MIAMIBEACH

Sustainability Resiliency Committee Meeting
Commission Chambers
September 25, 2019 - 1:00 PM

Commissioner Mark Samuelian, Chair
Commissioner John Elizabeth Aleman, Vice-Chair
Commissioner Joy Malakoff, Member
Commissioner Ricky Arriola, Alternate
Elizabeth Wheaton, Liaison

REPORTS

1. REVIEW OF RESILIENCE STRATEGY WORKPLAN - PLANNED AND IN PROGRESS RESILIENCY PROJECTS

   City Manager's Office | Public Works | CIP

2. SUSTAINABILITY COMMITTEE

   Dave Doebler, Committee Chair

DISCUSSION ITEMS

3. DISCUSS THE CITY'S PLAN TO ADDRESS FLOODING AS A RESULT OF EXTREME RAIN EVENTS AS WELL AS ANY LESSONS LEARNED

   Commissioner Samuelian

   Public Works

   Item C4 K - June 5, 2019 Commission Meeting

4. DISCUSSION PERTAINING TO AMENDMENTS TO THE CITY CODE REGARDING POTENTIAL REQUIREMENTS FOR HIGHER ELEVATION FOR NEW COMMERICAL CONSTRUCTION THAT IS VULNERABLE TO FLOODING

   Commissioner Aleman

   Planning

   Item CF D - July 17, 2019 Commission Meeting

5. DISCUSSION REGARDING PRIVATE SEAWALLS

   City Commission

   City Manager's Office | Public Works

   Item R7F - December 12, 2018 Commission Meeting

6. DISCUSS THE USE OF PESTICIDES, HERBICIDES, AND FERTILIZERS ON BOTH PUBLIC AND PRIVATE PROPERTIES

   Commissioner John Aleman

   Environment and Sustainability

   Item C4 V - March 13, 2019 Commission Meeting

7. DISCUSS THE PUMP STATIONS PLUMES ON WEST AVENUE

Commissioner Gongora

Public Works

Item C4 U - February 13, 2019 Commission Meeting

8. DISCUSSION ON EXPANDING THE PLASTIC BAG ORDINANCE IN MIAMI BEACH

Commissioner Micky Steinberg I Co-sponsored by Commissioner Michael Gongora

City Attorney's Office | City Manager's Office

Item C4 T - February 13, 2019 Commission Meeting

9. DISCUSS IMPLEMENTING A TOTAL BAN ON SINGLE-USE PLASTICS ON MIAMI BEACH PENDING THE FLORIDA RETAIL FEDERATION'S LITIGATION AGAINST THE CITY OF CORAL GABLES

Commissioner Arriola | Co Sponsered, Mayor Gelber, Commissioners Gongora, Malakoff, Steinberg

City Attorney's Office

Item R9 J - July 17, 2019 Commission Meeting

10. DISCUSS TERMINATING THE CITY'S CONTRACT WITH COCA-COLA

Commissioner Arriola

Communications and Marketing

Item R9 I - July 17, 2019 Commission Meeting

11. DISCUSS THE STATUS AND IMPLICATIONS OF THE ACTION ITEMS ASSOCIATED WITH ONGOING WATER QUALITY COORDINATION WITH MIAMI-DADE COUNTY

Commisioner Samuelian | Co-Sponser Commissioner Michael Gongora

Environment and Sustainability

Item C4U - July 17, 2019 Commission Meeting

DEFERRED ITEMS

12. DISCUSSION ON REPURPOSING OUR GOLF COURSES FOR THE FUTURE

Commissioner Ricky Arriola

Parks and Recreation | Public Works | Environment and Sustainability

Item C4 AB - May 16, 2018 Commission Meeting

13. DISCUSSION REFERRING A TASK TO THE CITY MANAGER'S READY TEAM IN ORDER TO BOTH OPTIMIZE PUBLIC ENGAGEMENT AND FACILITATE TIMELY COMPLETION OF PROJECTS

Commissioner John Elizabeth Aleman

CIP I Marketing & Communications

Item C4V - July 25, 2017 Commission Meeting

14. DISCUSSION REGARDING EXPLORING THE CITY OF MIAMI BEACH JOINING THE AMERICAN FLOOD COALITION

Commissioner Mark Samuelian I Co-Sponsor Commissioner Joy Malakoff

City Manager's Office | Environment & Sustainability

Item C4W - December 12, 2018 Commission Meeting

15. DISCUSSION TO REVIEW THE PALM HIBISCUS ROAD ELEVATION EXPERIENCE

Commissioner Samuelian

Capital Improvement Projects

Item C4 Q - September 11, 2019 Commission Meeting

16. DISCUSSION ON CITY OF MIAMI BEACH STORMWATER, SANITARY SEWER, AND WATER INFRASTRUCTURE BEST MANAGEMENT PRACTICES

Commissioner Micky Steinberg

Environment and Sustainability

Item C4U - May 11, 2016 Commission Meeting

17. DISCUSSION REGARDING HOW GREEN INFRASTRUCTURE INCLUDING LIVING OR HYBRID SHORELINES CAN COMPLEMENT GREY INFRASTRUCTURE IN OUR CLIMATE ADAPTATION ON-GOING WORK

Commissioner Micky Steinberg

Environment and Sustainability

Item C4 N - April 13, 2016 Commission Meeting

18. DISCUSSION ON ARTIFICIAL REEFS

Commissioner Ricky Arriola

Environment and Sustainability

Item C4 AI - May 16, 2018 Commission Meeting

19. DISCUSS HAVING THE CITY PURSUE MITIGATION PROJECT FUNDING FROM THE DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT

Commissioner Samuelian

Environment & Sustainability

Item C4 P - September 11, 2019 Commission Meeting

20. DISCUSS THE MOTION MADE BY THE SUSTAINABILITY COMMITTEE TO MAKE THE REDUCTION OF CO2 EMISSIONS A PRIMARY FOCUS ON THE FLEET ASSESSMENT

Commissioner Samuelian

Fleet Management

Item C4 S - July 17, 2019 Commission Meeting

21. DISCUSSION ON THE CITY PARTNERING WITH FPL EVOLUTION PROGRAM TO EXPAND EV-CHARGING STATIONS IN MIAMI BEACH

Commissioner Samuelian

Environment and Sustainability

Item C4 N - September 11, 2019 Commission Meeting

22. DISCUSSION ON REQUIRING ALL NEW CITY VEHICLES PURCHASED AFTER 2020 TO BE 100% ELECTRIC (EXCEPT EMERGENCY VEHICLES)

Commissioner Gongora

Fleet Management

Item C4 R - September 11, 2019 Commission Meeting

23. DISCUSSION REGARDING THE FREQUENCY OF WATER TESTING IN MIAMI BEACH

Commissioner Steinberg

Public Works | Environment and Sustainability

Item R9 S - September 11, 2019 Commission Meeting

24. DISCUSSION ON THE GRAND JURY REPORT REGARDING HEALTH OF BISCAYNE BAY WITH FOCUS ON HARD DEBRIS AND AN UPDATE ON WHAT THE CITY OF AVENTURA IS DOING IN RESPONSE

Commissioner Samuelian

Environment and Sustainability | Public Works

Item C4 S - September 11, 2019 Commission Meeting

25. DISCUSS UPDATES TO THE CITY CODE REFERENCING TURTLE NESTING

Commissioner John Elizabeth Aleman I Co-Sponsor Commissioner Joy Malakoff

Environment and Sustainability

Item C4F - September 25, 2017 Commission Meeting

26. DISCUSS THE CURRENT STATUS OF THE CITY'S TRANSITION PLAN FOR GAS BLOWERS

Commissioner Samuelian

Public Works | Parks and Recreation

Item C4 O - September 11, 2019 Commission Meeting

27. DISCUSSION ON REQUIRING ALL COMMERICAL LANDSCAPERS WORKING ON MIAMI BEACH TO ABIDE BY FLORIDA FRIENDLY LANDSCAPING STANDARDS

Commissioner Arriola

Public Works | Environment and Sustainability | Parks and Recretions

Item C4 T - September 11, 2019 Commission Meeting

MIAMIBEACH

Item 1.

COMMITTEE MEMORANDUM

TO: Sustainability Resiliency Committee Meeting

FROM: Jimmy L. Morales, City Manager

DATE: September 25, 2019

SUBJECT: **REVIEW OF RESILIENCE STRATEGY WORKPLAN - PLANNED AND IN PROGRESS RESILIENCY PROJECTS**

RESPONSIBLE DEPARTMENT:
City Manager's Office | Public Works | CIP

Analysis
VERBAL REPORT AT COMMITTEE MEETING.

PRESENTATION BY JACOBS ENGINEERING: BLUE/GREEN

PRESENTATION BY HAZEN AND SAWYER: WATER AND SEWER

UPDATE:
Supplemental #1 09.24.19 - Presentation provided by: Hazen and Sawyer

Supplemental #2 09.24.19 - Presentation provided by: Jacobs Engineering

ATTACHMENTS:

Description	Type
SRC Report September 2019	Memo
Hazen and Sawyer - Water and Sewer Presentation	Memo
Jacobs Engineering - Blue-Green Stormwater Infrastructure Concept Plan Update	Memo

SUSTAINABILITY AND RESILIENCY COMMITTEE PROJECTS PROGRESS REPORT

	Project Name	District	Scope of Work	Project Budget	Current Status	Anticipated Completion
Design						
1	First Street Imp Alton & Washington	South Beach	Improvements on First Street to include complete roadway reconstruction, elevation of the roadway to a minimum 3.7 NAVD elevation, utility removal/replacement, new storm drainage line installation, new storm pump station (120,000 gpm), force main installation, landscaping and lighting. Drainage improvements on Alton Road from South Point Drive to 5th Street and Washington Avenue from South Point Drive to 5th Street.	$24,000,000	Design is underway. Coordinating with SOFNA Traffic and Safety Committee the location of the storm pump station and outfall. Once the location of the pump station and outfall is selected will finalize the design.	Fall 2021
2	Indian Creek -Street Drainage Imp. - Phase III	Middle Beach	Storm water drainage improvements on Indian Creek Drive and side streets from 25 Street to 41 Street, including completing the stormwater pump station at 32nd Street. Final pavement restoration of the roadway and sidewalk on Collins Avenue between 25 Street and 26 Street; Rebuilding and raising the roadway and sidewalk on Indian Creek Drive between 26 Street and 41 Street and new street lighting, signage and pavement markings.	$33,000,000	On July 2019 bids were received for construction of the entire length of the project in the amount of $13.6 M and was awarded to Ricman Construction of Florida, pending execution of DFA amendment with FDOT for project funding. Project construction is aniticipated to start in Nov 2019.	Fall 2021
3	Maurice Gibb Park Redesign (GOB)	Middle Beach	Renovation of the park to include soil remediation, a new playground with shade canopy, pavilion(s), a dog park, walkways, minor restroom renovations, landscaping with open sodded areas, irrigation, signage and park furnishings.	$7,020,681	The updated 60% documents have been submitted and are being reviewed by staff. The permit applications for Army Corps of Engineers, FDEP and Miami Dade County DERM are being submitted to start the environmental permitting process. We have been notified by the permitting agencies that the environmental permitting process may require up to 12 months to obtain approval.	Spring 2022
4	Bayshore Park (Par 3) (GOB)	Middle Beach	A new passive community park to include environmental remediation, a central lake; open meadows and informal open play field areas; site grading; pavilion; 6 tennis courts with restroom facilities; children's playground; dog park; boardwalk and pathways; security lighting; vita course and fitness cluster; butterfly garden; linear water feature and parking lot. Resilient strategies proposed at the park include stormwater retention system, pervious pavement; solar panels for pedestrian lighting, energy efficient lighting and roof mounted solar panels.	$21,160,190	Plans are complete expect the lake area, pending DERM comments and approval. Resiliency stragtegy may have to be re-evaluated. A meeting has been scheduled at DERM on September 26, 2019 at 10:00 am.	Spring 2021
5	Middle Beach Recreational Corridor Ph 3 (GOB)	Middle Beach	Construction of approximately 3,500 linear feet of an on-grade pedestrian walkway and the demolition of the existing wooden boardwalk from 24th to 45th street. Dune enhancements such as native dune vegetation species and beach compatible dune fill and irrigation systems will be provided for the landscaping. Path lighting will meet Florida Fish and Wildlife Commission's marine turtle nesting requirements.	$13,215,000	Contract for construction has been awarded and is currently proceeding through contract execution.	Fall 2021
6	North Beach Oceanside Park Renovation	North Beach	Renovation of the park to include pedestrian entrances with new gates, pedestrian beach access, walkways with lighting, refurbished restrooms and picnic shelters, site furnishings, open sodded areas, landscape and irrigation.	$12,700,000	The project has been advertised and the bid date has been extended to September 30th. FDEP has not completed the permit review. In response to feedback from the Administration and the Sustainability and Resiliency Committee, some of the pathway widths are being reduced.	Spring 2021
7	Sunset Harbor Pump Station #3 Screen	Middle Beach	A perforated metal enclosure is being designed to screen the equipment at the Sunset Harbour Pump Station #3. The height of the screen will vary from 9'-0" above the traffic barricade adjacent to the generator, to 3'-0" at the westernmost portion of the pump station. At the eastern side, the enclosure will also serve as an entrance sign for the neighborhood.	$750,000	The 90 % Construction Documents have been submitted and are being reviewed by staff. Upon review by staff the plans will be submitted for permitting.	Spring 2020
Preconstruction						

