THE IMPORTANCE OF INTER-AGENCY COLLABORATION AND PUBLIC ENGAGEMENT IN THE DEVELOPMENT OF THE IMPLEMENTATION PLAN FOR THE NONPOINT SOURCE-FOCUSED VERMONT LAKE CHAMPLAIN PHOSPHORUS TMDL

Kari Dolan[1]

INTRODUCTION

A total maximum daily load ("TMDL") sets pollutant reduction targets from a range of sources to achieve state water quality standards of an

1. Manager, Vermont Clean Water Implementation Program, Department of Environmental Conservation. The views expressed in this paper reflect the views of the author only and do not necessarily represent the policies of the State of Vermont.

impaired water body.[2] Although not required under the Clean Water Act ("CWA"), an implementation plan typically is submitted as part of the TMDL to describe the actions needed to meet pollutant reduction targets.

Phosphorus loading is arguably Lake Champlain's greatest threat, largely due to nonpoint sources—precipitation-driven runoff and erosion—from land use activities. In 2002, the U.S. Environmental Protection Agency ("EPA") approved a Lake Champlain Phosphorus TMDL prepared by Vermont and New York, but revoked its approval for the Vermont portion of the TMDL in 2011.[3] The new Vermont Lake Champlain Phosphorus TMDL requires further reductions across all source categories (referred to as "source sectors," such as agriculture, stormwater from developed lands, roads, and point sources) to meet pollution reduction targets.[4] A new state water quality statute, Act 64, requires the state to develop a new implementation plan for the TMDL.[5]

This article describes the public process used to develop the new implementation plan. That process involved three essential tasks: engaging stakeholders, collaborating among state agencies, and securing a political commitment. This article also describes how the plan is structured to meet the TMDL's required "reasonable assurances" that nonpoint-source pollution reductions would be achieved. As part of reasonable assurances, this article outlines an accountability framework used for tracking implementation and assessing progress to determine whether more actions are necessary to meet water quality standards.

I. BACKGROUND: RESTORING LAKE CHAMPLAIN AND THE ROLE OF THE FEDERAL CLEAN WATER ACT

A. The Lake Champlain TMDL and Its Implementation Plan

The following statements characterize the general public sentiment expressed during the process to develop a new restoration plan for the Vermont portion of Lake Champlain—the Vermont phosphorus Lake Champlain TMDL. According to the Friends of North Lake Champlain,

---

2. 33 U.S.C. § 1313(d)(1)(C) (2012).

3. Letter from Linda Murphy, Dir. Office of Ecosystem Prot. to Christopher Recchia, Comm'r, Vt. Dep't of Environmental Conservation (Nov. 2002), https://www.epa.gov/sites/production/files/2015-09/documents/2002-lake-champlain-phosphorous-approval-tmdl.pdf [https://perma.cc/CDP3-ZGT4].

4. ENVTL. PROT. AGENCY, PHOSPHORUS TMDLS FOR VERMONT SEGMENTS OF LAKE CHAMPLAIN 1 (2016), https://www.epa.gov/sites/production/files/2016-06/documents/phosphorus-tmdls-vermont-segments-lake-champlain-jun-17-2016.pdf [https://perma.cc/2W7X-TKAD] [hereinafter PHASE 1 PLAN 2015].

5. *Id.* at app. E

"non-point source pollution is the 10,000 leaks that drain into Lake Champlain. Individually, not making a significant impact, but collectively, they are creating one of the largest human and environmental tragedies of our time."[6] The Friends of Winooski stated "the debate is over as to whether and how much the phosphorus level in Lake Champlain must be reduced. Now, the question is how can we reach our shared water quality goal?"[7] Finally, comment letters to the State of Vermont suggested that, "we have the opportunity to reverse this now, before it's too late, if we can find the political will to do what needs to be done."[8]

Together, Section 303(d) of the CWA and the EPA Water Quality Planning and Management Regulations (40 C.F.R. part 130) direct states to develop TMDLs for "impaired" water bodies (rivers, streams, lakes, and ponds that fail to meet water quality standards due to a pollutant or degraded condition).[9] A TMDL is typically described as a pollutant "budget" that calculates a numeric target or maximum allowable amount (or load) of the pollutant the water body can assimilate while still meeting water quality standards.[10]

The TMDL must account for contributions from all sources of the problem pollutant and determine the allowable pollutant load each of the pollutant sources can safely discharge. Sources include discharges from pipes or other discrete conveyances known as "point sources"[11] and all other sources not defined as point sources, referred to as "nonpoint sources."[12] Nonpoint sources are diffuse discharges, such as precipitation or

---

6. Public Comment from Friends of Northern Lake Champlain to Kari Dolan, Dep't of Envtl. Conservation (Jan. 9, 2014).

7. Comment Letter from Friends of Winooski River on Draft State of Vermont Proposal for a Clean Lake Champlain (Jan. 13, 2014), http://dec.vermont.gov/sites/dec/files/wsm/erp/cmnts/Friends%20of%20the%20Winooski%20River.pdf [https://perma.cc/D4YY-4PFT].

8. Comment Letter Toni Goddard on Draft State of Vermont Proposal for a Clean Lake Champlain (Jan. 22, 2014), http://dec.vermont.gov/sites/dec/files/wsm/erp/cmnts/Comments%20from%20Toni%20Goddard.pdf [https://perma.cc/ECL5-LWDY].

9. *Impaired Waters and TMDLs: Statute and Regulations*, U.S. ENVTL. PROTECTION AGENCY, https://www.epa.gov/tmdl/impaired-waters-and-tmdls-statute-and-regulations [https://perma.cc/VZK6-77MW] (last updated Jan. 19, 2016).

10. *Implementing Clean Water Act Section 303(d): Impaired Waters and Total Maximum Daily Loads (TMDL)*, U.S. ENVTL. PROTECTION AGENCY, http://www.epa.gov/tmdl [https://perma.cc/5NAL-MQLM] (last visited Apr. 3, 2016).

11. "Point sources" are "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).

12. U.S. ENVTL. PROT. AGENCY, PROTECTING WATER QUALITY FROM AGRICULTURAL RUNOFF (2005). ("Nonpoint sources" of pollution are sources that do not meet the CWA's legal

snowmelt-driven stormwater runoff from agricultural lands, parking lots, roads, and other developed areas, and stream channel erosion due to traditional channelization practices (dredging, straightening, berming, and armoring) and increased stormwater runoff.[13]

Implementation plans put TMDLs in to action. They describe measures that will reduce pollutant loads enough to meet water quality standards.[14] While the federal CWA does not explicitly require implementation plans, they are key to meeting the TMDL's pollutant targets and are typically submitted as part of or in conjunction with the TMDL.[15] An implementation plan for Lake Champlain is required by state statute.[16] Act 64 requires: (1) an update to the Lake Champlain implementation plan; (2) a description of how the state's basin plans will be used to implement the Phase I plan; (3) a schedule for adopting the basin plans; and (4) specific elements in the basin plans for carrying out the TMDL.[17]

EPA approved the joint Vermont and New York Lake Champlain Phosphorus TMDL and its Implementation Plan in 2002.[18] Vermont's TMDL served as the framework for the state to guide implementation of actions to control phosphorus pollution loading into Lake Champlain from all sources.[19] Vermont's plan contained a suite of action items for all major phosphorus sources and helped to direct funding, staff levels, program development, and implementation priorities.[20] Subsequently, Vermont Governor Douglas announced a "Clean and Clear Action Plan" to accelerate implementation of the TMDL and restore the Lake.[21]

---

definition of "point source." Nationally, nonpoint-source pollution is the leading cause of water quality degradation).

