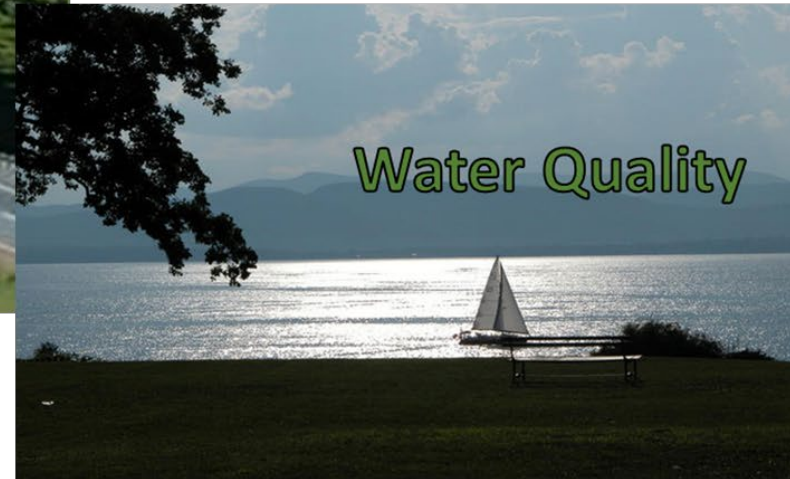


# VTrans' Clean Water Initiatives & Investments

## February 28, 2019

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# Why does stormwater matter and what is transportation nexus?

Road surfaces can carry both land-adjacent and road-vehicle pollutants (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 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.



# VTrans Transportation Infrastructure and Facilities Subject to Clean Water Regulations

2,709 State Highway System Miles  
(20% of Vermont road network)  
378 Interstate + 2,331 State Highway

