

# BISCAYNE BAY WATERSHED MANAGEMENT ADVISORY BOARD

February 10, 2023





# Biscayne Bay Watershed Management Advisory Board

## Board Package

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# AGENDA

BISCAYNE BAY WATERSHED MANAGEMENT

ADVISORY BOARD (BBWMAB) MEETING

February 10<sup>th</sup>, 2023 - 9:00am – 12:00pm

LOCATION – Stephen P. Clark Government Center, Commission Chambers, 2<sup>nd</sup> Floor

111 NW First Street, Miami, FL 33128

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1. **Roll Call**
2. **Reasonable Opportunity to be Heard**
3. **Approval of Agenda – Actionable Item**
4. **Approval of Minutes for October 25, 2022 – Actionable Item**
5. **In Memoriam**
  - a. **Truman E. (Gene) Duncan, Jr. Water Resources Director  
Miccosukee Tribe of Indians**
  - b. **Harvey Ruvin, Miami-Dade County Clerk of the Courts  
Irela Bagué, Chief Bay Officer**
6. **South Florida Water Management District Presentation**  
Richard Vigil, Division Director – Field Operations, SFWMD
7. **USACE Back Bay Update**  
Jim Murley, Chief Resilience Officer, Office of Resilience
8. **FDEP Grant Project Update**  
Pamela Sweeney, Senior Water Scientist, RER-DERM  
Carlos Hernandez, P.E., Division Chief, RER-DERM
9. **Reasonable Assurance Plan Update**  
Irela Bagué, Chief Bay Officer  
Pamela Sweeney, Senior Water Scientist, RER-DERM  
Dr. Tony Janicki, Janicki Environmental
10. **BBWMAB Annual Report Review**  
BBWMAB Chair, Commissioner Danielle Cohen Higgins
11. **2023 Boat Show Update**  
RER-DERM Staff
12. **Future Agenda Items**  
BBWMAB Chair, Commissioner Danielle Cohen Higgins
13. **Adjournment**  
BBWMAB Chair, Commissioner Danielle Cohen Higgins

# Biscayne Bay Watershed Management Advisory Board

Stephen P. Clark Government Center  
Commission Chambers, 2<sup>nd</sup> Floor  
111 NW First Street  
Miami, FL 33128

MINUTES October 25, 2022 9:00 am

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| MEETING CALLED BY | The roll call was taken – Quorum was met. 17 members present and 3 members absent.<br><br>Absent Members: Vice-Chair Vince Lago, Mayor Tim Meerbott, and Gene Duncan   |  |
| MEMBER ATTENDEES  | Chair - Commissioner Danielle Cohen Higgins<br>Commissioner Rebeca Sosa<br>Commissioner Jean Monestime<br>T. Spencer Crowley, III<br>Councilmember Crystal Wagar<br>Commissioner Rachel Streitfeld<br>Brett Bibeau<br>Dr. Todd Crowl<br>Dr. Diego Lirman | Erik Stabenau<br>Julissa Kepner<br>Jannet Cederberg<br>Gerald McGinley<br>Dave Doeblar<br>Roberto Torres<br>Dr. Joan Browder<br>John Alger |
|                   | Staff support for Biscayne Bay Watershed Management Advisory Board in attendance: Irela Bagué, Rashid Istambouli, Pamela Sweeney, Nancy Jackson, Marie Bell, Larissa Aploks, and Ana Fiotte.   |  |

## AGENDA TOPICS

### SPECIAL PRESENTATION

Commissioner Danielle Cohen Higgins - Chair

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| DISCUSSION | <p>Chair Cohen Higgins introduces Mayor Daniella Levine Cava for a special presentation to outgoing Board members, Commissioners Rebeca Sosa and Jean Monestime. The Mayor thanked the commissioners for their work on Biscayne Bay since the creation of the advisory board. The Mayor stated that with the latest fish kill, it is necessary to learn more. She will convene a group of scientific experts to work together and develop a consensus on what is happening in the Bay regarding the nutrient loading amounts.</p> <p>Commissioner Jean Monestime thanked the Mayor for the recognition along with Commissioner Rebeca Sosa. He learned a lot by being on the Biscayne Bay Watershed Management Advisory Board. Comm. Sosa stated that she appreciated her time on the Board. Biscayne Bay is the diamond of Miami-Dade County, and she is hopeful that the BBWMAB will continue with important work like the fertilizer ordinance. Chair Cohen Higgins said the legacy of Comm. Sosa would live on with the Board.</p> |
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### REASONABLE OPPORTUNITY TO BE HEARD

Commissioner Danielle Cohen Higgins - Chair

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| DISCUSSION | <p>Rachel Silverstein, Executive Director Miami Waterkeeper, 220 Miracle Mile, Coral Gables. Ms. Silverstein spoke about the importance of the Clean Water Act in its 50th Anniversary. In 1983, the goal was to ensure all waterways would be safe. In 2022, we are about halfway there. The fish kill reminds us how much more work we have to do. However, the community is much more prepared for this fish kill than previously.</p> |
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### APPROVAL OF AGENDA

Commissioner Danielle Cohen Higgins - Chair

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| DISCUSSION | Chair Cohen Higgins requested that an update be added to the agenda regarding the recent fish kill event in north Biscayne Bay before the agenda vote. Chair Cohen Higgins moved to set the agenda with the amendment. The agenda was approved unanimously. |
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## UPDATE ON FISH KILL

Rashid Istambouli – Interim Director, RER DERM

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| DISCUSSION | <p>Chair Cohen Higgins recognized Rashid Istambouli, Interim Director, RER DERM to provide the board with an update on the recent fish kill.</p> <p>Mr. Istambouli began the update by stating that the recent fish kill event although not at the magnitude of the 2020 event it is still a reminder of the fragility of the watershed reinforcing the importance of the work we are all doing.</p> <p>He thanked the local media, Alex Harris from The Miami Herald and Louis Aguirre from Local 10 News, for their help in communicating and educating the public about the work being done. He also thanked academic, nonprofit partners, and the public involved in reporting through the Baywatch campaign which helped DERM respond expeditiously to the locations of the fish kills.</p> <p>Mr. Istambouli shared the map of the locations comprised of the affected and hardest-hit areas, mainly in the northern bay basins and shared DERM's response with the initiation of investigations. The initial results determined the need to deploy the biomass removal contract and taking water quality samples in the affected areas on the water and landside. Water sampling chemical parameters consisted of nutrients, metals, suspended solids, and bacteria, and physical parameters including dissolved oxygen (DO), salinity, pH, and temperature. He further explained why fish kills occur due to the reduced DO levels, and DERM observed some levels at zero; however, the system is improving, showing increases in DO levels.</p> <p>DERM is still not at a point to determine the specific cause of the event but will continue to investigate working with academic partners and state agencies. He emphasized that although we are not yet able to determine the cause of the fish kill event, DERM was prepared to respond and worked and coordinated the response with the affected municipal partners.</p> <p>Mr. Istambouli thanked the Mayor, County Commission, Chief Bay Officer, all departments, and community partners in the team approach to the response.</p> <p>Dr. Todd Crowl stated that we should be cautious regarding the aftermath of fish kills for the possibility of algae blooms and shared that DO levels could drop again. Therefore, the County should be vigilant primarily in the Little River area.</p> <p>DERM responded that staff will continue to conduct water quality sampling in the area.</p> <p>Dave Doebler said he did not see the City of Miami Beach sewage break in the presentation and the SFWMD canal drawdowns due to Hurricane Ian, which seem as if they could be factors related to the fish kill. He asked about what roles those entities play in preventing fish kills.</p> <p>DERM responded that these events are being investigated as part of the fish kill, but it is also acknowledged that it is going to be hard to pin it on one factor because there could be multiple sets of factors causing fish kills.</p> <p>Comm. Rachel Streitfeld mentioned that North Bay Village has partnered with Miami Waterkeeper to conduct water quality sampling. Reports consistently indicate high levels of nutrient pollution from the C7 and C8 canals. She asked if the County has any authority over the SFWMD to do something to clean the water before lowering canal levels.</p> <p>Chief Bay Officer (CBO) stated that the way we manage water today is very different than in the past when she served on the SFWMD governing board. She mentioned ongoing coordination with SFWMD and the application of grants to implement projects to reduce nutrient pollution from entering the Bay through the flood control system. She stated that looking at new technologies and nature-based solutions is important instead of larger pump stations. Many of these projects are long-term solutions that should have started decades ago. The CBO mentioned the Biscayne Bay Commission and its role in</p> |
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collaborating with the County and stated that SFWMD serves on the Commission. Unfortunately, we are seeing annual fish kills that need to be dealt with, and we are all working as fast as we can.

Comm. Streitfeld asked DERM if they have regulatory authority over SFWMD in the County code.

DERM responded that the County does not have the authority.

CBO reiterated the partnership with SFWMD and mentioned that the Executive Director called her regarding the fish kill and offered their full support to look at how we can work together and review how the system is managed, particularly in the summer months.

Comm. Streitfeld requested to invite SFWMD to present at the next meeting.

Comm. Sosa thanked the CBO and DERM for their work and asked how much of the Bay is part of unincorporated Miami-Dade.

CBO stated that the Bay system is interconnected.

Comm. Sosa mentioned the issues in Miami Beach, the flooding issues in the City of Miami, the Brickell area, and the stormwater systems that outfall to the Bay. Comm. Sosa stated that the County is the largest investor in Bay recovery, and there is a need to work together for shared responsibility with the municipalities. In addition, she mentioned infrastructure, such as the causeways that limit the water flow, and the need to update the infrastructure.

Chair Cohen Higgins asked staff if municipalities share the cost of fish kill clean up.

DERM confirmed that the Cities of Miami and Miami Beach have their own biomass removal contractors in place.

Chair Cohen Higgins asked if there was a concerted effort to work with the municipalities to coordinate and advocate for funding.

CBO stated that the Reasonable Assurance Plan dictates the collaboration with municipal partners where they commit to working on projects that will meet the nutrient reduction goals. She mentioned that there is already work being done by the seven initial municipalities and thanked North Bay Village and Miami Shores for their commitments.

Mr. Erik Stabenau stated how impressed he is with how the community has stepped up and engaged. He asked about how the County is working on collecting data and the sustainability of those networks. Good networks will provide the information needed to decide what projects and programs are required in the long term.

Mr. Spencer Crowley agreed with Comm. Sosa's comments regarding the municipal responsibility and the RAP for getting it done. Mentioned the canal systems and how these were part of similar problems in the St. Lucie River. He said the USACE and SFWMD would soon be studying the C&SF system to make it more resilient to sea level rise, and the County will need to be part of those meetings. He asked DERM about the DO decreases and if there was any information as to why? If the County used vessels to oxygenate the water.

DERM stated it is too preliminary to determine and mentioned the City of Miami may have used oxygenation through their contract with the Scavenger vessel.

Dr. Diego Lirman asked if a monitoring process in place to forecast these events.

DERM responded that the events have been most unpredictable, and the investments are being made in collaboration with partners. What can be done to improve forecasting?

CBO reiterated the Mayor's comments regarding convening the scientific and technical communities to study past fish kills to determine where there are data gaps, if more monitoring is needed, and where to invest.

Dr. Lirman stated that we need to develop a framework and forecasting system to better work with the SFWMD on how they manage their system.

Mr. Roberto Torres asked why are there no Stormwater Treatment Areas (STA) in the County?

CBO responded that the County does not have the amount of land necessary for a STA.

DERM mentioned the challenges of getting water to the lands and holding it there.

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|  | <p>CBO stated that it is part of the modeling being done by the USACE on the Biscayne Bay Southeast Everglades Ecosystem Project (BBSEER).</p> <p>Chair Cohen Higgins asked if the residents of Miami-Dade County anticipated yearly fish kills.</p> <p>CBO said that since the 2020 fish kill, we have seen a consistent pattern of the Bay's decline, primarily in the northern basin. There are a lot of contributing factors and what we don't have an answer to now is what is the root cause. The Biscayne Bay Task Force determined that there is a combination of factors starting with the seagrass die-off in 2017.</p> <p>Chair Cohen Higgins asked how many more fish kills the Bay can sustain. What is the tipping point in the number of years? Has anyone studied this?</p> <p>DERM responded that has not been studied, however, and mentioned the 2017 NOAA seagrass report that stated the Bay was at a tipping point then, and we are now experiencing what that looks like in the third year of another fish kill.</p> <p>Chair Cohen Higgins asked if other areas have experienced similar fish kills.</p> <p>CBO stated that our recovery efforts have been modeled after Tampa Bay and Indian River Lagoon. There are estuaries all over the State, and how we manage water has impacted all of them.</p> <p>Chair Cohen Higgins asked what the cause of the 2020 fish kill was.</p> <p>DERM (Pamela Sweeney) answered that it had a lot to do with the current state of the bay, which is not resilient and cannot take on impacts from a combined number of sources. It has been challenging to determine, and there are differences with each fish kill.</p> <p>Chair Cohen Higgins stated that it is a huge environmental and economic problem.</p> |
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#### APPROVAL OF MEETING MINUTES

Commissioner Danielle Cohen Higgins - Chair

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| DISCUSSION | <p>A correction to the meeting minutes of June 10, 2022, was submitted by Mr. Brett Bibeau and read into the record by the Chief Bay Officer. To replace "Waste Management Technologies" with "Water Management Technologies" on page 6 of the meeting minutes. Correction made to confirm there is currently one vessel servicing the Bay and Miami River contracted by the City of Miami and Miami-Dade County on page 6 of the meeting minutes. Meeting minutes were adopted unanimously.</p> |
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#### REASONABLE ASSURANCE PLAN UPDATE

Commissioner Danielle Cohen Higgins - Chair

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| DISCUSSION | <p>The Chair requested that the CBO, Irela Bagué, provide an update on the Reasonable Assurance Plan (RAP). The CBO reminded the Board that a resolution was adopted last February recommending the Board of County Commissioners expedite the development of a RAP. Subsequently, the Commission adopted the resolution on March 1, 2022.</p> <p>Since then, County staff, with the support of consultants CDM Smith, have been working with FDEP staff to develop a draft plan for the RAP northern phase 1 boundary. The area that is currently experiencing a fish kill. The CBO noted that we shared the boundary and future phases of the watershed at the Biscayne Bay Commission meeting in June.</p> <p>DERM and the CBO engaged all stakeholders within the phase 1 boundary and coordinated the engagement of seven municipalities, including environmental stakeholders.</p> <p>The County submitted the draft RAP plan phase 1 to FDEP "technical staff" for review including stakeholder comments in early September.</p> <p>The County received a response letter from the FDEP with comments and concerns primarily regarding the phased approach. County staff and consultants have continued to work with the FDEP staff to address these comments and concerns.</p> <p>The CBO shared that to provide FDEP with reasonable assurance and an adoptable plan, the County will need to expand and work on a broader approach to incorporate the entire Biscayne Bay watershed.</p> |
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|  | <p>The CBO noted that despite the change to expand the RAP, the County has already demonstrated to the State its commitment to reduce nutrient pollution levels in the Bay. The County working together with stakeholders, has assembled a robust list of projects and has made significant progress.</p> <p>The County will now work to include additional stakeholders (municipalities) to finalize an adoptable plan and will present the Board with a Plan of Study at the next meeting.</p> <p>The RAP will be our roadmap and essentially will help develop the new Biscayne Bay Watershed Management Plan to improve the health of the Bay and prevent future fish kills in the long term.</p> <p>The CBO recognized that the County initially agreed on an expedited plan to become eligible for the State's Wastewater grant funds. Unfortunately, we are currently not eligible without an "approved" plan. However, the County today is in a much better position than last year.</p> <p>We have done a lot of work, and we will build upon that work. We will continue to work with FDEP and the Biscayne Bay Commission to help the County gain eligibility during the next legislative session.</p> <p>Dave Doebler asked if we can get a provisional approval of the RAP from DEP.</p> <p>CBO responded that no, the state won't allow it. She also mentioned the need to separate the funding from the RAP so that we can access state wastewater funds now for our identified projects while we continue to develop the RAP which will likely be a two-year process. The CBO recommended an urging to change the state statute's language be included in the County's legislative priorities.</p> <p>Spencer Crowley asked the CBO what the main comments from DEP were.</p> <p>CBO responded that most comments were small things easy to address but that the phased approach and modeling were not adequate for approval.</p> <p>Mr. Crowley stated that he didn't agree with the phased approach and thinks it does make more sense to look at the entire bay.</p> <p>Dr. Crowl asked if we could try again for a phased approach but to include a larger area in the first phase.</p> <p>Chair Cohen Higgins responded that Mayor Meerbot also expressed those concerns about phased approach but, at the moment there isn't anything the county can do as DEP is in charge here.</p> <p>Rashid Istambouli stated that the county team is putting together a Plan of Study which will be agreed to and signed off by both DEP and EPA.</p> <p>Rachel Streitfeld asked for a timeline and next steps.</p> <p>CBO responded that the Mayor will meet with Region 4 EPA to be sure they approve of our approach and support us. The CBO will ensure we have check points signed off all along the way so that we don't repeat this experience. We will be finalizing the Plan of Study within the next few weeks.</p> |
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Irela Bagué - Chief Bay Officer

#### **BISCAYNE BAY COMMISSION UPDATE - (Requested by Commissioner Rachel Streitfeld)**

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| DISCUSSION | <p>The CBO advised the board that the board packet includes a summary of the Biscayne Bay Commission meeting. She also encouraged the Board and members of the public to attend the next meeting scheduled for November 30, 2022.</p> |
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#### **Miami-Dade Back Bay Coastal Storm Risk Management Study** (Requested MDC Office of Resilience)

James Murley - Chief Resilience Officer

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| DISCUSSION | <p>Mr. Murley presented Michelle Harmon from the US Army Corps of Engineers (USACE) to speak with the board today about the new phase of the CSRM Back Bay Study. Hurricane Ian reminds us why the US government invests in research and projects to protect people and property.</p> <p>Mr. Murley stated that the Office of Resilience (OOR) supports the CBO, Chief Heat Officer, and all the resilience work for the County.</p> <p>The objective of the Back Bay Study is to protect the County from the consequences of storm surge and how we can continue to protect critical infrastructure, what kind of structures we may need to protect</p> |
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|  | <p>from storm surge and look at nature-based features. What is the best method to protect our County? That is what we are reviewing more expansively in this additional phase of the study.</p> <p>Ms. Harmon provided background information to the board, stating that we began the study in 2018 and submitted a draft tentatively selected plan (TSP) in 2020. We received public comment, updated the report, and opened it again to public comment in 2021. We received some comments and concerns from environmental stakeholders and key municipal leaders in the summer of 2021, which we could not resolve. The final TSP did include multiple physical structures and elevation features. The project with the most negative comment was related to the flood wall and gates at the mouth of the Miami River. We also received high concerns about the wall structure in the Little River and Biscayne Canal area of northern Miami-Dade. Mayor Levine Cava asked the Assistant Secretary of the Army to get a one-year extension so that the USACE could take a more holistic approach.</p> <p>Ms. Harmon confirmed that the request was approved for up to \$8.2 million for study and planning over the next 12 months. Our goals are to develop an additional alternative that will include more nature-based features, protect additional critical infrastructure, and will consider equity and community impacts of projects. Ms. Harmon presented the study area and some additional information in a power point which is included in the board packet. She also promised to make a lot of opportunities for more public comment and to address public concerns throughout the process.</p> <p>Mr. Murley stated that the previous 3-year study did not include time and access to a broad group of subject-matter experts who are being included in this 12-month additional time period. The broad group of experts will be coming to Miami for a five-day charrette comprising all our key stakeholders, including municipalities, community and environmental advocates, and the academic community. He also reminded the board that this is only one study of many that the Corps is carrying out in Miami-Dade County and that we need to coordinate these studies and outcomes very closely.</p> <p>Mr. Crowley asked if the Miami River charette will include the Downtown area and recommended that the Downtown Development Authority (DDA) should be involved.</p> <p>Mr. Murley we will interact with the DDA directly, and confirmed they are invited to the charette. He stated that the Miami River charette day includes the larger watershed not just the small area.</p> <p>Dr. Crawl mentioned studies that have shown that structures built behind mangroves sustain significantly less damage after a storm. The District is also changing their structures and asked if the study is working with them.</p> <p>Ms. Harmon answered that yes, the USACE is including the District in the Charrettes</p> <p>Mr. Cederberg thank you for having the USACE present together with county. The original plan was one dimensional only looking at storm surge, sea level rise was a major concern. My concern is that the old plan only looked at one parameter.</p> <p>Ms. Harmon reiterated that the plan is for coastal storm risk management and does focus on storm surge.</p> <p>Mr. Cederberg state that the plan looked at 50-year horizon, with that time frame sea level rise will make it different. His hope is that the project can be modified or added on by future generations.</p> <p>Ms. Harmon stated that the 50-year timeline is based on economic life of the project and the the Corps is looking beyond that time to make sure the project does last.</p> <p>Mr. Murley responded what the mayor has asked us to do is look at all these projects so that we are future ready.</p> <p>Mr. Cederberg mentioned that the City of Miami is raising the height of sea walls.</p> <p>Ms. Harmon confirmed the study is looking at that.</p> |
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## FUTURE AGENDA ITEMS

Commissioner Danielle Cohen Higgins - Chair

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| DISCUSSION | <p>Mr. Cederberg asked for standing agenda items so the Board can get regular updates from projects such as the Back Bay study and the RAP. Chair Cohen Higgins agreed and asked the CBO to add standing items to the next meeting's agenda.</p> |
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|  | <p>Dr. Joan Browder requested an update from FDOT regarding plans for bridges and causeways in general and specifically asked for an update about the 79<sup>th</sup> Street Causeway given there was a charrette held in October. She requested that FDOT District 6 Secretary, Stacy Miller, attend a board meeting.</p> <p>John Alger requested legislation to address illegal dumping in southern Miami-Dade County on Farmlands. A change in the statute is necessary to encourage reporting so that enforcement officers have discretion and landowners are not fined for reporting illegal dumping on their property. Lourdes Gomez, RER Director confirmed that she will have staff work with Mr. Alger to review the statute and take necessary action.</p> <p>Dave Doebler mentioned the 90-day mark for the storm water code changes. He would like to see the stormwater report.</p> <p>Ms. Lourdes Gomez (RER Director) stated that the County has been working diligently on code changes and mentioned some current work done on the feasible distance, increased fines, and enforcement sweeps of construction sites. The County is doing work to improve the Bay just like they did 40 years ago with the board and the watershed plan that was created then.</p> <p>Spencer Crowley asked that onsite sewage tracking, pilot projects, and bay funding be included in regular updates.</p> <p>Dr. Todd Crawl stated that it would be great if staff can share data being collected for the four tech demonstration projects in the Little River Area.</p> <p>Mr. Dave Doebler requested information about the upcoming Boat Show stating that there were issue's last year. Requested information on the status. He would like to see that topic on the next agenda. Chair Cohen Higgins agreed.</p> <p>Mr. Spencer Crowley responded that his clients would share the report and will share the permits that will be posted November 1st. Lourdes Gomez stated that the report will be on the 11/1/22 BCC agenda and is a quasi-judicial item but that she will have staff share the report with the Board.</p> <p>The CBO reminded the board that DERM has a year to run the stormwater pilot projects and then will present on outcomes of new technology at the October 2023 board meeting.</p> <p>The CBO also took a moment to thank Marie Bell for her support of the board during the past several months and wished her well.</p> |
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## ADJOURNMENT