13. *What Is Nonpoint Source?*, U.S. ENVTL. PROTECTION AGENCY, https://www.epa.gov/polluted-runoff-nonpoint-source-pollution/what-nonpoint-source [https://perma.cc/TEB2-UT2N] (last updated Jan. 5, 2016) ("The term 'nonpoint source' is defined to mean any source of water pollution that does not meet the legal definition of "point source." . . .).

14. *Effectively Implementing TMDLs*, U.S. ENVTL. PROTECTION AGENCY, https://www.epa.gov/tmdl/effectively-implementing-tmdls [https://perma.cc/B2EK-CDS6] (last updated Dec. 1, 2015).

15. CLAUDIA COPELAND, CONG. RESEARCH SERV., R42752, CLEAN WATER ACT AND POLLUTANT TOTAL MAXIMUM DAILY LOADS AT SUMMARY (TMDLS) (2012).

16. VT. STAT. ANN. tit. 10, § 1386 (2015).

17. *Id.*

18. Letter from Linda M. Murphy, Dir., Office of Ecosystem Prot., Envtl. Prot. Agency Region 1, to Christopher Recchia, Comm'r, Vt. Dep't of Envtl. Conservation (Nov. 4, 2002), https://www.epa.gov/sites/production/files/2015-09/documents/2002-lake-champlain-phosphorous-approval-tmdl.pdf [https://perma.cc/H6NF-77ML].

19. PHASE I PLAN, *supra* note 4, at 1.

20. VT. AGENCY OF NAT. RES., REVISED IMPLEMENTATION PLAN: LAKE CHAMPLAIN PHOSPHOROUS TMDL 1 (2010).

21. Vt. Governor James H. Douglas, Clean and Clear Action Plan (Sept. 30, 2003), (transcript available at https://votesmart.org/public-statement/23255/clean-and-clear-water-action-plan-remarks-of-governor-james-h-douglas#) [https://perma.cc/Q736-BGFX].

In 2007, the Vermont General Assembly called for a programmatic audit of the Clean and Clear Action Plan.[22] The audit covered the period between July 2005 and June 2007 and reported no significant phosphorus pollutant reductions to Lake Champlain.[23] It also found that the TMDL Implementation Plan lacked specific objectives about how to achieve nonpoint source pollution reductions, making it difficult to track and review progress to improve program performance.[24]

That same year, Vermont Agency of Natural Resources ("ANR") established the Center for Clean and Clear to further enhance Vermont's efforts in restoring Lake Champlain.[25] A year later, ANR released a progress report that found the TMDL and its implementation plan to be "a sound and appropriate framework for the on-going implementation of phosphorus control measures."[26]

Still concerned about the lack of significant progress in restoring Lake Champlain, the Vermont General Assembly directed ANR to revise the implementation plan for the Vermont portion of the Lake Champlain TMDL by January 2010 and update the plan periodically thereafter.[27] ANR engaged in a stakeholder process in the summer of 2009 that resulted in the *Revised Implementation Plan: Lake Champlain Phosphorus TMDL*.[28]

B. Meeting Reasonable Assurance

Despite these efforts, EPA disapproved the Vermont portion of the Lake Champlain phosphorus TMDL in 2011 as a result of the lawsuit filed in federal court by the Conservation Law Foundation.[29] One of the primary reasons for EPA's disapproval was its finding that Vermont had not provided sufficient reasonable assurances that the plan would achieve reductions in nonpoint sources of phosphorus pollution (primarily

---

22. Act 43 focused on stormwater management and the implementation of the Lake Champlain TMDL. VT. STAT. ANN. tit. 10, § 1264.

23. GREEN MOUNTAIN INSTITUTE FOR ENVIRONMENTAL DEMOCRACY, PERFORMANCE AUDIT OF VERMONT CLEAN AND CLEAR iii (2008).

24. *Id.* at iv.

25. VT. AGENCY OF NAT. RES. & VT. AGENCY OF AGRIC., FOOD & MKTS., VERMONT CLEAN AND CLEAR ACTION PLAN: 2010 ANNUAL REPORT 1 (2011).

26. VT. AGENCY OF NAT. RES. & VT. AGENCY OF AGRIC., FOOD, MKTS., PROGRESS IN ESTABLISHING AND IMPLEMENTING THE TOTAL MAXIMUM DAILY LOAD (TMDL) PLAN FOR LAKE CHAMPLAIN 2 (2008).

27. 2008 Vt. Acts & Resolves 126, 126–134.

28. VT. AGENCY OF NAT. RES., *supra* note 20.

29. Letter from H. Curtis Spalding, Reg'l Adm'r, Envtl. Prot. Agency Region 1, to Deborah Markowitz, Sec'y, Vt. Agency of Natural Res. 1 (Jan. 24, 2011), https://www.epa.gov/sites/production/files/2015-09/documents/2002-lake-champlain-tmdl-disapproval-decision.pdf [https://perma.cc/S2HD-ZB92].

agriculture and stormwater sources). "Nearly all elements of the plan depend on both additional funding and entities' willingness to participate or cooperate voluntarily with the intent of the program" and "the plan provides very little, if any, assurance that the recommended actions will occur, and provides no indication of the magnitude of phosphorus reductions expected from these actions."[30]

For a water body that is impaired by both point and nonpoint sources, as is the case with Lake Champlain, the level of pollution control at the point sources is based on the assumption that there will be controls on the nonpoint sources and that those nonpoint source pollutant load reductions will occur. Lake Champlain is one of these waters impaired by point and nonpoint sources.[31] Therefore, a TMDL for such waters must provide reasonable assurances that nonpoint-source control measures will achieve expected pollutant load reductions.[32]

Controlling nonpoint sources can be difficult compared to conventional ways to control pollution from point sources. Monitoring effluent from point sources is relatively easy, making it fairly straightforward for regulatory authorities to assign a quantitative effluent limit in a discharge permit.[33]

Nonpoint sources, however, are much harder to monitor and control. Nonpoint source pollution occurs from rainfall and snowmelt running over the landscape, requiring land-use best management practices ("BMPs") to control the pollution.[34] These nonpoint sources can be quite significant and damaging.[35] Thus, reasonable assurances are important because they address nonpoint source control needs. Moreover, reasonable assurances provide the public confidence that the TMDL is not based on overly optimistic or exaggerated assumptions regarding the amount of phosphorus-pollution load reductions that will occur from the implementation of nonpoint-source control measures.

---

30. *Id.* at 11.

31. *Nutrient*, LAKE CHAMPLAIN BASIN PROGRAM, http://www.lcbp.org/water-environment/water-quality/nutrients/ [https://perma.cc/TL6H-EN77] (last visited Apr. 25, 2016).

32. U.S. ENVTL. PROT. AGENCY, GUIDANCE FOR WATER QUALITY-BASED DECISIONS: THE TMDL PROCESS 15 (1991); Memorandum from Robert Perciasepe, Assistant Adm'r to Regional Adm'rs & Reg'l Water Div. Dirs. 5 (Aug. 8, 1997), https://www.epa.gov/sites/production/files/2015-10/documents/2003_10_21_tmdl_ratepace1997guid_0.pdf [https://perma.cc/5659-PLJB]; U.S. ENVTL. PROT. AGENCY, GUIDELINES FOR REVIEWING TMDLS UNDER EXISTING REGULATIONS ISSUED IN 1992 1, 4–5 (2002).

