

MEDFORD LAKES COLONY

—
2026

LAKES
&
LAKES LEADERS



Our Lakes

21 Lakes (in five chains)

Headwaters:

Upper Aetna

Algonquin

Meeshaway

Mescha

Sioux

2 Canals

Natchez

Wagush Levee

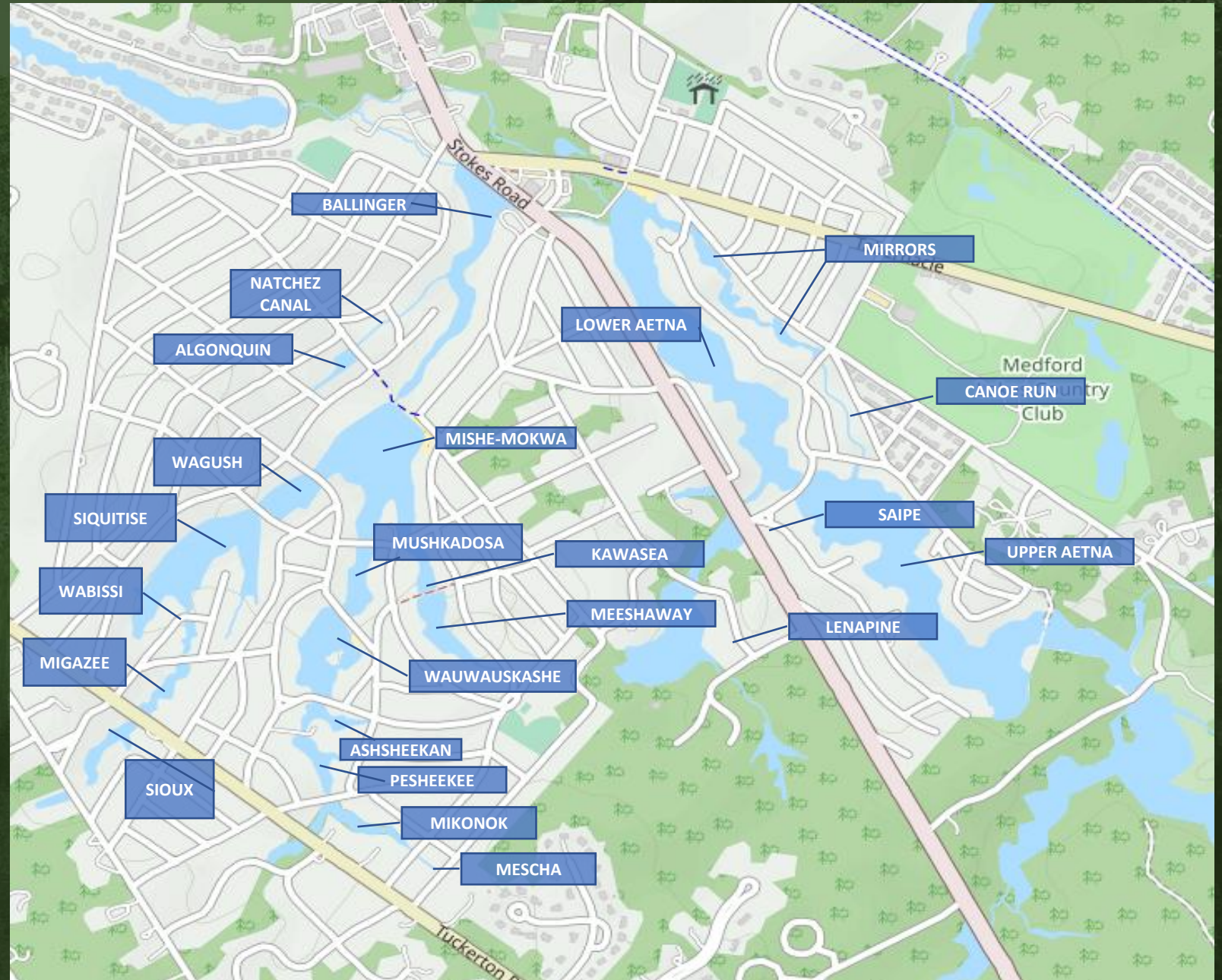
2 Lagoons

Ballinger

Siquitise

1 Run

Canoe Run
aka Mirror Run



Drone View of Lakes



BEAVER DAM

CANOE RUN

Sept 21, 2026



Lakes
Leaders
Meeting

Sept 21, 2026

MEETING AGENDA SEPTEMBER 21, 2026

- WATER LEVELS IN THE LAKES
- WAYS TO PRESERVE WATER
- LAWN FERTILIZER AND OTHER CHEMICALS
- EVALUATION OF HYDRO-RAKING
- REVIEW OF LAKE AERATION PROGRAM
- WEED, ALGAE, AND LILY PADS
- POD APPLICATION TO NJ DEP
- Q & A

LAKES
NATURAL
ISSUES

2026

NATURAL ISSUES FOR THE LAKES

- **LOW WATER VOLUMES**

- Lower aquifer levels
- Reduced aquastatic pressure

- **RECURRING SEDIMENT LOADS**

- Trees
- Road Run-Off
- Fish, turtle, mallard, geese waste

- **WATER QUALITY**

- Geese and Mallards
- Naturally Occurring Chemicals like Phosphorus, Iron, Nitrogen

- **WEED GROWTH**

- Fertilizers and decaying materials

- **AQUATIC LIFE ENVIRONMENT**

- Oxygen Levels
- Water Temperatures
- Weed Controls

LAKES

DROUGHT CONDITIONS

2025

Drought Conditions in New Jersey

Most of South Jersey is classified as being in a severe or extreme drought.



