



Lake Killarney Board Regular Meeting

Agenda

August 5, 2026 @ 10:00 AM

City Hall Commission Chambers
401 S. Park Avenue

welcome

Agendas and all backup material supporting each agenda item are accessible via the city's website at cityofwinterpark.org/meetings/ and include virtual meeting instructions.

decorum

As a courtesy to those present, please silence your mobile devices. If you must take a phone call, please excuse yourself and step outside.

Members of the public shall observe the same rules of propriety, decorum and good conduct applicable to members of the Board. Persons making remarks or exhibiting behavior that disrupts the orderly conduct of this meeting will be subject to removal from the meeting.

assistance & appeals

Persons with disabilities needing assistance to participate in any of these proceedings should contact the City Clerk's Office ([407-599-3277](tel:407-599-3277)) at least 48 hours in advance of the meeting.

"If a person decides to appeal any decision made by the Board with respect to any matter considered at this hearing, a record of the proceedings is needed to ensure that a verbatim record of the proceedings is made, which record includes the testimony and evidence upon which the appeal is to be based." (F.S. 286.0105).

board member compliance

Board/Committee members when acting within the scope of their public duties are subject to the Florida Sunshine Law (Ch. 286, F.S.), Florida Public Records Act (Ch. 119, F.S.) and state ethics laws (Ch. 112, F.S.). All discussions with any other board member(s) regarding public items that are likely to come before the board/committee must occur on the record during a public meeting. No member shall vote upon, and no appointed member shall attempt to influence, any item considered which would inure to the special private gain or loss of the member, any principal/parent/subsidiary retaining the member, or any relative or business associate of the member. Members must announce their conflict and file a written conflict disclosure with the City Clerk within 15 days of the meeting.

1. Call to Order**2. Approval of Minutes**

- a. Minutes of July 1, 2026 1 Minute

3. Public Comments (for items not on the agenda): Three minutes allowed for each speaker**4. Public Hearings (Public participation and comment on these matters must be in person.)****5. Action Items****6. Non-Action Items****7. Staff Updates**

- a. Orange County Update 10 Minutes

- b. Lakes Management Update 10 Minutes

- Lake Killarney Data Update
- Aquatic Plant Management Treatment Update
- Moleaer Nanobubble Update -
<https://winterparkfl.portal.civicclerk.com/event/1985/media>
- Maintenance & Efforts

- c. Stormwater Management Update 10 Minutes

- CIP Update

Follow-up Items:

- Orange County Killarney Dr.
- Major Outfalls Inspection Schedule

8. Board Comments

- a. Discussion of Public Comments Received 5 Minutes

9. Upcoming Agenda Items

- a. Upcoming Agenda Items 5 Minutes

- b. Summary of Meeting Action Items 5 Minutes

10. Adjournment



Lake Killarney Board

agenda item 2.a

item type

Approval of Minutes

meeting date

August 5, 2026

prepared by

Joseph Smirti, Environmental Special Grant
Manager

approved by

Victoria Tabor, Administrative Coordinator
IV

subject

Minutes of July 1, 2026

motion | recommendation**background****alternatives | other considerations****fiscal impact****attachments**

1. LKB-min-2026-07-01 DRAFT



Lake Killarney Board Regular Meeting Minutes

July 1, 2026 at 10:00 AM

City Hall Commission Chambers
401 S. Park Avenue

Present

Carolyn Minear, David L. Dickerson, Ellen Hencken, Melissa Valley, Robert Kunzweiler.

Absent

Staff Present

Assistant Director of Public Works Don Marcotte, Public Works Engineer Shannon Monahan, Assistant Director of Natural Resources and Sustainability Joseph Cordell, Lakes Specialist Daniel Barber, Environmental Specialist Grants Manager Joseph Smirti, Administrative Assistant Victoria Tabor

Also Present:

1. Call to Order

Mr. Dickerson called the meeting to order at 10:00 a.m. and read the decorum.

- a. Vote for Chair & Vice Chair

Motion made by Mr. Dickerson to renominate Ms. Wall as Chair, seconded by Mr. Kunzweiler. The motion was carried unanimously with a 5-0 vote.

Motion made by Ms. Hencken to renominate Mr. Dickerson as Vice Chair, seconded by Ms. Valley. The motion was carried unanimously with a 5-0 vote.

Mr. King arrived after the vote at 10:03 a.m.

- b. Board Member Orientation

Videos were presented to the board explaining roles and responsibilities.

Ms. Wall joined virtually at 10:10 a.m.

Mr. Dickerson posed a question about conflict of interest. Ms. Breland provided an explanation of what constitutes a conflict of interest. She stated that she would seek further clarification from the City attorney and provide additional information at the next board meeting. She also stated that financial disclosures are required and must be completed.

2. Approval of Minutes

- a. Minutes of April 1, 2026

Motion made by Ms. Valley to approve the April minutes. Mr. King seconded the motion. The motion carried unanimously with a 6-0 vote.

b. Minutes of May 6, 2026

Motion made by Mr. King to approve the May minutes, seconded by Ms. Minear. The motion was carried unanimously with a 6-0 vote.

c. Minutes of June 3, 2026

Motion made by Mr. King to approve the June minutes, seconded by Ms. Henchen. The motion was carried unanimously with a 6-0 vote.

3. Public Comments (for items not on the agenda): Three minutes allowed for each speaker

4. Public Hearings (Public participation and comment on these matters must be in person.)

5. Action Items

6. Non-Action Items

a. Lake Level Elevation Discussion

Mr. Dickerson stated that he believes everyone who owns lakefront property cares about knowing the lake elevation. He suggested a way to monitor the data. Mr. Cordell noted that the telemetry was installed in August 2024 and discussed the data. Prior to that, elevation data was collected monthly. Mr. Dickerson suggested sharing a historical average lake level to evaluate whether lowering the lake level is necessary. Mr. Cordell informed the board that after the hurricanes, Lake's personnel created a flood management guide that includes best management practices for lowering lake levels. Mr. Cordell stated that a reference for monthly average elevations will be added for future meetings.

7. Staff Updates

a. Orange County Update

Ms. Volpe was not present. Mr. Cordell gave the Orange County update on her behalf.

b. Lake Management Update

Mr. Cordell gave an update on Lake Killarney data and noted that hydrilla and water hyacinth treatments are needed.

Mr. Cordell spoke about the paddleboard cleanup event on Lake Killarney. Mr. Dickerson said he would like to draft a letter thanking the cleanup participants.

c. Stormwater Management Update

Ms. Monahan gave the update on active construction projects, street sweeping, and private exfiltration maintenance efforts.

d. Upcoming Events

- Lake Appreciation Month – July
- Litter Cleanup – July 11th 9am @ Lake Berry
- Paddleboard Cleanup – August 1st @ Chain of Lakes

8. Board Comments

a. Discussion of Public Comments Received

Ms. Wall suggested that Mr. Cordell or Ms. Eby speak about the nanobubble project at the next board meeting. By nods, all board members approved adding it to the agenda for the next meeting.

9. Upcoming Agenda Items

a. Upcoming Agenda Items

Mr. Dickerson reiterated to have staff speak about the Nanobubbler project and provide an update on lake level elevation data.

b. Summary of Meeting Action Items

- Lakes to add monthly averages as a reference for the lake elevation page.
- Provide information on the Nanobubbler project on Lake Virginia.

10. Adjournment

Mr. Dickerson adjourned the meeting at 10:58 a.m.

Approved by the board on
/s/ Joseph Smirti, Recorder



Lake Killarney Board

agenda item 7.a

item type

Staff Updates

meeting date

August 5, 2026

prepared by

Victoria Tabor, Administrative Coordinator IV

approved by

Victoria Tabor, Administrative Coordinator IV

subject

Orange County Update

motion | recommendation**background****alternatives | other considerations****fiscal impact****attachments**

None



Lake Killarney Board

agenda item 7.b

item type

Staff Updates

meeting date

August 5, 2026

prepared by

Victoria Tabor, Administrative Coordinator IV

approved by

Victoria Tabor, Administrative Coordinator IV

subject

Lakes Management Update

- Lake Killarney Data Update
- Aquatic Plant Management Treatment Update
- Moleaer Nanobubble Update -
<https://winterparkfl.portal.civicclerk.com/event/1985/media>
- Maintenance & Efforts

motion | recommendation**background**

Moleaer Nanobubble Presentation Link -

<https://winterparkfl.portal.civicclerk.com/event/1985/media>

The presentation starts at 6 minutes and 30 seconds.

alternatives | other considerations**fiscal impact****attachments**

1. Lake Update 08.2026 draft
2. Nanobubble Presentation

LAKE UPDATE: AUGUST 2026

- Lake Bell & Killarney Water Quality and Elevation Data
- Aquatic Plant Management Treatment Updates
 - Hydrilla Treatments
 - Water Hyacinth Treatments
- Water Hyacinth in the canal
- Moleaer Nanobubble Presentation
- Maintenance and Efforts

IMPORTANT FERTILIZER RULES

june 01^{to}
sept 30

Apply only fertilizer
with **zero** nitrogen
& phosphorus.

NOW

oct 01^{to}
may 31

If fertilizer has nitrogen,
at least **65% N** must be
slow release type.

Keep fertilizer at least
25 feet from natural
waterbodies.

year
round

Limit application to
1 pound total nitrogen
per 1,000 square feet.

Use **zero** phosphorus
unless a soil test shows
a deficiency.

**MORE
INFO**

scan the code or access
**[cityofwinterpark.org/
lakes/fertilize-wisely](https://cityofwinterpark.org/lakes/fertilize-wisely)**
includes complete ordinance details

