



Cyanobacteria Plan Advisory Committee Meeting 4

DRAFT Meeting Minutes

January 26, 2023, 9:00 AM – 12:00 PM

Room 208C, NHDES, 29 Hazen Dr., Concord, NH and virtual

Members Present (Virtually)

Doug Darling, Chair
Kristin Conte
Scott Decker
Laura Diemer
Sara Holland
Don Kretchmer
Andrea LaMoreaux
Abby Mathewson
Amanda McQuaid
David Neils
Rep. Andrew Renzullo
Tom Shevenell
Inga Sidor
Patricia Tarpey
Michele L. Tremblay
Senator Ruth Ward

Representing

Tucker Pond Association
Drinking Water Suppliers
Fish and Game Department
Environmental Engineers
Lakes Management Advisory Committee
Environmental Engineers
NH LAKES
NH Department of Health and Human Services
University of New Hampshire
New Hampshire Department of Environmental Services
New Hampshire House of Representatives
Volunteer Monitor of Lake Water Quality
Veterinarians
Lake Association
New Hampshire Rivers Council
New Hampshire Senate

Members Absent

Charles DeCurtis

The Nature Conservancy

NHDES Staff Present (Virtually and In-Person)

Michele Condon (in-person)	Beach Inspection Program
Ted Diers (in-person)	Assistant Director of the Water Division
Kate Hastings (in-person)	Cyanobacteria Harmful Algal Blooms Program Coordinator
Erin Holmes (virtually)	Watershed Bureau Administrator
Nisa Marks (in-person)	Watershed Coordinator
Liz Pelonzi (virtually)	Drinking Water and Groundwater Bureau
Pierce Rigrod (virtually)	Drinking Water and Groundwater Bureau
Tracie Sales (virtually)	Rivers and Lakes Programs
Sara Steiner (virtually)	Volunteer Lake Assessment Program

Guests Present (Virtually)

Rep. Rosemarie Rung	New Hampshire House of Representatives
Laura Colcord	Tucker Pond
Tim Mosher	Spofford Lake Association
Liam O'Rourke	DHHS
David Packard	New Hampshire Rivers
Jeffrey Scott	unknown
Hutchen Stone	Spofford Lake Association

- I. **Welcome and introductions:** Chair Doug Darling convened the meeting at 9:03 under the emergency provisions of RSA 91-A due to inclement weather. An in-person meeting location was available to the public at NHDES, and the virtual participation link also publicly posted.
- II. **Consent agenda:**
 1. Approval of October 13, 2022 and December 1, 2022 meeting minutes: Members corrected several typos and approved the two sets of revised minutes by a unanimous roll call vote, with one abstention.
 2. Update on the HB1066 \$30,000: Nisa Marks said that NH LAKES was selected in response to an RFP to gather additional information from statewide stakeholders to inform plan development. This contract and the one with UNH to do additional toxin analysis are both in the process of internal paperwork prior to going to Governor and Council. The earliest that the projects would be on the G&C docket would be their Feb. 22 meeting.
- III. **2023 Legislation about cyanobacteria:** Rep. Rosemarie Rung gave an overview of HB276, which would establish a \$25M loan fund to assist water suppliers, lake associations and others with projects to prepare watershed plans, minimize phosphorus loading, and conduct mitigation in waterbodies with chronic cyanobacteria issues. The bill includes a provision for loan forgiveness. She expects that the bill will be amended. At the January 25 hearing, 185 people signed in in favor of the bill and one person signed in opposed. She has asked Chairman Renzullo to create a subcommittee to work on an amendment, as lake associations would struggle to be eligible for and repay a large loan due to their limited assets. Currently, lack of funding is slowing down implementation of many projects to address nutrient loads. Rep. Rung also referenced a new study that shows that the cost to the state if action is not taken would be high due to declines in property values, lost tax revenue, lost seasonal income, etc.
- IV. **Conclusions from December 1, 2022 needs assessment discussion:** Doug summarized the December 1 meeting. The legislature's charge includes the committee advising DES on possible solutions to blooms and on legislative and budgetary recommendations. He encouraged the committee to focus on those. Doug proposed the idea of having a table in the plan with the major recommendations of the committee. Michele L. Tremblay suggested this is needed and asked that there be a way for committee members to submit their suggestions. Doug said he will follow up.

