

LTC #513-2025

LETTER TO COMMISSION

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

FROM: Eric Carpenter, City Manager 

DATE: December 5, 2025

SUBJECT: **UPDATE ON THE IMPLEMENTATION OF "OPERATION CLEAN WATER" PROGRAM - #12**

The purpose of this Letter to Commission (LTC) is to provide the Mayor and City Commission an update on "Operation Clean Water," adopted on March 19, 2025, by Resolution No. 2025-33559.

At the July 10, 2025 meeting of the Land Use and Sustainability Committee (LUSC), City staff provided an update on the North Beach Water Quality and Park View Canal Report. The discussion concluded with a motion, directing the Administration to provide weekly updates on the "Operation Clean Water" efforts at the Park View Canal, with a focus on Biscayne Beach Elementary hotspots, associated lateral pipe-lining, above-ground cleanliness (alleyways, street sweeping, pressure washing), and homeless outreach. The Stormwater Influence Index was created to provide data on sources of water contamination entering the City's sewers within a designated area. Assessments were conducted on 70 blocks in the North Beach area between June 1, 2025, through August 31, 2025. These assessments resulted in 2,392 block assessments with each block assessed approximately 30 times. Findings include the following:

- 84% of street assessments indicated litter visible
- 72% of sidewalk assessments indicated litter visible
- 17% of alley assessment indicated litter/trash and/or illegal dumping visible
- 6% of alley assessments indicated unkept infrastructure
- 56% of shoreline assessments indicated litter/trash visible
- 10% of private infrastructure assessment indicated private drain leading to street

At the September 11, 2025 LUSC meeting, the Environmental and Sustainability and Public Works Departments presented an update on "Operation Clean Water", which continues to be a significant priority for the City. At the meeting, LUSC members made a motion to move the item to the City Commission for discussion, with a favorable recommendation to: 1) Authorize an independent, third-party review of the Sanitary Sewer Pump Station 23; 2) Expand the monthly water quality study to authorize and fund weekly water testing in Park View Canal; 3) Expedite the comprehensive infrastructure study for North Beach; and to maintain Park View Canal as a standing item on the Committee's agenda for regular updates.

At the September 17, 2025 meeting, City Commission members were presented with the LUSC recommendation. The discussion concluded with a motion to move forward with the independent third-party consultant; authorize funding for the weekly water testing; expedite a comprehensive infrastructure study in North Beach; move forward with the proposed implementation of nanobubbles; and continue working with the dredging of the canal.

Biscayne Beach Elementary (No Update)

The pipe-lining contractor, Vortex Infrastructure Services, LLC (Vortex), mobilized at Biscayne Beach Elementary on August 8, 2025, and began with the cleaning of lateral lines and performing closed-circuit television (CCTV) inspections through existing access points. The cleaning process removed debris, tuberculation, and rust to improve inspection accuracy, facilitate point repairs, and prepare the lines for subsequent lining.

Vortex's revised scope of work included completing at least 5 point-repairs, replacing deteriorated cleanouts, and installing additional cleanouts as needed to provide proper access for lining at a minimum of twelve locations. As new lateral lines were identified, additional cleanouts were installed to ensure adequate system access. To minimize disruption to the school's operations, Vortex transitioned its lateral line activities to nighttime hours beginning August 14, 2025.

Since work began, the City has actively coordinated with the Miami-Dade County School Board and Biscayne Beach Elementary representatives to share project updates, address challenges, and review the anticipated completion schedule. Weekly coordination meetings were established to report progress, to identify newly discovered lateral lines, and to gain consensus on any proposed additions to the scope of work.

The project experienced delays due to the inaccurate as-built plans originally provided, which failed to show the correct locations of the school's lateral lines. This significantly extended the initial CCTV exploration, cleaning, and point-repair phase. That phase, along with the installation of clean-outs, was completed on August 31, 2025.

Lining of the additional lateral pipes began on August 29, 2025, and continued over the next three consecutive weekends. Because newly lined pipes produce a distinctive off-gassing during the curing process, this work was limited to weekends when the campus was unoccupied, ensuring that odors fully dissipated before classes resumed.

