Stormwater….what is it, why is it a problem and what is the transportation connection

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Current Regulatory Programs Addressing Stormwater

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VTrans Response to Those Programs

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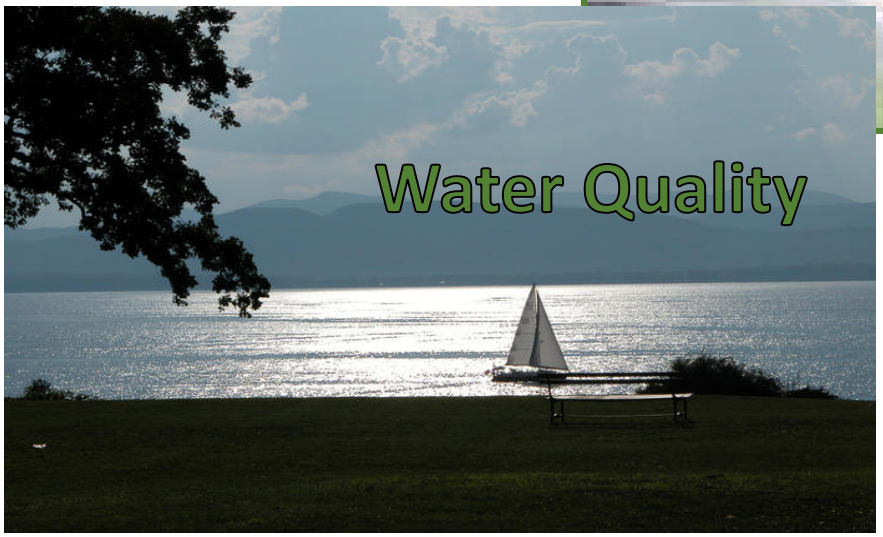
Regulatory Outlook and What it Means for VTrans

Responding to "Vermont's Clean Water Initiative"



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Road-Related Stormwater Management

Road surfaces can carry both land-adjacent and road-vehicle pollutants including heavy metals from tires, brakes, and engine wear, and hydrocarbons from lubricating fluids.

If these pollutants are not properly controlled they can cause waters to become impaired, meaning they no longer meet state Water Quality Standards.

Transportation authorities are **responsible for maintaining stormwater systems along streets, roads, highways and other transportation facilities** (Airports, Maintenance Yards, Park & Rides, Welcome Centers, Gravel Pits, etc) by managing the quality and quantity of stormwater discharging to our nation's waters via those systems.

Transportation stormwater management differs in some ways from traditional regulated entities (cities, towns, retail, commercial). Some of the differences include:

- **Linear transportation systems often stretch for many miles**, and cross numerous waterways, watersheds, and jurisdictions.

- Transportation storm conveyance systems often discharge stormwater and associated pollutants that originate **outside** of the transportation right-of-way.

Current Stormwater Regulations

Act 64 – Vermont's Clean Water Act

A broad suite of programs and regulations to address water quality including:

- Transportation Separate Storm Sewer General Permit (TS4)
  - Municipal Separate Storm sewer System (MS4)
  - Multi-Sector Industrial General Permit (MSGP)
  - State Operational Stormwater Discharges (State OSW)
  - Total Maximum Daily Load(TMDL)
- State Construction Stormwater Discharges (not part of TS4)

VTrans Response to Current Stormwater Programs

- ✓ **Integration of stormwater** across the Agency and fostering a new way of thinking in the Agency

- ✓ **New programs, initiatives and focus** across the Agency:
  - ✓ Integration of stormwater concerns early in project delivery process (resource identification and scoping)
  - ✓ Greater focus on Asset Management (inventory, mapping, GIS) and Asset Maintenance (street sweeping, catch basin cleaning, repair, etc)
  - ✓ TMDL Planning and Implementation
  - ✓ Enhanced education, outreach and awareness
  - ✓ Improved internal coordination

- ✓ **Enhanced partnerships and collaboration** with Municipalities, Watershed Groups and State and Federal Agencies looking to gain efficiencies, raise public awareness and address surface water quality issues

- ✓ **Focused assistance to Municipalities** (Better Back Roads, VT Local Roads, VTrans Training Center, funding through Town Grant Programs and Municipal Assistance Bureau

- ✓ New and reallocated **positions**

- ✓ **Committed funding** program for clean water projects averaging 7 million a year over the next 5 years.