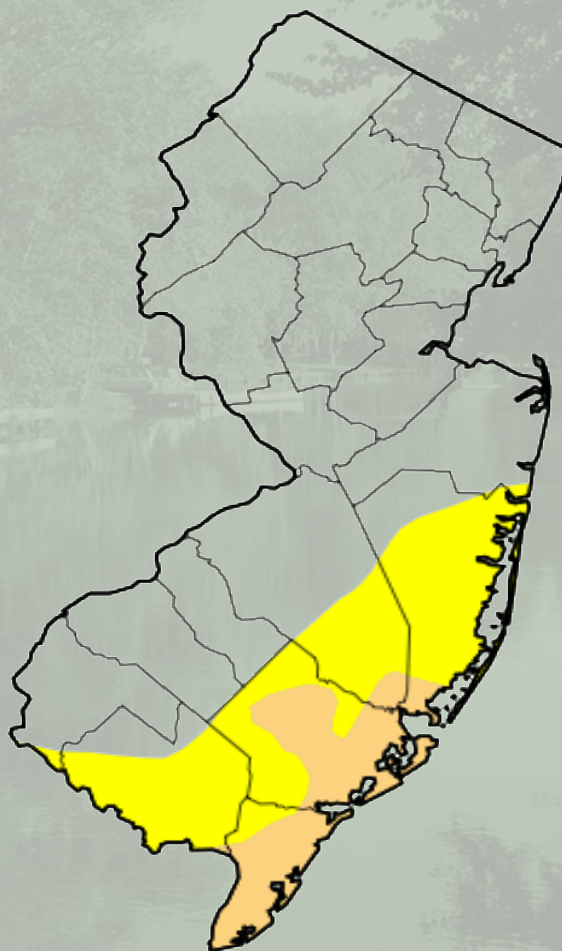
Source: U.S. Drought Monitor

John Duchneskie / Staff Artist

U.S. Drought Monitor New Jersey

September 15, 2026
(Released Thursday, Sep. 17, 2026)
Valid 8 a.m. EDT

LAKES
DROUGHT
CONDITIONS
2026



Intensity:

	None
	D0 Abnormally Dry
	D1 Moderate Drought
	D2 Severe Drought
	D3 Extreme Drought
	D4 Exceptional Drought

The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. For more information on the Drought Monitor, go to <https://droughtmonitor.unl.edu/About.aspx>

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NASA/GSFC/SSAI



droughtmonitor.unl.edu

LAKES

DROUGHT

CONDITIONS

2026

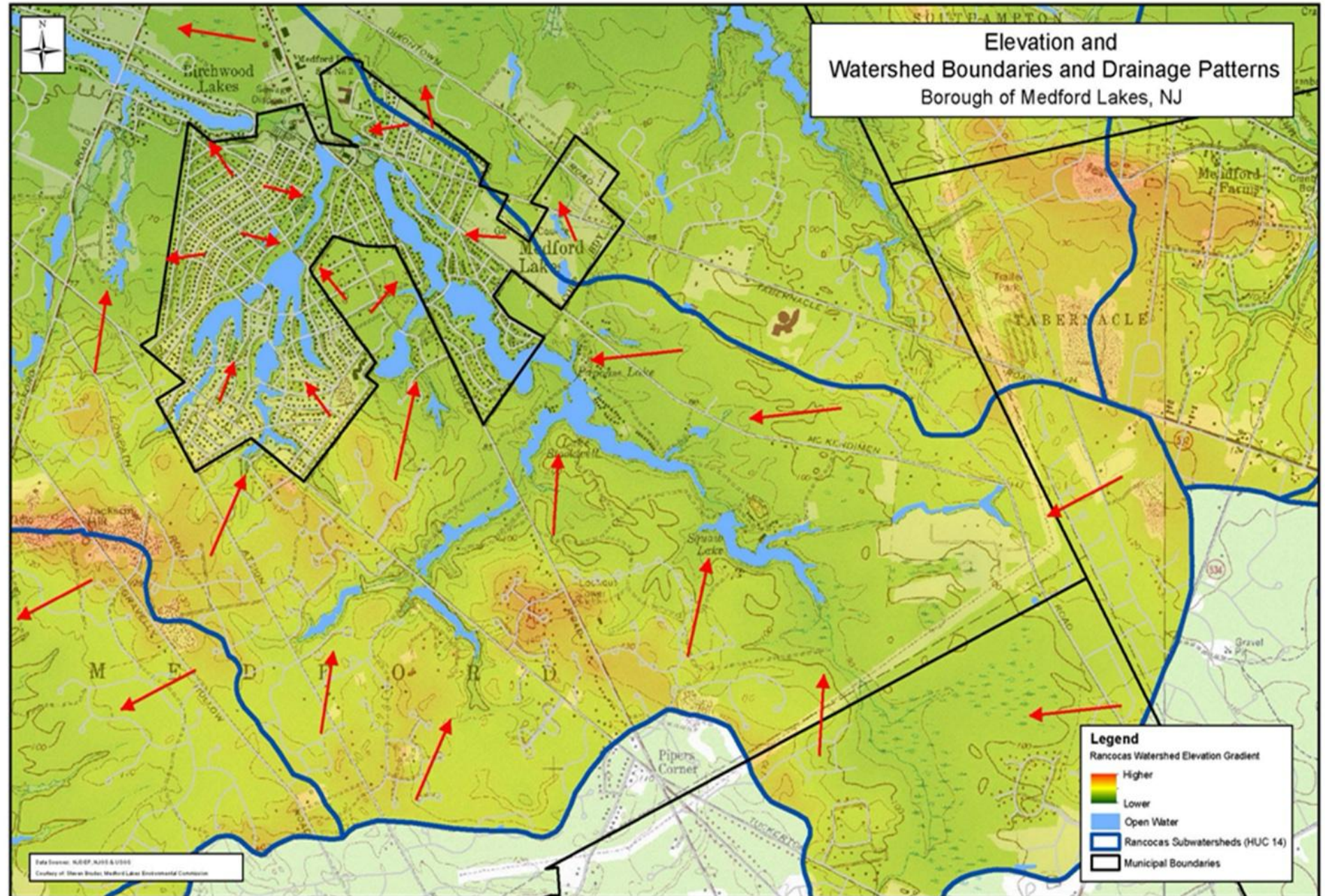
NEW JERSEY Regional Drinking-Water-Supply Indicators & Declared Water-Supply Status							September 13, 2026	
Region		Drinking-Water-Supply Indicator					Water-Supply Status	
		Status	90-day precipitation	90-day stream-flow	N.J. reservoirs	Del. R. reservoirs	Unconsolidated ground water	
North-west		Near or above normal	6	2	Not a significant region-wide water resource.	6	6	Normal
		Moderately dry						Watch
		Severely dry						Warning
		Extremely dry						Emergency
Central		Near or above normal	5	3	21	6		Normal
		Moderately dry						Watch
		Severely dry					11	Warning
		Extremely dry						Emergency
North-east		Near or above normal	6	4	9	Not a significant region-wide water resource.		Normal
		Moderately dry					4	Watch
		Severely dry						Warning
		Extremely dry						Emergency
South-west		Near or above normal	9		Not a significant region-wide water resource.	6	3	Normal
		Moderately dry		2				Watch
		Severely dry						Warning
		Extremely dry						Emergency
Coastal North		Near or above normal	5		19	Not a significant region-wide water resource.		Normal
		Moderately dry					2	Watch
		Severely dry		5				Warning
		Extremely dry						Emergency
Coastal South		Near or above normal	4		Not a significant region-wide water resource.	Not a significant region-wide water resource.		Normal
		Moderately dry						Watch
		Severely dry		2				Warning
		Extremely dry					11	Emergency