Commissioner Danielle Cohen Higgins - Chair

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| DISCUSSION | Chair Cohen Higgins thanked all board members for their time and adjourned the meeting at 12:00pm. |
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# **Requested Standing Updates**

- Reasonable Assurance Plan
- Miami-Dade Back Bay Coastal Storm Risk Management Feasibility Study (“Back Bay”)
- FDEP Water Quality Grant Projects

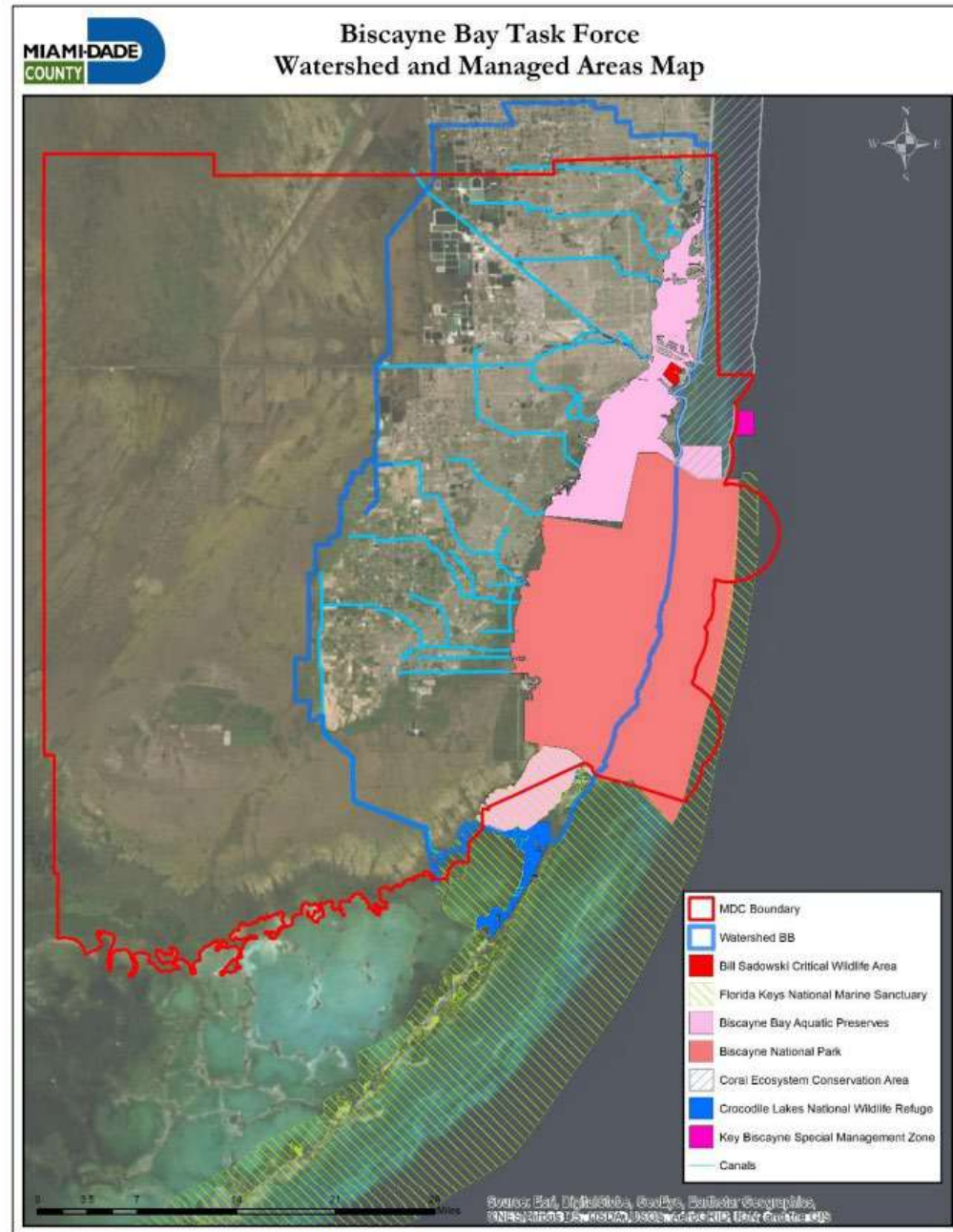
# Reasonable Assurance Plan: An Update on the Path Forward

## Technical Staff Update:

- Building upon work with CDM Smith
- Added to the team: Dr. Tony Janicki, Janicki Environmental, Inc.
  - Tampa Bay & Mosquito Lagoon RAPs
- Florida DEP
  - Decision Memos
- EPA

## RAP Document Development:

- Plan of Study (POS)
  - POS Outline
    - Biscayne Bay & its watershed
    - Define ecological targets
    - Define reference period
    - Identify potential nutrient sources
    - Define bay and watershed areas
    - Identify & work with stakeholders
    - Obtain data and run models
    - Develop load reduction targets
  - POS Draft
- RAP Document Draft
  - Public review & Agency review
- Timeframe to DEP approval- 24 - 36 months





## Board Requested Standing Updates

### Stormwater Improvements Update:

- Construction contract by RER-DERM is out for bid and under the “cone of silence” until award (DTPW completed the design and permitting)
- We are receiving bids on January 25, 2023
- Anticipated award by the end of February 2023
- Anticipated construction April 2023 – October 2023

Regarding “Update: Stormwater legislation related to [Approved Mayor \(miamidade.gov\)](https://www.miamidade.gov) (requested by Dave Doebler) - RER DERM”, below is the update:

- Draft Board report is currently under internal review, anticipated to go to the Board within the next 2 -3 months
- RER-DERM is working on draft for code changes which will be shared for public comment (in estimated time 2 -3 months).

Suggestion to keep both items/updates for inclusion in a later Advisory Board meeting (after February).

### Back Bay Update:

Upcoming Charrettes



## PLANNED AGENCY AND PUBLIC ENGAGEMENT



- **Public Meetings**
  - Virtual Meeting (Zoom) Feb. 23, 2023 5:00 p.m.
  - In-person Public Meeting Spring 2023 (TBD)
  - Virtual Meeting (Zoom) June 2023 (TBD)
- **In-person Charrette Mar. 1-3, 2023**
- **Interagency Meeting**
  - Mar. 16, 2023 10:00 a.m.



[Miami-Dade Back Bay Coastal Storm Risk Management Feasibility Study \(army.mil\)](https://www.army.mil)

# MIAMI-DADE BACK BAY COASTAL STORM RISK MANAGEMENT Feasibility Study

**February 10, 2023**

***Biscayne Bay Watershed Management  
Advisory Board Meeting***

**Jim Murley**

Chief Resilience Officer  
Miami-Dade County

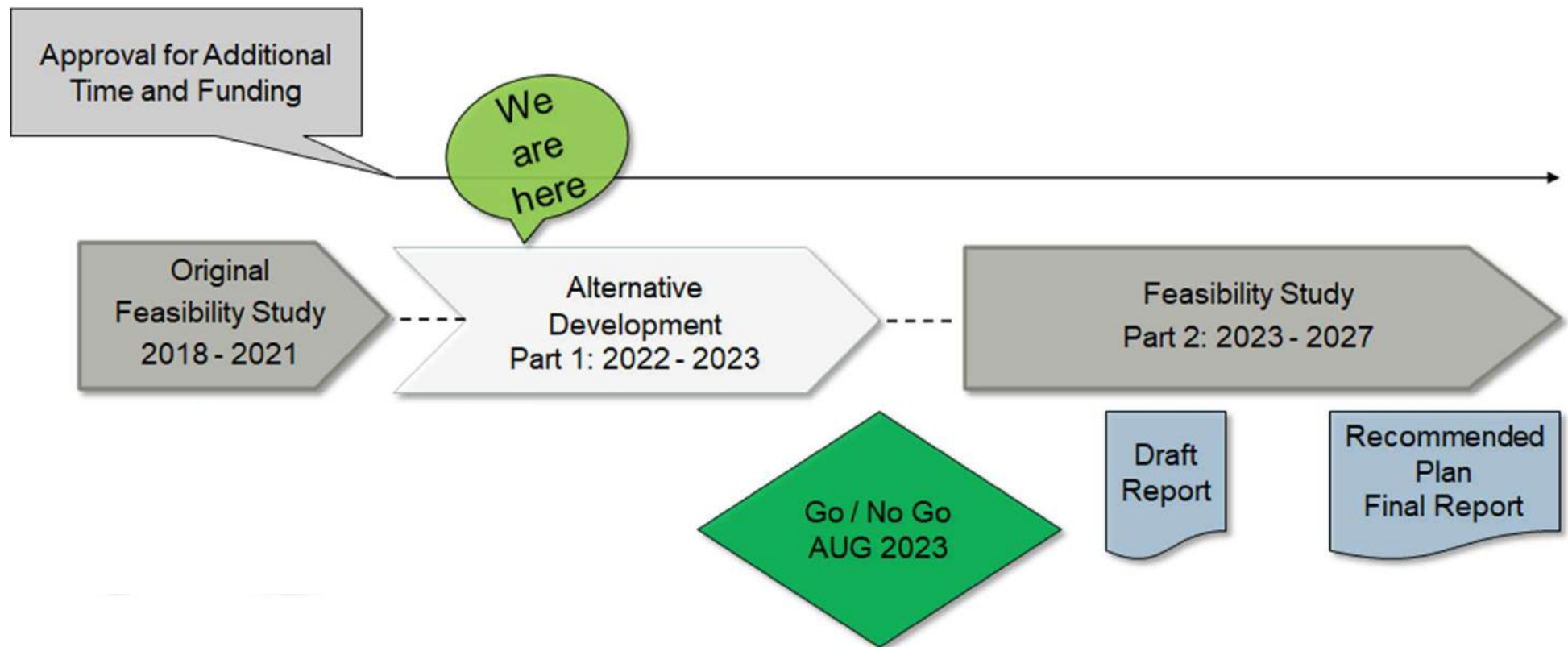


US Army Corps  
of Engineers®



<https://www.saj.usace.army.mil/MiamiDadeBackBayCSRMFfeasibilityStudy/>

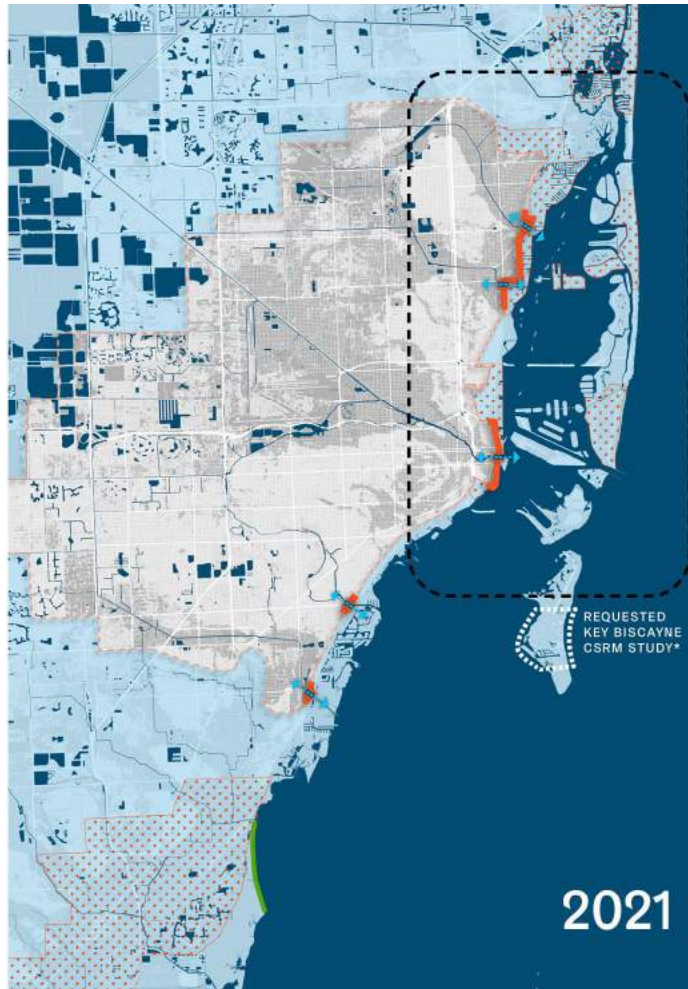
# Miami-Dade 'Back Bay' Study Timeline





# USACE 2021/22 Alternative

Not supported by Miami-Dade County



## LEGEND

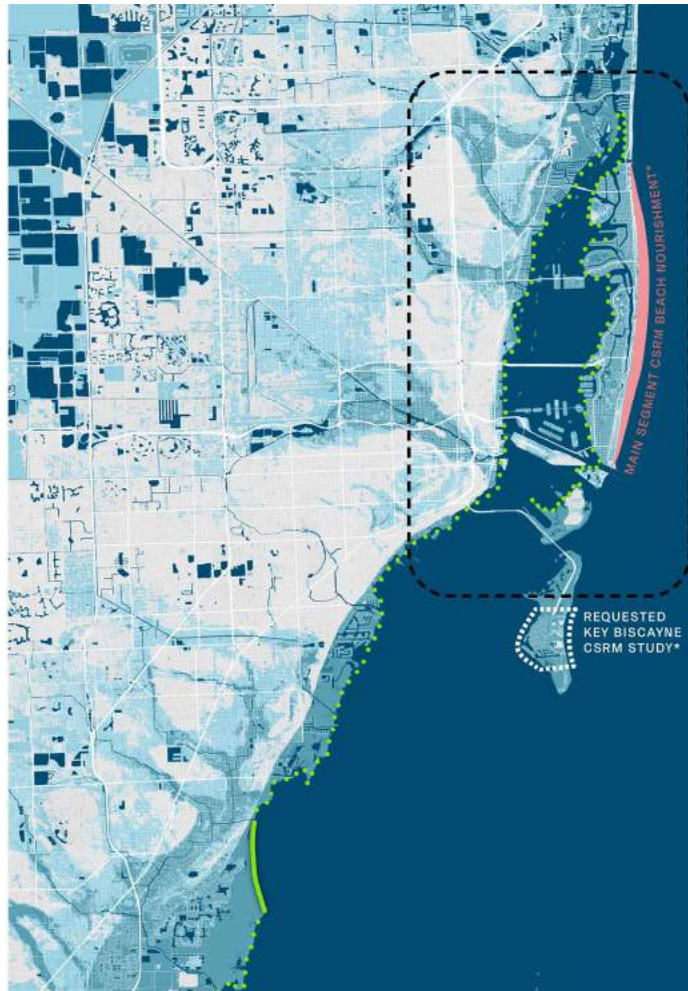
- USACE Alignment
- Gates or Control Structures
- Outside of Alignment
- Non-Structural Measures
- Proposed Nature Based Solutions
- Miami-Dade County, Florida Main Segment Coastal Storm Risk Management Final Integrated Feasibility Report And Environmental Assessment

\*Not included in the Miami-Dade County Back Bay CSRM Study



# Proposed Non-Structural Alternative

## Elevation and Floodproofing



### LEGEND

Flood Depth (SACS Data)  
200 Year Storm + 2.98 ft  
Sea Level Rise by 2120

Shallower than 3 ft  
Deeper than 3 ft

Non-Structural Measures

Proposed Nature Based Solutions

Possible Nature Based Solutions

Miami-Dade County, Florida Main Segment Coastal Storm Risk Management Final Integrated Feasibility Report And Environmental Assessment

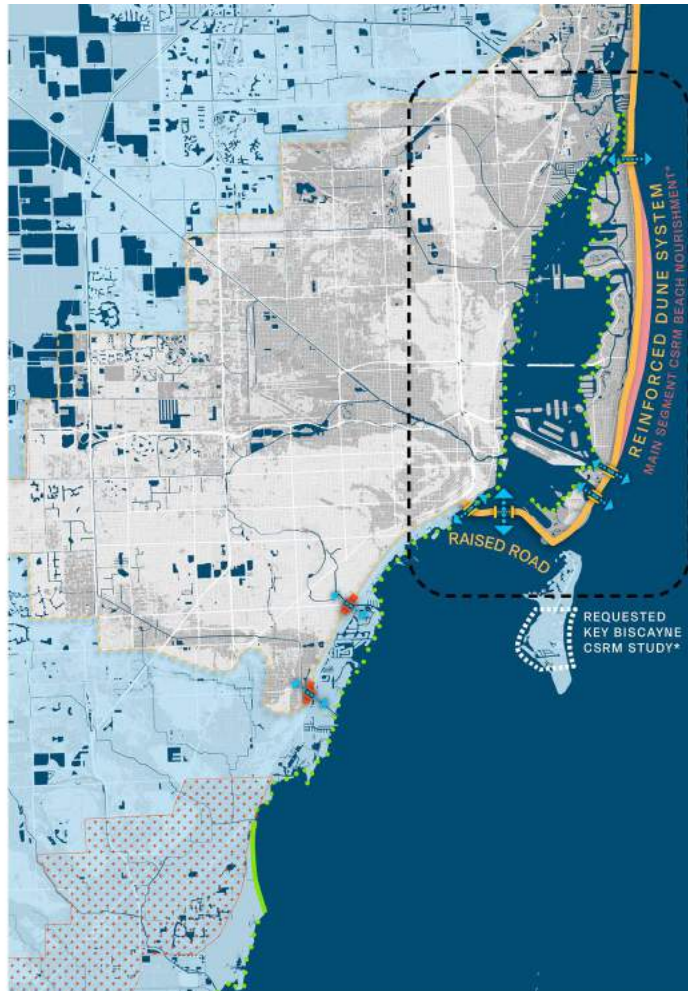
\*Not included in the Miami-Dade County Back Bay CSR Study

# Proposed Atlantic Coastline Alternative

Illustrative concepts inclusive of November 2022 Charrette and January 2023 Meetings



moffatt & nichol



## LEGEND

- Atlantic Alignment
  - Navigation Gates / Control Structures
  - Outside of Alignment
  - Navigation Gates / Control Structures
  - Non-Structural Measures
  - Proposed Nature Based Solutions
  - Possible Nature Based Solutions
  - Miami-Dade County, Florida Main Segment Coastal Storm Risk Management Final Integrated Feasibility Report And Environmental Assessment
- \*Not included in the Miami-Dade County Back Bay CSRM Study



# Proposed Atlantic Coastline Alternative

Illustrative concepts inclusive of November 2022 Charrette and January 2023 Meetings



Elevate Buildings + Infrastructure



Surge Barrier Gates



Artificial Reef



SLR Adapted Sea Walls + Living Shoreline



Submerged Breakwater



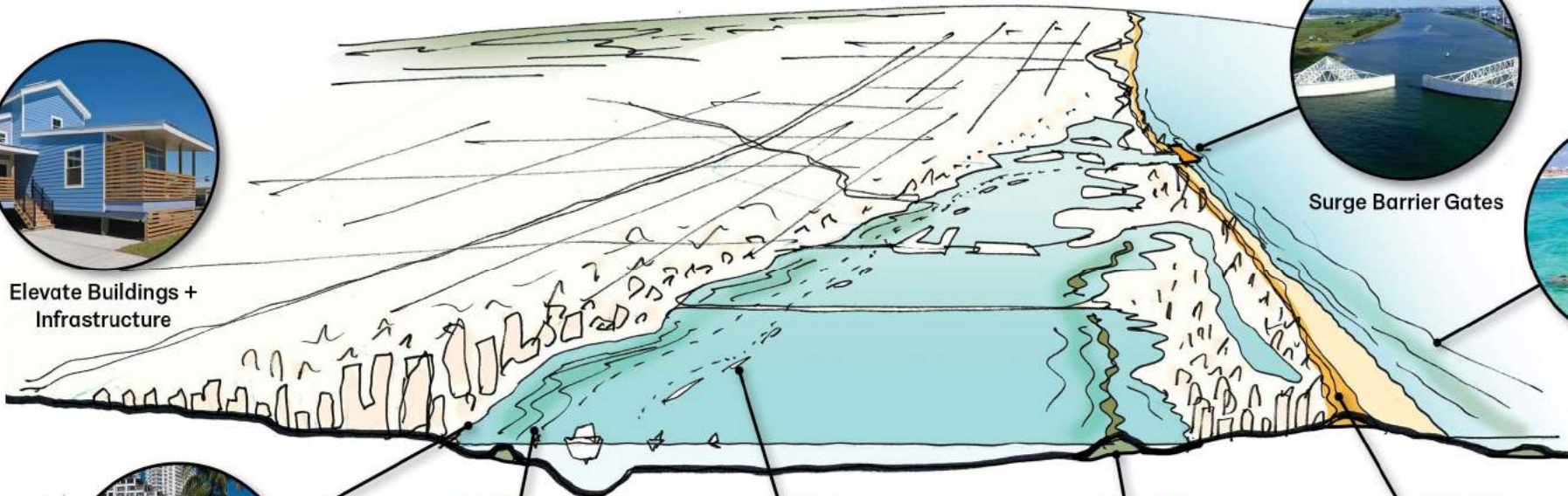
Enhanced Islands



Mangroves



Reinforced Dune System



# Upcoming Public Engagement Opportunities



**Virtual Public Meeting**  
Thursday  
**February 23<sup>rd</sup> | 5:00pm**  
RSVP: <https://bit.ly/40GsKkN>



**Charrette #2**  
Wednesday - Friday  
**March 1<sup>st</sup>-3<sup>rd</sup> | All-day**  
Location: PortMiami (Details TBD)









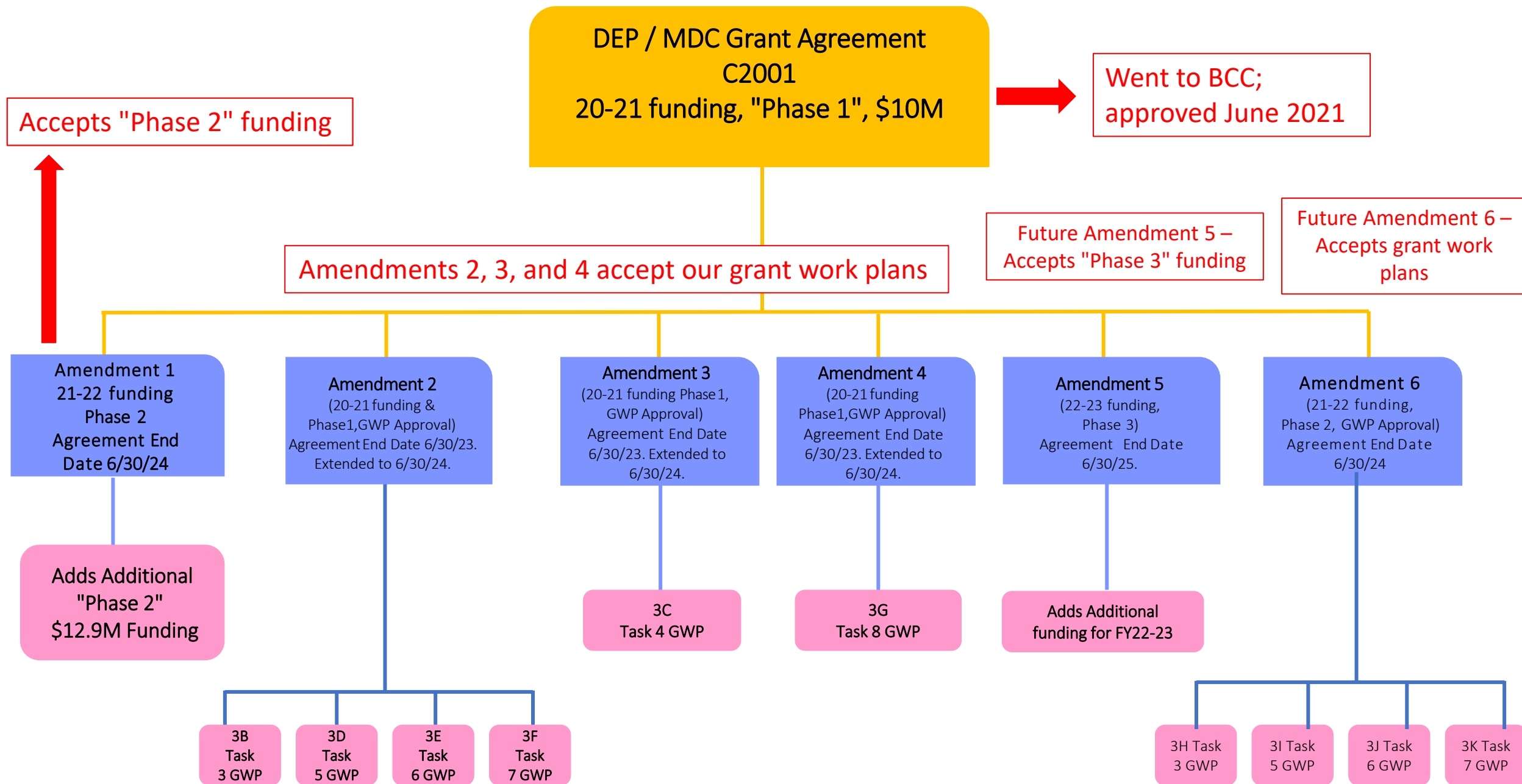
US Army Corps  
of Engineers.