SUSTAINABILITY AND RESILIENCY COMMITTEE PROJECTS PROGRESS REPORT

	Project Name	District	Scope of Work	Project Budget	Current Status	Anticipated Completion
8	Brittany Bay Park	North Beach	This project includes the creation of a living shoreline between the existing remaining seawall and the concrete retaining / seawall. ADA-Accessible overlook that will allow park patrons to walk from the Park to the existing seawall's edge. The project is intended to enhance the surrounding riparian and intertidal environment by creating a new habitat for aquatic and terrestrial species and improving water quality via filtration of upland runoff. The Park renovations also include new concrete walkways, milling and resurfacing the existing parking lot, new trees, new exercise equipment, furniture, lighting and new landscaping.	$1,400,000	The plans are being reviewed by the City of Miami Beach Building Department, Miami Dade County DERM, FDEP and the Army Corps of Engineers. The environmental permitting process has resulted in delays.	Fall 2020
Construction						
10	Palm & Hibiscus Island Neighborhood Improvements	South Beach	This project includes a variety of aboveground and underground improvement such as new water main and service, new storm water drainage system including 3 pump stations, lining of the sanitary sewer system and replacing all the sewer laterals, raising the elevation and reconstruction of the roadways including installation of Geo Textile, new decorative street lights, speed tables, landscape, hardscape improvements, harmonization with private properties and undergrounding the franchise utilities on Hibiscus Island. Additional scope of services was added to the project to install 3 bi-fuel generators as well as, implementation of the new drainage criteria to install and harmonize a yard drain in each private property with the finished floor elevation (FFE) lower than the crown of road.	$48,938,882	This project is 91% complete. All pump stations in Palm & Hibiscus Island are in operation. Design/Builder has submitted the permit application for the three (3) generators for the pump stations. Design and permitting of the private drains, in compliance with Commmission directive and the City's drainage policy is underway.	Spring 2020
11	Stormwater Pump Station at 19th Street East of Meridian	Middle Beach	Installation of a stormwater pump station, including an emergency generator and seawall reconstruction along Collins Canal near 19th Street and Meridian Avenue. A change order was approved for the extension of the Botanical Garden along the Dade Canal and a seawall at the Carl Fisher Clubhouse.	$8,400,000	Second demostration of the Pump Station to DERM officials was held, and final certification is pending. The pump station is currently operational. For the Botanical Garden expansion, FPL completed the new overhead relocation and installed the new transformer. Removal of existing poles is pending. For the Carl Fisher Seawall, SFWM and DERM have approved the plans, and permits are pending final fee payments. Permit from US Army Corps of Engineers is pending.	Completed December 2019 TBD
12	Venetian Islands Neighborhood Improvements	South Beach	Work includes site preparation, earthwork, demolition, storm drainage, roadway, concrete valley gutters, paving and grading, water main, lighting, and planting. Additional scope added included installation of six (6) stormwater pump stations, two per island, and automated meter reading technology.	$37,382,720	Engineer of record is collecting additional data and is preparing a new pavement design to best achieve the desired service life of the road. South Rivo Alto Pump Station completed. North Rivo Alto Pump Station start-up test held on 9/12/19. All six pump stations are operational, and pending DERM final approvals.	TBD Completed
13	Venetian Islands Seawalls	South Beach	This project entails seawall replacement, at two (2) locations consisting of precast concrete bulkhead panels, king piles, batter piles and concrete cap; and seawall cap raising at five (5) locations consisting in new concrete cap, batter piles and retaining walls, all locations within the Venetian Islands.	$650,000	Construction on hold, pending DERM permit modifications as per field conditions	TBD

SUSTAINABILITY AND RESILIENCY COMMITTEE PROJECTS PROGRESS REPORT

	Project Name	District	Scope of Work	Project Budget	Current Status	Anticipated Completion
14	West Avenue - Phase II Improvements - North of 14 Street	South Beach	West Avenue - Phase II Improvements North of 14th St - Scope includes Water, Sewer, Storm and above ground improvements from 14th Street north to the Collins Canal and include a new stormwater Pump Station and Baywalk at the end of Lincoln Road. Project is being re-designed to include the following resiliency items: Road elevation 3.7 NAVD; 10 year storm event; Mobility – 2 lanes with center continuous turn lane; Protected bike path; Street ends enhanced design; Permanent generators and 120,000 gpm pump station.	$79,158,564	Design of Water and Sewer System is 100% complete. Roadway, Landscaping, lighting, drainage and Pump Station Design is 60% complete. Meetings with the community will be scheduled for the first week of October to present option on the location of Pump Station above ground components and screening concept. Expected date for start of construction is December 2, 2019, pending DERM permits.	November 2022
15	West Avenue - Phase II Improvements - South of 14th Street	South Beach	West Avenue - Phase II Improvements South of 14th St. The scope includes Water, Sewer, Storm and above ground improvements from 14th Street south to 5th Street. Project is being re-designed to include the following resiliency items: Road elevation 3.7 NAVD; 10 year storm event; Mobility – 2 lanes with center continuous turn lane; Protected bike path; Street ends enhanced design; Elimination of street paving to allow for wider pedestrian sidewalks and more green areas; Permanent generators for existing pump stations.		Design of Water and Sewer System is 100% complete. Roadway, Landscaping, lighting, drainage is 60% complete. Expected date for start of construction is December 2, 2019, pending DERM permits.	August 2021
TOTAL				**$287,776,037**		

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Water and Sewer System Master Plans

September 25, 2019

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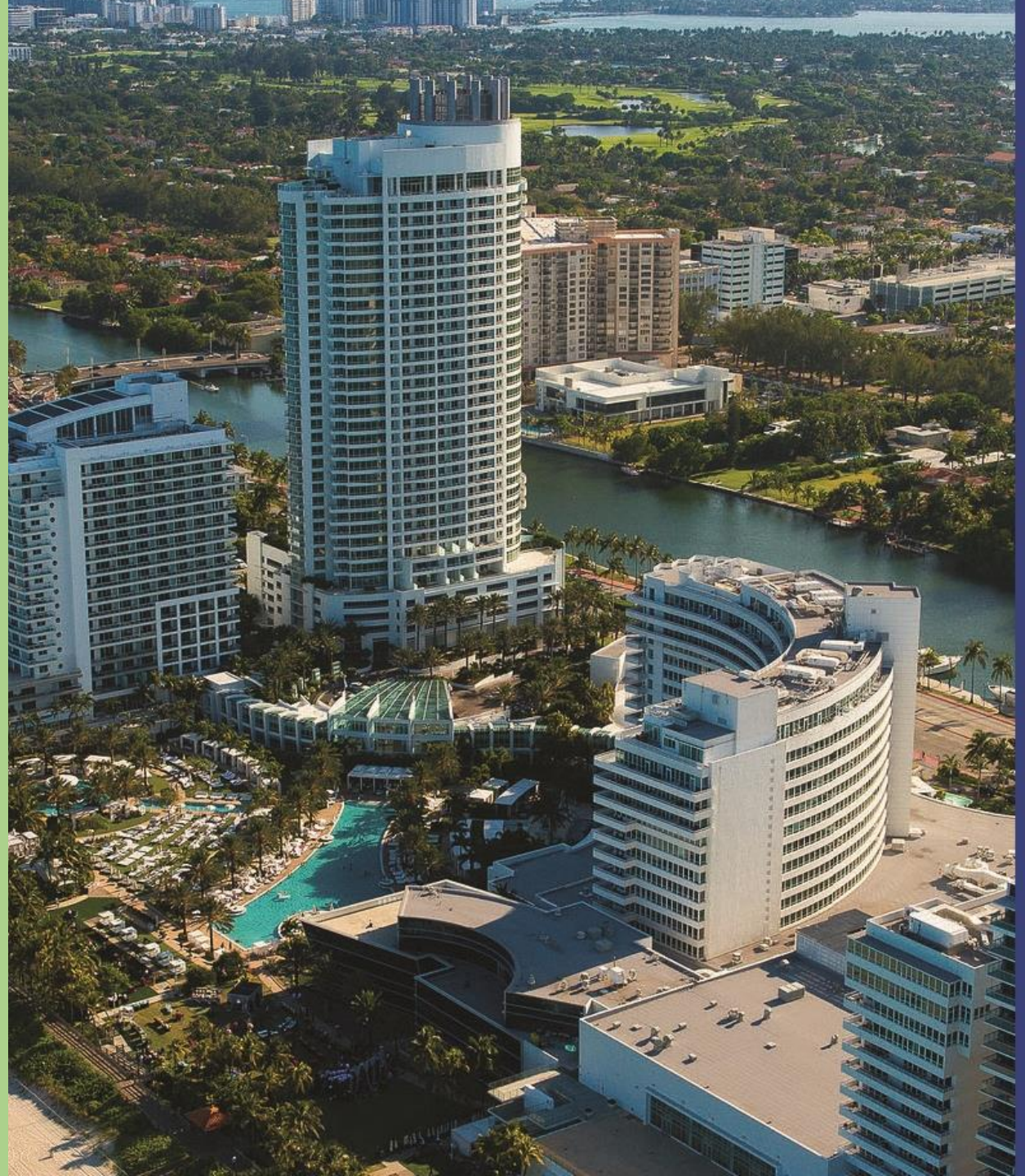
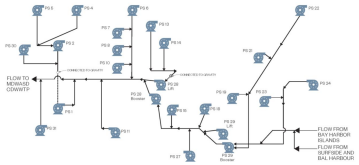
Master Plan Development

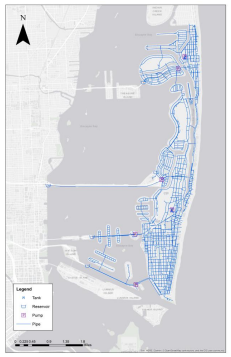


Methodology

Evaluation of the Existing System

Capacity Evaluation using **Hydraulic Modeling**





Evaluation of **Above Ground Assets**

Evaluation of **underground assets** (Risk Assessment)

Consequence of Failure (CoF)	Low
	Medium
	High
Probability of Failure (PoF)	Low
	Medium
	High

Capital Improvement Plan

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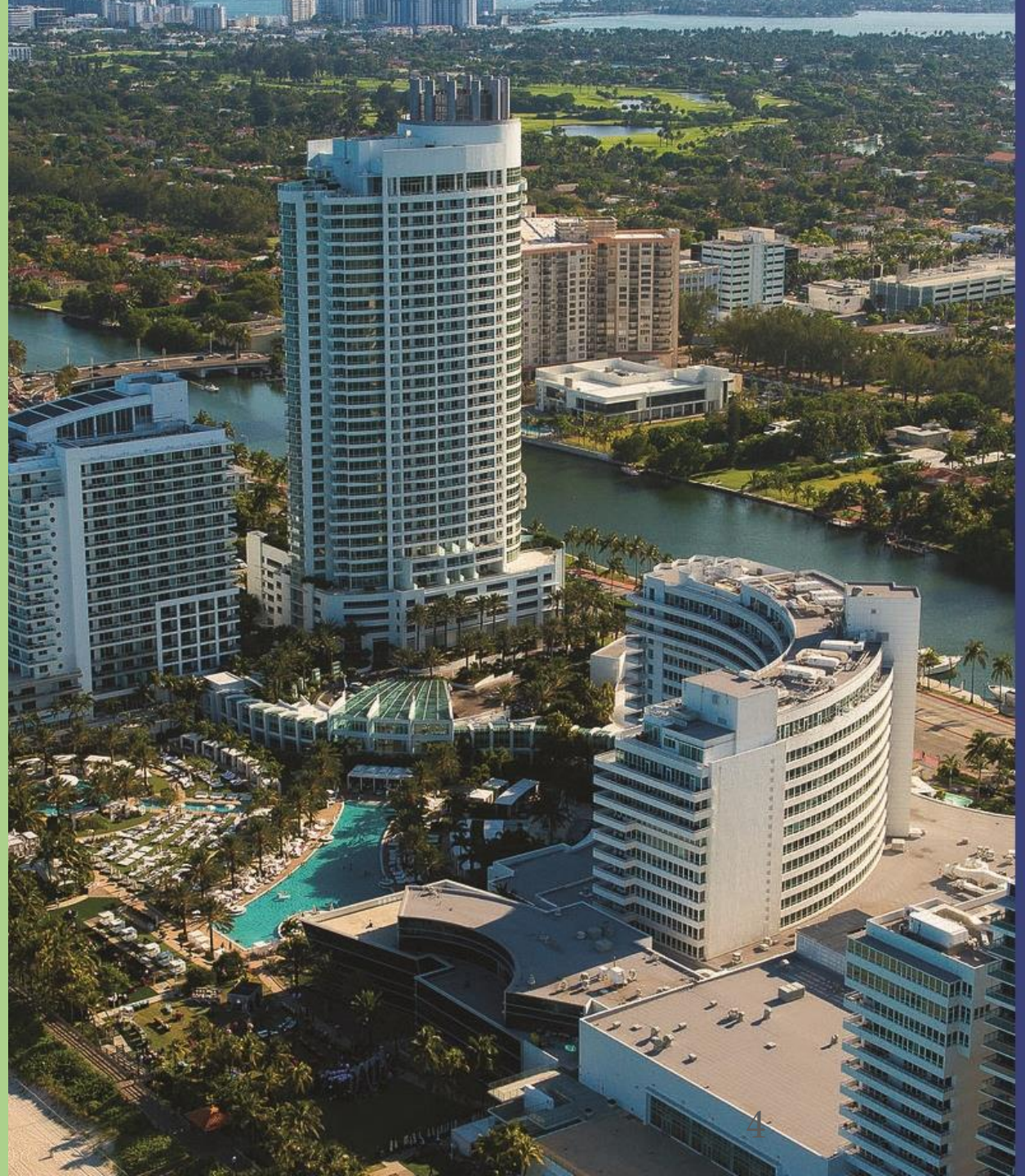
Population, Water Demand and Sewer Flows Forecast



Population Projections

Residents

Source: Traffic Analysis Zones (TAZ) Projections by Miami-Dade RER

2019	2045
96,000	121,000

+

Employees

Source: Traffic Analysis Zones (TAZ) Projections by Miami-Dade RER

2019	2045
70,000	96,000

+

Hotel Guests

Source: Current: Greater Miami Convention and Visitors Bureau, Future : Hazen

2019	2045
25,000	43,000

Population and Water Demand Projections

Equivalent Population

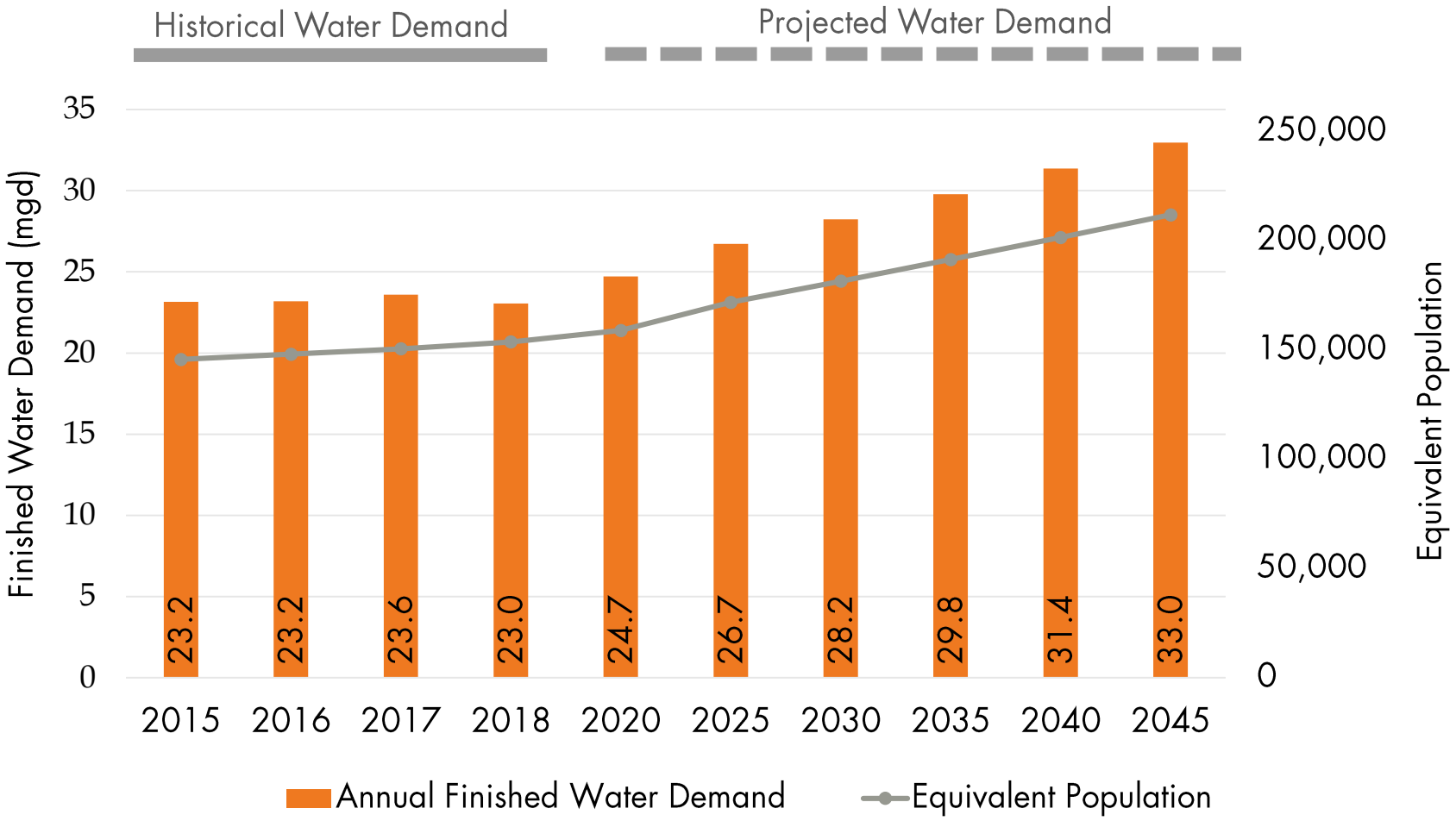
Residents (x 1)