At this point, Vortex's full scope of work at Biscayne Beach Elementary has been completed. The completed work includes: 1,320 LF of pipe cleaned, approximately 1100 LF of piping lined, 12 cleanouts installed and/or replaced, and 5 point-repairs performed due to collapsed pipes, rebar obstruction, and cleanout complications. Additionally, the cleanout 1B (CO1B) in the School's courtyard was plugged off.

The attached *updated* maps, 'EXHIBIT – A' provides a graphical depiction of the scope of work completed.

In addition to the CCTV inspection, point repairs, and lateral pipe-lining efforts on the Biscayne Beach Elementary property, over the last several years the City has performed extensive sanitary sewer assessments and rehabilitation activities on Park View Island and the Park View Extended area, see attached 'EXHIBIT – B' for additional details.

Force Main Break at Biscayne Beach Elementary, October 4, 2025 (No Update)

On Saturday, October 4, 2025, at 2:13 PM, a sewer force main break was reported by a stakeholder on the grounds of Biscayne Beach Elementary. Public Works Operations staff promptly responded to the site and successfully bypassed the flows, stopping the overflow by 4:30 PM. Repairs were conducted between 4:30 PM and 10:30 PM. By 10:30 PM, normal pumping operations were restored at the sewer station, and the pipe was placed back into service. MDC-DEEM and FDEP were notified the same day, in accordance with County and State Code and City reporting protocols. The rupture resulted in sewage being released onto the school grounds and into the Tatum Waterway near Park View Canal, which has been under a "no contact" advisory due to high bacteria levels. The replacement of the sewer force main, which is included in the City of Miami Beach Master Plan, is pending necessary funding.

On Sunday, October 5, 2025, Operations staff returned to the site to thoroughly clean and disinfect the area. All affected stormwater systems were cleaned and disinfected. Sodding and court restoration will commence now that a proposal has been received from Everglades Environmental Care. Sampling activities began on Sunday, October 5, 2025, and continued until two consecutive samples were received within appropriate parameters in coordination with the local regulatory authorities. Sampling took place daily by the Environment and Sustainability Department and the "No Contact with Water" advisory for the waters adjacent to 77 Street and the Tatum Waterway was lifted on October 16, 2025.

The sewer force main near the Park View Canal, which was installed in 1981, was initially projected to have a useful life of approximately 50 years, taking into account the corrosive environment typical of tidal-influenced communities. According to the City's Master Plan, it was scheduled for replacement by 2031. However, the Public Works Director has since deemed it a Departmental emergency, prompting the reprioritization of its replacement as an emergency project with a projected timeframe of 8-12 months.

On Friday, October 17, 2025, Engineering and Operations staff conducted a pre-bid meeting with drilling contractors who are already mobilized on the beach. The meeting aimed to go over the scope of work required for a design-build of an emergency 20-inch horizontal directional drill (HDD). The project will be procured as an emergency design-build.

The in-kind replacement of the existing 16-inch sanitary sewer force main, which runs approximately 2,900 linear feet from sanitary sewer pump station #24 South to sanitary sewer pump station #23, is a critical needs project. This replacement is vital, as it will help mitigate any potential future sanitary sewer overflows (SSO) in the already environmentally sensitive area.

Ultraviolet Sanitization Pilot Project (No Update)

The formal agreement between the City of Miami Beach and the University of Miami (UM) for the Ultraviolet Sanitization Pilot Project for street cleaning has been reviewed and executed by the City Manager's Office, and the University of Miami as of August 26, 2025. The purchase order was issued on August 28, 2025, and an onsite preparation meeting was held on September 5, 2025. Further coordination is taking place to schedule the three separate days for the study to take place.

One of the primary recommendations of the report was to focus on "cleaning" street surfaces, as best as possible, to reduce levels of enterococci entering the stormwater system. Recommendations include increasing the frequency of street sweeping, augmenting street sweeping by removing visible debris and fecal deposits manually, and the possible use of ultraviolet (UV) light to disinfect street surfaces. UV light is a known disinfection technology which is environmentally friendly, in that it does not impart a chemical residual.