The number in each colored dot is the number of weeks the specific indicator in that region has been in that status. For indicators which changed status this evaluation cycle the arrow indicates the direction of change. If points from the previous status to the current. A water drop (4) means the indicator has been green for more than a year.

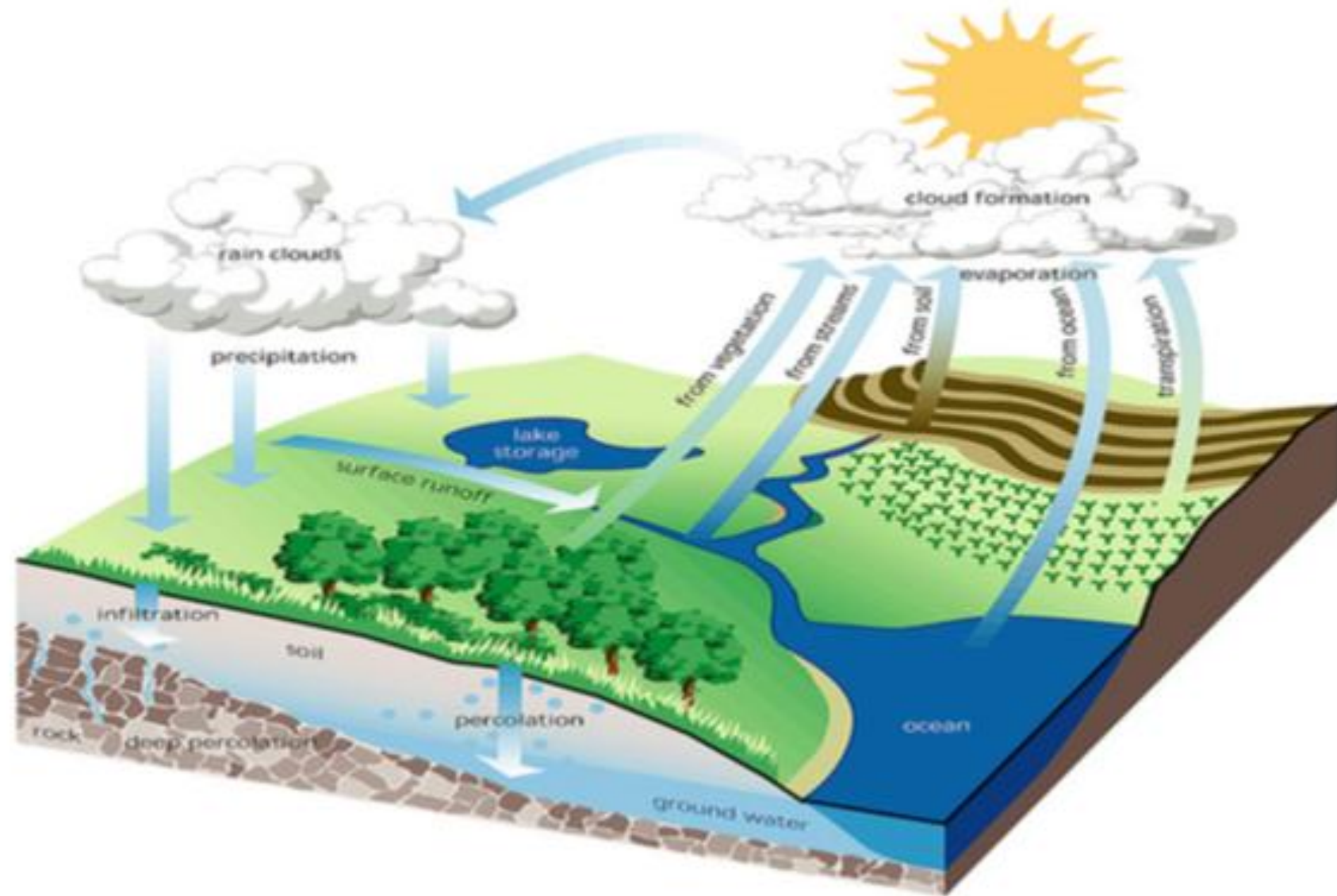
Subject to revision and update. This summary shows regional drinking-water-supply indicators for New Jersey with the most up-to-date available data, which is not always the date indicated on top of page. Note that data availability can lag one or more days depending on the data source and information here may vary temporarily and differ slightly from other summary reports. Local water-supply conditions may vary. Water-supply status is based on professional judgment of water-supply characteristics and indicators in each region. Indicators are shown only for those water resources significant for each region. The indicators are described at <https://dep.nj.gov/water-conservation/indicators/indicators-report-2024-2.pdf>.

