Clean Water Service Provider Target Setting Primer

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You will learn about...

- Total Maximum Daily Load Plans
- Three Implementation Phases
- How Phosphorus Reduction Targets are Determined
- Actions Needed to Meet Reductions
TMDL Basics
The What, Why, When, & How
What is a TMDL?

Source: Lake Champlain Basin Program, VT.
TMDL Overview

A TMDL is the “Total Maximum Daily Load”, or the maximum amount of pollution that a waterbody may receive without exceeding Vermont’s Water Quality Standards, herein referred to as a pollution budget.

Loading or Base Load is the current amount of pollution (in this case phosphorus as a limiting nutrient) that flows into a waterbody (such as Champlain and Memphremagog) from each of the major land use sectors (e.g., agriculture, developed lands, forested lands, etc).

There are many possible sources of pollution in a watershed.
Why do we have TMDLs for Lake Champlain and Lake Memphremagog?

- Elevated phosphorus levels
- Toxic Cyanobacteria blooms
- Concerns for public safety and enjoyment of water-based recreation
- Impacts to the economy and people’s livelihoods

Click on the video to learn more about cyanobacteria - https://www.youtube.com/watch?v=ea0EHiw5suDs
When are we expected to achieve the Lake Champlain and Memphremagog TMDLs?

- **2015**: State Passes Act 64 - Clean Water Act
- **2016**: EPA Issues Final Lake Champlain TMDL
- **2016**: State Releases Phase 1 Implementation Plan
- **2016-2020**: State Releases Phase 2 Implementation Plans
- **2017**: Lake Memphremagog TMDL and Tactical Basin Plan issued
- **2019**: State Passes Act 76 - Clean Water Service Providers
- **2021-2025**: State to release Phase 3 Implementation Plans
- **2026**: TMDL Targets Projected to be Attained
- **2036**: TMDL Targets Projected to be Attained
How will Vermont achieve the TMDLs?

- **Developed Lands (3-acre)**
- **Roads (MRGP)**
- **MS4/TS4s**

**Regulatory Projects (Waste Load Allocation)**

- **River Stability**
- **Riparian Buffers**
- **Forestry BMPs**

**Non-Regulatory Projects (Load Allocation)**

**TMDL Load Reduction Targets**

**TMDL Goal**

**State, Federal, and other $$$**

**Clean Water Service Providers**

**Implementation**
Implementation Plan Phases
Phase 1 Plan Overview

- Established VT’s commitments to achieve phosphorus reductions
- Timeline to achieve goals via the Accountability Framework
- Policy commitments for farming, developed lands, wastewater facilities, forests, wetlands, rivers, and lakes.
- Technical assistance, funding and financial incentives
Phase 2 Plan Overview

- Tactical Basin Plans (TBP)
- Geographically targeted strategies in the TBP Implementation Table
- TBP Interim & Final Report Cards to track progress of actions
- 5-year planning cycle
Phase 3 Plan Overview

- Tactical Basin Plans
- Progress achieved since 2016 by sector
- Sector specific reduction requirements for the next 5 years
- Gap identification
- Project tracking and accounting meets accountability framework
Clean Water Service Provider (CWSP) Target Setting
Clean Water Service Provider Targets

TMDL reductions - Regulatory reductions = CWSP target reductions

CWSP target reductions x Sector costing rates = Total dollars need per sector

Total dollar need x Scaling to available budget and capacity = Year-1 reduction targets and fund allocations
Regulatory Reductions

Regulatory

- Agriculture: 90%
- Streams: 67%
- Forests: 100% (except basin 2/4 & 6)
- Developed: MRGP, three-acre permit, TS4 and MS4 permits

Non-regulatory

- Agriculture: 10%
- Streams: 33%
- Forests: 88% for Basin 2/4, 90% for Basin 6
- Developed: The remaining developed lands reduction targets
Regulatory Reductions

**Regulatory**

- 90% Agriculture
  - Required Agricultural practices
  - Projects funded by NRCS and AAFM

**Non-regulatory**

- 10%
  - Natural Resource projects on farms
  - Projects on non-RAP farms
Regulatory Reductions

**Regulatory**

- Implementation of stream alteration regulations and Act 250
- Town river corridor adoption

**Non-regulatory**

- River corridor easements, riparian buffer plantings, stream restoration projects

Streams

67%  

33%
Regulatory Reductions

**Regulatory**

- 100% (except basin 2/4 & 6)

  - Implementation of the Acceptable Management Practices (AMPs) for forestry operations.

**Non-regulatory**

- 88% for Basin 2/4
- 90% for Basin 6

  - Reducing sedimentation from forest roads.
Regulatory Reductions

**Regulatory**

- MRGP, three-acre permit, TS4 and MS4 permits
- Implementation of permit programs

**Non-regulatory**

- The remaining developed lands reduction targets
- Non regulatory stormwater and road BMPS and lakeshore restoration.
TMDL reductions - \textbf{Regulatory reductions} = CWSP target reductions

\textbf{CWSP target reductions} \times \textbf{Sector costing rates} = \textbf{Total dollars need per sector}

\textbf{Total dollar need} \times \textbf{Scaling to available budget and capacity} = \textbf{Year-1 reduction targets and fund allocations}
## Sector costing rates

<table>
<thead>
<tr>
<th>Target sector</th>
<th>Project categories</th>
<th>Average cost per kg</th>
</tr>
</thead>
<tbody>
<tr>
<td>Streams</td>
<td>Floodplain/stream restoration, River corridor easement, Riparian buffer restoration</td>
<td>$11,000</td>
</tr>
<tr>
<td>Developed</td>
<td>Stormwater BMPs, Road BMPs, Riparian buffer restoration, Lake Shoreline restoration, Lake shoreland runoff treatment</td>
<td>$16,000</td>
</tr>
<tr>
<td>Farm</td>
<td>Riparian buffer restoration, Lake shoreline restoration</td>
<td>$7,000</td>
</tr>
<tr>
<td>Forest</td>
<td>Forest road BMPs</td>
<td>$10,000</td>
</tr>
</tbody>
</table>

Stream Sector Average $11,000 per kg
Clean Water Service Provider Targets

\[
\text{TMDL reductions} - \text{Regulatory reductions} = \text{CWSP target reductions}
\]

\[
\text{CWSP target reductions} \times \text{Sector costing rates} = \text{Total dollars need per sector}
\]

\[
\text{Total dollar need} \times \text{Scaling to available budget and capacity} = \text{Year-1 reduction targets and fund allocations}
\]
Proposed $7,000,000 budget for the Formula Grant to ramp-up capacity.

Minimum funding level of $650k set per basin.

Scaling of reduction targets and funds based on these available funds.
Adaptive Management

- Adaptive annual targets set using new information.
- Deeper dive as part of five-year Tactical Basin Plan updates
Now you should know about...

- Total Maximum Daily Load Plans
- Three Implementation Phases
- How Phosphorus Reduction Targets are Determined
- Actions Needed to Meet Reductions
Survey & FAQ Development

Please fill out the survey linked in this video or scan the QC code to help us measure our efficacy.

There is a question box in the survey that will be used to prepare an FAQ.

https://forms.office.com/g/q04GHjkAuV