+

Employees (x 0.5)

+

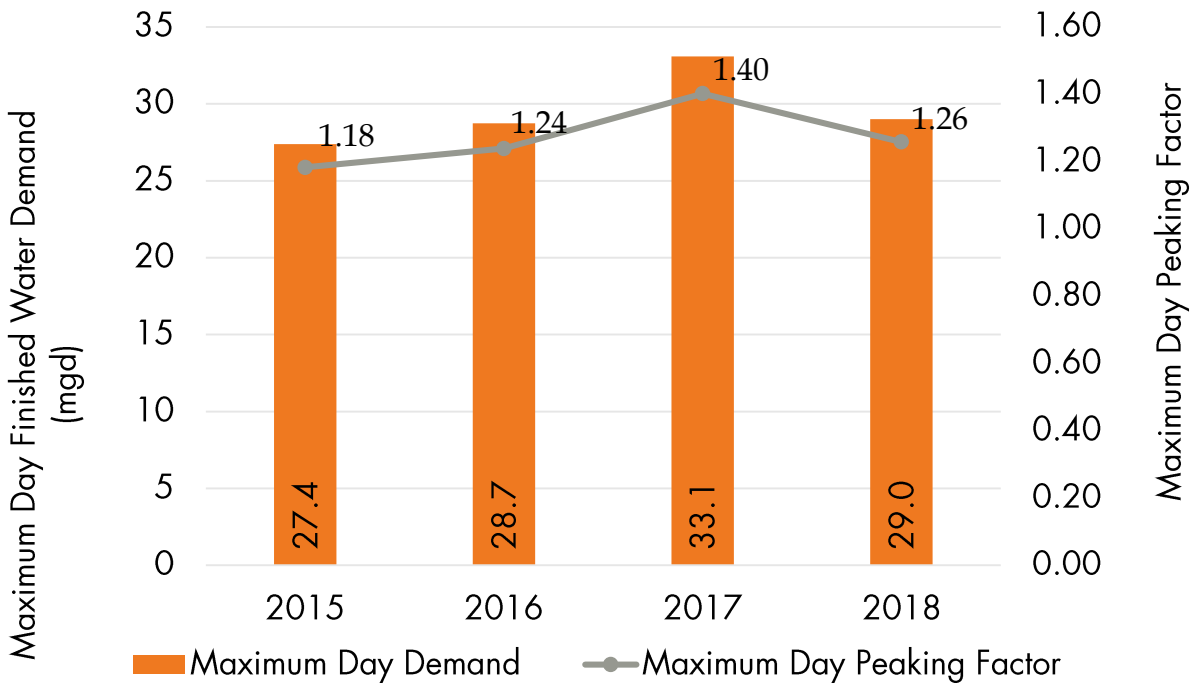
Hotel Guests (x 1)



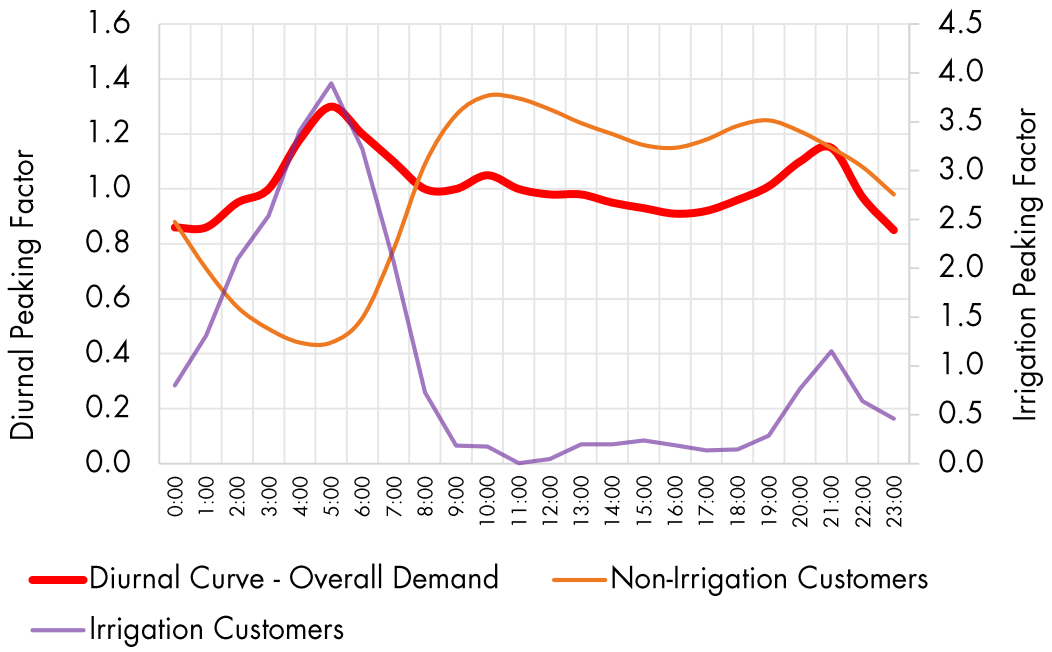
Seasonal and Diurnal Water Demand Fluctuations

The evaluation takes into account the day-to-day and hourly variations

Average maximum day peaking factor = 1.27



Overall diurnal peaking factor = 1.30



Estimation of Sewer Flows

Sewer Flows

Base Sanitary Flow

96,000 residents

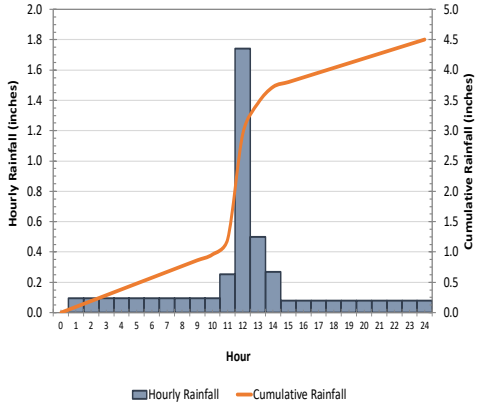
70,000 Employees

25,000 hotel guests

Groundwater Infiltration (GWI)

Pipe age, material and distance to groundwater

Rainfall Dependent Infiltration and Inflow (RDII)



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Water System Master Plan

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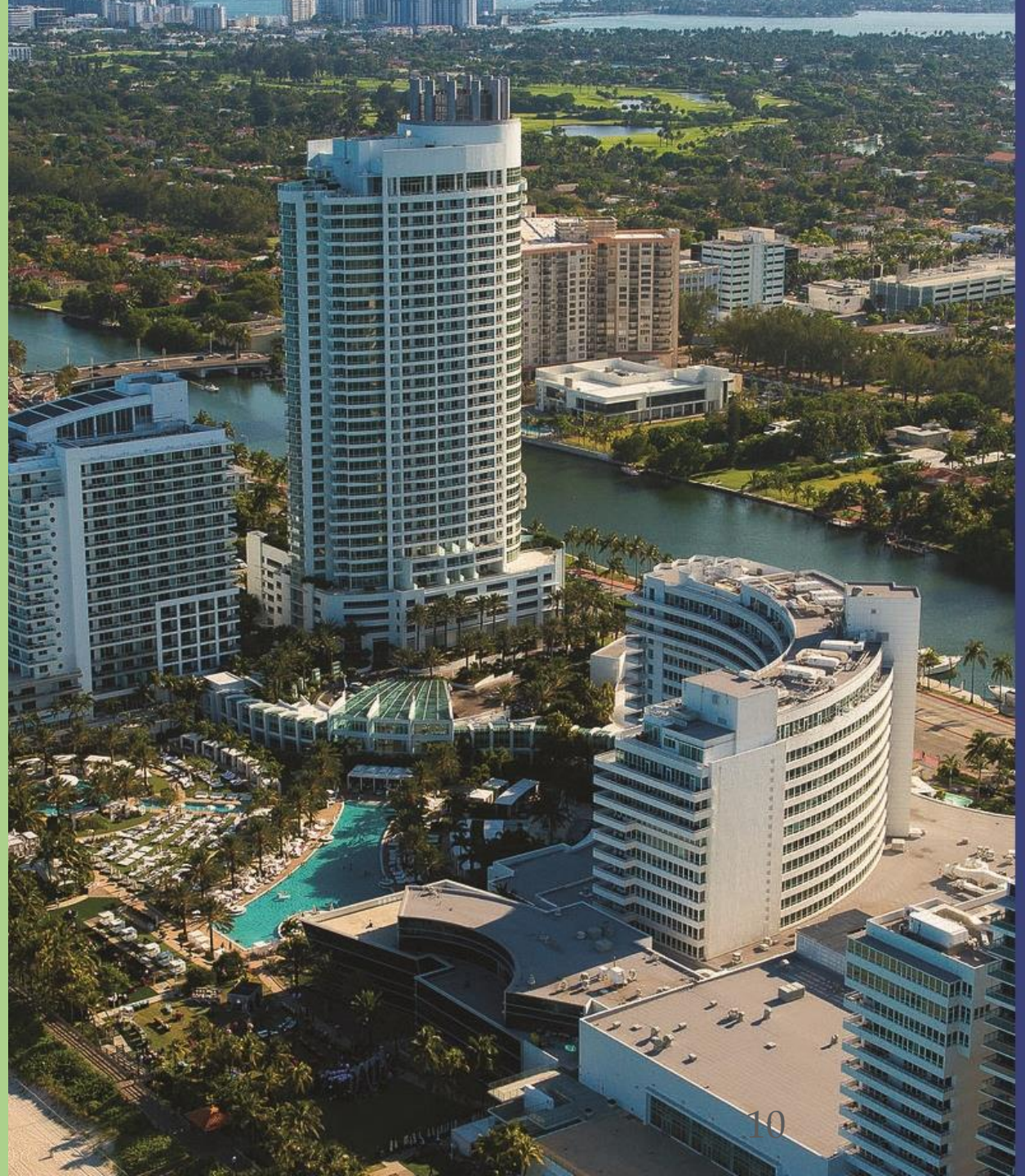
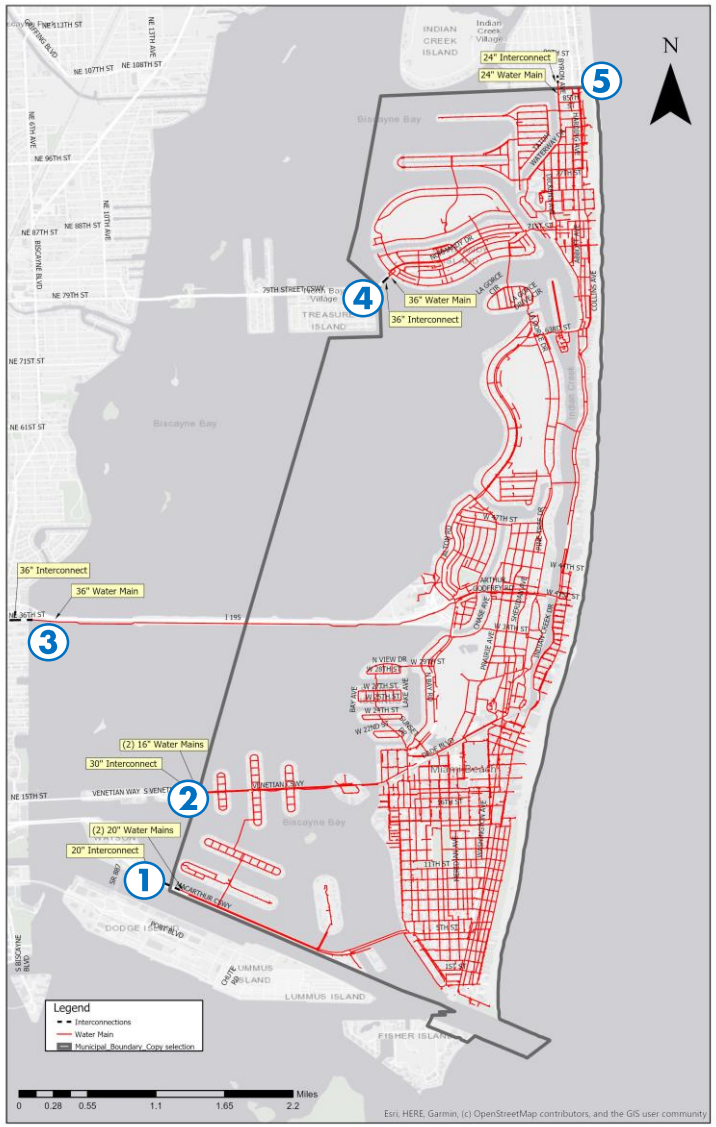
Summary of Existing Water Facilities



Existing Water Facilities



Miami Beach is a wholesale water customer of MDWASD

- Interconnects with MDWASD

1: 20-Inch water main on Watson Island (Mac Arthur Causeway)