Ted Diers said that the intent of the legislation is to have the committee advise NHDES in the agency's preparation of the cyanobacteria plan. He expressed concern about having two different products come out of the effort, and instead said the recommendations should be reflected in the report, which will also be prioritized in some fashion. Ted suggested that the committee wait to see a draft product from NHDES, when they can see that committee's ideas have been captured and suggest feedback on the report if they are not.

Rep. Renzullo agreed with Ted's comments that the request from the legislature was for a report from NHDES. Doug clarified that the intent would not be to have a separate plan, but rather to make clear both among committee members and to NHDES what the committee's recommendations are. He said that some committee members felt that the conclusions from last meeting were unclear and he is seeking a mechanism to clarify what the recommendations are. Michele said that there is not a forum for stakeholders to coordinate prior to going to the legislature unless a way to do that is made during the process.

Dave Neils reminded the committee that the next meeting will include discussion of the committee's recommendations to date, which may serve some of the function of clarification. He also said that the committee can choose to request to have additional meetings if needed. Doug said the current question is about whether to form a table to track recommendations, with a decision later about how that material is reflected in the report.

Doug opened discussion on a draft summary of the committee's recommendations, which included:

1. Contract with a PR firm to help develop messaging effective at changing behavior.
2. Expand the monitoring program capacity.
3. Develop additional sample collection and analysis sites across the state.
4. Increase staff capacity & redundancy to allow weekend coverage.
5. Develop the capacity for timely testing of multiple different cyanotoxins.
6. Add some sort of enforcement authority to advisories.
7. Create a public forum for information-sharing between stakeholder groups.

The committee members who responded supported these points. Ted asked for clarification on what "enforcement authority" means. Doug said that would be left up to NHDES but suggested potentially making the removal of advisory signs punishable by fine. Ted mentioned this would be challenging to implement. Michele said she agreed with the summary but suggested the need for standardizing the level of detail in each recommendation. Laura Diemer said she felt the recommendations reflect the major points from last meeting but some things may need fine tuning, including to reflect NHDES concerns.

Laura said she preferred that the meeting minutes be more detailed to include who spoke and what the point made was, as a way to track the ideas mentioned by the committee. Andrea seconded that comment. Nisa said that minutes can be made more detailed for this and future meetings. Kristin asked if individual stakeholders will have an opportunity to propose individual ideas. Doug suggested that the committee's goal is to have consensus on the bigger items and a few key details.

- I. **Overview of current NHDES activities: watershed-based planning and in-lake treatment:** Dave Neils reiterated the legislature's charge to prevent and control cyanobacteria blooms, and said the goal today is to get the committee's recommendations on watershed plans, technical lake investigations and in-lake management activities. Lake management is an umbrella term that covers both mechanical things done to the lake and also nutrient management in the surrounding watershed. In-lake management is relatively new for NHDES. Dave described the differences between watershed planning and in-lake management. Dave emphasized in-lake management is not effective unless the external (watershed) sources of nutrients are addressed. Technical assessments identify the sources of nutrient loading into a waterbody.

Dave gave an overview of the steps of watershed planning. The existing NHDES watershed assistance program gives grants and loans to do watershed planning with funds from three primary sources: 604(b) planning grants, 319 implementation grants, and SRF loans that can be used for planning or implementation. Funding is limited, very competitive and often a limiting factor in how many projects are implemented.

Dave gave the exotic species plant management program as an example of what an in-lake program requires, including a dedicated funding source, staffing and a well-developed process for tracking activities and outcomes. At present in-lake cyanobacteria management does not have an enabling policy framework, funding or staffing.

Dave gave a summary of the Nippo Lake alum treatment conducted in 2021. Current barriers to in-lake treatment in New Hampshire include the lack of a good permitting process for this activity, the lack of dedicated funds and staff, and the lack of formalized rules requiring that external nutrients be controlled before in-lake treatment pursued. Also needed are guidance about proper justifications for pursuing in-lake treatment, and guidance and resources about monitoring before, during and after treatment.

Andrea LaMoreaux asked how much the Nippo treatment cost. Dave said the cost included many components: planning, monitoring, treatment. The treatment itself was about \$130,000, not including planning or monitoring.

