



MONTCLAIR PROPERTY OWNERS' ASSOCIATION, INC. LAKE MANAGEMENT COMMITTEE Annual Report for 2024

The MPOA Lake Management Committee (LMC) prepares an annual report (Lake Montclair Environmental Quality Report (LMEQR)) providing an update to the MPOA BoD and residents on activities of LMC and others relevant to Lake Montclair's environmental quality.



1. Lake Recreational Activities and Water Use.

Swimming, sporting, and social activities in and around Lake Montclair are the primary recreational uses of the lake and continue to be key reasons residents value the lake for its contributions to their quality of life in Montclair. Safety & security remained priorities for the use of the lake. MPOA continued in providing lifeguards, recreational guards and security personnel for activities making use of the lake and beaches. To promote positive social dynamics in safely using the lake and its assets, the LMC coordinates with the property management agent to provide safety training and information related to swimming and using docks, swimming platforms and beaches.

2. Water Quality Management and Water Level Management and Control.

Water Quality is the most important concern for the management of Lake Montclair. On-going monitoring and assessment activities of Lake Montclair and Powells Creek Watershed ecosystem will provide information vital for evaluating water quality to determine whether the lake is safe for swimming, fishing, boating and other uses.

MPOA Board of Directors approved the Water Quality Testing, Assessments and Advisories Plan in March 2022. This document serves as a guide for the MPOA Management Staff and Lake Management Committee in assessing water quality relative to E coli and Harmful Algae Blooms. It has been updated with 2024 data and is available on the MPOA Forms and Documents web page:

<https://www.montclairva.com/forms-and-documents>

Surface water testing for E-Coli is conducted weekly at all three of Montclair's beaches during the summer swimming months. Past testing has indicated good conditions overall. MPOA contracts for water testing at beaches to examine the level of fecal coliform and to assess impact on the health of swimmers; long term trends of fecal coliform count at each beach and causes and potential actions to correct issues stemming from fecal coliform.

Montclair's monitoring program uses the U.S. Environmental Protection Agency standard, which triggers short-term swimming advisories when bacteria levels exceed 235 Most Probable Number (MPN). The "Advisory" standard of 235 MPN /100 mL (E. Coli in water) was adopted based upon data from three EPA studies. These studies indicate that E. Coli and/or Enterococci are the best bacterial indicators to assess the risk of acquiring a gastrointestinal illness because of using recreational waters.

With E. coli counts under 235 MPN/100 mL, the beach has no advisories or warnings issued. Once the E. coli count is greater than 235 MPN/100 mL management will issue an advisory. Once a reading is more than 235 MPN organisms per 100ml sample management will order additional test and lift advisories once samples are below 235 MPN. MPOA maintenance staff routinely removed/disposed of goose droppings and pet waste from beaches to reduce the E-coli counts. Pet waste and goose droppings have contributed to higher levels of E-Coli in the lake, creating human health hazards, aesthetic losses, & property damage.

Cyanobacteria, or blue-green algae are single-celled organisms that naturally exist in fresh waters. They use sunlight to make their food. When there are a lot of nutrients available in the water, the bacteria can grow rapidly or "bloom" to form a visible film or scum on the surface of the water. This is more likely to occur in warm spring and hot summer months, however, unseasonably warm temperatures in fall and winter can produce blooms. Cyanobacterial blooms are often green or blue green in color but not always.

The development and proliferation of algal blooms likely result from a combination of environmental factors including available nutrients, temperature, sunlight, ecosystem disturbance (stable/mixing conditions, turbidity), hydrology (flow and water storage levels) and water chemistry. However, the combination of factors that trigger and sustain an algal bloom is not fully understood and it is not possible to attribute algal blooms to any specific factor.

Virginia Department of Health, Guidance for Cyanobacteria Bloom Recreational Advisory Management will be used for determining when to issue an advisory. Cell counts of the Microcystis species of cyanobacteria above 40,000 will trigger an advisory. Cell counts above 100,000 of any combination of the species on VDH list will trigger an advisory. Below are the results of the 2023 algae testing efforts. Lake Montclair did not experience a lake wide Harmful Algae Bloom in 2023. Montclair residents should continue to be aware of the Virginia law banning the use of lawn fertilizer containing phosphorus, and there is a prohibition on sale and use of de-icers containing urea (or carbamide), nitrogen or phosphorus.

