VTrans Project Post-Construction "Operational" Stormwater Protocol

Updated April 2022

This document describes the process used to facilitate regulatory compliance for typical VTrans Highway Division projects, beginning with design, through construction, and ultimately post-construction and operation. The guidance is intended for designers, project managers, and stormwater staff and identifies the steps involved in advancing a project that requires an operational stormwater permit and is located within State ROW or on State property.

Stormwater staff referenced in this document include the Project Development Bureau's Stormwater Engineer and Green Infrastructure Engineer (PDB SW), Construction Bureau's Construction Environmental Engineer (CEE), and District Maintenance and Fleet Division's Stormwater Technicians (DMF SW).

Design

Coordination between the Project Managers, designers, and PDB SW is critical to the successful design and permitting of projects with stormwater needs. It is strongly suggested that coordination begin as early in the project development process as possible and should continue regularly throughout design development, as stormwater design and permitting is an iterative process.

Resource ID

The Resource ID review is often the first involvement and project review by the PDB SW and is initiated with the Project Manager submitting a VPINS request. As part of this review, PDB SW will perform a desktop review to assess the following:

- Project Location
  - Land ownership – VTrans or Town
  - MS4 area
  - Water Supply Source Protection Area
- Existing Stormwater Permits
  - Within the project limits
  - On adjacent properties
- Site Constraints
- Existing Drainage or water quality concerns
- Impaired (303(d) list) or stressed waters
- Municipal SW Master Plan or Tactical Basin Plan opportunity
- Known direct discharges to surface waters or hydrologically connected roads
- Opportunities to mitigate water quality impacts

In addition, if the PDB SW suspects that an operational stormwater permit may be needed, their review may include a site visit, coordination with DMF SW and more in-depth analysis, including:

- Topography
- Drainage Pattern Identification – Where does the water leave the project? Where is the water going?

        - Discharge locations
        - Receiving waters
            - Classification (warm or cold water fishery)
            - Impaired/Non-Impaired/ Stressed (with description)
            - Outstanding Resource Waters
        - Subwatershed delineations
    - Soil Types – primarily HSG and general sense of infiltrative capacity
    - Other Constraints
        - ROW
        - Utilities

At the conclusion of Resource ID, PDB SW will prepare a memo of their findings, which is shared with the Project Manager. PDB SW will also reach out directly to the Project Manager to draw attention to unique stormwater considerations, should any be identified during the initial review.

Initial Project Design

As the project design begins to take shape, assessing permit jurisdiction and applicability is an important step that should be coordinated with PDB SW. This begins with the designers developing a set of shaded plans depicting the impervious areas and calculating the associated areas. This should be shared with PDB SW for their review and concurrence using the Stormwater Impact Data Form.(Appendix A) It is best to conduct this analysis as soon as possible in preliminary plan development and the Stormwater Impact Data Form should be completed when the project is submitted to VPINS for NEPA review, if not sooner.

If the project will involve more than one acre of earth disturbance, but does not otherwise meet the jurisdictional threshold for an operational stormwater permit, the project will follow the "Gap Procedure" as outlined in Appendix B.

If an operational stormwater permit is required for the project, the following will need to be identified:

- Proposed Topography
- Drainage Patterns – Any changes from existing?
    - Discharge point locations to be used for permitting
    - Receiving waters
- Subwatershed delineations
- Detailed tabulation of impervious areas by discharge point & receiving water

Based on that information, in addition to the information previously gathered during Resource ID, the designer, Project Manager, PDB SW, and DMF SW should collaborate on selecting appropriate stormwater treatment options. This will involve a review of typical BMP's and considerations for future maintenance needs. The designer and PM will initiate field testing (depth to groundwater, infiltration rates, etc), as necessary.

The designer, with support from PDB SW as needed, will then conduct the iterative process to identify the best treatment locations with appropriately sized practices to provide the required treatment. Efforts should be made to avoid the need to be a co-permittee with Municipalities (or

other State Agencies) to the extent practicable so that the permit can be incorporated into the TS4.

PDB SW will update the shared permit tracking workbook to include the project.

Permit Application Process
Once the stormwater design has been established, the designer will prepare the application materials, following ANR's Application Requirements for Operational Stormwater Permits. This includes the following:

- Narrative
- Workbooks
- Worksheets
- Modeling (if required)
- Plans (relevant to Stormwater)
- Plan Sheet Reference Form

The materials are then shared with PDB SW and DMF SW for internal review. Once all the comments have been addressed, the eNOI on ANR's web portal or TS4 amendment form is filled out and the application materials are attached.