<https://www.saj.usace.army.mil/MiamiDadeBackBayCSRFeasibilityStudy/>



## Project: Water Quality Characterization and Pollution Reduction

| Task / Type  | Project Name                                    | Description   | Phase 1<br>(\$10M) | Phase 2<br>(\$12.9M) | Phase 3<br>(\$14.5M) |
|--|---|---|--------------------|----------------------|----------------------|
| <b>Task 3</b><br><b>Investigative</b>   | Water Quality Characterization                  | Identify sources of pollution in Biscayne Bay   | <b>\$2,150,000</b> | <b>\$2,250,000</b>   | <b>\$0</b>           |
| <b>Task 6</b><br><b>Restorative</b>     | Septic to Sewer Conversion                      | Connect2Protect program   | <b>\$4,400,000</b> | <b>\$6,690,463</b>   | <b>\$14,500,000</b>  |
| <b>Task 4</b><br><b>Preventative</b>    | Innovative Technology - Wastewater              | Preventing Sanitary Sewer Overflows with Smart Covers and Smart Rain Gauges   | <b>\$1,150,000</b> | <b>\$2,000,000</b>   | <b>\$0</b>           |
| <b>Task 7</b><br><b>Restorative</b>     | Stormwater Treatment                            | Implementing stormwater technology in the Little River area.  | <b>\$1,300,000</b> | <b>\$2,000,000</b>   | <b>\$0</b>           |
| <b>Task 8</b><br><b>Restorative</b>   | Biological Restoration to Enhance Water Quality | The development of a “Living Shoreline” guide for the public and business .<br>The creation of sponge nurseries to increase filtration and reduce bacteria. | <b>\$500,000</b>   | <b>\$0</b>           | <b>\$0</b>           |
| <b>Task 5</b><br><b>Preventative</b>  | Septic Education & Outreach<br>Connect2Protect  | Education efforts in Little River Adaptation Action Area for Connect2Protect  | <b>\$500,000</b>   | <b>TBD</b>           | <b>\$0</b>           |

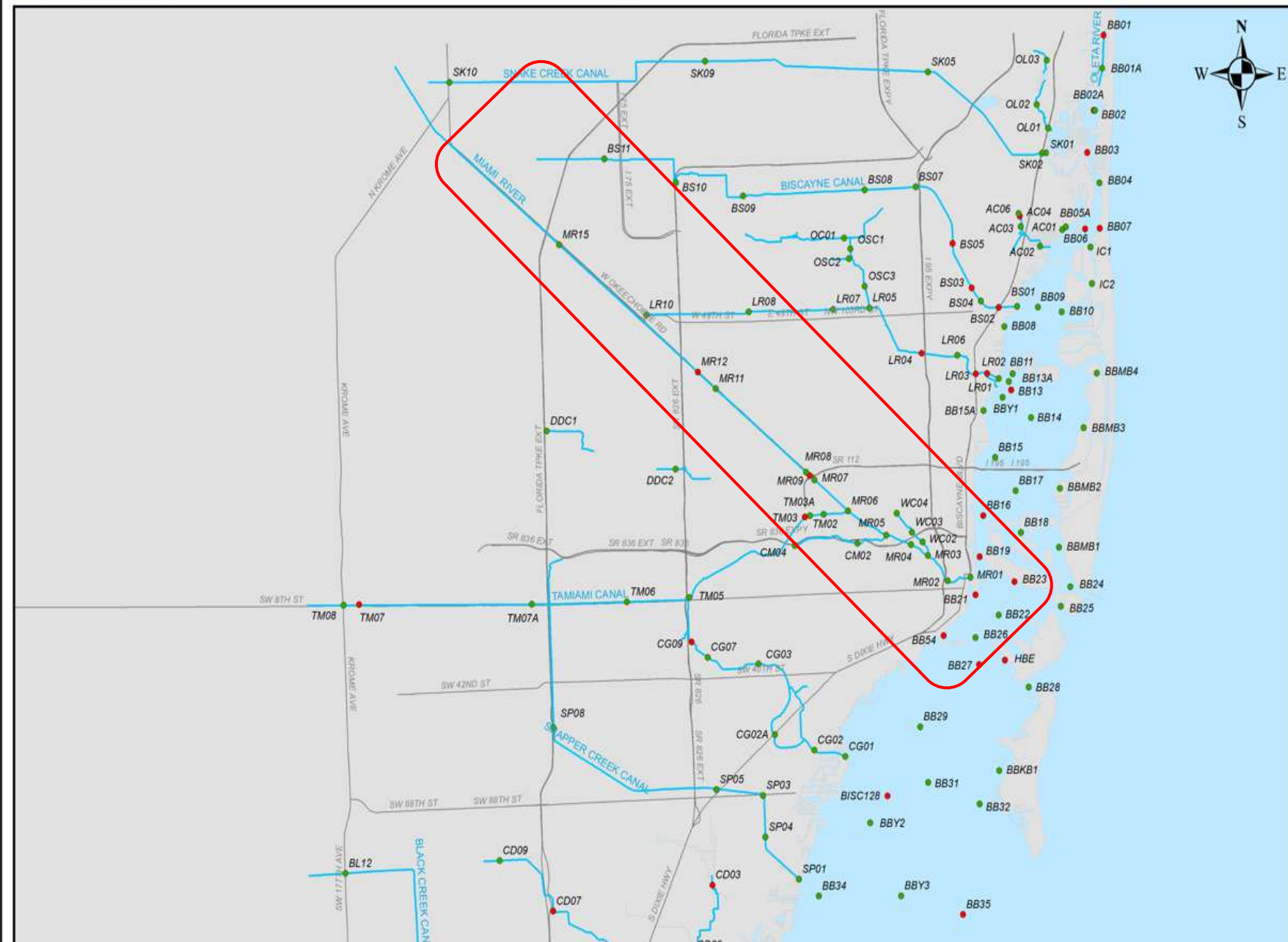


| Tasks | Task Name   | Co-Principal Investigator    | Description   | Details  |
|-------|---|------------------------------|---|--|
| 3.1   | Quality Assurance Project Plan  | Sweeney, Dr.Gardinali (FIU)  | The Grantee will prepare the QAPP and will specify all key processes/information required for the execution of the project.   |  |
| 3.2   | Reporting   | Sweeney, Dr. Gardinali (FIU) | The Grantee will provide a quarterly progress and budget report. The progress report will summarize the work completed within each task for the reporting period.   |  |
| 3.3   | Water Quality Characterization  |                              | Identify sources of water quality pollution in north Biscayne Bay watersheds, with a focus on the Miami River and Inlet Contributing Area (C-6), Little River (C-7), and Biscayne Canal (C-8) basins.   |  |
| 3.3A  | Inventory of Potential Pollution Sources and Pollutants   | Dr. Piero Gardinali (FIU)    | Identify the key water sources contributing to the Miami River, Little River, and Biscayne Canal watersheds, catalog them, and produce an inventory based on existing and available datasets.   |  |
| 3.3B  | Water Quality Sampling Program  | Dr. Piero Gardinali (FIU)    | Collect information on physical, chemical, and biological water characteristics that will provide discriminatory power to identify specific sources of pollution  | <b>Miami River:</b> Approx. 51 sites total<br>30- existing, 10- outfall, 10-new,1-opportunistic<br><b>Little River:</b> Approx. 25 sites total 11- existing, 6- outfall, 6-new, 2-opportunistic<br><b>Biscayne Canal:</b> Approx. 10 sites total<br>10- existing, 0- outfall, 0-new, 0-opportunistic |
| 3.3C  | Characterization of Particulate Material and Sediment Movement  | Dr. Swart (UM RSMAS)         | Sediment samples will be co-located with water sampling sites of environmental relevance. These will be analyzed for the content of organic carbon, carbon isotopic composition, nitrogen isotopic composition and C/N ratio. This study will trace the movement of sediments from the Miami River, Little River, and Biscayne Canal into the relevant Biscayne Bay basins. |  |
| 3.3D  | Relative Contributions of Ground and Surface Water into Miami River, Little River, Biscayne Canal and Environment | Dr. Swart (UM RSMAS)         | Study the input of surface and groundwater into the Miami River and ultimately Biscayne Bay using concentrations of the stable isotopes of H and O and concentration of major and minor elements in water samples collected temporally and spatially.   |  |

| Tasks | Task Name   | Co-Principal Investigator       | Description   |
|-------|---|---------------------------------|---|
| 3.3E  | Using Nitrogen Isotopes as Indicators of Pollution Sources  | Dr. Swart (UM RSMAS)            | Measure nitrogen isotope within the following components: particulate organic material, dissolved inorganic nitrogen, sediments, and, if present, submerged aquatic vegetation.   |
| 3.3F  | Initial Model Data Compilation  | Dr. Olascoaga (UM RSMAS)        | To compile existing data needed to characterize the contribution of the Miami River and Inlet Contributing Area (C-6), Little River (C-7), and Biscayne Canal (C-8) as sources of pollution reaching Biscayne Bay.  |
| 3.3G  | Model Implementation  | Dr. Olascoaga (UM RSMAS)        | To implement a hydrodynamic model of the circulation in Biscayne Bay.   |
| 3.3H  | Model Validation  | Dr. Olascoaga                   | The simulated circulation will be validated using the newly collected data and historical data (in-situ velocity and salinity measurements and trajectories produced by satellite-tracked drifting buoys.)  |
| 3.3I  | Model Output Analysis   | Dr. Olascoaga                   | The output from the model will be analyzed using specialized tools from nonlinear dynamics developed by the team members, and enable users to evaluate how pollution from Miami River, Little River, and Biscayne Canal affects receiving basins in Biscayne Bay.   |
| 3.3J  | Assessments of microbial community, pathogens, and DNA source tracking of bacteria in water quality samples | Dr. Gidley and Dr. Sinigalliano | Total microbial community metagenomic eDNA will be extracted and purified from water samples collected from the Miami River, Little River, Biscayne Canal, extending into Biscayne Bay. Purified eDNA extracts will be analyzed by quantitative PCR for general enterococci , human-source Bacteroides, dog-source Bacteroides, and bird-source Helicobacter species.   |
| 3.3K  | Analysis of Sediment/Particulate Matter, Microbial, Pathogen Assessments, and Source Tracking               | Dr. Gidley and Dr. Sinigalliano | Total microbial community metagenomic environmental DNA (eDNA) will be extracted and purified from sediment samples collected from the Miami River, Little River, Biscayne Canal, extending into Biscayne Bay. This eDNA will be analyzed by qPCR-based microbial source tracking as described above for general enterococci, human-source Bacteroides, dog-source Bacteroides, and bird-source Helicobacter, with appropriate controls and EPA recommended QA/QC.                    |
| 3.3L  | Source apportioning and microbial fingerprinting  | Dr. Gidley and Dr. Sinigalliano | Aliquots of selected samples of the total microbial community metagenomic eDNA extracts already generated from water and sediment for the MST analyses, will also be analyzed by 16S ribosomal DNA amplicon sequencing as per the standardized Earth Microbiome Project protocols and the generated sequencing data will be subject to community taxa bioinformatics analysis, as well as bioinformatically analyzed by specific “Source Tracker” sequencing algorithms and pipeline. |



# MDC Surface Water Quality Monitoring Stations 2022



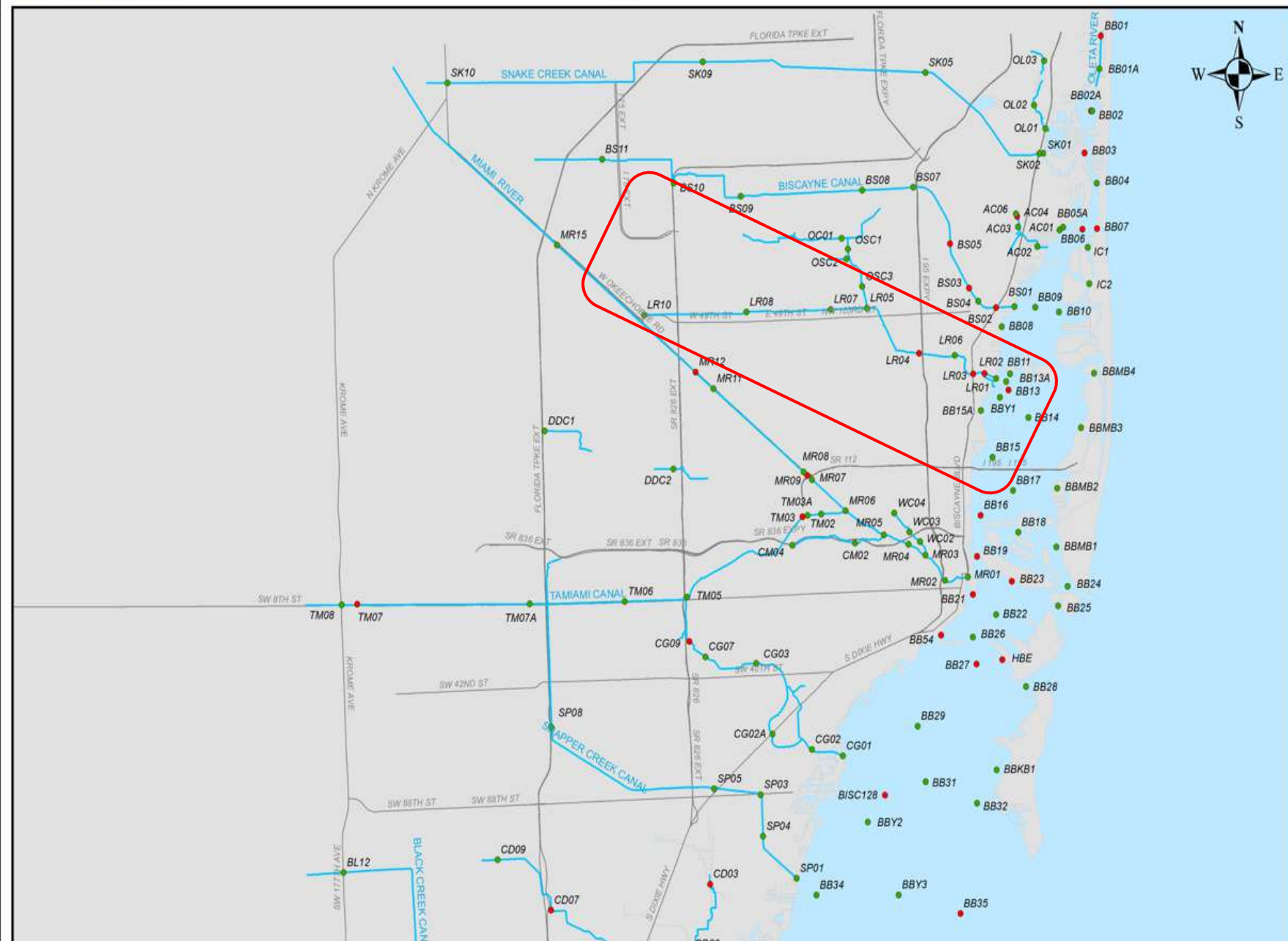
## All Monitoring Stations

- Current
- Discontinued
- Canals
- Shoreline
- Major Roads

## Miami River ( C-6)

|                          |    |
|--------------------------|----|
| Existing locations:      | 30 |
| Outfall locations:       | 10 |
| New locations:           | 9  |
| Opportunistic locations: | 1  |
| Total locations:         | 50 |

# MDC Surface Water Quality Monitoring Stations 2022



## All Monitoring Stations

- Current
- Discontinued
- Canals
- Shoreline
- Major Roads

## Little River ( C-7)

|                          |    |
|--------------------------|----|
| Existing locations:      | 11 |
| Outfall locations:       | 6  |
| New locations:           | 6  |
| Opportunistic locations: | 2  |
| Total locations:         | 25 |

# MDC Surface Water Quality Monitoring Stations 2022



## All Monitoring Stations

- Current
- Discontinued
- Canals
- Shoreline
- Major Roads

## Biscayne Canal ( C-8)

|                          |    |
|--------------------------|----|
| Existing locations:      | 4  |
| Outfall locations:       | 4  |
| New locations:           | 1  |
| Opportunistic locations: | 1  |
| Total locations:         | 10 |

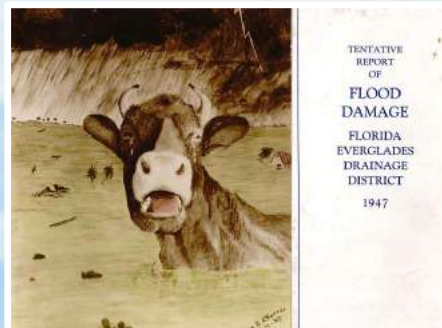
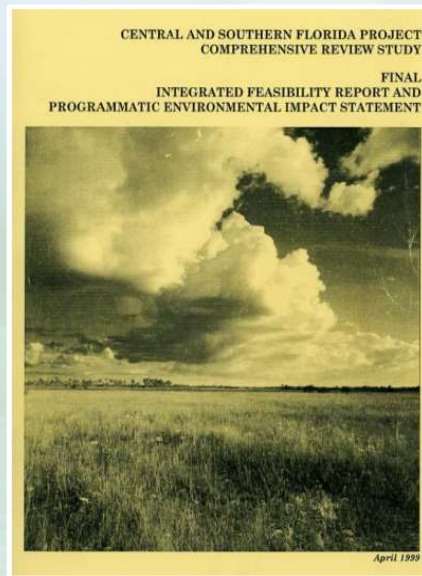


# South Florida Water Management





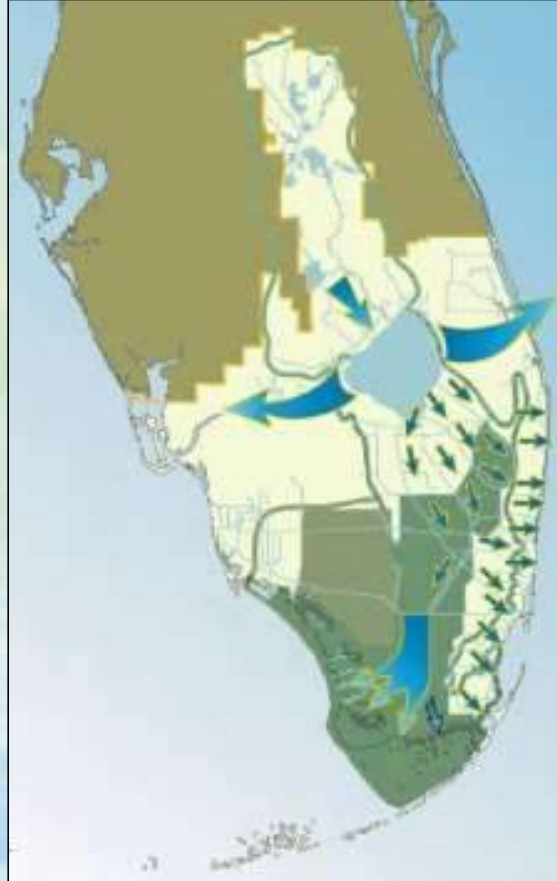
# Central and Southern Florida Flood Control Project



# Improving the Water Flow



**Historic Everglades Flow**



**Current Everglades Flow**



**Restored Everglades Flow**



SOUTH FLORIDA WATER MANAGEMENT DISTRICT

## Mission



To **safeguard and restore** South Florida's water resources and ecosystems, **protect** our communities from flooding, and **meet** the region's water needs while connecting with the public and stakeholders



