



LAUDERTRAC

WATERWAY QUALITY UPDATE

Tracking Progress on Fort Lauderdale Commission Priorities for 2021




Commission Conference Presentation

January 5, 2022

Public Works Department

1





LAUDERTRAC

WATERWAY QUALITY UPDATE FORT LAUDERDALE

Tracking Progress on Commission Priorities for 2020

December 2020

IMPROVING OUR WATERWAYS



Protecting Waterways from Pollutants

The City of Fort Lauderdale has taken great strides to improve our waterways and protect and preserve our natural environment. One of our primary goals is to prevent pollution and algal blooms through education and enforcement. The City participates in the National Pollutant Discharge Elimination System (NPDES) permit program and operates an aggressive erosion and sediment control program. Some of the actions taken include regular inspections of construction sites for compliance with erosion and sediment control best management practices and prohibiting the use of fertilizer from June 1st to September 30th each year. Neighbors are also educated to never dispose of or blow trash, litter, yard, or lawn clippings in streets, storm drains, or waterways to prevent nutrients that feed the algal blooms from entering waterways. In addition, the City is reviewing a pilot study plan for algae prevention that will help find innovative ways to keep our waterways clean.

Stormwater Improvements

The City of Fort Lauderdale is implementing a stormwater management program through the stormwater master planning effort to address chronic flooding and other stormwater management issues including water quality. Over the past year, the City's Stormwater Operations team took proactive steps to keep our waterways clean by reducing nonpoint-source (NPS) pollution from stormwater runoff. Catch basin cleaning and street sweeping prevented more than 1,000 tons of debris from entering our waterways. Over 30 tons of water were collected from our waterways and disposed of properly through the City's canal cleaning program. Furthermore, a new initiative was implemented to install 57 "SNOT" pollution prevention devices. The "SNOT" devices act as a filter for trash, sediment, leaves, and other debris in the existing catch basins. The devices keep oil and trash on the surface of the water while heavy sediment sinks to the bottom, letting cleaner water flow through the outlet. They remove up to 75 percent of stormwater pollutants and prevent them from entering the waterways.

New Water Monitoring Program

The City established a bacteria monitoring program to ensure waterways are safe for neighbors and visitors enjoying recreational activities. A monitoring service agreement with Miami Waterkeeper will provide the City with weekly water quality testing results across key waterway recreational areas over a 12-month period. Monitoring is scheduled to begin in January 2021. The up-to-date water quality status will be available to the public on www.fortlauderdale.gov or the program's mobile device app "Swim Guide" that is available to download from the App Store or Google Play.


Additionally, environmental assessments of George League Lake and Tarpon River have been completed in response to the sewer main breaks that occurred starting in December 2019. Sediment removal plans and permits are in process and work is expected to begin in 2021. An environmental assessment is also occurring on the Himmelfarb Canal which should be completed in early 2021. The quality of our 145 miles of waterways is critical to our way of life with its beautiful views, marine commerce, habitat for wildlife, and recreational opportunities. The City is dedicated to protecting its waterways as it is the "Venice of America".

WATERWAY QUALITY (WQ) IS A COMMISSION TOP PRIORITY

2020 Accomplishments

- Initiated recreational WQ monitoring
- Adopted a restriction on fertilizing during the rainy season
- Prevented 1,000 tons of debris from entering the waterway through catch basin cleaning and street sweeping
- Installed 57 pollution control devices

2



LAUDERTRAC

WATERWAY QUALITY UPDATE

Tracking Progress on Fort Lauderdale Commission Priorities for 2021

March 2021

IMPROVING OUR WATERWAYS

Waterway Quality Continues To Be a Top Priority

The City Commission met on January 25, 2021 to prioritize the initiatives they would like the City to focus on for 2021. Waterway Quality was one of the identified Top Priorities continuing from 2020 that aligns with Goal 3 of the City's Five Year Fort Lauderdale 2024 Strategic Plan, which is to build a healthy and engaging community.

The primary focus of this initiative in 2021 will be to monitor and improve the quality of Fort Lauderdale's 165 miles of waterways. This goal will be achieved through education on preventing discharges, infrastructure improvements such as waste rehabilitation to improve the quality of stormwater reaching the waterways, and the implementation of pilot and restoration projects to directly address water quality in our waterways. Additional focus will be placed on continuing to monitor waterway quality, exploring options to increase the availability of mobile pumpouts, and collaborating with Broward County and the State of Florida.