MEDFORD LAKES

DRAINAGE PATTERNS



MAINTAINING LAKE WATER LEVELS



MAINTAINING LAKE WATER LEVELS

NEW ALGONQUIN SPILLWAY

2025

Mishe Mokwa Chain of Lakes (Beach 3)							
	Surface Area (acres)	Average Depth (ft)	Deepest Point	Water Volume (gals)	Demucking	# of Homes	Elevation above Sea level (ft)
Western Stream							
Wagush Siquitise	Not available						
Wabissi	0.46	3.36	7	511,378	May 2025	4	78.96
Migazzi	1.10	3.90	9	1,358,902	May 2025	10	83.40
Sioux	1.60	4.48	10	2,414,680	June 2024	14	91.68
Middle Stream							
Mushkodosa	1.80	5.2	7	3,069,965		9	70.80
Wauwaukashe	4.60	6.47	10	9,831,450	May 2026	9	76.57
Ashsheekan	1.10	2.8	5	1,019,201	June 2023	4	81.33
Peshekee	1.30	4.61	9	2,033,454	N/A	9	86.41
Mikonok	1.80	4.08	8	2,474,768	June 2023	11	90.88
Mischa	0.16	1.98	3	103,148	N/A	4	97.38
Eastern Stream							
Kawasea	1.10	3.92	6	1,306,307	June 2025	8	70.02
Meeshaway	2.50	4.54	9	3,713,656	June 2024	15	73.04



LAKE WATER LEVELS

BIGGEST WATER SUPPLY ISSUES WITH OUR LAKES

- **IMPACTS ON WATER SUPPLY**

- Residential Use (500-800 gpd)
- Precipitation and Drought
- Aquifer Levels
- Location in Drainage Patterns
- Erosion