SOUTH FLORIDA WATER MANAGEMENT DISTRICT

## Governing Board

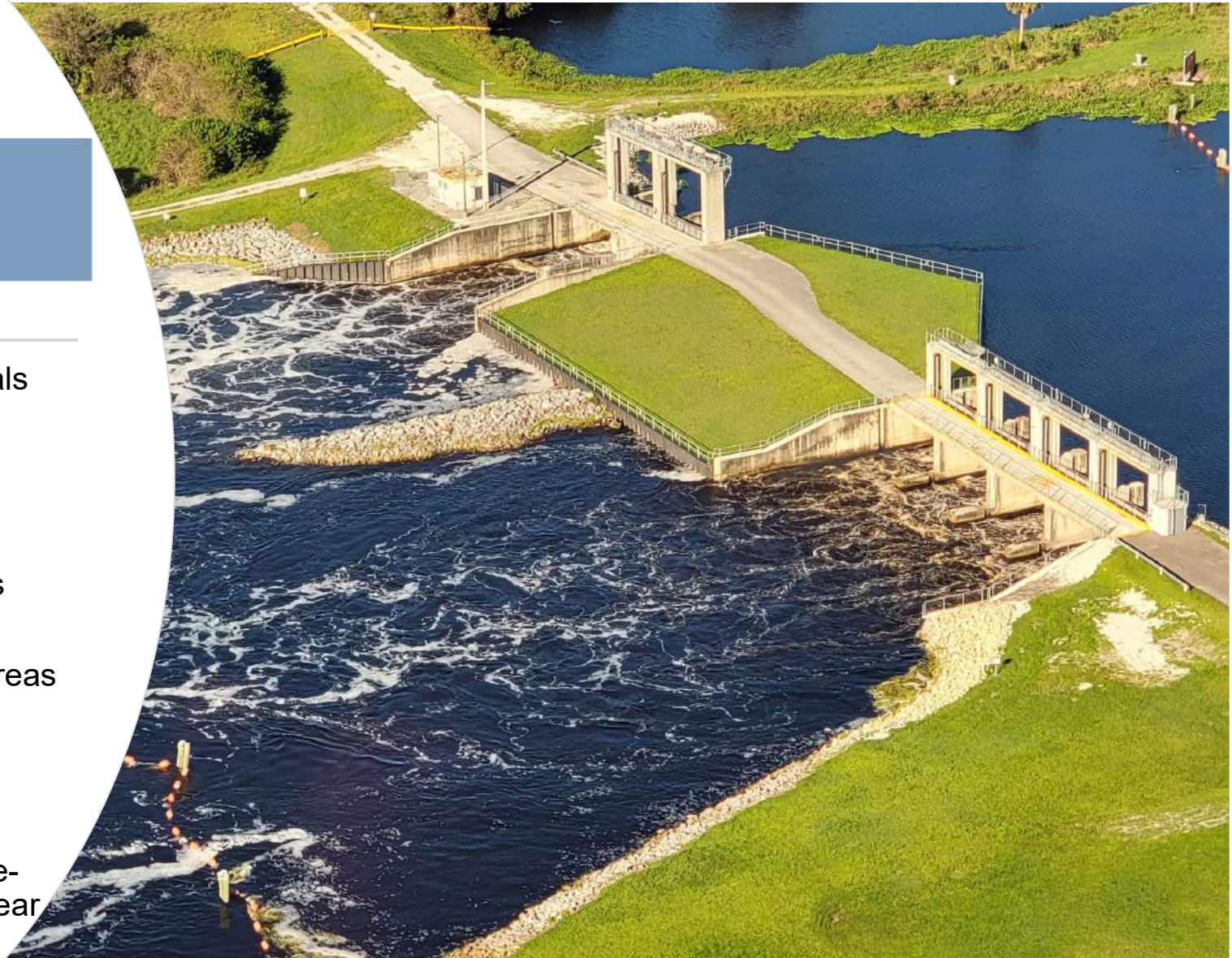


➤ 9 Board Members Appointed by the Governor



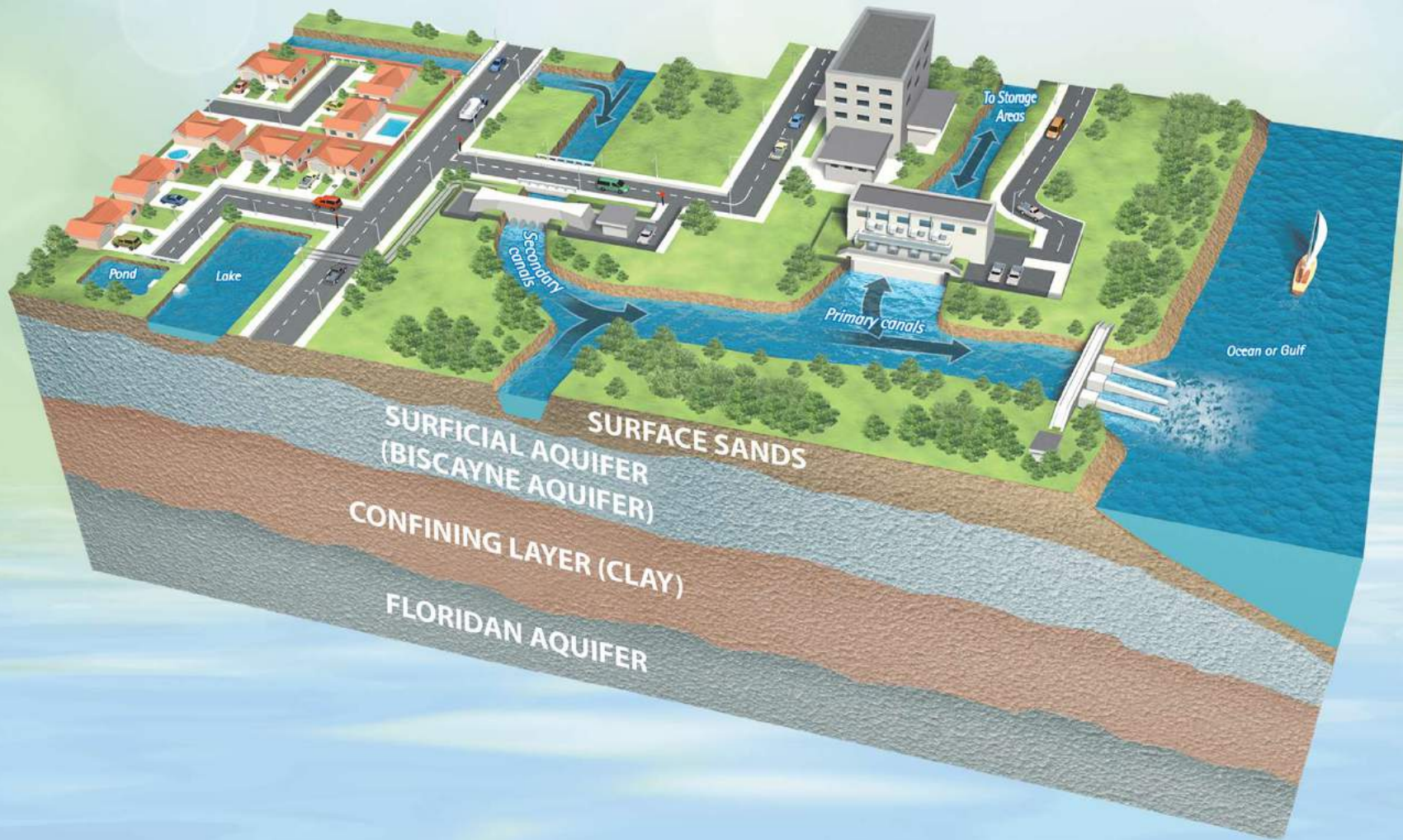
# Flood Protection

- Over 2,100 miles of canals
- Over 2,130 miles of levees/berms
- Over 915 water control structures
- Over 620 project culverts
- 89 pump stations
- Stormwater Treatment Areas
- 5 Major Reservoirs in Design or Construction Phase
- Regional network moves more than 20 million acre-feet during an average year



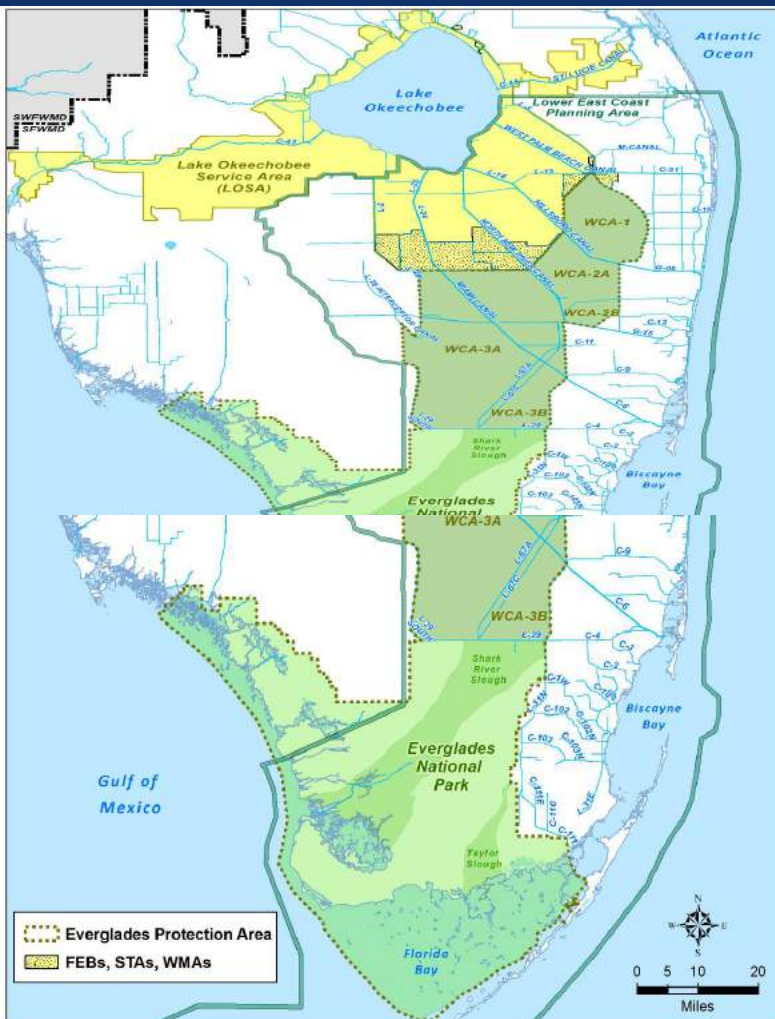


# Flow of Water





# Water Supply – Regional Water Management System



- Regional Water Management System is an integral part of South Florida's water supply system.
- Lake Okeechobee is the heart of South Florida's system.
- Lake Okeechobee continues to be a vital freshwater resource for South Florida.
- Water Conservation Areas (WCA) provide for aquafer recharge.



SOUTH FLORIDA WATER MANAGEMENT DISTRICT



# **Debris Removal In District Waterways In Miami-Dade County**

[sfwmd.gov](http://sfwmd.gov)



- **S-22**
- **S-26**
- **S-27**
- **S-28**
- **G-58**

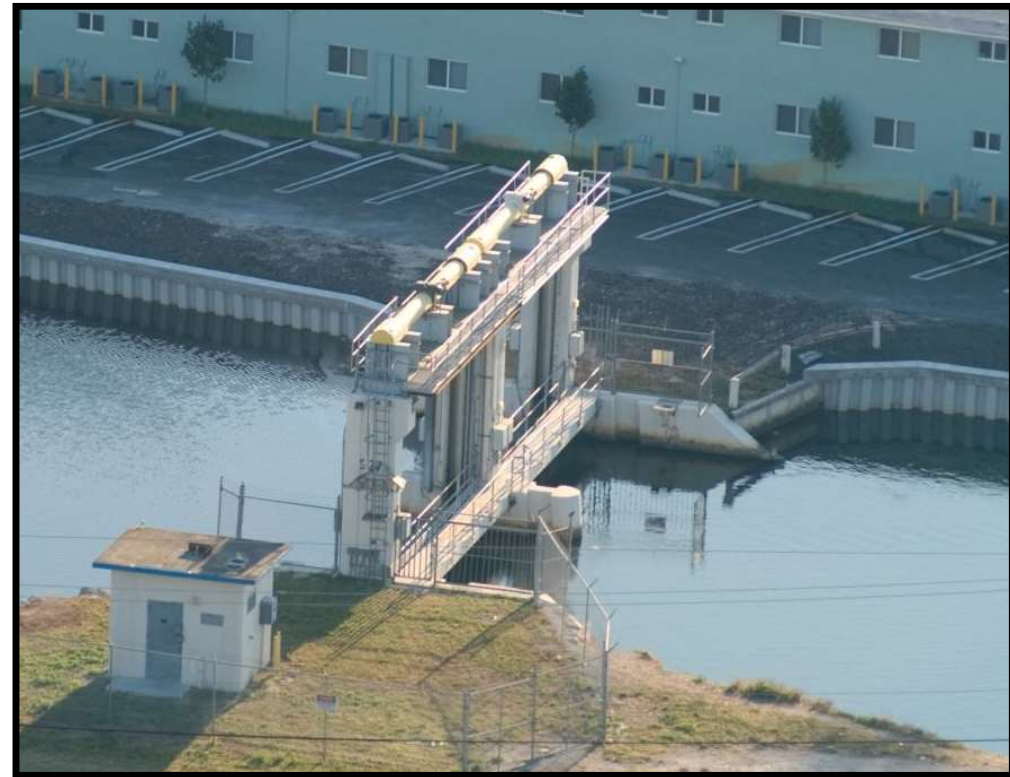




## Debris Issues In Miami Dade County

### Background:

- S-27 is the coastal salinity structure located on C-7 Canal. C-7 is approximately 11 miles long and flows west to east through 5 local urban municipalities. Large amounts of trash and debris accumulates upstream of S-27. This results in high number of complaints to clean the area requiring significant District resources.



**Discharge of debris to coastal estuaries can have negative impacts to water quality.**





## Type of Debris that Accumulates



- Plastic water bottles, Styrofoam cups, coconuts and vegetation



- Doors, bed mattresses, couches, coolers, tires and pallets



# Equipment Needed to Clean Up Debris



- Towboat in action removing debris from the water



# Equipment Needed to Clean Up Debris



- Trash truck loading debris for transport and disposal

# Equipment Needed to Clean Up Debris



- Long reach trash truck removing debris directly from C-7 Canal



## After Clean Up at S-27 on C-7 Canal





## Ongoing Efforts on C-7 Canal

- In an ongoing effort to reduce debris in the Miami Little River C-7 Canal the District has installed a second tuff boom at NW 27<sup>th</sup> Avenue.
- The S-27 Structure and NW 27<sup>th</sup> Avenue booms are cleaned twice a week.



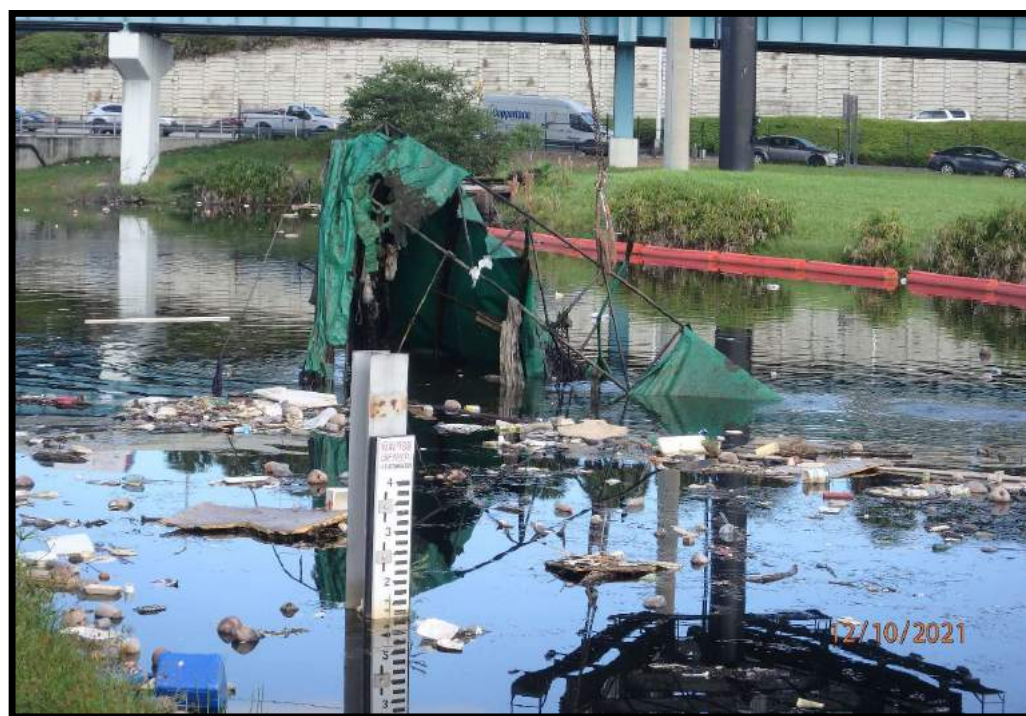


# Debris Accumulation at S-22 on C-2 Canal





# Debris Accumulation at S-26 on C-6 Canal



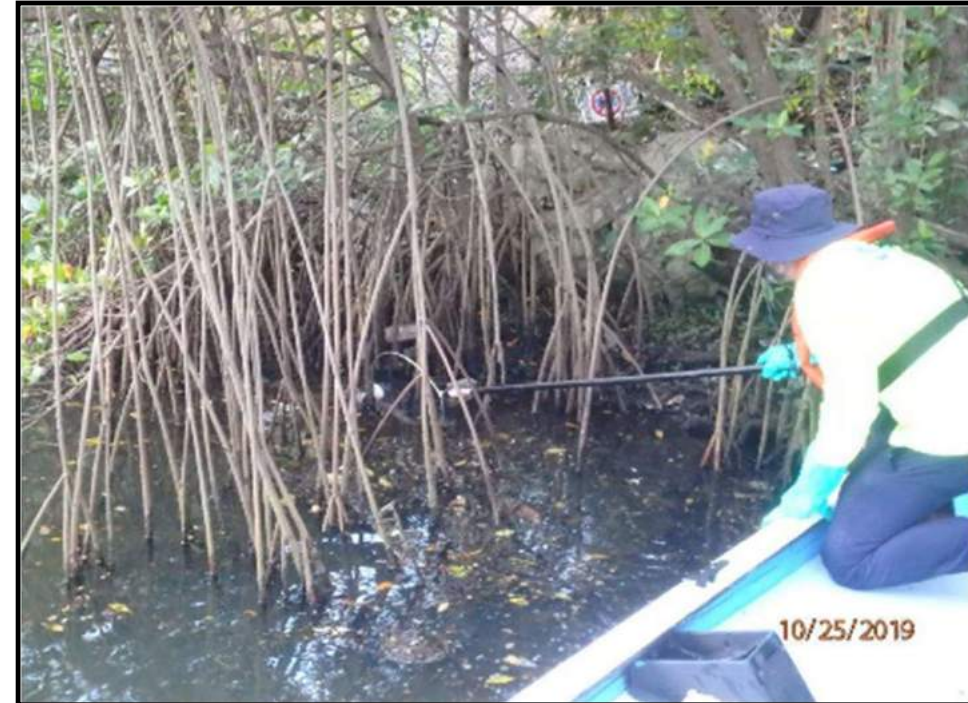


# Debris Accumulation at S-28 on C-8 Canal





## Debris Accumulation at G-58 on Arch Creek



- Due to the shallow canal and mangrove at the G-58 Structures the canal is cleaned by hand from a boat. The structure and canal is cleaned 4 times a year.



## Debris Removal Deposal Costs

### **FY21 Structure Cleaning Costs for Significant locations:**

- ❑ S-22: 25 Tons Average - 19 Cleanings, Total Cost \$11,000**
- ❑ S-26: 2 Tons Average - 2 Cleanings, Total Cost \$4,352**
- ❑ S-27: 217 Tons Average - 97 Cleanings, Total Cost \$89,433**
- ❑ S-28: 84 Tons Average - 57 Cleanings, Total Cost \$42,746**
- ❑ G-58: 2 Tons Average - 4 Cleanings, Total Cost \$2,415**

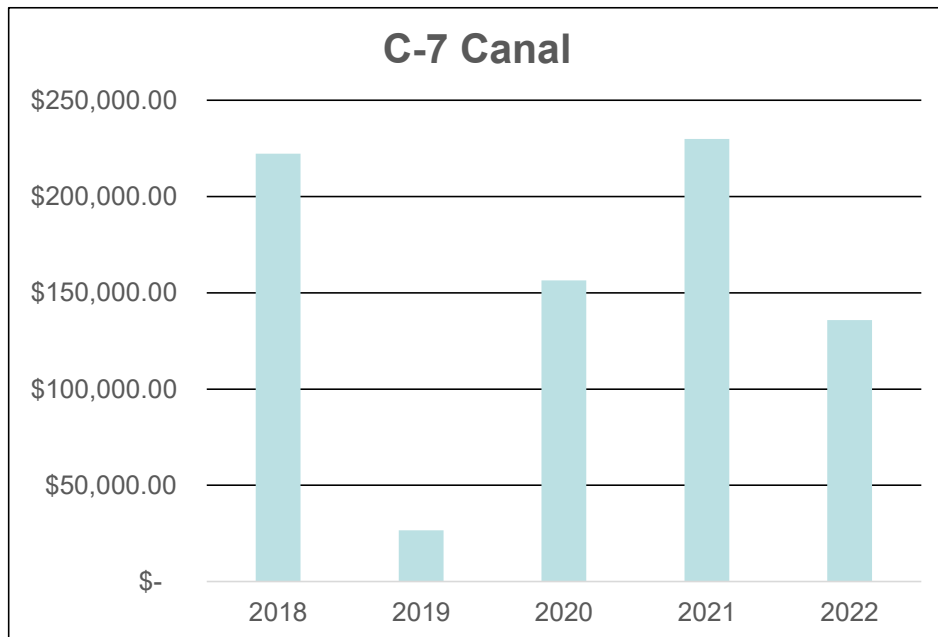
## Canal Maintenance

- Through out the year the District maintains its canal system in preparation for the Rainy Season. This includes 366 miles of canal in Miami Dade County.
- That maintenance includes the removal of items that could cause conveyance issues due to a storm or hurricane.

