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COMMENTS

Comments on New Jersey Drinking Water Quality Institute's (DWQI) Recommendation on Cyanotoxin Treatment Options in Drinking Water

By Email to: DWQI@dep.nj.gov

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Introduction and Background

New Jersey Future (NJF) submits the following recommendations to the Treatment Subcommittee of the New Jersey Drinking Water Quality Institute's ("DWQI") Recommendation on Cyanotoxin Treatment Options in Drinking Water.

Founded in 1987, NJF is a nonprofit, nonpartisan organization that promotes sensible growth, redevelopment, and infrastructure investments to foster vibrant cities and towns; protect natural lands and waterways; enhance transportation choices; provide access to safe, affordable, and aging-friendly neighborhoods; and fuel a strong economy. NJF does this through original research, innovative policy development, coalition-building, advocacy, and hands-on strategic assistance. Embracing differences and advancing fairness is central to NJF's mission and operations. NJF is firmly committed to pursuing greater justice, equity, diversity, and inclusion through its programs, internal operations, and external communications.

Cyanotoxins are becoming an evergrowing threat to the health of New Jersey's waterways due to rising temperatures, nutrient pollution, and climate change. Harmful Algal Blooms (HABs), caused by the overgrowth of cyanobacteria, have been detected in numerous lakes, reservoirs, and rivers across the state, posing risks to drinking water supplies, recreational activities, and aquatic ecosystems. Exposure to cyanotoxins can lead to serious health issues, including liver damage, neurological disorders, and skin irritation, affecting both humans and wildlife. With incidents of HABs on the rise, preemptive treatment options are essential to safeguard public health and maintain water quality.

NJF applauds the DWQI's efforts to identify treatment methods for cyanotoxins in New Jersey and thanks the DWQI for the opportunity to comment on the Recommendation on Cyanotoxin Treatment Options in Drinking Water.

Recommendations
NJF is pleased to see an emphasis on cyanotoxin prevention and mitigation and makes the following recommendations to support nutrient management.

1. **Emphasize Green Stormwater Infrastructure and Similar Nature-Based Solutions as a Containment Strategy Against Nutrient Loading.**
    - Green stormwater infrastructure (GSI) and similar nature-based solutions can act as natural filters, alleviating source waters from excess runoff that would otherwise introduce harmful nutrient pollution. Encouraging the widespread implementation of decentralized GSI–both near waterways and broadly throughout a municipality–helps reduce runoff volume and, by extension, the volume of nutrients.
        - Examples include floating wetlands, bioswales, rain gardens
    - GSI practices can be designed with forebay areas to capture and retain sediment, preventing it from entering and polluting downstream waterways. Regular maintenance, including biannual dredging, is necessary to prevent sediment accumulation. Monitoring of GSI is necessary after high-rainfall events to ensure erosion is not compromising functionality.
    - Category One (C1) designated waters are required to maintain a 300-foot vegetated riparian buffer strip, which provides a layer of protection from non-point source pollutants that act as nutrients for cyanobacteria. Prioritizing the use of plants, trees, and other vegetation native to the region when populating or restoring these riparian buffers improves nutrient filtration and groundwater recharge.
        - Efforts to remove invasive non-native species located within riparian buffers can also help prevent internal nutrient loading. Non-native species disrupt natural soil stability, making riparian buffers more susceptible to erosion and sedimentation.
        - Reforestation of riparian buffer strips using native species helps prevent soil erosion, reduce sedimentation, and improve water quality through added filtration. Tree canopies over waterways also provide shade, helping regulate water temperatures and prevent favorable conditions for cyanobacteria growth.

2. **Enhance Water Flow and Oxygen Levels Through Strategic Dam Removal**
    - Many water resource engineering firms and watershed organizations are actively working to remove outdated, non-essential dams to restore natural water flow and improve oxygenation in source waters. As one of the oldest states in the country, many historic dams originally built to power mills for textiles, lumber, and manufacturing are now obsolete and pose significant risks to the integrity of waterways. By slowing water flow, raising water temperatures, and allowing sediment to accumulate, dams can create breeding grounds for cyanobacteria to

flourish. Removing unnecessary dams is a proven strategy for reducing cyanotoxin risks that the Treatment Subcommittee has not mentioned.

3. **Shoreline Naturalization**
    - Channelized rivers, streams, and lakes that rely on gabion or cement barriers disrupt water quality by disconnecting waters from natural embankments and shorelines. Removing these structures and restoring embankments with a low gradient and natural vegetation improves filtration while maintaining strong protections against erosion.

4. **Cross-Program Coordination**
    - Expanding coordination efforts between the DWQI and the Watershed and Land Management Program (WLM) on implementation strategies for cyanotoxin treatment would improve the Department's ability to mitigate harmful algal blooms statewide. This partnership could help enforce maximum contaminant levels (MCLs) through nature-based solutions, a key focus of WLM's ongoing efforts.

Conclusion

Overall, we support the recommendations and applaud the DWQI's efforts to assemble a wide array of treatment methods for cyanotoxins in source water. We maintain that green stormwater infrastructure and nature-based solutions are low-cost treatment methods for cyanotoxins that introduce a wide range of co-benefits for ecosystems, stormwater management, carbon sequestration, and capturing suspended solids. Thank you for considering our recommendations.