33. U.S. ENVTL. PROT. AGENCY, NATIONAL MANAGEMENT MEASURES TO CONTROL NONPOINT SOURCE POLLUTION FROM URBAN AREAS 0-7 (2005).

34. Daniel R. Mandelker, *Controlling Nonpoint Source Water Pollution: Can It Be Done?*, 65 CHI.-KENT L. REV. 479, 480–83 (1989).

35. OLIVER A. HOUCK, CLEAN WATER ACT TMDL PROGRAM: LAW POLICY AND IMPLEMENTATION 166 (1999).

EPA's disapproval of the initial plan resulted in the agency taking on the responsibility of establishing a new TMDL, as required by federal law.[36] The new TMDL, released in June of 2016, requires stronger reasonable assurances with specific and enforceable targets.[37] Vermont anticipates finalizing the implementation plan in 2016.[38]

EPA's task in developing the new TMDL involved setting new phosphorus pollution reduction targets to meet water quality standards.[39] The new targets must focus on sources contributing to the problem, most of which are nonpoint sources.[40] Virtually all of these nonpoint sources are under the direct authority of state government.[41]

The State of Vermont agreed to work cooperatively with EPA in the development of the new TMDL, recognizing it as an opportunity to incorporate flexibility in setting priorities and directing resources to achieve phosphorus load reduction in the most efficient and cost-effective manner possible.[42]

The Vermont Department of Environmental Conservation ("DEC") staff recognized that the reopening of the TMDL would provide an opportunity for Vermont to renew its commitment to restore Lake Champlain. DEC staff noted that: (1) the implementation plan is aligned with the state's delegated responsibility to maintain water quality; (2) nonpoint sources contributing to phosphorus loading are largely the result of land use activities that the state and local governments oversee; (3) the state already had in place a cooperative relationship among state agencies and engaged stakeholders that were involved in the development and implementation of the 2002 Vermont-specific Implementation Plan (and the process to amend that Plan in 2010); (4) a new TMDL implementation plan could be used to make enhanced policy commitments to achieve greater phosphorus load reductions, particularly at nonpoint sources; and (5) the

---

36. 40 C.F.R. § 130.7(d)(2).

37. U.S. ENVTL. PROT. AGENCY, PHOSPHORUS TMDLS FOR VERMONT SEGMENTS OF LAKE CHAMPLAIN 4–6 (2016) [hereinafter 2016 PHOSPHORUS TMDL].

38. VT. STAT. ANN. tit. 10, § 1386 (2015).

39. 2016 PHOSPHORUS TMDL, *supra* note 39, at 4–6; 33 U.S.C. § 1313(d); 40 C.F.R. § 130.7 (2015).

40 PHASE I PLAN, *supra* note 4, at 1.

41. 33 U.S.C. §1329(a)(1).

42. 40 C.F.R. § 130.2(i). "If best management practices or other nonpoint source pollution controls make more stringent load allocations practicable, then wasteload allocations can be made less stringent;" Correspondence from David Mears, Comm'r to Stephen Perkins, U.S. Envtl. Prot. Agency (Oct. 23, 2013) (regarding the Draft set of preferred state policy alternatives pertaining to the Lake Champlain Phosphorus TMDL).

state could readily integrate the TMDL requirements into its existing watershed scale planning framework referred to as tactical basin planning.[43]

It is important to acknowledge that two major flood events in 2011 also had some influence on public opinion regarding the restoration of Lake Champlain.[44] The spring flood event in 2011 caused localized flooding in some communities and raised Lake Champlain to historic levels, causing damages to homes, property, and farmland.[45] A few months later, and seven months after EPA's disapproval of the Vermont portion of the Lake Champlain Phosphorus TMDL, Tropical Storm Irene struck.[46] Irene caused loss of life. The storm destroyed homes, displaced businesses, demolished roads and bridges, damaged farmlands, disrupted wastewater treatment, affected drinking water supplies across the state.[47] Irene caused spikes in water pollution loading into many of the state's waters, including Lake Champlain.[48] These events demonstrated to the public the impacts caused by precipitation-driven stormwater running off farms and developed lands. They helped to raise public concern about public health and water quality and renewed interest in actions that can achieve both improved water quality and greater resilience to future flooding.[49]

II. ROLE OF IMPLEMENTATION PLAN IN MEETING REASONABLE ASSURANCES

As described above, TMDLs that rely on pollution reductions from sources that are largely regulated by permits are relatively straight forward to implement. The reduction requirements are integrated into their permits. The challenge with TMDLs that require reductions from nonpoint sources is that EPA must find reasonable assurances that the necessary nonpoint source controls will occur.[50] Lake Champlain falls within this category of

---

43. Author's personal knowledge, conversation with David Mears, Comm'r, Dep't of Envtl. Conservation.

44. PHASE I PLAN, *supra* note 4, at 52.

45 STEPHANIE S. CASTLE, LAKE CHAMPLAIN BASIN, FLOOD RESILIENCE IN THE LAKE CHAMPLAIN BASIN AND UPPER RICHELIEU RIVER 5 (2013).

46. *Id.*

47. SACHA PEALER, LESSONS FROM IRENE: BUILDING RESILIENCY AS WE REBUILD 1, 3, 5 (2012); David K. Mears & Sarah McKearnan, *Rivers and Resilience: Lessons Learned from Tropical Storm Irene*, 14 VT. J. ENVTL. L. 177, 178 (2013).

48. LAKE CHAMPLAIN PHOSPHOROUS PLAN: NEW YORK 11, http://www.dec.ny.gov/docs/water_pdf/lcbprp2014draft.pdf [https://perma.cc/Y259-4L9U] (last updated June 17, 2014).

49. VT. AGENCY OF NAT. RES., RESILIENCE: A REPORT ON THE HEALTH OF VERMONT'S ENVIRONMENT 11 (2011).

50. Revisions to the Water Quality Planning and Management Regulation, 65 Fed. Reg. 43,586, 43,668 (July 13, 2000).

TMDL's. Therefore, success in achieving a clean Lake Champlain fundamentally means greater control of precipitation-driven nonpoint sources and improvements in natural infrastructure, such as floodplains and river corridors, that could help attenuate the erosive forces of floodwaters and improve water quality.[51]

Nonpoint sources of pollution, particularly agricultural and stormwater runoff, and stream channel erosion, are the largest contributors of nutrient and sediment pollution into Vermont's waters.[52] About ninety-seven percent of the phosphorus load to Lake Champlain comes from these sources.[53] Restoring Lake Champlain means that Vermont needs to dramatically increase its efforts to control nonpoint sources of pollution.

Providing reasonable assurances that control on nonpoint pollution sources will achieve expected pollutant load reductions will need: (1) a comprehensive implementation plan that contains enhanced state programs to target the greatest pollution sources, particularly nonpoint sources, with increased funding levels to support implementation;[54] (2) modeling tools to quantify the reductions from measures described in the implementation plan; and (3) an accountability framework that will serve as a backstop to ensure a high likelihood that implementation according to the plan will take place.[55]

The challenge is how to create an implementation plan that contains adequate and effective measures and is acceptable by the very sources that are causing or contributing to the pollution problem.

III. THE PUBLIC PROCESS

Getting buy-in from the public to support the Lake Champlain TMDL required public policy makers to convince the public, political leaders, and stakeholders themselves that a clean Lake Champlain is a worthy investment. Creating a political will to invest enough to improve the lake's

---

51. *Restoring Lake Champlain*, AGENCY OF NAT. RES. (2015), http://dec.vermont.gov/watershed/cwi/restoring [https://perma.cc/HN7D-T2ZL].

