

Operational Stormwater Discharge Permitting; and 3-Acre Sites

Municipal Day - 2024

Vermont Department of Environmental Conservation
Stormwater Program

What is an Operational Permit?

- Operational permits require that stormwater runoff from regulated impervious surfaces is captured, treated, and/or controlled prior to reaching receiving waters, such that the impacts from the development activity on receiving waters are eliminated or greatly minimized.
 - General Permit 3-9050
 - Individual Permit (INDS)
- The permit is essentially a legal agreement in perpetuity between property owners and the State of Vermont on the quantity, quality, and conveyance of stormwater runoff leaving a site and entering a surface water or otherwise discharging to groundwater.

Why are operational permits required?

Stormwater runoff is one of the greatest threats to clean water and aquatic habitats

Replacing pervious surfaces with impervious surfaces can negatively impact water resources:

- Lowers potential for infiltration, increases surface runoff, reduces groundwater recharge
- Alters hydrology of streams and rivers resulting in higher peak flows, increased sediment deposits, erosion of the bed and banks, other deleterious changes to stream and river channels
- Water quality impacts from increased loads of nutrients, suspended solids, organic chemicals, heavy metals, bacteria, other pollutants to waterways

Permitting Authority

- VT Water Pollution Control statute, 10 V.S.A. Chapter 47, sections 1258 and 1264, Vermont Stormwater Permitting Rule

Operational permits are post-construction permits applicable for stormwater runoff from impervious surfaces (roads, roofs, parking lots) when the area of impervious surface proposed for a project is above the jurisdictional threshold.

Requires a stormwater runoff treatment system built in accordance with the Vermont Stormwater Management Manual

- General Permit 3-9050
- Individual Permits

When is a permit needed?

- Regulatory Thresholds
 - $\geq \frac{1}{2}$ acre of new impervious surface (as of 7/1/22), on previously undeveloped parcels
 - $\geq \frac{1}{2}$ acre of redeveloped impervious surface (as of 7/1/22)
 - ≥ 1 acre of new impervious surface (7/2005)
 - ≥ 1 acre of redeveloped impervious surface (7/2005)
 - Expansion of impervious such that total resulting impervious is ≥ 1 acre; cumulative expansions totaling less than 5,000-sf since July 2005 exempt, however expansion beyond that is subject to permit;
 - Three Acre Sites
 - Discharges of regulated stormwater runoff from impervious surfaces of ≥ 3 acres (unpermitted – single tract of land; or tract(s) previously permitted under pre-2002 requirements).

What is an Impervious Surface?

Regulated impervious surfaces include paved and unpaved roads, parking areas, roofs, driveways, and walkways, from which precipitation runs off rather than infiltrates.

When Is a Permit Not Needed?

- Projects that do not cross the regulatory threshold.
- Stormwater runoff from “farms” in compliance with Required Agricultural Practices (RAPs), per AAFM.
- Stormwater runoff from accepted silvicultural practices when in compliance with Acceptable Management Practices for Maintaining Water Quality on Logging Jobs in Vermont (AMPs), per FPR.
- Stormwater runoff covered by a State wastewater permit (e.g. combined storm/sewer systems).

Treatment Standards in VSMM

- **Water Quality Treatment Standard**
 - Treats the 1" rainfall event which contains most pollutants and is inclusive of 90% of storm events.
- **Groundwater Recharge Standard**
 - Infiltrate or disconnect to preserve existing water table elevations (may be waived for HSG "D" soils)
- **Channel Protection Standard**
 - Manages the 1-year, 24-hour rainfall event (may be waived based on specific criteria)
- **Overbank Flood Protection Standard**
 - Manages the 10-year, 24-hour rainfall event (may be waived based on specific criteria)
- **Extreme Flood Protection Standard**
 - Manages the 100-year, 24-hour rainfall event (may be waived based on specific criteria)
- **Post-Construction Soil Depth and Quality Standard**
 - Prevent and mitigate soil compaction to maintain stormwater functions of existing undisturbed soil

Water Quality Treatment Standard Practices

Divided into Tiers based upon pollutant removal efficiencies and potential for runoff reduction

- Tier 1: infiltration (basins, trenches, chambers, bioretention, dry swales, filter systems), disconnection.
- Tier 2: gravel wetlands, bioretention (not designed to infiltrate).
- Tier 3: wet ponds, non-infiltrating filter systems, non-infiltrating dry swales, shallow surface wetlands.
- Highest tier practice must be implemented if feasible.
- Cost is not a feasibility consideration per the VSMM.