Waterway Quality Initiatives

Seven initiatives have been selected to meet the 2021 goal. These initiatives include:


- ▶ Educating and building awareness through National Pollutant Discharge Elimination System (NPDES) implementation.
- ▶ Continuing the Waterway Quality Monitoring Program.
- ▶ Implementing stormwater quality improvements.
- ▶ Remediating the impacted water bodies from the 2019 and 2020 wastewater discharges.
- ▶ Researching the feasibility of a program to increase the availability and cost-effectiveness of mobile pumpouts.
- ▶ Continuing the Canal Cleaning Program to remove floating debris.
- ▶ Implementing aeration and the pilot projects from the algal study.

The City has allocated \$24,780 to remove sediment in George English Lake that occurred in late 2019 and 2020 as a result of the sewer force main breaks. The City has contracted with Gator Dredging and work should begin in mid to late April.

The restoration of the Tarpon River and Homestead Canal will require additional funding. Tarpon River is in the permitting stages with regulatory agencies for sediment removal and a report on the Homestead Canal is expected in April once the assessment in this area is completed. The continuation of the Canal Cleaning Program has been fully funded in fiscal year 2021 for \$379,800.

Another initiative is to research the cost effectiveness and feasibility of a new program to increase the availability of mobile pumpouts. Illicit discharges from pumpouts are a source of bacterial pollution and impairment in our waterways, and this research will explore ways to make it easier and more convenient to access those services.

The implementation of aeration and the pilot projects from the algal study are being considered. The new aeration technology initiative in Lake Mithra, Cliff Lake, Tarpon River, and the Homestead Canal can increase oxygen concentrations in the water that will break down nutrients to reduce algal blooms and may help with bacterial pollution in our waterways.



WATERWAY QUALITY IS A COMMISSION TOP PRIORITY

2021 Accomplishments


- Completed National Pollutant Discharge and Elimination System (NPDES) Implementation and Reporting (Non-Point Source Pollution)
- Performed monthly WQ monitoring at 10 sites
- Piloted protein skimmer technology
- Initiated remediation of water bodies impacted by 2019-2020 wastewater discharges
- Initiated installation of aerator at four (4) sites
- Initiated algal bloom prevention pilot

3

ROLE OF WATERSHED ASSET MANAGEMENT PLAN IN ADDRESSING WATERWAY QUALITY

Goals

- 1) Reduce flooding and adapt to sea level rise
- 2) Improve water quality and our natural resources
- 3) Proactively maintain the City stormwater infrastructure
- 4) Maintain and improve the community's rating system (CRS) score
- 5) Collaborate with stakeholders to mutually understand and address our community's flood risk



City of Fort Lauderdale Flood Resilience and Environmental Vision, Mission, and Goals

VISION

To provide flood protection and waterway pollution control through efficient and sustainable management of the City's stormwater and related natural assets

MISSION

Proactively manage our stormwater and environmental resources through best asset management practices

GOAL 1

Reduce flooding and adapt to sea level rise

GOAL 2

Improve water quality and our natural resources

GOAL 3

Proactively maintain the City stormwater infrastructure

GOAL 4

Maintain and improve the community's rating system (CRS) score

GOAL 5

Collaborate with stakeholders to mutually understand and address our community's flooding risks

Flood Resilience

Environmental

4

CAM 21-1136
Exhibit 1

2




FY 2021 STORMWATER OPERATIONS POLLUTION PREVENTION ACTIVITIES

- ▶ Proactive maintenance of the stormwater system helps prevent pollutants from being discharged into waterways.
- ▶ **15,604** Proactive Inspections:
 - ▶ Generates repair work orders
 - ▶ Generates catch basin cleaning work orders
- ▶ **5,488** Catch basin cleaned and **22,782** miles of curbed streets swept:
 - ▶ **1,489** tons of debris captured
- ▶ Four (4) Pollution control devices cleaned

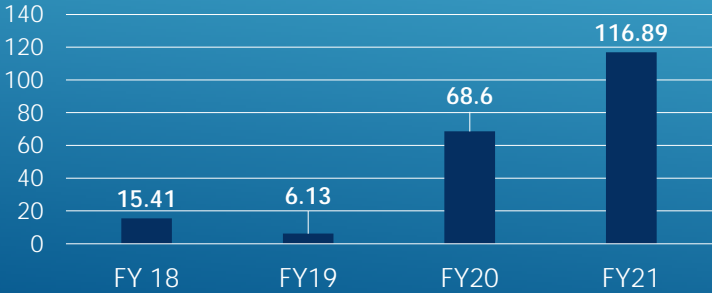
5

CANAL CLEANING

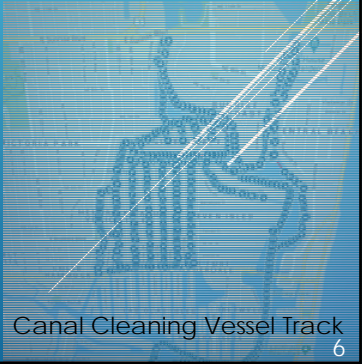
The City has substantially increased its effort to remove debris from our waterways.