The scope of the pilot project includes 73rd Street, which was documented as a "hot spot." This location was also chosen because it is a uniform, two-lane street with a median which can facilitate experimental and traffic logistics, and it is an area where both University of Miami studies demonstrated elevated levels of enterococci. The street can be partitioned into three segments to evaluate six conditions (one set of three for streets, and another set of three for sidewalks), and the conditions to be tested are: no cleaning, sweeping (industrial for streets and manual for sidewalks), and sweeping plus UV. These conditions are being tested three times, once at each segment, to assess whether the UV treated segments show a significant improvement over non-UV treated segments. One segment took place on September 19, another on September 26, and the final took place on October 17, 2025. Results will be compiled and disclosed after the completion of the assessment, around February 2026.

Nanobubble Technology

Nanobubble technology was identified and reviewed by Environment and Sustainability, Public Works, and the City Manager's Office as a viable technology for Park View Canal. Nanobubbles are tiny bubbles, less than 200 nanometers in size. Unlike regular bubbles that quickly rise and pop due to buoyancy, nanobubbles can stay suspended in water for a longer period of time thanks to their small size and random motion. These bubbles can be naturally created in places like waterfalls or artificially produced using special generators.

Nanobubbles are beneficial because they dissolve gases, like oxygen, more effectively in water, which helps accelerate various physical, chemical, and biological processes. They also adhere to materials in the water, causing them to clump together, which can prevent the buildup of biofilm and scale. These processes also help clean the water by promoting the breakdown of microbial contaminants, reducing harmful pathogens, algal growth, and bad odors, ultimately improving overall water quality. The technology has been used in the State of Florida and globally, however it has not been used yet in Miami-Dade County.

Additionally, a pre-application meeting was held with the County regulatory staff to confirm that the technology could be permitted. An on-site meeting was held and the small containment unit/station for the technology can be stored securely within the Public Works facility adjacent to the canal. There are no expected impacts to the environmental resources of the Park View Canal or disruptions to the park.

At the request of the City Commission at the September 17, 2025 meeting and subsequent approval at the September 30, 2025 Budget Hearing, nanobubble technology was discussed and the Environment and Sustainability Department will negotiate an agreement for the planning of the nanobubbles project within the Architecture and Engineering pool. The estimate for the design and permitting phase is less than \$250,000, which was allocated in the FY26 budget. Direction was given to the selected consultants, TY Lin, to provide a proposal for an initial short-term project to test how the technology works within the Park View Canal setting and to evaluate the impact of the technology. TY Lin provided a draft proposal on October 24, 2025 which was thoroughly evaluated by the Environment and Sustainability and Procurement Departments. Comments were provided back to the consultant for edits with a requested deadline to return a revised proposal to the City by November 18, 2025. The proposal was received and is currently being reviewed by City staff. Once fully reviewed and approved, it is anticipated that a change order can be issued to the original dredging purchase order by early December to begin the design and permitting process for nanobubbles technology.

Weekly Water Quality Testing

At the September 17, 2025 City Commission meeting, a motion was passed to move forward with and authorize funding for weekly water testing at up to five locations within Park View Canal. At the September 30, 2025 City Commission Budget Meeting, \$21,000 was approved and added to the Public Works' Stormwater budget for FY26 to fund the sampling effort. The Environment and Sustainability and Public Works Departments obtained a proposal and executed a Purchase Order for the Miami-Dade County sampling contractor, Eurofins Environment Testing, on November 14, 2025 and the weekly sampling is scheduled to begin on Thursday, November 20, 2025. Eurofins Environment Testing is a certified laboratory utilized by the Miami-Dade County Surface Water Quality Monitoring Program for water quality sampling. The sampling map was developed by the Environment and Sustainability Department drawing on known hotspot locations, publicly accessible shorelines, and input from Dr. Helena Solo-Gabriele, Associate Dean, University of Miami College of Engineering. There may be an opportunity to adjust sampling points at a later date to include sampling for additional areas and to collect unique data points.

Stormwater Management (No Update)

The Miami-Dade County Environmental Resources Management (DERM), which has approved the responses submitted to their last Request For Information (RFI), issued the Class II permit for the seven Downstream Defender hydrodynamic separator/water quality structures on Friday August 1, 2025, allowing the City to move forward with the final design and the procurement process. Construction is scheduled to commence in the first quarter of 2026.