52. "Stream channel erosion" refers to the stream bed and bank erosion brought about by loss of floodplain and wetland functions. Stream channel dredging, straightening, berming, and armoring, coupled with the impacts from a greater amount of stormwater runoff from stormwater flow or drainage practices, have resulted in poor, highly erosive (often referred to as "disequilibrium") stream channel conditions.

53. 2016 PHOSPHORUS TMDL, *supra* note 39, at 16.

54. PHASE I PLAN, *supra* note 4, at 1–3.

55. Letter from Stephen S. Perkins, Dir., Office of Ecosystem Prot., U.S. Envtl. Prot. Agency, Region 1, to David Mears, Comm'r, Vt. Dep't of Envtl. Conservation, and Chuck Ross, Sec'y, Vt. Agency of Agric., Food & Mkts (Jan. 17, 2014), http://dec.vermont.gov/sites/dec/files/wsm/erp/Champlain/docs/Phase_1_Plan_Appendices_August%202015_draft.pdf [https://perma.cc/V6V8-HRLD] [hereinafter Jan. 17 Letter from Stephen S. Perkins].

health and water quality statewide was not easy. Even the term "TMDL" is difficult to understand, making it hard to engage the public and secure their support.

Secondly, controlling nonpoint sources fundamentally means changing or making adjustments to our land uses. Changing land uses requires education. All polluted runoff sources (farmers, municipal road crew and highway departments, commercial business owners with large parking lots, developers at construction sites, and residential homeowners) need to learn about the problems with nonpoint source pollution, and understand why they may be contributing to the problem, how to take action, and what resources are available to help with implementation.[56] The added challenges are that the right actions are not always easy to implement and can be costly. It will also take time before the benefits are realized in the lake's water quality.[57]

The process Vermont used to build interest and support involved three essential tasks:

- Task #1: Engaging stakeholders, including the business community, farm associations, local governments, environmental advocacy groups, watershed groups, and the public early in the process;
- Task #2: Bringing together state agencies to work collaboratively throughout the development of the implementation plan; and
- Task #3: Building a political commitment at the state level to support the goals of the TMDL.

A. Task 1: Engaging Stakeholders

Much of the Lake Champlain TMDL's focus is on nonpoint-source pollution reductions that affect many activities on the landscape. Thus, a robust public process, involving all source categories, is vital to the TMDL process. That process must engage stakeholders and the public and show responsiveness on the part of public agencies to the concerns of the public.[58]

---

56. STATE OF VT., VERMONT'S CLEAN WATER INITIATIVE 24 (2014), http://legislature.vermont.gov/assets/Legislative-Reports/303279.pdf [https://perma.cc/VKB2-3TCH].

57. Mandelker, *supra* note 34, at 480–83.

58. FINAL REPORT OF THE AGRICULTURAL WORKING GROUP 3, http://legislature.vermont.gov/assets/Documents/2014/WorkGroups/House%20Agriculture/Bills/H.586/Witness%20Testimony/H.586~Laura%20DiPietro~Final%20Report%20of%20the%20Agricultural%20Working%20Group~2-25-2014.pdf [https://perma.cc/4HCW-6AP7].

Vermont recognized the need for a new, bold, and extensive approach to engage municipalities, farmers, and the public in a renewed commitment to restore Lake Champlain.[59] The state set about creating and implementing an outreach plan to use across all source categories.[60] That outreach plan included listening sessions, small stakeholder meetings, farmer working group meetings, technical discussions, and public meetings to periodically report on progress in the development of the TMDL.[61]

Vermont first initiated an extensive public outreach process with a series of fifteen informal listening sessions around the Champlain Basin in the fall of 2011.[62] These sessions were intentionally organized early in the process, before the completion of the modeling to estimate pollution load reduction needs and before identifying pollution reduction strategies to pursue.[63] The intent of these listening sessions, jointly sponsored by EPA, were to raise awareness about EPA's disapproval of the TMDL and next steps, hear about people's concerns, listen to suggestions about strategies to restore Lake Champlain, and, most importantly, invite on-going and far-reaching participation across all sectors in the process.[64]

The state discovered an extremely high level of frustration about the condition of Lake Champlain and tremendous support for a renewed effort to turn the lake around. Some of the more common messages raised during the listening sessions that helped to move the discussion forward were: "Do not invest in any more studies"; "We need action"; "Safeguarding clean water is everyone's business"; "We all have a role in reducing water pollution"; "Municipalities will support the TMDL if actions are science-based, reasonable, cost-effective, and doable"; "Investments should target the biggest sources"; and "Stop 'pointing fingers' and focus on problem-solving."[65]

EPA began developing new phosphorus loading models based on updated water quality and stream flow data.[66] EPA engaged a technical working group made up of state and federal agency staff to assist in the

---

59. SARAH COHEN, COLLABORATIVE APPROACHES TO ENVTL. DECISION-MAKING: A STATE AGENCY'S GUIDE TO EFFECTIVE DIALOGUE AND STAKEHOLDER ENGAGEMENT 32.

60. *Id.*

61. *Id.*

62. *Id.*

63. *Id.*

64. *Id.*

65. *Id.*

66. 2016 PHOSPHORUS TMDL, *supra* note 39, at 4–6; *Lake Champlain Phosphorus TMDL: A Commitment to Clean Water*, U.S. ENVTL. PROTECTION AGENCY, https://www.epa.gov/tmdl/lake-champlain-phosphorus-tmdl-commitment-clean-water [https://perma.cc/D6EF-NXHD] (last visited Apr. 3, 2016).

development and assessment of the modeling data and tools for evaluating the performance of pollution control practices.[67]

The state held another eight public meetings in the summer of 2013.[68] These meetings were small, sector-specific stakeholder meetings intended to provide technical updates on the TMDL and foster a more thorough discussion about pollution control needs and strategies within each sector.[69] Topic themes included: stormwater management on developed lands in large municipalities; municipal wastewater infrastructure, municipal road-related stormwater management; stormwater management on private (e.g., commercial, industrial) properties; regional planning; roles of watershed organizations; and regional and statewide environmental advocacy interests.[70]

DEC and the Vermont Agency of Agriculture Food and Markets ("VAAFM") ran the Agricultural Working Group, a concurrent stakeholder process solely focused on agricultural community.[71] The state retained facilitation services from the Environmental Mediation Center ("EMC") and the Consensus Building Institute ("CBI") with support from EPA via the Conflict Prevention and Resolution Center, Natural Resources Conservation Service ("NRCS"), and the private philanthropic organizations Green Mountain Coffee Roasters and the High Meadows Fund.[72]

Agricultural Working Group members included dairy farmers, livestock farmers, and crop farmers from small, medium, and large farms and agricultural service providers and other stakeholders.[73] The Agricultural Working Group sponsored 15 focus group sessions with nearly 400 people participating to discuss the efficacy of conservation practices, ideas to achieve greater water quality improvements, resource needs, and federal and state programs.[74] The sessions spread across 13 different watersheds in the state, most of which were in watersheds within the Lake Champlain Basin.[75] Upon completing those focus group meetings, the work group met seven times to develop recommendations to reduce phosphorus pollution from the agricultural sector.[76]

---

67. 2016 PHOSPHORUS TMDL, *supra* note 39, at 5.
68. Author's personal knowledge.
69. *Id.*
70. *Id.*
71. FINAL REPORT OF THE AGRICULTURAL WORKING GROUP, *supra* note 58, at 4.
72. *Id.*
73. *Id.*
74. *Id.*
75. *Id.*
76. *Id.*