Canal Cleaning Disposal Tonnage

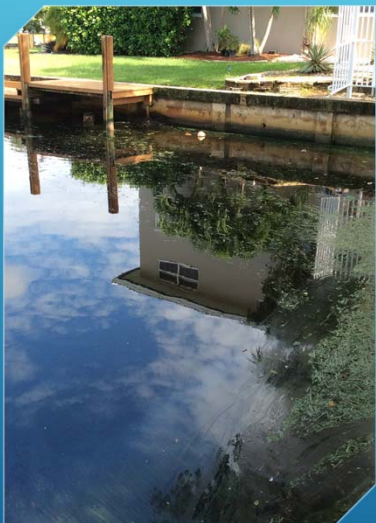


Fiscal Year	Disposal Tonnage
FY 18	15.41
FY19	6.13
FY20	68.6
FY21	116.89



Canal Cleaning Vessel Track

6



EDUCATION AND AWARENESS

- ▶ NPDES Outreach
 - ▶ Pesticides, herbicides, and fertilizer
 - ▶ Illicit discharges and improper disposal
- ▶ Algal Blooms
- ▶ Outreach on Florida Friendly Fertilizer Use on Urban Landscapes



7



IMPLEMENTATION OF AMENDED FLORIDA-FRIENDLY FERTILIZER USE ON URBAN LANDSCAPES

- ▶ Prohibits application of nitrogen and phosphorus during the rainy season (July 1 – September 30)
- ▶ Retailers must post a sign notifying customers of the limitations on fertilizer
- ▶ Retailers must make available a surface and groundwater protection brochure
- ▶ City staff visited 5 retailers, placed 7 signs, and provided 250 brochures

8

PROACTIVE WATERWAY QUALITY SAMPLING PROGRAM



- ▶ Broward County NPDES Monitoring Report
 - ▶ Two sites in Fort Lauderdale: C-13/North Fork Middle River and New River/Coastal
 - ▶ 5 parameters at 15-minute intervals, 24/7
- ▶ Contract with Miami Waterkeepers – 10 sites weekly bacterial sampling
- ▶ City proactive monitoring certain areas since March 2020 around Middle River, George English Park, and Tarpon River

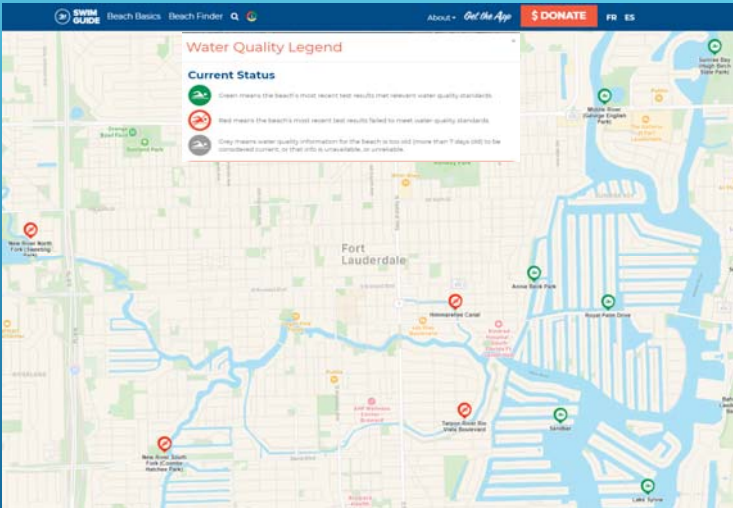
WEEKLY WATERWAY QUALITY MONITORING MIAMI WATERKEEPER

