed Area	*Stormwater Flow Description*	*Total Area (acres)*	*Impervious surface area (%)*	*Runoff Coefficient*	*Drainage Discharge Point*	*Drainage Name*
AREA 18	Runoff from 700 Airport Drive	2.6	61.5	High	AP700	Unnamed tributary to Winooski
TOTAL AREA	**SWPPP FOR BTV ONLY**	**560.3 BTV**	**N/A**	**HIGH**	**VARIES**	**VARIES**

3.6 PRECIPITATION INFORMATION

Average annual precipitation: According to data provided the National Weather Service, the average annual precipitation for western Vermont is 39 inches.

Wettest months: June, July, August, and September

Expected rainfall in the wettest month: 4.29 inches (August)

Types/intensity of storms: The following table shows the rainfall depths associated with various storm events in Chittenden County, Vermont.

Table 3: Rainfall Depths (inches) Associated with the 1-Year, 2-Year, 10-Year, and

1-yr, 24-hr	2-yr, 24-hr	10-yr, 24-hr	100-yr, 24-hr
2.1	2.3	3.2	5.2

How are industrial activities affected by changing precipitation and temperature? Industrial activities on the site are not substantially affected by changes in precipitation or temperature patterns.

3.7 INVENTORY OF EXPOSED MATERIALS AND POTENTIAL POLLUTANT SOURCES

Table 4 summarizes activity areas and potential pollutant sources (PPS's) at BTV.

Table 4: Inventory of Site Areas and Activities Exposed to Stormwater

Map Key	Activity/ Area of the Facility	Significant Materials	Amount (Approx.)	Discharge Point
PPS1	Deicing area	Propylene glycol	Minimal to small amounts from airport terminal gates	Q001A (S1.001)
		Sodium formate		
	Aircraft fueling operations	Benzene	Potential for spill at each fueling operation	Q001A (S1.001)
		Ethyl benzene		
		Toluene		
		xylene		
		MTBE		
PPS2	Deicer area	Propylene glycol	Approximately 1,800 gallons/year	P005 (S2.020)
		Sodium Formate		
PPS3	Deicing storage	Propylene glycol	Above ground storage	P005

Map	Activity/ Area of	Significant Materials	Amount (Approx.)	Discharge
		Sodium Formate	tanks	(S2.020)
PPS4	Aircraft fueling operations	Benzene	Potential for spill at each fueling operation	PO05 (S2.020)
		Ethyl benzene		
		Toluene		
		xylene		
		MTBE		
PPS5	Old Equipment Storage	Oil	Minor leakage possible of petroleum products from idle equipment	P001 (S2.001)
		Grease		
		Heavy metals		
PPS6	Gas/fuel pump	Benzene	10,000 gallon and 2,000 gallon underground tanks; minimal spill potential	Pumped to municipal wastewater treatment system
		Ethyl benzene		
		Toluene		
		xylene		
		MTBE		
PPS7	Containment storage for waste fuel	Benzene	500 gallon above-ground storage tank; minimal spill potential	Pumped to municipal wastewater treatment system
		Ethyl benzene		
		Toluene		
		Xylene		
		MTBE		

Map Key	Activity/ Area of the Facility	Significant Materials	Amount (Approx.)	Discharge Point
		Sodium formate		
	Aircraft Fueling Operations	Benzene	Potential for spill at each fueling operation	D018 (S4.001)
		Ethyl benzene		
		Toluene		
		xylene		
		MTBE		
PPS9	Sand/gravel/mulch stock piles	Sediment	Varies	D018 (S4.001)
PPS10	Fuel Transfer Station Jet-A and AFGAS fuel storage	Benzene	3 above ground storage tanks at 25,000 gal each plus 1 at 12,000 gal = 87,000 gallons	D018 (S4.001)
		Ethyl benzene		
		Toluene		
		xylene		
		MTBE		
PPS11	Deicing	Propylene glycol	Approximately 600 gallons	D018 (S4.001)
		Sodium Formate		
	Aircraft fueling operations	Benzene	Potential for spill at each fueling operation	DO18 (S4.001)
		Ethyl benzene		
		Toluene		
		xylene		
		MTBE		

Table 5 below provides a summary of potential pollutant materials used on site.

Table 5: Significant Materials Used Onsite

Trade Name Material	***Chemical/ Physical Description***	***Stormwater Pollutants***
Hydraulic fluids	Brown oily petroleum Hydrocarbon	Mineral oil
Brake fluid	Ethylene glycol-based syrup liquid	Ethylene glycol
Antifreeze/coolant	Clear green/yellow liquid	Ethylene glycol, propylene glycol, heavy metals (copper, lead, zinc)
Oil recovered from steam cleaning	Brown oily water	Oil and grease, solids
Wastewater recovered from steam cleaning	Water	Oil and grease, solids
Gasoline	Colorless, pale brown or pink petroleum hydrocarbon	Benzene, ethyl benzene, toluene, xylene, MTBE
Jet – A fuel	Clear white or yellow liquid	Naptha, naphthalene, kerosene
Degreasing solvents	Colorless or white liquid	Trichloroethylene, trichloroethane, perchloroethylene
Paint	Various colored liquids	Stoddard solvent, naphtha, bisphenol, arsenic
Deicing materials	White powder or colored oily liquid	Propylene glycol, sodium formate
Lubricants	Amber liquid or brown paste	Kerosene, mineral oil, petroleum distillates

Trade Name Material	*Chemical/ Physical Description*	*Stormwater Pollutants*
Fertilizers	Liquid or solid granules	Nitrogen, phosphorus
Herbicides and pesticides	Various colored to colorless liquids, powder, pellets, or granules	Chlorinated hydrocarbons, arsenic, organophosphates, carbonates,

3.8 INVENTORY OF PAST SPILLS AND LEAKS

An inventory of past reportable spills and leaks is presented in Table 6 below. A reportable spill is defined as greater than 2 gallons.

Table 6: Past Reportable Spills and Leaks

Date	Nature of Spill			Discharge Point
	Source / Cause of Spill	Material	Quantity	
5/2/16	Jet-A fuel spill at Gate 3 of Terminal Apron. Cause of the spill was identified as a United Aircraft was leaking overnight.	Jet-A Fuel	25 gallons	Spill released to Main Air Carrier Apron trench drain and downstream stormwater collection system to the pump station with control weir. Spill contained and cleaned up by BTV Maintenance, Enpro, and Environmental Products and Services.
12/8/15	Jet-A fuel spill – Heritage employee filling specified amount of fuel but excess escaped from wing vents (shut offs malfunctioned)	Jet-A Fuel	5-10 gallons	Spill released to Heritage Ramp; Heritage contained and cleaned with spill cleanup supplies
10/25/15	Jet-A fuel spill – pilot transferring fuel between tanks.	Jet-A Fuel	8-10 gallons	Spill released to Heritage Ramp; Heritage contained and cleaned with spill cleanup supplies.
12/13/2010 WMD606	Diesel fuel spill – snow removal vehicle backed into other vehicle at Maintenance Bldg.	Diesel fuel	100 gallons	Release contained and cleaned up by hazmat team; some over embankment toward wetland.
5/18/2009 WMD234	Jet fuel spill – overfill during refueling	Jet-A Fuel	30 gallons	Released to concrete pad with no drains in vicinity. All product collected and drummed.
1/10/2007 WMD018	Diesel fuel spill to blacktop	Diesel fuel	20 gallons	Spill to blacktop. EP&S collected and drummed produce.