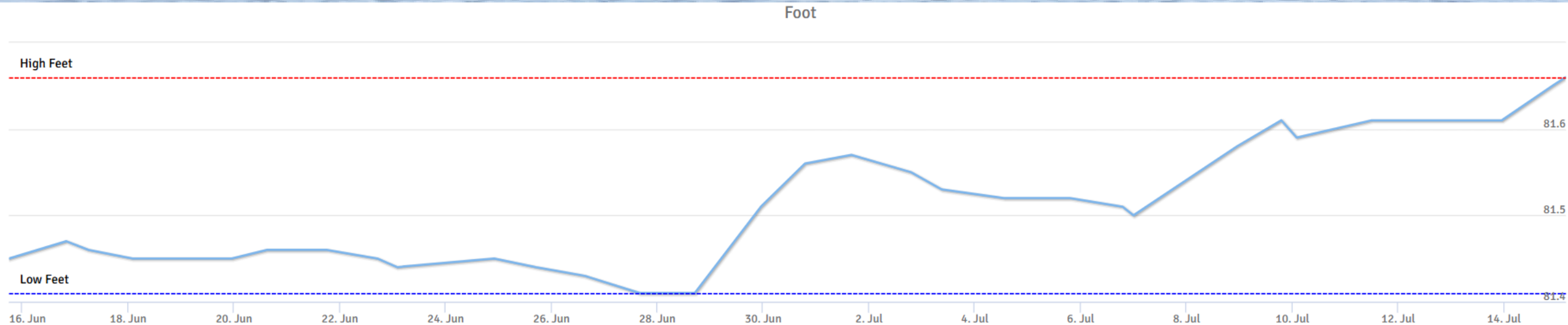


Status	Priority	Subject	Board Description	Current Status: red= items requested during 2026 work session	Date Provided
Ongoing	High	Exfiltration Maintenance	See example/actual agreement regarding requirements for underground retention systems and related cleaning process and timing.	Shannon provided example of signed maintenance agreement and letter requiring compliance with maintenance records. Provide an annual report on the compliance results for exfiltration system maintenance in the Killarney Basin.	12/4/2024
Ongoing	High	Private Lift Station Maintenance Agreement Program	Status of private lift station inspection and reporting program to monitor the maintenance compliance of private lift stations in Winter Park or WP's jurisdiction.	David Zusi Provided update to the Board. Agreement in effect sent to Board. May 2026 David updated on the program and advised annual updated will be provided.	11/5/2024
Ongoing	Low	Lk Bell water quality testing	Add Lk Bell to sampling schedule	Lake Bell is already a part of city's monitoring program. Lk Bell Data will be added to the monthly updates.	8/6/2025
Ongoing	High	HAB Education	HAB concerns	Staff provides advisories via lake alerts as they are issued by the public health agencies. Continue education efforts.	Ongoing
Ongoing	High	Imperial Update	latest update on the testing and results	Shannon provides update upon report received from FDEP	7/2/2024
Pending	High	Drainage Basin Improvements	Killarney Drive Outfall Project	Construction in progress	
Ongoing	High	Basin Study Update	Status on study's recommendations and progress such as FDOT pond expansion	Killarney Drainage Improvements are under construction. MLK flood storage expansion design is underway. Nothing to report on the FDOT pond expansion.	Ongoing
Pending	High	Drainage Basin Improvements/ CCTV Infrastructure	CONDITION REPORT OF LK STORMWATER SYSTEM – Status of the report on mapping and the condition evaluation of all stormwater outfalls on or around Lake Killarney /cove/ canal. Who's responsible for this project and any update, or is a partial report review possible? I know the city hired an engineering firm and that report is due in about a year; however, I believe Shannon was working on this. Is this still in the works at the staff level?	Camera truck received May 2025; Program to begin inspections in high priority areas. Requested monthly Gantt Graph.	Ongoing
Ongoing	High	Drainage Basin Improvements	NEW ENHANCEMENTS FOR LK – Where might it be good to include a CDS box if stormwater pipes and outfalls are updated, consolidated and fixed? Will the board be part of this discussion? Are there federal or state funds available for these types of expensive corrections and enhancements? I know staff always considers this enhancement; however, maybe the board could assist with encouragement to the commission to access funds for these environmentally beneficial devices.		Ongoing
Ongoing	High	Henderson Hotel Area	Advise Board of any development of the area previously designated for the Henderson Hotel project.		
Ongoing	High	Boathouse/Dock Compliance	Furnish reportings as they occur.		
Pending	High	Street Sweeping Compliance	Status of ew contract, schedule, and work verification	Contractor is still in the process of learning the City streets and timing to complete sections of the City. Once completed, a schedule will be developed. Requested monthly Gantt Graph.	Ongoing
Completed	High	Lake Data Dashboard	Status of on-line dashboard	Completed and launched.	
Ongoing	High	Attend Orange County Lake Advisory Board Meeting	WP Board Members should attend regularly	WP staff hosts and attends OC meeting. WP Board expressed importance for its members (at least one) to regularly attend. Coordination with Orange County on corrections to failing infrastructure and flooding streets (Geosyntac study).	Ongoing
Ongoing	High	Canal Improvements	Board expressed concerns with maintenance, water quality and aesthetics	City performs monthly activities for the canal. City continues revegetation efforts and the treatment of Brazilian pepper.	Ongoing
Pending	High	Lake Killarney Board Members Participation	Better participation from board members in community projects and communication		

City Staff Recommendations to Board:

Pending	High	Welcome to your Lake Program	Provide welcoming educational packet for lakeside living for all new residents.	Lakes is developing packet for distribution and communicated for effectiveness, lake members provides awareness to new residents on the lake. In progress with Communications Dept.	
Ongoing	High	Host Community Meetings	Provide Community meetings for education & awareness	Host annual Dock Party at a minimum to engage the community. Goal is to provide continuous education and a venue to gain contact information for all lakeside residents. Conducted Dock party in May 2026 and a paddleboard cleanup for Jun 2026.	
Pending	High	Septic to Sewer	Reduce nutrient sources with septic to sewer conversion	Seek grants (one submitted for Planning Grant) and coordinate with OC for conversion funds to include community educational program	

Lake Killarney Elevation (2026)



Weir Elevation :

- Orlando Ave Weir inflow @ 83.0'
- Lake Gem Weir outflow @ 82.7'

Drainwell Elevations :

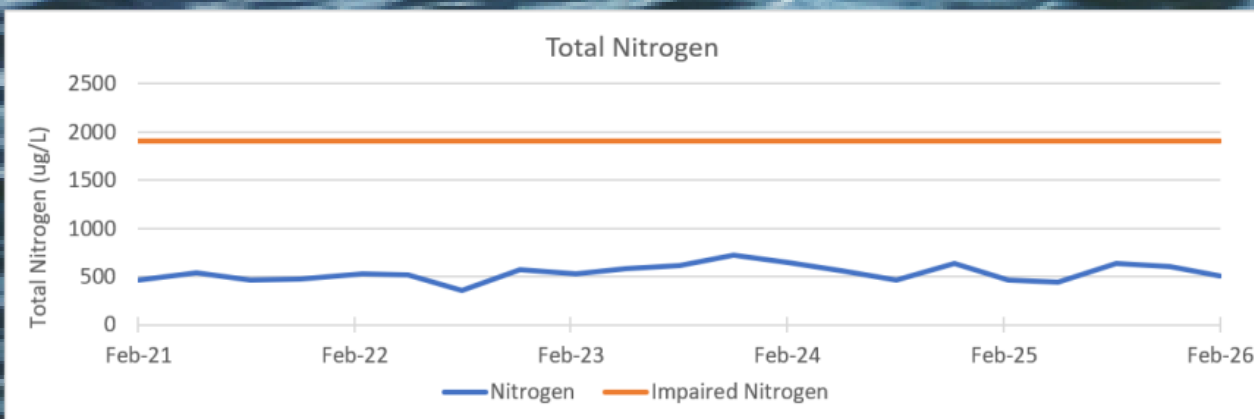
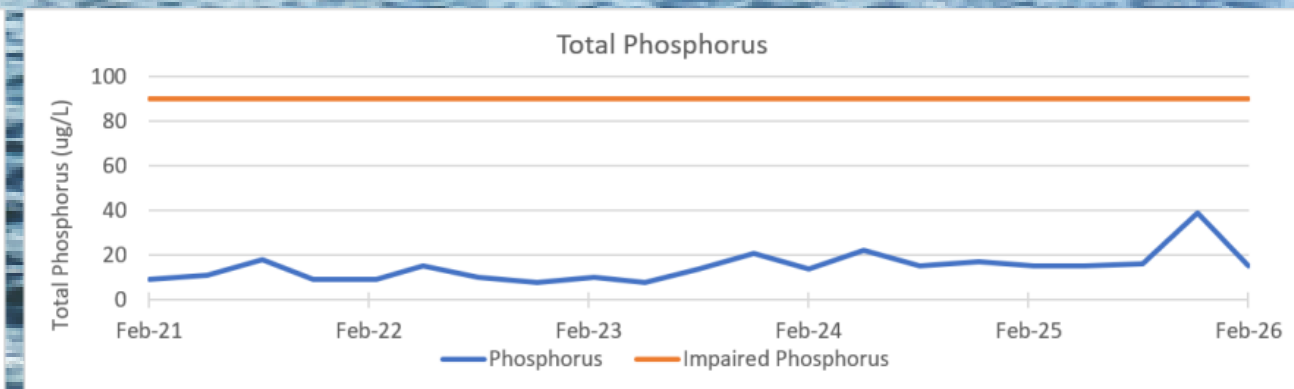
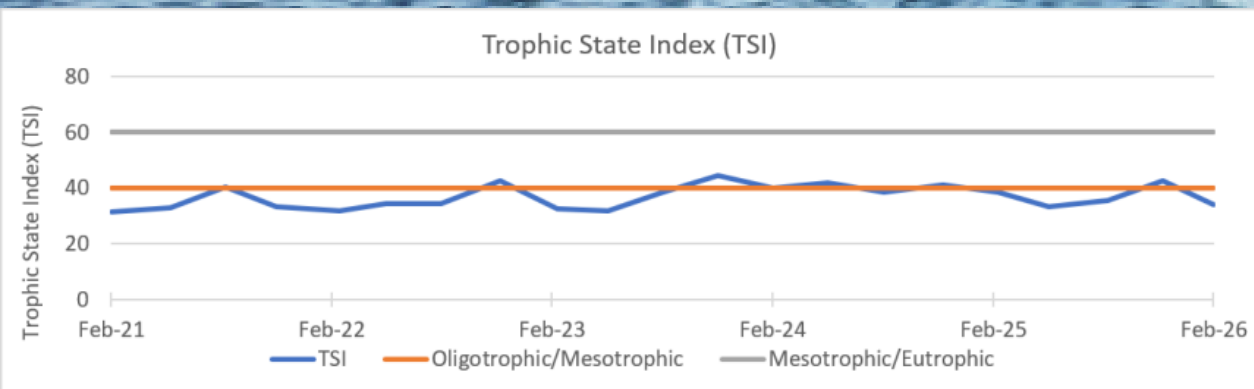
- Killarney Drain Well Collars @ avg 81.66'
- Top of Drain Well casings @ avg 80.0'

Monthly Averages from 1989 - 2026

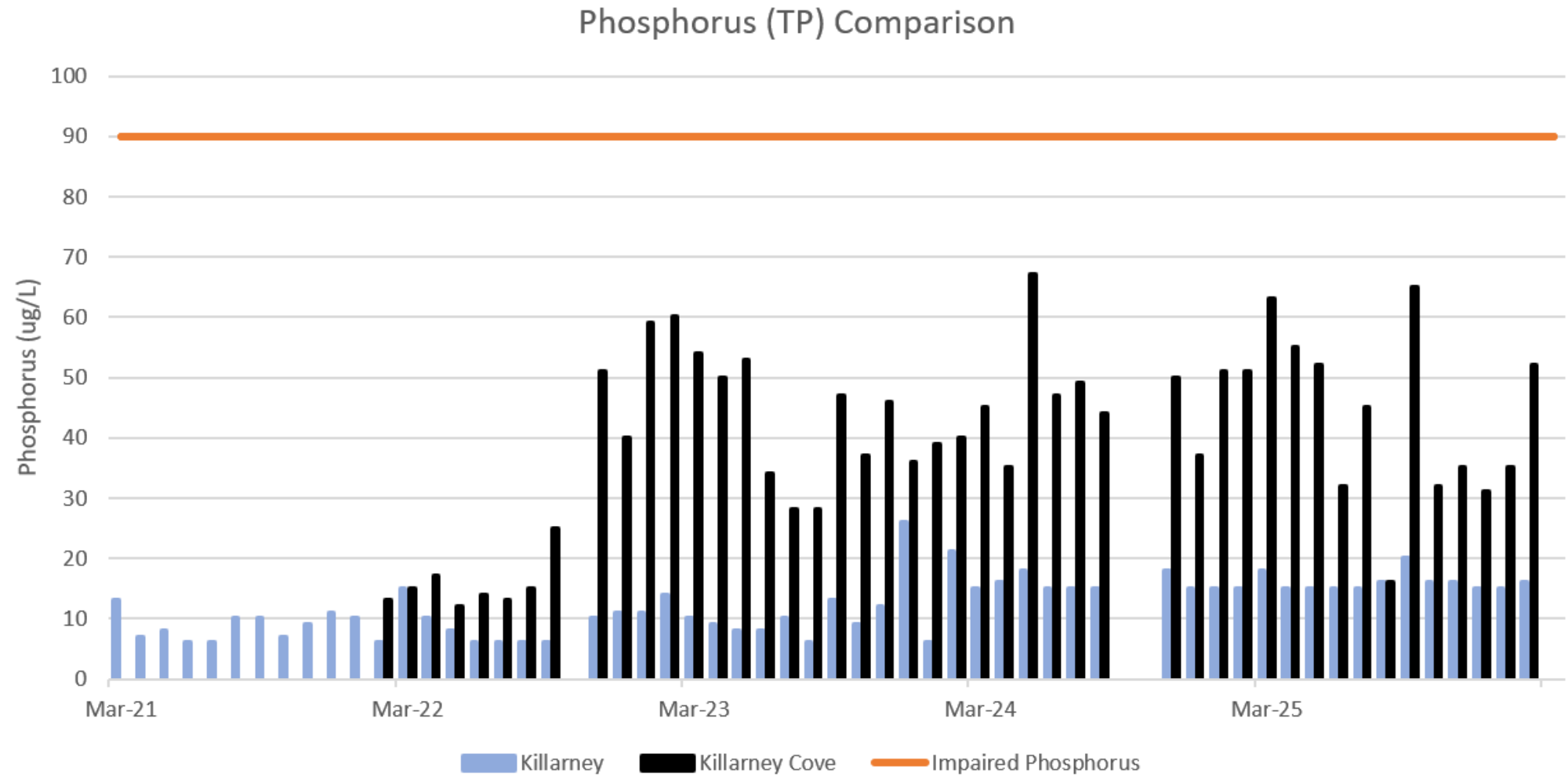
Jan	81.6	Jul	81.8
Feb	81.7	Aug	81.9
Mar	81.6	Sept	81.9
Apr	81.5	Oct	82.0
May	81.5	Nov	81.8
Jun	81.5	Dec	81.6