3. Lake Sustainment, Access, and Use

Lake water level is managed and controlled based on current conditions. As a part of dam operations, MPOA management staff monitor the weather to determine when to lower the lake in advance of hazardous conditions. On September of 2023, the lake water monitoring system was replaced with one that is now part of PWC Automated Flood Warning System (AFWS) that includes a water level gage and rain gage tied to their monitoring system. During an event, flood sensing equipment installed on critical waterways, including dams, gives PWC real-time situational awareness of the impacts of flooding upstream and downstream. PWC and MPOA have access to the system's data, and alarms are set up to notify Montclair staff either directly or through the mass notification system by emails and text, as well as phone calls. The staff will lower the lake as needed using the low-level gate valves. Lake level monitoring equipment allows for more multiple people to be alerted at the same time, helping in making decisions more quickly in any emergency events.

The earthen impounding structure (dam and spillways) is the most important asset for the Lake Montclair community. The concrete boat ramp, three beaches, and common areas offered access to the lake for use. MPOA was issued a Regular Operations and Maintenance Certificate entitling MPOA to operate and maintain the Dam. The latest certificate was effective May 31, 2019, and expires May 31, 2025. A. Morton Thomas and Assoc. (AMT) with David Krisnitski are working on an updated Regular Operations and Maintenance Certificate Request for a February 2025 submission to DEQ.

On January 2, 2024, David Krisnitski submitted to DCR a design report for the alteration of the dam to replace the bottom valve and drain intake trash rack. Bander Smith LLC provided a proposal on January 2, 2024, to replace the failed internal downstream valve and drain intake trash rack to replace the downstream valve and trash rack. DCR approved the alteration permit on March 4, 2024. AMT designed a new steel bar trash rack and an Orbinox Knife gate assembly. On 30 September Bander Smith started to install both units. During the damaged gate removal process it was determined the thimble/flange was not reusable and the plate/transition flange was shop fabricated and installed. On 20 November, Bander Smith pressure washed the upstream sluice gate slides and seat, inspected the stem and brackets, and found it was in good working order. The downstream gate remains open, and the upstream gate remains closed for normal operational use.

David Krisnitski performed an annual inspection of Lake Montclair Dam on October 16, 2024. David examined the downstream gate as well as the current conditions of the tower and conduit/tunnel. David indicated once this project is complete and the alteration permit is closed, then this potentially changes the rating of the dam. Since our current certificate does not expire until May 2025, this affords David adequate time needing to file for a new permit. David did note that we still need to look at crack mapping and grouting in 2026.

An Emergency Action Plan (EAP) drill for Lake Montclair Dam took place on August 16, 2024, at the PWC-Emergency Management Office. David Krisnitski conducted the dam safety training event and tabletop exercise. LMC updates the EAP annually along with performing an internal seminar drill.

Dam Mowing and Maintenance LLC provides mowing and nutrient management services for both the dam. They have the required equipment for the steep slopes of the dam. Their services included two lime applications, core aeration, three herbicide applications for turf and two for the riprap, a compost application, and a fertilizer application. LFMC received approval to fund Dam Mowing and Maintenance LLC to perform mowing and landscaping services for the auxiliary spillway. Remediation efforts to restore the turf with the latest nutrient management plan. The Nutrient Management Plan for the dam and auxiliary spillway, created by the Virginia Cooperative Extension, remains in effect until 1 May 2026.

4. Watershed Property Use and Monitoring Relevant to Lake Ecosystem Management.

Because properties in Montclair and upstream in the watershed connect to the lake through flow of water, MPOA (primarily through LMC and property management) continued to coordinate and work with others in accomplishing objectives for land use that are relevant to lake management.

The LMC continues to Montclair residents' information on the threat to water quality caused by allowing excessive nutrients to accumulate in the lake. Information was relayed by several articles in the Montclairion that include actions to help prevent nutrients from entering the lake.

Goose fecal droppings and improperly disposed pet waste continued to contribute to degradation of the lake's water quality. Resident Canada Geese on Lake Montclair leave excessive amounts of fecal droppings on turf and beach areas, and some residents are ignoring PWC statute and MPOA guidelines by not cleaning up after their pets. MPOA provides contract support to groom the beaches, remove trash, and animal waste daily, during the beach season.

