


LTC #507-2025

LETTER TO COMMISSION

TO: Honorable Mayor Steven Meiner and Members of the City Commission

FROM: Eric Carpenter, City Manager 

DATE: December 2, 2025

SUBJECT: **Water Quality Sampling Programs and Infrastructure Efforts**

The purpose of this Letter to Commission is to provide an overview of water quality sampling programs and infrastructure efforts to address Resolution No. 2025-33922 adopted by the Mayor and City Commission and sponsored by Commissioner Tanya K. Bhatt on September 17, 2025 (Attachment 1). This memorandum provides an overview of key water quality sampling programs in Miami Beach and broader Miami-Dade County, including the Miami-Dade Department of Health Healthy Beaches Program, Miami-Dade County Surface Water Quality Program, and the Miami Beach Surface Water Quality Program (which expands upon the County program). Additionally, advocacy and citizen science volunteer water quality sampling programs are conducted by Miami Waterkeeper and Surfrider Foundation: Blue Water Task Force.

Biscayne Bay is critical to the environmental, recreational, cultural, and economic well-being of our community. The city has been a leader in ordinance and program development. On January 21, 2021, the city became among the first municipalities to adopt an ordinance to restrict fertilizer use Ordinance No. 2021-4392, acting against nutrient pollution in response to the Biscayne Bay unprecedented fish kill in the summer of 2020. On July 28, 2021, the Mayor and City Commission adopted Water Quality Ordinance No. 2021-4435 to address illicit discharges to the stormwater system and Biscayne Bay. Additionally, the waterway contractor recently began an increased level of service with additional days, removal of most organics such as landscaping debris, and on-demand response for complaints. Information regarding water quality is available by visiting <https://www.mbrisingabove.com/climate-adaptation/biscayne-bay/>

The challenges facing the Bay are complex and regional in nature. The Biscayne Bay Report Card remains the countywide tool for long-term water quality trends and can be accessed by visiting <https://www.miamidade.gov/global/environment/ecosystems/surface-water-quality.page>

Water Quality Sampling Programs Overview

1. Miami-Dade County Department of Health (DOH) Healthy Beaches Program

The Miami-Dade County Department of Health (FDOH) Healthy Beaches Program tests ocean locations along the beach weekly for enterococci, which can indicate the presence of human or animal waste and provides health advisories if levels exceed targets. There are also natural, non-fecal sources of fecal indicator bacteria, including plants, sand, soil and sediments, that contribute to a certain background level in ambient waters and vary based on local environmental and meteorological conditions. The FDOH testing locations are in the vicinity of 1st Street, 21st Street, 53rd Street, and 73rd Street. At the request of the city, FDOH also samples the ocean water in the vicinity of 79th Street beach and at the public boat launch at Maurice Gibb Park on the bay side. When swimming at public beaches, public health officials expect that swimmers will be in the water for extended

periods of time and fully submerged. For this reason, the parameter tested is enterococci and the target is 70 MPN/100mL. The benchmarks were established as part of the Environmental Protection Agency's (EPA) 2012 Recreational Water Quality Criteria. Based on the study, the estimated illness rate is about 36 cases out of 1,000 swimmers (~3.6%) at or under the recommended threshold. As the bacteria levels rise higher than 70 MPN/100mL, the risk increases. Symptoms of illness could be gastrointestinal such as diarrhea, respiratory such as sore throat, and/or skin/ eye/ear irritation or infection such as swimmer's ear. From a public health and safety perspective, the FDOH recommends residents swim in the ocean or pools as opposed to canals and rivers considering potential water quality and debris hazards, wildlife, lack of safe access and lifeguards.

To alert the public, FDOH advises the city when results are exceeded for two sampling days in a row. FDOH issues an advisory notice and the city further shares this information with the community through dedicated newsletters, posting on the city's website, posting signage and advising Ocean Rescue who then fly red double flags and advise beach patrons of the advisory.

Additional information about the Healthy Beaches Program can be accessed through the following website: <https://www.floridahealth.gov/environmental-health/beach-water-quality/county-detail.html?County=Dade&Zip=33126>

2. Miami-Dade County Surface Water Quality Monitoring Program

The Miami-Dade County Surface Water Quality Monitoring Program was established in 1979 and collects data that includes various physical, chemical, and biological water quality parameters. The Department of Environmental Resources Management administers the program which includes Biscayne Bay, rivers, lakes, canals, and coastal waters. The department conducts monthly sampling and analysis of 137 sites that are assessed for pollutants, nutrients, and other contaminants.

It is important to note that although the program tests for enterococci as part of its broader program, the results are not used for "no contact" advisories to the public, but rather long-term data analysis and trends. The Biscayne Bay Report Card is a tool to share annual water quality results in a 'stoplight' red, yellow, green approach. The areas of the Bay adjacent to Miami Beach are rated "good" for enterococci, however areas such as the Northern North Bay on the north side of Bay Harbor Islands to the Broward County line, the Miami River and additional tributaries and canals are scored as "poor" for enterococci.