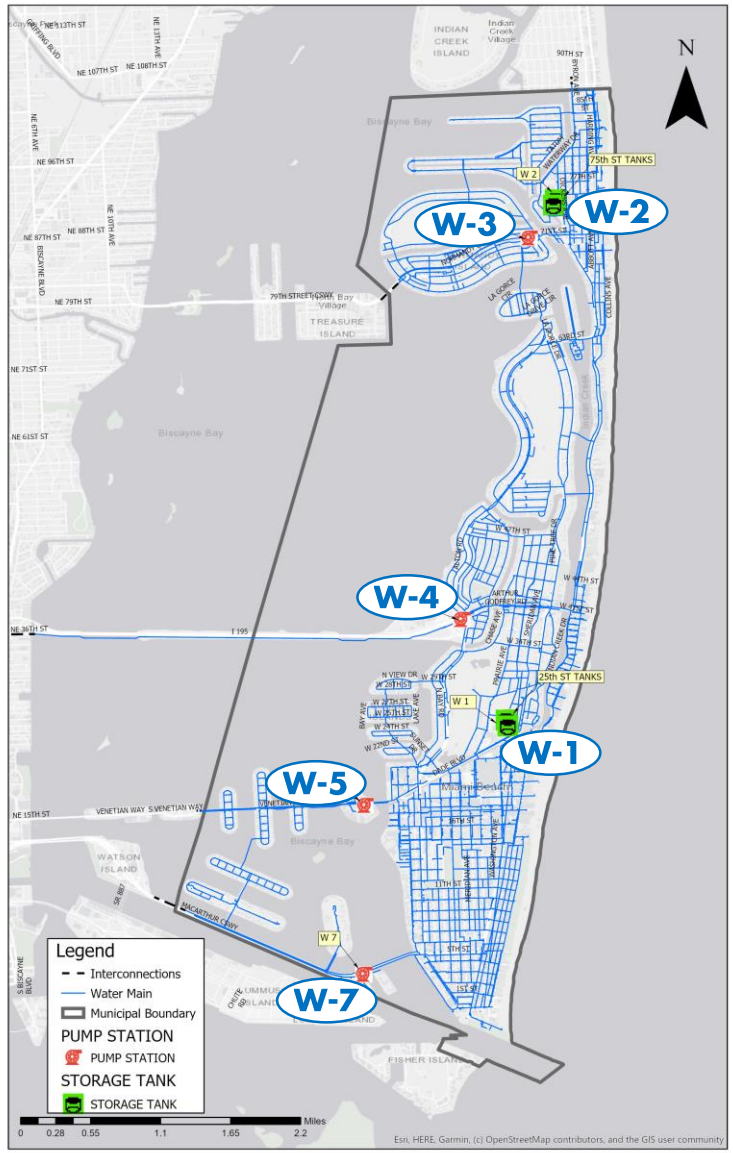
2: 30-Inch water main on San Marco Island (Venetian Causeway)

3: 36-Inch water main on Julia Tuttle Causeway (Norwood)

4: 36-Inch water main on Normandy Isle (79th Street Causeway)

5: 24-Inch water main on Byron Avenue (Emergency Interconnect)

Existing Water Facilities



The water pressure is boosted from the MDWASD Interconnects

- Main Facilities

W-1: 45th Street Booster Station and 2 3MG Storage Tanks

W-2: 75th Street Booster Station and 2 4MG Storage Tanks

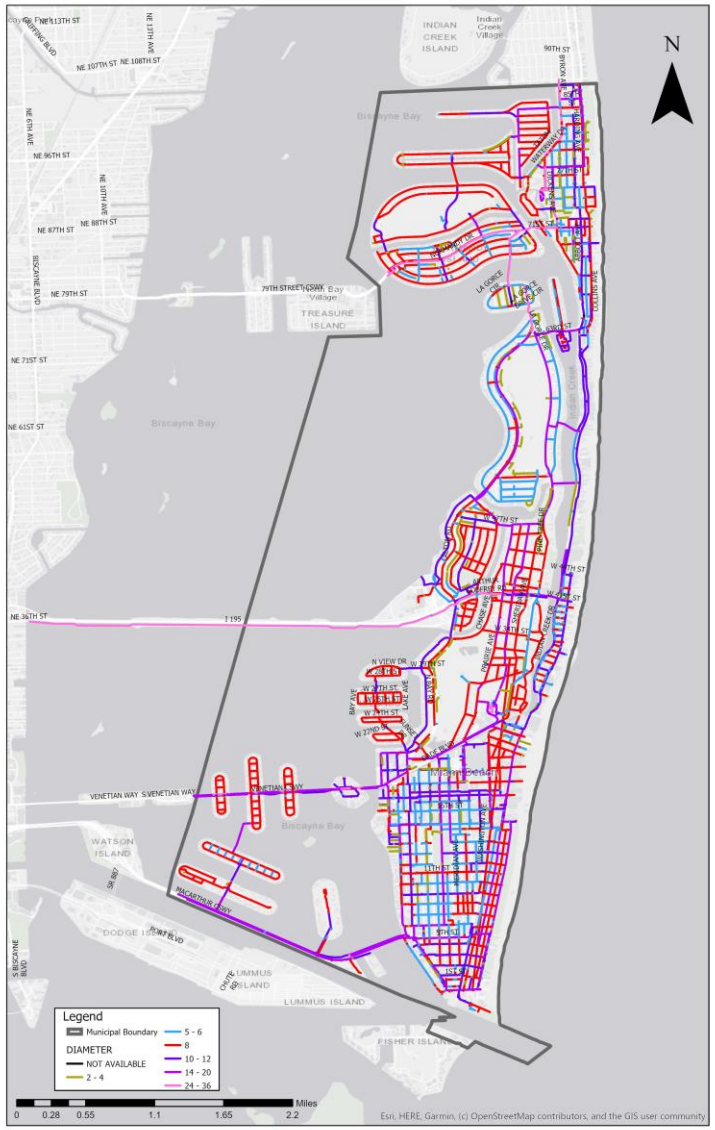
W-3: Normandy Isle Booster Station

W-4: 41st Street Booster Station

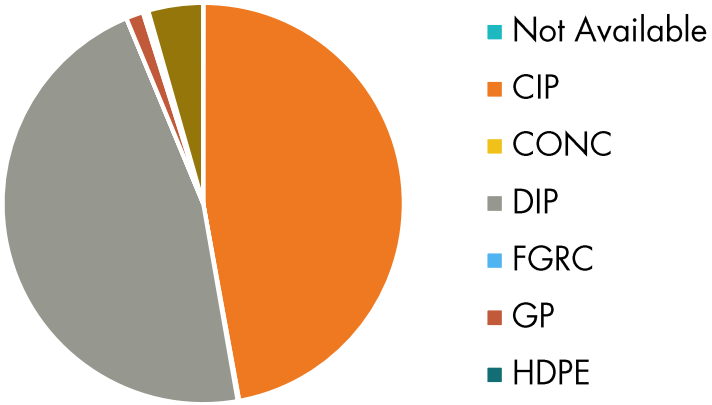
W-5: Belle Isle Booster Station

W-7: Terminal Island Booster Station

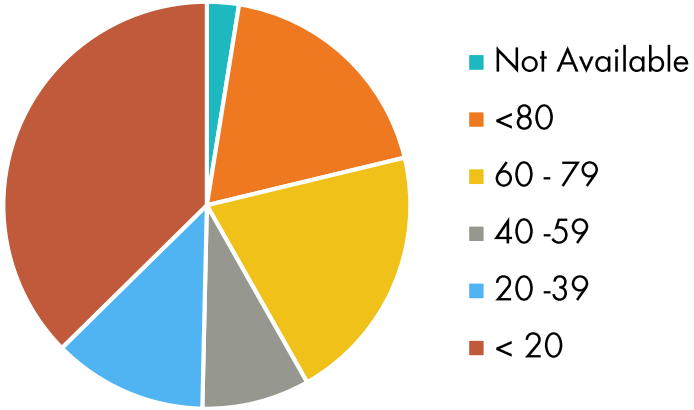
Water Distribution Network



Pipe Material

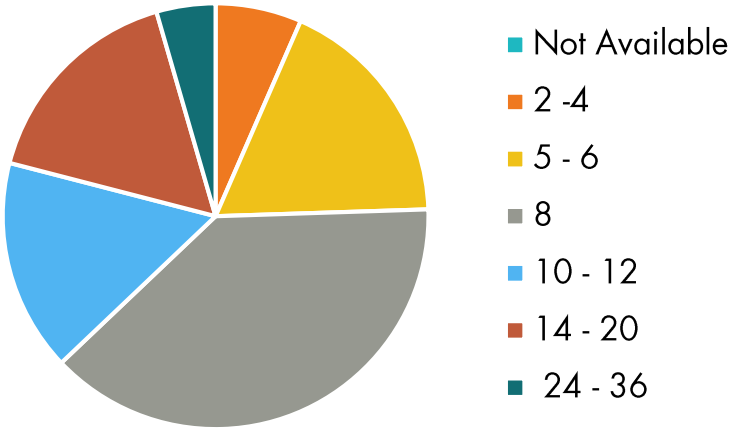


Pipe Age (years)



Notes:
FGRC = fiberglass reinforced pipe
GP = galvanized pipe
HDPE = high-density polyethylene
RCP = reinforced concrete pipe

Pipe Diameter (inches)



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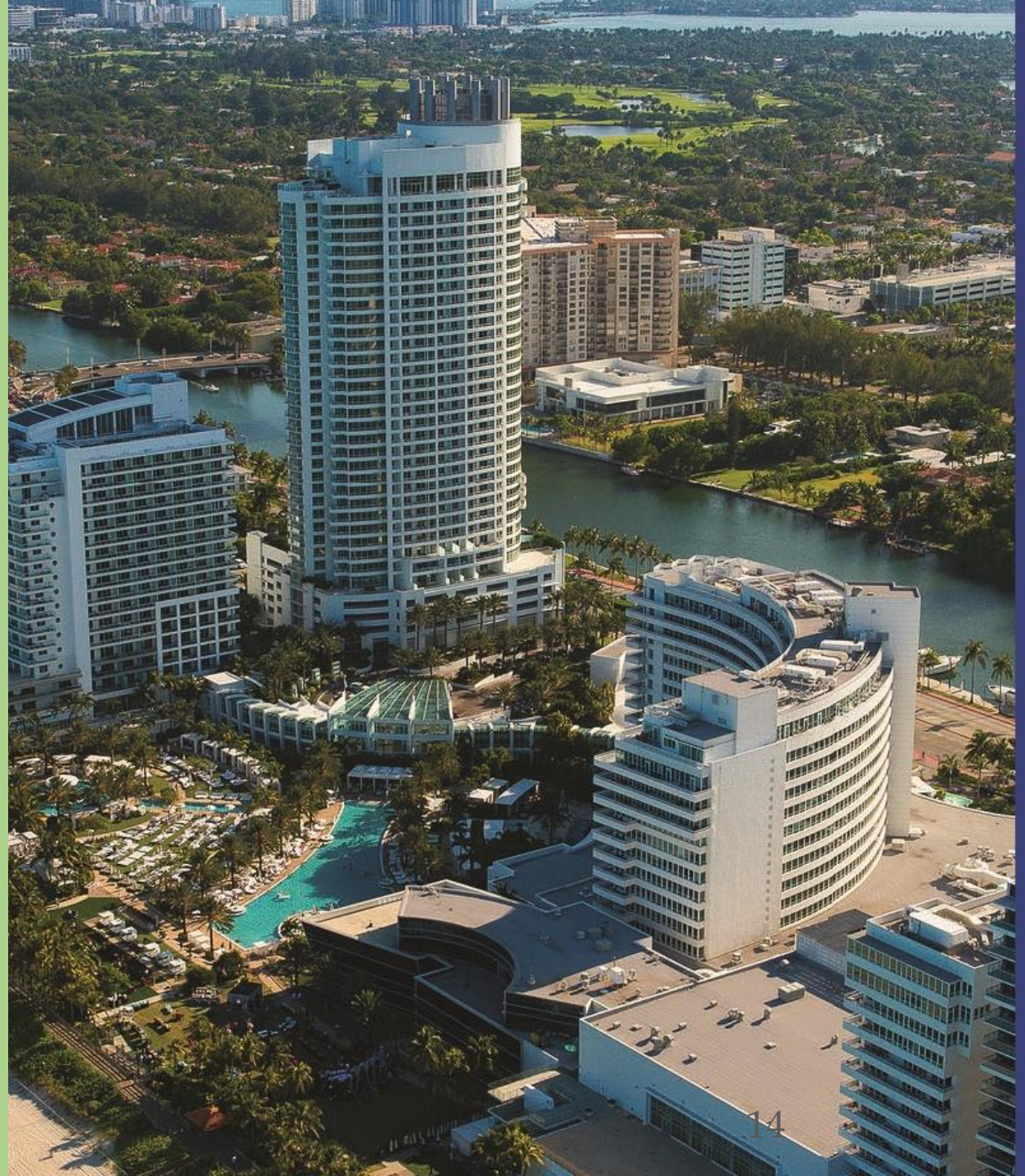
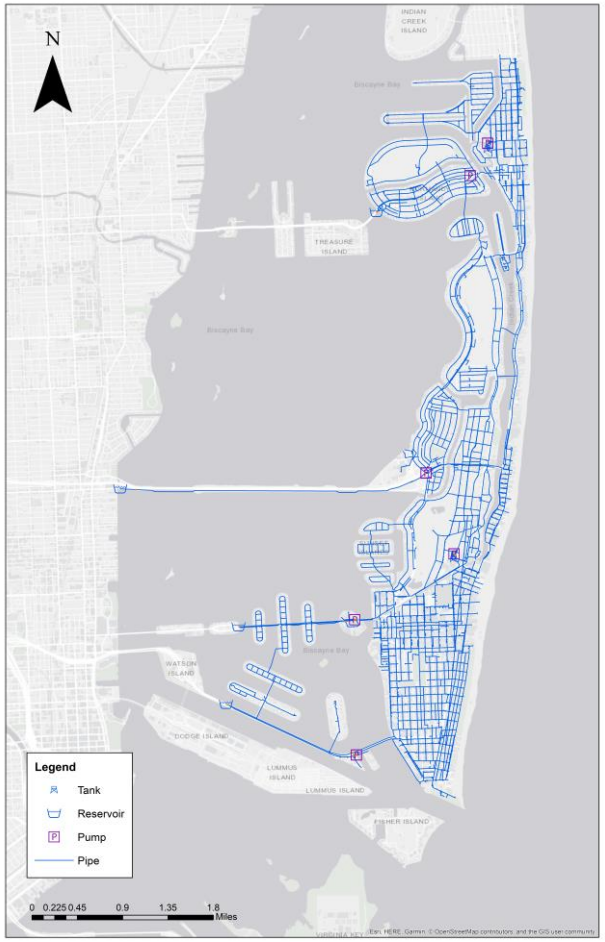
Water Distribution System Hydraulic Model



A dynamic computer model of the City's water system was created using Innovyze InfoWater

- Represents the components of the water system **starting at the points of connection with the MDWASD** system and the downstream pipe network
- **Developed using information from City's GIS database**, as-built records, pump curves, data collected during field visits, and other documentation provided by the City
- **Calibration** was conducted to obtain agreement between observed and model predicted flows and