4.0 NON-STORMWATER DISCHARGES

4.1 CERTIFICATION OF NON-STORMWATER DISCHARGES

A description of non-stormwater discharge testing and certification can be found in Worksheet 1, Appendix A at the end of this document. Outfalls which could not be evaluated are listed in Worksheet 2, Appendix A.

4.2 ALLOWABLE NON-STORMWATER DISCHARGES

BTV has no allowable non-stormwater discharges as authorized per MSGP Section 1.2.3.

5.0 BEST MANAGEMENT PRACTICE (BMP) IDENTIFICATION

5.1 SOURCE PROTECTION BMP'S

Stormwater controls and BMP's to prevent or control pollutants in stormwater discharges from the site have been selected with the following considerations: appropriateness for identified potential pollutant sources, feasibility of on-site implementation, and cost.

Good Housekeeping
Good housekeeping practices will be implemented to minimize the risk of stormwater contact with potential pollutant sources by keeping exposed areas clean and orderly. Good housekeeping practices to be implemented at the site include, but are not limited to, the following:

- Store contained fluid indoors (maintenance buildings) whenever feasible
- Maintain an organized inventory of materials used in maintenance buildings
- Perform all maintenance activities inside maintenance buildings
- Park vehicles with any detected fluid leaks inside maintenance buildings and repair
- Ensure that all outdoor dumpsters, trash cans, and other waste containers are adequately covered
- Recycle, or properly dispose of waste materials regularly in approved fashion.
- Do not dispose of waste materials in unapproved areas (e.g., do not pour waste fluids down storm drains, in sewer system, or on the ground)
- Store potential pollutants (i.e., fuels, oils, paints, hydraulic fluids, etc.) in maintenance buildings in appropriate, sealed, and labeled containers
- Regularly maintain and inspect all vehicles
- Include the inspection of all containers, drums, and tanks stored outdoors as part of the routine facility inspection

Minimize Exposure
In order to minimize exposure, ensure that industrial vehicles and equipment that are stored outdoors are regularly maintained and inspected for leaks. All hazardous materials will continue to be handled and stored within the maintenance buildings, and waste materials disposed of

promptly and properly. As a general practice, potential pollutants will not be handled outdoors during precipitation events.

Preventative Maintenance
All facility equipment will be inspected monthly and receive regular maintenance, as needed, to prevent system failures and compromised performance that could potentially cause contamination of stormwater runoff.

Spill Prevention and Response
The risk of potential pollutant releases will be reduced by the following measures:

- Hazardous material handling procedures will be followed by all personnel, and specific training will be provided
- Absorptive materials will be placed beneath aircraft during fueling operations
- Storage containers will be regularly inspected and maintained, as needed (see Section 5.1 Routine Inspections).
- Emergency spill kits will be available where materials are commonly handled (Maintenance buildings)
- Material handlers will be trained in spill prevention and response procedures, including the spill response instructions Hazardous Material Spill Response Environmental Fact Sheet (see Section 5.2 Spill Response).

5.1.1 Area Specific BMP's

5.1.1.1 Runway Deicing

BMP	Implementation Date	Responsible Party
Evaluate current chemical application rates to avoid over-application.	Summer 2007/ ongoing	BTV
Install devices to meter the amount of chemical applied to runways.	Ongoing	BTV
Continue to maintain runway ice detection (RID) system or pavement sensor to monitor runway temperatures and inform operators when temperatures are approaching freezing conditions. This increases the likelihood of timely and effective deicing operations.	Installed and in use	BTV
When possible, avoid applying deicing chemicals under extreme cold and dry conditions, which make it difficult for the chemicals to adhere to the ice surface.	October-April annually	BTV
Consider "pre-wetting" deicing chemicals to improve the adhesion to the iced surface and increase the efficiency rate of the application.	Previously evaluated and deemed not feasible	BTV
Pre-treat or promptly treat surfaces to inhibit the strong bonding of ice.	October 2007/ ongoing	BTV
Use drain blocks to separate deicing chemicals from storm drains.	October 2007/ ongoing	BTV
Route planes to designated deicing areas.	October 2007/ ongoing	BTV

BMP	Implementation Date	Responsible Party
Construct additional subsurface infiltration systems.	October 2007 / ongoing	BTV

5.1.1.2 Aircraft Deicing (Main Apron, NOTE 2 Apron, and Valley West Apron)

BMP	Implementation Date	Responsible Party
Evaluate chemical application rates to avoid over-application.	October 2007	BTV
Implement and monitor ADF Infiltration System, adhering to specification in UIC permit #6-0075	May 2007 /ongoing	BTV
Implement and monitor ADF Infiltration System, adhering to specification in UIC permit #6-0084	2009 /ongoing	BTV

5.1.1.3 Aircraft Deicing (other deicing areas)

BMP	Implementation Date	Responsible Party
Evaluate chemical application rates to avoid over-application.	October 2007/ ongoing	BTV
Continue to use Type I and Type II deicing fluids (ADF) when longer holdover times are not a concern. Type I and II contain lower concentrations of additives.	Implemented	BTV
Purchase ADFs that use environmentally benign or less toxic chemicals and additives	Summer 2007/ ongoing	BTV
Consider mechanical deicing technologies such as boot de-icing and electrical restive heating.	Ongoing	BTV
Consider a computerized spraying system to reduce the volume of ADFs used as well as the time needed for deicing. This can increase the efficiency of ADF collection.	Ongoing	BTV
Continue spraying ADFs from truck-mounted booms to deliver more fluid to the target area from a closer range, in order to reduce overspray and waste.	Already implemented by Heritage/ongoing	BTV
Consider using ice detection systems and sensors to determine if deicing is necessary.	Ongoing	BTV

5.1.1.4 Managing Glycol Solutions

BMP	Implementation Date	Responsible Party
Continue to consider air temperature when preparing glycol solutions (i.e., "blend to temperature").	Already implemented	BTV

BMP	Implementation Date	Responsible Party
Avoid applying glycol-based deicers near storm drains.	Summer 2007	BTV
Follow manufacturers' recommendations when preparing and applying ADFs.	Summer 2007	BTV
Properly maintain spreading equipment to increase efficiency and reduce the potential for over-application.	Summer 2007	BTV
Consider using a vacuum truck to recycle glycol. Fluids containing as little as 5% glycol can be recycled.	Previously evaluated and determined not feasible	BTV

5.1.1.5 Aircraft, Vehicle, and Equipment Maintenance and Cleaning Areas

BMP	Implementation Date	Responsible Party
Continue to conduct all maintenance and cleaning activities indoors or in a designated, contained area. Prohibit such activities outside of these areas.	May 2007/ongoing	BTV
Use drip pans under all aircraft, vehicles, and equipment waiting for maintenance.	May 2007/ongoing	BTV
Maintain an organized inventory of all chemicals and materials.	May 2007/ongoing	BTV
Provide secondary containment for fuels and hydraulic fluids (e.g., store containers in tubs or buckets).	May 2007/ongoing	BTV
Drain all parts prior to disposal.	May 2007/ongoing	BTV
Do not pour liquid waste down floor drains, sinks, or storm drains.	May 2007/ongoing	BTV
Properly dispose of greasy rags, oil filters, air filters, batteries, spent coolant, degreasers, and similar products. Promptly transfer used fluids to a designated appropriate storage container.	May 2007/ongoing	BTV
Store used batteries in a leak-proof, noncorrosive container prior to proper disposal.	May 2007/ongoing	BTV
Use dry cleanup methods for apron and hangar floor.	May 2007/ongoing	BTV
Direct stormwater from maintenance and cleaning areas to treatment areas.	May 2007/ongoing	BTV
Fuel vehicles on impervious surfaces and use funnels and drip pans to reduce spillage.	May 2007/ongoing	BTV
Wash vehicles indoors.	May 2007/ongoing	BTV

