

Restoring Lake Champlain: Frequently Asked Questions

General Topics

- **Why do we need a clean Lake Champlain?**

A clean Lake Champlain supports the health of our communities, adds to the vibrancy of our economy, bolsters our businesses that depend on clean water, keeps drinking water safe for people and treatment costs down, and safeguards the recreational and ecological values that we treasure.

- **What is a TMDL and why do we need one?**

TMDL means “Total Maximum Daily Load”, which is a cap on the amount of a pollutant (in this case phosphorus) that a waterbody can safely absorb and still meet the State’s water quality standards. The cap, or the maximum amount of that pollutant, is then allocated among the various pollutant sources and locations.

- **Was there not already an existing TMDL?**

In 2002, the U.S. Environmental Protection Agency (EPA) approved a Lake Champlain Phosphorus Total Maximum Daily Load (TMDL) prepared by the states of Vermont and New York. The TMDL placed a cap on the amount of phosphorus allowed to enter Lake Champlain, and allocated that maximum amount among the various sources within each major watershed draining to the Lake. In 2011, in response to concerns about the adequacy of the 2002 TMDL, EPA revoked its prior approval of the Vermont portion of the Lake Champlain TMDL and is in the process of developing a new TMDL.

- **What is meant by “point” source water pollution?**

There are two general source categories of water pollution – “point” and “nonpoint” source pollution. Since the passage of the federal Clean Water Act in the 1970s, Vermont and the rest of the nation have made significant gains in controlling water pollution through permit requirements that manage discharges from “point sources.” The federal Clean Water Act defines point sources as, “any discernible, confined and discrete conveyance, including but not limited to any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation, or vessel or other floating craft, from which pollutants are or may be discharged. This term does not include agricultural storm water discharges and return flows from irrigated agriculture.” 33 U.S.C. § 1362(14).

- **What is meant by “nonpoint” source pollution?**

Nonpoint sources of water pollution from our land use activities have grown in significance in Vermont and nationally. Nonpoint sources of pollution are sources that do not meet the Clean Water Act’s legal definition of point source. A common definition is the kinds of water pollution emanating from diffuse sources, rather than a pipe or

discrete conveyance. Examples include runoff from developed areas, construction sites, and agricultural operations, and erosion from unstable and incised streams. Nationally, nonpoint source pollution is the leading cause of water quality degradation.

- **Why specifically did EPA revoke its approval of the 2002 TMDL?**

For TMDLs that require pollution reductions from nonpoint sources to meet water quality standards, EPA must have “reasonable assurances” from the State that the necessary nonpoint source phosphorus reductions will actually occur. Insufficient reasonable assurance was the primary reason given by EPA for reversing its approval of the 2002 TMDL.

- **Will there be one TMDL for the Basin, or multiple TMDLs, one for each tributary?**

Total loading capacities will be established for each major lake watershed. These watershed-level total loading capacities will be subdivided into a “wasteload allocation” for point sources of pollution and a “load allocation” for nonpoint sources of pollution.

- **What are the main problems affecting the health of Lake Champlain?**

Phosphorus pollution is a significant threat to clean water in Lake Champlain, which is important for recreational and drinking water uses, as well as aquatic life and aquatic habitat function. Phosphorus is a nutrient that stimulates excessive growth of algae in the Lake, turning the water green and making it unsuitable at times for swimming, and increasing the costs for drinking water treatment.

- **Where is the phosphorus pollution coming from?**

Excessive levels of phosphorus are entering the Lake from many sources including stormwater runoff from roads, parking lots, and lawns, agricultural and logging operations, unstable and incised streams, and discharges from sewage treatment plants.

- **Why is the phosphorus trend line going up over the past 20 years? How do we get the trend line to go down?**

There are several reasons why phosphorus levels in the Lake have been increasing in spite of our efforts to reduce phosphorus loading to the Lake. There is a tremendous amount of phosphorus stored in soils, unstable streambanks, and lake sediments that has built up over a period of many decades. Even with better management, it takes time for these soils and sediments to purge themselves of excess phosphorus and for river channels to stabilize. The wetter weather and more intense floods we have experienced in recent decades have increased the rates of phosphorus loading to the Lake, offsetting some of the progress that has been made in watershed management. However, the major reason for the increasing phosphorus trend line is that we have not taken strong enough actions to reduce phosphorus from all the major sources. We need to do more.