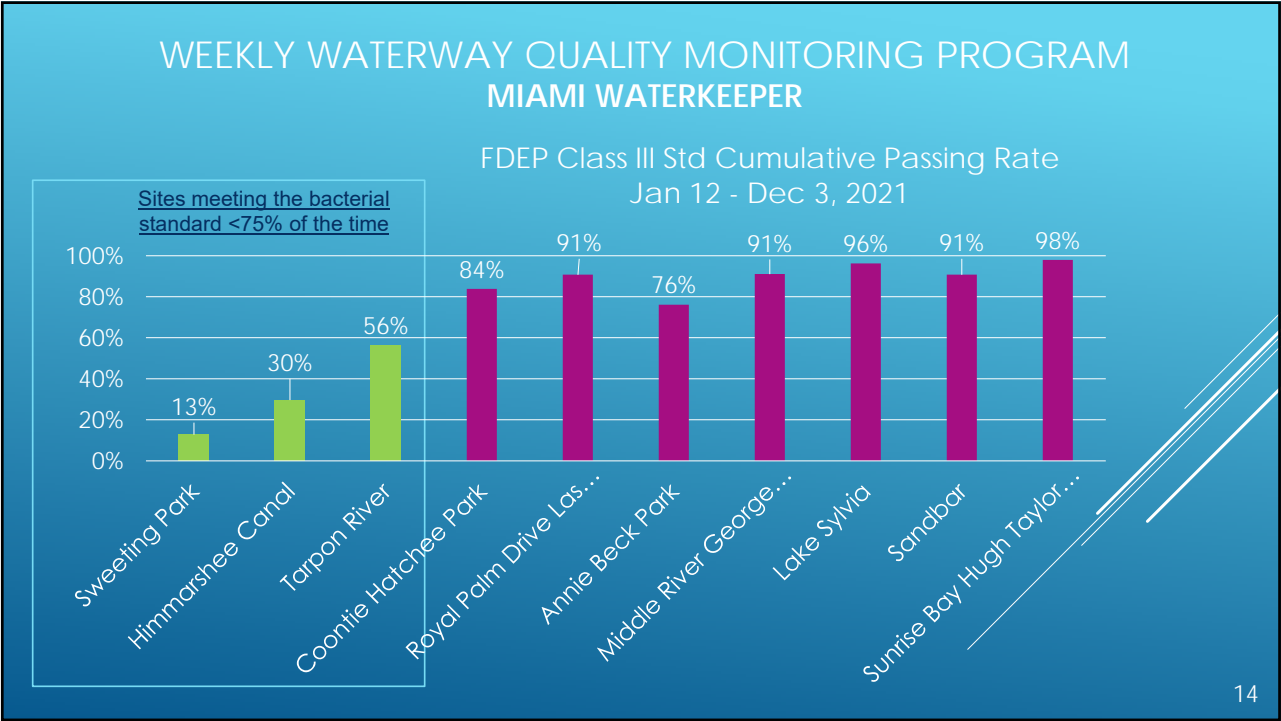
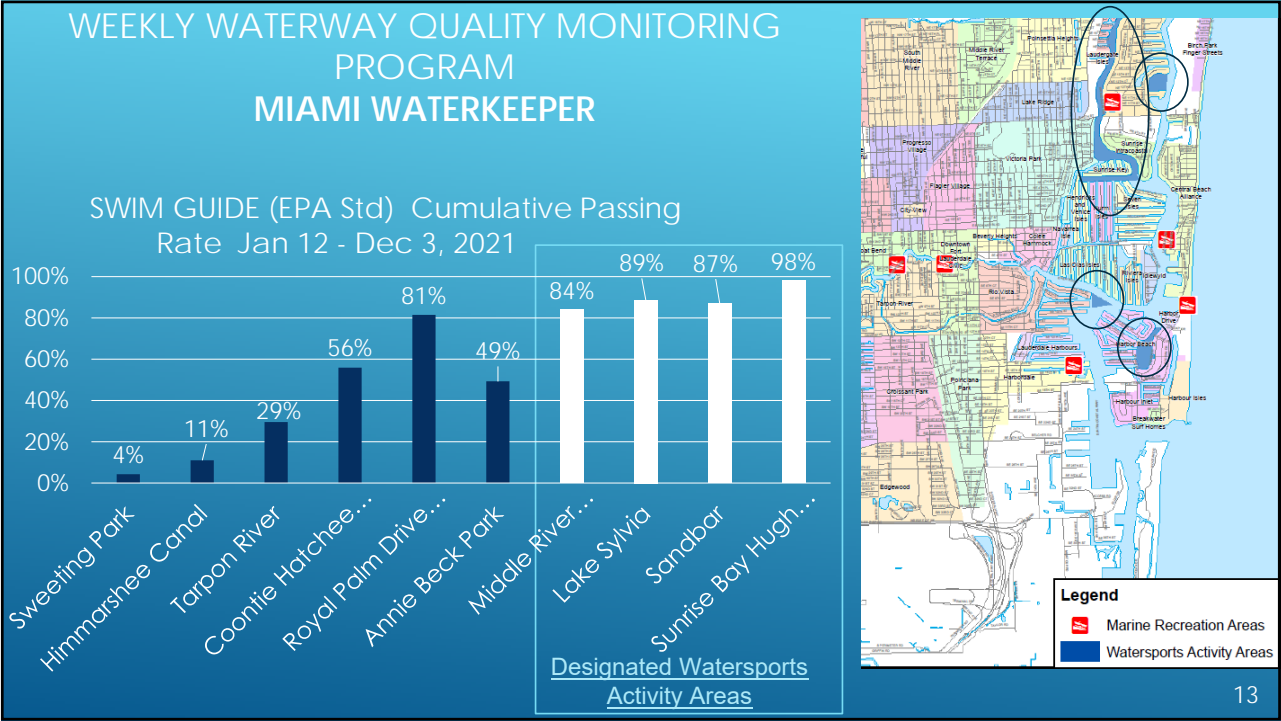
Intent of Program

