

New Hampshire's Cyanobacteria Plan: A Statewide Strategy

November 2023

Access full plan here: <https://www.des.nh.gov/sites/g/files/ehbemt341/files/documents/r-wd-23-12.pdf>

Overall Conclusions:

- Cyanobacteria blooms cannot be eliminated from the state's surface waters.
- New policies and funding, use of existing expertise, additional education and partnerships among stakeholders are key to reducing and controlling blooms as well as minimizing their impacts.
- Statewide and local efforts to control nutrient inputs are critical to curb the potential for blooms to occur.
- Additionally, significant work is required on individual waterbodies through watershed management and monitoring to better understand the specific causes of, and remedies for, cyanobacteria blooms.
- These efforts coupled with education and outreach represent the best opportunity to reduce the risks and impacts associated with cyanobacteria blooms.

Summary of Plan Strategies, Priorities, Tactics:

1. Develop policies and practices to reduce, control, and prevent the nutrient inputs that cause cyanobacteria blooms.

- A. Identify and implement state and local regulations and practices that address the sources of nutrient inputs that cause cyanobacteria blooms.
 - Tactic 1. Promote the development and implementation of stormwater utilities that control stormwater runoff and fund stormwater management projects.
 - Tactic 2. Promote the development and implementation of municipal overlay districts in areas adjacent to surface waters and in areas that are known to contribute significant quantities of nutrients to surface waters.
 - Tactic 3. Promote the use of the New Hampshire stormwater manual to plan, design and implement stormwater control measures that slow down, infiltrate and reduce nonpoint source nutrient pollution.
 - Tactic 4. Complete a review of state laws and administrative rules that are designed to reduce nutrient inputs with the goal of identifying regulatory priorities. *(Funding required – 1 time \$50,000 to hire an independent contractor)*
 - Tactic 5. Promote and provide financial assistance to statewide voluntary stormwater management programs. *(Funding required - \$150,000 annually)*

- B. Identify ways to increase capacity and financial support for watershed and in-lake management efforts that prevent and reduce nutrient inputs and address cyanobacteria blooms.
- Tactic 1. Increase resources that support the development and implementation of watershed management plans on waterbodies that are specifically targeted to address cyanobacteria blooms (*funding required – continuous state source that does not compete with aquatic invasive species funding*)
 - Tactic 2. Implement a lake management program with sufficient funding dedicated to diagnosing the cause of cyanobacteria blooms and implementing the recommended actions for remediation.
- C. Develop laws, rules, and guidance that clearly define the permitting requirements and processes for lake management activities designed to remediate cyanobacteria.
- Tactic 1. Update current applicable law(s) to address lake management practices that are designed to reduce nutrient inputs that contribute to cyanobacteria blooms.
 - Supplemental Action: Change to law or administrative rules that would reduce nutrient inputs
 - Action 1. Consider updating Administrative Rule Env-Wq 1500 (Alteration of Terrain) to address the land slope threshold associated with the definition of a significant alteration. (see Env-Wq 1502.58, specifically). *Advisory Committee Recommendation. *Requires Rulemaking.*
 - Action 2. Consider updating RSA 485-A:39 and Administrative Rule Env-Wq 1025 relative to waterfront property site assessment studies to require a formal septic system inspection and to include that the results be reported to NHDES and the local municipality. *Advisory Committee Recommendation. * Requires legislation.*
 - Action 3. Identify ways to create a stronger enforcement and penalty structure for violation of the Shoreland Water Quality Protection Act. The root concern is the inability of NHDES to issue stop work orders which fall to local enforcement. *Advisory Committee Recommendation.*
 - Supplemental Action: Continued implementation of roadway maintenance practice to reduce erosion
 - Action 4. Consider requirement for culvert maintainer certification through UNH stormwater center (Certified Culvert Maintainer Website).
 - Action 5. Use routine roadway maintenance guide from New Hampshire Department of Transportation (NH DOT BMPs for Routine Roadway Maintenance).

- Action 6. Use/development of guidance/requirements for gravel road maintenance [see UNH gravel road resource library (UNH Gravel Road Maintenance Website)].
- Supplemental Action: Create and provide continued appropriations to an assistance fund for septic system upgrades or replacements.
 - Action 7. Consider updating RSA 485-A:39 to require replacement of septic systems determined to be in failure at the time of sale of property. *Advisory Committee Recommendation. * Requires legislation.*
 - Action 8. Explore establishing a funding source that would assist property owners, through a cost-sharing program, to complete the required upgrade or replacement depending on a demonstration of financial need. *Advisory Committee Recommendation. * Requires legislation. * Requires Funding.*
 - Action 9. Consider legislation that requires unpermitted septic systems that serve properties within the protected shoreland to be upgraded. *Advisory Committee Recommendation. * Requires legislation.*
- Supplemental Action: Utilize Total Maximum Daily Load (TMDL) studies to address cyanobacteria blooms.
 - Action 10. Enter into discussions with EPA to explore and utilize novel TMDL approaches by NHDES staff where recurring cyanobacteria blooms have resulted in water quality impairment.
 - Action 11. Research, explore and consider the appropriateness of completing a statewide nutrient TMDL. *Advisory Committee Recommendation.*
 - Action 12. Increase the implementation of nutrient reduction strategies included in TMDLs after they are completed specifically for waterbodies with recurrent cyanobacteria blooms.
- Supplemental Action: Implement workgroups to gather information that inform nutrient reduction efforts.
 - Action 13. Convene a group of stakeholders to provide input on the content of the 2024-2029 Nonpoint Source Management Program Plan.