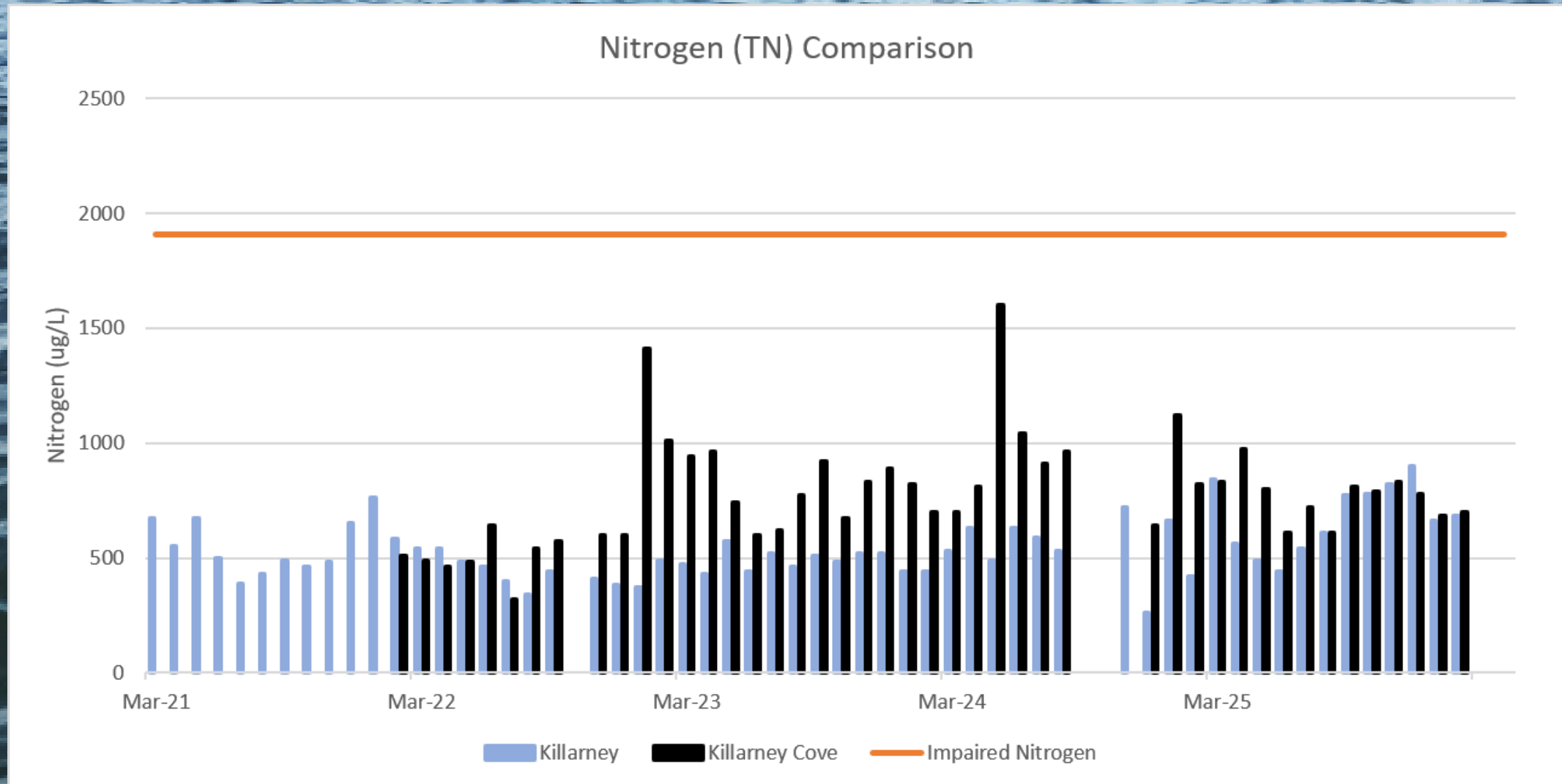
Lake Bell



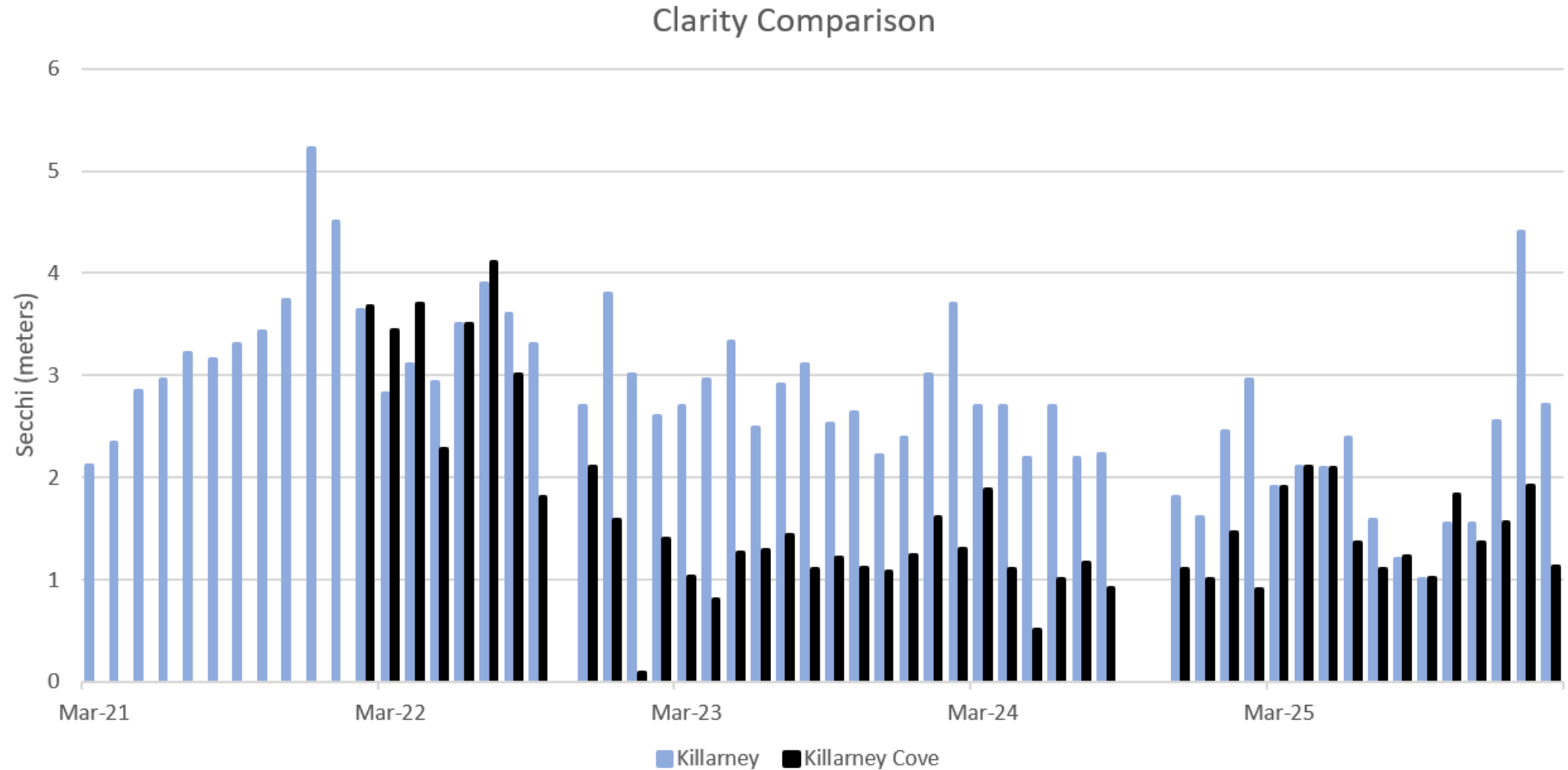
Lake Killarney (Phosphorus)



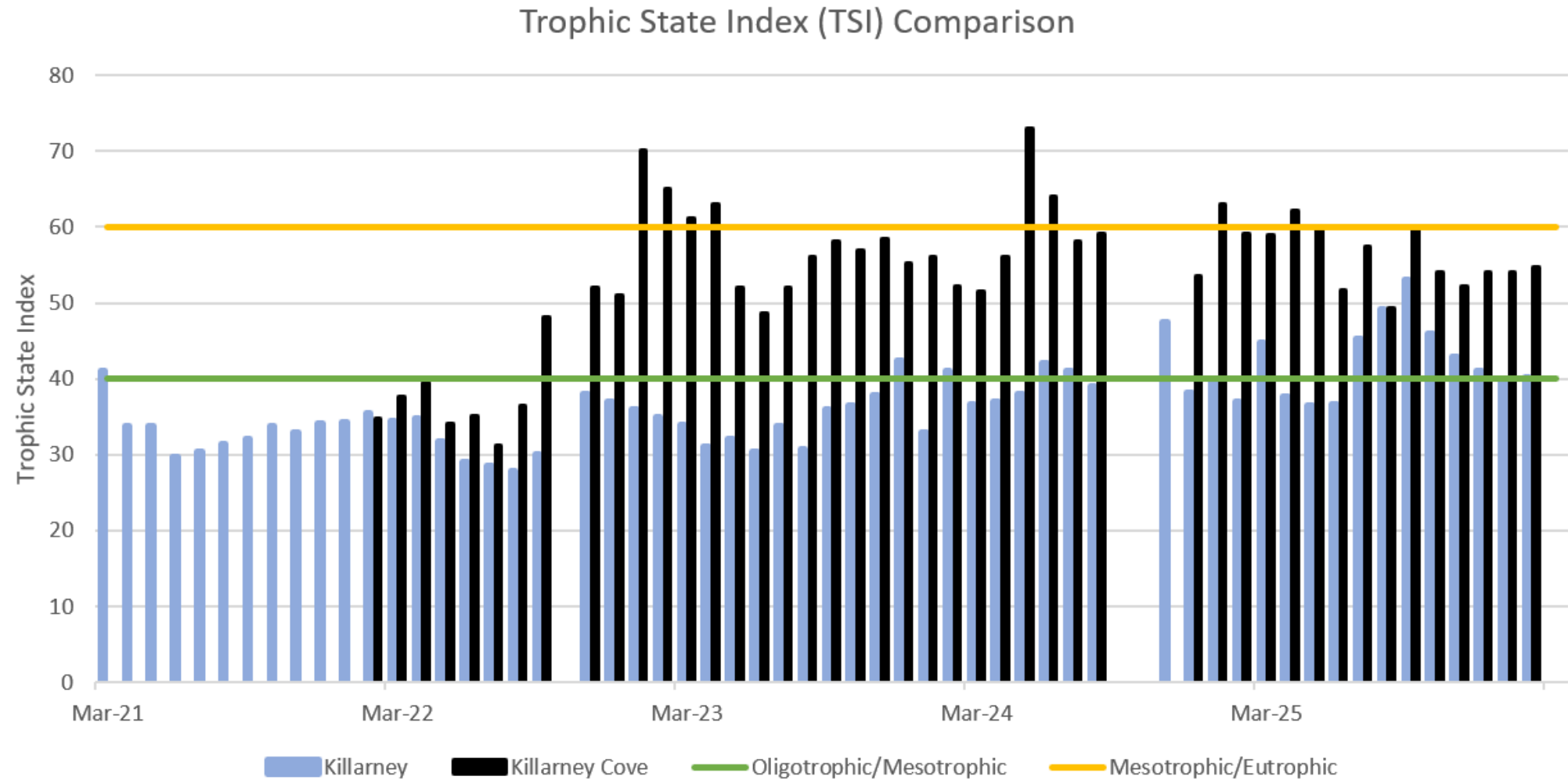
Lake Killarney (Nitrogen)