Use only phosphorus-free soaps.	May 2007/ongoing	BTV

5.1.2 Site-wide BMP's

BMP	Implementation Date	Responsible Party
All spills will be cleaned up immediately using dry methods. Spill areas are never washed down with water	May 2007/ongoing	BTV
Catch basins will be cleaned out every year.	May 2007/ongoing	BTV
Trash containers and dumpsters will be tightly covered when not in use	May 2007/ongoing	BTV
Trash will be picked up every week.	May 2007/ongoing	BTV
Grass cover will be maintained in vegetated areas to aid infiltration of runoff.	May 2007/ongoing	BTV
Continue regular maintenance of subsurface infiltration system.	May 2007/ongoing	BTV
Store only well-maintained planes and vehicles outdoors.	May 2007/ongoing	BTV
Store snow only on grass areas, and avoid storing near stormwater drainage areas.	Ongoing	BTV

5.2 SPILL RESPONSE

The SWPPP will be modified within 14 days of knowledge of a spill to include information regarding the nature, date, and cause of the release. The plan will be modified with measures to prevent reoccurrence and to improve response.

Specifically, the following procedures will be followed:

1. Assess the Hazard and Perform Initial Response

For spills that can be safely managed without assistance:

- Stop the spill at its source;
- Prevent spilled material from entering storm drains, waterways, drainage ditches, etc.;
- Contain spilled material using a barrier (absorbent pads or socks), temporary dike or trench.

For all other spills, a cleanup contractor will likely need to be hired since they have the training and equipment necessary to safely respond to dangerous hazardous material spills.

2. Report the Spill

Any hazardous material spill to the land or water that meets the following criteria must be immediately reported to the Department of Environmental Conservation (DEC) Spill Response Team (spill team) by calling the **24-hour Hazardous Materials Spills Hotline at 1-800-641-5005**. *If there is any question about whether a spill is reportable, call.*

- A spill of 2 gallons or more;
- A spill that is less than 2 gallons, but poses a threat to human health or the environment (for example, a gallon of gasoline spilled to a wetland); or
- A spill that exceeds a CERCLA reportable quantity.

Any person who has knowledge of a spill and who may be subject to liability for that spill, is responsible for reporting the spill. In addition to reporting to the DEC, any spill of hazardous material that impacts (or threatens) surface water (e.g., lakes, streams, wetlands) must also be reported to the U.S. Coast Guard via the National Response Center at **1-800-424-8802**.

3. Clean up and Follow up

- Ensure that the spill is cleaned up to the extent that it no longer presents a threat to human health or the environment;
- Make a hazardous waste determination for all spill cleanup materials;
- Ensure that contaminated soil/water/debris is collected and managed appropriately;
- **For any reportable spill, submit a written follow-up report within 10 days detailing how the spill was cleaned up and how waste was managed.**

5.3 VEHICLE AND EQUIPMENT WASHING

All BTV-owned vehicle washing and equipment washing is conducted indoors. Rental car washing discharges to the municipal sewer system (see Section 4.2).

If there is ever a hazardous spill to a floor drain or to the ground and there is a potential for groundwater contamination or the contents of a holding tank is in question, the Hazardous Spills Hotline (1-800-641-5005) will be contacted for assistance.

5.4 SEDIMENT AND EROSION CONTROL

Prior to beginning construction projects, the facility will contact the VT ANR at (802)490-6104 to determine if an Individual Construction Stormwater Discharge Permit (INDC) is necessary.

5.5 STRUCTURAL BMP'S

BMP 1

Structure:	Vortechnics Swirl Concentrator Device: Permit #3028-9010.A, S/N 001, formerly Permit #3972-9015
Date of Implementation:	Existing
Discharge Point:	Q001A (Stantec S1.000)
Area(s) Treated:	Area 6
Pollutants Removed:	Nutrients, glycol, and sediment

Maintenance Requirement(s):	Frequency:
Sediment removal	When needed
Inspection	Monthly during de-icing season.

BMP 2

Structure:	Vortechs/Stormtech Treatment System, Permit #3028-9010.A, NOTE 2, S/N002, formerly Permit #3972-9015
Date of Implementation:	Existing
Discharge Point:	Groundwater via infiltration chamber (Stantec S1.023.3) and overflow to Q001A (Stantec S1.000)
Area(s) Treated:	Area 6
Pollutants Removed:	Nutrients, sodium formate, glycol, and sediment

Maintenance Requirement(s):	Frequency:
Sediment removal	When needed
Inspection	Monthly during de-icing season.

BMP 3

Structure:	Infiltration Trench Area, UIC Permit #6-0075 – Main Apron & NOTE 2 System
Date of Implementation:	2007 (completed)
Discharge Point:	Infiltration to groundwater
Area(s) Treated:	Area 6
Pollutants Removed:	Nutrients, sodium formate, glycol, and sediment

Maintenance Requirement(s):	Frequency:
Sediment removal, maintain vegetated area	When needed
Inspection	Monthly during de-icing season.

BMP 4

Structure:	Vortechnics Swirl Concentrator Device, Permit #1-1391, S/N 001
Date of Implementation:	Existing
Discharge Point:	P005 (Stantec S2.020)
Area(s) Treated:	Area 13
Pollutants Removed:	Nutrients, glycol, and sediment

Maintenance Requirement(s):	Frequency:
Sediment removal	When needed
Inspection	Monthly during de-icing season, one quarterly inspection in July.

BMP 5

Structure:	Oil & Grit Separator
Date of Implementation:	2003
Discharge Point:	Municipal Wastewater System
Area(s) Treated:	Area 11
Pollutants Removed:	Nutrients, oil, glycol, and sediment

Maintenance Requirement(s):	Frequency:
Sediment removal	When needed
Inspection	Monthly

BMP 6

Structure:	Exfiltrating Sand Filter, Permit #3028-9010.A, S/N 004, formerly Permit # 1-1580
Date of Implementation:	2003
Discharge Point:	Q001A (Stantec S1.000)
Area(s) Treated:	Area 6
Pollutants Removed:	Nutrients, sediment

Maintenance Requirement(s):	Frequency:
Sediment removal	When needed
Inspection	Monthly during de-icing season.

BMP 7

Structure:	Infiltration Chambers (2 locations, subsurface) Permit #1-0839.
Date of Implementation:	2007
Discharge Point:	Infiltration – groundwater
Area(s) Treated:	Area 11
Pollutants Removed:	sodium formate, sediment

Maintenance Requirement(s):	Frequency:
Sediment removal, maintain vegetated area	When needed
Inspection	Monthly during de-icing season, one quarterly inspection in July.

BMP 8

Structure:	Infiltration Chambers (2 locations, subsurface) Permit # 3028-9010.1, formerly #3028-INDS.1, S/N 004.
Date of Implementation:	2007
Discharge Point:	Infiltration – groundwater
Area(s) Treated:	Area 7
Pollutants Removed:	sodium formate, sediment

Maintenance Requirement(s):	Frequency:
Sediment removal, maintain vegetated area	When needed
Inspection	Monthly during de-icing season, one quarterly inspection in July.

BMP 9

Structure:	Infiltration Chambers (subsurface) Permit # 3028-9010.1, formerly Permit #3028-INDS.1, S/N 007.
Date of Implementation:	2007
Discharge Point:	Infiltration – groundwater
Area(s) Treated:	Area 4
Pollutants Removed:	sodium formate, sediment

Maintenance Requirement(s):	Frequency:
Sediment removal, maintain vegetated area	When needed
Inspection	Monthly during de-icing season.