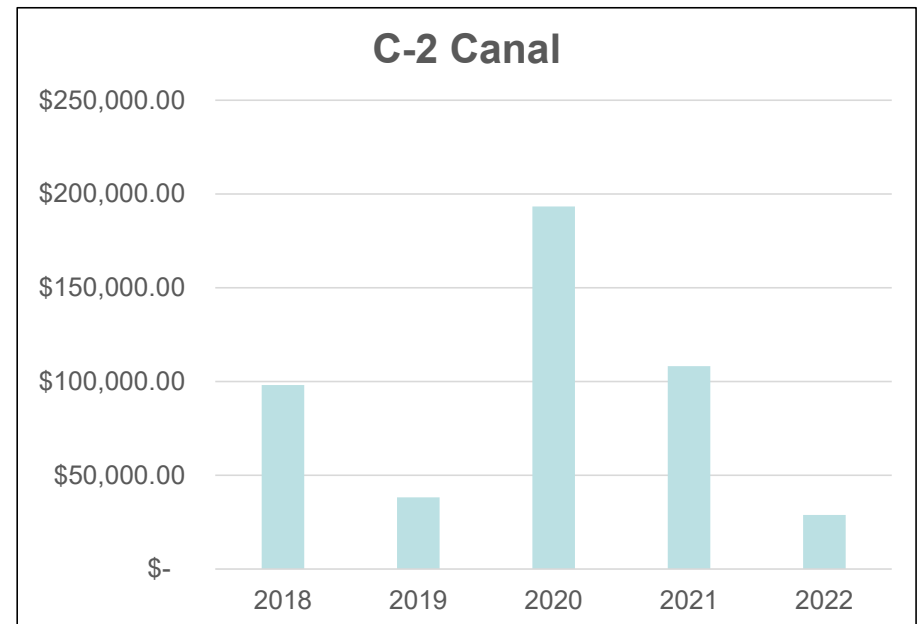




# Canal Maintenance Expenses

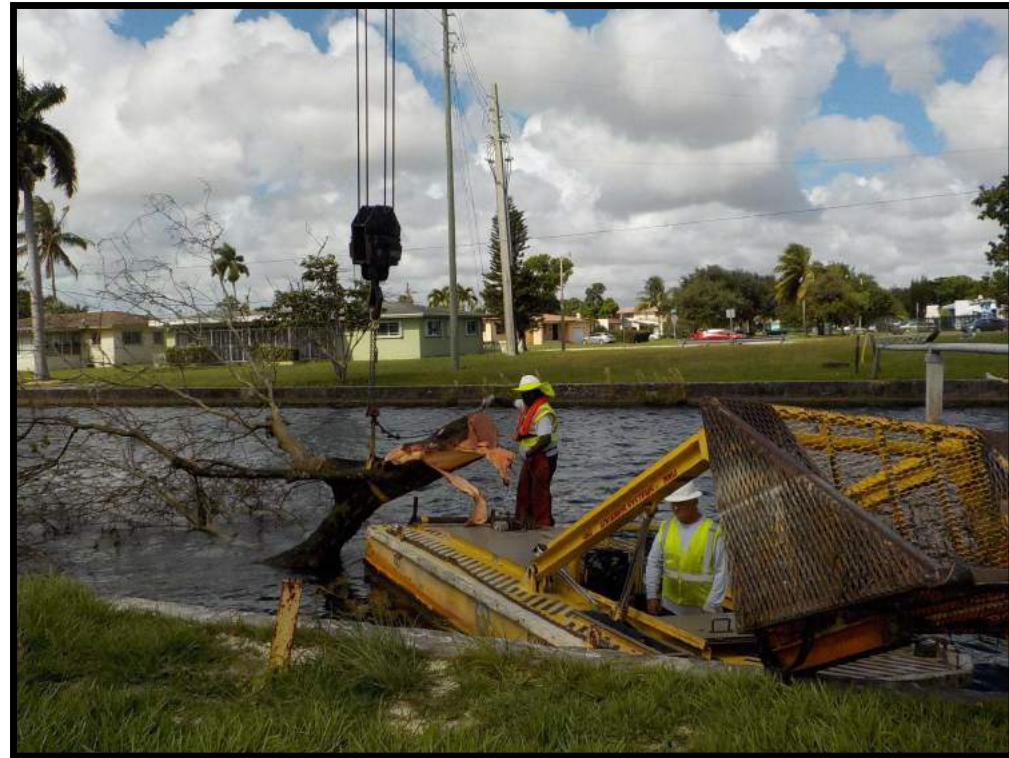


**C-7 Canal Debris and Vegetation Removal  
Average 5 years approx.: \$154,241**



**C-2 Canal Debris and Vegetation Removal  
Average 5 years approx.: \$98,325**

# Canal Maintenance



## QUESTIONS?



# M i a m i - D a d e C o u n t y

# RER

## SSOP<sup>4</sup>

## Sanitary Sewer Overflow Prediction and Prevention Pilot Plan

## DERM

Carlos L. Hernandez, PE, CFM, LEED AP, CEHP





# Minimize *SSOs*



- Protect public health,
- Protect Property Values,
- Protect Development,
- Protect Environmental Resources,...

B I S C A Y N E B A Y !







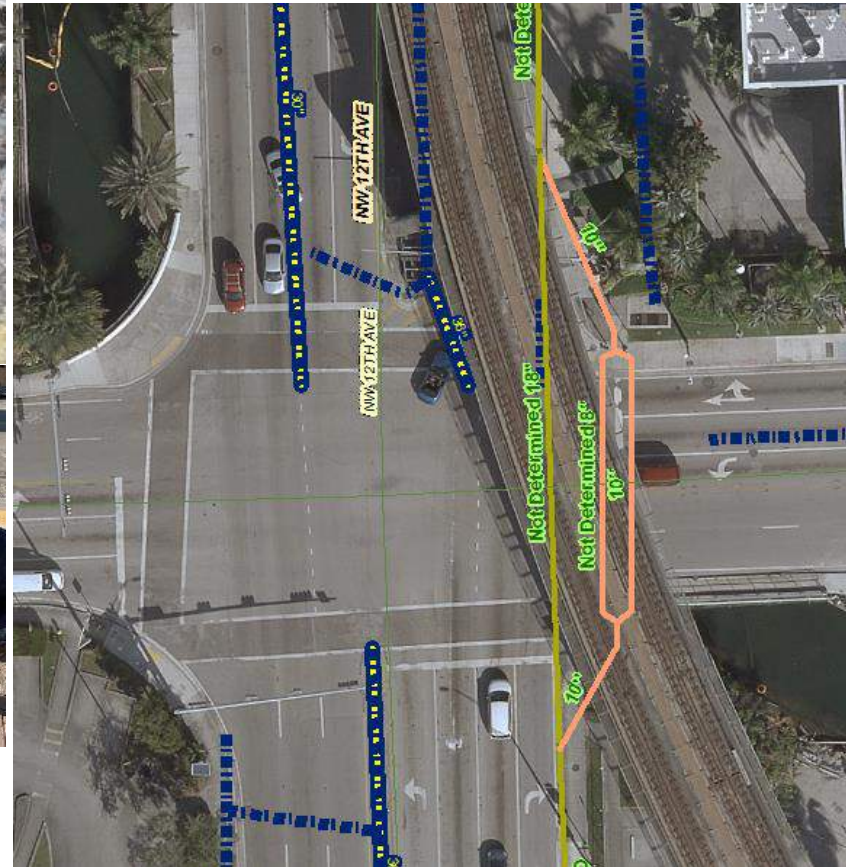
*Minimize*  
**SSOs**

- Protect public health,
- Protect Property Values,
- Protect Development,
- Protect Environmental Resources,...

**B I S C A Y N E B A Y !**







*Minimize*  
**SSOs**

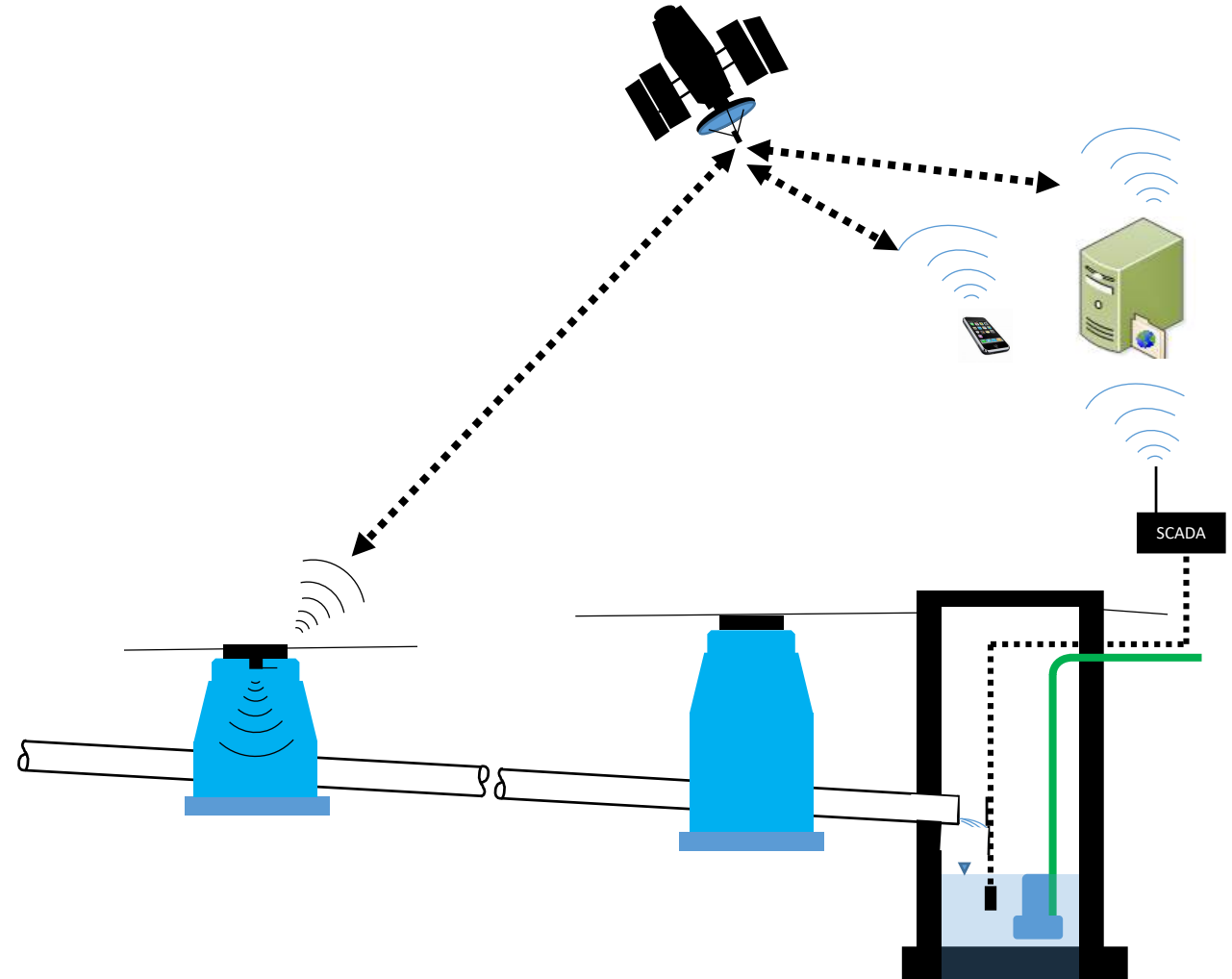


- Protect public health,
- Protect Property Values,
- Protect Development,
- Protect Environmental Resources,...

**B I S C A Y N E B A Y !**



## ***Making the Wastewater Collection System SMARTer***

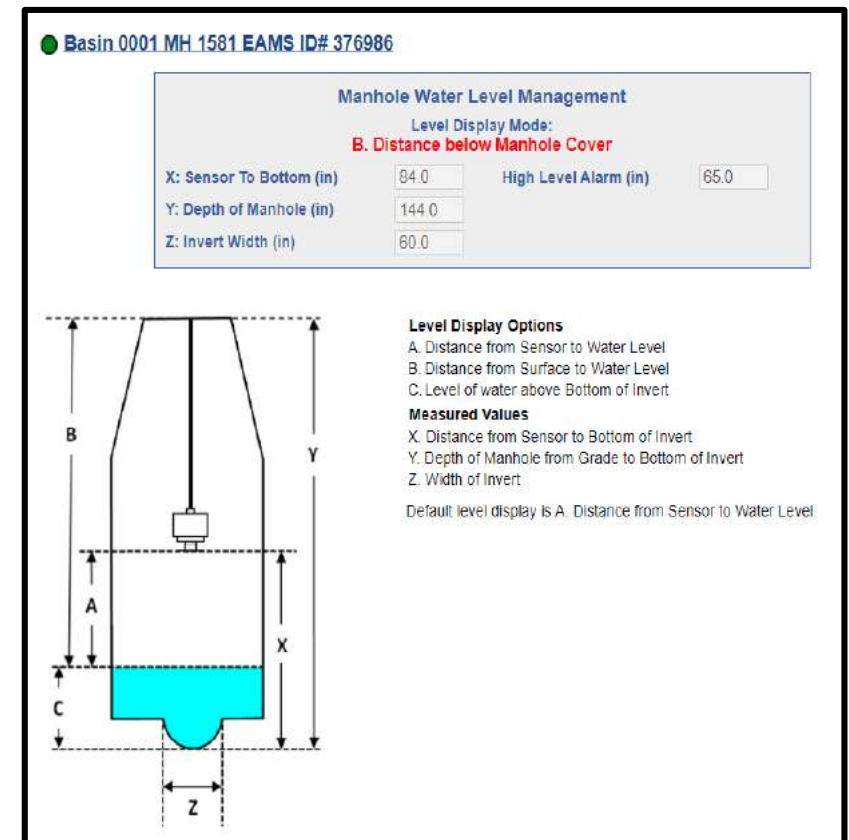






## ***Making the Wastewater Collection System SMARTer***

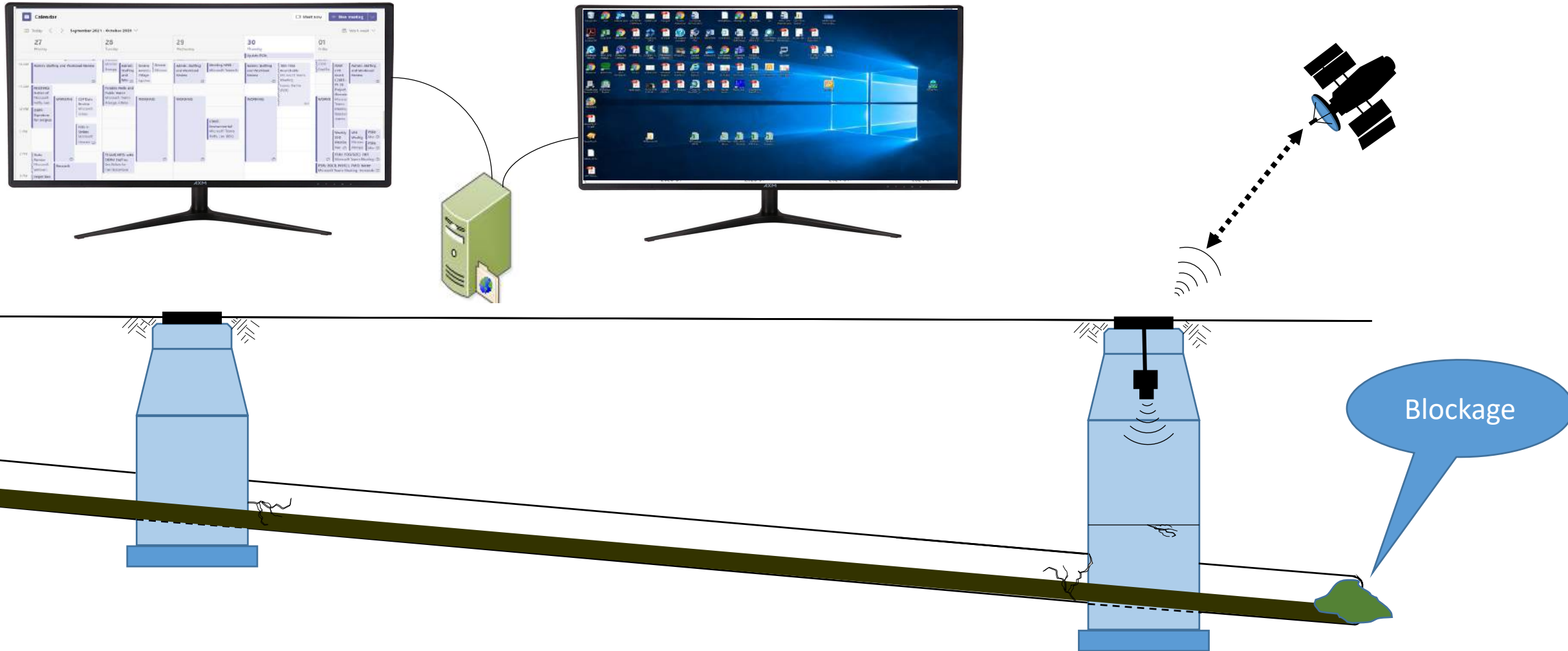
## SSOP<sup>4</sup> – Real-Time Monitoring