Lake Killarney (Clarity)



Lake Killarney (TSI)



August 2025



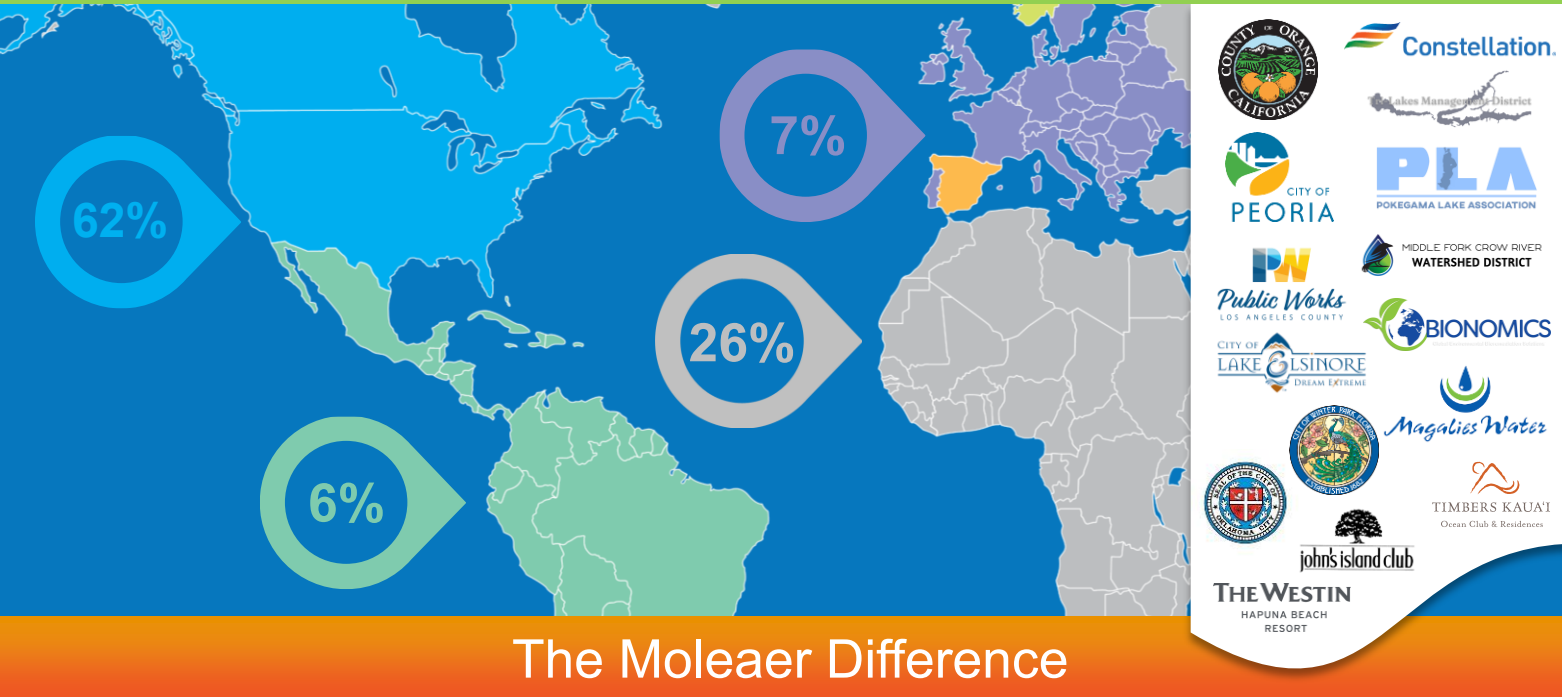
Lake Virginia

City of Winter Park, FL

Nanobubble Treatment to
Mitigate Harmful Algae Blooms
Blooms and Improve Resiliency

Over 4,000 Nanobubble Installations

650+ Nanobubble Installations in Waterbodies & Waterways



The Moleaer Difference

- Leader in nanobubble science and it's applications
- Largest R&D and Application Development teams with over 15 PhDs:
 - Investigating nanobubbles and their impacts in various applications
 - Developing prescriptive solutions and monitoring plans
- Largest NB treatment installation and customer base globally

Surface Water Team



Dr. Denise Devotta
Senior Limnologist



Shane Hoyt
Limnologist



Chris Stephan
Global Director of
Surface Water



Erin Klores
Business Development
Manager, Southeast US



Clint Hanson
Business Development
Manager, Western US



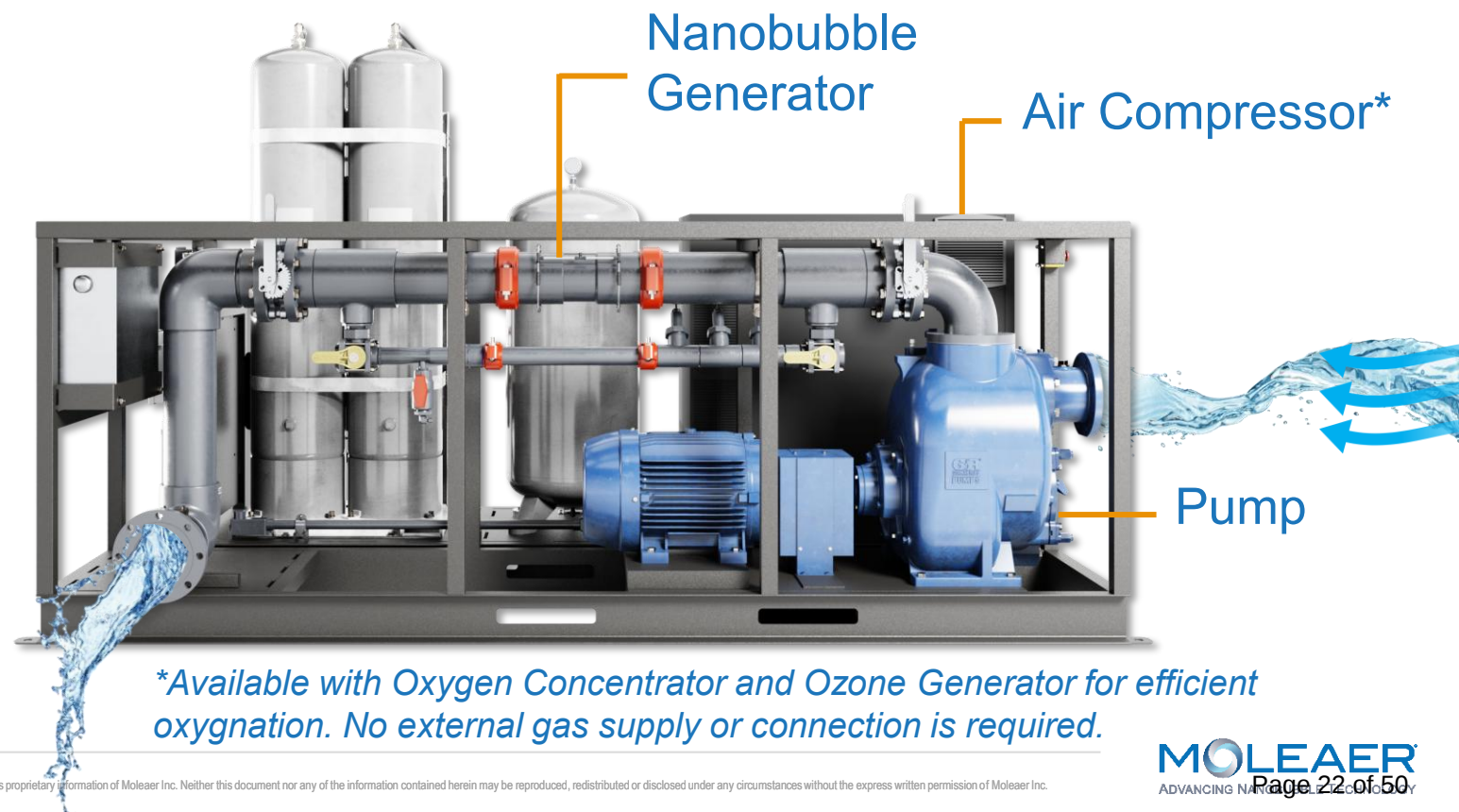
Jon Morales
Business Development
Manager, Central US

Moleaer's Patented Technology

Scalable for any size waterbody:
100's of installations over 1000 GPM

Introduces **dissolved oxygen** and **nanobubbles**:

- Most cost-effective way to provide critical dissolved oxygen to waterbodies
- Nanobubbles deliver the oxygen to the bottom where it is needed most
- Promotes natural lake recovery processes



**Available with Oxygen Concentrator and Ozone Generator for efficient oxygenation. No external gas supply or connection is required.*

Moleaer's Nanobubble Generator

Best-in-class Oxygen Transfer Efficiency | Scalable, Versatile Easy-to-Install Technology



Moleaer's patented technology introduces two forms of gas into water: **Dissolved** and **Nanobubbles**

Dissolved Oxygen

Dissolved Oxygen = amount of oxygen in water.

Moleaer's technology **dissolves oxygen** with best-in-class efficiency in any depth.

Nanobubbles

Charged gas nanoparticles, 1/1000th thickness of hair.

They do not rise, do not easily dissolve, improve gas stability, and catalyze physical, biological, and chemical reactions.



