

# ***GMT CONNECT DRIVE PROJECT***

Burlington, Vermont

Prepared for **Green Mountain Transit**  
15 Industrial Parkway  
Burlington, VT 05401

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## **1.0 Introduction**

On behalf of Green Mountain Transit (“GMT”), VHB has prepared this application package and narrative to describe the regulatory framework and obligations for stormwater management associated with the construction of a 5,118 square foot paved access ramp located at Green Mountain Transit in Burlington, Vermont (the “Project”).

This application is for a State Stormwater Discharge Permit Pursuant to the General Permit 3-9015 due to an expansion of impervious when existing site impervious exceeds one acre.

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## **2.0 Project Description**

The GMT Project involves construction of an access drive between two existing parcels in Burlington located at 1 and 15 Industrial Parkway. The two existing parcels currently being used as bus storage and maintenance as well as offices for Green Mountain Transit. Access to the site is provided by an existing paved drive off Industrial Parkway. The Project will include the construction the access drive joining two parking lots to allow for vehicle circulation between the two parcels without the use of the public roadway and associated stormwater treatment and drainage infrastructure, in addition to full depth reconstruction of the existing parking lot and driveway on the 1 Industrial Parkway parcel.

The Project requires coverage as there is over an acre of existing impervious surface on the 1 Industrial Parkway parcel and the Project creates additional impervious which causes the project to fall under the jurisdiction of stormwater management rules – Environmental Protection Rules, Chapter 18. Additionally, the 15 Industrial Parkway has prior stormwater permit coverage. The Project is in the Lake Champlain watershed.

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## **3.0 Existing Conditions**

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### **Existing Topography, Land Cover, Hydrology, and Soils**

The 1 Industrial Parkway parcel is currently being used as a commercial building for Green Mountain Transit bus storage and maintenance and has approximately 1.05 acres of impervious cover consisting of buildings and paved drives/parking. The Project area mainly consists of a forested area and grass embankment at the southwest corner of the 1 Industrial parcel as well as the northwest corner of the 15 Industrial parcel. There are two existing driveways providing access to the site; Austin Drive to the North and Industrial Parkway to the East. The topography on the site generally slopes from south to north and west to east with slopes ranging from approximately 0.5 to 5 percent. There are no wetlands located on the property.

Runoff is conveyed to Lake Champlain via overland flow and through a series of ditches and culverts.

There are two of soils in the Project area as identified in Table 1 below. A Natural Resources Conservation Service (“NRCS”) soils map highlighting hydrologic soil groups (“HSG”) is included at the end of this attachment.

**Table 1: Project Soils**

<b>Map Unit Name</b>	<b>Map Unit Symbol</b>	<b>Hydrologic Soil Group</b>
Farmington extremely rocky loam, 5 to 20 percent slopes	FaC	D
Covington silty clay	Cv	D

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## **Existing Stormwater Systems**

The 1 Industrial parcel does not have prior stormwater permit coverage and has no existing stormwater management infrastructure. Stormwater runoff from the site area is conveyed via overland flow to the City of Burlington drainage system and routed through a series of ditches and culverts with eventual discharge to Lake Champlain.

The 15 Industrial parcel was originally permitted under discharge permit 1-1277 with two discharge points and included grass channel treatment and a detention basin. This permit was subsequently renewed under 3102-9010 and 3102-9010.R. In 2005, the southern portion of this parcel was redeveloped and permitted under 3102-9015 which included grass channel treatment systems. The northern portion of the parcel remained covered under 3102-9010.R. The 2005 permitting effectively split the two original discharge points between the 9010 and 9015 permits, however the language indicating two discharge points was inadvertently still included in the 9010 permit.

3102-9015 expired in 2015 and due to an oversight has not yet been renewed. Pending acceptance of the permitting methodology outlined in Section 4.0, GMT intends to submit an application to renew this expired permit.

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## **4.0 Proposed Stormwater Management System**

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### **Compliance with the 2017 Vermont Stormwater Management Manual**

This Project will result in 0.12 acres of new impervious surface consisting of the new paved access ramp. Due to topography and site constraints, runoff from the new impervious surface is split between the 1 and 15 and Industrial parcels, with 0.08 acres of new impervious draining to 1 Industrial and 0.04 acres of new

impervious draining to 15 Industrial. The new impervious draining to 15 Industrial is within the area covered under 3102-9010.R. Efforts were made to provide treatment for this portion of the new impervious in the grass area along the boundary between the two parcels, however due to the constraints imposed by the existing develop and the amount of effectively unmanaged existing impervious draining to this area, treatment in accordance with the VSMM was found to be not feasible.

Therefore this application proposes to utilize site balancing to demonstrate compliance which is accomplished by treating existing unmanaged impervious on the 1 Industrial parcel.

The receiving water for the Project is Lake Champlain which is designated as warm-water fish habitat, where depths are less than 25 feet at Low Lake Level (93 feet NGVD) from June 1, through September 20, per Appendix A of the Vermont Water Quality Standards.

### **Post-Construction Soil Depth and Quality Treatment Standard**

The Post-Construction Soil Depth and Quality Standard applies to all disturbed areas within the limits of the site which are not covered by an impervious surface, incorporated into a structural stormwater treatment practice, or engineered as structural fill once development is complete. The various options available to the Contractor for meeting this criterion have been provided on the plans.

### **Water Quality Treatment Standard**

The water quality requirements for this project will be met by site balancing and treating the impervious parking area along the northwest part of the parcel draining to the north. The proposed treatment system will treat 0.34 acres of existing impervious which exceeds the 0.09 of new impervious that will not be treated, therefore meeting the site balancing requirements. Due to the site being located on HSG 'D' soils, a Tier 1 treatment practice could not be utilized. Additionally, due to site constraints Tier 2 treatment practices were unable to fit in the limited area available for treatment, which lead to Tier 3 being necessary for treatment.

The proposed stormwater treatment approach utilizes a dry swale in the grass area between the northern parking lot and Austin Drive. A grass filter strip has been proposed for pre-treatment. Please refer to the accompanying DEC application forms and worksheets for demonstration of compliance with the applicable treatment standards of the VSMM as well as conformance with the applicable VSMM treatment criteria and design requirements for stormwater treatment practices to be implemented for the Project. The VSMM treatment standards that apply to this Project are Water Quality, and Overbank Flood Protection Treatment Standards.

The proposed Dry Swale has been designed to contain a 24" thick sand filter underlain by a 12-inch thick layer of crushed drainage stone which features an 8-inch underdrain system. Runoff enters a grass filter strip for pre-treatment before entering the dry swale.

### **Channel Protection Standard**

This standard is waived because the site is discharging to waters with a drainage area equal to or greater than 10 square miles and that is less than 5% of the watershed area at the site's upstream boundary.

### **Groundwater Recharge Standard**

This standard is not applicable due to the HSG D soils on the site.

### **Overbank Flood Protection Standard**

This standard is waived because the site is discharging to waters with a drainage area equal to or greater than 10 square miles and that is less than 5% of the watershed area at the site's upstream boundary.

### **Extreme Flood Protection Standard**

This standard is waived because the site is discharging to waters with a drainage area equal to or greater than 10 square miles and that is less than 5% of the watershed area at the site's upstream boundary.