Routine maintenance efforts remain ongoing. Stormwater structures from 72nd to 77th Streets, between Dickens Avenue and Collins Avenue, have been cleaned twice since March 2025, a third cleaning was completed during the week of July 28, 2025, and two additional cleanings are scheduled to occur before the end of the 2025 calendar year.

The Public Works and Communications Departments are working together to display messaging on the side of waste collection trucks around the City. Details are being coordinated for this effort, but below are two mock-ups to see how the designs will look on the trucks:



Sanitation (No Update)

The Sanitation Division continues to provide:

- Hand-sweeping crews and mechanical sweeping are conducted three times per week in the Park View area (Monday, Wednesday, and Friday). The Multihog machine operates on alternating days (Tuesday, Thursday, and Saturday), focusing on alleyways between 73rd and 76th Streets.
- There are eleven (11) doggie-bag dispensers installed in the area of Park View Island, they are refilled twice a week, and the associated waste is collected daily (seven days a week).
- Service frequency in Crab Alley has increased from twice to three times per week. Crews have been equipped with extended-reach pick sticks (up to 6 feet) to improve access within the mangroves.
- New, once a week service is being provided to the mangroves located between 72nd and 73rd Street on the west side.
- An additional litter cans have been placed at 75th Street and Dickens Avenue street end.
- Waste haulers, Waste Management and Waste Connections were asked to check all the garbage cans in the alleys from 73rd to 76th Street to make sure that all cans had plugs and lids that were functioning properly, have completed their work.

Homeless Services Engagements

Below is a summary of the Housing & Community Services Department's activities in the Park View area from November 14 to November 19, 2025:

Parkview Homeless Services Engagements:		
11/14/2025	Homeless Outreach Services Team visit at 9:26 AM. (1) persons engaged. Refused services.	New Hope visit at 12:30 AM. No persons found.
11/15/2025	Homeless Outreach Services Team visit at 2:20 PM. (1) persons engaged. Refused services.	New Hope visit at 10:15 PM. No persons found.
11/16/2025	Homeless Outreach Services Team visit at 10:35 AM. (1) persons engaged. Refused services.	New Hope visit at 12:00 AM. No persons found.
11/17/2025	Homeless Outreach Services Team visit at 10:30 AM. No person(s) found.	New Hope visit at 1:00 AM. No persons found.
11/18/2025		New Hope visit at 12:00 AM. No persons found.
11/19/2025	Homeless Outreach Services Team visit at 10:05 AM. No person(s) found.	

Code Compliance

To support "Operation Clean Water," Code Compliance has conducted weekly walk-throughs in the North Beach watershed area, completing 850 inspections. These inspections check for sanitation issues such as illegal dumping, overflowing dumpsters, and trash in the alleys. These efforts resulted in 206 written violations for the creation of a health hazard/nuisance. The data below is from the timeframe of March 19 to November 18, 2025.

Violations	Count
City Code Violation	6
Environmental - Illicit Discharge	1
Environmental - Illicit Discharge	3
Environmental - Sediment Requirements	1
Gas-Powered Leaf Blowers	1
Property Maintenance Violation	9
Deteriorated Rain Gutter	1
Rain Gutter (Stagnant Water)	1
Stagnant Water	5
Trash	1
Tree Debris	1
Sanitation Violation	191
Construction and Demolition Debris Permit	1
Deteriorated Dumpster	1
Dumpster on Row	3
Garbage/Trash Alley	2
Illegal Dumping/Disposal	132
Illicit Discharge	2
Illicit Discharge(Raw Sewage)	2
No Garbage Container Permit	1
No Garbage Service	1
Overflowing Dumpster	41
Overflowing Dumpster / Illegal Dumping Alley	3
Refrigerator on ROW	2
Grand Total	206

Pursuing Dredging to Increase Flow/ Flushing (No Update)

Since Park View Canal is an angled and narrow canal within the Tatum Waterway, natural flushing to dilute pollutants associated with urban stormwater runoff is limited. Dredging of the canal is a potential option to increase flushing of the waterway. Bathymetric and geotechnical surveys and flushing analysis are completed. These analyses are necessary to understand the efficacy of potential dredging of the canal. The results of these evaluations are being carefully reviewed for desired water quality outcomes. The dredging project was reiterated as a City Commission priority during the September 30, 2025, Budget Hearing and will move forward in the design and permitting process concurrently with the nanobubble technology. The construction phase project mobilization is recommended to follow the hydrodynamic separator installation to reduce sediment inputs into the canal following dredging.