- **MAINTAINING WATER LEVELS**

- Spillway Leakage
- Removal of Spillway Boards
- Beaver Dams



GOOD NEWS

MAINTAINING
LAKE
WATER
LEVELS

2024-2026

SPILLWAY LEAKAGE

• Replacement of wood with metal plates

Mikonok

Pesheekee

Ashsheekan

Meeshaway

Kawasea

Mushkadosa

Migazee

Wabissie

Siquitise

• New Dams or Spillways

Sioux

Algonquin

• Planned

• Wagush

Wauwaukashe

• New Bulkheads

Ashsheekan

Middle Mirror

Algonquin

LAKES RESTORATION

New Spillway
Design & Build
Meeshaway
2024



LAKES RESTORATION

New Spillway
Design & Build
Meeshaway
2024



LAKES RESTORATION

Leaking Spillway
Wauwauskashe
2026



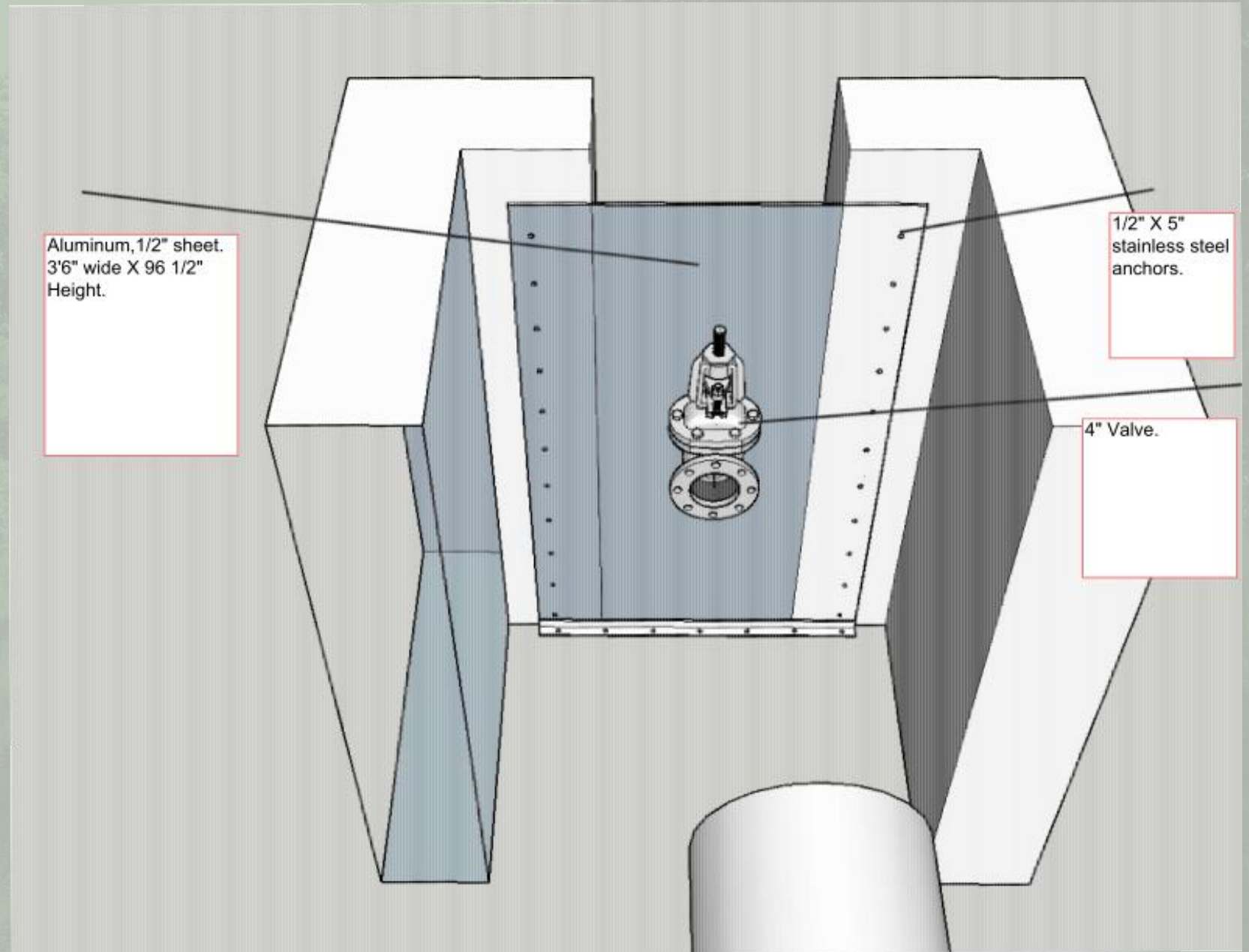
LAKES RESTORATION

Spillway
with Metal Plate
and drain
Ashsheekan
2025



LAKES RESTORATION

New Spillway
Design
Wauwauskashe
2026



MAINTAINING
LAKE
WATER
LEVELS

NEW
ALGONQUIN
SPILLWAY

2025



MAINTAINING
LAKE
WATER
LEVELS

THE
FUTURE

OTHER ALTERNATIVE PLANS FOR WATER LEVELS

New Wells on Colony Property

- Long Shot
- Issues with Pinelands and NJ DEP regs
- Potential low impact on aquifer

Pumping Water Between Lakes

- Source lake has to be viable
- Any piping would have to go through the lakes
- Cost (pump, platform, piping, power)
- Costly to Operate
- Oversight

Use Waste Water Plant Effluent

- Logistical and legal nightmare
- “EW-W-W-W”

MAINTAINING
LAKE
WATER
LEVELS

NEW
ALGONQUIN
SPILLWAY

2025

OTHER ALTERNATIVE PLANS FOR WATER LEVELS

Currently have a pump in Ballinger that pumps water to Sioux/Algonquin

- **WPA project, possibly tied to 1938 Waste Water project. Pipe runs under Algonquin Trail.**
- **New pump replacement NOW, with platform & box**
- **Very costly to operate, new pump to be more efficient**



SAVE WATER

WAYS TO PRESERVE WATER

- Limit lawn watering to 2 times per week
- Water flowers and landscaping from a rain barrel
- Use drip irrigation, water from A/C or dehumidifier
- Raise your lawnmower blade to at least 3"
- Driveways should grade TOWARDS the yard
- Build rain gardens
- Plant and group native, drought tolerant plants based on water needs

LAKES
PREVENTABLE
“MAN-MADE”
ISSUES

2026

PREVENTABLE ISSUES FOR THE LAKES

- **FERTILIZERS**

- Illegal Applications
- Over-use

- **ROAD SALT**

- Snow Removal
- Residential Over-use

- **ROAD RUN-OFF**

- Driveways
- Abuse of site limitations

- **OVERGROWN TREES**

- Lack of Maintenance

LAKES
PREVENTABLE
“MAN-MADE”
ISSUES

2026

- **FERTILIZERS and ROAD SALT**

Disrupt water chemistry

Starve aquatic life of oxygen

Poison freshwater organisms

Feed the weeds and algae blooms

Creates dead zones

- **ROAD RUN-OFF**

Washes toxic mix into lakes (mainly motor oil and gasoline)

Heavy metals, rubber, debris, fertilizer

- **OVERGROWN TREES**

Leaves, leaves, leaves

LAKES
PREVENTABLE
“MAN-MADE”
ISSUES

2026

**FERTILIZERS and ROAD SALT
ROAD RUN-OFF
OVERGROWN TREES**

ORDINANCES!!!!