Case Studies

Satellite Beach, Florida

Better Muck Reduction Over Control

About the Waterbody

- Surface Area: 1.5 acres (0.6 ha)
- Brackish water

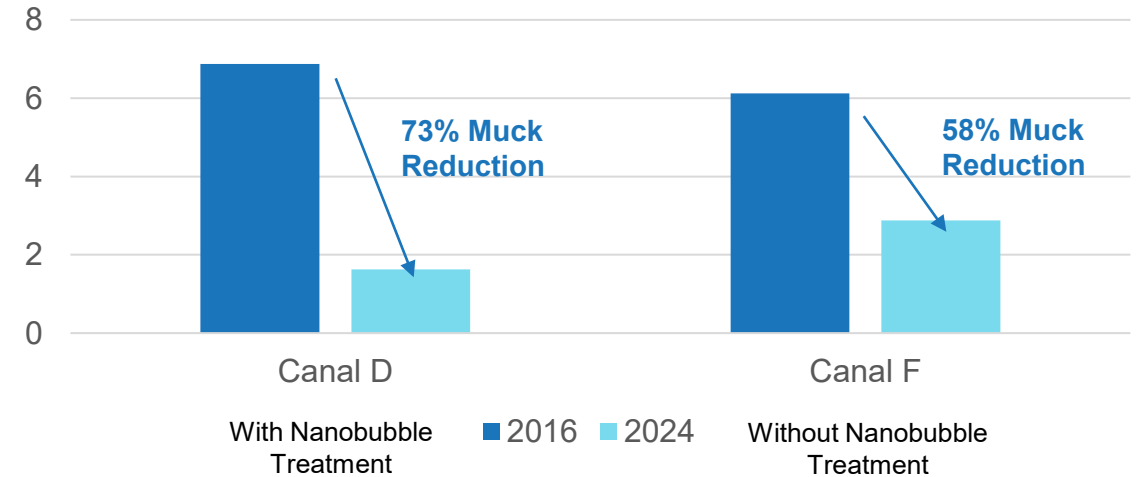
Challenges

- Thick muck
- Poor water quality

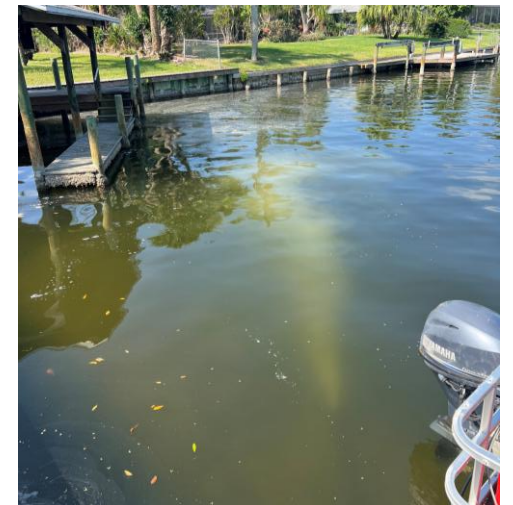
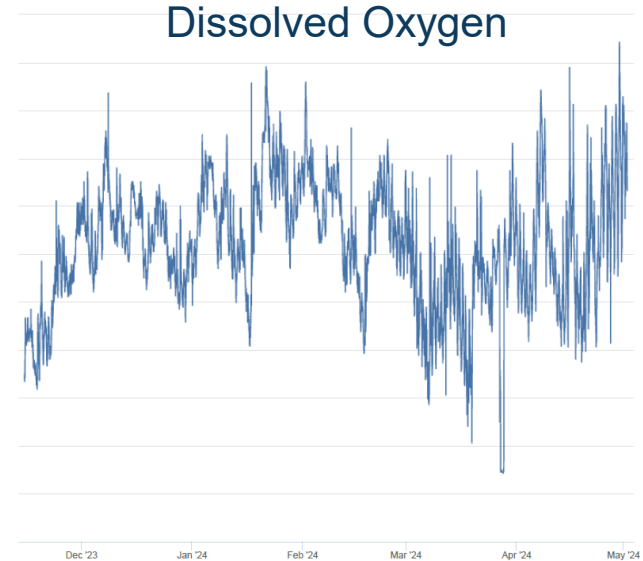
Results: Clear 150 nanobubble generator

- Average 73% reduction in muck in the pilot canal, a 15% improvement over the control
- Elevated dissolved oxygen in the water column and at the sediment-water interface

Average Muck Thickness



Dissolved Oxygen



Private Golf Club, Florida

Algae Control on the 19th Hole

About the Waterbody

- 2.87 acres (1.2 ha)
- 14.35-acre feet (17,700 m³)

Challenges

- Excessive algae in golf course ponds
- Foul odors

Results: Clear 150 & Kingfisher nanobubble generators

- Reduced algae growth
- Improved water clarity
- Eliminated foul odors

“Nanobubble technology is a sustainable and chemical-free tool for lake managers to utilize to restore lake health for our clients. By getting at the root cause of common lake issues, we can naturally improve water quality, allowing our clients to enjoy their lakes and ponds once again.”

- Rick Anderson, the owner of Aquatic Balance



Lake Elsinore, California

From Closure to Clarity

About the Waterbody

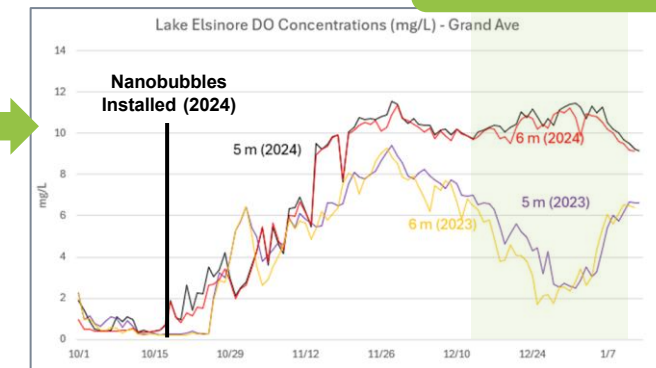
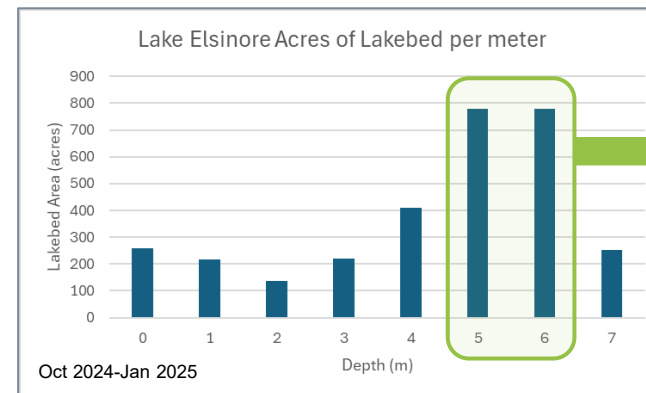
- Surface Area: 3,311 acres (1334 ha)
- Max Depth: 24 ft (7.3 m)
- Volume: 30K acre-feet (37 million m³)
- Receives 6.5M GPD (24k m³) of treated effluent

Challenges

- Recurrent lake closures due to HABs
- Poor clarity & high nutrient loading
- Economic impacts for community
- Inefficient, outdated aeration system

Results: (1) 2,400 GPM (545 m³/hr) & (2) 4,500 GPM (1022 m³/hr) Nanobubble Barges

- Significant reduction (50-90%) in early-season cyanobacteria levels
- Up to 7,000% reduction in turbidity (highest water clarity reported in 2 Years)
- Elevated DO sustained at critical depth, > 2,000 meters from nearest nanobubble unit



Tadd Lake, Minnesota

Pilot: Major Improvements Compared to Control

About the Waterbody

- Surface Area: 10 acres (4 ha)
- Max Depth: 8 ft (2.4 m)
- Volume: 50-acre-feet (61,714 m³)
- Terminal lake, connected to Upper Lake (surface area: 25 acres (0.1 km²))

Challenges

- Poor water clarity
- Excess algae growth and odor issues
- Invasive aquatic plant proliferation
- Unable to use recreationally
- Legacy poor water quality issues

Results: 1,000 GPM (227 m³/hr) Trailer

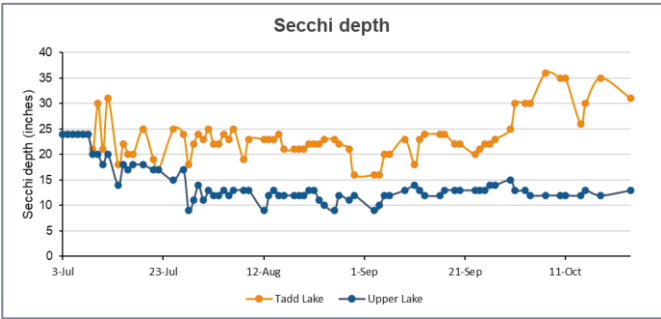
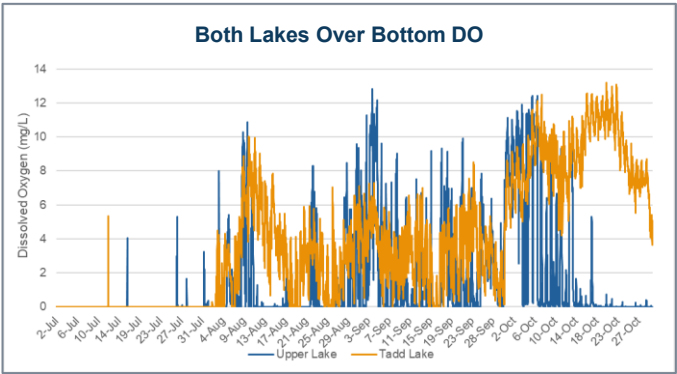
Compared to Control Lake:

- > 2x clearer
- 2x higher over bottom DO
- ~ 4x lower orthophosphate levels
- > 4x less total algae loads



Nanobubble Pilot:

- July 2 – Oct 24, 2024
- Upper Lake: Control site



	> 3 mg/L (fish struggle)	> 1 mg/L (fish die)
Tadd	65%	88%
Upper	25%	25%



Lake Arrowhead, Wisconsin

Pilot Marina Shows Remarkable Results in 75 Days

About the Waterbody

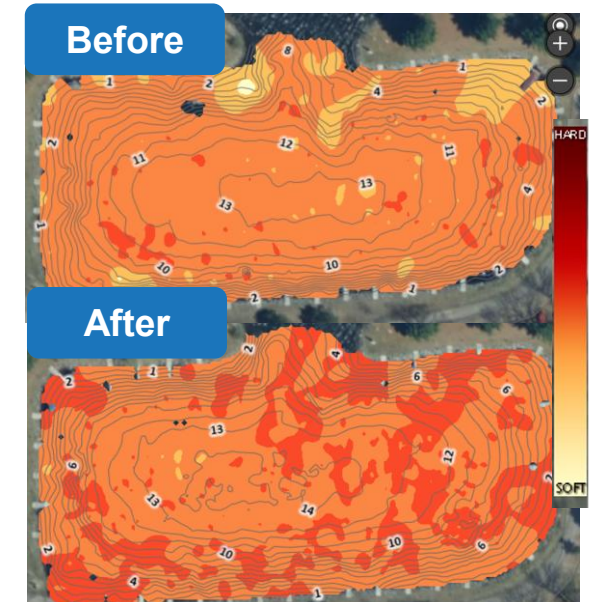
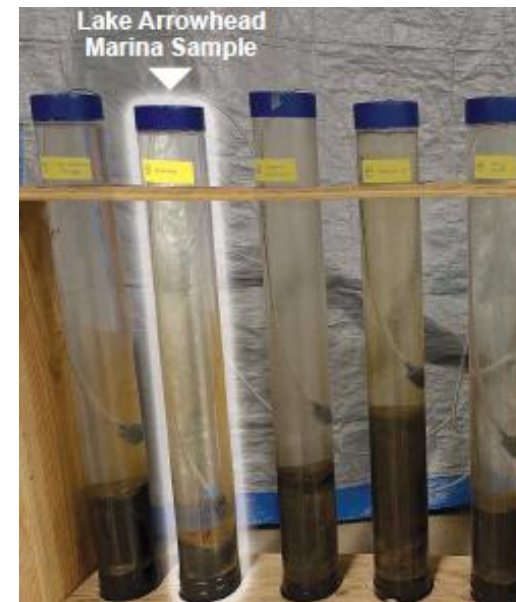
- Marina Surface Area: 2 acres (0.8 ha)
- Lake Surface Area: 300 acres (121 ha)
- Flowing Lake System: 900 acres (364 ha)