Tier 1 STP



Tier 2 STP



Tier 3 STP

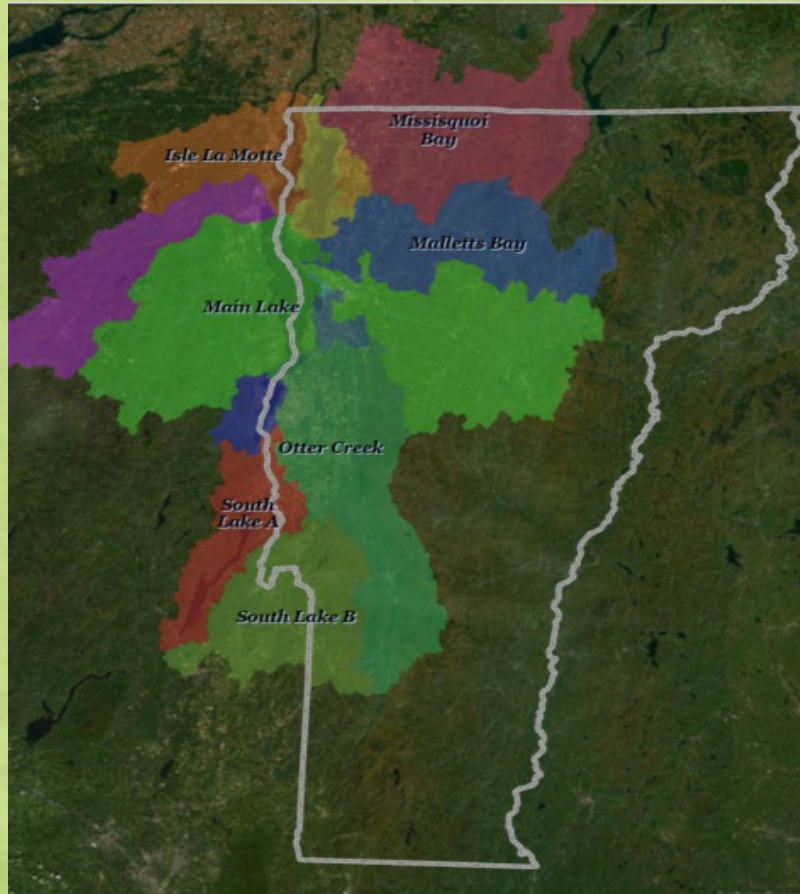


3-Acre Sites

VT Clean Water Act (Act 64 of 2015) requires ANR to regulate these sites as part of a broader effort to meet TMDL pollutant reduction targets, and to protect and restore water quality statewide.

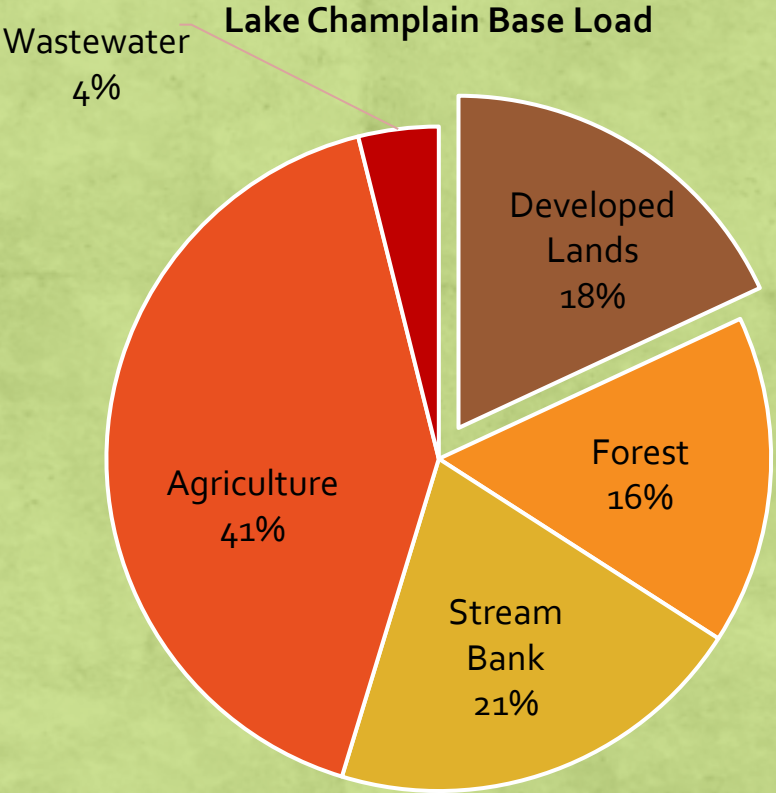
- Lake Champlain (2022) and Lake Memphremagog (2023) to address Phosphorus TMDLs.
- Stormwater-Impaired Watersheds to address Stormwater Runoff Volume TMDLs and including some impairments without TMDLs.
 - Chittenden County, Franklin County, Rutland County, Killington, Sugarbush