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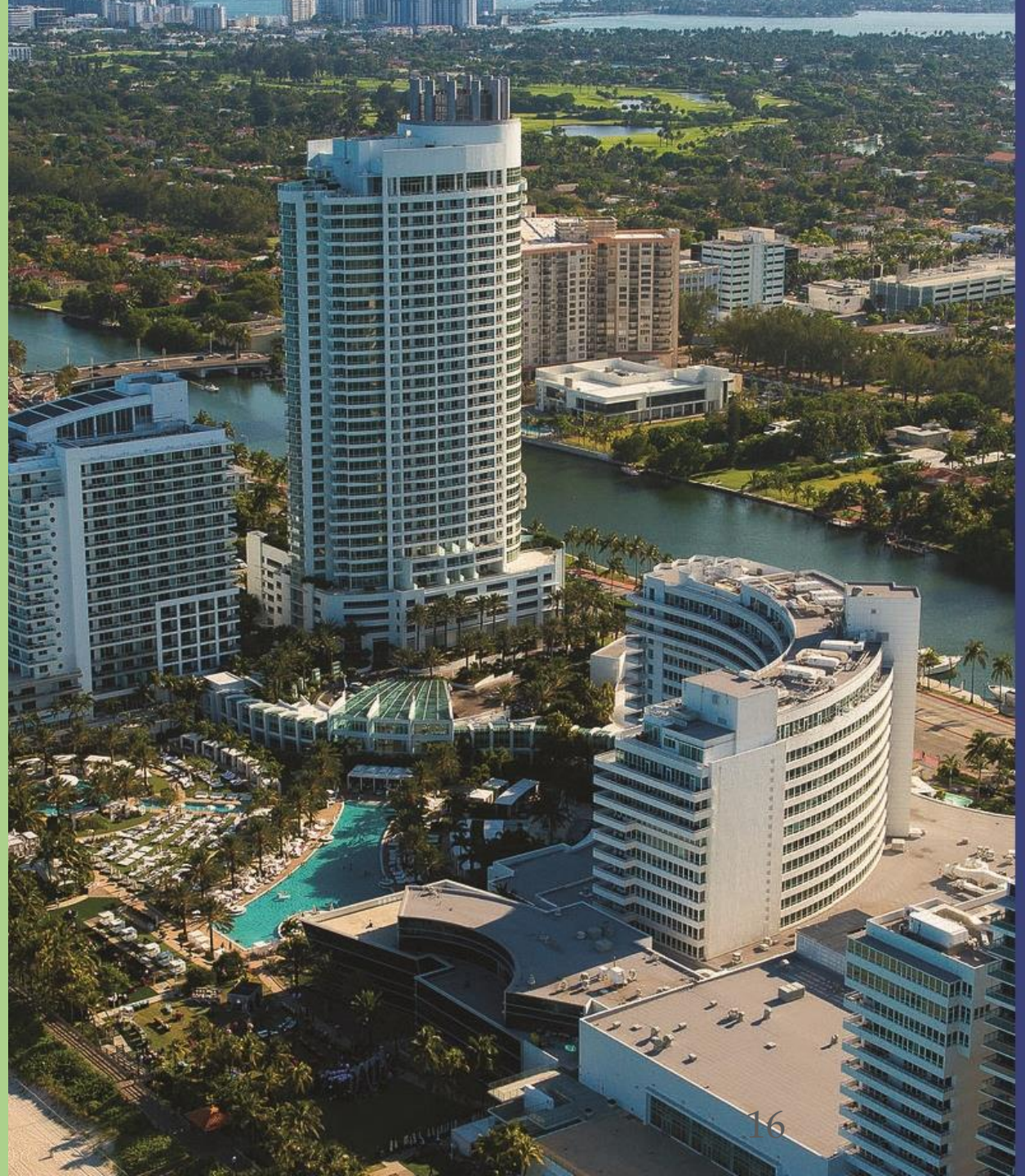
Water Supply System Evaluation



System evaluation conducted using the hydraulic model

Adequate Pressure

- During Maximum Day – Peak Hour Flows
- Pressures >= 35 psi

Fire Flow Adequacy

- Assessed based on land-use
- Assessed large fire events in different parts of the network

Water Age Analysis

- Storage Tank Turnover
- System wide and localized water age evaluation

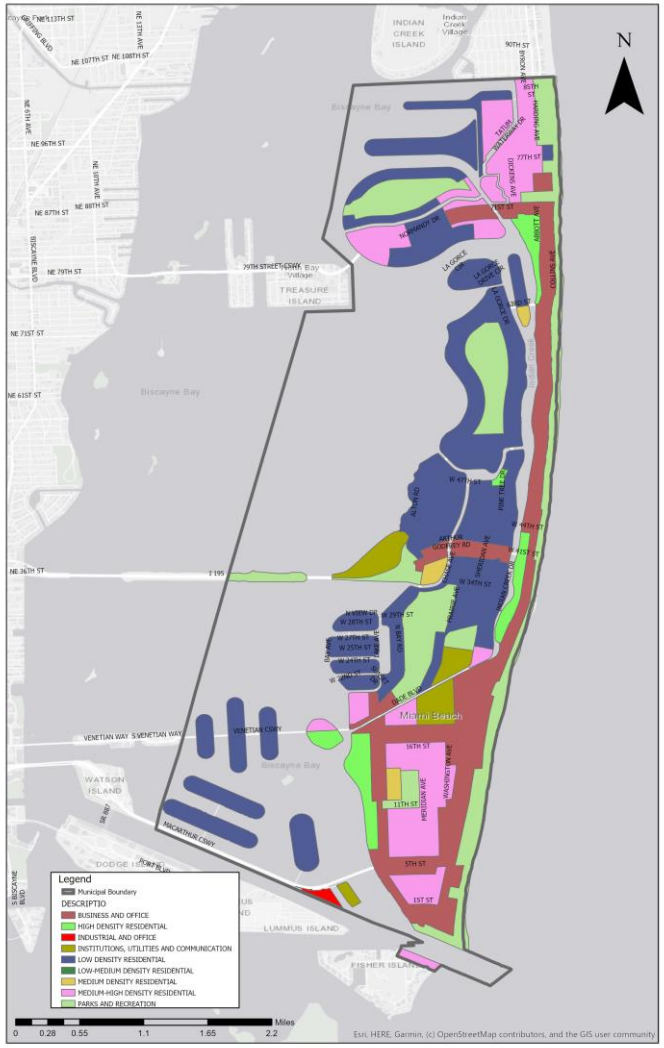
What-if Scenarios

- 20" pipe from Terminal Island to the Beach Offline
- Alternate supply from Byron Ave

The required water flow for fire suppression purposes from fire hydrants based on land use

Land Use Classification	Needed Fire Flow (gpm)
Business and Office	3,000
High Density Residential	3,000
Industrial and Office	3,000
Institutions, Utilities, and Communication	1,000
Low Density Residential	1,000
Low-Medium Density Residential	1,500
Medium Density Residential	2,000
Medium-High Density Residential	2,500
Parks and Recreation	750

A second step in evaluating fire flow availability was carried out evaluating the performance of the water system during a large concentrated fire events at specific locations within the distribution system.



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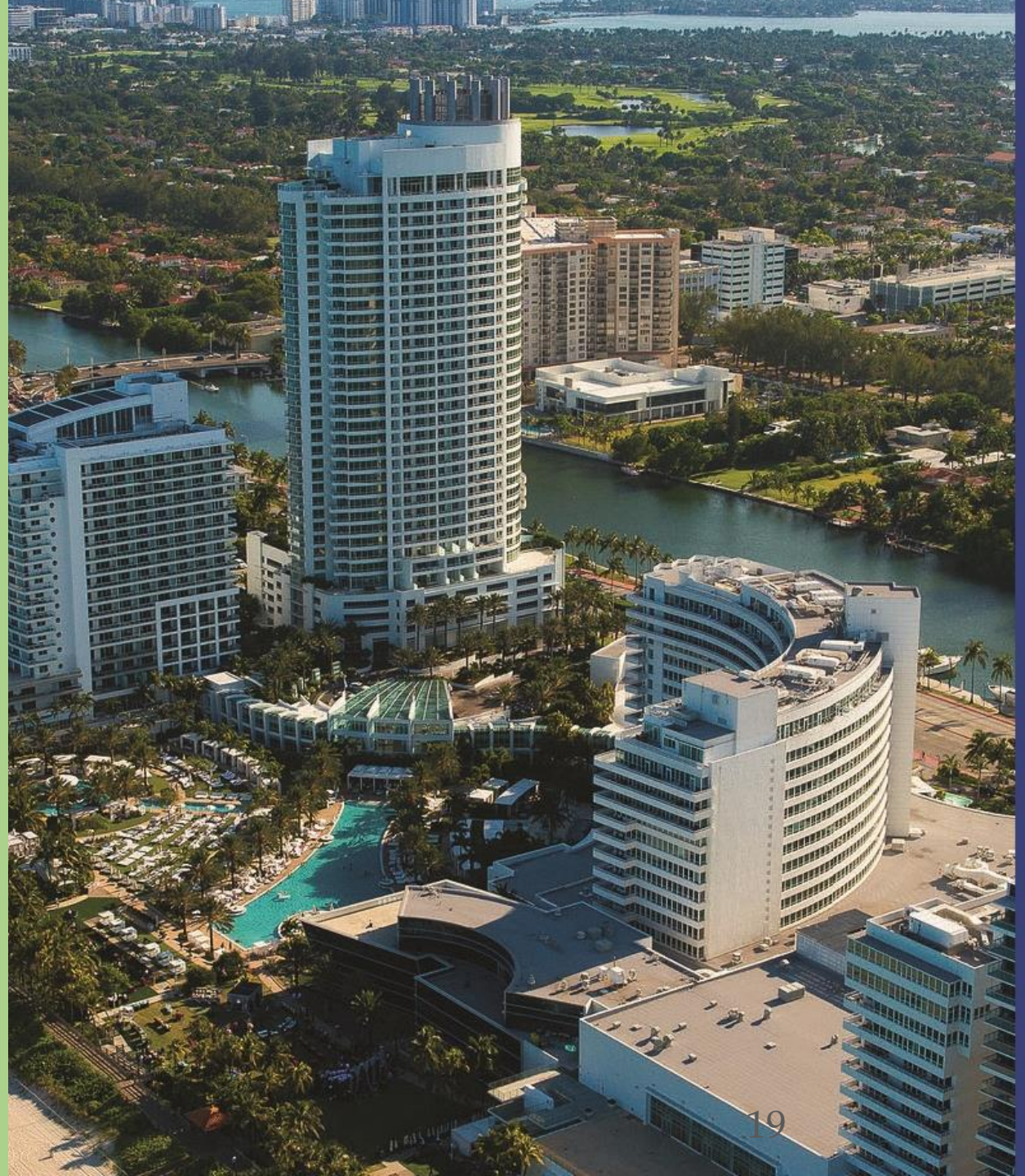
Risk Assessment and Rehabilitation and Repair (R&R) Projects for Water System Aboveground Assets



CIP Projects Identified as part of Condition Assessment of Water System Aboveground Assets

- Hazen performed a condition assessment of the major above-ground water and sewer assets
- Pump stations, storage tanks, and aerial crossings were evaluated
- Medium and high critically projects identified:
  - Two aerial crossing replacements : Venetian MacArthur Causeway
  - Six pump station rehabilitations

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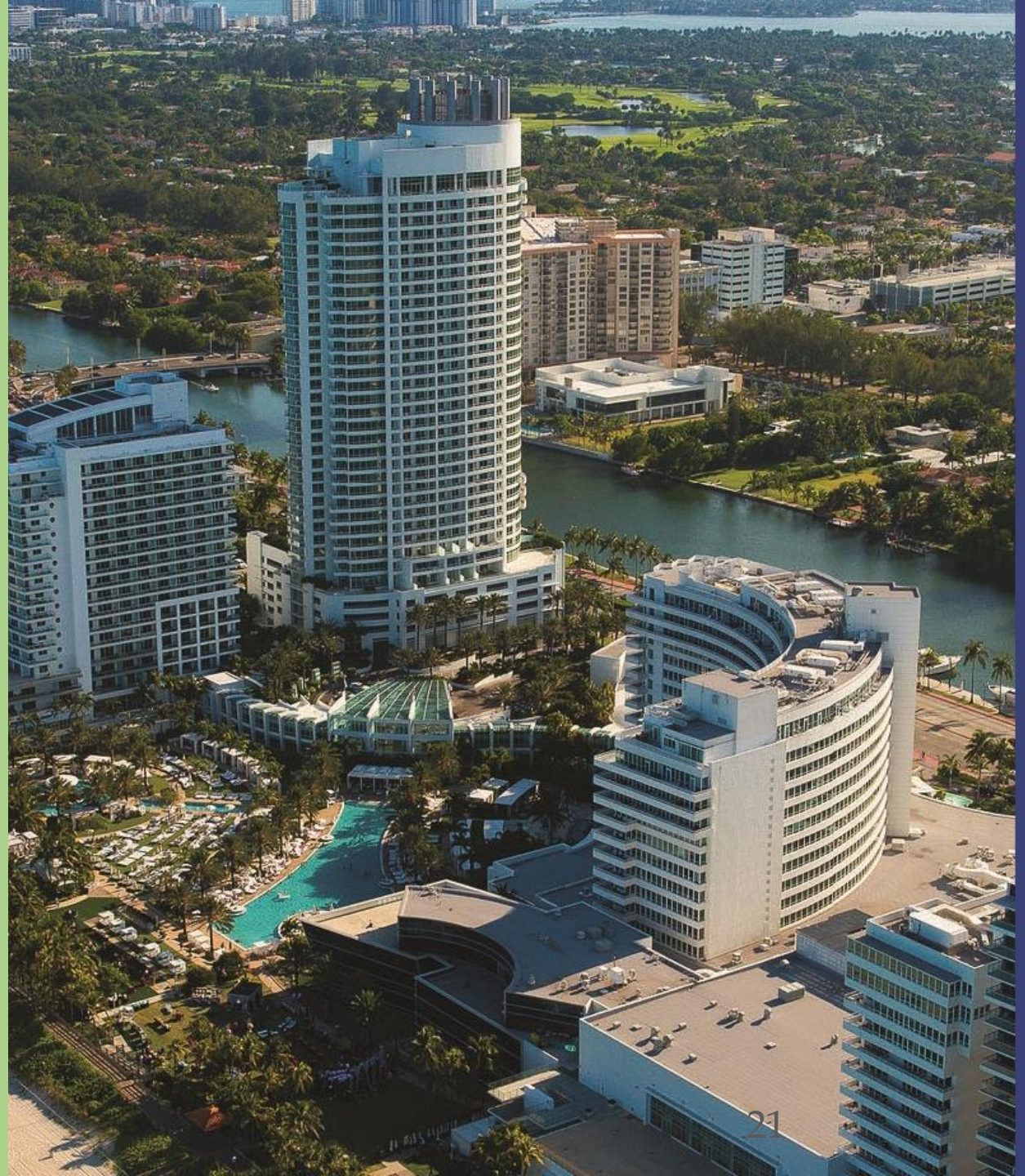
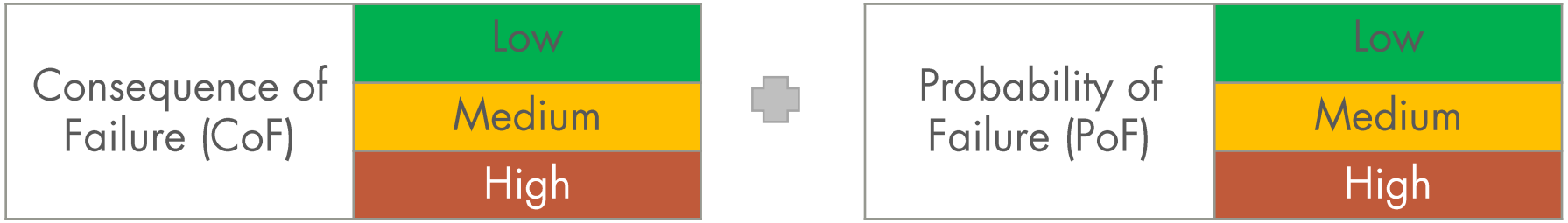
Risk Assessment and Rehabilitation and Repair (R&R) Projects for Water System Underground Assets



Risk Analysis Project Prioritization for Underground Assets

- R & R Project Prioritization was developed based on a Risk Analysis that combined Consequence of Failure (CoF) and Probability of Failure (PoF) to obtained a combined scored use to rank each project.
- Three levels (Low, Medium and High) were developed for CoF and PoF



CoF relates to factors such as the cost of repair, social/health impacts, and environmental impacts.