Challenges

- Excessive algae and very poor water clarity
- High muck accumulation
- Stagnant area of lake with poor circulation
- Legacy poor water quality issues

Results: 1000 GPM (227 m³/hr) Trailer

- DO levels were 50% higher than control
- Increased depth by 1' (30 cm)
- Water clarity improved by 2-3' (61-91 cm)



Hartbeespoort Dam, South Africa

Success in South African Dam Spurs Community

About the Waterbody

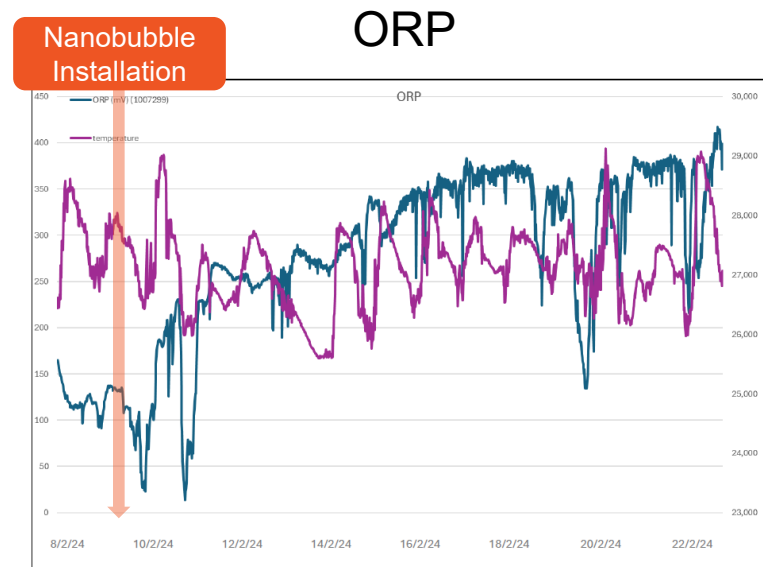
- Surface Area: >2,000 ha
- Max Depth: 30 m (84 ft)
- Average Depth: 9.8 m (65 ft)
- Volume: 192,800,000 m³ (51B gal)
- Ret Time: 6 mo to 1 yr

Challenges

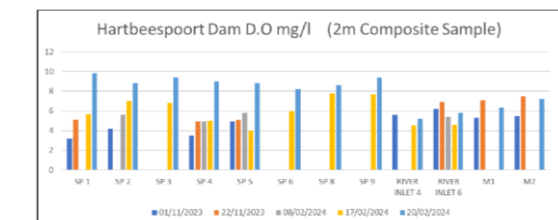
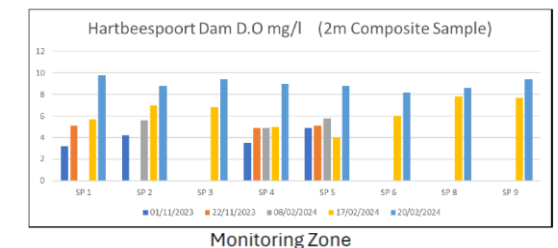
- Poor water clarity and legacy of poor quality
- Excessive algae growth
- Invasive aquatic plant proliferation
- Unable to use recreationally
- Odor issues

Results: 2,400 GPM (550 m³/hr) Trailer

- Nutrient reduction (Ammonium, Orthophosphate)
- COD increase
- Significant bottom muck digestion in treatment zone
- Reduced nutrient flux in treatment zone and outfall
- Improved resilience against incoming nutrient load
- Cyanobacteria, Microcystin & *E. coli* reductions in treatment area & outfall



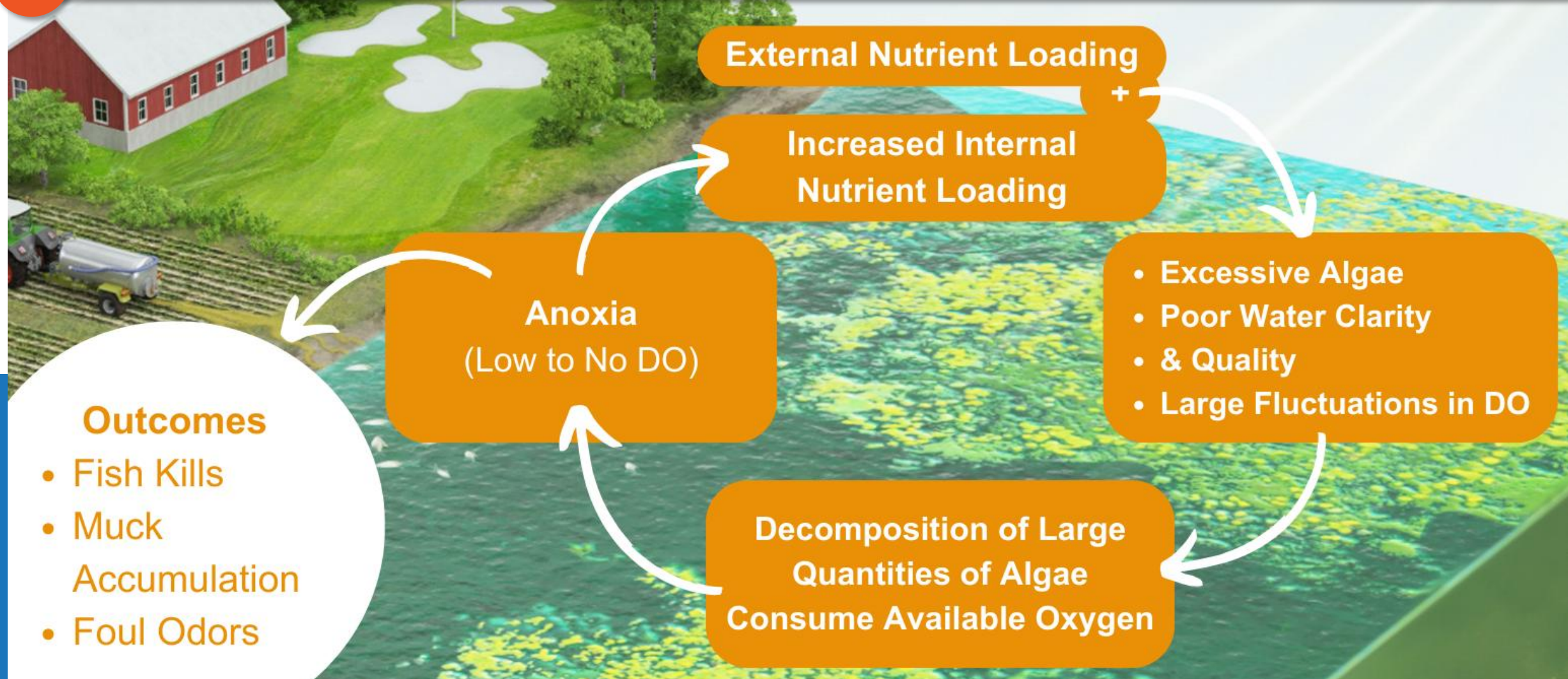
Dissolved Oxygen



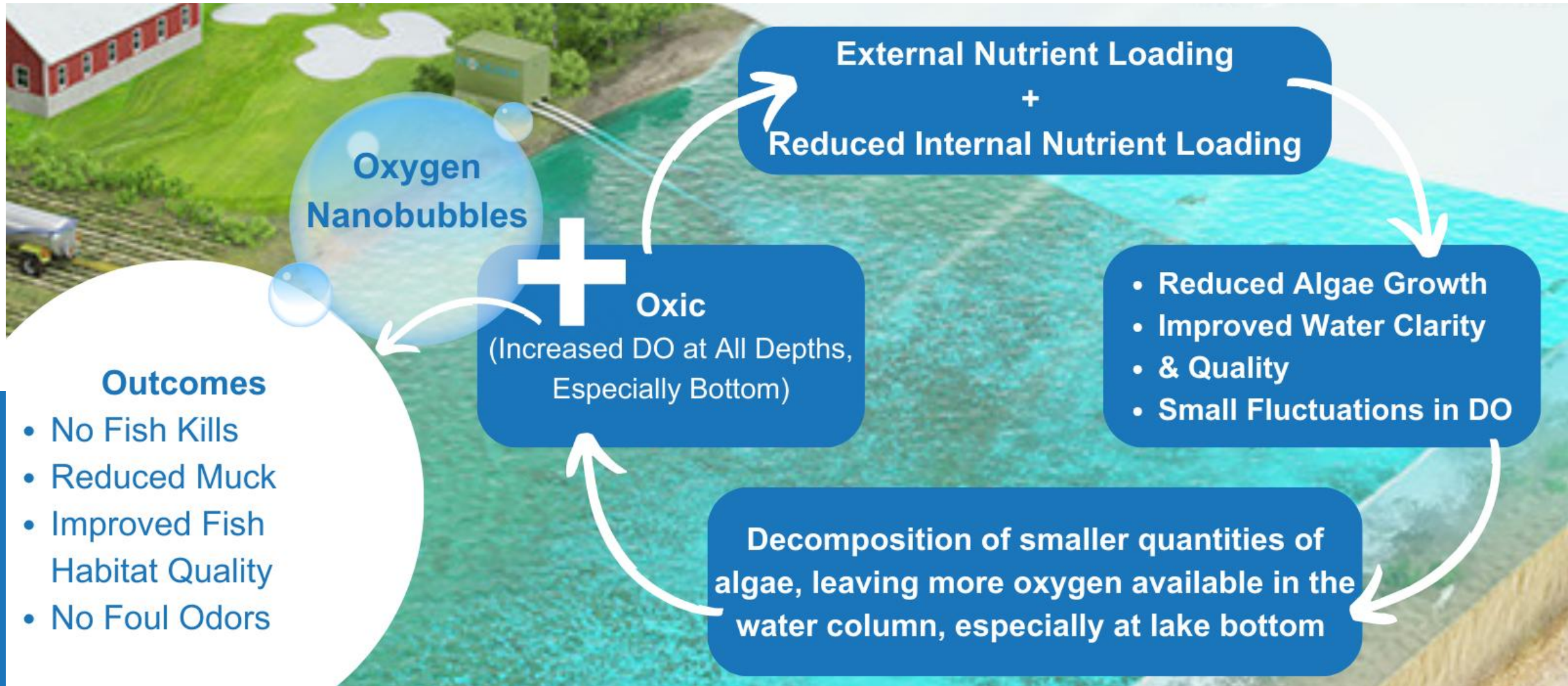
The Problem: Nutrient Loading & Anoxia Fuel Waterbody Impairment



50% of Waterbodies Globally are Impaired, Impacting Communities & Aquatic Ecology



The Solution: Moleaer Nanobubble Treatment Enhances Oxidic Conditions & Increases Resiliency to Restore Waterbodies



Your Waterbody: Lake Virginia, Winter Park, FL

Challenges

- HAB proliferation due to excessive nutrients
- Run off in watershed contributing to external nutrient loading
- Highly flocculant organic sediments
- Declining water clarity