Pat Tarpey asked whether updated permit mechanisms are needed only for in-lake treatments, or also for watershed-based work. Dave clarified it is for in-lake treatments, and that a whole program needs to be designed to support in-lake work.

Abby Mathewson asked what the residual effects of alum treatment are, whether there is the possibility for resuspension of either aluminum or phosphorus, and whether there is a cumulative toxic effect from multiple applications. Dave said that after application the chemicals are suspended for about two to three weeks, after which the aluminum settles into the sediment. Treatment effectiveness diminishes over time as leaves and other material settle on top of the settled flock. If external sources have been eliminated, literature suggests the application lasts about 15 years. At Kezar Lake the treatment has lasted about 35 years.

Doug asked why more ponds are not being considered for treatment at this time. Dave clarified that of the 70 watershed plans completed in New Hampshire, most are for threats other than cyanobacteria. In most cases, internal loading was not the primary contributor to the lakes' issues, which emphasizes the need to control external nutrient loading before considering treatment. Controlling external load is essential for long-term success even though the effects of doing so are not seen immediately.

Scott Decker asked about the relationship between milfoil treatment and cyanobacteria blooms. He suspected that most external sources would dwarf the signal of the milfoil dying and releasing phosphorus. Dave agreed, particularly given the success of the aquatic invasives program in controlling invasives before they cover extensive geographic area. Staff said they could add this to the list of potential research needs.

- II. **Needs assessment part two:** Dave and Doug directed the committee's attention to the questions on the handout to guide discussion, starting with **"Does the committee support the development of an in-lake treatment permitting process?"** Michele said she thought there were new rules coming that would allow for this. Dave said that the surface water discharge permit rules are being revised. Using that process to do in-lake treatments was discussed by NHDES but NHDES concluded that those rules

were not the best way to permit in-lake treatments. As a result the proposed rule change does not change the need for legislation and rules to permit in-lake treatment.

Pat said she felt in-lake treatment was a last resort and suggested that the committee start by talking about watershed-based plans. Dave said that he gets five to six requests a year for doing in-lake treatments and that it is difficult to respond to those without having rules in place. Dave suggested that RSA 487 (Clean Lakes Program section) may be a good place to add language authorizing NHDES to do rulemaking related to in-lake cyanobacteria treatments. Doug suggested the question for the committee about in-lake treatment is simple: yes or no to establishing a new program.

Laura said that the Maine DEP now has rules for alum treatments and that a permitting process is needed in New Hampshire. She also suggested that NHDES standardize the data requirements for in-lake treatment, as well as the process for deciding dosage and monitoring. She recommended that permits include requirements for biological assessments.

Laura said that at this point in-lake treatment is straightforward for lakes with clear internal loading and consistent whole-lake blooms. Other lakes have species that bloom even when internal loading is not an issue; research is needed to understand the causes and appropriate management of those. Don Kretchmer supports the development of a lake treatment permit process. He reminded the committee that there are treatments other than alum. He would like the permit process to accommodate a variety of treatments and have a screening process to ensure the appropriate technique is selected. Don said that all lakes can benefit from a watershed-based approach to reduce external loading, including the subset where alum treatment is appropriate. Watershed planning is important to ensure that new internal loading does not accumulate. Kristin Conte said the permit process should consider whether the surface waterbody is a drinking water source or not. When a drinking water source, she wants the rules to be clear about which NHDES program drinking water suppliers should communicate with.

Doug concluded that there was consensus among committee members for creating formal permit process for in-lake management, and that it should require developing and implementing a watershed plan to address external nutrients before pursuing in-lake management.

Doug opened discussion about watershed plans by asking **what is needed to facilitate more lakes having watershed plans**. Laura said the current big need is for funding, particularly for implementation. Right now there are three primary funding sources: 604b planning grants, 319 implementation grants, and State Revolving Fund (SRF) loans.