Lake Champlain TMDL



- The Lake Champlain Total Maximum Daily Load (TMDL) was issued in 2016 by the Environmental Protection Agency (EPA).
- The TMDL is designed to address excess phosphorus that causes algae blooms.

Lake Champlain TMDL



The TMDL requires reductions from:

- Agriculture
- Wastewater
- Forestry
- Stream Bank Erosion
- Developed Lands

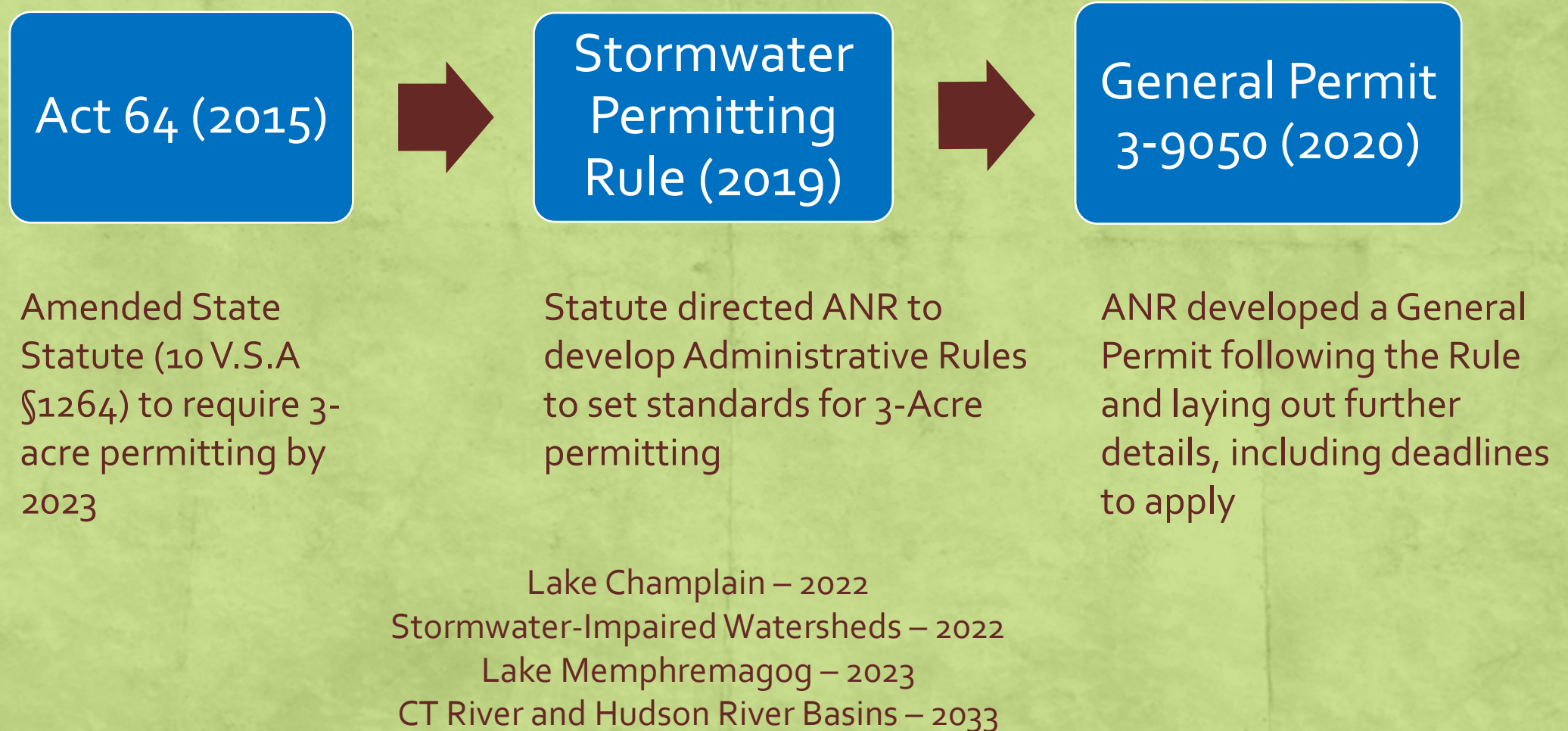
Reduction of 213 Metric Tons of phosphorus per year (34%)