Consequence of Failure Criteria (Weight)	Range or Value	Score
Flow [a] (40%)	< 10 gpm	1
	10 – 50 gpm	2
	50 – 150 gpm	3
	150 – 500 gpm	4
	> 500 gpm	5
Land Use (40%)	Any other Land Use	1
	Business and Offices	5
Proximity to Major Roads (20%)	Other	1
	Collector Roads	2
	Federal / State Roads	3
	Divided Access / Major Roads	4
	Limited Access Roads	5

Note:
[a] 2019 DWF from hydraulic model.

A composite CoF was calculated for each water main segment based on the scores and relative weights presented in the Table.

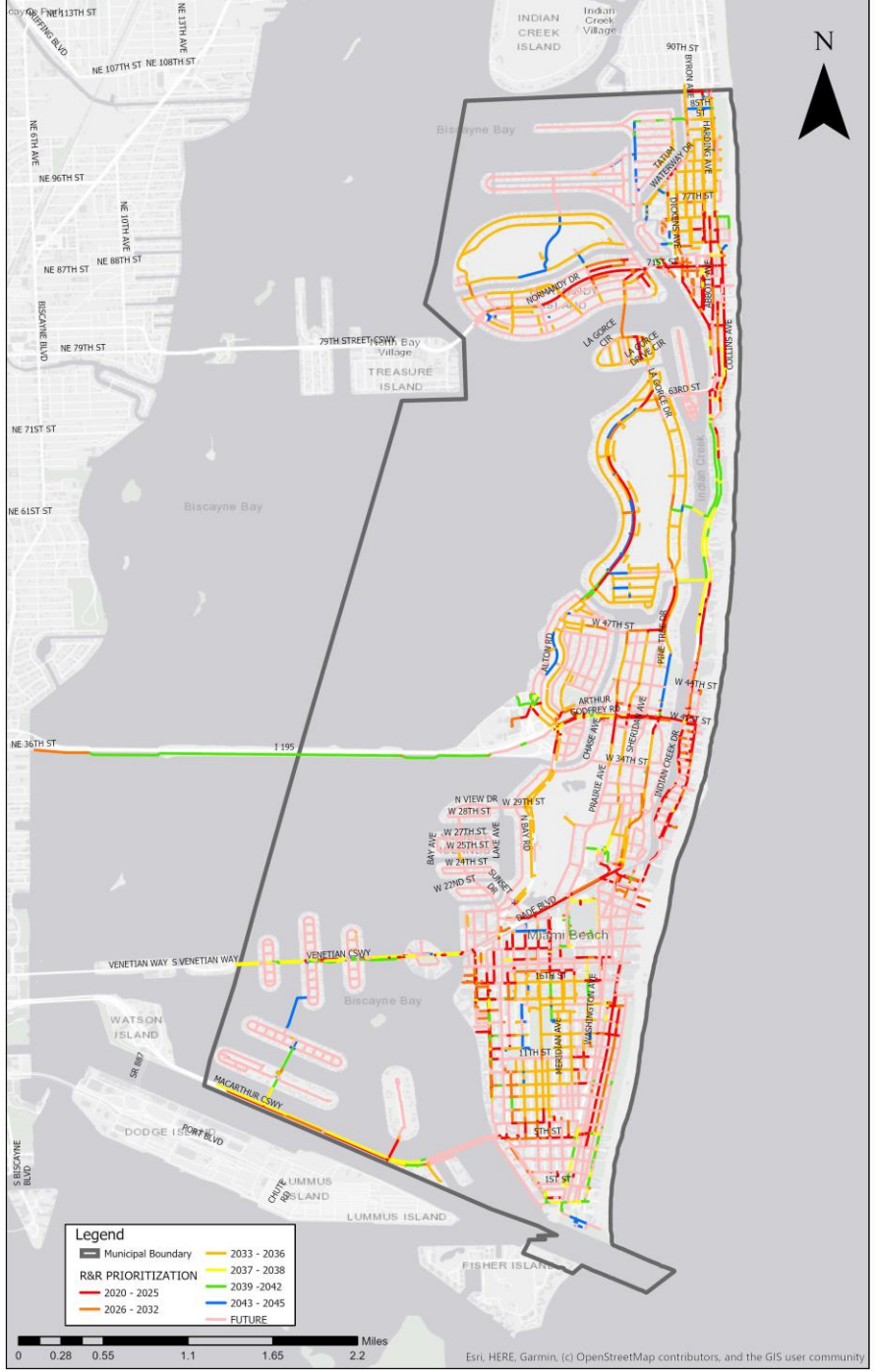
Consequence of Failure	Composite Score	Total Water Main Length (ft)
Low	< 1.8	452,190
Medium	1.8 – 2.6	198.200
High	> 2.6	323,640

After both Water System PoF and CoF ratings were combined in 3x3 matrix

Water Main Risk Matrix by Length (Feet)

Consequence of Failure (CoF)	Probability of Failure (PoF): Low	Medium	High
High	158,770 (16%)	46,780 (5%)	118,090 (12%)
Medium	82,230 (8%)	42,780 (4%)	73,190 (8%)
Low	222,190 (23%)	28,170 (3%)	201,830 (21%)

Consequence of Failure (CoF)	Probability of Failure (PoF): Low	Medium	High
High	Future	2037-2038	2020-2025
Medium	Future	2039-2042	2026-2032
Low	Future	2043-2044	2033-2036



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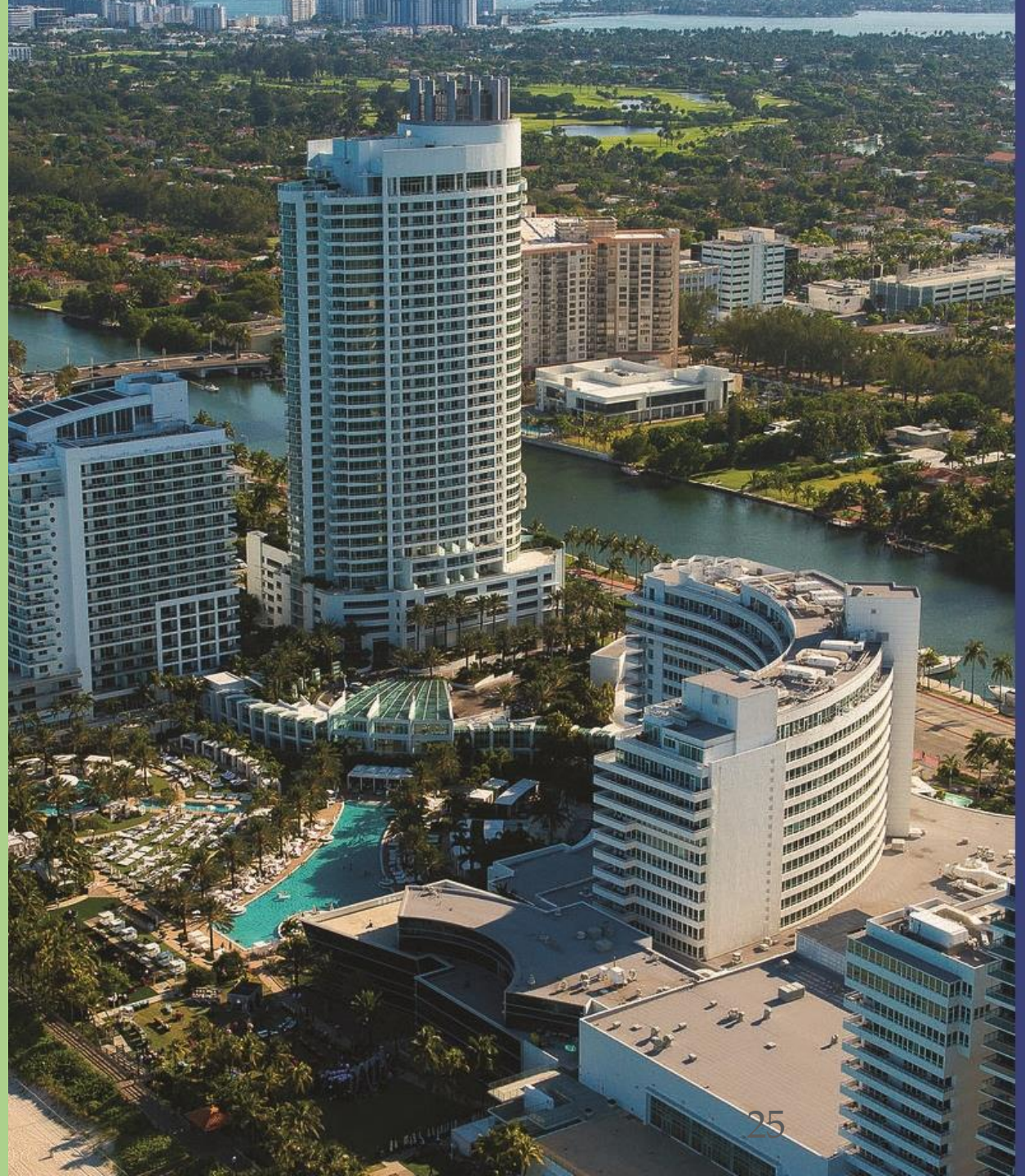
Water System Capital Improvement Program



Identified Water System Improvements Based on Evaluation of the Distribution System

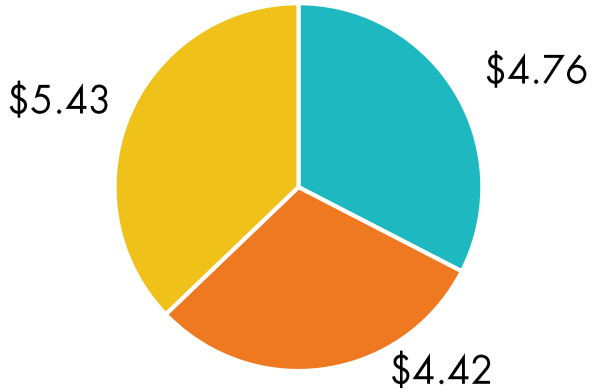
48 CIP Projects Identified

17 Capacity Based Improvements Identified (including improvements for fire flow)

48 R&R Based Improvements Identified

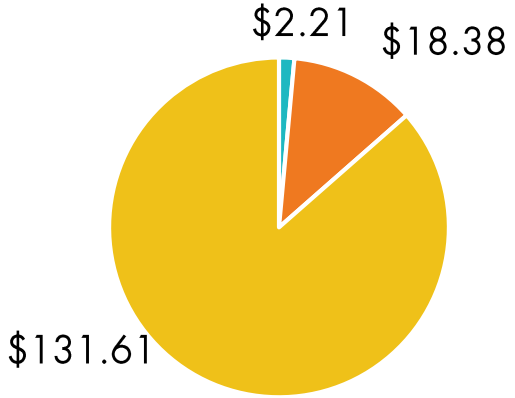
Total CIP Cost Through 2045 = **$167 M**

Capacity Based Improvement Projects
(Total Cost = $ 14.6 M)



- Water Distribution System Projects - Capacity
- Water Supply Projects - Capacity
- Pumping and Storage Facility Projects - Capacity

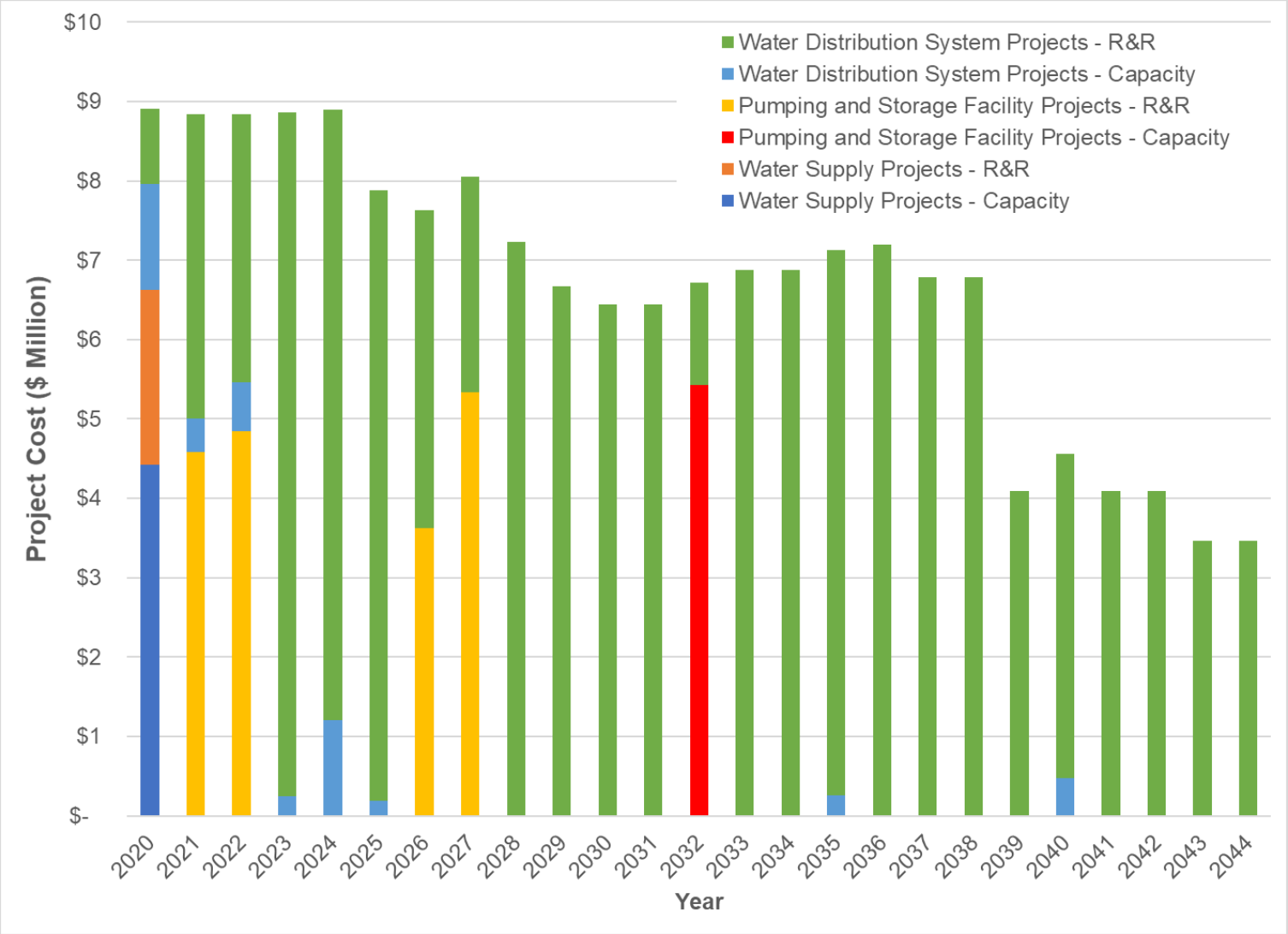
R&R Based Improvement Projects
(Total Cost = $ 152.2 M)