Sanitary Pump Station #23 Assessment Study

The Sanitary Pump Station #23 Assessment will be conducted by CHA, which is one of the City's consultants for Water and Sewer related work. The project is currently in Procurement and is awaiting approval to be released into requisition. The assessment of Sanitary Pump Station #23 will take place over the course of 90 days and will include the following tasks: Data Collection, Field Investigations, Site Analysis, and Adjacent Infrastructure Analysis. The Data Collection task will focus on gathering baseline information and understanding infrastructure and operational history before any field investigations occur. The Field Investigation task will focus on inspecting the pump station's wet well, valve vault, force main connections, and mechanical and structural components, and evaluate their condition. The Site Analysis task will synthesize all of the

information gathered in the previous task and identify the most probable factors contributing to recurring bacteria exceedances and develop a foundation for targeted recommendations and corrective measures. The Adjacent Infrastructure Analysis task will focus on reviewing any infrastructure around the vicinity of Park View Canal to develop and assess any potential pathways to pollutant migration and establish a technical basis for identifying corrective measures and targeted improvements to protect water quality within the Park View Canal.

For more information, contact Rodney Knowles, Assistant Public Works Director at RodneyKnowles@miamibeachfl.gov.



DM/JN/RK

EXHIBIT - A



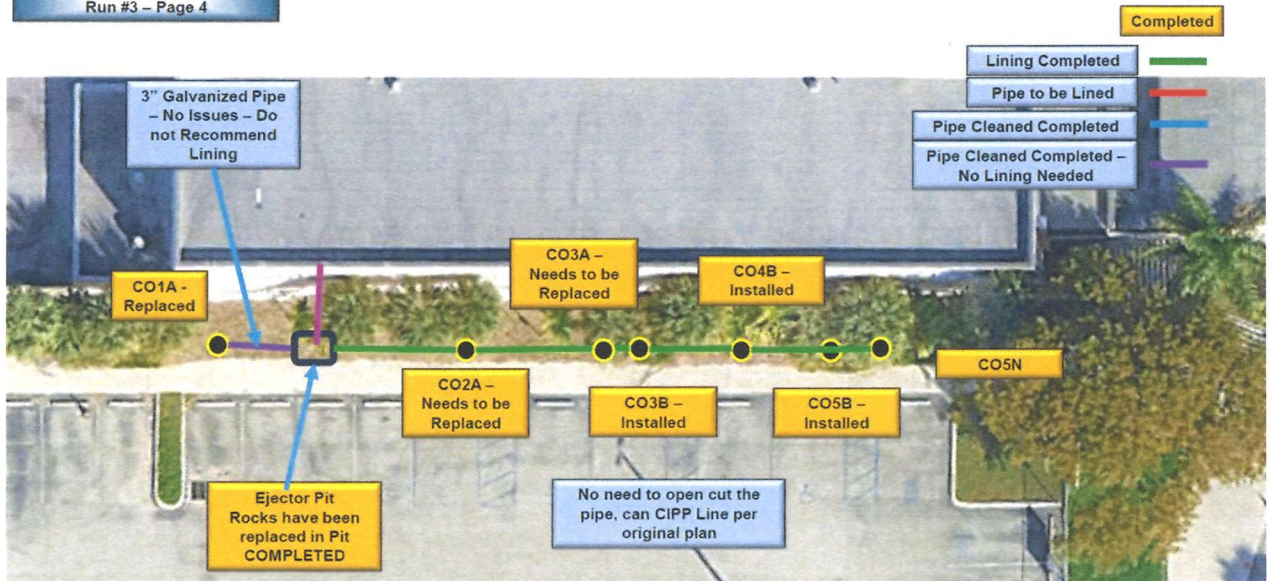
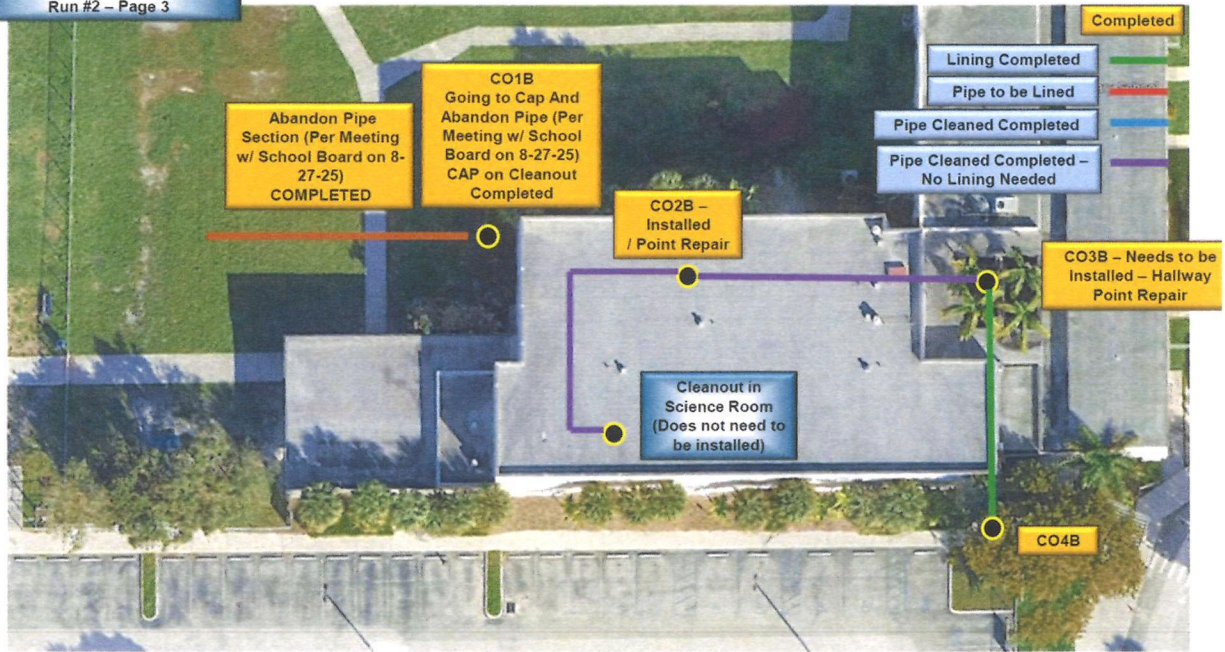