In November of 2013, Vermont released the outline of an implementation plan entitled *The State of Vermont Proposal for a Clean Lake Champlain, Draft for Discussion* for public comment.[77] The proposed set of policy commitments to be applied basin-wide outlined how Vermont could meet reasonable assurances. The Agricultural Working Group's recommendations were incorporated into this proposal were as draft policy commitments for all other major sources of phosphorus to Lake Champlain including public and private developed lands and municipal and state road networks.[78] It also included additional draft commitments to restore natural infrastructure (floodplains, river corridors, wetlands, buffers, and forest management) and a proposal for a new clean water improvement fund.[79]

The state, in partnership with EPA, held six public meetings in December of 2013.[80] The Lake Champlain Basin Program ("LCBP") facilitated the meetings.[81] The state then worked with the regional planning commissions to hold an additional thirteen public meetings across Vermont to discuss clean water needs outside the Lake Champlain Basin.[82]

Well over 500 people attended the Lake Champlain Basin public meetings and the presentations focused on activities that work effectively at reducing nutrient pollution.[83] The state received well over 100 comments, including formal comments from EPA.[84] Most of the comments expressed general support for the TMDL, although there were concerns about cost and the potential impacts to farming.[85]

Some of the comments expressed during the December public meetings truly helped to establish the public discourse that became fundamental to securing support for the TMDL from the public, stakeholders, the Governor, and legislators. That support ultimately led to the passage of Act 64—the state legislation that provided the legislative authority and funding

---

77. VT. DEP'T OF ENVTL. CONSERVATION & VT. AGENCY OF AGRIC., FOOD & MKTS., STATE OF VERMONT PROPOSAL FOR A CLEAN LAKE CHAMPLAIN: DRAFT FOR DISCUSSION (2013).

78. *Id.* at 3.

79. *Id.* at 26.

80. News Release, EPA and Vermont Announce Public Meetings to Discuss Lake Champlain Cleanup Efforts, U.S. Envtl. Prot. Agency (Nov. 26, 2013), https://yosemite.epa.gov/opa/admpress.nsf/6427a6b7538955c585257359003f0230/c0b11825666aec3785257c230070ff8d!OpenDocument [https://perma.cc/5XJS-A9RM].

81. *Id.*

82. DEP'T OF ENVTL. CONSERVATION, UPDATED 2013-2036 TIMELINE FOR COMPLETING THE VERMONT LAKE CHAMPLAIN RESTORATION PLAN, http://dec.vermont.gov/sites/dec/files/wsm/erp/docs/2016-01-11%20Updated%20Timeline.pdf [https://perma.cc/A4ML-FWH7] (last visited May 2, 2016).

83. PHASE I PLAN, *supra* note 4, at 2.

84. Letter from Stephen S. Perkins, *supra* note 55.

85. DEP'T OF ENVTL. CONSERVATION & VT. AGENCY OF AGRIC., FOOD & MKTS., SUMMARY OF PUBLIC COMMENT (2014).

to begin to implement the TMDL and water quality restoration priorities statewide.[86] Those key messages were:

- "Be part of the solution." Vermonters love Lake Champlain and the streams that flow into it. Everyone has a responsibility to do their part to protect the health of sports fishery, the recreation and tourism benefits these waters provide, the lake's value to local businesses and property values, public health and safety, and the clarity the ecology;
- "All in." Moving away from finger-pointing and working together to find and implement solutions is how we need to imagine a new way of living on the land that supports agriculture, our businesses, and communities and protects our lakes and streams;
- "Clean water is good for the economy." Tourism and recreation, property values, and even business recruitment depend on a clean Lake Champlain;
- "Phosphorus control actions often provide additional benefits beyond clean water." Better management of soil, manure, and fertilizers can reduce costs to farmers and improve the health of the soil. Maintaining gravel roads can save towns money over the long haul by correcting chronic erosion problems along ditches and at culverts. Restoring floodplains can reduce damage to property from future flooding and support fish and wildlife habitat. [87]

Eventually, the policy commitments evolved into the *Draft Vermont Lake Champlain Phosphorus TMDL Phase I Implementation Plan*, released to EPA and presented to the public at a press event in May of 2014[88] (it was later updated with the passage of Act 64 in July of 2015).[89] Six months later, the state and EPA hosted four more public meetings in November of 2014 to discuss progress in drafting the TMDL and describe examples of success stories from implementing pollution reduction management practices across all sectors.[90]

EPA released the draft TMDL in August of 2015, held three more public meetings with the state, and announced a thirty-day public comment period on the draft TMDL (which was later extended to a sixty-day

86. PHASE I PLAN, *supra* note 4, at 4.
87. *Id.*
88. *Id.*
89. *Id.*
90. UPDATED 2013-2036 TIMELINE FOR COMPLETING THE VERMONT LAKE CHAMPLAIN RESTORATION PLAN, *supra* note 82.

comment period).[91] EPA released the final, approved TMDL in June of 2016.[92] In August of 2016, within three months of the release of the EPA-approved TMDL, Vermont will hold another set of three public meetings and public comment period before releasing the final Phase I implementation plan anticipated for September of 2016.[93]

B. Task 2: Collaborating Among State Agencies

Collaborating among state agencies in the implementation of the Lake Champlain TMDL is essential, because state oversight and management of the various source categories extends across multiple state agencies. While DEC is the designated lead agency to manage the quality of Vermont's waters, VAAFM was delegated the authority to manage agricultural nonpoint-source pollution control.[94] The Vermont Agency of Transportation ("VTrans") uses its grant programs and voluntary Road and Bridge Standards to incentivize municipalities to use road BMPs.[95] The Forests, Parks and Recreation Department ("VFPR"), albeit a department of ANR along with DEC, promotes the use of forest-management related practices to prevent polluted runoff from entering surface waters.[96] DEC also relied on these agencies and departments to engage their own constituencies in understanding and participating in the TMDL process.

Another reason for a state-wide, multi-agency solution is to work together to avoid the cost-prohibitive consequences if Vermont fails to secure nonpoint source reductions. The consequences of failing to meet the

---

91. *EPA Extends Public Comment Period on Phosphorus Limits for Vermont Segments of Lake Champlain*, U.S. ENVTL. PROTECTION AGENCY (Sept. 9, 2015), https://yosemite.epa.gov/opa/admpress.nsf/d0cf6618525a9efb85257359003fb69d/f65d724324cb414b85257ebb006f107d!OpenDocument [https://perma.cc/L6SN-FPBQ].

92. Press Release, U.S. Envtl. Prot. Agency, EPA Releases Final Phosphorus Limits for Vermont Segments of Lake Champlain (June 17, 2016), https://www.epa.gov/newsreleases/epa-releases-final-phosphorus-limits-vermont-segments-lake-champlain [https://perma.cc/B3KN-98CS].

93. VT. STAT. ANN. tit. 10, § 1386.

94. Memorandum of Understanding between Vt. Agency of Nat. Res. & the Vt. Dep't of Agric., Food & Mkts. Concerning Agricultural Nonpoint Source Pollution Reduction Program (Apr. 16, 1993), http://legislature.vermont.gov/assets/Documents/2014/WorkGroups/House%20Fish%20and%20Wildlife/Bills/H.586/Witness%20Testimony/H.586~Jim%20Leland~Memorandum%20of%20Understanding%20Between%20ANR%20and%20Agency%20of%20Agriculture%C2%A6%20Non%20point%20source%20pollution%20reduction~1-21-2014.pdf [https://perma.cc/TBA9-3TML].