- Water Supply Projects - R&R
- Pumping and Storage Facility Projects - R&R
- Water Distribution System Projects - R&R

The total cost of the recommended projects in the Water Master Plan is $167 million (2018 dollars):

Water System
$167M



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Sewer System Master Plan

September 25, 2019

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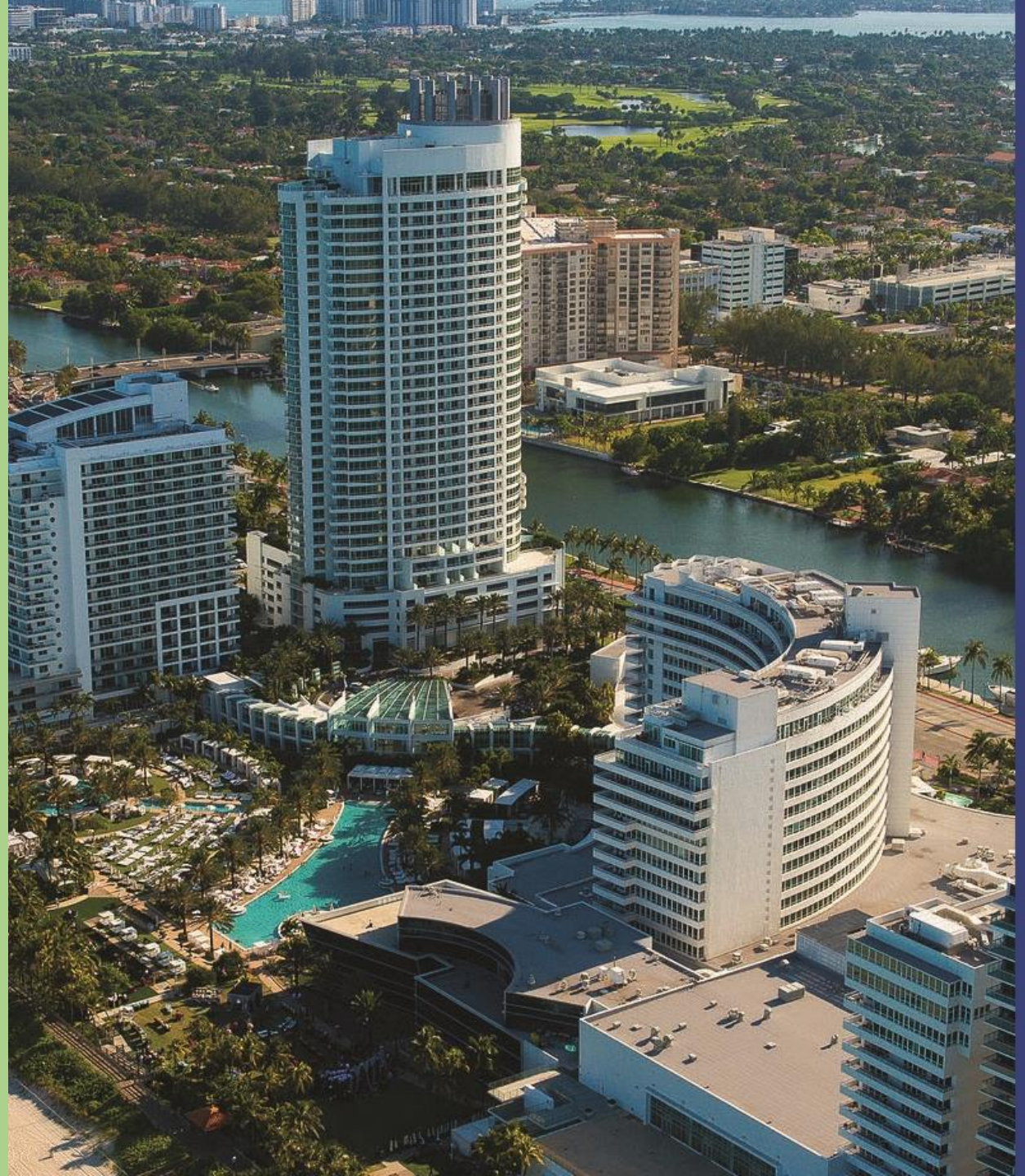
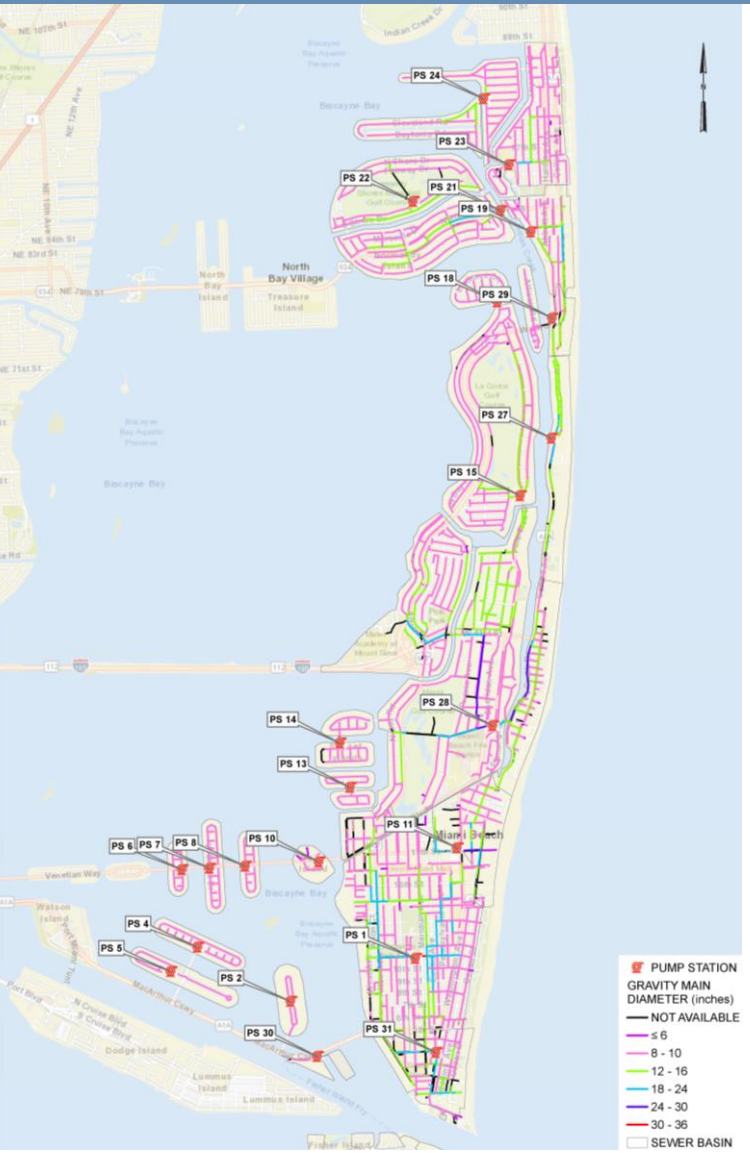
Summary of Existing Sewer System



Existing Sewer Collection and Transmission System



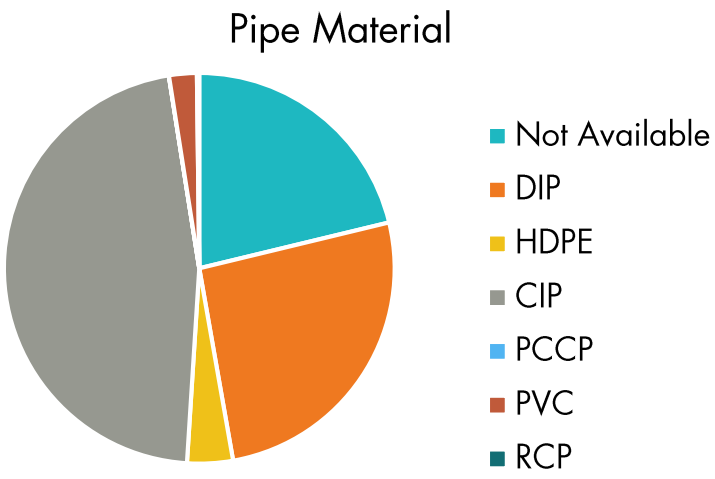
3,100 manholes

117 miles gravity sewer mains

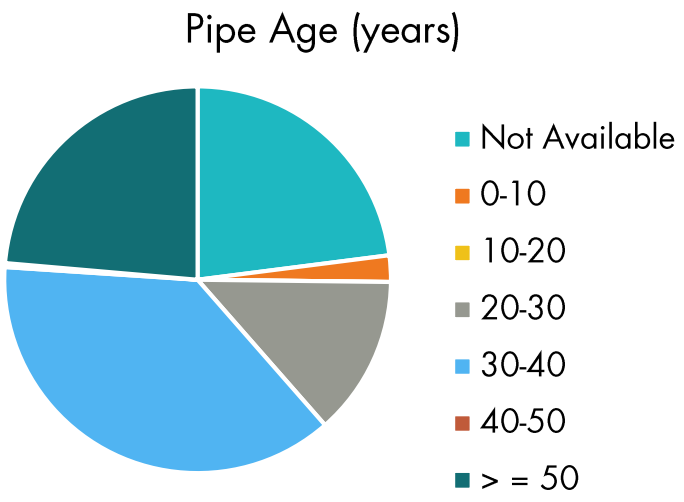
24 miles active force mains

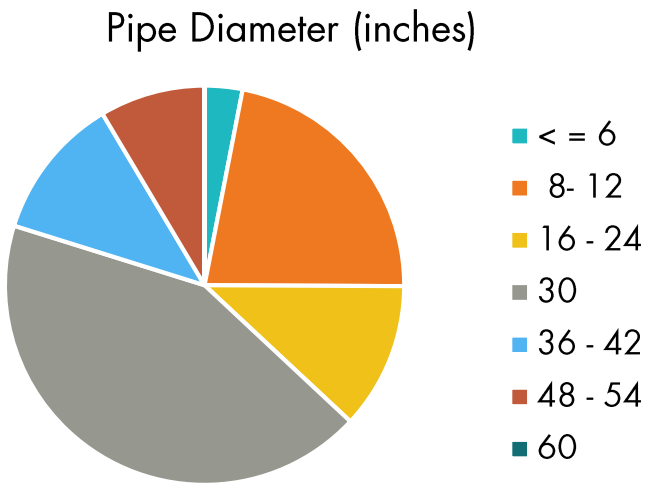
23 pump station service areas (basins)

Sewer Force Main Network



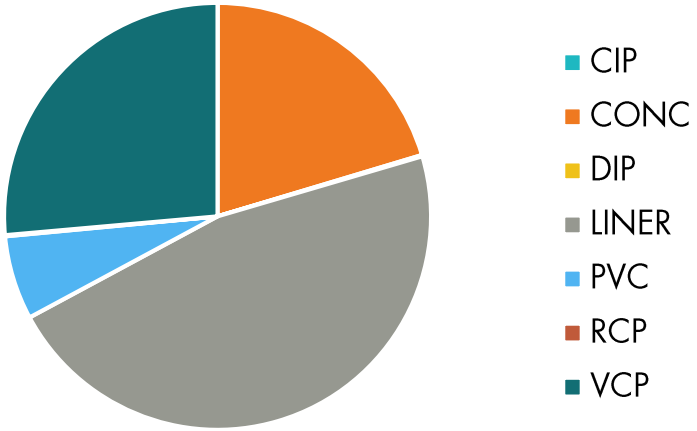
Notes:
CIP = Cast Iron Pipe
DIP = Ductile Iron Pipe
FRP = fiberglass reinforced pipe
HDPE = high-density polyethylene
PCCP = Prestressed Concrete Cylinder Pipe
PVC = Polychloride Vinyl Pipe
RCP = reinforced concrete pipe





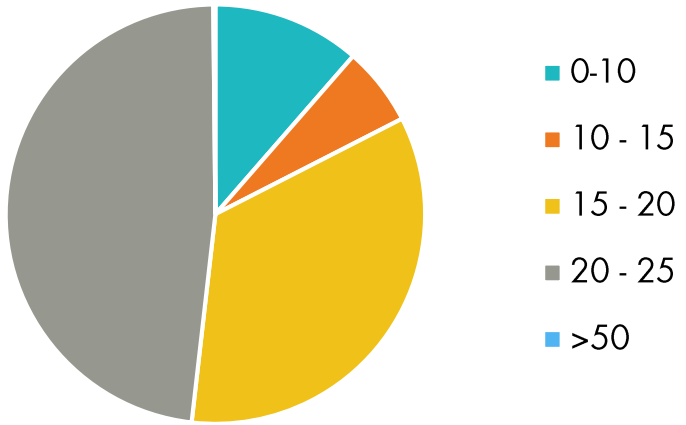
Sewer Gravity Main Network

Pipe Material

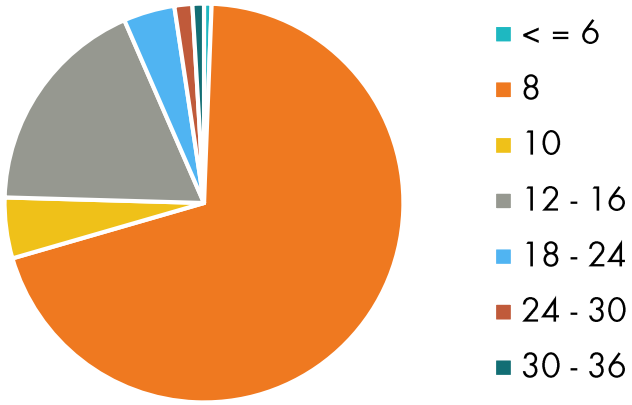


Notes:
CIP = Cast Iron Pipe
CONC = Concrete
DIP = Ductile Iron Pipe
PVC = Polychloride Vinyl Pipe
RCP = reinforced concrete pipe
VCP = Vitrified Clay Pipe

Pipe Age (years)



Pipe Diameter (inches)