EXHIBIT - B

Sanitary Sewer Assessment and Rehabilitation Summary (No Update)

The Public Works Department has had a proactive, nonstop, find-and-fix approach to performing its sanitary sewer assessment and rehabilitation efforts. The work has been a joint effort between the Public Works Operations Division's in-house staff and contractors. Below is a summary of the work completed thus far in the Park View Island and Park View extended areas:

City Wide Smoke Test and Manhole Assessment (2021): Smoke Test and Manhole Inspection was performed on the gravity sewer system Citywide by a contractor first half of 2021. Smoke tests detect private and public defects on sewer laterals as well as any illegal connection of private drainage systems to public sanitary sewer systems. All public defects were rehabilitated by Operations within a month of discovery. Private defects were reported to Miami-Dade Department of Environmental Resource Management (DERM) per Chapter 24 County Code for enforcement.

Clean and Video Inspection (CCTV) of all Sewer Gravity Pipe in Park View Island and Park View extended area (July 2021): A contractor was hired to do a complete video inspection of 100% of all gravity sewer mains in Park View Island and Park View extended area on public property. CCTV of the inside of the gravity pipe is done to understand the condition of the pipe and to put together the scope of work for the needed type of rehabilitation.

Force main Air Release Valve (ARV) Replacement Program by Public Works Operations (February 2023): On February 2023 Operations completed the force main ARV Replacement Project for the force mains associated with Sewer Pump Station #23 and Sewer Pump Station #24. These two force mains are in the area of Park View extended area. A total of sixteen (16) ARVs were replaced or rehabilitated.