For in-house designed projects, PDB SW will fill out the eNOI form,based on information provided from the designer. For consultant designed projects, the consultant designer will fill out the eNOI and then share the online application with PDB SW for review and submission. DMF will be listed as the permit applicant.

Prior to submission, PDB SW will schedule a pre-application meeting with the ANR Stormwater Analyst, Project Manager, designer, and DMF SW to introduce the project and provide an overview of the stormwater treatment approach.

DMF signs the Applicant Certification Form and PDB SW then submits the application. Once determined administratively complete with a permit number assigned, PDB SW initiates the fee payment process. In the event that there are questions or review comments from ANR, PDB SW will work with the PM, designer, and DMF SW to respond and update the application as necessary.

Once the permit has been issued, PDB SW will do the following:

- Forward notice of issuance and permit to the PM and DMF SW
- Label and save a copy of the permit in the project's ContractDocs environmental folder on the M: drive as "Operational Stormwater Permit"
- Update the shared tracking worksheet
- Add the permit issued date to the VPINS permitting request and complete the OSW Permits tab
- Place a copy of the permit and associated application materials in a new folder on the shared Z: drive MOB_STORMWATER
- Enter relevant data into the Phosphorus Control Plan BMP tracking table

Final Design & Contract Document Preparation

As the project advances through Final Design, any changes impacting the permitted treatment measures, including the impervious areas draining to them, should be communicated to PDB SW. If the Project's Final Plans are distributed via On-Line Shared Review, they will be reviewed by PDB SW, CEE, and DMF SW.

The PM is responsible for ensuring that the permitted design is conveyed accurately in Contract Documents, including plans and specifications, with treatment areas clearly identified as such in the plans.

Construction

Prior to the Notice to Proceed with construction, the CEE will review the contract documents and consult with PDB SW to understand the stormwater treatment measures, locations, and any other requirements. The CEE will then convey this information to the Resident Engineer, Inspector, and Contractor via the pre-construction conference. For involved or complex projects, PDB SW may also attend the pre-construction conference.

While construction is underway, the CEE will perform regular field visits and provide updates to PDB SW and DMF SW on the progress of BMP installations and any related concerns. Photos during BMP installation are helpful for verification and troubleshooting, should a BMP not be functioning as fully intended after installation.

If field changes are proposed during construction, PDB SW shall be contacted to determine if there is any impact to the stormwater design and whether a permit amendment permit is necessary. Any deviations in impervious surface, drainage conveyance or permitted stormwater management must be reviewed by PDB SW and documented as either not needing further action or permit amendment (supported by confirmation from DEC Stormwater Section, as necessary) and coordinated with the PM. If an amended stormwater permit is deemed necessary, it shall be obtained prior to project acceptance and transfer of the project to DMF.

For projects needing to meet the Post-Construction Soil Depth and Quality Standard (in accordance with the *2017 Vermont Stormwater Management Manual Rule*), PDB SW will assist the CEE and Resident Engineer with conducting the required shovel tests once work in the given area has been completed and protected from compaction.

Prior to the completion of construction, a pre-final site inspection with the CEE, PDB SW, and DMF SW will be scheduled. This inspection shall be after treatment measures have been installed, but before the contractor has demobilized from the project site. In this meeting SW Staff will compare permitted documents to in field features to ensure compliance with the stormwater permit. Additional intermediate field visits may also be scheduled, as needed.

Once it has been determined that the project is built and functioning as designed and permitted and all "punch list" items have been resolved, PDB SW will complete and submit the Initial Designer's Certification of compliance, either themselves, or in coordination with the original project design team. Once the Initial Designer's Certification has been filed with ANR, PDB SW will notify DMF SW, place a record of the filing in the shared z: folder and update the shared permit tracking workbook. Responsibility for ongoing operation and maintenance of the

stormwater management system can then be officially transferred to DMF for ongoing compliance under the permit. (For town-owned projects, this transfer will be to the town road authority.)

Post-Construction (Operation)

Following official Acceptance and transfer, DMF will move the project in the shared permit tracking workbook from the PDB to the DMF tab and will assume ongoing responsibility for permit compliance and stormwater management system operation, maintenance, repair and/or replacement. DMF SW will input and maintain stormwater features in GIS database. DMF SW will provide necessary training to District Staff on location and requirements of permit treatment areas.