Act 64 and TMDL Implementation for Developed Lands

Phosphorus reductions from developed land comes from:

- Municipal Roads General Permit (MRGP)
- MS₄ General Permit – Phosphorus Control Plan for larger municipalities, municipal roads requirements
- TS₄ General Permit – Phosphorus Control Plan for VTrans
- 3-Acre Permitting Requirements

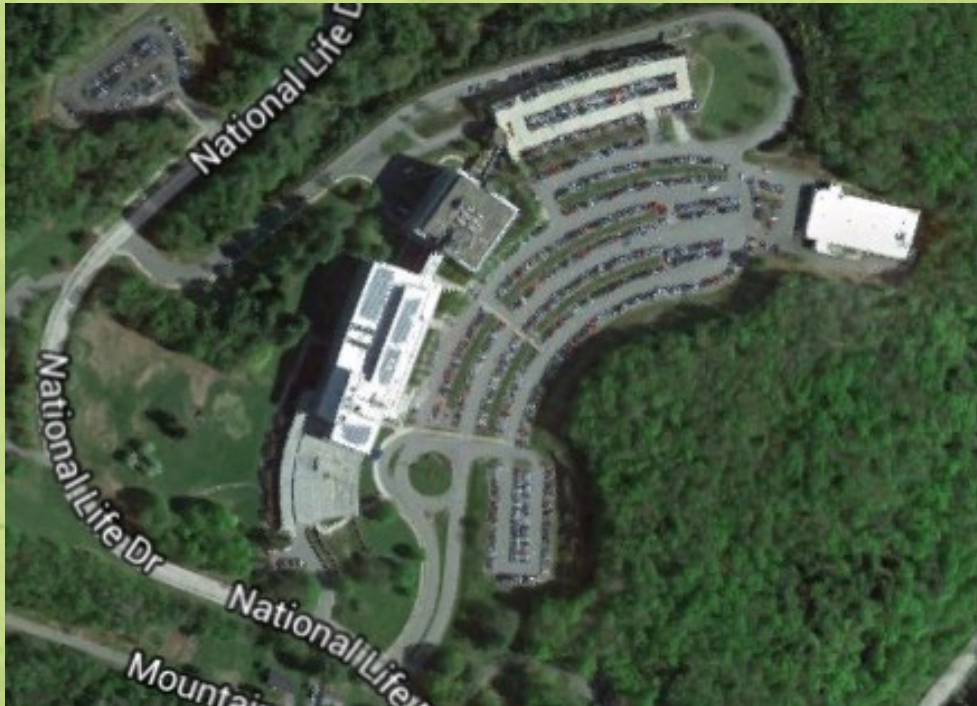
Regulation Timeline



What is a 3-acre site?

- Single tract with ≥ 3 acres of impervious surface with no permit, or a pre-2002 permit; or,
- A multi-lot project with a pre-2002 stormwater permit for ≥ 3 acres of impervious surface;
- And, adjacent impervious surfaces where part of a related operation (e.g. a campus)

3-Acre Sites



- Approximately 700 sites in the Lake Champlain Basin that comprise ~6000 acres of impervious surfaces.
- More information, including list of sites:
<https://dec.vermont.gov/watershed/stormwater/9050>

What assistance is available?