BMP 10

Structure:	Infiltration Chambers (subsurface) Permit # 3028-9010.1, formerly Permit #3028-INDS.1, S/N 006.
Date of Implementation:	2010
Discharge Point:	Infiltration – groundwater
Area(s) Treated:	Area 5
Pollutants Removed:	sodium formate, sediment

Maintenance Requirement(s):	Frequency:
Sediment removal, maintain vegetated area	When needed
Inspection	Monthly during de-icing season.

BMP 11

Structure:	Infiltration Chambers (subsurface) Permit # 3028-9010.1, formerly Permit #3028-INDS.1, S/N 001.
Date of Implementation:	2010
Discharge Point:	Detention – groundwater
Area(s) Treated:	Area 6
Pollutants Removed:	sodium formate, sediment

Maintenance Requirement(s):	Frequency:
Sediment removal, maintain vegetated area	When needed
Inspection	Monthly during de-icing season.

BMP 12

Structure:	Infiltration Chambers (subsurface) Permit # 3028-9010.1, formerly Permit #3028-INDS.1, S/N 002.
Date of Implementation:	2010
Discharge Point:	Detention – groundwater
Area(s) Treated:	Area 2
Pollutants Removed:	sodium formate, sediment

Maintenance Requirement(s):	Frequency:
Sediment removal, maintain vegetated area	When needed
Inspection	Monthly during de-icing season.

BMP 13

Structure:	Infiltration Chambers (subsurface) Permit # 3028-9010.1, formerly Permit #3028-INDS.1, S/N 003.
Date of Implementation:	2010
Discharge Point:	Infiltration – groundwater
Area(s) Treated:	Area 2
Pollutants Removed:	sodium formate, sediment

Maintenance Requirement(s):	Frequency:
Sediment removal, maintain vegetated area	When needed
Inspection	Monthly during de-icing season.

BMP 14

Structure:	Glycol Infiltration Field (subsurface) Permit #UIC 6-0084, South End Development, Phase 2
Date of Implementation:	2009
Discharge Point:	Infiltration to groundwater
Area(s) Treated:	Area 9
Pollutants Removed:	Nutrients, sodium formate, glycol, and sediment

Maintenance Requirement(s):	Frequency:
Sediment removal	When needed
Inspection	Monthly during de-icing season.

BMP 15

Structure:	Bioretention Basin, Permit # 3845-9010, formerly Permit #3845-INDS.A, S/N 002, Heritage Flight Campus Expansion
Date of Implementation:	2009
Discharge Point:	MU01 (Stantec S3.043)
Area(s) Treated:	Area 9
Pollutants Removed:	Nutrients, sediment

Maintenance Requirement(s):	Frequency:
Sediment removal, maintain vegetated area	When needed
Inspection	Monthly during de-icing season.

BMP 16

Structure:	Vortechnics Swirl Concentrator Device, Permit #3028-9010.A, S/N 008, formerly 4026-9015 – South End Development, Phase 2
Date of Implementation:	2009
Discharge Point:	Groundwater via Glycol Infiltration Field (Stantec S3.021) and overflow to MU02 (Stantec S3.001)
Area(s) Treated:	Area 9
Pollutants Removed:	Nutrients, sodium formate, glycol, and sediment

Maintenance Requirement(s):	Frequency:
Sediment removal	When needed
Inspection	Monthly during de-icing season.

BMP 17

Structure:	Glycol Infiltration Field (subsurface) Permit #UIC 6-0117, 890 Air Cargo Ramp
Date of Implementation:	2012
Discharge Point:	Infiltration to groundwater
Area(s) Treated:	Area 9
Pollutants Removed:	Nutrients, sodium formate, glycol, and sediment

Maintenance Requirement(s):	Frequency:
Sediment removal	When needed
Inspection	Monthly during de-icing season.

BMP 18

Structure:	Infiltration Trench (subsurface) Permit #3028-INDS.3, S/N 001 Aircraft Sewage Receiving Station
Date of Implementation:	2014
Discharge Point:	Infiltration to groundwater
Area(s) Treated:	Area 11
Pollutants Removed:	Sodium formate and sediment

Maintenance Requirement(s):	Frequency:
Sediment removal	When needed
Inspection	Monthly during de-icing season.

6.0 BMP IMPLEMENTATION

6.1 ROUTINE FACILITY INSPECTIONS

Facility inspections will be performed by the Airport Engineer, or their designated representative. In order to maintain compliance with MSGP 3-9003 conditions, BTV's future monthly routine facility inspections will be performed as stated per guidance provided by VT ANR, Stormwater Program staff (ref. e-mail correspondence dated March 5, 2012):

- **During Deicing Season (October 15 to April 15)**
  All BMP's and all PPS's will be inspected monthly during the deicing season.

- **During Non-deicing Season (April 16 to October 14)**
  All PPS's will be inspected monthly during non-deicing season. BMP's do not require monthly inspection during this period other than those inspections that are required to satisfy inspection conditions included in operational Stormwater Discharge Permits.
- Monthly routine facility inspections performed during April and October will include all BMP's and PPS's.

If stormwater BMP's are found to be functioning incorrectly, maintenance will be performed before the next anticipated storm event, or as necessary to maintain effectiveness of the stormwater controls. A sample inspection form and records of past inspections will be kept in Appendix B of the SWPPP.

6.2 EMPLOYEE TRAINING

All employees will attend an annual training session. New employees will be trained within two weeks of hire. Records of attendance are to be kept with this plan using Appendix C found at the end of this plan.

Topics to be included in employee training:

- Introduce Pollution Prevention Team and discuss need for the SWPPP
- Spill response procedure
- Review of past spills
- Review of good housekeeping procedures
- Proper material handling procedures
- Proper disposal or recycling of materials
- Be sure employees know where cleaning materials and spill kits are located
- Review sources of stormwater pollutants used onsite
- Familiarize employees with drainage routes near areas where industrial materials are handled
- Proper handling (collection, storage, and disposal) of potential pollutants and hazardous materials
- Maintenance of structural BMP's

7.0 MONITORING REQUIREMENTS

Ultimately, the goal of this SWPPP it is to protect the quality of water resources. To evaluate the effectiveness of the measures described here, the following monitoring activities will be conducted on the stormwater discharges at the Burlington International Airport. Monitoring results will be used to regularly reassess the impact of pollutant sources and the need for best management practices (BMP's). The SWPPP will be updated and improved throughout the term of the permit and these updates will be informed by the results of monitoring.

7.1 QUARTERLY VISUAL MONITORING

Each discharge point on the site will be examined each quarter by the Airport Engineer or their designated representative for evidence of contamination during a runoff event. Monitoring will take place within the first 30 minutes of a precipitation or snowmelt event if possible, but no more than 60 minutes after onset. Precipitation events must be greater than 0.1 inches in magnitude and occur at least 72 hours after the last runoff producing event. Results of quarterly visual monitoring will be found in Appendix D.

7.2 BENCHMARK MONITORING

Stormwater Monitoring

Benchmark monitoring will include ONLY those outfalls from the airport facility that collect runoff from areas where deicing activities occur (ref. SIC 4581). The deicing outfalls include: Q001A (Stantec S1.001), D018 (Stantec S4.001), and P005 (Stantec S2.020).