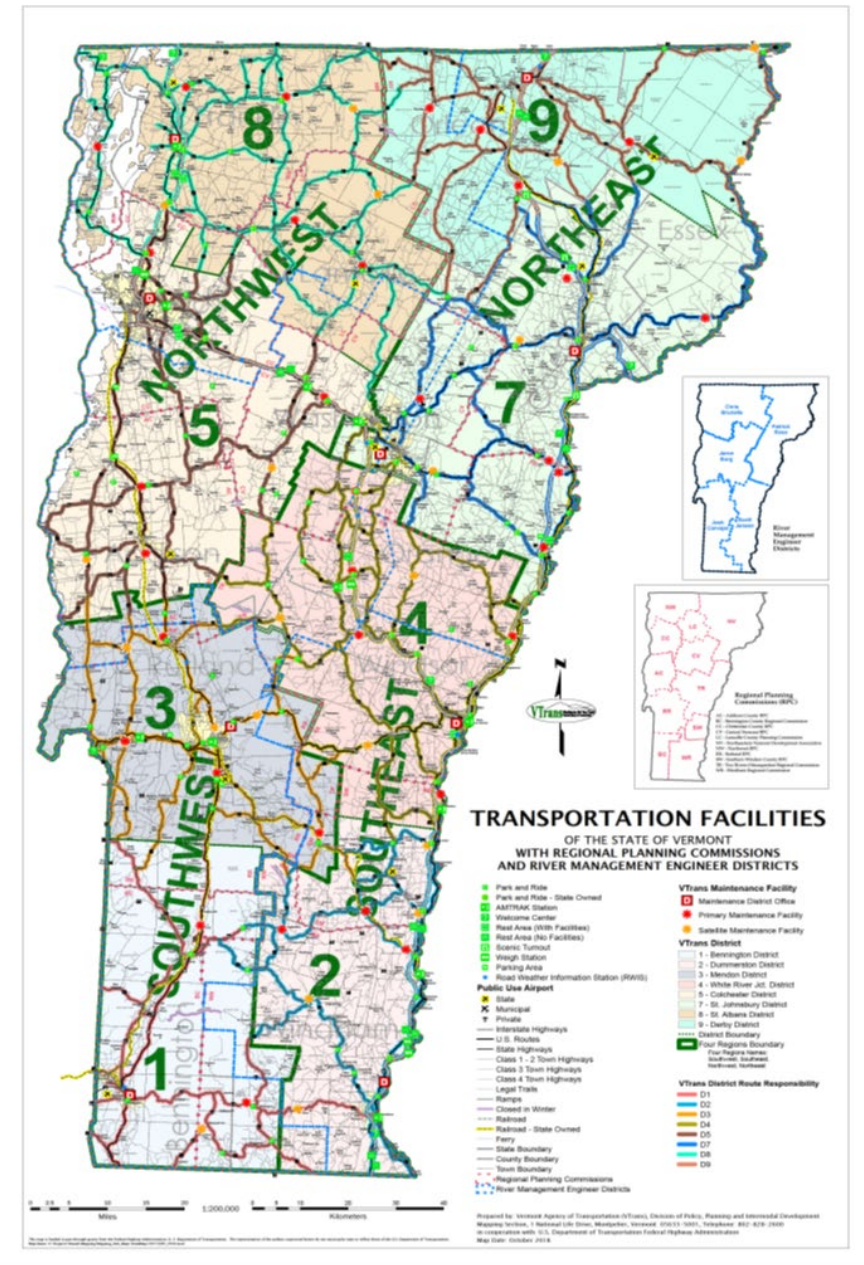
30 State-Owned Park & Ride Lots

64 State Maintenance facilities

10 State-Owned Airports

3 State-Owned Gravel Pits

**VTrans maintains extensive compliance programs addressing multiple clean water/stormwater regulations impacting its entire transportation network, associated infrastructure, and facilities.**







# What is the regulatory framework VTrans is subject to?

VTrans has a role to play under Vermont’s Act 64 “Clean Water Act” and under pre-Act 64 regulations addressing stormwater from its highways and non-road developed lands. *(for details refer to VTrans testimony of 1/29/2019)*

➤ **Transportation Separate Storm Sewer System** (TS4 - since 2018) General Permit (VTrans specific statewide permit allowing several stormwater programs to be rolled into one comprehensive regulatory program), includes:

Municipal Separate Storm Sewer System General Permit (MS4 – since 2003) – a MS4 is a conveyance or system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, man-made channels, or storm drains). In addition to TMDL implementation, requires compliance with six minimum control measures including:

- Public Education & Outreach
- Illicit (non-stormwater) Discharge Elimination
- Post-Construction Runoff Control
- Public Participation & Involvement
- Construction Site Runoff Control
- Pollution Prevention & Good Housekeeping

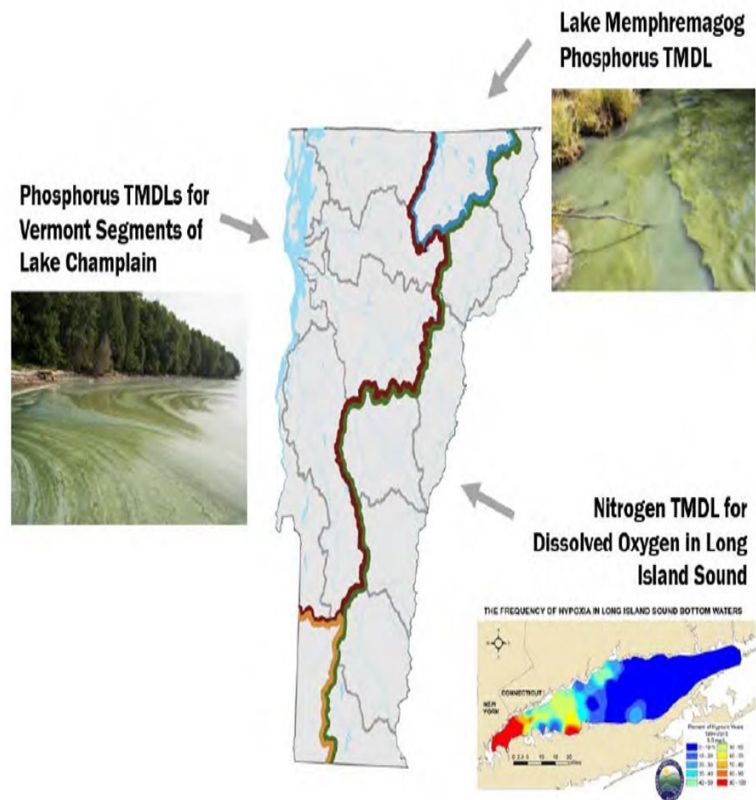
Total Maximum Daily Load (pre and post Act 64) - establishes reduction targets for specific pollutants (e.g. stormwater flow, phosphorus, E. coli, etc.) to attain water quality standards

Multi-Sector Industrial General Permit (since 2007) – regulates discharges of stormwater from industrial facilities which conduct activities and use materials that have the potential to impact the quality of Vermont’s waters (applies to State Airports and Gravel Pits)

State Operational Stormwater Discharges (since pre-2002) – regulates stormwater runoff from the construction, expansion, and redevelopment of impervious surfaces pursuant to the permit threshold triggers established in Vermont Statutes (average 10 projects per year obtaining coverage and building treatment)

➤ **State Construction Stormwater General Permit** (since 2003) – Not under TS4 - regulates discharge of stormwater runoff from construction activities with average 30 projects per year complying with this permit during construction.