- **What do we need to do to clean- up the Lake?**

We need to address all major sources of phosphorus to Lake Champlain and its tributaries and involve new and increased efforts from nearly every sector of society, including homeowners, developers, farmers, municipalities, and state government. All of us contribute to phosphorus problems, and we must commit to act together. Fundamentally, we must work together as a Vermont community to view nonpoint sources of phosphorus as a shared problem with a shared solution. Vermont must aggressively address or avoid every situation that results in water quality degradation.

- **What funding will be provided to support the clean-up, and where will those funds come from?**

Our first step is to develop a set of policy commitments to reduce phosphorus loading and an estimation of the costs of implementation. We also need to promote a process for establishing funding priorities – a process that strategically directs resources towards projects that will yield the greatest long-term benefit. We will then explore ways to fund implementation, recognizing that progress in reducing phosphorus loading will require a long-term commitment of adequate resources. A greater state investment will also enable the State to leverage greater benefit from federal, local, and private funds.

- **What kind of benefits will the restoration of Lake Champlain provide?**

Investments in a clean Lake Champlain and its tributaries will support local and regional economies, enhance tourism and recreation-based businesses, support property values, help our communities reduce future flood damage risk, support the viability of our public infrastructure, and improve the ecological functions within the watershed.

- **Are you looking at the cost-effectiveness of actions, including the cost of upgrading wastewater treatment facilities, when evaluating alternatives?**

Yes, EPA is developing “costs per kilogram of phosphorus removed” for a variety of practices, including upgrades to wastewater treatment facilities. For the wastewater treatment plants, EPA intends to consider both generalized estimates developed by EPA’s consultant, Tetra Tech and some site specific cost estimates being developed by VTDEC that take into account higher costs at some plants due to specific plant characteristics.

- **Is Lake Champlain recoverable?**

Yes, but it will require a collaborative and deliberate effort involving everyone – towns, homeowners, farmers, citizens, and loggers. It will also take time.

- **How long will it take to restore Lake Champlain?**

We need to accept that the restoration of Lake Champlain could take decades in some areas. Accomplishing all the necessary phosphorus reduction steps in the watershed will require a phased implementation process with achievable programmatic and budgetary milestones along the way. The watershed soils, river channels, and lake

sediments will take considerable time to stabilize and purge themselves of stored phosphorus. The sooner we accelerate this work, the sooner the Lake will recover.

- **What are the consequences of inaction?**

Vermont's restoration plan will likely adopt an "adaptive management" approach to the restoration of the Lake. This plan will include the development of two-year milestones to help the State monitor its progress and assure that it does not fall short in meeting expectations. If nonpoint source reduction goals are not met, EPA has the authority to drive wastewater treatment facilities to install the best available technology available for phosphorus removal, a move that will provide minimal reduction in phosphorus inputs to the Lake at an excessive cost.

- **What are the State of New York and the Canadian Province of Quebec doing about cleaning up Lake Champlain?**

The New York portion of the 2002 Lake Champlain TMDL remains in effect. The New York State Department of Environmental Conservation is in the process of revising its implementation plan for the TMDL. The Province of Quebec committed in a 2002 Water Quality Agreement with Vermont to achieving 40% of the phosphorus reduction needed in the Missisquoi Bay watershed. Vermont committed to achieving the other 60% of the necessary reduction.

- **How large is Lake Champlain Basin? How many people live in the Basin?**

Lake Champlain Basin is 8,234 square miles, spanning two states (Vermont and New York), and two countries (the United States and Canada's province of Quebec). Fifty-six percent of the land mass in the Basin is in Vermont, 37% is in New York, and 7% is in Quebec. The Lake is 120 miles long, flowing northerly from Whitehall, NY to Quebec's Richelieu River, which drains into the St. Lawrence River. Approximately 388,000 people live in the Vermont portion of the Basin, representing about 68 percent of the overall population in the Basin. The Lake is the drinking water source for nearly 200,000 people.

- **Do ski areas put fertilizer on snow in race courses? If it does occur, are there any studies into the impacts of this practice?**

The so-called, "salting" of racecourses is not known to be a common practice in Vermont. A comprehensive study was conducted recently by the University of Vermont that examined the possibility that additives in snowmaking may result in water quality impacts to receiving waters. For those skis areas in the Lake Champlain Basin, they found no evidence that snowmaking additives or race course management resulted in phosphorus impacts. However, this is an area that deserves additional inquiry with resort operators.