Limits on Fertilizer use

Limits on fertilizer types

Weed controls require a permit

Driveway paving AND repaving requires a permit

Driveways are supposed to grade towards impervious surfaces

Impervious surfaces are limited

Tree cutting requires a permit

MEDFORD
LAKES
ORDINANCES

HELP
KEEP
OUR
LAKES
HEALTHY

- **New Jersey's Fertilizer Law**
- **Sets standards for fertilizer content;**
- **Restricts the amount of nitrogen used in a single application and the total amount used in a year;**
- **Sets limits for when and where lawn fertilizer can be applied by homeowners and landscape professionals; and**
- **Requires professional applicators to be trained and/or certified in proper fertilizer use.**

LAKES MAINTENANCE 2026

Hydro-Rake
in action





LAKES MAINTENANCE 2026

HYDRO-RAKING IN MEDFORD LAKES **2021-2026**

- Preceded by other lake cleanings, usually manual
 - Jim Dugan Pond Cleaning (2000)
 - Angel's Landscaping (2020)
- First attempted in 2020 in Algonquin and Meeshaway
 - Completed 16 lakes and 2 beaches
- Removed much larger volumes than manual cleaning
 - But much lower volumes than dredging
- Less expensive than dredging or manual cleaning
 - Daily oversight and record keeping
 - Disposal and clean up issues
 - No permitting (except by contractor)

LAKES
MAINTENANCE
2025

WEEDS, ALGAE, LILY PADS

Mother Nature: Low depth levels, lots of sunlight
People: Fertilizer, fertilizer, fertilizer

Weeds - Standard policy going back to late 1930's

Weeds - historically been the biggest lake issue

Weed - treatments using herbicides (mostly Diquat in past)

Algae - treated with herbicides

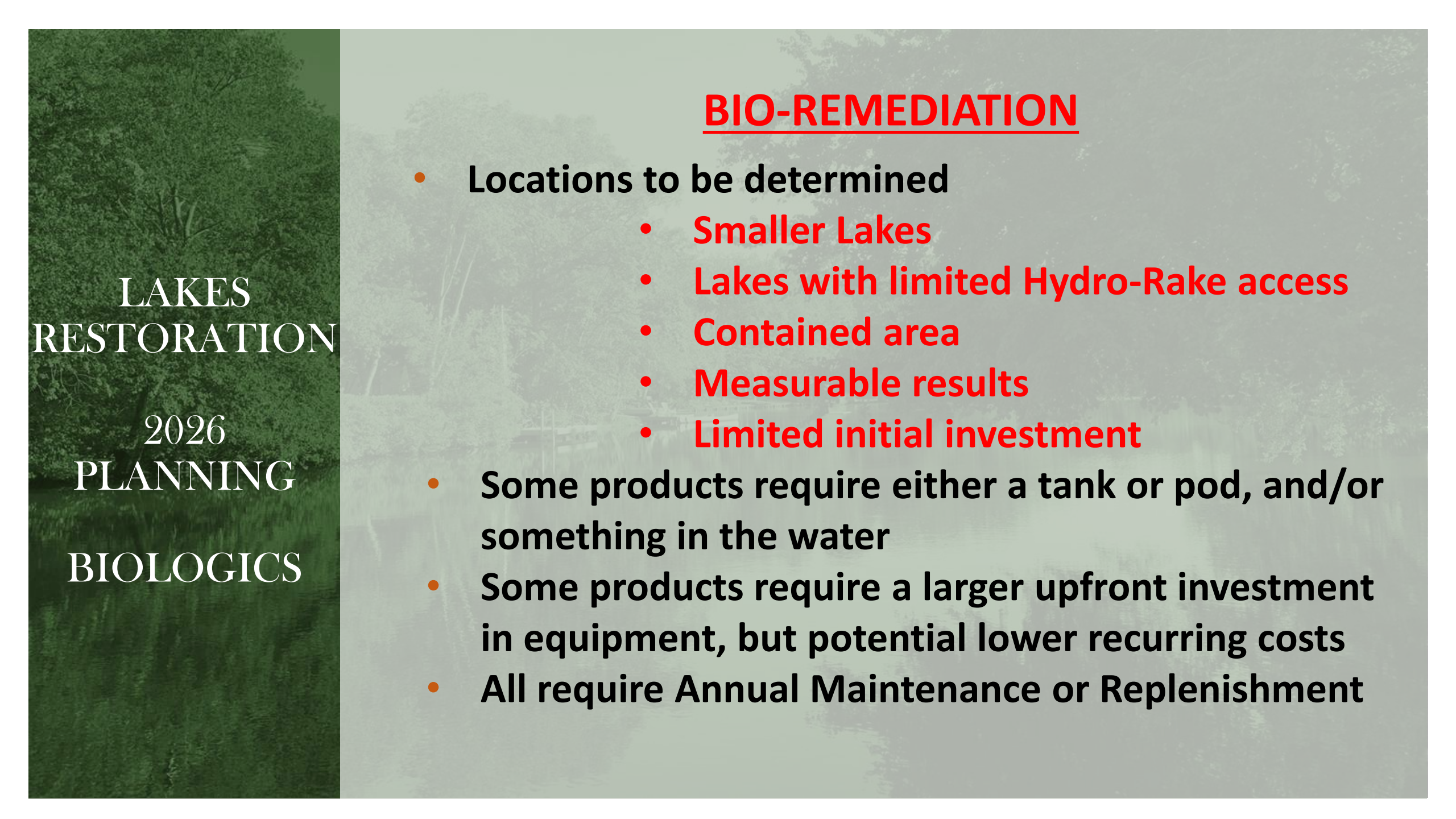
Algae - Aeration helps to mitigate growth