95. CHRIS COLE, DEPUTY SEC'Y, TRANSPORTATION AND WATER QUALITY (2015), http://legislature.vermont.gov/assets/Documents/2016/WorkGroups/House%20Fish%20and%20Wildlife/Bills/H.35/Witness%20Testimony/H.35~Chris%20Cole~Transportation%20and%20Water%20Quality~1-29-2015.pdf [https://perma.cc/5D7P-UEZZ].

96. *Acceptable Management Practices*, VT. DEPT. OF FORESTS, PARKS & REC., http://fpr.vermont.gov/forest/vermonts_forests/amps [https://perma.cc/2BET-9D4R] (last visited Apr. 4, 2016).

early policy and program-based milestones necessary to support implementation or failing to achieve targeted nonpoint source reductions, both of which as described in the TMDLs' accountability framework, are significant.[97] EPA may "[r]evise the TMDLs to reallocate additional load reductions from nonpoint to point sources, such as wastewater treatment plants."[98] Vermont runs the risk that wastewater treatment plants in the basin may be targeted for greater phosphorus reductions, which could result in upgrading facilities to the limit of technology.[99] The State would also need to expand the use of offsets and expand permit programs to directly regulate more phosphorus pollutant sources.[100] Perhaps the most egregious consequence of focusing on reductions at the point sources, particularly wastewater treatment plants (a small source relative to the nonpoint source control needs), would be the failure to secure enough phosphorous reductions to achieve a clean Lake Champlain.[101] Other consequences may "expand NPDES permit coverage to unregulated sources," and "increase and target federal enforcement and compliance assurance."[102]

The state agencies and EPA met regularly for many months. EPA explained early in the process their expectation that the Phase 1 Implementation Plan would need to be: (1) broad enough in scope to include all major pollutant sources, including those sources beyond DEC's existing authorities; (2) enforceable to demonstrate that the pollutant controls will take place; and (3) measurable in order for EPA to demonstrate that the TMDL can meet water quality standards over time and to enable the state to track its progress in reducing pollutant loading. Specifically, EPA expected the Phase 1 Implementation Plan to describe:

> each policy or program element involved to meet the TMDL's pollution load reductions; how the phosphorus reduction associated with elements may be estimated using the phosphorus estimation tool called the "TMDL scenario tool"; the policy mechanisms to ensure the element will occur; the time period—date and year—when the element will take effect; dates for activities or "milestones" of partial implementation of the elements; resources

97. 2016 PHOSPHORUS TMDL, *supra* note 39, at 58–59.
98. *Id.* at 57, 59.
99. *Id.* at 54.
100. Letter from Stephen S. Perkins, *supra* note 55.
101. E-mail from Stephen Perkins, Dir., Office of Ecosystem Prot., U.S. Envtl. Prot. Agency, Region 1 to David Mears, Comm'r, Vt. Dep't of Envtl. Conservation (Nov. 1, 2013) (on file with Vt. J. Envtl. L.)
102. 2016 PHOSPHORUS TMDL, *supra* note 39, at 57, 59

> needed to support the element; and, anticipated sources of any new funding needed to support implementation.[103]

Fortunately, state agencies were already meeting on a regular basis to discuss a wide range of cross-agency topics. The inter-agency coordination that resulted from the State's recovery efforts following the catastrophic floods of 2011[104] created the foundation to support enhanced communications about the TMDL. Senior management staff from ANR and VTrans met twice per month. ANR and VAAFM met once per month. The Lake Champlain TMDL became a permanent agenda item for these meetings. Senior management of DEC, VAAFM, VTrans, and VFPR jointly participated at public meetings and testified collectively at the General Assembly.[105] Their staff worked as a team to evaluate public comments and develop the Phase I Plan.

C. Task 3: Securing a Political Commitment to Achieve a Clean Lake Champlain

On January 8, 2015, Governor Peter Shumlin walked through a crowd of protesters to give his inaugural address to the State's General Assembly. Protesters were calling for greater affordability of health care and were angry over his decision to abandon action to build the first-in-the-nation, single-payer universal health care system.[106] Although this was not the entrance that anyone would have expected, the Governor did invoke a standing ovation when he unveiled the restoration of Lake Champlain as a top agenda item:[107]

> We love our rivers and lakes, from Lake Memphremagog to the Battenkill, from the Lamoille River to Lake Bomoseen, from Otter Creek to the river I grew up on, the Connecticut. And we all revere

---

103. *See* Letter from Stephen S. Perkins *supra* note 55 (detailing some of EPA's expectations).

104. Mears & McKearnan, *supra* note 47, at 190.

105. Draft Press Release, U.S. Envtl. Prot. Agency & Vt. Dep't of Envtl. Conservation, Announcing the First Round of TMDL Small Group Meetings (Sept. 13, 2011) (on file with Vt. J. Envtl. L.).

106. Paul Heintz, *Twenty-Nine Arrested After Protest Disrupts Shumlin Inauguration*, SEVEN DAYS (Jan. 9, 2015), http://www.sevendaysvt.com/OffMessage/archives/2015/01/08/massive-protest-disrupts-shumlin-inauguration [https://perma.cc/N9UH-MJH3].

107. Steph Machado, *Amid Protesters, Gov. Shumlin Focuses on Environmental Issues in Inauguration Speech*, MYCHAMPLAINVALLEY.COM (Jan. 8, 2015), http://www.mychamplainvalley.com/news/vermont/amid-protesters-gov-shumlin-focuses-on-environmental-issues-in-inauguration-speech [https://perma.cc/QC9Q-VC48].

> our crown jewel, Lake Champlain, which supports hundreds of millions of dollars in economic activity every year. [108]

The Governor acknowledged the challenges in meeting the public's call for cleaner water: "We know everything we hold precious is under threat from climate change and pollution. . . . We are rapidly losing the battle for clean water."[109] He then followed up with a resounding commitment to do something about it: "We must all take our share of responsibility and work together . . . to get the job done. . . . I need your support to ensure that the State of Vermont does its part, and . . . to launch a new era of clean water in Vermont."[110] The Governor also announced a Clean Water Fund to support clean water needs, stating that "[w]e must all take our share of responsibility and work together . . . to get the job done . . . . I need your support to ensure that the State of Vermont does its part, and . . . to launch a new era of clean water in Vermont."[111]

How did we arrive at this level of political support? How did the conversation change from concerns of how costly the restoration of Lake Champlain has been to acknowledging that we have not done enough to reduce the sources of phosphorus? We went from reporting on the numerous good-faith efforts made in recent years across all source sectors to realizing the many water quality problems that remain.

What changed is that the call for a cleaner Lake Champlain got louder. This was partly due to the leadership of state government to seize the opportunity and use the TMDL process to achieve water quality improvements for Vermont communities statewide. Also notable was the collaboration across state agencies to engage their constituencies and stakeholders and convince them to do their part.

The fundamental reason was from the groundswell of public opinion for cleaner water, thanks to the numerous voices of municipalities, business groups, grassroots organizations, and farmer groups. Nearly all of the voices were speaking in unison to demand clean water, calling for an "all in" approach to Lake Champlain and clean water statewide. The call was to stop the finger-pointing and encourage everyone to take on some responsibility to improve water quality. Advocates circulated petitions,

---

108. Peter Shumlin, Governor, Inaugural Address (Jan. 8, 2015), http://www.vpr.net/apps/interactive-transcript-gov-peter-shumlins-third-inaugural-address/ [https://perma.cc/U2BK-8HFP].