- Permit Obtainment Assistance (POA) funding is available to assist with engineering costs, application costs, and final permit obtainment. American Rescue Plan Act (ARPA) provided these funds, with \$49,999 available per eligible site.
 - The application deadline for this grant funding has passed. Those already enrolled remain eligible to receive these funds.
- Clean Water State Revolving Fund (SWSRF)
 - Projects may be eligible in certain instances, particularly if there is a public-private partnership.

Other assistance provided...

- Green Schools – Provides funding for both permit obtainment and implementation for school compliance with 3-acre stormwater requirements.
- Manufactured Housing Communities (MHCs) – Provides funding for both permit obtainment and implementation for some MHC compliance with 3-acre requirements.

3-Acre Permitting Timeline

Determination

DEC identified and contacted property owners and permittees

Letters were sent 9/2019, 9/2020, 3/2024, 8/2024

Initial NOI

Application Deadlines
12/2021-1/2023

Owners could previously apply for an initial NOI which included basic site information. No design

Authorization was valid for **18 months**. New initial NOI applications no longer accepted.

Full NOI

Application Deadlines 6/2023-7/2024

Applicants must propose how treatment standards will be met.

Authorization is valid for **5 years**.

Treatment must be built by end of the first permit term.

Who Must Apply?

General Permit 3-9050 states:

- *An applicant for coverage under this permit shall own the impervious surface for which permit coverage is required and the lands on which the stormwater system required to comply with Subpart 3.1 of this general permit is located. If the applicant does not own the impervious surface, or lands on which the stormwater system used to comply with the requirements of Subpart 3.1 is located, the owner shall be a co-applicant...*

In other words, owner(s) of the impervious surface need to apply for the permit.

Who Must Apply?

- Multi-lot developments with municipal owned surfaces require private landowners and municipality apply as co-applicants.
 - Municipality
 - Association or similar common legal entity
- Municipality may be sole applicant if they assume full legal responsibility for the impervious surface or stormwater system.
- Single parcel development, landowner will apply.

Application Process

- Professional engineer required to prepare a permit application
- Application materials submitted to DEC with required fees
- DEC administrative and technical review of application
- Engineer makes any necessary changes in response to DEC comments
- Application determined to be complete by DEC & placed on public notice
- Permit issued to applicant and 5-year permit term begins

Treatment Standards for 3-acre sites (non-stormwater-impaired waters)

Redevelopment Standard: Treat 50% of the Water Quality Volume (WQ_v) on the site

The Water Quality Volume treats the first 1" of runoff from the site's impervious surfaces. Examples of Treatment Practices:

- Disconnection of Impervious surfaces
- Bioretention/Rain Gardens
- Infiltration basins, trenches, and chambers
- Gravel Wetlands
- Dry Swales
- Sand Filters

Treatment Standards for 3-acre sites: Stormwater-Impaired Waters

Additional standards required for these discharges

Redevelopment Standard: Treat 50% of the Water Quality Volume (WQ_v) on the site.

The Water Quality Volume treats the first 1" of runoff from the site's impervious surfaces.

AND

Channel Protection Standard: 1-year 24-hour storm runoff volume released over 12/24-hours, maximize compliance, no less than 75%.

To protect stream channels from scour and erosion.

Where does a 3-acre site start? Engineering Feasibility Analysis (EFA)

Don't need to:

- Purchase additional land
- Pump stormwater
- Construct in flood plains or wetlands