For the first year of permit coverage, four benchmark samples will be taken during the deicing season from all outfalls that collect runoff from deicing activities. This time period is defined as October 15-April 15. Periods for quarterly monitoring are therefore defined as follows:

- October 15 to November 31.
- December 1 to January 15.
- January 16 to February 28.
- March 1 to April 15.

This benchmark monitoring will be conducted for the parameters described in Table 7:

Table 7: Benchmark Monitoring

Parameter	Benchmark Cutoff Concentration
Biological oxygen demand (BOD_5)	30 mg/L
Chemical oxygen demand (COD)	120 mg/L
Ammonia	2.14 mg/L
pH	6.0-9.0 s.u.

Sampling will occur during a storm event producing at least 0.1 inch of precipitation, and which occurred at least 72 hours after the last storm event. A single grab sample will be taken at each outfall during the first 30 minutes of the discharge. If sampling is not possible during the first 30

minutes, then the sample will be taken during the first hour of the discharge and the reason why sampling during the first half hour was infeasible will be documented.

Sampling will be collected by a qualified environmental professional and processed at Endyne, Inc. in Williston, VT using approved EPA methods. The results of all benchmark monitoring will be submitted to the Agency using a Discharge Monitoring Report (DMR). The samples results will be sent to the Agency no more than 60 days after sampling took place. A sample DMR and a copy of all monitoring reports will be kept in Appendix E of this document.

If the average of the four samples is less than the benchmark value, then the benchmark monitoring requirement has been met for the term of the permit. If the average of the four samples exceeds the benchmark cutoff concentration, then the SWPPP will be reviewed and corrective actions taken as described in section 3.2.2.4 of the MSGP. This includes continuing the sampling four times during the deicing season until the average of the four samples is below the benchmark cutoff concentration.

Note that based on two consecutive years of average benchmark data, and the referenced MSGP monitoring requirements, **quarterly benchmark monitoring has been discontinued at the Muddy Brook outfall (DO18)** for the duration of MSGP General Permit 3028-9003 (i.e., until August 2016).

Groundwater Monitoring

Groundwater monitoring shall be performed per the permit requirements for the following Underground Injection Control (UIC) Program Permits:

- UIC Permit #6-0075 (Aircraft Deicing Fluid Treatment Facility, Main Apron and NOTE2)
- UIC Permit #6-0084 (Aircraft Deicing Fluid Runoff, South End Development, Phase 2).
- UIC Permit #6-0117 (Aircraft Deicing Fluid Treatment System, 890 Ramp)

Water quality sampling will be performed at specified on-site monitoring wells, and the water samples will be analyzed for the constituents listed in Table 8 below.

Table 8: Required Monitoring Constituents

Parameter	EPA Method
BOD_5	401.5
COD	410.2
Propylene Glycol (PG)	SW 8015B
Ethylene Glycol	SW 8015B
Chloride	325.1
Nitrate	300.0
Total dissolved solids	160.1
Alkalinity	310.1
pH	150.1
Conductivity	120.1 (field measurement)
Temperature	170.1 (field measurement)

Note: Monitoring of Ethylene Glycol is not required for UIC #6-0075

The primary groundwater quality standard that must be maintained at the compliance point is a BOD_5 concentration increase above background of no more than 25 mg/L.

Duration of Monitoring:

Groundwater sampling will be conducted at specified monitoring wells twice annually during October/ November and April/May, coinciding with late fall and spring base streamflow periods as indicated by the Winooski River USGS gage. Sampling in April/May is intended to capture spring runoff and the cumulative effect of winter de-icing operations. BTV initiated this groundwater quality monitoring in 2007. Groundwater sampling will continue under the new SWPPP twice annually until the average of the samples is below the benchmark cutoff concentrations.

Additional Wastewater Monitoring:

Additional wastewater monitoring is required for the 890 Ramp Aircraft Deicing Fluid Treatment System (UIC Permit #6-0117).

Flows from the collection system wet well to the infiltration system will be measured with an in-line magnetic flowmeter. During the first twelve months of operation, weekly flow measurements will be obtained. Subsequently, flows will be measured monthly. The physical and chemical characteristics of the wastewater, as specified in Table 10 above will be analyzed with samples collected from the sump area of the pump station. Wastewater quality will be sampled twice annually, in the Fall (October/November) and Spring (April/May), concurrent with the groundwater quality sampling noted above.

Reporting:

A summary report describing the results of the monitoring will be prepared for each year of monitoring. The report will provide a basis for establishing whether future changes in groundwater quality are attributable to the operation of the BTV infiltration system. These annual reports will be submitted to the DEC, Drinking Water & Groundwater Protection Division (DWGWPD), Underground Injection Control Program by June 30th of the year following sampling.

7.3 EFFLUENT LIMITATIONS

There are no effluent limitations associated with BTV.

7.4 MONITORING ASSOCIATED WITH DISCHARGES TO IMPAIRED WATERS

Potash Brook, Centennial Brook, and Muddy Brook are ~~both~~ included in the EPA Approval Documentation of the *State of Vermont 2014 303(d) List of Waters*. Potash Brook and Centennial Brook, included in Part D of the list, are considered surface waters with a completed and approved TMDL. Muddy Brook, from the mouth to seven miles upstream, was previously noted in Part A of the list, but was proposed and approved for delisting by the EPA in September 2014.

Potash Brook is an impaired water with a TMDL that was approved by EPA on December 19, 2006. Therefore, no monitoring is necessary at this time unless the Secretary informs BTV otherwise at some time in the future. In the event that such notice is provided in the future, the Secretary's notice would include which pollutant to monitor and the required monitoring frequency.

Centennial Brook is an impaired water with a TMDL that was approved by EPA on September 28, 2007. Therefore, no monitoring is necessary at this time unless the Secretary informs BTV otherwise

at some time in the future. In the event that such notice is provided in the future, the Secretary's notice would include which pollutant to monitor and the required monitoring frequency.

Muddy Brook was approved for delisting by the EPA in September 2014. Per direction provided by ANR, Stormwater Section staff in an email dated February 3, 2015, sampling for Total Phosphorus and Total Nitrogen is no longer required. For future reference, this e-mail correspondence is contained in Appendix G of the annual report entitled Annual Report for General Permit 3-9003 (MSGP), dated April 1, 2015.

Corrective Actions must be taken whenever:

- Routine facility inspections, comprehensive site compliance evaluations, or any other process, observation, or event results in discovery of any deficiency; or
- There is an exceedance of a Vermont Water Quality Standard (VWQS), or
- Following a benchmark exceedance, based on the average of 4 benchmark monitoring events conducted during the deicing season (Oct 15 – Apr 15), the SWPPP does not meet the requirements of Part 2 of the MSGP.

8.0 COMPLIANCE EVALUATION

A comprehensive site evaluation will be performed every year. This inspection will include all exposed industrial areas identified in Section 3, Table 4, and all BMP's identified in Section 5.5, of this plan for evidence of stormwater pollution.

The results of the inspection will be documented in a report containing at minimum: the date, the person(s) making the inspection, the scope of the inspection, observations relating to the discharge of pollutants from the facility, BMP's needing maintenance, BMP's which failed to operate as designed, locations where additional BMP's are needed, corrective actions taken, and any updates to the SWPPP. Copies of past inspection reports will be kept in Appendix F.