109. *Id.*

110. *Id.*

111. *Id.*

contacted their representatives, used newsletters, and wrote action plans demanding clean water.

Another important voice supporting the TMDL came from the business community. The Agency of Commerce and Community Development and businesses across the state recognized the importance of clean water to local economies and to the recreation and tourism economy that depends on a clean environment.[112] Perhaps a pivotal moment was when Tom Torti, president of the Lake Champlain Regional Chamber of Commerce, remarked, "It's time for the business community and the taxpayers of Vermont to stand up and say 'we also have an affirmative obligation to fund this going forward. These are all of our waters.'"[113]

D. Key Strategies of the Implementation Plan

As described above, the TMDL implementation plan is the road map to describe how to achieve the reductions in pollutant loading from each of the source categories. The implementation plan for the new Lake Champlain TMDL is based on two phases.[114] The Phase I Implementation Plan involved the development of a basin-wide implementation plan to lay out the policy commitments related to nonpoint-source phosphorus pollutant reductions.[115] That plan was built on the draft set of policy commitments that was released in November of 2013[116] and the public comments received on that document. EPA is using the Phase I Plan to meet reasonable assurances.[117]

Engaging people who live and work in the watersheds that make up the basin is a critical part of the restoration process. Now that EPA finalized the TMDL, the state will develop "Phase II" plans—watershed-scale implementation plans for each segment of Lake Champlain.[118] The state will rely on its tactical basin planning process to develop and implement these Phase II plans and seek reductions in pollutant loading at critical

---

112. *See* Patricia Moulton & Deb Markowitz, *Moulton & Markowitz: The Many Benefits of Clean Water*, VTDIGGER (Apr. 17, 2015, 6:55 PM), http://vtdigger.org/2015/04/17/moulton-markowitz-the-many-benefits-of-clean-water/ [https://perma.cc/99CZ-AZQ7] (containing commentary from Patricia Moulton, the Secretary of the Vermont Agency of Commerce and Community Development, about the economic importance of clean water in Lake Champlain).

113. John Herrick, *Vermonters Should Be "All In" on Water Quality*, VTDIGGER (Feb. 18, 2015), http://vtdigger.org/2015/02/18/vermonters-water-quality/ [https://perma.cc/5WA3-JD5F].

114. PHASE I PLAN, *supra* note 4, at 1.

115. *Id.*

116. VT. DEP'T. OF ENVTL. CONSERVATION, *supra* note 77.

117. Letter from Stephen S. Perkins, *supra* note 55.

118. PHASE I PLAN, *supra* note 4, at 1.

sources within all pollutant source categories.[119] The process fosters collaboration among local and regional partners, municipalities, farmers, businesses, federal and state agencies, and other interested parties. It keeps people engaged and identifies local concerns. Phase II plans target and implement point and nonpoint pollutant control measures and practices and includes implementation dates for those corrective actions.[120]

E. The New Implementation Plan

The Phase I Implementation Plan was the outcome of a significant amount of stakeholder engagement, a comprehensive evaluation of policy options,[121] and agency collaboration. The state anticipates releasing the final draft of the Phase I Implementation Plan by early August of 2016, holding a public comment and three more public meetings and adopting it as the final plan by September of 2016.[122] The plan targets the principal sources of phosphorus, including the agricultural sector, developed-lands sector (including state and municipal roads), the point-source sector, river channel and floodplain sources, and forest management sources.

In the agricultural sector the plan calls for an update to the Required Agricultural Practices (water quality practices) for all farms. The new standards will include: (1) stream and ditch setbacks; (2) livestock exclusion; (3) nutrient management planning, including enhanced practices at flood-prone lands and other critical source areas; and (4) improved compliance and enforcement, including small farm certification.[123]

In the developed-lands sector, the plan issues the following stormwater control measures: (1) a new state general permit to reduce stormwater discharges from existing developed lands where impervious surfaces exceed three acres and currently are not regulated; (2) an update to the existing municipal general permit, referred to as the "Municipal Separate Storm Sewer System" ("MS4") permit, consistent with the requirements of the new Lake Champlain TMDL; (3) a new state highway-stormwater general permit to reduce erosion and stormwater discharges from the state

---

119. INT'L JOINT COMM'N, INTERNATIONAL MISSISQUOI BAY STUDY BOARD: MISSISQUOI BAY CRITICAL SOURCE AREA STUDY 23 (2012) (the term, "critical sources" or "critical source areas," refer to those areas on the landscape that have a high likelihood of delivering nonpoint pollution, relative to other areas; targeting these areas for corrective action improves the cost-effectiveness in achieving required pollution reductions).

120. PHASE I PLAN, *supra* note 4, at 3, 113.

121. JONATHAN R. WINSTEN, POLICY OPTIONS FOR REDUCING PHOSPHORUS LOADING IN LAKE CHAMPLAIN 1 (2004); VT. DEP'T OF ENVTL. CONSERVATION, WATER QUALITY REMEDIATION, IMPLEMENTATION AND FUNDING REPORT 98 (2013).

122. Author's personal knowledge.

123. PHASE I PLAN, *supra* note 4, at 73.

highway network; (4) a new municipal-road stormwater general permit to reduce erosion and stormwater discharges from municipal roads; and (5) an update to the stormwater manual, the state's technical guidance for new development projects that requires a state stormwater permit.[124]

In the point-source sector, which includes wastewater treatment, the plan applies more stringent concentration limits for effluent from some waste water treatment facility ("WWTF") in targeted segments of the Lake Champlain watershed when upgrades are required.[125] The plan also increases floodplain and river-corridor protection for both flood resilience and water quality benefits using: (1) new floodplain rules, mapping, and municipal support; (2) stream alteration permits; (3) new codes and standards for stream crossings; (4) an update to the Emergency Relief and Assistance Fund rule; and (5) and Standard River Management Procedures for state disaster response.[126]

In regards to forest management, the plan requires an update of the acceptable forest management practices to reduce impacts from logging roads and skid trails.[127] In addition, the Phase II plan will use the Tactical Basin Planning process to target highest-priority actions in each watershed.[128] Finally, the Phase I plan will establish a new Clean Water Fund to provide greater support in BMP implementation.[129]

IV. ACCOUNTABILITY FRAMEWORK

An "accountability framework" is a new strategy, modeled after the Chesapeake Bay TMDL, to ensure that the commitments made in the Phase I Plan and implementation actions described in the Phase II plans will occur.[130] This framework contains expectations within successive two-year milestone periods.[131] The first milestone period, for years 2015 to 2017, focuses on the establishment of new programs and permits described in the Phase I plan and the implementation and enforcement of programs already in place.[132] EPA expects to issue an interim report card by early 2017 on the

---

124. *Id.* at 84–90.
125. *Id.* at 32.
126. *Id.* at 53–56.
127. *Id.* at 97.
128. *Id.* at 109.
129. *Id.* at 126.
130. CHESAPEAKE BAY TMDL, SECTION 7. REASONABLE ASSURANCE AND ACCOUNTABILITY FRAMEWORK 7-2 (2010).
131. Lake Champlain TMDLs Public Outreach Meetings (Aug. 2015) (on file with VT. J. OF ENVTL L.) [hereinafter Pubic Outreach Meetings].
132. UPDATED 2013-2036 TIMELINE FOR COMPLETING THE VERMONT LAKE CHAMPLAIN RESTORATION PLAN, *supra* note 82.

state's progress through the end of 2016 and will make a final determination by early 2018 whether the state has met expectations for the first milestone period.[133]

The second milestone period, post-2017, involves monitoring progress in implementing the TMDL over the twenty-year implementation schedule.[134] EPA anticipates monitoring progress at the watershed scale, tied to the five-year Phase II planning cycles and keyed to the plan's implementation tables.[135] EPA envisions a check-in point halfway through the five-year Phase II planning cycle and a major evaluation of progress at the end of the five-year cycle.[136]

The framework specifies contingencies if progress is delayed. Those contingencies target a particular watershed or are applied more broadly if more systemic problems arise. DEC acknowledges the role of an accountability framework as a transparent and equitable way to achieve reasonable assurances that pollution-load reduction targets will be met across all sectors.