- **Will the plan include treatment of the internal phosphorus loads that have accumulated in the lake sediments?**

Research on St. Albans Bay has shown that internal phosphorus loading from the Bay's sediments is likely to delay the recovery of the bay for a long time, even after all necessary watershed load reductions are achieved. Vermont's TMDL implementation plan will likely include additional feasibility studies for an in-lake treatment to control internal phosphorus loading in St. Albans Bay, with such a treatment being the final step after all watershed controls are fully implemented.
- **How can the public participate in the Lake Champlain restoration process?**

There will be many opportunities for the public and interested parties to stay involved in the process to restore Lake Champlain. The State is committed to an open and transparent process to engage the public in the restoration of all of Vermont's waters. The Vermont Department of Environmental Conservation (VTDEC) and the Agency of Agriculture, Food and Markets (VAAF), in conjunction with EPA, held six public meetings and took public comments on the draft State Proposal for a Clean Lake Champlain, over 500 people attended those meetings. The VTDEC, in partnership with the Vermont Transportation Agency (VTrans) and the regional planning and development agencies, held 12 additional meetings with municipalities across the State to discuss the draft proposal. The State received over 100 comments and is using those comments to inform the development of the TMDL's Phase I Implementation Plan, required by EPA in the spring of 2014. Upon the release of the draft TMDL later this spring, EPA will hold a formal public comment period. After the TMDL is completed and approved by EPA, the State will establish a public process pertaining to the implementation steps that will be described in the TMDL's Phase I Implementation Plan. Moreover, the State expects to use the Tactical Basin Planning process to oversee the implementation of the TMDL.
- **What technical assistance, sample policies or projects, and education programs will be available to help town leaders, who are not professionals in water quality?**

We acknowledge that all sectors – municipalities, farmers, loggers, developers, businesses, and homeowners – need technical, educational, and financial assistance to reduce nutrient and sediment pollution loading. We also recognize that our successes depend on an informed and engaged citizenry. The State anticipates using existing resources and programs to support this need. Statewide, regional, and local organizations play an important role in delivering technical and educational assistance. These existing programs will become the foundation for an expansion of existing grant and loan programs, should additional resources become available.

Stormwater Management

- **Can work to reduce combined sewer overflow (CSO) problems count towards stormwater pollution reductions?**
It will depend on how the CSO problem is being addressed. EPA anticipates establishing specific CSO wasteload allocations. Thus, CSO improvements will count, at a minimum, towards achieving any specific CSO reduction targets in the TMDL.
- **Does the plan call for improving compliance with stormwater permits?**
The Department anticipates both expanding the scope of stormwater programs as well as increasing the effectiveness of existing permit programs. Continued implementation of the Compliance Monitoring Strategy, as approved by EPA, has resulted in robust inspection rates and increased compliance actions. These efforts are expected to continue.

River Management

- **Should there be more focus on streambank erosion?**
The State should develop the capacity, both in terms of technical assistance and funding, to address erosion from unstable streams, where doing so is consistent with the State's river corridor and tactical basin plans. Stabilization methods need to be consistent with the state equilibrium and connectivity standards for stream alterations. This consistency will ensure that stopping bed and bank erosion in one location does not lead to or cause erosion in another location.
- **What are some examples of the kinds of developments exempt from municipal regulations that can be addressed with new state floodplain rules?**
Power facilities regulated under Section 248, telecommunications facilities regulated under Section 248a, accepted agricultural practices, and state facilities and infrastructure (including state roads) are the types of development exempt from municipal regulation that will be subject to the State Floodplain Rule.
- **How will actions to improve resilience to future flooding help?**
Increasing the storage of floodwaters in meandering river channels and land features that may function as floodplains lower both flood levels and velocities. These actions make downstream residents safer, reduces property damage, and increases the storage of fine sediments and phosphorus.
- **Are there phosphorus standards for streams?**
The [Vermont Water Quality Standards](#) currently include numeric criteria for total phosphorus in Lake Champlain, Lake Memphremagog, and in high-elevation streams. VTDEC has been working for several years to develop more comprehensive nutrient criteria for inland lakes and three types of streams (small high gradient; medium high-gradient; warmwater medium gradient). VTDEC expects to initiate rulemaking to amend

the Water Quality Standards during spring of 2014 that will include in-stream total phosphorus criteria.