9.0 ENDANGERED SPECIES

Based on a review of the ANR Environmental Interest Locator, there is one federally listed Threatened species within the immediate vicinity of BTV. This species, the Northern Long-eared Bat (*Myotis septentrionalis*), is known from forested habitat to the east of BTV. Projects and operations at the BTV airfield do not include tree clearing or habitat disturbance, and therefore BTV does not pose an adverse risk to endangered or threatened species designated under the Endangered Species Act. Any work outside of the airfield that will require tree clearing may require coordination with the US Fish and Wildlife Service (USFWS) and Vermont Fish and Wildlife Department (VFWD). Any proposed tree clearing may be limited to winter months (September 1 to April 1) to avoid any potential impacts to listed bats. This site is eligible for coverage under the MSGP by meeting Criteria A, as described in Appendix E of the general permit.

10.0 GENERAL REQUIREMENTS

10.1 RECORD KEEPING AND REPORTING

A copy of this SWPPP will be sent to the VT ANR, Stormwater Section and the original will be maintained onsite. The following documents will be attached to the SWPPP and available on site:

- A copy of the NOI submitted to the Secretary along with any subsequent correspondence;
- A copy of the authorization to discharge received from the Secretary;
- A copy of the permit (or an electronic copy easily accessible and available to SWPPP personnel);
- A description of any deviations from monitoring and inspection schedules and the reason for the deviation (e.g., adverse weather, impractical to collect samples within the first 30 minutes of a measurable storm event);
- A description of any corrective action taken at the site, including information on the triggering event and dates when problems were discovered and modifications occurred;
- Documentation of any benchmark exceedances and how they were responded to, including either (1) corrective action taken, or (2) a finding that no further pollutant reductions were technologically available and economically practicable and achievable in light of best industry practices consistent with Part 6.2.1.2 of the permit.

Records pertaining to inspections, monitoring, maintenance, employee trainings, compliance evaluations, and spills will be kept onsite with the SWPPP. These records must be retained for at least five years after the expiration of the permit. This plan will be made available upon request to the Agency, operator of a municipal separate storm sewer receiving the discharge, and to the public if requested in writing to do so.

10.2 MAINTAINING THE UPDATED SWPPP

This SWPPP will be amended if inspections or monitoring should indicate a deficiency, or Agency personnel determine that it is not effective at controlling stormwater pollutant discharges. The plan will also be amended if changes occur to the facilities layout or operations. A history of amendments will be kept with this plan in Section 11.

10.3 CERTIFICATION

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Name (print): Gene Richards III **Title:** Director of Aviation

Signature:  **Date Signed:** 9/30/16

11.0 SUMMARY OF UPDATES

Date Program or Map Amended	Summary of Updates
April 1, 2012	BTV's SWPPP, including site map and listing of BMP's, were updated for the following reasons: • To reflect re-authorization of General Permit 3-9003 (MSGP) dated August 4, 2012. • To reflect the construction of several new BMP's covered under newly acquired operational Stormwater Discharge Permits since the previous SWPPP was developed in 2008. No other changes to the SWMP other than updating the SWPPP dated April 1, 2012 were required for 2011.
April 1, 2013	BTV's SWPPP, including site map and listing of BMP's, were updated for the following reasons: • To reflect the construction of one new BMP (BMP 17) covered under Underground Injection Control (UIC) Permit #6-0117 (Aircraft Deicing Fluid Treatment System, 890 Ramp) as issued since the SWPPP was last updated on April 1, 2012. • To reflect one PPS location that is no longer valid. The glycol storage facility formerly identified as PPS11 has been relocated (see PPS3) and is no longer a potential pollutant source. In turn, deicing and aircraft fueling operations performed at the Valley West Apron (formerly PPS12) have been renumbered from PPS12 to PPS11. No other changes to the SWMP other than updating the SWPPP dated April 1, 2012 and as amended April 1, 2013 were required for 2012.
April 1, 2014 April 1, 2014, continued	BTV's SWPPP, including site map and listing of BMP's, were updated for the following reasons: • To reflect the construction of one new BMP (BMP #18) covered under the recently issued Stormwater Discharge Permit No. 3028-INDS.3 (Aircraft Sewage Receiving Station) and associated construction including a new building since the SWPPP was last updated on April 1, 2013. Construction of the infiltration trench is complete at this time. Grading, seeding, and mulching of swales is not complete to date. It is anticipated that BMP #18 will be complete and fully operational by June 1, 2014. A Designer's Certification will be

Date Program or Map Amended	Summary of Updates
	submitted with the 2014 MS4 and Individual Stormwater Permits Annual Report. • To reflect changes to the drainage system on the easterly side of Runway 1-19 due to the reconstruction of Taxiway 'B'. • As part of the General Permit 3-9014 (2012) MS4 NOI submission and re-authorization, the SWMP was updated in June 2013.
April 1, 2015	BTV's SWPPP, including site map and listing of BMP's, were updated for the following reasons: • To include information regarding the change in status of Muddy Brook, as it is no longer considered an impaired water according to the State of Vermont 2014 303(d) List of Waters, Part A – Impaired Surface Waters in Need of TMDL. • To include mapping updates to drainage structures associated with construction projects. Construction projects at BTV for the 2014 reporting year include the following: • Aircraft Sewage Receiving Station was largely completed in March, 2014, but grading, seeding, and mulching of swales, and general site cleanup activities continued into summer, 2014. A Designer's Certification was submitted to ANR as part of the *Annual Report for General Permit 3-9014 (2012) MS4 and Annual Report for Operational Stormwater Discharge Permits* (dated April 1, 2015). • Taxiway 'B' Reconstruction Project was completed in December, 2013, but site cleanup activities continued into summer, 2014 • Concrete Apron for Gate 11 at Terminal Building Reconstruction Project, including associated infiltration trench work, was partially constructed in 2014. This work will continue in 2015. • Cargo Apron Reconstruction Project, Phase 2, was partially constructed in 2014. This work will continue in 2016.
April 1, 2016	BTV's SWPPP, including site map and listing of BMP's, were updated for the following reasons: • The site map was revised to include minor drawing changes as well as updated permit numbers. Construction projects at BTV for the 2015 reporting year include the following: • Construct, Mark, and Light Taxiway G/K, Phase 1

Date Program or Map Amended	Summary of Updates
	• Rehabilitate a Portion of Terminal Apron, Phase 2 • Heritage Aviation Parking Lot Reconstruction • Marcelino Project: Material to be removed from Marcelino Property and placed in the Airport Quarry. • Housing Removal on Airport-Acquired Land.
May 9, 2016	BTV's SWPPP was updated for the following reason: • **Date of fuel spill:** 5/2/16 • **Where did the spill occur?** Gate 3 of Terminal Apron • **Is the cause of the spill known? If so, what was it?** United Aircraft leaking overnight. • **How much material was lost during the spill?** 25 gallons. • **Please list the source materials here (i.e. Jet Fuel):** Jet Fuel. • **Was the spill stopped at the source?** No. • **Did the spill enter any enter any storm drains, waterways, drainage ditches, etc.? Please specify.** Yes, the fuel ran downgrade on the terminal apron and entered the trench drain. • **Was the spill contained? If so, what was it contained in?** Absorbent pads and a frac tank were used to clean up the fuel spill. • **Was the spill completely cleaned up so that it no longer poses any ecosystem threat?** Yes.
September 30, 2016	BTV's SWPPP, including site drainage map, was updated for the following reasons: • To include information regarding the Flow Restoration Plan (FRP) as required under BTV's Municipal Separate Storm Sewer System (MS4) General Permit 3-9014. • To include information on the Centennial Brook watershed, an impaired watershed within BTV's MS4 area due to BTV ownership of house removal properties. • As part of the General Permit 3-9014 (2012) MS4 Flow Restoration Plan submission, the SWMP, Volume 1 was updated in September 2016. This includes the request to incorporate ten (10) existing, currently valid operational stormwater permits into the MS4.