5. Storm Water Management, Dredging, and Management of Soil, Sand and Sediment.

Erosion and sediment control were a primary consideration for storm water management. The progressive build-up of sediment requires periodic dredging to properly sustain or restore lake-ecosystem functions. During 1991, 1996, 2001, 2007 and 2014 the lake dredging took place. While 2021 was anticipated to be the next dredge, the last three years have been a challenge in organizing lake dredging. The primary cause of the delay has been who will accept wet mud which needs to be removed to a decanting site. Due to the limited capacity remaining at Prince William County (PWC) Landfill, they can no longer accommodate a decanting site for the large amount of wet sediment provided by our lake dredge projects. MPOA and PWC signed an agreement that created a unique opportunity to accept Lake Montclair dredge material. PWC and Quantico Marine Corps Base came to an agreement to accept Lake Montclair's dredged material at a decanting site which was designed by PWC Public Works. MPOA is responsible for hiring the dredger, and an agreement with LSI Inc. (formerly Lake Services Inc) to dredge the lake approved by the MPOA Board at the December BoD meeting. PWC has an agreement with GDC Construction to haul material to Quantico. MPOA will reimburse the County for all hauling costs. There were environmental concerns about the material being removed from the lake, so full toxicity testing was completed. Dredging Lake Montclair is ready to go, and LSI Inc. has already positioned equipment at West Beach. Approximately 15,500 cubic yards of sediment and organic material will be removed from the Lake by LSI Inc. The overall objective is to mechanically dredge selected areas, coves, and shorelines at a slope equal to a depth of five feet twenty feet from the shoreline. Dredging is necessary to protect the water quality of Lake Montclair. However, it is not the only solution. We all need to educate ourselves about safe recreational water and how each of us can impact water quality. Every homeowner can impact the lake since the storm drain water empties into the lake. Everyone should practice environmentally friendly landscaping techniques. These techniques include using native trees, shrubs and flowers and minimizing the size of our lawns that require fertilizer and pesticides and looking for ways to reduce run-off. For those on or near the lake, keep trees and natural shoreline vegetation.

The stream now known as Hunters Run empties out into a sediment forebay that has been commonly referred to as the Timber Ridge Forebay. This sediment forebay captures sediment and other debris before it can enter Lake Montclair. The benefit of having this forebay is to allow for easier access for sediment removal. The Timber Ridge forebay was dredged in 2010, 2012, 2015, 2018 and 2023. Each time approximately six hundred cubic yards of sediment was removed. There is a stone check dam near the riser structure that helps slow water flow and allows sediment to be captured in the forebay. PWC-Solid

Waste Management agreed to allow delivery of this volume of wet mud at their Dumfries Road Sanitary landfill. LSI Inc. removed 560 cubic yards of silt at the end of September 2023.

6. Biological Communities (vegetation, insects, wildlife, fish, & aquatic life) in/around the lake.

Fish Stocking – On April 3, 2023, Smith Minnow Farm delivered 225 lbs. of 2.5-inch Golden Shiners and nine hundred eight-to-ten-inch Channel Catfish throughout the lake at key location. Channel Catfish would not normally spawn in Lake Montclair. On April 20, 2024, Smith Minnow Farm delivered approximately 150,000 Golden Shiners approximately 2.25 inches in length. Montclair volunteer residents met at West Beach and using pails and buckets transported the fish by boat from the delivery truck to various key locations within the lake where habitats are located.

The environmentally safe size for the Canada Goose population on Lake Montclair is approximately twenty-five geese. We strive to control this level.

7. Systems and Procedures for Community Interaction, Training, and Information Resources.

MPOA provides information resources and opportunities for community engagement. Residents need to understand how their actions can have an impact on lake stewardship efforts, and their participation are required for improvements in lake-ecosystem use and stewardship to be realized.

Given the nature of the earthen dam, its aging and the changing of the Association Management, Engineers and Managers, it is vitally important that all the material records of the dam reside at one central location. Records and Information Management Committee are working to this end to archive these documents as historic information important to the association and its consultants to make informed decisions on the dam in future years. A small team continues to collect and file dam, lake and LMC related documents.

8. Special thanks to Ned Green

Ned Green passed away on 3 July 2024. Ned was a Lake Management Board member for ten years, four of them as Chairperson. He dedicated himself as a board member from 2009 to 2024. He was the LMC Liaison for many of those years. Ned worked closely with management on planning and execution of a vast number of projects from fish stocking, leading the Stormwater Task Force (SWTF) after the 2008 flood, and oversaw several dredging projects, as well as the construction of the Auxiliary Spillway. His life was a testament to his enduring strength, love, and dedication. Ned Green is a legacy that will continue to inspire all who knew him.

Submitted by the MPOA Lake Management Committee members with MPOA BoD Liaison and MPOA Staff liaison:

Buck Arvin - MPOA Board Liaison
Austin Carroll - LMC Chairperson
Mike Czapiewski - Member
Jim Greenwood - Member
Desiree Morehead - Member
Bill Warner – Member
Jesse Kirk - Member
Adam Werle - MPOA Assistant General Manager