Laura suggested creating a statewide programmatic plan for waterbodies impaired by cyanobacteria, with appendices for each waterbody to describe the more unique features of each. Treatment approaches are lake-specific, but there are some general management steps that apply to a broad set of lakes. Doug asked if there are other states with a programmatic cyanobacteria plan. Laura said Connecticut has a statewide lake nutrient TMDL. Connecticut's programmatic plan includes the nine elements that EPA requires in a watershed plan. Ted asked if an EPA-approved plan would actually be needed in order to take action on a lake, and suggested there may be ways to similarly address external sources but without all the requirements of an EPA plan. Don said that it is necessary to understand nutrient sources prior to management action and therefore it should be required to identify them, but that some of the other a-i elements of an EPA plan are not necessary to successful treatment. Don

reiterated that funding is the big limitation to watershed planning and implementation, and that currently the biggest source of implementation funding is only available if a waterbody has an EPA-approved plan in place. An alternate funding stream would be needed if the state pursued alternative types of watershed or cyanobacteria plans. Pat agreed that a full EPA-approved plan is only needed if there are no sources of funding other than the current EPA funds. She said that if something like HB276 passed there would be cases where a full plan was not needed to achieve project objectives.

Doug asked when the state would recommend a full EPA plan. He would not want to see lakes not get alternative funding sources simply because they could also compete for EPA funding. Dave suggested there be a statewide plan that is not connected to 319 funds, and sources of funding to develop additional lake-specific information and implement the statewide plan. He suggested addressing this idea in rules if the legislature authorized a statewide program. Ted pointed out that the 319 funding program incorporates *all* designated uses and pollutants, not just those related to nutrients and cyanobacteria. For instance, 319 funding can be used for impairments due to other bacteria, dam removals, addressing sediment pollution, etc. He suggested that the universe for the new funding source and statewide plan should focus on nutrients because of its relevance to cyanobacteria.

Laura asked for clarification on if the new program would focus on planning, implementation, or both. Dave suggested that a program needs both, and pointed to the aquatic invasive species program and RSA 487 Clean Lakes Initiative as examples. The latter already speaks to algae, blooms and nutrients. Doug suggested having two funds (or subsets of one fund) – one for watershed plan development, a second for plan implementation – because it would be hard to compare the two types of application during proposal review.

Michele raised the idea of creating a fee associated with boat registration in order to fund cyanobacteria work. The mechanism to associate boat registration fees and aquatic-related programs is currently being looked at by the legislature; once resolved, she suggested that is a potential mechanism to fund watershed associations' work on cyanobacteria. Pat said she would not be in favor of a boater fee because all users and all residents are affected, not just boaters. Scott agreed, saying he did not see the relationship between boating and blooms. Andrea pointed out that there is potentially a connection between boating and cyanobacteria because recreational activity and wakes from any type of boating activity can disturb bottom sediments, which introduces phosphorus into the water column where it becomes available to fuel blooms. Andrea would like to see committee talk about how to encourage recreation in deeper waters. Sara Holland said that there are many types of activity that disturb sediment, such as placing docks and dredging, not just boating. She would want the issue to be looked at comprehensively if pursued further. Sara suggested that many stakeholders benefit from use of surface waters and that a broad stakeholder approach would be helpful when designing a funding source. Rep. Rung suggested it is easier to tie fees to the activities causing the pollution in order to incentivize better behavior. For instance, someone mentioned to her the idea of taxing those who have shoreline septic systems. Another path she mentioned would be to have stronger enforcement and penalty structure for violations of the Shoreland Water Quality Protection Act, with fines contributing to a mitigation fund.

Sara asked what the cost of developing a plan is. Doug said \$60,000 - \$80,000 for a lake is typical. Laura confirmed those numbers. Laura identified that the up-front cost of a statewide plan would be higher, but subsequent lake-specific work such as watershed surveys would be less costly, maybe \$30,000 -

\$60,000. Dave said that a statewide plan would solve a number of issues, such as understanding the list of lakes in need. Dave said that sections 303 and 305 of the Clean Water Act require a report about water quality impairments, of which cyanobacteria is one. Having an impairment would be a way to qualify a lake into a program in a consistent way. Doug said that the increasing frequency of cyanobacteria blooms means the impairment list would need to be updated annually. Erin said that preparation of the 303(d) list is an extremely time consuming two-year process and it would not be feasible to do annually. Doug asked why advisories do not feed into the 303(d) list directly. Dave said that 303(d) assessments consider multiple years of data. He would not want to pursue a large investment on lakes that had only had one passing bloom, since blooms are itinerant and a bloom one year does not mean it would be recurrent in other years. He said NHDES would consider different systems to evaluate waterbodies for inclusion into a lake management program, but right now the question is whether a program should be established.