The indicators most representative of the health of water quality in Biscayne Bay include nutrients such as phosphorus and nitrogen, chlorophyll-a, bacteria, and water clarity (captured as turbidity in data collection). These parameters can serve as indicators of the overall health of Biscayne Bay and its tributaries and can help identify the potential impact of the urbanized watershed on water resources throughout the County.

3. Miami Beach Surface Water Quality Monitoring Program

The Environment and Sustainability Department oversees monthly water quality testing in partnership with the Public Works Department in Biscayne Bay at approximately 43 stations throughout the city's waterways. These sampling locations were added voluntarily by the city as an extension of the larger Miami-Dade County Surface Water Quality Monitoring Program. Consistent with the county's methodology, the samples are analyzed for physical (i.e., temperature), chemical (nutrients) and biological (enterococcus) parameters at a NELAP-certified lab. Similar to the Miami-Dade County program, the results are analyzed

annually to inform the National Pollution Discharge Elimination System permit Annual Report and stormwater management decisions.

4. Emergency Sanitary Sewer Overflow Sampling

In the event of an environmental incident, such as a sanitary sewer spill, the city conducts water quality sampling and issues “no contact with water” advisories. Sampling points are established around the known discharge point, including upstream and downstream locations, to determine the extent of affected waters. When a “no contact with water” advisory is issued, the city will re-test the affected location daily and will lift the advisory once levels test below the respective State recreational water quality standard for two consecutive days.

5. Miami Waterkeeper

The Miami Waterkeeper is a non-profit organization with priorities for clean water, habitat protection, and sea level rise resilience. The organization conducts weekly water quality testing in locations across South Florida and provides results on their Swim Guide app or website. If a site fails to meet water quality standards, the organization will resample the location on either Thursday or Friday and post the results on Swim Guide.

6. Miami Surfrider Foundation: Blue Water Task Force

The Blue Water Task Force Miami is part of the Surfrider Foundation, a grassroots organization that champions ocean and beach preservation. The Miami chapter conducts water quality monitoring for enterococci in various locations. Most of their efforts are focused on volunteers collecting surface water samples adjacent to Miami Beach. The findings are shared with the public through the Swim Guide app. This information is easily accessible to the public; however, sampling and testing is a citizen science effort as opposed to a certified lab or certified sampling effort. Additionally, the program does not utilize the quality assurance protocol of data validation through repeat samples. The data can be useful to complement the city’s analysis for investigations; however, results are variable and higher than results documented through the certified sampling process.

Water Quality Advisories

According to the Florida Department of Health (FDOH), only sampling results processed in labs certified under the National Environmental Laboratory Accreditation Program (NELAP) are used to issue advisories. NELAP is one of 13 Accreditation Bodies in the United States recognized under the Florida Department of Health’s Environmental Laboratory Certification Program. To be certified under NELAP, laboratories are required to demonstrate that they can produce high-quality testing results and sampling protocols in the interest of protecting the health and environment.

Infrastructure Related to Water Quality

Rehabilitation of sanitary and storm sewer infrastructure is critical for water quality in Biscayne Bay, canals and the ocean. The Public Works Department is responsible for evaluating the condition of all sanitary and storm sewer infrastructure and prioritizing its replacement and rehabilitation. Current initiatives include the replacement of sanitary force mains, rehabilitation of manholes, trenchless lining of sanitary sewer gravity lines, and rehabilitation of sanitary pump stations.

Aging gravity sewer lines and manholes can allow groundwater to infiltrate the system and sanitary flow to exfiltrate into the surrounding soil. To mitigate these risks, the department applies continuous impermeable linings to pipes and manholes, effectively sealing the infrastructure. This approach significantly reduces groundwater infiltration, particularly during high tides and the wet season, thereby maintaining system performance within its design capacity and minimizing the risk of sanitary sewer overflows.

Storm sewer system modernization efforts focus on improving water quality prior to discharge into Biscayne Bay. These enhancements incorporate advanced treatment technologies, including proprietary systems like the Downstream Defender, as well as exfiltration trenches and injection wells. Compliance with new regulatory standards has made these improvements mandatory, and they are now integrated into all capital improvement projects.

Investing in our city's infrastructure is vital to maintaining water quality and providing safe, reliable services. Currently, the water/sewer and stormwater funds cannot cover all the improvements the city needs, especially as construction costs have risen significantly in the last five years. Without additional funding, many essential projects will remain unfinished. The most responsible solution is to adopt modest annual rate increases, as recommended in the rate study. These adjustments will ensure we can repay bonds and move forward with the projects that keep our community strong and resilient.

For more information, please contact Amy Knowles, Chief Resilience Officer, at AmyKnowles@miamibeachfl.gov or Lindsey Precht, Deputy Resilience Officer, at lindseyprecht@miamibeachfl.gov.

CC: John Norris, Public Works Director


MH/AK/LP

Attachment 1: Resolution No. 2025-33922

RESOLUTION NO.