Major Elements VTrans will undertake with TS4

TS4 takes what we are currently doing and apply it across the entire state to varying levels resulting in:

- **Increased asset management**, mapping, operation, maintenance, inventory, inspection, reporting and tracking activities
- **Building more stormwater treatment practices** targeting a variety of pollutants (sediment, phosphorus, nitrogen, bacteria, other)
- **Implementing a stormwater retrofit program** addressing environmental mitigation/restoration for legacy impervious surfaces
- **Public education and outreach**
- **Increased need to partner with municipalities** on Flow Restoration & Phosphorous Reduction Planning and TMDL implementation
- **Increased need to address source control**, pollution prevention, and stormwater management at all of the Transportation Maintenance Facilities (65 plus sites)
- **Increased need to manage "run-on"** and enforce against illegal connections and illicit (non-stormwater) discharges into the ROW
- **Implementing TMDLs**
- **Committing the necessary funding, resources and staff** to support these efforts

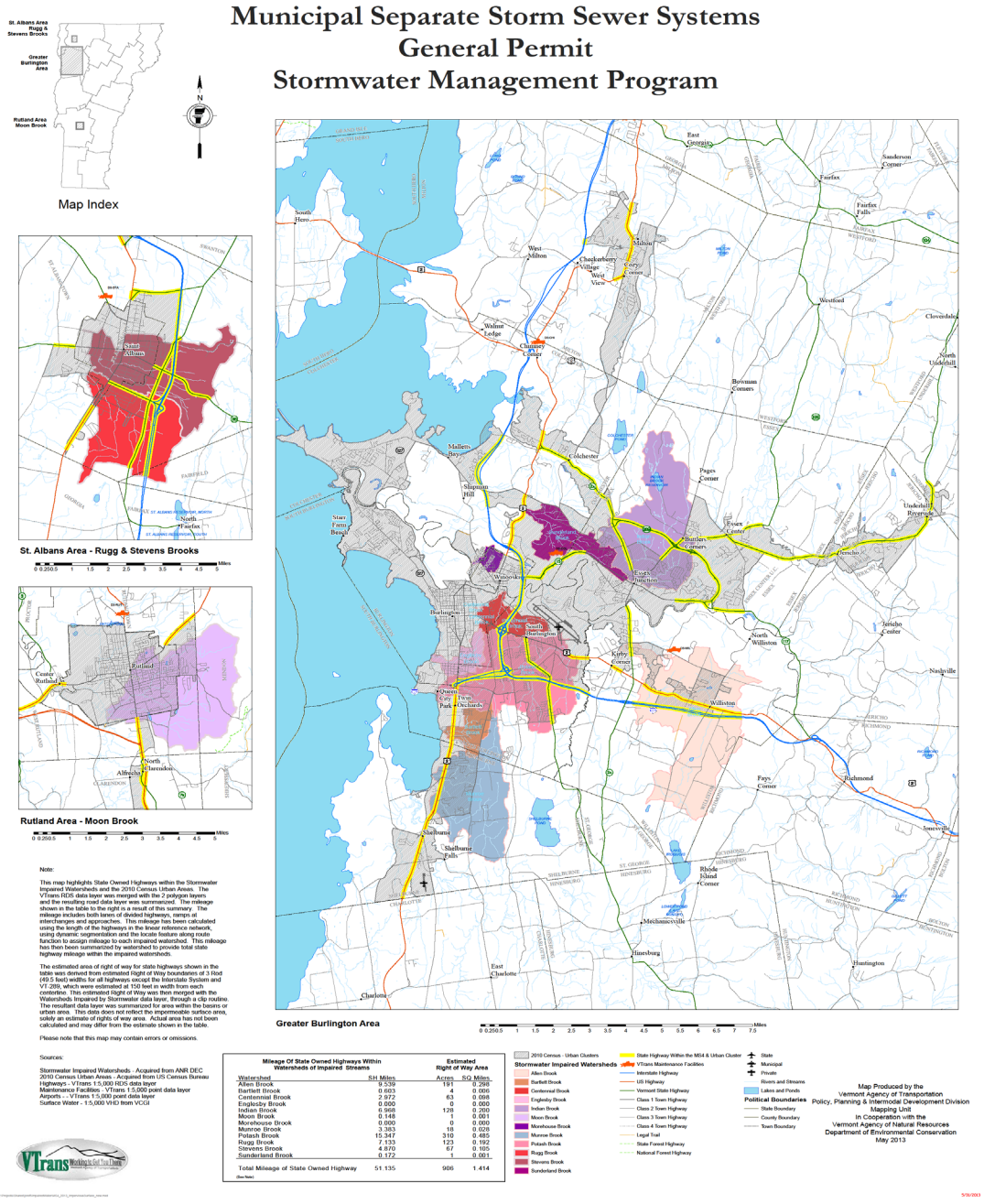
Municipal Separate Storm Sewer System(MS4)