Appendix A: Non-Stormwater Discharges

Record the results of the Non-Stormwater Discharge Assessment and Certification in Worksheet 1. If evaluation of any discharge points is impossible, then the discharge points of concern and the reasons they could not be evaluated should be recorded on Worksheet 2.

Worksheet 1: Assessment and Certification of Non-Stormwater Discharges

Date of Test	Outfall	Method Used to Evaluate Discharge	Test Results	Potential Sources	Person or Party Conducting the Test

CERTIFICATION

I _____ (responsible corporate official) certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Name & Official Title	**Area Code and Telephone No.**
Signature	**Date Signed**

Worksheet 2: Non-Stormwater Discharge Failure to Certify Notification

Outfall Not Tested/Evaluated	Why Certification is Infeasible	Potential Sources of Non-Stormwater Pollution

CERTIFICATION

I _____ (responsible corporate official) certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Name & Official Title	**Area Code and Telephone No.**
Signature	**Date Signed**

Appendix B: Routine Facility Inspections

Keep records of all routine facility inspections here. A sample inspection form has been included (see next two pages).

Stantec	Stantec 55 Green Mountain Drive South Burlington, VT	BURLINGTON	City of Burlington, VT Burlington International Airport Multi-sector General Permit

Drainage Structure No. _____ **Routine Facility Inspection Report**

Signature _____ Date: _____ Time: _____

Print: _____ Weather: _____

Permit: Temperature: ± °F _____

BMP Inspection Point **BMP__** (As identified in the SWPPP and shown on the MSGP site map)

BMP Location _____

Control Measures:

Condition of Existing: _____

Effective? Yes: _____ No: _____

Need to replace: Yes: _____ No: _____

Any to be added? _____

Overall Assessment: _____

_____

Incidents of noncompliance observed: _____

_____

Other noncompliance issue identified: _____

_____

Recommended solution(s): _____

_____

Timetable for implementation: _____

Person/persons notified:

Airport official: _____

State of Vermont: _____

Stantec manager: _____

HISTORY:

Any previous problems identified?

No: _____

Yes: _____

Previous recommendations, if any:

No: _____

Yes: _____

Status of recommendation:

_____

Stantec	Stantec 55 Green Mountain Drive South Burlington, VT	BURLINGTON	City of Burlington, VT Burlington International Airport Multi-sector General Permit

DE-ICING & FUELING ACTIVITIES **Routine Facility Inspection Report**

Signature _____ Date: _____ Time: _____

Print: _____ Weather: _____

Temperature: ± °F _____

PPS Inspection Point **PPS __** (As identified in the SWPPP and shown on the MSGP site map)

PPS Location _____

Control Measures:

Condition of Existing: _____

Effective? Yes: _____ No: _____

Need to replace: Yes: _____ No: _____

Any to be added? N/A _____

Overall Assessment: _____

_____

Incidents of noncompliance observed: _____

_____

Other noncompliance issue identified: _____

_____

Recommended solution(s): _____

_____

Timetable for implementation: _____

Person/persons notified:

Airport official: _____

State of Vermont: _____

Stantec manager: _____

HISTORY:

Any previous problems identified?

No: _____

Yes: _____

Previous recommendations, if any:

No: _____

Yes: _____

Status of recommendation:

_____

Appendix C: Employee Training Records

Keep a sign in sheet for each employee training session your facility holds and retain them with this SWPPP.

Refresher Course Employee Sign-In Sheet

Date	Employee Name	Employee Signature

Appendix D: Quarterly Visual Monitoring Inspection Forms

Keep the completed inspection forms with the SWPPP here.

Stantec	Stantec 55 Green Mtn Drive South Burlington, VT		City of Burlington, VT Burlington International Airport Multi-sector General Permit

Quarterly Visual Inspection Form

Inspector: _____

Date: _____ Time: _____

Weather _____

Tempera. ± °F _____

Discharge Point _____ (As identified in the SWPPP and shown on the MSGP site map)

Location of point Below Heritage West ramp, Williston Rd., outside of fence

Sampled from: _____ Free flowing stream

_____ Partially submerged If so, depth of water: _____

Condition of outlet _____

Other remarks _____

_____

In a clean, clear container, analyze a sample of dischage water for:

Characteristic

Color of water: _____

Any odor present: _____

Clarity of sample: _____

Floating Solids: _____

Suspended Solids: _____

Settled Solids: _____

Foam present: _____

Oil Sheen present: _____

Other indicators: _____

Testing Lab used:

Reviewed by: _____

Appendix E: Analytical Monitoring Reports

Results of your site's benchmark, effluent limitation, and impaired waters monitoring should be kept in this section of the SWPPP.

MSGP	*Vermont Multi-Sector General Permit* **Discharge Monitoring Report (DMR)**	Permit Number:
		SIC Code(s):
		Outfall Number:
	Facility Name:	Sample Date:

Benchmark Monitoring **Monitoring Year:** **Quarter:** ☐ **Jan – Mar** ☐ **Apr – Jun** ☐ **Jul – Sept** ☐ **Oct - Dec**

Parameter	Cut-off Concentration (mg/L)	Sample Result (mg/L)

Effluent Limitation Monitoring *(additional space is available on the back)*

Parameter	Sample Type *(circle one)*	Limitation (mg/L)	Sample Result (mg/L)
	1x year / Daily Max		
	30 day avg / Monthly avg		
	1x year / Daily Max		
	30 day avg / Monthly avg		
	1x year / Daily Max		
	30 day avg / Monthly avg		
	1x year / Daily Max		
	30 day avg / Monthly avg		

Impaired Waters Monitoring

Parameter	Cut-off Concentration (if applicable)	Sample Value

Certification

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Name:		Phone Number:	
Signature:		Date:	

E

Effluent Limitation Monitoring (continued)

Parameter	Sample Type *(circle one)*	Limitation (mg/L)	Sample Result (mg/L)
	1x year / Daily Max		
	30 day avg / Monthly avg		
	1x year / Daily Max		
	30 day avg / Monthly avg		
	1x year / Daily Max		
	30 day avg / Monthly avg		
	1x year / Daily Max		
	30 day avg / Monthly avg		
	1x year / Daily Max		
	30 day avg / Monthly avg		
	1x year / Daily Max		
	30 day avg / Monthly avg		
	1x year / Daily Max		
	30 day avg / Monthly avg		
	1x year / Daily Max		
	30 day avg / Monthly avg		
	1x year / Daily Max		
	30 day avg / Monthly avg		
	1x year / Daily Max		
	30 day avg / Monthly avg		

Notes:

Instructions

- A separate DMR form must be submitted for each outfall sampled at your facility.
- List monitoring results for the type(s) of sampling you are reporting in the appropriate section. If your sampling event was used to satisfy more than one type of monitoring (e.g. Effluent Limitation and Benchmark monitoring) you may submit results for each type using the same form.
- For benchmark monitoring, be sure to indicate which quarter the sample was taken in.
- For effluent limitations, the permit may specify that a single grab sample is adequate, or that a daily maximum and a 30 day or monthly average is necessary. Circle the kind of value that you are reporting under the "Sample Type" heading.
- Write additional information about the sample collection and processing in the notes section, such as if the samples were taken more than 30 minutes after the start of discharge and the reason for the delay.
- Keep a copy of your DMR onsite with the SWPPP.
- DMR's must be sent to the Vermont Water Quality Division within 60 days of the sampling event at the following address:

Attn: MSGP Coordinator
Water Quality Division
103 South Main Street
Building 10 North
Waterbury, Vermont 05671-0408

E

Storm Event Data

Information on the storm events sampled should be recorded here. This information does not need to be submitted to the Agency, but should be available upon request.