The District Staff and Maintenance Stormwater Techs will work together to ensure routine inspections are conducted and report findings as required by the stormwater permit with oversight and compliance tracking from PDB SW. Any failures or matters of non-compliance shall be presented to DMF SW prior to submittal to DEC Stormwater Program. DMF district staff will take necessary corrective actions with assistance from DMF SW to repair or replace stormwater treatment infrastructure necessary to maintain compliance with permits.

DMF SW will process renewals or amendments in coordination with PDB SW, as needed. Whenever possible, DMF SW will incorporate 9050/INDS permits into the TS4. DMF will be the applicant on all permit renewal or amendment forms submitted.

DMF SW will also be responsible for maintaining updated permits in Municipal Land Records associated with permit.

APPENDIX A
Stormwater Impacts Data Form

INTER-OFFICE MEMORANDUM

Clear Form

STORMWATER IMPACTS DATA FORM

TO: Jon Armstrong **DATE:**

FROM:

PROJECT:

The purpose of this form is to assist with an initial review of stormwater permit jurisdiction and applicability as early in the design process as possible. Information provided on this form should be a reasonable estimate of the areas involved. (Note that the corresponding areas that will later be provided on the Project Impact Data Form may need to be updated based on design refinements.)

Please provide a title sheet, typical section(s), and shaded plan sheets depicting anticipated areas associated with impervious surfaces.

Vermont State Construction EPSC Stormwater (NPDES):

Anticipated area of earth disturbance within project limits _____ (acres)

(include contiguous and on-site waste, staging, borrow, and haul, but do not include reclaim or paving areas).

Vermont State Operational Stormwater Discharge (Post Construction):

Name of the receiving water(s) [include watershed, if groundwater]? _____

Is there an existing Stormwater Permit(s) issued for this location? (If yes, Permit #?) _____

Calculate *anticipated* areas of post-construction impervious surfaces[1]:

1. New/Expansion (where none existed): _____ (sq ft)
2. Redevelopment (full-depth reconstruction of existing impervious surface): _____ (sq ft)
3. Existing Impervious to remain (areas not being redeveloped): _____ (sq ft)
4. Existing Impervious to be removed and restored to pervious _____ (sq ft)
5. Total Pre-Construction impervious (2 + 3+ 4 above): 0 (sq ft)
6. Total Post-Construction impervious (1 + 2 + 3 above): 0 (sq ft)

[1] For linear projects, calculate areas of proposed impervious within the project limits, but do not include approaches, driveways, private roads, and portions of bridge decks over OHW. For non-linear projects, include all impervious surfaces within the parcel that is associated with the facility.

APPENDIX B
Gap Procedure

VTrans Stormwater GAP Procedure

(July 2021)

The "GAP Procedure" is the process of managing stormwater on projects that involve greater than 1 acre of earth disturbance (and therefore require a construction stormwater permit), but do not trigger jurisdiction under the State's operational stormwater permit program. The requirement to manage these projects is part of the Minimum Control Measures, identified within the Agency's TS4 Stormwater Management Program (SWMP).

The following steps outline the process to comply with the GAP procedure.

Project Manager (PM)	1. Submits the project for Environmental Permits through VPINS with a completed Project Information Data Form (PIDF).
Stormwater Engineer/Green Infrastructure Engineer (SWE/GIE)	2. Assesses if GAP Procedure applies to the project.
	3. Adds "GAP" to VPINS under the OSW tab.
	4. Notifies PM and Maintenance Water Quality Unit (MWQU) Stormwater Technician via email that GAP Procedure applies and schedules meeting to review/discuss.
	5. Updates Shared Tracking Workbook to include project.
	6. Begins filling out the GAP Worksheet. • Assess Level 1/2/3 Practice required • Review plans to identify potential practices & locations
	7. Meets with PM (and designer/consultant) to review practices.
PM	8. Designs treatment practices and incorporates into plans.
SWE/GIE	9. Completes GAP Worksheet.
	10. Prepares GAP Documentation (one combined PDF): • Memo with brief description • Completed GAP Worksheet • Plan/map showing location(s) of treatment practices
	11. Distributes completed GAP document to: • PM • Environmental Specialist • Construction Environmental Engineer • MWQU Stormwater Technician.
	12. Updates VPINS with date of distribution. ("GAPmmddyy")

MWQU SW Tech	13. Tracks, inspects, and maintains (as needed) stormwater treatment practices as assets