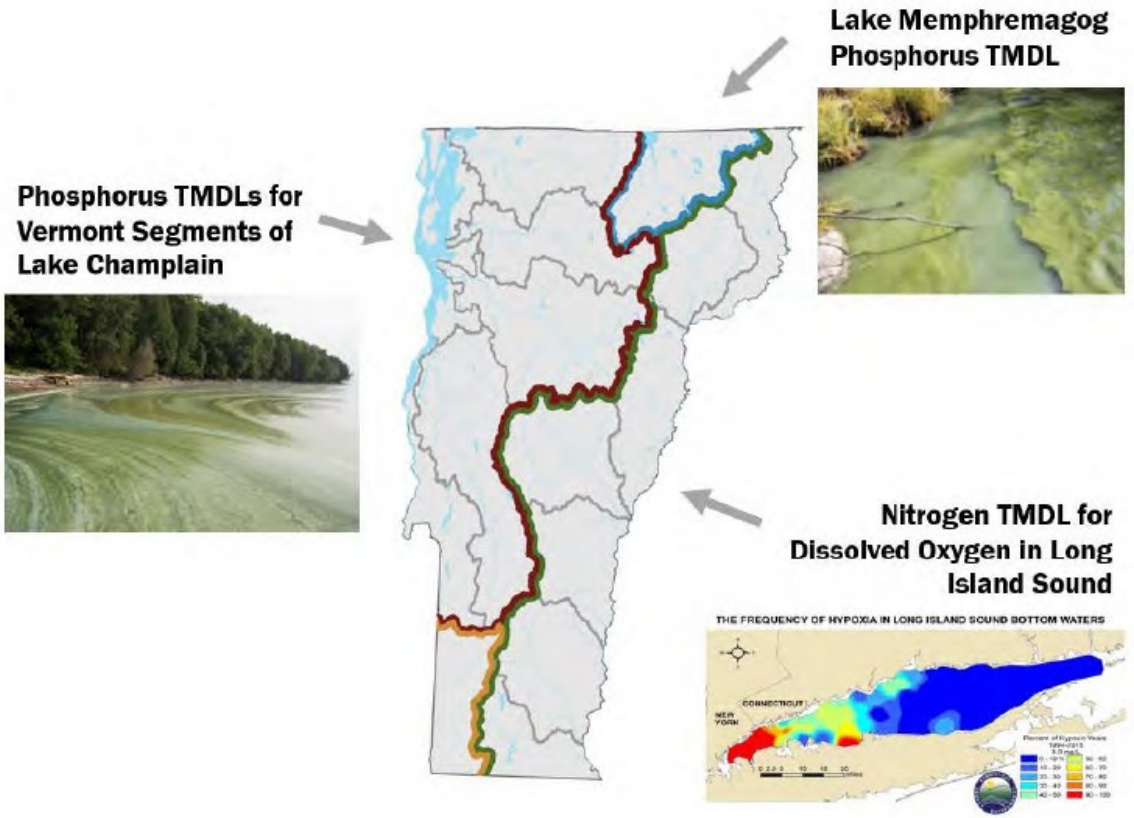
2003 with new provisions & expanded area in 2012

Goals:

- Public education & participation
- Construction and post-construction stormwater measures
- Asset mapping/management
- Illegal discharge detection and elimination program
- MSGP activities for transportation garages
- Water quality monitoring
- TMDL compliance
- Good housekeeping at Transportation Garages
- and more…

VTrans is subject to this permit in 15 watersheds includes transportation infrastructure in multiple communities (Burlington, Colchester, Essex Town, Essex Jct, Jericho, Milton, Shelburne, So. Burlington, Williston, Winooski, St. Albans City & Town, Rutland Town).





Total Maximum Daily Load (TMDL)

- TMDLs are issued to address the pollutant of concern or stressors (e.g. phosphorus, nitrogen, Stormwater, etc…).
- Watershed specific Plans (implementation under MS4/TS4)
- Requires collaborative planning/design/construction/maintenance of new & retrofit stormwater treatment.