Sampling Year 20 - 20

	Stantec **55 Green Mtn Drive** **South Burlington, VT**	**City of Burlington, VT** **Burlington International Airport** **Multi-sector General Permit**

Storm Event Data

Record information concerning the storm events that occurred during stormwater sampling. The information need not submitted to the Agency, they may request the data.

Monitoring Period: ______ to ______
MMM/DD/YYYY MMM/DD/YYYY
Date of storm event: ______ Type of monitoring: Benchmark
MMM/DD/YYYY Effluent Limit/Benchmark
Storm duration: ______ Total precipitation: ______
Hours Inches
Time since last measurable storm event ______
Days and/or hours

Monitoring Period: ______ to ______
MMM/DD/YYYY MMM/DD/YYYY
Date of storm event: ______ Type of monitoring: ______
MMM/DD/YYYY Effluent Limit/Benchmark
Storm duration: ______ Total precipitation: ______
Hours Inches
Time since last measurable storm event ______
Days and/or hours

Monitoring Period: ______ to ______
MMM/DD/YYYY MMM/DD/YYYY
Date of storm event: ______ Type of monitoring: ______
MMM/DD/YYYY Effluent Limit/Benchmark
Storm duration: ______ Total precipitation: ______
Hours Inches
Time since last measurable storm event ______
Days and/or hours

Monitoring Period: ______ to ______
MMM/DD/YYYY MMM/DD/YYYY
Date of storm event: ______ Type of monitoring: ______
MMM/DD/YYYY Effluent Limit/Benchmark
Storm duration: ______ Total precipitation: ______
Hours Inches
Time since last measurable storm event ______
Days and/or hours

Note: Add additional data sheets as necessary.

Appendix F: Comprehensive Site Compliance Evaluation

Annual Compliance Evaluation Report for the Burlington International Airport

Name of person(s) completing evaluation: _____

_____

Date of evaluation.....

Weather conditions during inspection.....

Inspect the following BMPs for evidence of contamination of runoff and complete the individual report form for each. Include the date of the inspection, use the Remarks column to record any issues uncovered and provide details of the findings in the table attached to this report. Check "Done" when finished inspecting each BMP.

BMP	Date	Remarks	Done
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
14			
15			
16			
17			
18			

Inspect the following PPSs for evidence of contamination of runoff and complete the individual report form for each. Include the date of the inspection, use the Remarks column to record any issues uncovered and provide details of the findings in the table attached to this report. Check "Done" when finished inspecting each PPS.

PPS	Date	Remarks	Done
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			

Inspect the following stormwater collection systems for evidence of contamination of runoff and complete the individual report form for each. The table has been arranged by permit number and S/N. Include the date of the inspection, use the Remarks column to record any issues uncovered and provide details of the findings in the table attached to this report. Check "Done" when finished inspecting each system. Discharge point for each included on individual BTV Stormwater Permits structures inspection forms.

PERMIT 3028-9010.A BTV Master Permit			
S/N	Inspection Dates	Remarks (See add'l. Maintenance Recommendations)	Done
001			
002			
003			
004			
005			
006			
007			
008			
009			

PERMIT 1-1391 South Apron Expansion (pending MS4)			
S/N	Inspection Dates	Remarks (See add'l. Maintenance Recommendations)	Done
001			

PERMIT 1-0839 North Outfall and Taxiway A Improvements (pending MS4)			
S/N	Inspection Dates	Remarks (See add'l. Maintenance Recommendations)	Done
001	N/A	No longer covered under this permit – see 3028-9010.A	N/A
002			
003	N/A	No longer covered under this permit – see 3028-INDS.A	N/A

PERMIT 3028-9010.2 Reconstruct TW B & C; Relocate TW J; Construct TW G (formerly permit 3028-INDS.A)			
S/N	Inspection Dates	Remarks (See add'l. Maintenance Recommendations)	Done
001			
PERMIT 3028-INDS.AR Reconstruct TW B & C; Relocate TW J; Construct TW G (formerly permit 3028- INDS.A)			
002			

PERMIT 3028-9010.1 Reconstruct, Mark, and Groove Runway 15-33 (formerly permit 3028-INDS.1)			
S/N	Dates	Remarks (See add'l. Maintenance Recommendations)	Done
001			
002			
003			
004			
005			
006			
007			

PERMIT 3845-9010 Heritage Flight Aviation Campus Expansion (formerly Permit 3845-INDS.A)			
S/N	Inspection Dates	Remarks	Done
001			
002			

PERMIT 6-0075 Aircraft De-icing Fluid Treatment Facility (Main Apron and NOTE2)			
S/N	Inspection Dates	Remarks (See Maintenance Recommendations)	Done
001			

PERMIT 6-0084 Aircraft Deicing Fluid Runoff, South End Development, Phase II			
S/N	Inspection Dates	Remarks	Done
001			

PERMIT 6-0117 Aircraft Deicing Fluid Treatment System, 890 Ramp			
S/N	Inspection Dates	Remarks	Done
001			

PERMIT MS4 Miscellaneous Areas Not Covered in Other Permits			
	Inspection Dates	Remarks (See add'l. Maintenance Recommendations)	Done
001			
002			
003			
S/N			
004			
005			
006			
007			
008			
009			
010			
011			
012			
013			

PERMIT 3028-9015.1 Quarry Access Road			
S/N	Inspection Dates	Remarks	Done
001			

PERMIT 3028-INDS.3 Aircraft Sewage Receiving Station			
S/N	Inspection Dates	Remarks	Done
001			

PERMIT 3028-9015.2 Construct, Mark and Light Taxiway "G"/"K"			
S/N	Inspection Dates	Remarks	Done
001			

PERMIT 3845-9015.1 Heritage Aviation Parking Lot			
S/N	Inspection Dates	Remarks	Done
001			

Item Designation: (BMP_, PPS, etc.			Location		
Is there evidence of the following problems?	YES	NO	Describe Problem	Corrective actions	Schedule
Industrial materials, residue, or trash in contact with stormwater					
Leaks or spills from industrial equipment, drums, tanks, or other containers					
Offsite tracking of industrial or waste material, sediment tracked into site					
Waste materials moving from unexposed areas to exposed areas by wind or other movement					
Evidence or potential for pollutants entering the drainage system					
Evidence of pollutants discharging to the receiving waters at discharge points					
Scouring around discharge points or other degrading of structures; excessive silt					

Are there any new sources of potential stormwater pollutants not previously identified in the SWPPP? ..... **YES / NO**

If YES, how will the SWPPP be modified to prevent contamination of runoff?

Have either visual inspections or monitoring during the past year indicated pollution of stormwater which has not been addressed? ..... **YES / NO**

If YES, describe the potential sources of any pollutants found in runoff:

What actions or modifications to the SWPPP are needed to prevent these pollutants from reaching the receiving waters?

N/A

Describe any other places where the site inspection indicated noncompliance with the SWPPP and other conditions of the general permit:

N/A

What other changes to the SWPPP are needed to ensure that the site is in compliance?

N/A

Certification of Compliance

This Compliance Evaluation Report has been prepared by qualified personnel who properly gathered and evaluated information submitted for this Report. The information in this Report, to the best of my knowledge, is accurate and complete. After inspection of all exposed industrial areas BMPs, and stormwater systems, and review of the SWPPP and required monitoring, I find that this facility is in compliance with the SWPPP and the permit.

Name (print): _____ Title: _____

Signature: _____ Date: _____