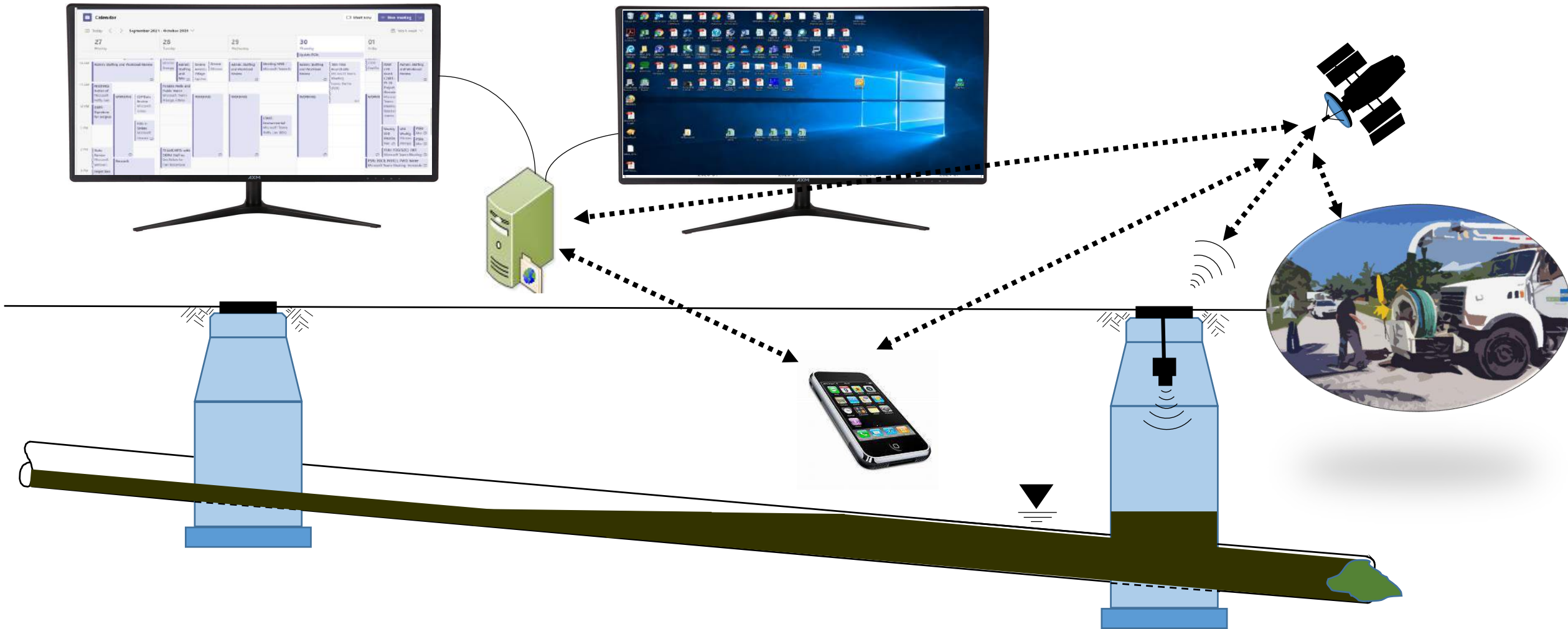
# M i a m i - D a d e C o u n t y

## SSOP<sup>4</sup>



# M i a m i - D a d e C o u n t y

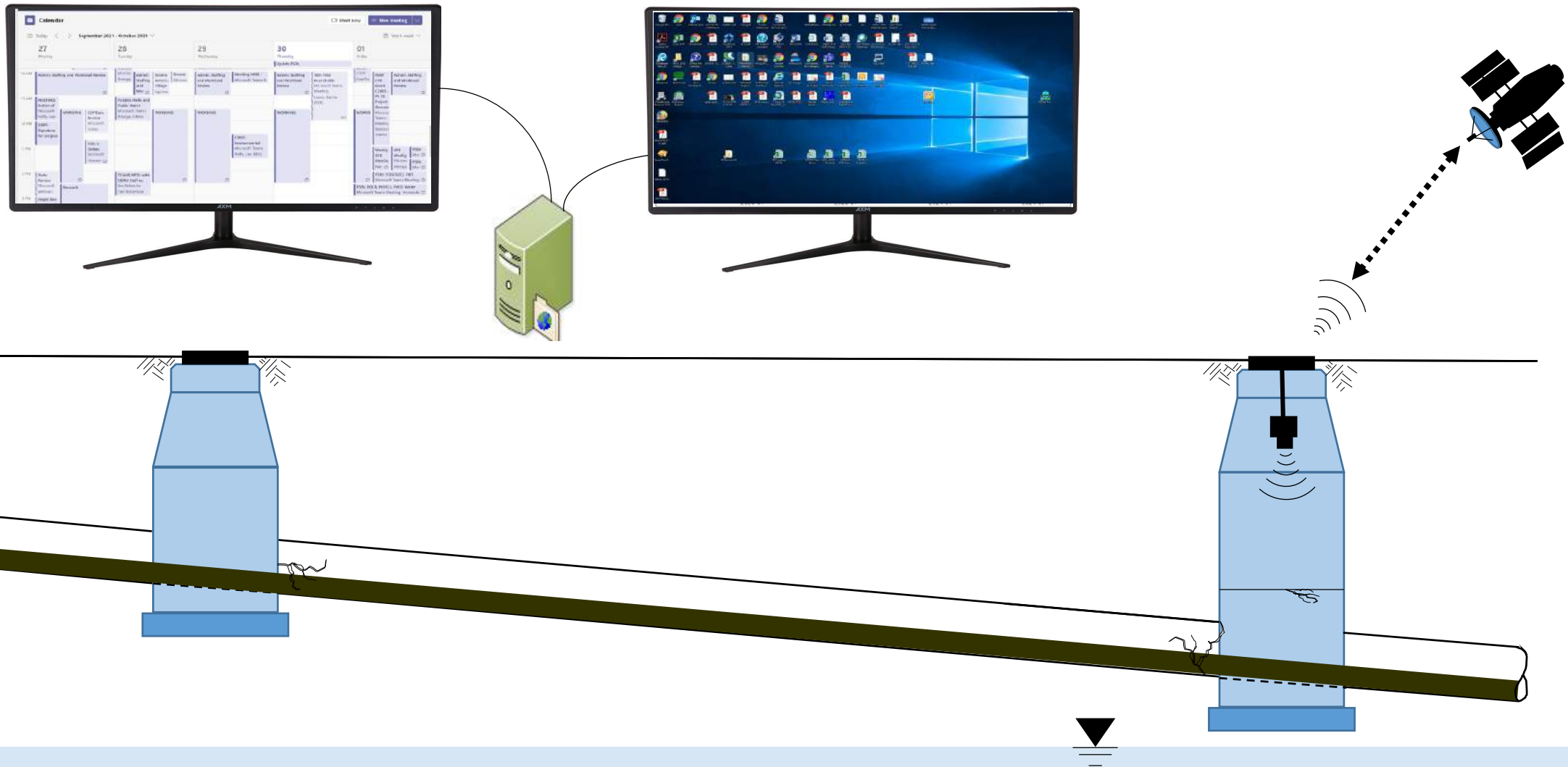
## SSOP<sup>4</sup>





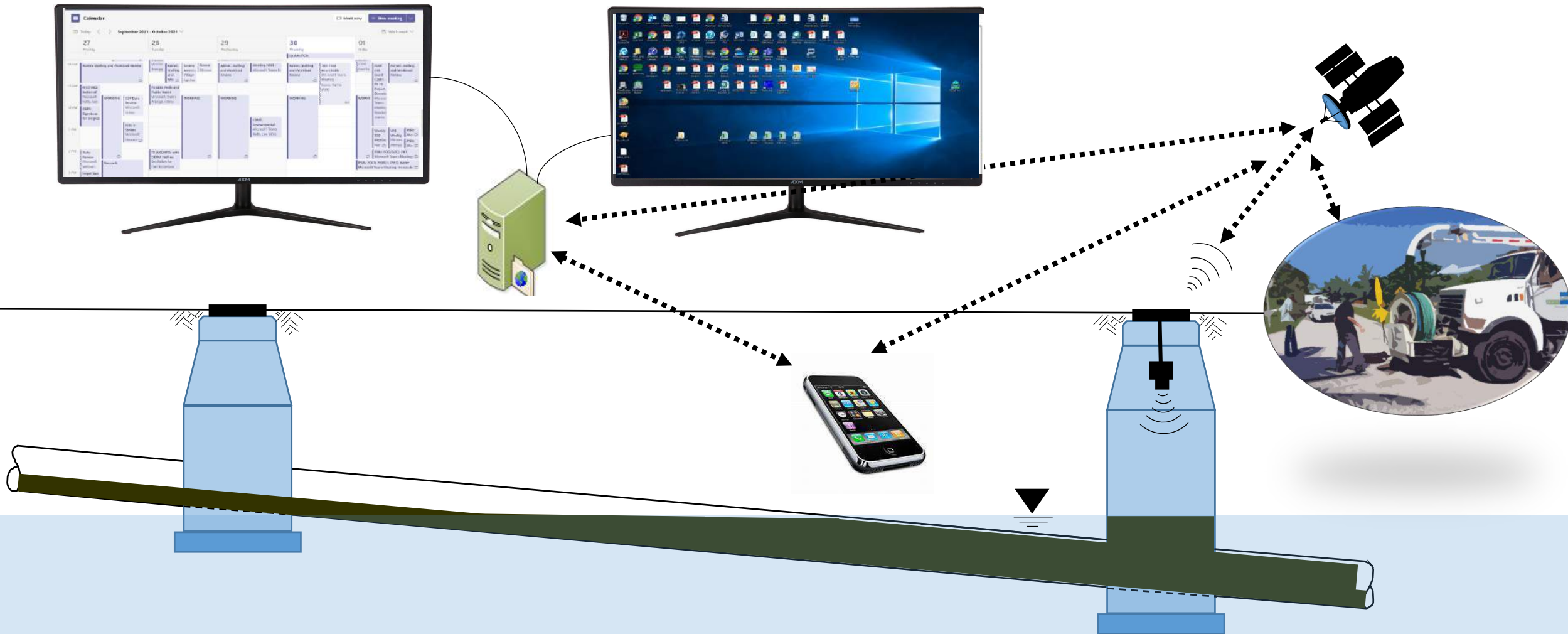
# M i a m i - D a d e C o u n t y

## SSOP<sup>4</sup>

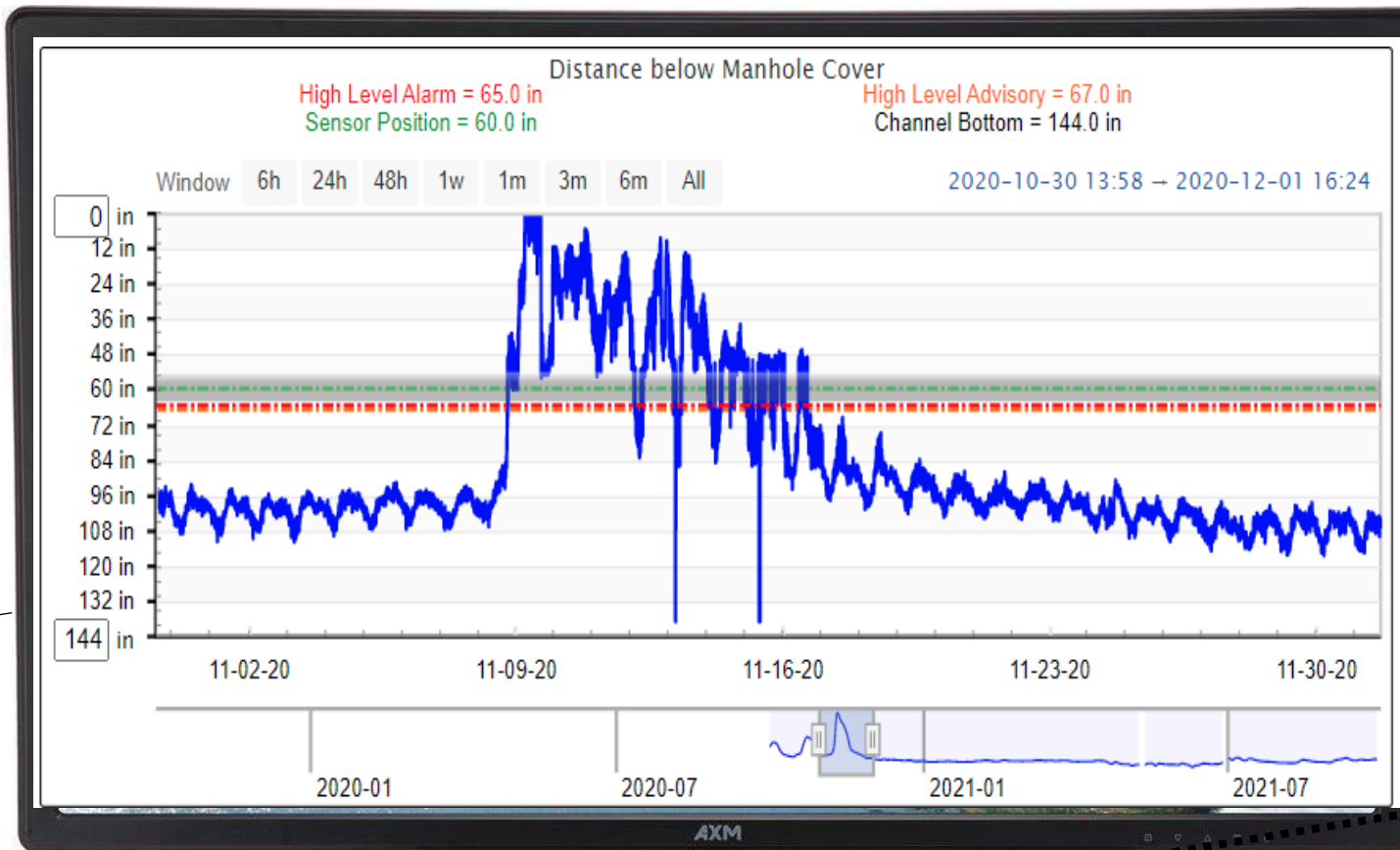


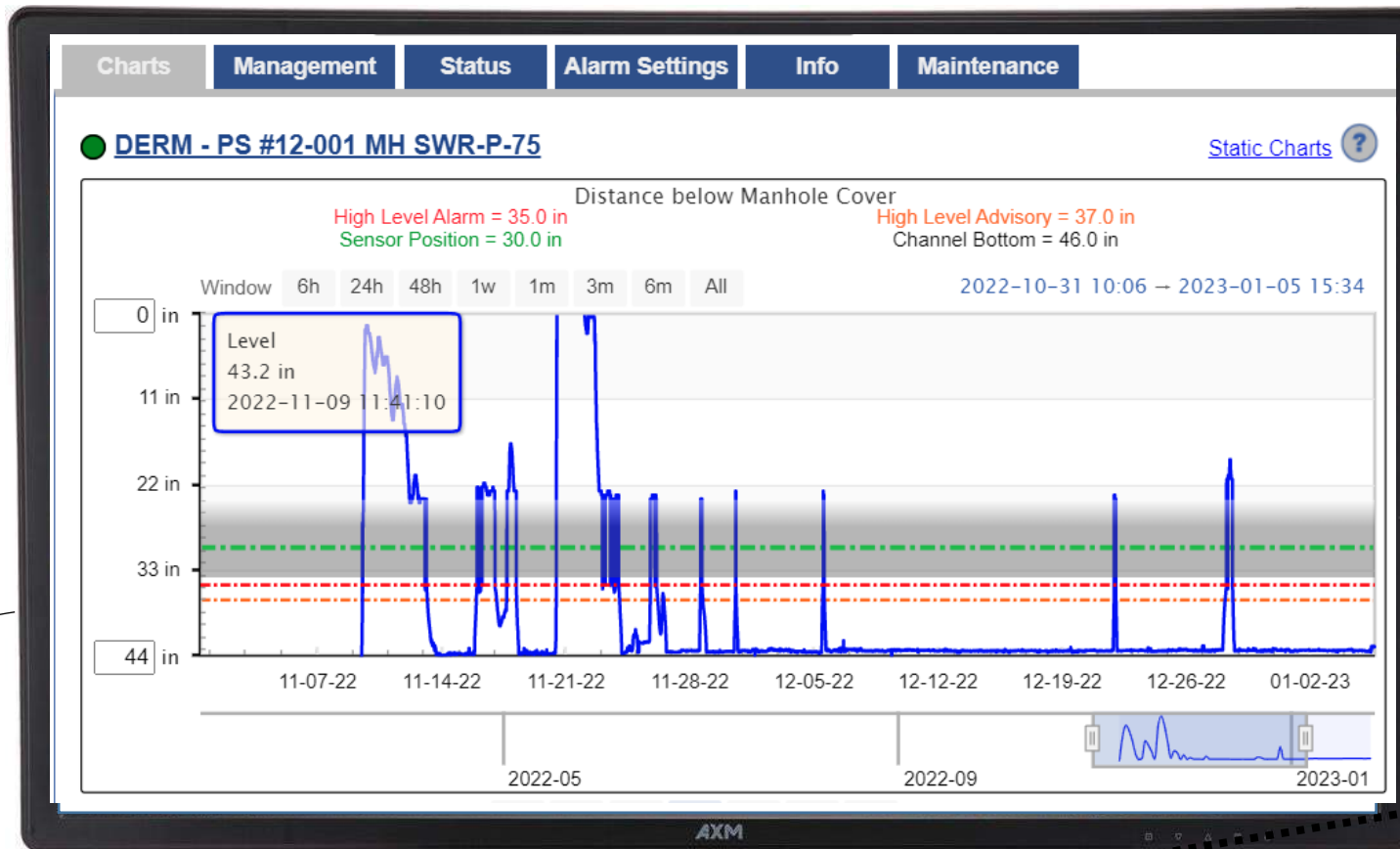
# M i a m i - D a d e C o u n t y

## SSOP<sup>4</sup>













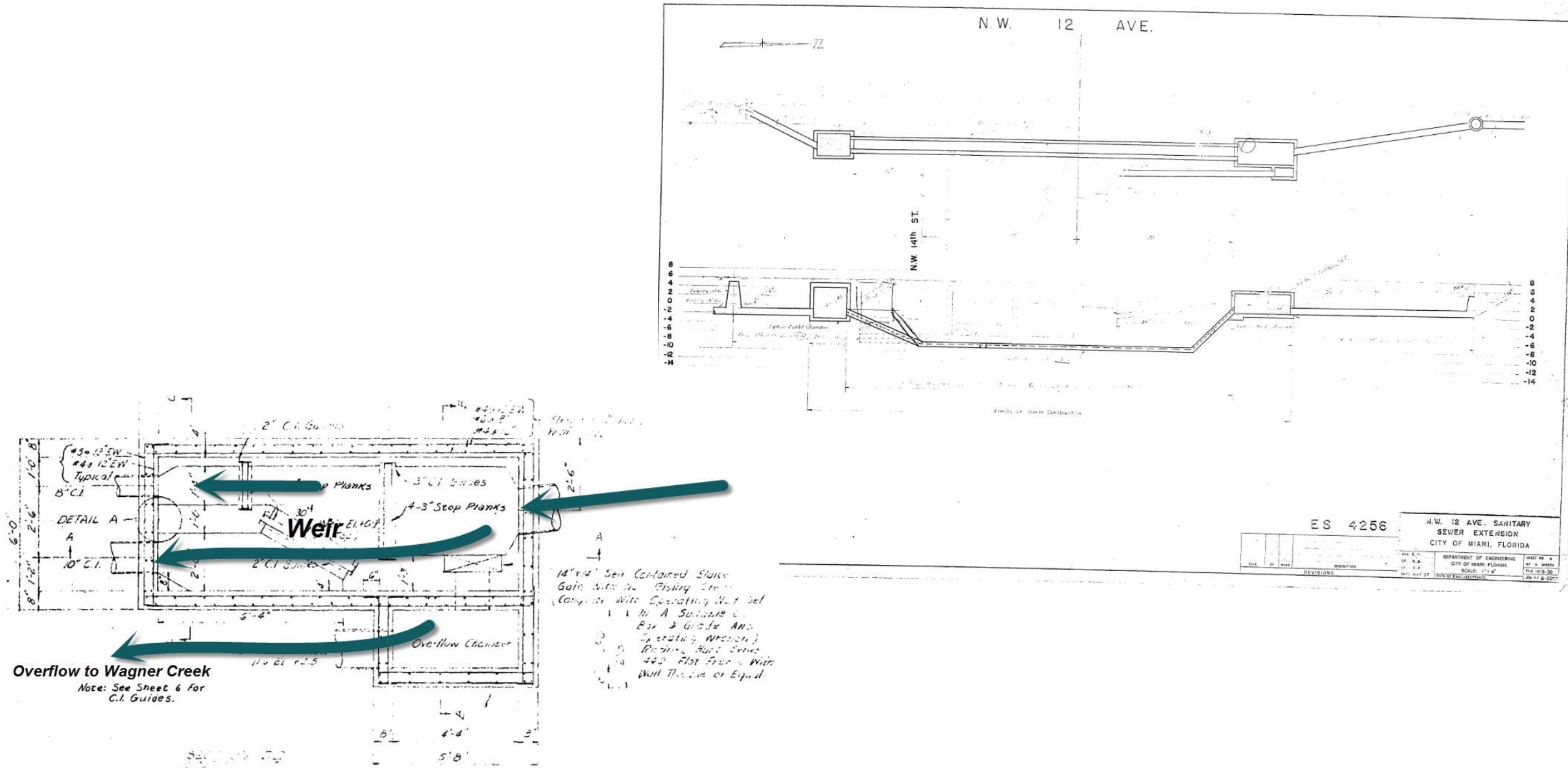
Sanitary Sewer Overflow  
Prediction and Prevention Pilot Plan

SSOP<sup>4</sup>

***Minimize SSOs!***

***Questions?***

# SSOP<sup>4</sup>





# Memorandum



**Date:** February XX, XXXX

**To:** Honorable Chairman Oliver G. Gilbert, III  
and Members, Board of County Commissioners

**From:** Commissioner Danielle Cohen Higgins  
District 8 – Biscayne Bay Watershed Management Advisory Board Chair

**Subject:** Biscayne Bay Watershed Management Advisory Board Annual Report

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On July 20, 2021, the Board of County Commissioners (Board) approved Ordinance [No. 21-72](#), relating to Biscayne Bay Task Force Recommendation 2-A – Establish by ordinance a Biscayne Bay Watershed Management Board, creating CLXIV of Chapter 2 of the Code of Miami-Dade County. Per Section 2-2426 of the Ordinance, the Board of County Commissioners directed the Chair or Vice Chair of the Biscayne Bay Watershed Management Advisory Board (BBWMAB) to present to the Board on an annual basis a written report describing the BBWMAB's activities and appear as needed before the Board to present any matters pertinent to the BBWMAB. The completed report required by this section shall be placed on an agenda of the Board pursuant to Ordinance No. 14-65.

The BBWMAB is grateful for the support of the Board, State, and Federal partners as we continue to adopt policies and take other actions as recommended by the Biscayne Bay Task Force (Task Force), implement projects to improve the health of Biscayne Bay (Bay), and work with the Chief Bay Officer (CBO) and County staff to develop the Reasonable Assurance Plan (RAP) and Watershed Management Plan (WMP) for Biscayne Bay.

As Chair of the BBWMAB, I am pleased to provide the 2022 report describing our work and accomplishments in our inaugural year.

## **BBWMAB Meetings:**

The BBWMAB held its inaugural meeting on December 6, 2021 and hosted a total of four meetings during 2022. Meeting agendas and recordings can be found here:

[Biscayne Bay Watershed Management Advisory Board \(miamidade.gov\)](https://miamidade.gov/bbwmab)

## **Biscayne Bay Task Force Recommendations & Related Legislation Adopted:**

The Board adopted [R-165-19](#) on 02/05/2019 creating the Biscayne Bay Task Force. The Task Force was charged with reviewing prior studies, relevant data, evaluations, and management planning and policy documents related to the Bay and to receive recommendations for the Bay's health and management. The Task Force met 18 times and received approximately 35 presentations related to the health and management of Biscayne Bay from local and state regulatory agencies, municipalities, academia, community-based organizations, and other key stakeholders.

The Task Force submitted its final report in June 2020, recommending an overarching governing and administrative structure to implement recommendations under seven policy themes: water quality, governance, infrastructure, watershed habitat restoration, natural infrastructure, marine debris, education and outreach, and funding.

The Task Force acknowledged that some recommended policies and projects could be implemented immediately by the County to address the areas within the watershed with the most significant water

quality issues, based on the currently available water quality data. In addition, the Task Force recommended a review of existing funding sources and highlighted the infrastructure recommendations to help reduce excess nutrient pollution and help restore the Bay watershed.

The following policies have been adopted by the Board in FY2021 following the sunseting of the Task Force:

**CREATE BISCAYNE BAY RECOVERY WEBPAGE**

Resolution to create and promote a Biscayne Bay recovery webpage providing the Biscayne Bay task force's report and Miami-Dade County's actions resulting from the Biscayne Bay Task Force's recommendations.

[Legislative Matter \(miamidade.gov\)](https://www.miamidade.gov/legislative-matter)

4/20/2021

**REGULATION OF FERTILIZER**

Ordinance relating to regulation of fertilizer; creating Chapter 18C of the code of Miami-Dade County, Florida; regulating fertilizer application and usage in the incorporated and unincorporated areas; adopting the Florida Department of Environmental Protection's (FDEP) model ordinance for Florida-Friendly fertilizer use for urban landscapes; providing for additional and more stringent standards than the model ordinance, including an annual period during which fertilizer application generally would be prohibited, limitations on types of fertilizer including use of slow-release products, and a year-round prohibition on use of fertilizer containing phosphorus without demonstrating a need through soil testing.

[Legislative Matter \(miamidade.gov\)](https://www.miamidade.gov/legislative-matter)

4/20/2021

**ROADWAY PAVEMENT & OVERLAY LOCATIONS OF SEPTIC SYSTEMS**

Resolution to compile information and to identify the locations of roadway projects within Miami-Dade County which will require the cutting of roadway pavement within the next five years by Miami-Dade County, the state of Florida Department of Transportation, municipalities, and utility companies; to overlay the locations of septic systems which are vulnerable to failure or compromise in relation to the locations of the identified roadway projects; and to provide a report within 90 days.

[Legislative Matter \(miamidade.gov\)](https://www.miamidade.gov/legislative-matter)

4/20/2021

**STORMWATER RELATED PROJECTS TO PROTECT BISCAYNE BAY**

Resolution urging the Florida Legislature to appropriate funding for stormwater-related projects to protect Biscayne Bay, including the upgrading of stormwater infrastructure, installation of additional stormwater grates, smart sensors, baffle boxes, and similar mechanisms and technologies, pilot projects, and research projects.

[Legislative Matter \(miamidade.gov\)](https://www.miamidade.gov/legislative-matter)

4/20/2021

**SEPTIC SYSTEM MAINTENANCE CAMPAIGN**

Resolution to conduct an educational campaign as to septic system maintenance and to prepare reports.

[Legislative Matter \(miamidade.gov\)](https://www.miamidade.gov/legislative-matter)

5/4/2021



**COST-SHARE PARTNERSHIP WITH SFWMD**

Resolution to negotiate a cost-share partnership with the South Florida Water Management District to update the 2005 Biscayne Bay Economic Study and to bring such partnership agreement to this board for approval.

[Legislative Matter \(miamidade.gov\)](https://www.miamidade.gov/legislative-matter)

5/4/2021

**BISCAYNE BAY FISH KILLS, OXYGEN LOSS, AND ALGAL BLOOMS**

Develop proactive long-term measures that may help prevent fish kills, oxygen loss, and algal blooms in Biscayne Bay, develop an action plan to mitigate the negative consequences of any future fish kills, oxygen loss, or algal blooms in Biscayne Bay, collaborate with municipalities and universities, and provide reports.

[Legislative Matter \(miamidade.gov\)](https://www.miamidade.gov/legislative-matter)

5/4/2021

**PROMOTE AND IMPROVE AWARENESS REGARDING BISCAYNE BAY**

Resolution to develop and implement a multilingual, multimedia public awareness campaign and educational outreach program to promote and improve awareness regarding Biscayne Bay.

[Legislative Matter \(miamidade.gov\)](https://www.miamidade.gov/legislative-matter)

6/10/2021

**SEPTIC TO SEWER TASK FORCE**

Resolution creating a Septic to Sewer Task Force; setting forth powers and responsibilities of such task force; providing for a report; and providing for sunset.