**Algae – installed ultra sound “algae killers” in Mikonok and
Sioux Lakes in 2024**

Lily Pads – always around, mostly Ballinger and Mushkadosa

Lily Pads - bigger issue in 2026, especially Upper Aetna

Lily Pads – treated with special herbicide

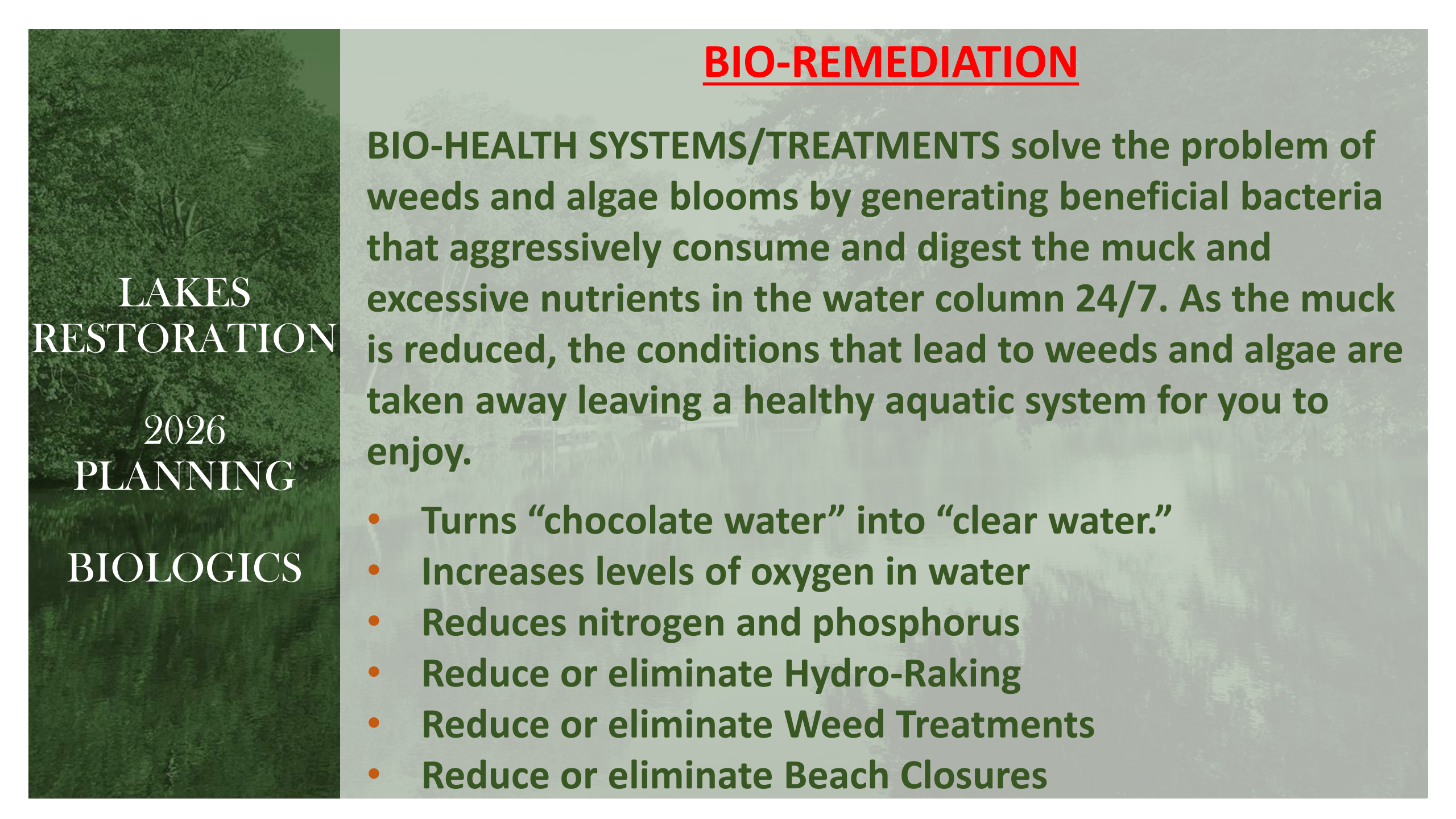


LAKES RESTORATION

2026
PLANNING
BIOLOGICS

BIO-REMEDIATION

- **Locations to be determined**
 - **Smaller Lakes**
 - **Lakes with limited Hydro-Rake access**
 - **Contained area**
 - **Measurable results**
 - **Limited initial investment**
- **Some products require either a tank or pod, and/or something in the water**
- **Some products require a larger upfront investment in equipment, but potential lower recurring costs**
- **All require Annual Maintenance or Replenishment**



LAKES RESTORATION

2026
PLANNING

BIOLOGICS

BIO-REMEDIATION

BIO-HEALTH SYSTEMS/TREATMENTS solve the problem of weeds and algae blooms by generating beneficial bacteria that aggressively consume and digest the muck and excessive nutrients in the water column 24/7. As the muck is reduced, the conditions that lead to weeds and algae are taken away leaving a healthy aquatic system for you to enjoy.