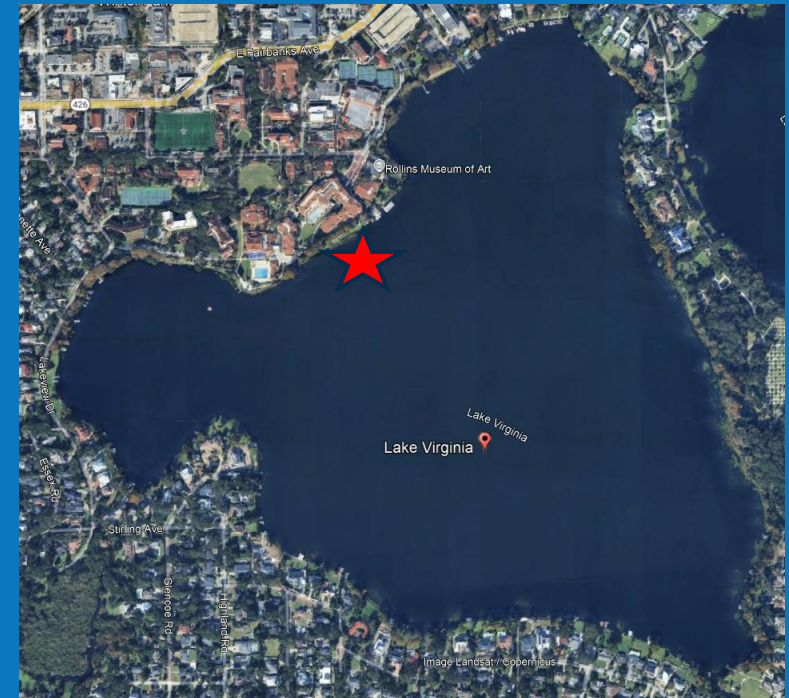
Details

Surface Area: 223 acres

Volume: ~2,555 AF

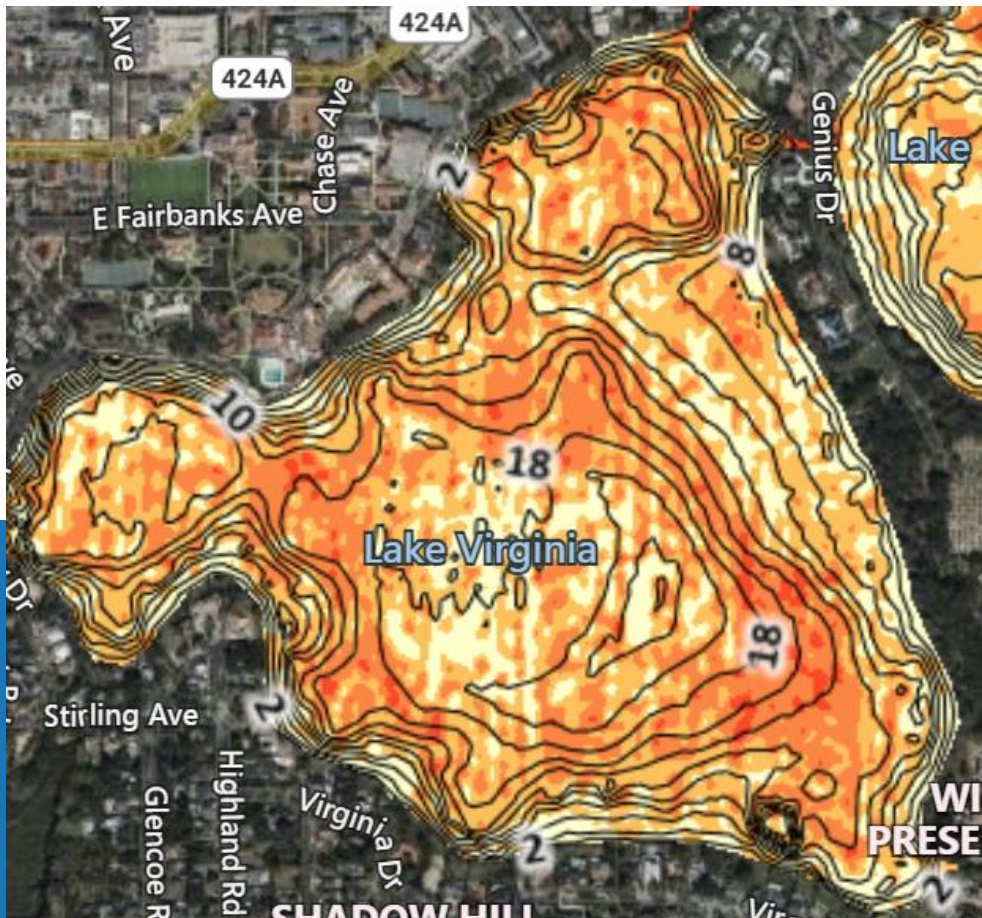
Average Depth: ~ 11 ft

Max Depth: ~23 ft



Your Waterbody: Lake Virginia, Winter Park, FL

Sediment Hardness Map



Bathymetry Map



Image from Genesismaps.com

Your Waterbody: Lake Virginia, Winter Park, FL

Moleaer O2 O3 Treatment Goals

1. Less muck
2. Reduce algae and internal nutrient loading
3. Improve resiliency
4. Reduce bacteria levels

Success Indicators

- ✓ Reduced muck thickness
- ✓ Reduced algae and internal nutrient loading
- ✓ Increased ORP
- ✓ Reduced bacteria levels



Image : April 8, 2025

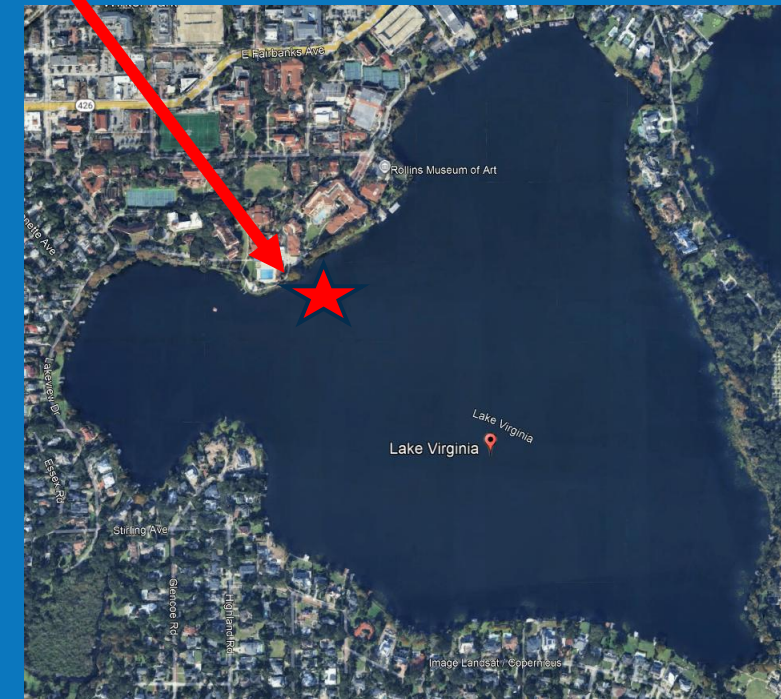
Proposed Installation Location: Lake Virginia, Winter Park, FL

Rollins College

1. Location with likely 3ph 460V power supply
2. Outside of in/out flow
3. Ability to influence large area from single treatment point

Installation details

- ✓ Barge mounted containerized O2 O3 NB System
- ✓ Intake and discharge pipes mounted to barge and do not extend out or interfere with recreational use of waterbody
- ✓ Fast and simple installation and deployment from boat ramp



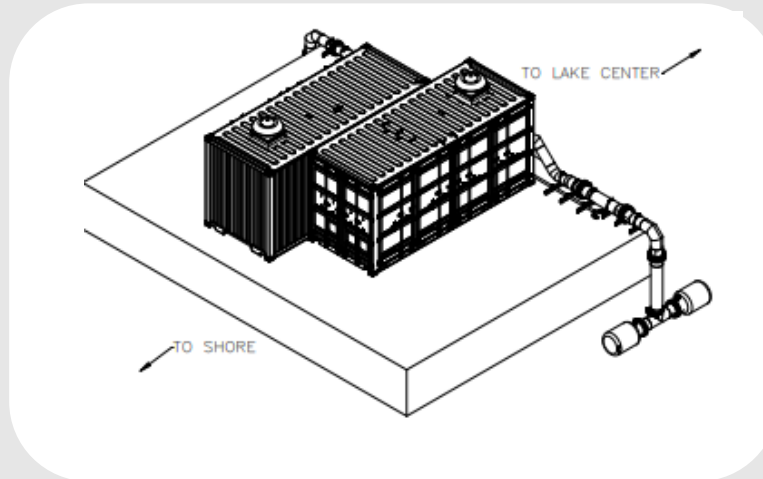
Lake Virginia, Winter Park: Nanobubble System & Installation Location

NB System



- Barge-mounted Moleaer O₂ O₃ nanobubble generator system
- (2) 20' sea containers with HVAC

NB System Specifications



- System capable of up to:
 - 4,500 GPM
 - 108 lbs of O₂/hr
 - 1000g of O₃/hr (*up to 2 mg/L)

*In the process stream. Zero detectable O₃ in waterbody.

Installation Location



- Barge to be located just off shore
- Location is lakeside near McKean Hall

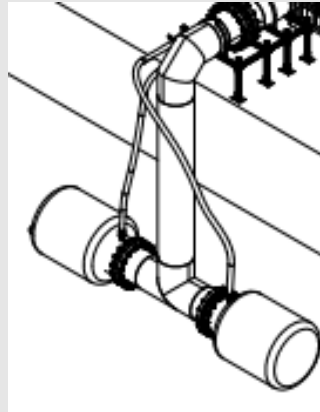
Lake Virginia, Winter Park, FL: Installation Pics

Simple Installation



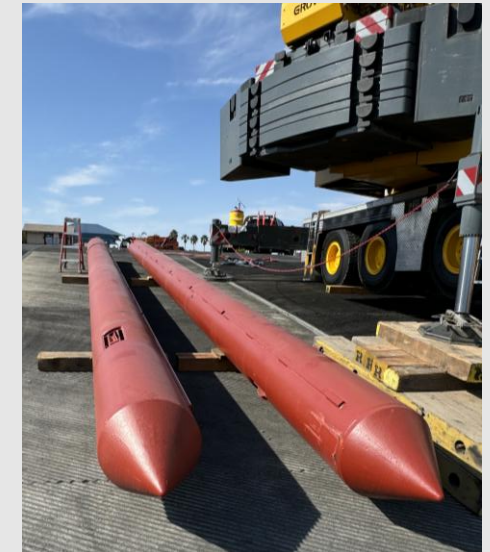
- Crane to be used to offload containers and barge at boat ramp