Lakes Management

- **There are lakes in the basin that might benefit from pollution management. Are these waters included in the TMDL?**

Lakes located in the Champlain basin are not directly included in the TMDL, however they can benefit from additional program resources available through the TMDL implementation process. Lake Carmi, in the Town of Franklin, also has a phosphorus TMDL that calls for specific work in that lake's watershed. Work in this watershed will be aided by increased funding and technical assistance that the Champlain TMDL is identifying. Other lake residents concerned about phosphorus runoff to their lake can access technical and funding assistance by contacting either the Lakes and Ponds Section or the regional basin planner of the Watershed Management Division. The State intends to continue assisting lake residents to both address existing water quality problems as well as prevent problems from emerging, both in the Champlain basin as well as in the rest of the State.

- **Why is the State supporting a shoreland regulation when this is not included in the State's draft proposal to clean up Lake Champlain?**

There is no information to quantify the phosphorus load from erosion and runoff derived specifically from the Lake Champlain shoreline. However, developed sites along the lakeshore are likely to be greater than average phosphorus contributors per acre because of their direct proximity to the Lake. Shoreland protection, as proposed in H.526, would help address these shoreline critical source areas within the broader developed landscape in the basin, and if enacted would become part of Vermont's overall commitment to EPA to implement the Lake Champlain Phosphorus TMDL. The shoreland source of phosphorus runoff is likely to be a larger percent of a lake's phosphorus budget on Vermont's smaller, more rural lakes. In addition, the protection of shoreland vegetation seeks to achieve the objective of protecting important wildlife habitat and fish and aquatic habitat.

Wastewater Treatment

- **What is the State doing about sources from septic systems?**

Decentralized wastewater treatment systems (including septic systems and small, shared systems that discharge to a leach field) are typically small scale, gravity based wastewater treatment systems with little or no management oversight after the system is permitted and installed. Failed or failing septic systems are more of a public health concern from pathogens than a major source of phosphorus loading to Vermont lakes. Failing lakeshore septic systems could, however, contribute to localized health hazards from pathogens, and all such systems should be properly constructed and maintained. The property owner has the responsibility to maintain the system including bearing the costs for upgrades and replacement. There are few funding sources available for property owners if a system needs to be replaced. The Vermont Wastewater and Potable Water Revolving Loan Fund was recently established to provide low interest loans to moderate and low income households for the purpose of repairing or replacing a home's failed septic system or water supply. The NeighborWorks® HomeOwnership Centers of Vermont offers a low-interest revolving loan program to single-family homeowners below an income threshold.

- **This year, there were a number of instances of accidental discharges of partially and untreated effluent from wastewater treatment facilities. Will the TMDL work to reduce these discharges?**

The TMDL does not directly address accidental discharges, as they are transitory unplanned events. However, the actions established in the TMDL to address stormwater runoff have the potential to result in a significant reduction in the volume of stormwater entering sewage collection systems, the primary cause of most releases seen in the last few years, and should eventually lead to a substantial reduction in the number of these events. The remaining portion of the releases are generally caused by equipment failures and even more rarely by operator error.

Management of Agriculture Runoff

- **How are the Accepted Agricultural Practices (AAPs) enforced?**

The Agency of Agriculture, Food and Markets (VAAFAM) inspects all complaints. However, there are limited resources to perform systematic whole farm inspections. VAAFAM recently hired a small farm inspector, who is conducting inspections in the agriculturally impaired watersheds in Northern Lake Champlain.

- **Will stream-side or lake-side buffers at farms be increased to 25 feet?**

One of the proposals in the restoration plan is that all perennial streams have a 25 foot buffer. Science shows that there are substantial water quality benefits with larger buffer sizes. If this becomes a new regulation, there will be timelines for implementation.