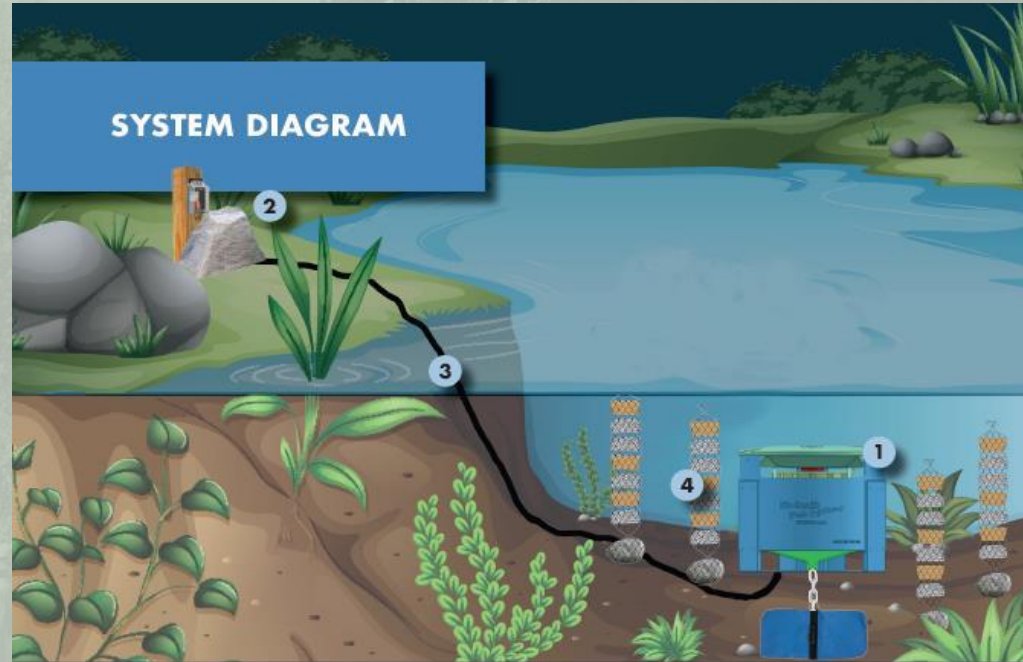
- Turns “chocolate water” into “clear water.”
- Increases levels of oxygen in water
- Reduces nitrogen and phosphorus
- Reduce or eliminate Hydro-Raking
- Reduce or eliminate Weed Treatments
- Reduce or eliminate Beach Closures

LAKES RESTORATION

2026 PLANNING BIO-PODS



Pond System



- 1 **BHP:** Find a location where the Bio-Health Pod can project to all areas of the pond. Ideal depth is around 4 to 5 feet.
- 2 **Air Pump:** Locate the Air Pump near the 110 volt outlet that is closest to the BHP. Keep the pump at a high point so it will not get flooded in the event of a large storm. The pump is covered with the faux rock.
- 3 **Weighted Air Hose:** When running the hose to the Bio-Health Pod it is important to keep it away from deeper water. Deep water will significantly reduce air flow and system performance resulting in increased wear and tear on the pump. The recommended depth is less than 5 ½ foot of water.
- 4 **Nano Pods:** Place one Nano Pod every 25 feet around the edge of the pond. Distance from the edge is determined by depth. The ideal depth for the Nano Pods is between 2 ½ to 3 ½ feet. If the pond is shallow, Nano Pods can be shortened. In ponds that are wide, additional Nano Pods may be necessary for the center of the pond.



LAKES RESTORATION

2026
PLANNING
BIO-PODS

24/7 Nutrient Digestion

Once distributed into the water, these beneficial microbes immediately go to work. They naturally consume and digest the organic muck on the bottom and the suspended nutrients in the water column. This constant biological action starves out unwanted aquatic issues by removing their primary food source. Over time, this process lowers muck levels, improves water clarity, and creates a healthier aquatic ecosystem with fewer pathogens.

LAKES
RESTORATION

2026-2027
PLANNING
&
ACTION

USING BIOLOGICS & NJDEP

Sought proposals from three companies

Two used chemical treatments, one from tanks, one from boats

NJDEP informed ML that chemical treatments required extensive pre and post treatment testing

Estimated cost, even with ML Waste Water assistance, was about **\$18,000 PER LAKE**

LAKES
RESTORATION

2026-2027
PLANNING
&
ACTION

USING BIOLOGICS & NJDEP

Why so much testing? New products and NJ is using these tests to evaluate products for use and permitting

August 25th – ML LR and Rigerio have zoom meeting with NJ DEP to discuss the ‘Rigerio System’

August 26th – Rigerio submitted all the required information to register for analysis as a “new product”

LAKES
RESTORATION

2026-2027
PLANNING
&
ACTION

**SPRINGTIME MANUAL CLEANING
MOVE FORWARD FROM HYDRO-RAKING
TO BIOLOGICS**

**MECHANICAL SOLUTIONS
TO MAINTAIN WATER VOLUMES
WATER MANAGEMENT & DRAINAGE**

**ON-GOING AND FUTURE NJDEP
REQUIRED COMPLIANCE**

ORDINANCE ENFORCEMENT



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