V. ELEMENTS OF THE ACCOUNTABILITY FRAMEWORK AND CONTINGENCIES TO ENSURE PROGRESS

The accountability framework for the Lake Champlain TMDL consists of numerous program elements, with completion dates specified, many of which are described in the Phase I Plan,[137] such as: update agricultural and forestry rules in 2016; issue new stormwater permits by 2017 and seek authority and funding for implementation of the Phase I Plan by 2015; and develop and implement Phase II plans for each of the watersheds in the basin, updated every five years to 2036.[138]

The framework further establishes milestones to demonstrate near-term commitments and progress over time, including developing and using a tracking and accounting system to track programmatic progress and BMP implementation by 2016. There are also milestones in place for EPA action

---

133. *Id.*

134. *Id.*

135. *Tactical Basin Planning: Managing Waters Along a Gradient of Condition and Recommended Changes to Current Basin Planning Framework*, DEP'T OF ENVTL. CONSERVATION, http://dec.vermont.gov/sites/dec/files/documents/WSMD_swms_Chapter_4_Approach_to_TacticalBasinPlanning_Rev2_V5.pdf [https://perma.cc/E7CB-WXJX] (last visited Apr. 4, 2015) (implementation tables are part of the Phase II tactical basin plans that identify geographically and programmatically specific actions to meet the plan's priorities).

136. Public Outreach Meetings, *supra* note 136; 2016 PHOSPHORUS TMDL, *supra* note 39, at 55–59.

137. PHASE I PLAN 2015, *supra* note 4, at app. B.

138. 2016 PHOSPHORUS TMDL, *supra* note 39, at 56–58.

if Vermont fails to complete a Phase I Implementation Plan that meets reasonable assurances or to fulfill phosphorous reductions described in the Phase II plans.

EPA will determine an appropriate response that will continue to support implementation of the TMDL if Vermont fails to: (1) complete a Phase I Implementation Plan that meets EPA's expectations in meeting reasonable assurances; or (2) fulfill phosphorus reduction needs described in the Phase II plans. Some of the responses that EPA would consider are to:[139] (1) assign reductions to point sources, making them more stringent (this change may result in requiring upgrades at wastewater-treatment-plant discharges to limits of technology and offsets); (2) expand CWA discharge permit coverage to include more stormwater and/or agricultural sources; and (3) increase regulatory oversight of discharge permits proposed and issued.[140]

To assist the state in meeting its commitments described in the Phase I plan, the State of Vermont is developing a comprehensive tracking and reporting system. This system will track, evaluate, and report on its progress under the TMDL, leveraging EPA's tracking and accounting system it has developed for monitoring progress.[141]

The system will track the level of state investment, measurable outcomes from the investment, environmental performance (such as phosphorus reductions estimated from BMP activities), and social investment.[142] This tracking system will enable the state to document the location of and phosphorus reduction by BMPs that are supported by public investment.[143] Social indicators will show the degree of investment in educational and technical assistance programs necessary to raise awareness and increase BMP adoption rates. Vermont will evaluate its progress in meeting the goals of the implementation plan and report to EPA and the Vermont General Assembly on a periodic basis.

---

139. Letter from Stephen S. Perkins, *supra* note 55.

140. Letter from Stephen S. Perkins, Dir., Office of Ecosystems Prot., to David Mears, Comm'r, Vt. Dep't of Envtl. Conservation & Chuck Ross, Sec'y, Vt. Agency of Agric., Food & Mrkts. (Feb. 13, 2014), http://dec.vermont.gov/sites/dec/files/wsm/erp/Champlain/docs/SupplementalDEC_AAFM_letter_02-13-14.pdf [https://perma.cc/LC8C-GBB7]; 2016 PHOSPHORUS TMDL, *supra* note 39, at 56–57.

141. PHASE I PLAN 2015, *supra* note 4, at 107.

142. *Id.*

143. *Id.*

CONCLUSION: THE ROAD TO RECOVERY

A detailed look at past efforts to restore Lake Champlain identified a number of "lessons" that were constraining Vermont's progress in achieving meaningful phosphorus load reductions into Lake Champlain: (1) lack of leadership; (2) fragmentation of agency responsibilities; (3) competing messages from special interest groups; (4) how crises galvanize public concern but rarely lead to long-term commitments; and (5) attitudes both inside and outside bureaucracies.[144]

The reopening of the TMDL provided the State of Vermont a unique opportunity to use adaptive management in evaluating progress. To create a new Phase I Implementation Plan that "would do right by the Lake," state agency staff took deliberate steps to learn from past and present management decisions, adjust management programs and implementation strategies, and involve partners and stakeholders throughout the process.

The outcome is notable. Vermont, thus far, has successfully addressed those earlier lessons that heretofore had constrained prior efforts. We now have political leadership, new authorities to sustain long-term commitments, and a Clean Water Initiative to promote inter-agency cooperation. The strong support from both the Governor and both houses of the General Assembly resulted in the passage of Act 64,[145] referred to as the with the House approval by a vote of 133 to 11 and Senate approval by a vote of 27 to 2.[146] The Act provided the state with the authority and capacity it needs and a new Clean Water Fund. The state launched a Clean Water Initiative[147] that builds on existing inter-agency cooperation to meet the state's legal obligations under the federal CWA and Act 64.[148]

The state and EPA have launched a new chapter in the restoration of Lake Champlain. That chapter contains new policies and authorities, stronger enforcement measures, and a greater emphasis on transparency and public engagement.

A few important gaps remain that may affect the pace of restoration efforts; most immediate is the need for long-term funding to support a long-term commitment to implement the TMDL plans. An important step

---

144. Gail Osherenko, Note, *Understanding the Failure to Reduce Phosphorous Loading in Lake Champlain: Lessons for Governance,* 15 VT. J. ENVTL. L. 323, 324 (2014), http://vjel.vermontlaw.edu/files/2014/01/Issue-2_Osherenko.pdf [https://perma.cc/LU6F-7YF8].

145. 2015 Vt. Acts & Resolves 975, 1016–1018 (codified as amended at VT. STAT. ANN. tit. 10, § 1386 (2015)).

146. Rebecca Ellis, Presentation on Vermont's Clean Water Act (Nov. 2015).

147. STATE OF VT., *supra* note 56.

148. There are four inter-agency working groups as part of the Clean Water Initiative: Finance and Reporting, Communications, Agriculture, and Transportation.

towards closing that gap will be the release by the State Office of the Treasury report on long-term financing strategies to meet statewide water quality improvement needs, required by Act 64 and due in 2017.[149]

Nonetheless, the new Phase I Implementation Plan, which incorporates the wisdom, experience, and interests of political leaders, municipalities, interested parties, and government staff, is helping the state head in the right direction toward achieving a cleaner Lake Champlain. Time will tell; the first reporting milestone of the accountability framework is at the end of 2016, with EPA's issuance of a report card on Vermont's progress due early next year. Stay tuned.

149. VT. STAT. ANN. tit. 10, § 1386.