[Legislative Matter \(miamidade.gov\)](https://www.miamidade.gov/legislative-matter)

7/8/2021

**CREATING BISCAYNE BAY PERMANENT BOARD**

Ordinance creating the Miami-Dade County Biscayne Bay Watershed Management Advisory Board; creating Article CLXIV of Chapter 2 of the Code of Miami-Dade County, Florida; providing for the composition and duties of the board and other related matters; providing severability, inclusion in the code, and an effective date.

[Legislative Matter \(miamidade.gov\)](https://www.miamidade.gov/legislative-matter)

7/20/2021

**VOLUNTEER CERTIFICATION PROGRAM**

Resolution to create the “Plastic Free 305” program, a volunteer certification program for businesses located within Miami-Dade County to be launched during Earth Month 2022; and to work with local nonprofit organizations in the development and implementation of the voluntary certification program and partner with the private sector and business organizations.

[Legislative Matter \(miamidade.gov\)](https://www.miamidade.gov/legislative-matter)

12/8/2021

The following policies have been adopted by the Board in FY2022 following the creation of the BBWMAB:

**WASTEWATER GRANT PROGRAM**

Resolution to expeditiously develop a proposed reasonable assurance plan pursuant to state procedures and guidelines for such a plan; and urging the secretary of FDEP to expeditiously approve

such reasonable assurance plan, through the adoption of a final order, after the county submits such plan to FDEP for approval.

[Legislative Matter \(miamidade.gov\)](#)

3/1/2022

#### **ONSITE SEWAGE TREATMENT AND DISPOSAL SYSTEM**

Ordinance updating the Onsite Sewage Treatment and Disposal System (OSTDS). The ordinance provides requirements for new and replacement OSTDS; and provides effective dates for compliance for new and replacement OSTDS.

[Legislative Matter \(miamidade.gov\)](#)

6/7/2022

#### **RECOGNIZE THE TOWN OF CUTLER BAY**

Presentation on Town of Cutler Bay 8.4 Acres of land for conservation and resiliency project.

[Legislative Matter \(miamidade.gov\)](#)

7/19/2022

#### **ORDINANCE RELATING TO ENVIRONMENTAL PROTECTION**

Significant increase in fines for environmental violations with the potential to pollute the county's ground and surface waters, including Biscayne Bay. The penalties for these violations have remained unchanged for almost 20 years and have not been adjusted for inflation.

[Legislative Matter \(miamidade.gov\)](#)

7/19/2022

#### **BBCW PHASE I RESTORATION PROJECT**

Resolution approving amendment to agreement between Miami-Dade County and the South Florida Water Management District and attached certification of lands related to the dedication of the county's interests in approximately 322 acres of land owned by Miami-Dade County and located in the cutler wetlands area to the South Florida Water Management District for the Biscayne Bay Coastal Wetlands Phase I Restoration Project

[Legislative Matter \(miamidade.gov\)](#)

7/19/2022

#### **OPERATIONS AND MAINTENANCE OF MUNICIPAL STORMWATER SYSTEMS**

Resolution to (1) develop proposed changes to the code of Miami-Dade County with respect to operations and maintenance of municipal stormwater systems, (2) develop new standards for design and construction of municipal stormwater systems, (3) expand the county's asset management system to include stormwater infrastructure, and (4) conduct educational campaigns related to Biscayne Bay, and to provide reports with respect to the foregoing; urging municipalities to conduct educational campaigns related to Biscayne Bay; and urging the Florida Department of Environmental Protection to strengthen requirements and increase auditing and enforcement of its National Pollutant Discharge Elimination System (NPDES) permits for municipal stormwater systems.

[Legislative Matter \(miamidade.gov\)](#)

9/1/2022

#### **BISCAYNE BAY FRIENDLY DECALS AWARENESS CAMPAIGN**

Resolution to manufacture a "Biscayne Bay friendly" decal, develop a program for entities to apply to purchase or receive decals, incorporate the promotion of such decal in the Biscayne Bay public



awareness campaign and educational outreach program, and collaborate with local nonprofit organizations.

[Legislative Matter \(miamidade.gov\)](https://miamidade.gov)

10/6/2022

#### **BISCAYNE BAY AND FOR SEPTIC-TO-SEWER CONVERSION PROJECTS**

Urging requesting the United States Congress and the United States Environmental Protection Agency to provide funding for the protection and enhancement of Biscayne Bay and for septic-to-sewer conversion projects. Urging the Florida Legislature to provide funding for the protection and enhancement of Biscayne Bay and for septic-to-sewer conversion projects and to modify the state wastewater grant program to enable Miami-Dade County to obtain wastewater grant funding.

[Legislative Matter \(miamidade.gov\)](https://miamidade.gov)

11/15/2022

#### **FEASIBLE DISTANCE TO CONNECT TO PUBLIC SANITARY SEWER SYSTEMS**

Ordinance relating to environmental protection revising standards related to feasible distance to connect to public sanitary sewers and public water mains. This ordinance amends Section 24-5 and Division 2 of Article III of Chapter 24 of the code of Miami-Dade County, Florida.

[Legislative Matter \(miamidade.gov\)](https://miamidade.gov)

11/21/2022

#### **Marine Debris Progress Update**

Marine debris is one of the most widespread problems stressing the world's oceans, waterways, and coastlines. It can travel long distances and traverse territorial borders, and there are many difficulties in identifying its sources. There are two common sources of marine debris: the actions that take place on land (land-based sources) and the actions that take place in waterways and the marine environment (water-based sources). It is estimated that 80% of marine debris is from land-based sources.

The BBTF recommended the County create a comprehensive marine debris prevention, reduction, and removal program within the Department of Regulatory and Economic Resources – Division of Environmental Resources Management (RER-DERM) and adequately fund and staff the program and convene stakeholders to help further develop the program. In July 2022, RER-DERM hosted the first meeting of the Marine Debris Planning Team in support of creation of a comprehensive plan and discussed marine debris program development and goal setting. Members of the team include municipal, state, and federal partners as well as community organizations.

The following are additional highlights from the team's work throughout the year:

- Received nearly \$52,000K in grant funding for derelict vessel removal, removing 33 vessels totally more than 775 linear feet of bay bottom.
- Received \$31,000 in grant funding for derelict trap removal, removing over 270 traps from Bay waters.
- Completed monthly Surface Water Quality Monitoring Program, totaling over 34,000 water quality parameters collected.
- Two illegal structures were removed from the Environmental Endangered Lands managed areas.
- Collected data from 460 stations across the entirety of the greater Biscayne Bay area.
- Completed multiple interagency efforts for disturbance response monitoring surveys at

31 locations to document coral diversity and density and the prevalence of coral bleaching and disease as part of the Florida Reef Resilience Program.

- Completed fish and benthic surveys at 31 locations to document the status and trends of the Florida Coral Reef ecosystems known as the National Coral Reef Monitoring Program and completed 23 field days treating 93 colonies for stony coral disease tissue loss disease.
- Successfully facilitated the deployment of 4 offshore artificial reefs with a combined footprint of 371 ft<sup>2</sup>
- An estimated 83.88 tons removed from the spoil islands. As of 2022, there is an average increase of 2.5 tons a year since 2013.

### **Biscayne Bay Grant Funding Update**

All levels of government have a role in the management of the Bay; therefore, funding and investments for Bay restoration should come from local, state, and federal governments. The BBWMAB included regular funding updates at its meetings throughout the year. In addition, as recommended by the Task Force, the BBWMAB has made recommendations to the Board to make water quality restoration and public education an annual budget priority.

The County has been awarded funding through FDEP's Biscayne Bay Grant Program for projects including septic to sewer conversions, septic maintenance education, stormwater infrastructure advancements, innovative technology to predict and prevent sanitary sewer overflows, and intensive water quality investigations to identify sources of pollution entering the Miami River, Little River, and Biscayne Canal watersheds.

### **Phase 1 and Phase 2 Breakdown of the County's Awarded Projects**

<https://www.miamidade.gov/environment/library/bbwmab/2022-12-15-fdep-grant-funding.pdf>

### **2022 – 2023 - FDEP Biscayne Bay Water Quality Awarded**

The County has also been awarded funding through FDEP's Resilient Florida grant program, both through the state-funded initiative as well as the federal-funding initiative. The County received more than \$20 million dollars in state funding to complete stormwater projects that include retrofits and water quality improvements as well as land acquisition to promote and protect habitat and protect groundwater as well as hydrologic restoration in southern Miami-Dade to improve water quality received by the Bay. The County received an additional \$20 million in federal funding for stormwater improvements including elevating canal banks to allow for more storage to prevent flooding and retain more water versus releases to the Bay as well as additional land acquisition to support groundwater percolation and protection.

[Biscayne Bay Grant Program Fiscal Year 2022-23 11282022 OnlinePosted 0.pdf](#)  
([protectingfloridatogether.gov](http://protectingfloridatogether.gov))

[2021-2022 Resilient Florida Grant Program Awards](#)

[2022-2023 Resilient Florida Grant Program Awards](#)

### **Biscayne Bay Commission Participation**

In 2021, the Florida Legislature adopted ([CS/HB 1177](#)) creating the Biscayne Bay Commission (BBC). The BBC is required to monitor the state's strategic plan and create an associated financial plan to ensure its priorities are funded, using agencies representing the commission. BBC meetings provide a forum for exchange and serve as a clearinghouse for public information on all plans, programs and projects being conducted.



The BBC is comprised of state agencies and three Board of County Commissioners who serve on the BBWMAB. BBWMAB Board members attended meetings, as well as the CBO and related County staff, who presented important updates, information, and facilitated BBC meeting coordination efforts.

The BBC held its inaugural meeting on January 04, 2022 and hosted a total of four meetings in 2022.

Meeting agendas and recordings can be found here:

<https://protectingfloridatogether.gov/BiscayneBayCommission>

### **2022 Biscayne Bay Marine Health Summit**

The BBTF recommendation 2C called for the organizing of a biannual Biscayne Bay Marine Health Summit. The CBO together with Miami-Dade County departments attended the Biscayne Bay Marine Health Summit. There was a total of 450 participants. A full recording of the summit can be found here: [2022 Biscayne Bay Marine Health Summit](#)

### **Biscayne Bay Reasonable Assurance Plan Update**

The BBWMAB focus has been on the implementation of the recommendations of the Task Force, and the priority recommendation from the report is to establish science-based pollutant load reduction goals and interim targets to improve surface water and groundwater quality and, ultimately, restore seagrass and other natural habitats impacted by water quality issues.

A Reasonable Assurance Plan (RAP), also regarded as a Category 4b Plan, is a stakeholder-led initiative focused on achieving cleaner water faster than the traditional method of establishing regulatory Total Maximum Daily Loads and subsequent Basin Management

Action Plans to gain compliance with the state's estuarine numeric nutrient criteria. In partnership with key stakeholders, Miami-Dade County has identified the need for a RAP to most expeditiously address the water quality impairments that have recently characterized Biscayne Bay.

Earlier this year, the BBWMAB recommended the development of a RAP for consideration by the Board with the goal of setting nutrient reduction targets and seagrass restoration goals. Subsequently, the Board adopted a resolution [R-184-22](#) to expedite the development of the RAP.

The BBWMAB plans to continue to monitor and provide regular updates to the Board regarding the RAP process. The RAP will ultimately help form the roadmap to develop and be included in the new Biscayne Bay Watershed Management Plan to restore the health of the Bay and prevent future fish kills, algal blooms, seagrass and coral die-offs in the future.

The County working in collaboration with municipal partners, state agencies, community stakeholders, and environmental organizations expects a final Biscayne Bay RAP to be completed in 2024 and submitted to FDEP for Secretarial Adoption with final approval by the U.S. Department of Environmental Protection Agency (EPA).

### **BBWMAB Communications**

To best keep the public advised on the work of the Biscayne Bay Watershed Management Advisory Board, the County created the following webpage. The webpage provides information about BBWMAB membership, meeting notices and agendas, meeting recordings, documents, and resources. [Biscayne Bay Watershed Management Advisory Board \(miamidade.gov\)](#) and can also be

Honorable Chairman Oliver G. Gilbert, III  
and Members, Board of County Commissioners  
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found on FDEP's webpage [Biscayne Bay Commission | Water Quality Dashboard](https://protectingfloridatogether.gov/Biscayne-Bay-Commission-Water-Quality-Dashboard)  
([protectingfloridatogether.gov](https://protectingfloridatogether.gov))

If you have any questions, please contact Irela Bagué, Chief Bay Officer  
[Irela.Bague@miamidade.gov](mailto:Irela.Bague@miamidade.gov)

cc: TBD



# **BBWMAB Policy Update and Reports:**

- Policies Adopted
- Septic Maintenance and Care
- Stormwater Pilot Projects

# BBWMAB POLICY UPDATE

**File Number: 222880**

File Name: SEPTIC SYSTEM MAINTENANCE

Sponsors: NONE

[Legislative Matter \(miamidade.gov\)](https://miamidade.gov)

Status: Accepted – 1/17/2023

BBTF Recommendation: Education

**File Number: 222890**

File Name: URGING - FUNDING FOR THE MIAMI RIVER COMMISSION

Sponsors: Eileen Higgins, Prime Sponsor

Sen. Rene Garcia, Co-Sponsor

[Legislative Matter \(miamidade.gov\)](https://miamidade.gov)

Status: Adopted / Amended – 1/17/2023

BBTF Recommendation: Funding

**File Number: 222891**

File Name: URGING - SEPTIC-TO-SEWER CONVERSIONS

Sponsors: Anthony Rodriguez, Prime Sponsor

Sen. Rene Garcia, Co-Sponsor

[Legislative Matter \(miamidade.gov\)](https://miamidade.gov)

Status: Adopted / Amended – 1/17/2023

BBTF Recommendation: Marine Debris

**File Number: 222258**

File Name: MOU WITH NARANJA LAKES CRA

Sponsors: Kionne L. McGhee, Prime Sponsor

[Legislative Matter \(miamidade.gov\)](https://miamidade.gov)

Status: Adopted – 12/6/2022

BBTF Recommendation: Marine Debris

**File Number: 222485**

File Name: REPORT REGARDING COMPANIES THAT DAMAGE MIAMIDADE WATER PIPES

Sponsors: NONE

[Legislative Matter \(miamidade.gov\)](https://miamidade.gov)

Status: Accepted – 11/15/2022

BBTF Recommendation: Infrastructure and Water Quality

**File Number: 222266**

File Name: STORMWATER PILOT PROJECTS

Sponsors: NONE

[Legislative Matter \(miamidade.gov\)](https://miamidade.gov)



Status: Accepted – 11/15/2022  
BBTF Recommendation: Infrastructure and Water Quality

**File Number: 222250**

File Name: BBEETF DISBURSEMENT BAYNANZA 2023

Sponsors: Rebeca Sosa, Prime Sponsor

Sally A. Heyman, Co-Sponsor

[Legislative Matter \(miamidade.gov\)](https://miamidade.gov)

Status: Adopted – 11/15/2022

BBTF Recommendation: Education

**File Number: 222251**

File Name: EEL COVENANTS

Sponsors: PortMiami and Environmental Resilience Committee

[Legislative Matter \(miamidade.gov\)](https://miamidade.gov)

Status: Adopted – 11/15/2022

BBTF Recommendation: Watershed Habitat Restoration and Natural Infrastructure

**File Number: 222563**

File Name: BISCAYNE BAY AND FOR SEPTIC-TO-SEWER CONVERSION PROJECTS

Sponsors: Danielle Cohen Higgins, Prime Sponsor

Sen. Rene Garcia, Co-Sponsor

Sally A. Heyman, Co-Sponsor

[Legislative Matter \(miamidade.gov\)](https://miamidade.gov)

Status: Adopted – 11/15/2022

BBTF Recommendation: Infrastructure

**File Number: 222401**

URGING - CLASS I PERMIT MODIFICATION YACHTING PROMOTIONS

Sponsors: NONE

[Legislative Matter \(miamidade.gov\)](https://miamidade.gov)

Status: Adopted – 11/1/2022

BBTF Recommendation: Funding

**File Number: 222470**

File Name: REPORT ON THE WINTER 2022 MIAMI INTERNATIONAL BOAT SHOW

Sponsors: NONE

[Legislative Matter \(miamidade.gov\)](https://miamidade.gov)

Status: Presented - 11/1/2022



# Memorandum



**Date:** December 15, 2022

**To:** Honorable Chairman Oliver G. Gilbert, III  
and Members, Board of County Commissioners

Agenda Item No. 2(B)(9)  
January 17, 2023

**From:** Daniella Levine Cava  
Mayor

A handwritten signature in blue ink that reads "Daniella Levine Cava".

**Subject:** Report on Conducting an Educational Campaign as to Septic System Maintenance-Directive No. 210738

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## **Executive Summary**

On May 4, 2021, and in response to the December 2020 report entitled “Plan of Action Report: A Risk-Based Approach to Septic Systems Vulnerable to Sea Level Rise” which estimated that there were 120,000 septic systems in use throughout Miami-Dade County, the Board of County Commissioners (Board) adopted Resolution No. R-464-21, sponsored by Commissioner Raquel Regalado, directing the County Mayor or County Mayor’s designee to conduct an educational campaign regarding septic system maintenance and to prepare two written reports. The first written report set forth the plan for the educational campaign and was accepted by the Board on October 5, 2021. The second report shall describe the educational campaign that was conducted.

The purpose of this report is to convey to the Board how the educational campaign related to septic system maintenance was implemented this past year and the effectiveness of the campaign. The campaign was successfully carried out as outlined in the first written report accepted by the Board. The Department of Regulatory and Economic Resources (RER), Division of Environmental Resources Management (DERM) launched Miami-Dade County’s new septic system care webpage, utilized social media platforms to promote the importance of septic system maintenance over a seven-month period, and developed a companion campaign with Miami-Dade County Water and Sewer Department (WASD) for properties that cannot yet connect to public sewer.

## **Report**

This second report has been prepared by DERM staff. On October 27, 2021, RER-DERM launched Miami-Dade County’s new septic system care webpage at [www.miamidade.gov/septic-care](http://www.miamidade.gov/septic-care) (Attachment A). This fully developed informational resource details how septic systems work, how to recognize problems with septic systems, the importance of routine septic system maintenance and how to find Miami-Dade County permitted septic system service providers. The webpage also demonstrates how septic systems are tied to the health of our environment and further highlights the substantive steps Miami-Dade County is taking to decrease nutrient pollution in our watershed from sources such as septic systems.

In conjunction with the webpage release, RER-DERM has been highlighting the importance of septic system care to our community through multiple unique and recurring posts on the department’s social media platforms (Attachment B). Collectively, during the seven-month period of promoting septic system care through RER-DERM’s website, and on Twitter and Facebook platforms, the social media posts have garnered 650 impressions (defined as the number of times a post has appeared in search, in a follower’s timeline, or as a result of someone liking the Tweet), and the septic care webpage has garnered 3,050 page views.

RER-DERM has additionally promoted the critical importance of septic system care through the development of a companion educational campaign entitled “Check 2 Protect.” Created in concert with WASD’s “Connect 2 Protect” campaign, Check 2 Protect was developed to specifically promote septic system maintenance for properties that cannot yet connect to the public sewer infrastructure. RER-DERM’s Check 2 Protect campaign (Attachment C) focuses strictly on promoting community awareness to the importance of inspecting (i.e. “Check”) septic systems every three to five years. RER-DERM worked with the Water and Sewer Department (WASD) to include a link to the Check 2 Protect webpage from their Connect to Protect webpage (<https://www.miamidade.gov/global/water/connect-to-protect-septic-to-sewer.page>). RER-DERM will continue to widely promote septic system care through the developed webpage and across County social media platforms, and to amplify the message through cross-departmental promotion and partnerships with community organizations to minimize physical printing and maximize budgetary resources and community reach.

In accordance with Ordinance No. 14-65, this report will be placed on the next available Board meeting agenda. Should you have any questions concerning the above, please contact Rashid Z. Istambouli, P.E., Interim Assistant Director, Division of Environmental Resources Management in the Department of Regulatory and Economic Resources, at (305) 372-6750 or by email at [Rashid.Istambouli@miamidade.gov](mailto:Rashid.Istambouli@miamidade.gov).

Attachments:

Attachment A—Septic Care Webpage

Attachment B—Social Media Posts

Attachment C—Check 2 Protect/Connect to Protect marketing

c:     Geri Bonzon-Keenan, County Attorney  
       Gerald Sanchez, First Assistant County Attorney  
       Jess McCarty, Executive Assistant County Attorney  
       Office of the Mayor Senior Staff  
       Lourdes M. Gomez, Director, Department of Regulatory and Economic Resources  
       Rashid Z. Istambouli, P.E., Interim Assistant Director, Department of Regulatory and Economic Resources  
       Irela Bagué, Chief Bay Officer  
       Yinka Majekodunmi, Commission Auditor  
       Jennifer Moon, Chief, Office of Policy and Budgetary Affairs  
       Basia Pruna, Director, Clerk of the Board  
       Eugene Love, Agenda Coordinator

# Attachment A

(RER-DERM Septic Care Webpage Screenshot)

MIAMI-DADE  
COUNTY

Services & Information ▾

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Employees ▾

Search

Login

Home > Regulatory and Economic Resources > Environment > Septic System Care

Septic System Care

Share:

When public sanitary sewers aren't yet available in your area, a septic system is the temporary on-site wastewater recycling system that simply treats your wastewater and returns it to the groundwater. Proper maintenance of your septic system will add years to its service life, keep problems at bay and save you money. But when you neglect septic system maintenance, the system is sure to fail and become a threat to your family's health, to your wallet and to our environment.

**How to tell if you have a septic system or if you are connected to sewers**

- 1 If your property is in unincorporated Miami-Dade County, you can check to see if you are served by the public sanitary sewer system from your computer. Go to the Water and Sewer Department's [WASD Connect GIS Viewer](#) and enter your address in the search box to see if you are connected to sewers.
- 2 If you are in a municipality, contact your local water and sewer department, or if you receive utility bill for water and/or sewer, review your bill and see if you pay a sewer fee. If you do not, you should have a septic system.
- 3 Consult your construction plans if available or look for clues such as an area of very green and lush grass over a septic system drain field.

**Septic systems and how they work**

Your septic system consists of two main parts, an underground tank that collects all of the wastewater from your house, and a series of perforated pipes called a drain field that releases wastewater back into the ground and groundwater. In a correctly operating septic system, wastewater flowing into the tank separates into solids, called "sludge", which settle to the bottom; grease and lighter solids, called "scum", which float on the top; and liquid in the middle between those two layers. Bacteria in the tank eat, or "digest", the sludge, and the middle wastewater liquid flows out of the tank and into the drain field where it slowly seeps into the underlying soil. Dissolved wastes and bacteria in the water are trapped or absorbed by soil particles or decomposed by microorganisms. This process removes many disease-causing organisms, organic matter and most nutrients. The treated wastewater then returns to our [groundwater](#) or evaporates from the soil.