- **What is the timeframe for implementing a small farm certification program?**
VAAFM is proposing a certification program for small farms and increasing inspections of small farms. Ideally, VAAFM will incorporate the small farm certification concept into the AAP rule-making process planned for next year. Implementation will depend on resource availability and will be phased in over time.
- **If you own land, but lease it to a farmer, who is responsible for making corrective changes, such as livestock exclusion, erosion control, and establishing buffers?**
Either can make any changes. Ultimately, the landowner is responsible for the land and compliance with all regulations. If a farmer who is leasing requests financial assistance, he or she would need to demonstrate that there is a long-term lease on the land.
- **What can a resident do if a neighboring farm does not employ practices to reduce runoff?**
Any time an individual believes that there is a violation of the AAPs or any type of water quality violation, that person should contact the VAAFM, who will send out an inspector to evaluate the situation. If there is a discharge, there may be a violation of the Vermont Water Quality Standards and will be addressed with the appropriate enforcement procedures of either VAAFM or ANR. If the farmer is not choosing to do some voluntary practices, there are non-regulatory organizations, such as the UVM Extension System or the natural resources conservation districts, which can visit the farm and provide assistance and resources to install additional runoff prevention practices.
- **Is the Army Corps helping Vermont farmers convert wetlands to agricultural uses? If so, it appears counter-productive to restoration efforts.**
No one is helping farmers convert wetlands. Any wetland conversion must be approved by ANR. Conversions which compromise the effectiveness of wetlands to prevent excess nutrients from entering waterways are not approved. ANR strongly encourages wetland restoration through grants and by identifying priority restoration sites.
- **The agencies cannot regulate the laws they have now. Why make more regulation that could put small farmers out of business?**
Our primary goal is to implement the current rules that exist (i.e., the AAPs, Medium Farm Operations (MFO), Large Farm Operations (LFO), and Concentrated Animal Feeding Operation (CAFO) permit rules). The State intends to add new rules and requirements, where they will make a measureable water quality difference, and where the State can provide educational, technical, and financial assistance to help meet the rules. Of the proposed rules, many are simply enhancements of the regulations that VAAFM is already enforcing, and therefore, do not require a substantial increase in resources.

- **Does it make sense to make all farms that have to meet the Accepted Agricultural Practices (AAPs) do a self-certification program, including someone with 3 chickens in their backyard?**

The State continues its policy of making the most serious water quality problems a high priority for treatment. All farms are required to meet AAPs. There are times when very small operations can cause significant water quality impacts, and they are still required to meet Accepted Agricultural Practices. The small farm certification is a way to find and correct the smaller operations that may be causing water quality problems. It will also help raise awareness about the AAPs with the non-traditional agricultural community.

- **Many landowners do not know about the AAPs, and their responsibility to comply with them. How can you locate those that own a few animals?**

Education is critical for farmers and landowners to understand how their actions can make a difference and reduce water quality impacts. We will need to rely on local, regional, and statewide partners, such as UVM Extension, Conservation Districts, watershed groups, agriculture service providers, and municipalities, for assistance, and we will need to find ways to support their involvement.

- **Agricultural runoff seems to be a major source. Why are you not regulating more farmers?**

The state's farm inspection effort is based on current resources. Between VAAFM and ANR, the State visits hundreds of farms every year, and responds to all direct complaints and concerns. We cannot see every violation that occurs, and appreciate the information we receive from the public and neighbors to help us identify potential problems areas.

- **Most of the problems are from manure on fields. Why don't you regulate manure application?**

We do. Dairy farms with more than 200 cows must have a certified nutrient management plan that details how much manure can go on individual fields. All other farms are required to apply manure and other nutrients based on soil tests and crop needs. We acknowledge that these requirements, which involve more farmer education opportunities and more field checks of records, are resource-intensive.

- **Manure in the road is getting into road ditches and into streams. What is being done about this?**

If manure has simply spilled on the road, this problem is usually left to the local law enforcement due to safety concerns. However, manure running off into ditches and streams is a violation of the AAPs and permits. Those cases should be referred to the VAAFM or ANR for inspection.

- **Why are farmers allowed to plant corn along the edges of rivers and streams where the runoff would be a big problem?**

Pursuant to the AAPs and farm water quality permits, farms are required to install a minimum buffer between crop lands and surface waters, and VAAFM enforces those buffer requirements. The AAPs require a minimum buffer width of at least 10 feet. The State's proposal is to increase the AAP minimum buffer width and to require buffers on ditches.

- **If you want to inspect small farms, why did the Agency of Agriculture, Food and Markets (VAAFM) only hire one employee?**

VAAFM was authorized to hire one new position to inspect small farms.

- **VAAFM proposes working on small farm compliance in agriculturally impaired watersheds. What happens if someone reports soil or manure washing onto a public road or into a waterway outside of an agriculturally impaired watershed? Can the State conduct enforcement as a follow up to a complaint?**

The AAPs will remain in place as the statewide set of agricultural water quality regulations, and VAAFM will continue to follow up on all complaints. If an inspector sees a violation of any regulation, whether it is the result of a complaint or any other notification, that inspector has the authority to pursue enforcement.