

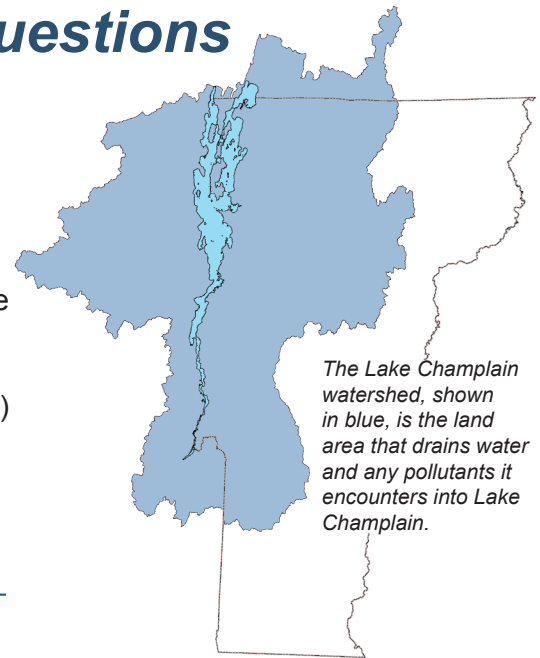
Lake Champlain TMDL Implementation and Wastewater Treatment Plants

Frequently Asked Questions

January, 2017

1. What is the Lake Champlain TMDL?

Excess phosphorus entering Lake Champlain from a variety of sources has impaired the water quality of the lake. The Lake Champlain TMDL, or Total Maximum Daily Load, places a cap on the maximum amount of phosphorus from point and non-point sources that is allowed to flow into the lake while still meeting Vermont's water quality standards. The Environmental Protection Agency (EPA) developed phosphorus TMDLs for the twelve Vermont segments of Lake Champlain in collaboration with the Vermont Agency of Natural Resources, Department of Environmental Conservation and the Vermont Agency of Agriculture, Food and Markets, and released the document titled "[Phosphorus TMDLs for Vermont Segments of Lake Champlain](#)."



2. What specific phosphorus discharge requirements apply to my wastewater treatment facility (WWTF) as a result of the new TMDL?

The 2016 Lake Champlain TMDL specifies allowable phosphorus loads, or waste load allocations (WLA), expressed as metric tons per year (mt/yr), for each of the 59 wastewater treatment facility (WWTF) that discharge to the lake's watershed.

The TMDL establishes an annual WLA for WWTFs with a design flow capacity of above 0.1 million gallons per day (MGD) that discharge to the Main Lake, Shelburne Bay, Burlington Bay, St. Albans Bay and Missisquoi Bay lake segments. Specifically, WWTFs with a design flow capacity of 0.1 to 0.2 MGD were assigned WLA based on a 0.8 mg/L effluent phosphorus concentration at permitted flow while WWTFs with design capacity of > 0.2 MGD were assigned a WLA based on a 0.2 mg/L effluent phosphorus concentration at permitted flow.

3. How are the Waste Load Allocations (WLA) calculated?

The TMDL establishes an annual WLA for WWTFs based on the WWTF's design flow capacity, expressed in million gallons per day (MGD), and phosphorus concentration limit (either 0.2 mg/L, 0.8 mg/L or current permit limit).

4. Why don't all wastewater treatment facilities that discharge to the lake's watershed have new waste load allocations under the 2016 TMDL?

The EPA developed phosphorus TMDLs for the twelve Vermont segments of Lake Champlain. Reductions in waste load allocations are targeted only to WWTFs in those lake segment watersheds where the currently permitted wastewater load represents a significant (defined as being 10% or greater) portion of the total phosphorus load to that segment from all sources (Main Lake, Shelburne Bay, Burlington Bay, St. Albans Bay) and/or where wastewater upgrades would meaningfully reduce the phosphorus reduction burden placed on non-wastewater (non-point) sources (Missisquoi Bay). Therefore, WWTFs discharging to the Port Henry, Otter

Creek, Mallets Bay, Northeast Arm, Isle LaMotte and the South Lake A/B lake segments were not assigned a new waste load allocation. The EPA also determined that wastewater facilities with a design flow of < 0.1 MGD will keep their currently permitted load due their minor contribution of phosphorus loading.

5. Will my wastewater treatment facility need to optimize or upgrade to meet its allowable phosphorus load?

The TMDL provides an 80% of allowable load threshold specifically to provide time for a facility that is approaching the allowable load to optimize phosphorus treatment and/or to plan and implement the construction of the upgraded phosphorus treatment facilities. A facility must implement phosphorus treatment upgrades if its discharge of phosphorus exceeds the 80% of allowable load threshold. The Wastewater Management Program maintains a tracking system for phosphorus loading from Vermont WWTFs so facilities approaching or over the 80% threshold can be identified.

6. How is the 80% phosphorus load threshold calculated?

The 80% phosphorus load threshold is calculated by comparing the individual WWTF phosphorus WLA established in the TMDL to the actual phosphorus discharge load from the WWTF over last 12 months:

$$\text{WWTF Annual P Load} / \text{TMDL WLA} \times 100$$

7. How will the 80% of WLA threshold be enforced?

The 80% of allowable load threshold, as it relates to each facility, will be included in the facility's reissued discharge (NPDES) permit, and is enforceable as a permit condition.