The diagram illustrates a septic system's components and function. A house with solar panels is shown on a green lawn. A line leads from the house to a rectangular septic tank buried in the ground. From the tank, a network of perforated pipes, labeled 'Drainfield', extends across the yard. Arrows indicate the flow of wastewater from the house into the tank and then into the drain field. A label 'Drinking Water Well' points to a well in the ground near the drainfield. The bottom of the diagram shows a cross-section of the earth with layers of soil and groundwater.

miamidade.gov

Feedback



## Attachment B

(RER-DERM Social Media Post examples)



**Attachment C**  
(RER-DERM & WASD Check & Connect2 Protect marketing collateral)



**CHECK<sup>2</sup>  
PROTECT**



Properly Functioning Septic Systems  
Save You Money and Protect Your  
Property, Health & Our Environment!

**CONNECT<sup>2</sup>  
PROTECT**



Connecting to Sewer Protects  
Your Property, Health & Biscayne Bay!

# Memorandum



**Date:** October 12, 2022

Agenda Item No. 2(B)(4)

**To:** Honorable Chairman Jose “Pepe” Diaz  
and Members, Board of County Commissioners

November 15, 2022

**From:** Daniella Levine Cava  
Mayor

A handwritten signature in blue ink that reads "Daniella Levine Cava".

**Subject:** Report Outlining Miami-Dade County’s Efforts to Implement Stormwater Pilot Projects to Protect Biscayne Bay from Pollutant Discharges – Directive No. 210440

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## **Executive Summary**

On April 20, 2021, the Board of County Commissioners (Board) adopted Resolution No. R-361-21, sponsored by Commissioner Sosa and co-sponsored by Commissioner Heyman, directing the County Mayor or County Mayor’s designee to: (1) install additional stormwater treatment technologies and research projects; (2) expand upon existing collaboration and coordination with municipalities within Miami-Dade County with respect to stormwater-related projects that municipalities may have already implemented; (3) determine which of those projects could be successfully implemented by the County; and (4) recommend to the Board three specific stormwater pilot projects to be prioritized, including details of how such projects could be implemented, estimated costs, and proposed funding.

This report has been prepared through the collaborative efforts of staff from the Department of Regulatory and Economic Resources, Division of Environmental Resources Management (RER-DERM) and the Department of Transportation and Public Works (DTPW). The three stormwater pilot project locations have been identified, the stormwater treatment technologies identified, and the funding allocated (\$1.3 million in FDEP grants, with the remaining \$500,000 balance funded by County’s stormwater utility). Details of the three pilot projects, including timelines for construction and implementation, are enumerated subsequently in this report.

## **Background and Recommendations**

Stormwater runoff is one of the main potential sources of pollutant discharge into Biscayne Bay (Bay). However, effective management of stormwater systems can help prevent pollutant discharges into the Bay.

The County researched the application of existing stormwater technologies used by other municipalities and found them not to be as effective. A summary of existing stormwater treatment technologies that have been used by the County and/or municipalities in the past for reducing nutrient pollutant discharges to provide stormwater quality improvements in stormwater management systems is shown below along with the reason why they were found not to be as effective.

- *Downstream Defender* has been used in the past by the County and some municipalities. It is generally effective for intercepting large trash and debris and capturing hydrocarbons. It performs well with sediments, however, it is not suitable for reducing pollutant discharges to Biscayne Bay including Total Nitrogen (TN), Total Phosphorous (TP), and bacteria.



- *Catch Basin Screens* that are installed over grate, under grate, or curb inlet screens have been used in the past by some municipalities. They are generally effective for intercepting debris and sediment, however, they have been found to create water ponding if debris has accumulated heavily over the filter and is not removed timely and they are not suitable for reducing pollutant discharges to Biscayne Bay including TN,TP and bacteria. Proper maintenance of catch basins including street sweeping has been found to be a more reliable best management practice that is less likely to increase flooding risks specially during storm events.
- *Booms and Turbidity Curtains* have been used in the past by the County and municipalities. They are generally effective for intercepting large trash and debris that has been discharged into a water body such as a canal or the Bay, however, they are not suitable for reducing pollutant discharges to Biscayne Bay including TN, TP and bacteria, and capture trash and debris only after it reaches the water body.
- *Vault Units* have been used in the past by municipalities. While they can remove some pollutants, it was found not to be cost effective because their maintenance specifies the requirement of confined space entry permit to change the media filter.

Additionally, the County researched several stormwater treatment technologies currently available that can be used to further reduce nutrient pollutant discharges to the Bay, specifically TN, TP and bacteria. Staff identified several stormwater systems in different locations in the County that would greatly benefit with the application of new stormwater treatment technologies. To establish a water quality baseline, RER-DERM conducted water quality assessments to determine water quality levels on the Bay prior to the installation of the new stormwater treatment technologies. Based on the research conducted and the assessment of the nutrient pollutant discharges to the Bay that need mitigation, a decision was made by RER- DERM and DTPW to utilize new technology applications described below and test their effectiveness as part of three pilot projects.

The three project pilot locations were selected for the application of new stormwater treatment technologies that would effectively reduce nutrient pollutant discharges to the Bay in combination with other specific stormwater system improvements. The identification of the best technologies selected was based on applicability, effectiveness, durability, maintenance, and cost. The recommended locations for the three pilot projects are based on results from previous completed water quality assessments, namely in the Little River Sub-basin, and in support of recommendations from the Biscayne Bay Task Force. These pre-installation assessments will be used to monitor and document the operational performance of each nutrient removal technology installed during storm events, monitor, and document the level of effort required for maintenance, and determine the amount of nutrients and bacteria removed by each type of technology. Selection has also been based on balancing the effectiveness of improving stormwater quality while maintaining the flood quantity level of service.

On June 15, 2021, the Board adopted Resolution No. R-611-21 approving the Florida Department of Environmental Protection (FDEP) Grant Agreement No. C2001. Funds from FDEP Grant Agreement No. C2001 will be used to fund approximately \$1.3 million of the estimated cost for the three pilot projects identified, with the balance of the project estimate (approximately \$500,000) to be covered by the County’s Stormwater Utility. The Little River Basin, along with the Miami River basin, are the

primary focus of the water quality investigations, stormwater and wastewater improvements being implemented with funds from FDEP. The implementation of these pilot projects will afford the County a better understanding of the challenges, opportunities, and applicability for implementing these new technologies in future upgrades of stormwater infrastructure, as well as their anticipated success in improving system levels of service and water quality performance moving forward.

The selection process of the three stormwater pilot project locations required the participation and coordination of several Miami-Dade County Departments, local agencies, and private companies. The pilot project locations selected represent areas that are highly affected by nutrient pollution, while the existing stormwater drainage infrastructure will serve to test implementation for future projects and provide environmental benefits for the Little River Basin. The implementation of the pilot projects will be in full collaboration of RER-DERM and DTPW.

Specific locations were chosen based on the Little River Basin Water Quality Assessment Report (October 2020) produced by Wood, the County’s contractor. The report provides test results related to TN, TP, and bacteria levels throughout the Little River (C-7). In addition, to aid the selection process, staff examined information about the drainage basin, including infrastructure and flow data. The selected pilot projects include a residential area with outfalls with a minimum of water quality treatment system, an arterial road with outfalls without water quality treatment systems, and a residential area discharging through a stormwater pump station with existing water quality treatment. All pilot projects discharge to the Little River (C-7) which is a direct tributary water body to Biscayne Bay.

The technologies that have been selected for implementation are considered the best fit for each of the three sites identified, as follows:

- **Pilot Project Location 1** is located on a residential area in Miami-Dade County bounded by NW 111 Street to the North, NW 107 Street to the South, between NW 21 Court and NW 17 Avenue and is in an area serviced by septic tanks. Two optimal drainage basins were identified within Pilot Project Location 1 since each basin has an isolated stormwater system that collects stormwater thru a network of solid drainage pipes and discharges to an existing single outfall. The existing stormwater system for basin 1 consists of 63 drainage structures and 5,509 linear feet of solid drainage pipes which ultimately connects to a pollution control structure with a baffle or a flow regulator prior to discharging through an existing outfall into the C-7 Canal. The total drainage area is 8.50 acres for basin 1. The existing stormwater system for basin 2 consists of 19 drainage structures and 1,088 linear feet of solid drainage pipes which ultimately connects to a pollution control structure with a baffle or a flow regulator prior to discharging through an existing outfall into the C-7 Canal. The total drainage area is 5.95 acres for basin 2. The pollution control structures for both stormwater systems provide a minimum of water quality treatment to the collected stormwater prior to discharging through the existing outfalls. For Pilot Project Location 1, the technologies selected for each drainage basins include the use in combination of StormBasin Filter and EcoVault unit. The StormBasin is a catch basin insert filter that can be easily added to existing catch basins and captures and treats stormwater pollutants commonly found in runoff from parking lots or alongside roadways, such as: trash, vegetation, sediment, debris, nutrients, coliform bacteria, oil/grease, and dissolved metals (e.g.,

lead, copper, cadmium, and chromium). The system uses preassembled proprietary cartridge filters that can be customized for targeted pollutants. The large sediment and debris chamber provides ample storage volume for solids carried in stormwater flows and its design includes a hooded bypass to reduce the potential for flooding during peak storm events while still retaining sediment and debris. The EcoVault can be easily added prior to the existing outfall and consists of a flow regulator box multi-stage system that provides separation, screening, and filtration. The EcoVault will remove sediments, heavy metals, nitrogen, phosphorous, oil, and grease by the integration of the Baffle Buddy Cassette Filter, which is a high-flow filter integrated into the last baffle wall of the EcoVault. Placement of the technologies will be determined by site conditions while evaluating their efficiencies in the field. Routine maintenance servicing for the StormBasin and EcoVault can be achieved using a Vactor truck, while filters media can be easily accessed manually for servicing.

- **Pilot Project Location 2** is located on an arterial roadway in Miami-Dade County bounded by NW 96 Street to the North, NW 93 Terrace to the South, between NW 17 Avenue and NW 14 Avenue and is in an area serviced by septic tanks. Two optimal drainage basins were identified within Pilot Project Location 2 since each basin has a stormwater system that collects stormwater through a network of solid drainage pipes and discharges to an existing single outfall without a pollution control structure to provide additional stormwater water quality treatment prior to discharging into a water body. The existing stormwater system for basin 1 consists of 14 drainage structures and 960 linear feet of solid pipes which ultimately discharges through an existing outfall into the C-7 Canal. The total drainage area is 3 acres for basin 1. The existing stormwater system for basin 2 consists of 13 drainage structures and 1,010 linear feet of solid pipes which ultimately discharges through an existing outfall into the C-7 Canal. The total drainage area is 3.5 acres for basin 2. For Pilot Project Location 2, the technologies selected for each drainage area include the use in combination of Hydro DryScreen and AbTech Ultra Urban Filter (UUF) insert with Smart Pak media. The Hydro DryScreen is a next-generation flow regulator box that captures sediment and screens trash and other solids from stormwater, storing organic materials such as leaf litter and prevent nutrients from leaching into surface water runoff between storm events. The AbTech’s UUF inserts with Smart Pak media are designed for use in existing stormwater catch basins that experience hydrocarbon and heavy metal pollution accompanied by sediment, debris, or bacteria. Placement of the technologies will be determined by site conditions while evaluating their efficiencies in the field. Routine maintenance servicing for the UUF inserts and Hydro DryScreen can be achieved using a Vactor truck while filters media can be easily accessed manually for servicing.
- **Pilot Project Location 3** is located on a residential area in Miami-Dade County bounded by NW 85 Street to the North, NW 82 Street to the South, between NW 2 Avenue and N. Miami Avenue and is in an area being serviced by septic tanks. Two optimal drainage basins were identified within Pilot Project Location 3 since both systems discharge to the C-7 Canal through the Larchmont Pump Station. The existing stormwater system for basin 1 consists of 43 drainage structures and 2,100 linear feet of exfiltration trenches. The drainage area is 5.10 acres for basin 1. The existing stormwater system for basin 2 consists of 38 drainage structures and 2,450 linear feet of exfiltration trenches. The drainage area is 5.05 acres for basin 2. Both



drainage basins have exfiltration trenches as part of the existing stormwater system which provides water quality treatment for the basins prior to discharge. The technologies selected for each drainage area include the Contech JellyFish and SOP Technologies Stormwater Filter Baskets. The Jellyfish Filter is a stormwater quality treatment technology featuring high flow pretreatment and membrane filtration in a compact stand-alone system. The Jellyfish removes floatable, trash, oil, debris, total suspended solids, fine silt-sized particles, and a high percentage of particulate-bound pollutants, including phosphorus, nitrogen, metals, and hydrocarbons. The SOP Technologies Stormwater Filter Baskets are placed under existing catch basins and are designed for maximum water flow. In addition, SOP Technologies storm drains offer markers with Quick Response (QR) codes, and an associated website application to provide an easy way for community members to share photos and their observations of storm drain filters & inlets. The QR feature offers a way to engage the community in learning about Miami-Dade County’s efforts to protect Biscayne Bay. Placement of the technologies will be determined by site conditions while evaluating their efficiencies in the field. Routine maintenance servicing for the Jellyfish and SOP Technologies inserts can be achieved using a Vactor truck while filters media can be easily accessed manually for servicing.

The three pilot projects are scheduled to start construction in October 2022 and their duration will be approximately one and a half years, including permitting, implementation, maintenance cycle(s) and post-installation water quality assessment to evaluate the effectiveness and technology performance.

Results of the implementation of the three pilot projects are expected to provide information needed for future use of new technologies for removing nutrients from the stormwater drainage systems discharging to the Little River and other Biscayne Bay tributaries and increase the understanding of which solutions work best and under which scenarios. Results will ultimately be used to assist with the evaluation of the cost-benefit analysis of implementing different stormwater nutrient removal technologies for stormwater drainage systems discharging into waterbodies of Miami-Dade County. In addition, results of these pilot projects can assist to establish and refine policies that will encourage private developers to implement new technologies in private projects to further mitigate impacts to the health of Biscayne Bay.

Pursuant to Ordinance No. 14-65, this report will be placed on the next available Board meeting agenda. Should you require additional information, please contact Eulois Cleckley, DTPW Director and CEO at (786) 469-5406.

cc: Geri Bonzon-Keenan, County Attorney  
Gerald Sanchez, First Assistant County Attorney  
Jess McCarty, Executive Assistant County Attorney  
Office of the Mayor Senior Staff  
Lourdes Gomez, Director, RER  
Jennifer Moon, Chief, Office of Policy and Budgetary Affairs  
Yinka Majekodunmi, Commission Auditor  
Basia Pruna, Director, Clerk of the Board  
Eugene Love, Agenda Coordinator  
Eulois Cleckley, Director and CEO, DTPW

Honorable Chairman Jose “Pepe” Diaz  
and Members, Board of County Commissioners  
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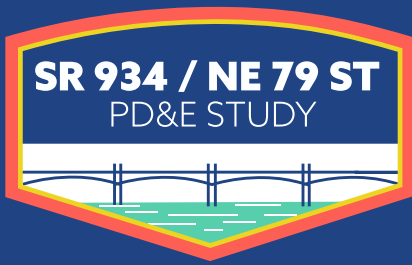
Rashid Istambouli, Senior Division Chief, RER  
Miguel Soria, Assistant Director, DTPW

# **Supplemental Items**

## **– Requested by the Board:**

- FDOT 79th Street and I-195 Study





# FACT SHEET

## STATE ROAD (SR) 934/NE 79th Street PROJECT DEVELOPMENT AND ENVIRONMENT (PD&E) STUDY

From west of Pelican Harbor Drive to east of Adventure Avenue  
Miami-Dade County, Florida

FINANCIAL MANAGEMENT  
NUMBER: 449007-1-22-01  
FEDERAL AID NUMBER: N/A  
EFFICIENT TRANSPORTATION  
DECISION MAKING (ETDM)  
NUMBER: 14484

## OVERVIEW

The Florida Department of Transportation (FDOT), District Six, is conducting a Project Development and Environment (PD&E) Study for the SR 934/NE 79th Street (John F. Kennedy Causeway) from west of Pelican Harbor Drive to east of Adventure Avenue. The project is located in the City of Miami and North Bay Village in Miami-Dade County.



## PROJECT IMPROVEMENTS

The primary objective of this study is to evaluate bridge replacement alternatives to address structural deficiencies of four existing bridges (two bridge pairs) along SR 934/NE 79th Street (John F. Kennedy Causeway). Other objectives include:



### IMPROVE CONNECTIVITY

Including new and/or improved paved shoulders, marked bicycle lanes and sidewalks. SR 934/NE 79th Street provides a direct connect to various area neighborhoods including North Bay Island, Harbor Island, and Treasure Island to the mainland.

During the PD&E phase, the preliminary engineering and documentation required for funding is completed. This includes the review and analysis of potential impacts from the proposed project on the social, economic, natural, physical, and cultural resources in the surrounding environment.



### MAINTAIN EVACUATION ROUTES

SR 934/NE 79th Street serves as part of the emergency evacuation route network designated by the Florida Division of Emergency Management (FDEM) and Miami-Dade County and plays a critical role in facilitating traffic between the heavily populated beaches and the Miami mainland during emergency evacuation periods.

## SCHEDULE

This PD&E Study started in August 2022 and is expected to be completed by 2024. The design phase begins once the PD&E Study is complete.

## FUNDING

State and federal funding has been allocated by the FDOT for future phases of the project, including Design and Construction. Preliminary construction costs will be developed during the PD&E phase.

## GET INVOLVED

Public involvement is an extremely important part of a PD&E Study, to inform citizens about the project and provide interested persons an opportunity to be involved in the development of the project. The environmental review, consultation, and other actions required by applicable Federal environmental laws for this project are being, or have been, carried out by FDOT pursuant to 23 U.S.C. § 327 and a Memorandum of Understanding dated May 26, 2022, and executed by Federal Highway Administration and FDOT. FDOT encourages public participation without regard to race, color, national origin, age, sex, religion, disability, or family status. There will be several opportunities to participate in public meetings and individual stakeholder discussions.

## CONTACTS

### FDOT PROJECT MANAGER

Hector Di Donato, P.E.  
Florida Department of Transportation – District VI  
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[hector.didonato@dot.state.fl.us](mailto:hector.didonato@dot.state.fl.us)

### CONSULTANT PROJECT MANAGER

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### VISIT OUR WEBSITE:

[fdotmiamidade.com/79thstreetbridgespdstudy.html](https://fdotmiamidade.com/79thstreetbridgespdstudy.html)



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# I-195 PD&E Study

From NW 12 Avenue to SR 907/Alton Road

## FACT SHEET

### INTERSTATE 195 (I-195)/STATE ROAD (SR) 112/JULIA TUTTLE CAUSEWAY

FROM NW 12 AVENUE TO SR 907/ALTON ROAD

### PROJECT DEVELOPMENT AND ENVIRONMENT (PD&E) STUDY Miami-Dade County, Florida

FINANCIAL MANAGEMENT NUMBER: 440228-2-22-01

FEDERAL AID PROJECT NUMBER: TO BE DETERMINED

EFFICIENT TRANSPORTATION DECISION MAKING (ETDM)  
NUMBER: 14453

## OVERVIEW

The Florida Department of Transportation (FDOT) District Six is conducting a PD&E Study for the I-195/SR 112/Julia Tuttle Causeway from NW 12 Avenue to SR 907/Alton Road. The project is located within the cities of Miami and Miami Beach in Miami-Dade County, Florida.

## PROJECT OBJECTIVES

The primary objective of this study is to build upon the Corridor Planning Study (CPS) efforts and evaluate alternatives that address operational deficiencies, relieve existing/future congestion, accommodate future travel demand projected as a result of area-wide population and employment growth along the I-195 corridor. Other objectives include:



**PROVIDE TRANSIT, BICYCLE AND PEDESTRIAN IMPROVEMENTS**



**IMPROVE CONNECTIVITY**



**ENSURE SAFETY**



**INCREASE CAPACITY**

## SCHEDULE



This PD&E Study started in June 2022 and is expected to be completed in June 2025. Design and construction phases for the project have not yet been funded. Preliminary construction costs will be developed during the PD&E phase.

## GET INVOLVED

The public plays a vital role in the PD&E process. There will be several opportunities to participate in public meetings and individual stakeholder discussions, including Project Advisory Team and Community Advisory Group meetings, which will be held throughout the life of the study.

The environmental review, consultation, and other actions required by applicable Federal environmental laws for this project are being, or have been, carried out by FDOT pursuant to 23 U.S.C. § 327 and a Memorandum of Understanding dated May 26, 2022, and executed by Federal Highway Administration and FDOT.

## PROJECT CONTACT

### FDOT PROJECT MANAGER

Ivette Funtanellas, P.E.

Florida Department of Transportation – District Six

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1000 NW 111 Avenue,  
Room 6251

Miami, FL 33172

Phone: (305) 470-5268

Fax: (305) 470-5179

## YOU ARE INVITED



Please join the Florida Department of Transportation (FDOT) District Six at a Public Kickoff Meeting regarding this project.



**Wednesday, February 8, 2023 | 6 p.m.**  
**(Simultaneous In-Person and Virtual Meeting)**

### IN-PERSON MEETING:

Miami Beach Golf Club, 2301 Alton Road,  
Miami Beach, Florida 33140

Register online: <https://bit.ly/I-195-KOMeeting>

### VIRTUAL MEETING:

To participate virtually from your computer, tablet, or smartphone, please register using the following link:

<https://attendee.gotowebinar.com/register/2913207062977947743>

Participants can also call in by dialing  
**+1 (213) 929-4212; access code: 946-593-501.**

Scan to  
register:



Scan to  
register:



The public meeting will consist of a formal presentation starting at 6:15 p.m., followed by an open discussion. Questions will be responded to as time permits, in the order received. If your question is not responded to during the meeting, a response will be provided in writing. Persons wishing to submit statements, in place of or in addition to oral statements, may do so at the meeting or by sending them to the **Project Manager, Ivette Funtanellas, P.E., at (305) 470-5270 or via email at [Ivette.Funtanellas@dot.state.fl.us](mailto:Ivette.Funtanellas@dot.state.fl.us).**

**FDOT encourages public participation without regard to race, color, national origin, age, sex, religion, disability or family status.**

Pursuant to the provisions of the Americans with Disabilities Act, any person requiring special accommodations to participate in this meeting is asked to advise the agency at least seven (7) days before the meeting by contacting **Mr. Nicholas Danu, P.E., FDOT District Six Title VI Coordinator at (305) 470-5219 or in writing at FDOT, 1000 NW 111 Avenue, Miami, FL 33172 or by email at [Nicholas.Danu@dot.state.fl.us](mailto:Nicholas.Danu@dot.state.fl.us).**

### VISIT OUR WEBSITE:

<https://www.fdotmiamidade.com/i195pdestudy.html>



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