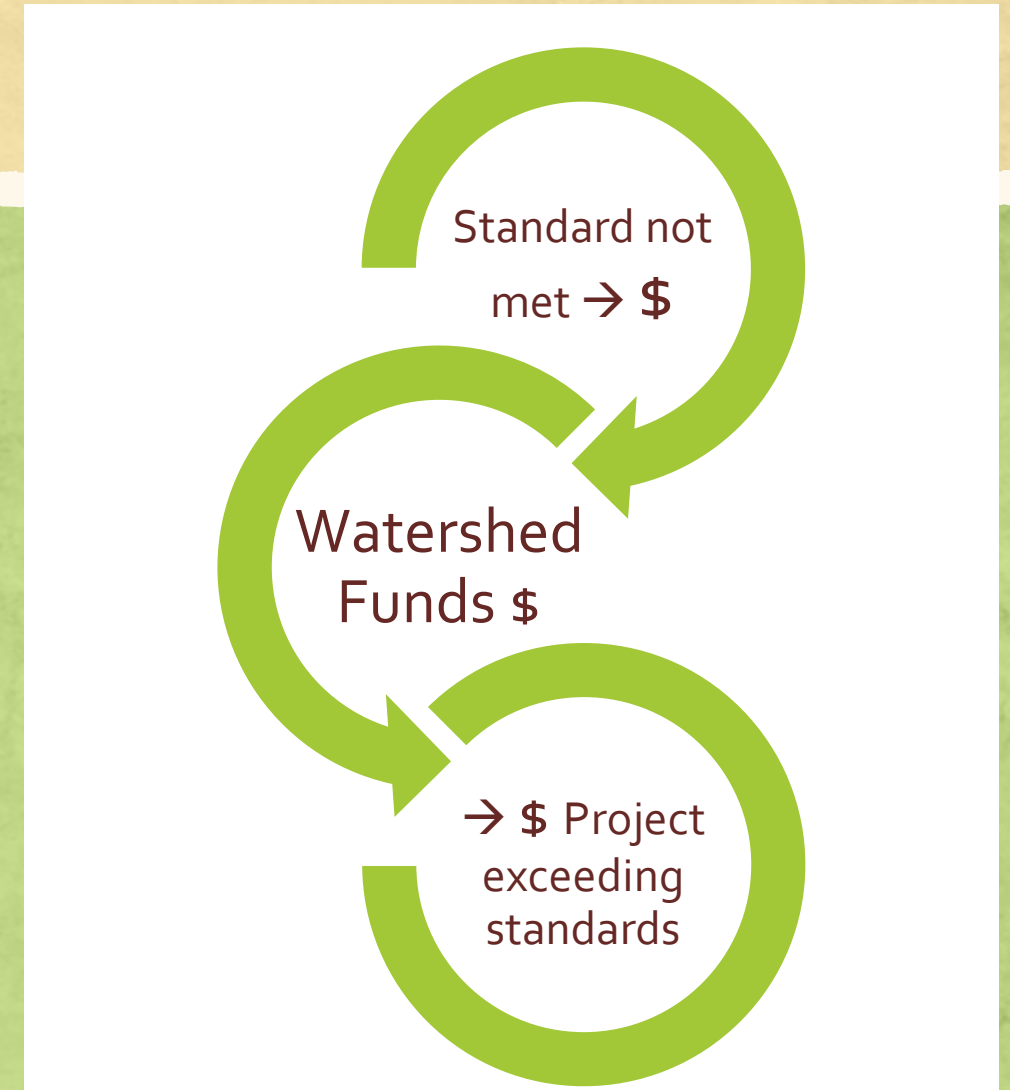
Do need to:

- Consider feasibility of underground treatment (ex. temporary removal of a parking lot surface or other site modifications to install sub-surface treatment/control).
- Prioritize Tier 1 Practices

Impact Fees

- Redevelopment Standard (50% of Water Quality Volume)
 - $\$25,000/\text{acre} * (\text{required volume} - \text{actual volume})$
 - $\$25,000/\text{acre} * (50\% - 0\%) =$
 $\$12,500/\text{acre}$
- Channel Protection Standard
 $\$25,000/\text{acre} * \text{impervious area acreage}$
not meeting standard.
 - $\$25,000/\text{acre}$

Impact fees paid prior to permit issuance.



We have our permit, now what?

- Post Issuance Requirements for Permittees
 - Record issued permit in land records
 - Annual inspections, annual operating fees, and report submittals required
 - Licensed engineer must certify the system was installed in accordance with the permit and is functioning properly
 - Licensed engineer must recertify the system at the time of permit renewal (every 5 years).
 - Maintenance very important for continuing functionality of permitted systems

Questions and Comments

Vermont Agency of Natural Resources

VT DEC Stormwater Program

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