8. What if my wastewater treatment facility is operating near or above 80% of the allocated waste load threshold?

There are currently a number of WWTFs in the Lake Champlain watershed where the existing discharged loads of phosphorus are already at, or above, 80% of allowable loads. The reissued wastewater discharge (NPDES) permit for these facilities will specify a period of time (12 months) for optimization to be pursued and the corresponding load reduction results to be realized, prior to evaluating where a facility ranks relative to the 80% trigger. Discharge permits will specify that after the optimization period, when an existing facility reaches 80% of its waste load allocation for phosphorus (evaluated as a rolling, 12-month load), there will then be a re-opener based requirement for that facility to commence the upgrade process to ensure it maintains compliance with overall permit conditions as it approaches the facility's full-design allocation.

9. Will wastewater treatment facilities that operate below 80% of the allocated waste load threshold be required to explore and implement phosphorus optimization?

Reissued discharge permits for all wastewater facilities affected by the TMDL will contain requirements for phosphorus optimization.

10. Will wastewater treatment facilities that are not in the first year of permit issuance under the TMDL be required to explore and implement optimization immediately?

Phosphorus treatment optimization is encouraged for all WWTFs discharging to Lake Champlain, but WWTFs regulated under the TMDL will not be required to complete phosphorus optimization plans until the facility is reissued their discharge permit.

11. When will my facility's discharge permit be issued to comply with the TMDL?

Discharge (NPDES) permits will be issued by the Wastewater Management Program in accordance with the permit issuance schedule in the [Lake Champlain TMDL Phase 1 Implementation Plan](#) (Chapter 3, page 45). The Program will follow this schedule unless special circumstances are raised by the facility that warrant the issuance of the permit sooner (e.g., planned facility upgrades), and the Program has sufficient staff capacity to handle the request.

12. If my facility wants to upgrade now, or will be upgrading prior to the date for the reissuance of our NPDES permit, can we get our permit reissued earlier?

The Wastewater Management Program will issue discharge permits in accordance with the schedule provided in Chapter 3, page 45, of the [TMDL Phase 1 Implementation Plan](#), unless special circumstances are raised by the facility that warrant the issuance of the permit sooner (e.g., planned facility upgrades).

13. Will a wastewater treatment facility's NPDES permit contain a concentration-based, total phosphorus effluent limit?

Effluent phosphorus limits will be expressed as total annual mass loads, and as monthly effluent concentration requirements only for facilities that currently have an existing monthly effluent concentration limit in their NPDES permit.

14. If a community invests in a project to meet a WLA based on a 0.2 mg/l total phosphorus concentration limit, and subsequently the limit is reduced to 0.1 mg/l total phosphorus through the accountability framework, are there any legal protections or certainty for communities who have already made that investment?

No. The Lake Champlain total load capacity, or TMDL, is the sum of waste load allocations (point sources, such as wastewater treatment plant discharges) and load allocations (non-point sources, such as agricultural runoff), therefore, if the load allocations established in the TMDL are not achieved, the EPA may consider further reduction requirements to waste load allocations. Hypothetically, further reductions to waste load allocation could be targeted to those lake segments where load allocations are not fully realized.

15. Can my facility receive credit towards its WLA by removing, treating, or reducing combined sewer (CSO) discharges?

With the exception of CSOs associated with the Burlington Main WWTF, estimated annual phosphorus loads from untreated CSOs were included as part of the TMDL's Load Allocation (non-point sources), therefore, any reductions or eliminations of CSOs would be credited toward Load Allocation reductions, not Waste Load Allocations (point sources such as WWTF discharges).

16. Can my facility obtain additional waste load allocation?

The TMDL allows Vermont to make changes to the individual WWTF allocations within a lake segment as long as the adjusted combined allocations do not exceed the total WWTF allocation for that segment (i.e., phosphorus loads may be reallocated between WWTFs discharging to the same lake segment). A reallocation agreement between facilities would be crafted by facility owners and submitted for review and approval by the Wastewater Management Program.

17. What are the potential funding sources for wastewater treatment facility improvements (planning, design and construction) relating to the Lake Champlain TMDL?

Potential funding sources for WWTFs include loans and grants. The State provides loans through the [Clean Water State Revolving Fund](#) (CWSRF), [Vermont Pollution Control State Revolving Fund](#), and the [Vermont Planning Advance Program](#); and grants via the [Vermont Pollution Control Grants](#) and the [Clean Water Fund](#) (created via Act 64: Vermont Clean Water Act). The USDA also provides loans via [USDA Rural Development Water and Environmental Loans and Grants](#).

18. Will the Wastewater Management Program offer any resources or technical assistance to optimize total phosphorous removal at my facility?

The Wastewater Management Program will work cooperatively with local organizations, such as [Vermont Rural Water Association](#) and [Vermont Energy Investment Corporation](#) (VEIC), to facilitate technical assistance related to optimization of nutrient removal and energy efficiency at wastewater treatment facilities.