# What are Clean Water Projects?



Most of Vermont’s water quality problems are caused by nonpoint sources of pollution. Nonpoint source pollution includes nutrient and sediment pollution transported from the landscape to waterways by rain-runoff and snowmelt. TMDLs target nonpoint source pollutant reductions in addition to end-of-pipe (point source) reductions.

Most of the State of Vermont is covered by large TMDLs that require nutrient pollution reductions (i.e. phosphorus and nitrogen), shown in this map. Phosphorus TMDLs seek to address cyanobacteria (i.e. blue-green algae) and Nitrogen TMDLs seek to address low dissolved oxygen in the Long Island Sound. Other TMDLs include Stormwater Flow Reductions in MS4 Watersheds.

**Clean Water Projects** are intended to address a specific pollutant of concern in a watershed with an approved Clean Water Restoration Plan (i.e. Total Maximum Daily Load or TMDL).

They include structural stormwater treatment systems (detention ponds, underground treatment chambers, infiltration trenches and filters, gravel wetlands, and many more).

There are many non-structural practices being implemented that benefit water quality and do not result in the construction of a including street and lot sweeping/vacuuming, drop inlet sump vacuuming, erosion prevention and sediment controls and pollutant source control.

# What Clean Water Projects is VTrans investing in?

## St. Albans Park & Ride Gravel Wetland Retrofit (2010)

Eliminated direct discharge to stream, reduce flow, promote **infiltration** and phosphorus reduction



## St. Albans I-89 Exit 19 & 20 Median Infiltration Trenches (2012)

Modified grass swale to reduce flow, promote **infiltration** and phosphorus reduction

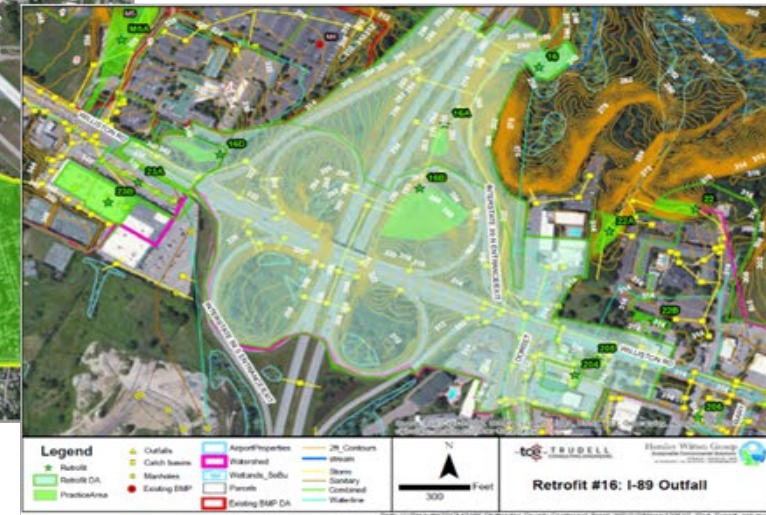
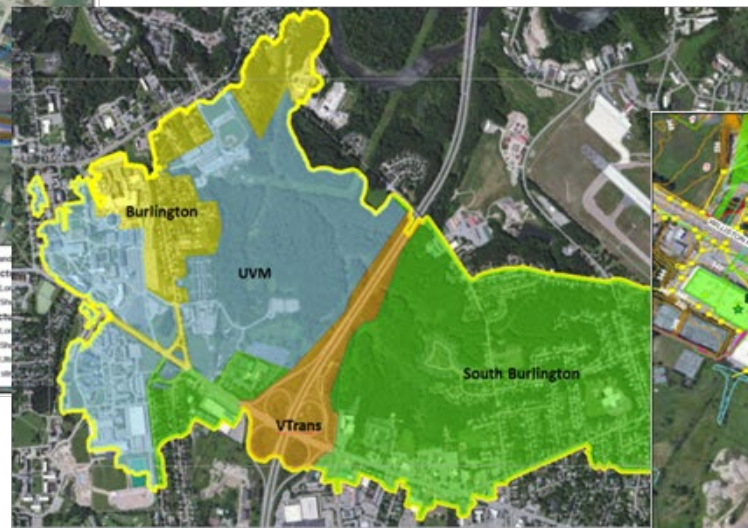
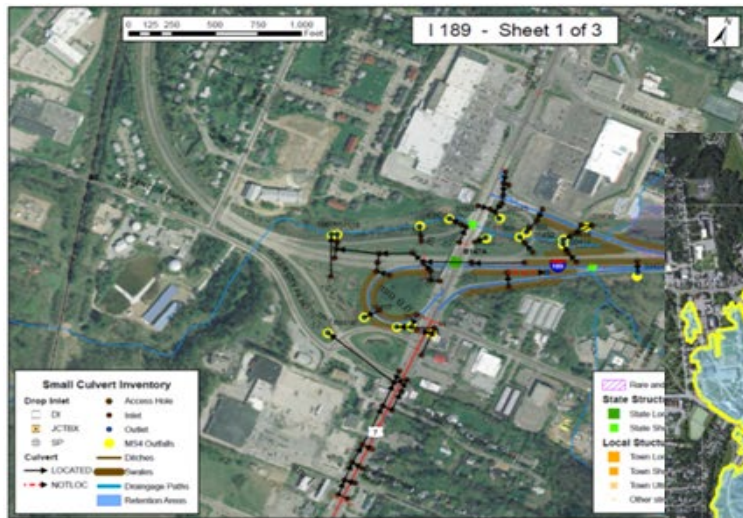