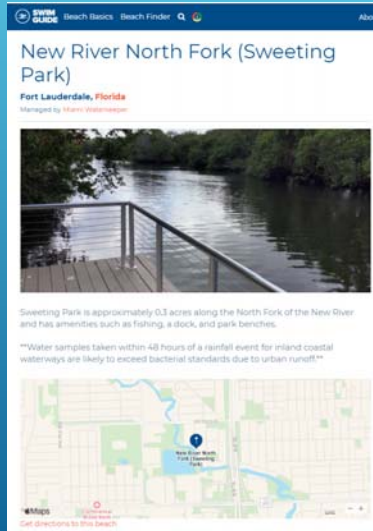
1. Provide transparent near real time bacteriological data through Swim Guide
2. Monitor waterway areas used for recreation (10 sites)
3. Target areas of concern for WQ mitigation



Photos of Miami Waterkeeper taking water samples at Lake Sylvia







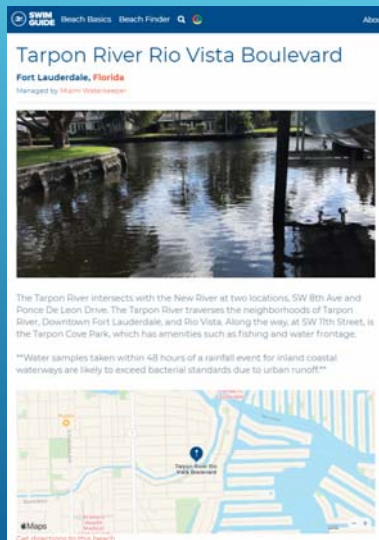
► Completed Initiatives

► Planned

- ▶ Clean of City-owned drainage pipe
- ▶ Effect stormwater repairs on NW 21st Street
- ▶ Initiate construction of Durrs SMP including WO structures
- ▶ Install of pollutant retardant baffles
- ▶ Assess opportunities for pro-active swale replacement



15



► Completed Initiatives

► Planned

- ▶ Clean City-owned drainage pipes
- ▶ Perform remediation dredging of eastern Tarpon River
- ▶ Install permanent aeration

16



► Completed Initiatives

► Planned

- ▶ Clean of City-owned stormwater system
- ▶ Perform remediation dredging
- ▶ Install permanent aeration

17



PROTEIN SKIMMER PILOT PROJECT

- ▶ Tested in the Himmarshee Canal at three sites for 12 weeks at a cost of \$350,670
- ▶ Operations resulted in waterway quality improvements in the immediate area near the barge but not over the spatial extent of the waterway
- ▶ Provided only temporary waterway quality improvements
- ▶ Waterway quality improvements were not demonstrated to meet water quality standards
- ▶ Technology worked better at the more saline end of the waterway

18

**LAUDER
SERV**

FOUR WAYS TO REACH US!

**TAP**
USE THE SMART PHONE APP
fortlauderdale.gov/lauderserv

**CLICK**
SUBMIT A REQUEST ONLINE
fortlauderdale.gov/lauderserv

**CALL**
CALL US ANYTIME
954-828-8000

**EMAIL**
cservice@fortlauderdale.gov

24-HOUR CUSTOMER SERVICE

QUESTIONS

Neighbors can always report
waterway quality concerns to the
City's 24/7 Customer Service line at
954-828-8000