Laura said new funding sources are necessary. She also said there are potential short-term adjustments for existing funding sources. For 604b, eligibility could be expanded to include entities other than Regional Planning Commissions (RPCs). Nisa clarified that 604b eligibility changed recently and it is already the case that entities other than RPCs are eligible. Laura said that ARPA funding is being used for some watershed plans. She also suggested that in the short-term, SRF money could be changed from being a loan to being a grant when used for cyanobacteria work. She said that because some towns are hesitant to take on a loan obligation, it would be helpful if the loan could be converted to a grant upon completion of work.

Rep. Rung discussed HB276. She said that the proposed \$25M is not much to address current and anticipated need, but that amount is still a heavy lift to pass through the legislature. She said that there is a need to prioritize the types of projects that will be funded, based on some form of criteria related to the public interest. Ted noted that this idea is like the Priority Projects List that is done for SRF funding.

Doug directed the conversation to pollution prevention: **what changes are needed to better control the nutrient pollution that causes blooms?** Pat sent an email to the committee this morning with ideas about improving shoreland protection. Don pointed out that everyone lives in a watershed so is up to everyone to deal with pollution contributions, not just lakefront residents and users. He said that during the existing permit review process, there is little documentation about how proposed development will change the export of phosphorus into the environment. He cited the existing description in rule of Class A and B waters, which includes nutrient criteria.¹ Rules state that Class A waters shall contain “no phosphorus or nitrogen unless naturally occurring.” He said Class A waters should be phosphorus-neutral. The Class B definition refers to avoiding phosphorus “in such concentrations that would impair any existing or designated uses.” If a lake is impaired for phosphorus or cyanobacteria, more phosphorus should not be allowed to be added to the system, based on these Class A and B standards. To achieve the standards, Don said that the state needs to change how phosphorus is considered in the development permitting process. Clause D of the water quality rules say there shall be “no new or increased discharge into lakes or ponds,” yet Don said the state does not adequately regulate this aspect of development.

¹ Citation for more information: [Wq-1700](#)

Pat agreed with Don's description of the issues with existing permitting. She also said the state does not adequately address smaller development projects, as they are not covered in Alteration Of Terrain (AOT) permits. Pat had some confusion about the details of what was regulated, but asked that NHDES staff talk internally about how to better regulate shoreland development. She gave the example that small projects under 25% slope did not need an AOT permit. On one project on Winnepesaukee, NHDES was not able to issue a cease and desist order for violations of a shorelands permit, and towns often either do not enforce permit requirements or look to the state to do enforcement. Nisa asked for clarification if that would be a rules change or a statutory change. Pat said it would fall under the definition of what would "significantly alter the characteristics" but was unclear on if this is in rule or in statute.

Don said that development that changes the natural forested condition typically changes phosphorus export, but that there are ways to mitigate it. Maine has a series of tiers for lakes. Development proposals in sensitive watersheds have to demonstrate that there will be no net increase in phosphorus export due to development; in other watersheds the state allows a small net increase of phosphorus export. Don said that New Hampshire cannot continue to develop as we are now without expecting that cyanobacteria problems will be as bad or worse in the future. Doug asked whether setback regulations and new designs of septic systems are sufficient to make it possible to pursue development and be phosphorus neutral. Don said it is hard, but possible. Maine does allow instances where if you cannot fix the phosphorus output on site, then developers can offset their impacts with mitigation elsewhere in the watershed.

Andrea said that New Hampshire does not provide incentives for homeowners to inspect, upgrade, repair or replace their septic systems. She said that based on the work of lake associations and from watershed plans, it is clear that in some cases septic does contribute to cyanobacteria blooms. She said that correcting septic issues can be a financial burden, despite common perceptions about lakefront property owners. Andrea suggested that the state create a septic remediation/upgrade fund. She suggested several ideas, like using the lead paint hazard remediation fund as a model or having a loan fund where loans were required to be paid back at time of resale or after a certain number of years.

Doug suggested the committee continue the conversation about nutrient pollution prevention next meeting. He asked members to consider specific recommendations for the committee to discuss. The next meeting is March 10 at 9:00.

Doug adjourned the meeting at 11:58.