- Tactic 2. Develop administrative rules that establish a process for obtaining the necessary permits or permissions to utilize in-lake management practices that are designed to minimize the impacts and remediate of cyanobacteria blooms.
- Tactic 3. Complete guidance materials that describe effective and allowable lake management practices for the prevention or treatment of cyanobacteria.

2. Advance education and outreach efforts that allow individuals who recreate or use surface waters to assess their cyanobacteria risks and respond accordingly.

A. Promote self-risk assessment messaging and techniques.

- Tactic 1: Install informational signage at waterbody (lakes and rivers) public access points.
- Tactic 2. Partner with various organizations to promote common messaging and training.
- Tactic 3. Creation of dedicated self-risk assessment instructional videos, written materials and public service announcements.

B. Produce cyanobacteria information materials to provide learning opportunities that are available to related professional disciplines and consumer groups.

- Tactic 1. Create publicly accessible training and information videos about cyanobacteria risks, identification and the bloom warning system.
- Tactic 2. New and updated written materials that can be shared directly and used by statewide organizations and local watershed/lake/river associations.
 - Supplemental Actions:
 - Action 1. Create a new NHDES cyanobacteria website. *Advisory Committee Recommendation.*
 - Action 2. Integrate information about cyanobacteria into other state agency informational materials and distribution points.
 - Action 3. Establish a contract with a public relations firm to assist NHDES in developing messaging that is effective in communicating the risk of cyanobacteria and materials for public consumption. *Advisory Committee Recommendation. *Requires Funding.*
 - Action 4. Complete an NHDES annual cyanobacteria status report. *Advisory Committee Recommendation.*

- Action 5. Identify the best methods for informing individuals renting properties with water access about the potential occurrence and risks of cyanobacteria. NHDES will identify stakeholders and establish a workgroup to explore the range of acceptable options. *Advisory Committee Recommendation. *Requires legislation.*
- Tactic 3. Development of targeted materials for use by veterinarians and medical professionals.

3. Enhance cyanobacteria monitoring to track when and where blooms occur and clearly communicate conditions to the public.

A. Enhance cyanobacteria monitoring, sample submission, and processing efficiency.

- Tactic 1. Increase NHDES cyanobacteria monitoring and bloom tracking capacity by adding new staff and training current staff.
- Tactic 2. Increase sample processing efficiency by establishing new options for sample transfer to NHDES.
- Tactic 3. Development of cyanobacteria monitoring training opportunities and tools for volunteer monitoring organizations and citizen scientists.
- Tactic 4. Research the utility of various advanced monitoring techniques for tracking cyanobacteria bloom indicators and development of cyanobacteria bloom predictive tools.

B. Develop and implement advanced bloom notification tools.

- Tactic 1. Implementation of a clearer cyanobacteria bloom severity notification system with multiple levels that are more easily interpreted.
- Tactic 2. Creation and use of an advanced, map-based online cyanobacteria bloom status tool.
- Tactic 3. Development and use of electronic options that allow for waterbody-specific reporting of suspected blooms and notices of current blooms.
 - Supplemental Actions:
 - Action 1. Implement sentinel monitoring locations in several lakes and rivers in order to better understand the conditions that promote cyanobacteria blooms.
 - Action 2. Improve existing suspected bloom-related illness reporting opportunities for humans, pets and livestock to better monitor the

incidence, severity and types of illnesses that occur. Advisory Committee Recommendation.

- Action 3. Periodically evaluate the validity and practicality of using cyanobacteria cell density as the primary indicator as opposed to cyanotoxin testing for determining the risks associated with cyanobacteria blooms. Advisory Committee Recommendation.
- Action 4. Update administrative rule Env-Wq 1100 (Public Bathing Places) to reflect the most current and effective cyanobacteria risk indicator(s) for use by NHDES. *Requires rulemaking.

4. Establish policies and procedures for prevention, early detection, and response, and treatment of cyanobacteria blooms and cyanotoxins in surface waters that serve as public drinking water supplies to minimize customer risks.

A. Develop cyanobacteria action plans by public water suppliers.

- Tactic 1. Provide sufficient funding that supports the development of cyanobacteria action plans by public water suppliers that utilize surface waters.
- Tactic 2. Develop the policies and guidance that define what is to be included in a cyanobacteria action plan.
- Tactic 3. Sufficient NHDES staff to support the development of and progress towards implementation of cyanobacteria action plans.

B. Minimize risks that cyanobacteria pose to drinking water supplies

- Supplemental Actions
 - Action 1. Support the development and use of advanced monitoring techniques to track bloom development and the water quality conditions that support blooms. High frequency data on parameters such as temperature and dissolved oxygen in conjunction with cyanobacteria indicators or density would be useful in building predictive models that can forecast bloom probability.
 - Action 2. Require a public water systems to report known blooms that occur in close proximity to the water intake to NHDES. Bloom reporting requires that monitoring, of some type, occurs on a regular basis. Currently there is no such policy in place. * Requires legislation.

- Action 3. Identification or development of state or regional laboratory services for cyanotoxin testing. NHDES Biology section staff complete cyanotoxin testing using ELISA techniques in the winter months on samples collected the previous summer, but there are no local or regional laboratories that complete cyanotoxin testing on a continuous basis to satisfy rapid tests of drinking water supplies during a bloom event.

- Action 4. Consider an evaluation of authority needed to require public water systems to incorporate cyanobacteria into their emergency response plans (ERPs). ERPs are federally required and cover a variety of threats to drinking water sources.

- Action 5. NHDES will work with public water systems to develop a communications plan that describes how the public will be informed in the event a cyanobacteria bloom or cyanotoxins impact their water supply and what emergency measures are in place to protect public health.