Intake Screen



- NOAA compliant active intake screen

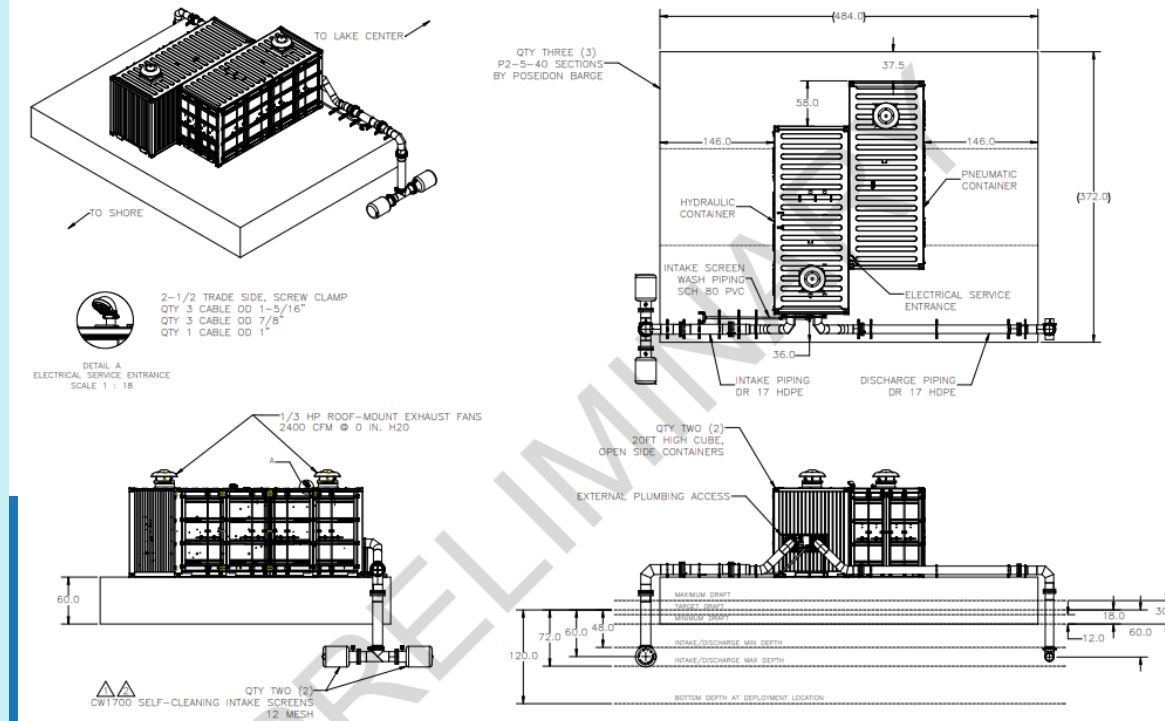
Spud securement



- Spuds keep barge firmly in place, allow for changing water levels and keeps secure in inclement weather

Nanobubble Treatment Strategy: Lake Virginia, Winter Park, FL

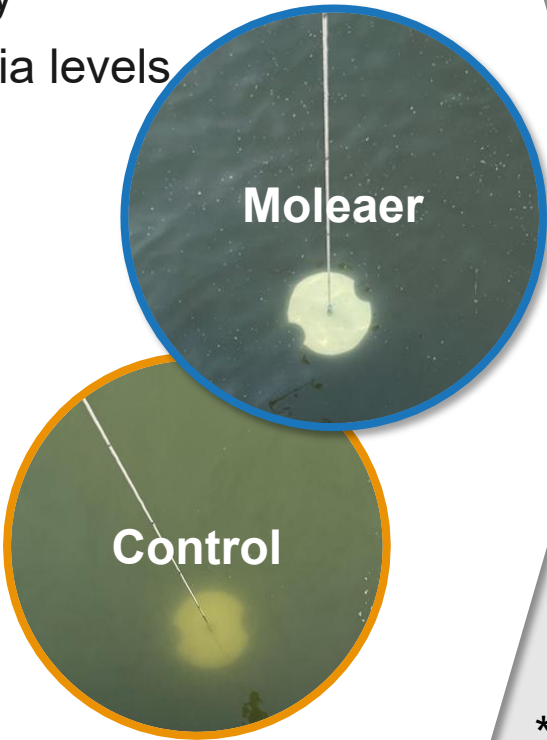
- Utilize O2 O3 nanobubbles to meet and reduce the internal oxygen demand to stop nutrient flux, improve water clarity, balance food web and mitigate harmful algae blooms
- Install barge mounted industrial grade nanobubble system with oxygen concentration and ozone generation system that requires no external consumables, except electricity
- Highly flexible system design to optimize (turn up/down, on/off) to meet changing needs and maximize efficiency
- System is sized to meet the sediment and hypolimnetic oxygen demand and also turn the volume in primary treatment area every days



Goals: What You Can Expect from Moleaer Nanobubble Treatment

Short-Term (Within 1-2 months*)

- Improved DO and ORP levels
- Improved water clarity
- Reduced fecal bacteria levels



After 3-4 months*

Reduction in Blue-Green Algae Loads	Reduction or Elimination of Anoxic Conditions at Sediment Water Interface	Maintained or Increased ORP Values Throughout the Water Column
Reduction of Accumulated Organic Sediment	Notable Reduction in Nuisance Nutrient Release from Sediment	Significantly Reduced Total Coliform Levels

*Subject to site conditions

How We Measure Success: Your Monitoring Plan



Moleaer Staff Taking Water Quality Samples

Customized Monitoring Plans to Track Progress

Up to 30 parameters measured using:

- Real-time water quality sensors
- Vertical profiling
- Depth discrete water and sediment grab samples
- BioBase® Sediment hardness mapping

To track changes in:

- Water and sediment chemistry
- Biology (phytoplankton and zooplankton speciation and enumeration)
- Muck depth and spatial extent

Moleaer Letter of Recommendation

Large Water Body

•City of Lake Elsinore

“In summary, Moleaer’s nanobubble generator has proven to be a game changer for Lake Elsinore, delivering tangible improvements in water quality and overall aesthetics”



April 24, 2024

To Whom It May Concern,

I am writing to share our experience with Moleaer and the remarkable impact their nanobubble generator has had on Lake Elsinore. In November 2023, the City of Lake Elsinore entered into a contract with Moleaer for the installation and servicing of a nanobubble generator system, and I am pleased to report that the outcomes have far exceeded our expectations.

Moleaer delivered the equipment promptly, and the system became operational on February 6, 2024. Since its activation, we have witnessed a transformative change in the quality of our lake water—so much so that it is the clearest it has been in over twenty years. The installation included five water quality sensors, providing our staff with comprehensive monitoring capabilities.

During the initial two months of operation, we observed significant improvements in critical water parameters such as Dissolved Oxygen and Oxidative Reduction Potential, both essential indicators of lake health. Previously, Lake Elsinore had a water visibility of less than two feet; today, our aquatic biologists are reporting visibility over sixteen feet—a remarkable turnaround that underscores the effectiveness of Moleaer's technology.

The success of this project has garnered widespread attention and satisfaction among our residents. Many have taken to social media platforms to express their astonishment at the lake's newfound clarity, with numerous individuals noting that they have never seen Lake Elsinore looking so pristine.

Given these outstanding outcomes, we are currently in discussions with Moleaer to potentially install a second unit later this year. This decision reflects our commitment to sustaining and enhancing the environmental quality of Lake Elsinore for the benefit of our community.

In summary, Moleaer's nanobubble generator has proven to be a game-changer for Lake Elsinore, delivering tangible improvements in water quality and overall aesthetics. We look forward to continuing our partnership with Moleaer and exploring additional opportunities to further enhance the health and beauty of our beloved lake.

If you have any questions or require further information, please do not hesitate to contact Adam Gufarotti, Community Support Manager responsible for overseeing our Lake Management Plan. Adam can be reached at agufarotti@lake-elsinore.org.

Jason Simpson
City Manager
City of Lake Elsinore
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LAKE ELSINORE, CA 92530
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Sustainable, Proven Solution to Solve Your Challenges

Achieve Your Goals...

Problem:

Lake has degraded water quality, specifically:

- Elevated levels of bacteria
- Muck accumulation
- Internal nutrient loading
- Harmful Algae

Goals:

- Reduce fecal bacteria levels
- Less muck and odor
- Reduce HAB events

Solution:

- Oxygen-ozone NB treatment that will:
 - Reduce fecal bacteria levels by elevating oxidation-reduction potential (ORP) of the waterbody
 - Improve water clarity and safety for recreation
 - Oxygenate the sediment-water interface, reducing nutrient levels, muck, odor, and algae growth

...with the Leader in Nanobubble Technology

- ✓ Largest NB installation and customer base
- ✓ Dedicated surface water specialists and team for your project
- ✓ Largest NB R&D and Application Development teams
- ✓ Backed by science through rigorous independent research



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Thank You!
MOLEAER®



Lake Killarney Board

agenda item 7.c

item type

Staff Updates

meeting date

August 5, 2026

prepared by

Victoria Tabor, Administrative Coordinator IV

approved by

Victoria Tabor, Administrative Coordinator IV

subject

Stormwater Management Update

- CIP Update

Follow-up Items:

- Orange County Killarney Dr.
- Major Outfalls Inspection Schedule

motion | recommendation**background****alternatives | other considerations****fiscal impact****attachments**

1. SW Update 8.26 Lake Killarney Board

Stormwater Staff Update

Lake Killarney Board Stormwater CIP – Fiscal Year 2026

CIP Title & Description	Original Year Funded	Current Balance	Status/Comments
Drainage Improvements - Recent years of unusually heavy rainfall events have revealed several substandard drainage conditions in various locations throughout the City.	Annually Funded	\$38,340	Several in-house drainage improvements projects for 2025-26 - Completed - Lake Knowles Cir/ Edgewater Ave Pipe Replacement Ongoing - Stormwater Outfall Dredging as needed, Bennett Ave Inspection
			Upcoming
			Spruce Ave Pipe Replacement
			Shultz Ave Pipe Repair
			Cherokee Ave drainage improvements
			Blossom Ln pipe/ inlet install
Seminole County Ditch Piping (along Arbor Park Dr) – Drainage ditch behind the homes along Arbor Park Drive has a shared drainage basin with Seminole County. Funding is provided for the design and construction to pipe the ditch.	2016	\$532,168	The Interlocal Agreement was approved by the City Commission and by the Seminole County Commission. SJRWMD permit has been received. Updates to plans and bid documents are underway per comments received by Seminole County.
Stirling Bridge Replacement	2024	\$17,243	Final design deliverables are being prepared for an early July 2026 submittal to FDOT.
Palmer Ave at Old England - Drainage Improvements-Phase 1	2025	\$249,500	Replacement outfall at Old England Ave, north of Palmer Ave. Permit received. Work is scheduled for August 2026.
Lake Spier Drainwell	2024	\$85,721	Both wells installed and online. Wetland and upland plantings are scheduled over the next few months.
Fawsett Road CDS Unit	2026	\$550,000	New CDS unit to treat the outfall that discharges to Lake Sue. 60% plans complete.
Curb Implementation	2026	\$68,760	Curb installation at various locations.
Golfside Dr Pipe Replacement	2026	\$600,000	Replace culvert under Golfside Dr to improve drainage upstream. Survey is complete.

Stormwater Staff Update

Lake Killarney Board

- Follow-up items:
 - Orange County Killarney Dr
 - Major Outfall Inspection Schedule



Lake Killarney Board

agenda item 8.a

item type

Board Comments

meeting date

August 5, 2026

prepared by

Victoria Tabor, Administrative Coordinator IV

approved by

Victoria Tabor, Administrative Coordinator IV

subject

Discussion of Public Comments Received

motion | recommendation**background****alternatives | other considerations****fiscal impact****attachments**

None



Lake Killarney Board

agenda item 9.a

item type

Upcoming Agenda Items

meeting date

August 5, 2026

prepared by

Victoria Tabor, Administrative Coordinator IV

approved by

Victoria Tabor, Administrative Coordinator IV

subject

Upcoming Agenda Items

motion | recommendation**background****alternatives | other considerations****fiscal impact****attachments**

None



Lake Killarney Board

agenda item 9.b

item type

Upcoming Agenda Items

meeting date

August 5, 2026

prepared by

Victoria Tabor, Administrative Coordinator IV

approved by

Victoria Tabor, Administrative Coordinator IV

subject

Summary of Meeting Action Items

motion | recommendation**background****alternatives | other considerations****fiscal impact****attachments**

None