Flow Restoration Planning (FRP) and Phosphorus Control Planning (PCP) under TMDL

FRP Implementation

- Focus on 303(d) listed waterways impaired for stormwater
  - Allen, Bartlett, Centennial, Indian, Moon, Munroe, Potash, Rugg, Stevens, and Sunderland Brooks
  - VTrans FRP has been developed and is now starting to be implemented
    - Allen Brook Final Design, construction planned for the 2019 construction season.
    - Beginning Final Design of Rugg and Stevens Brooks
  - **Complete implementation no later than December 5, 2032**

PCP Development and Implementation

- Lake Champlain TMDL schedule as outlined in the TS4 permit:
  - ✓ April, 2018 – establish baseline P load and reductions needed
  - ✓ October, 2018 – complete GIS inventory of P loading factors
  - April 2019 – complete development of coefficients of loading rates
  - April 2020 – complete generalized statewide PCP
  - October 2020 – 2032 - submit four 4-year implementation plans
  - **Complete implementation no later then June 17, 2036**

Gravel Wetland in St. Albans before (top) and after (bottom)

Multi-Sector Industrial Stormwater Permit (MSGP) 2007

- Transportation Sectors impacted include Airports, Gravel Pits, and Public Transit & Rail Facilities

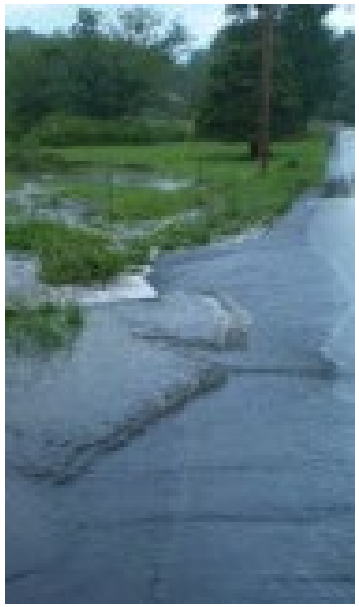
- Goal is to manage sites for industrial stormwater runoff and source control, materials storage, usage & disposal, vehicle washing and equipment maintenance

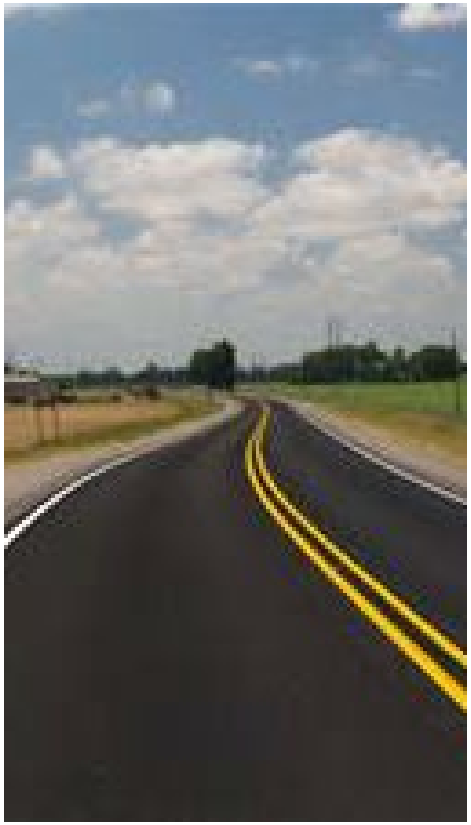
- Requires development of a Stormwater Pollution Prevention Plan for each facility

- Requires facility audits, training, new and retrofit treatment and surface water quality testing

Vermont Post-Construction Operational Stormwater Discharge Permit Program pre-2002

- A State program addressing “post construction” stormwater discharge management off new or redeveloped impervious surfaces statewide (roads, buildings, parking lots, etc)
- Permanently treating stormwater with collection, conveyance, treatment and discharge practices.
- Average for VTrans is **10 projects** per year obtain this permit.
- Currently **82 projects** constructed and being maintained (and growing).
- Another **42 projects** under design development, permitting or construction.
- Statewide program only required on projects that trigger jurisdiction. **These numbers are expected to increase with lowered ½ acre threshold**.
- Site-by-site approach not a watershed approach.





Construction Stormwater Permit (CGP) 2004

- Statewide Program
- Goal is to prevent discharge of sediment to surface waters
- Project specific regulating temporary earth disturbance & construction
- Requires design & construction of temporary erosion prevention & sediment control practices
- On average 30 VTrans projects per year need this permit

VTrans Partnerships

VTrans Partners and collaborates with Municipalities, Watershed Groups, State and Federal Agencies, and others looking to gain efficiencies, raise public awareness and address surface water quality issues.

- Vermont DEC
- Vermont Agency of Agriculture
- US EPA
- LCBP
- Regional Planning Commissions
- Municipalities
- Watershed Groups
- Other New England DOTs
- The University of Vermont

VERMONT
DEPARTMENT OF ENVIRONMENTAL CONSERVATION

The University of Vermont

VTrans Working to Get You There
Vermont Agency of Transportation

Chittenden County
Regional Planning Commission

Lake Champlain
Basin Program

United States Environmental Protection Agency