Leak Detection Dye Test on Transmission System by Operations and Engineering (1st Qtr. 2023): Dye was introduced into the wet wells of Sewer Pump Station #23 and Sewer Pump Station #24 to test the integrity of the transmission system (pressurized pipe). Several staff members from Public Works' Operations and Engineering teams were positioned in various locations at canal outfalls, stormwater manholes, and on a boat in Park View Canal for approximately 2 to 3 hours. No dye was observed in the canal nor in the stormwater system.

Gravity Sewer Lining and Manhole Rehabilitation of Park View Island (1st Qtr. 2023): Approximately 98% of sewer laterals were lined and 95% of manholes were rehabilitated in Park View. Suspect laterals were also inspected using CCTV and were found to be in good condition on the public property. Lining and rehabilitation of sewer and manholes extends the life of the infrastructure and stops leaks in or out of the structure.

Gravity Sewer Lining and Manhole Rehabilitation of Park View Extended Area (4th Qtr. 2024): Approximately 98% of the sewer gravity lines from 72nd Street north to 76th Street, and Dickens Avenue to Ocean Terrace were inspected using CCTV and lined in order to extend the infrastructure's lifespan and to stop any observed leaks. The manholes were rehabilitated as needed in the area.

Complete Rehabilitation of Sewer Pump Station #23 on 75th Street (1st Qtr. 2023): Complete rehabilitation of the sewer pump station, including the replacement of two existing pumps and motors, and replacing 20 linear feet of piping, two check valves, and two plug valves. Pump station wet well rehabilitation was done as part of the Citywide well rehabilitation project.

City Wide Pump Station Wet Well Rehabilitation (Completed August 2025): Rehabilitation and lining of seventeen (17) sewer pump station wet wells Citywide. The remaining six (6) wet wells will be rehabilitated as part of future Public Works projects. A wet well collects all sanitary flow from the contributing basin to be pumped via force main to the Miami-Dade Central Wastewater Treatment Plant. Rehabilitation and lining extends the lifespan of the wet well and seals any existing leaks.

CCTV of Laterals on Public Property at 75th Street and Dickens Avenue Intersection by Public Works Operations (03/16/2024): Operations conducted a CCTV assessment of the lateral pipes in the public right-of-way, located at the intersection of 75th Street and Dickens Avenue, including only the portion of the lateral coming from Biscayne Beach Elementary on 75th Street that lies within the right-of-way. The public right-of-way laterals on Dickens Avenue and 75th Street intersection were found to be in good condition.

Force Main Leak Detection (City Wide) Performed by Contractor (09/2024): A Citywide leak detection test was performed by a contractor on the sanitary sewer transmission system in early September 2024. The leak detection test revealed no leaks.

CCTV of Private Biscayne Beach Elementary up to and including the ROW by Public Works Operations (04/26/2025): The School's as-built records from the 1990's were shared with the City in 2024. The records showed one existing lateral line extending from the school to the public manhole at 75th Street. Public Works Operations performed a CCTV inspection of the private lateral pipe from visible cleanouts or access points on the school's property. The CCTV inspections on the private laterals identified several deficiencies, and at one point, the CCTV inspection was abandoned due to buckling/pipe belly-and-sag due to severe corrosion and heavy sediment buildup inside of the private sewer pipe. Operations marked the approximate location of the private lateral based on the CCTV inspection performed that day, and uploaded the survey information to the City's GIS system. The school also conducted their own independent CCTV inspection of the lateral the same day (04/26/2025), alongside Operations.

Dye Test on Biscayne Elementary Lateral (05/05/2025) by Operations: Dye testing was performed by introduced dye into cleanouts (access points within the lateral lines,) and at the school's toilet in an attempt to locate any leaks into stormwater system. Even though the test was performed at the lowest tide (10:00 AM) that day, the school's private stormwater system remained full, therefore, the dye test was inconclusive.

Visual Inspection of Stormwater Conflict Structure that houses City force main (05/16/2025 & 05/17/2025) by Operations: On 05/16/2025, the Operations team conducted a visual inspection of the conflict manhole at low tide (11:20 AM) and at high tide (5:20 PM) to determine the integrity of the force main. Operations returned the next day (5/17/2025) to clean the force main at the conflict structure. The force main was found to be in good condition with no leaks. Both the duplex Sewer Pump Station #23 and #24 were turned on by hand at the time of the observation. No leaks were detected on the force main.