2025-33922

A RESOLUTION OF THE MAYOR AND CITY COMMISSION OF THE CITY OF MIAMI BEACH, FLORIDA, DIRECTING THE CITY ADMINISTRATION TO ISSUE A LETTER TO COMMISSION (LTC) AND ENGAGE IN ADDITIONAL OUTREACH TO THE COMMUNITY WITHIN SIXTY (60) DAYS TO ADDRESS WATER QUALITY CONCERNS IN BISCAYNE BAY AND THE ATLANTIC OCEAN WATERS OFF MIAMI BEACH, WHICH LTC SHALL INCLUDE AN OVERVIEW OF CURRENT SAMPLING PROGRAMS AND INFRASTRUCTURE EFFORTS.

WHEREAS, Biscayne Bay and the Atlantic Ocean waters off Miami Beach are vital ecological, recreational, and economic resources for the residents and visitors of the City of Miami Beach; and

WHEREAS, recent concerns regarding water quality in Biscayne Bay and the Atlantic Ocean have prompted increased public interest and demand for transparency, accountability, and action; and

WHEREAS, multiple entities, including Miami-Dade County, the City of Miami Beach in coordination with the Florida Department of Health, and the Surfrider Foundation, are actively engaged in water sampling and monitoring programs to assess the health of these coastal waters; and

WHEREAS, the City is committed to improving water quality through infrastructure planning, capital improvements, and collaborative efforts with regional partners; and

WHEREAS, it is in the public interest to provide a high-level overview of the current water quality status, sampling efforts, and the City's initiatives to address these concerns, and to engage the community in meaningful dialogue and outreach.

NOW, THEREFORE, BE IT DULY RESOLVED BY THE MAYOR AND CITY COMMISSION OF THE CITY OF MIAMI BEACH, FLORIDA, that the Mayor and City Commission hereby direct the City Administration to issue a Letter to Commission (LTC) and engage in additional outreach to the community within sixty (60) days from the adoption of this Resolution to address water quality concerns in Biscayne Bay and the Atlantic Ocean waters off Miami Beach, which LTC shall include an overview of current sampling programs and infrastructure efforts.

PASSED and ADOPTED this 17 day of September, 2025.

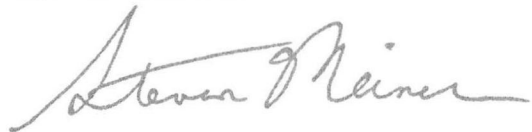
ATTEST:



Rafael E. Granado, City Clerk

(Sponsored by Commissioner Tanya K. Bhatt)


SEP 18 2025



Steven Meiner, Mayor



APPROVED AS TO
FORM & LANGUAGE
& FOR EXECUTION


City Attorney

9/10/2025
Date

MIAMI BEACH

COMMISSION MEMORANDUM

TO: Honorable Mayor and Members of the City Commission

FROM: City Attorney Ricardo J. Dopico

DATE: September 17, 2025

TITLE: A RESOLUTION OF THE MAYOR AND CITY COMMISSION OF THE CITY OF MIAMI BEACH, FLORIDA, DIRECTING THE CITY ADMINISTRATION TO ISSUE A LETTER TO COMMISSION (L TC) AND ENGAGE IN ADDITIONAL OUTREACH TO THE COMMUNITY WITHIN SIXTY (60) DAYS TO ADDRESS WATER QUALITY CONCERNS IN BISCAYNE BAY AND THE ATLANTIC OCEAN WATERS OFF MIAMI BEACH, WHICH L TC SHALL INCLUDE AN OVERVIEW OF CURRENT SAMPLING PROGRAMS AND INFRASTRUCTURE EFFORTS.

RECOMMENDATION

BACKGROUND/HISTORY

ANALYSIS

The attached Resolution was prepared at the request of the sponsor, Commissioner Tanya K. Bhatt.

FISCAL IMPACT STATEMENT

N/A

Does this Ordinance require a Business Impact Estimate?

(FOR ORDINANCES ONLY)

If applicable, the Business Impact Estimate (BIE) was published on:

See BIE at: <https://www.miamibeachfl.gov/city-hall/city-clerk/meeting-notices/>

FINANCIAL INFORMATION

CONCLUSION

Applicable Area

Citywide

**Is this a "Residents Right to Know" item,
pursuant to City Code Section 2-17?**

No

**Is this item related to a G.O. Bond
Project?**

No

**Was this Agenda Item initially requested by a lobbyist which, as defined in Code Sec. 2-481,
includes a principal engaged in lobbying?** No

If so, specify the name of lobbyist(s) and principal(s):

Department

City Attorney

Sponsor(s)

Commissioner Tanya K. Bhatt

Co-sponsor(s)

Condensed Title

Issue LTC - Overview of Water Quality Sampling Programs and Infrastructure Efforts. (Bhatt)
CA

Previous Action (For City Clerk Use Only)