# How does VTrans build its Clean Water Action Plan?

→ stormwater asset mapping → flow patterns → partnerships → impervious surface → sub-watershed scale calculating & modeling → treatment practice identification → ANR review & approval → design & construction →

repeat → over less than 20 years for 12 Stormwater Impaired Watersheds and 12 Lake Champlain Phosphorus Impaired Lake Segments (sub-watersheds)



# VTrans Clean Water accomplishments (2018)

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- ✓ **30 new projects** undergoing stormwater design and permitting under the State Operational Program.
- ✓ **12 new projects** constructing new stormwater treatment practices.
- ✓ **82 previously constructed projects** with stormwater treatment practices were inspected and maintained.
- ✓ **29 of the 77 active construction projects** required Construction Stormwater Permit coverage and implemented erosion prevention and sediment controls and 134 compliance visits by VTrans staff.
- ✓ **58 practices identified, 16 designed, and 4 constructed** to meet our Flow Restoration Reduction Targets in the VTrans designated MS4 to be constructed over seven phases between 2018 and 2032 to comply with our TMDL flow reduction targets in the 10 stormwater impaired streams.
- ✓ Initiated **Missisquoi Bay Watershed Phosphorus Control Planning** to address Lake Champlain TMDL and VTrans' phosphorus reduction targets.
- ✓ **8 new Stormwater Pollution Prevention Plans** (SWPPPs) for VTrans Maintenance Facilities were completed. This is in addition to the existing 12 SWPPPs in place for other VTrans District Facilities, Airports and Gravel Pits.
- ✓ **\$5 million** (approx.) expended on clean water program and compliance costs including planning, design, construction, Operation & Maintenance, and staff time.



# VTrans Clean Water Action Plan Budget and Funding Sources

**VTrans’ Clean Water Program is estimated at an annual average of \$7 million over the next 5 years.**

VTrans’ 5 year TMDL compliance plan (an 18 to 20 year commitment) is included in our Fiscal Year Transportation Program Projects Book submitted to the General Assembly each legislative session for authorization under Act 38. For FFY 20 refer to:

Page 15 “St. Albans IM SWFR(2)”	Page 18 “Statewide SWFR ( )”
Page 17 “Statewide PCPM ( )”	Page 23 “Williston IM SWFR (1)”

**VTrans’ Clean Water Initiatives and Stormwater Regulatory Compliance Investments for the State Highway System and VTrans nonroad developed lands are anticipated to be covered by the Transportation Bill and Federal Funds where eligible and does not include “Capital Dollars”.**

See estimated costs below through SFY24 which include Project Development, Construction, O&M and FTE across multiple VTrans Programs & Budgets.