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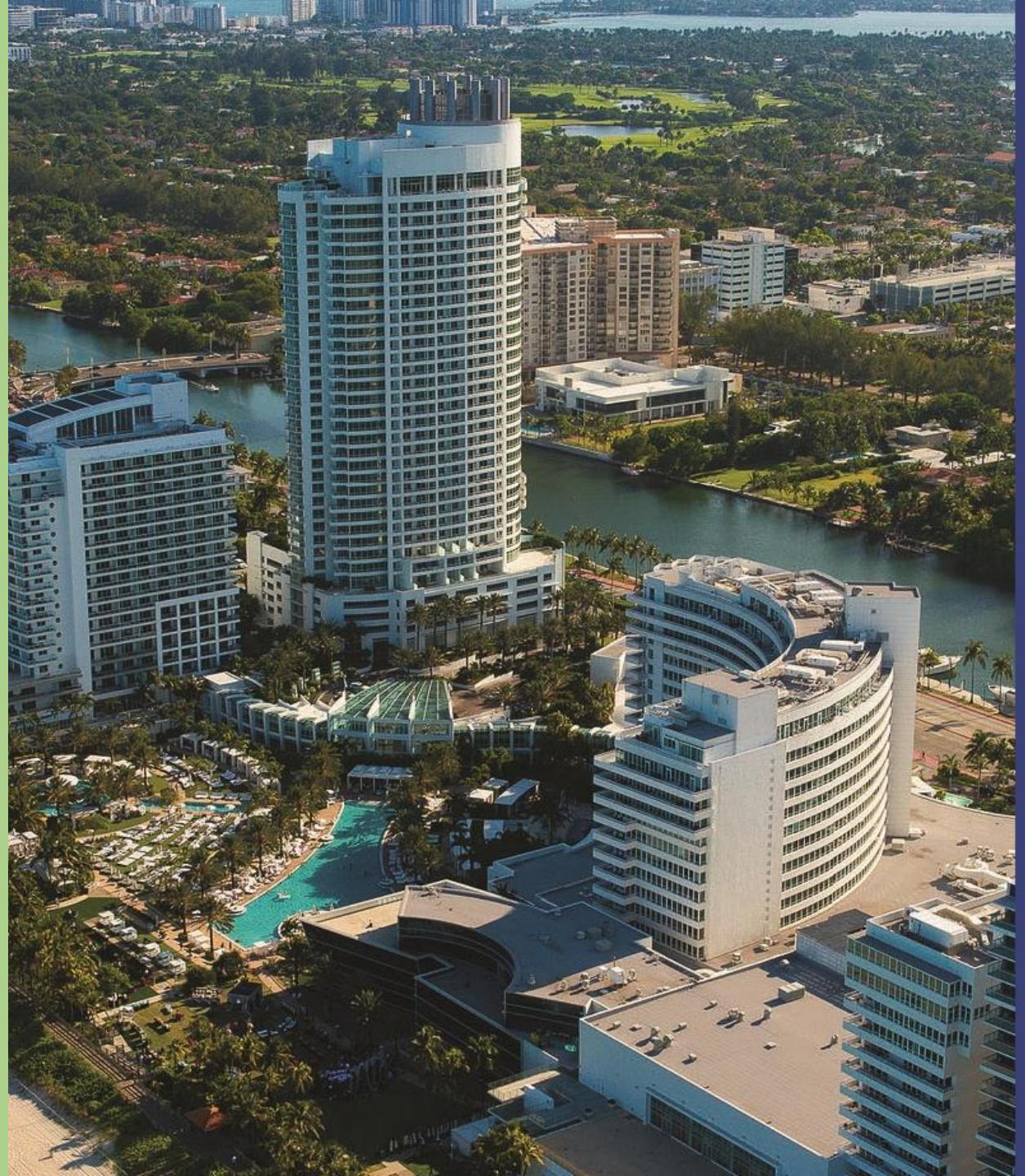
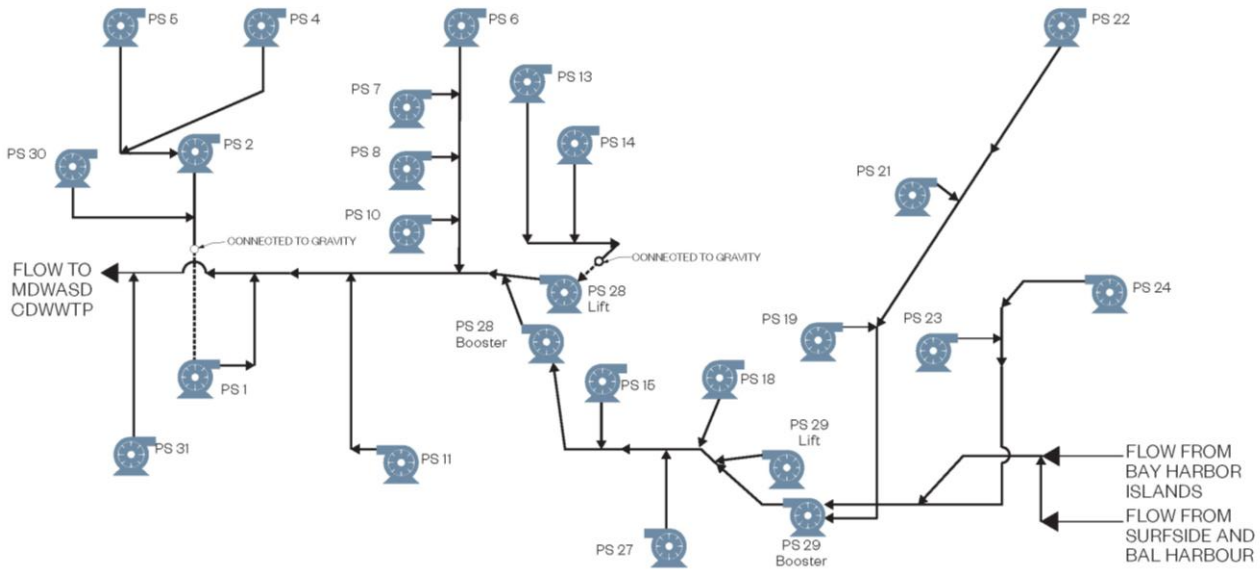
Force Main Hydraulic Model



Hydraulic Model (InfoWorks ICM)

The hydraulic model was used to perform extended period simulations to predict the following:

- Sanitary flow through all infrastructure components in network
- Hydraulic pressures at any point in the force main system
- Pumping capacity of each pump station
- Pumping capacity with standby pump out of service
- Pump station operating wet well levels
- Likelihood and location of SSOs



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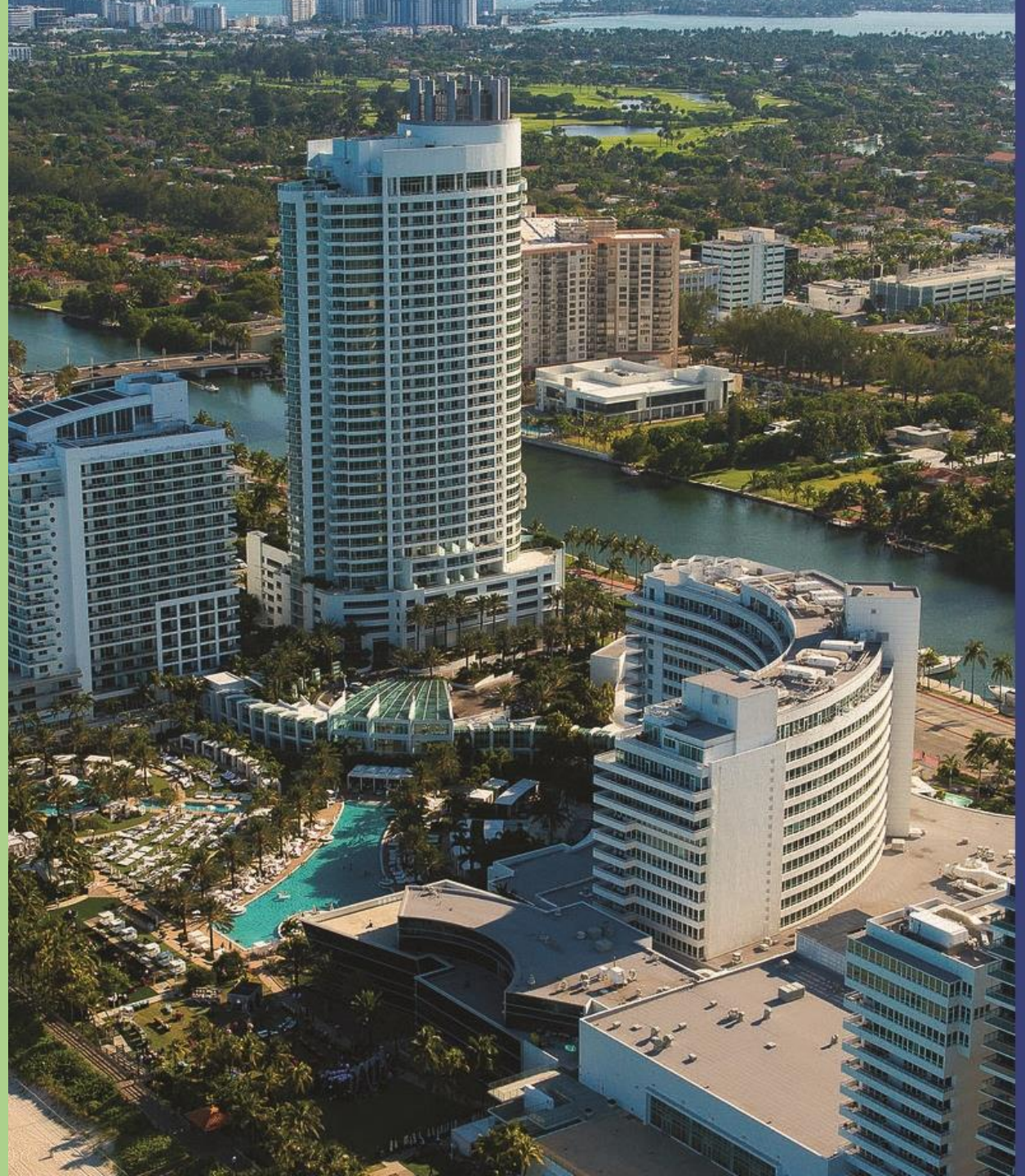
Evaluation of Sewer System Improvement Needs



Force Mains / Transmission - Capacity Based Improvement Projects

Recommended Capacity Improvement Projects			
ID	Project Name	Recommended Project Description	Timeframe
4	Pump Station 2 parallel force main	Install parallel 10-inch force main (subaqueous crossing).	2020 - 2024
5	Pump Station 4 parallel force main	Install parallel 6-inch force main.	2020 - 2024
6	Pump Stations 4 and 5 parallel force main	Install parallel 8-inch force main.	2020 - 2024
7	Pump Station 14 parallel force main	Install parallel 8-inch force main.	2020 - 2024
8	Pump Station 18 parallel force main	Install parallel 8-inch force main.	2020 - 2024
9	Pump Station 23 parallel force main	Install parallel 16-inch force main.	2020 - 2024
10	Pump Station 27 parallel force main	Install parallel 10-inch force main.	2020 - 2024
11	North Beach parallel force main and interconnect	Install parallel 16-inch force main and interconnect from interconnection with Bal Harbour to 16-inch force main on Harding Avenue at 85th Street. (Add interconnection between 16-inch parallel force mains.)	2030-2034
12	Pump Stations 6, 7, and 8 flow rerouting	Reroute flow so that the flow from Pump Stations 6, 7, and 8 is repumped by Pump Station 10.	2020 - 2024 [a]

Note:
[a] Pump Station 6 wet well level set points are not exceeded until 2025, but Pump Stations 6, 7 and 8 all discharge to the same force main, so Pump Station 6 will be rerouted at the same time as Pump Stations 7 and 8.

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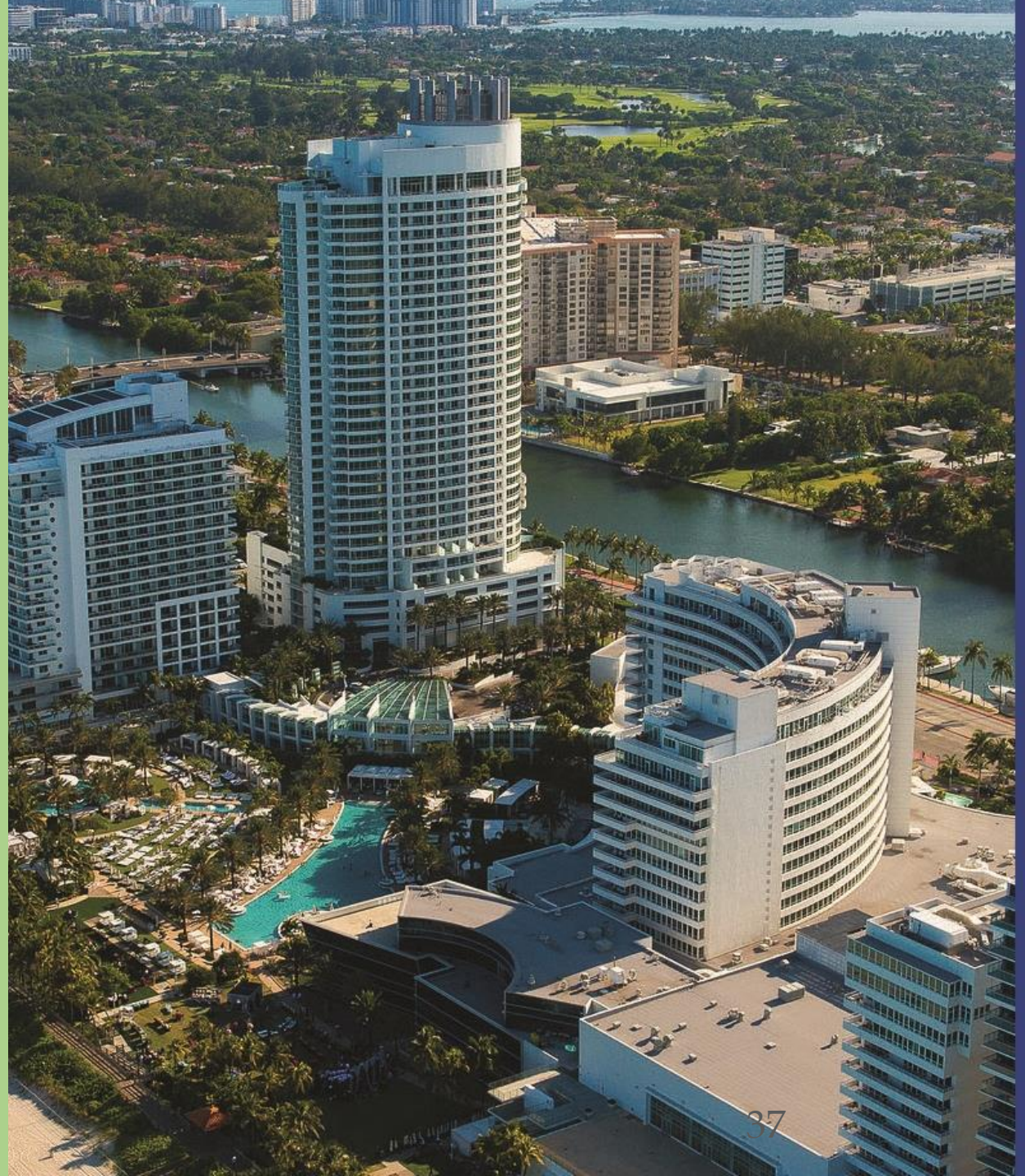
Risk Assessment and Rehabilitation and Repair (R&R) Projects for Sewer Aboveground Assets



37

CIP Projects Identified as part of Condition Assessment of Sewer System Aboveground Assets

The *Water and Sewer Renewal and Replacement Report* (Hazen, 2018) evaluated the aboveground assets (pump stations and aerial crossings) based on criticality

- Six (6) High Criticality Projects identified
- Eight (8) Medium Criticality Projects identified

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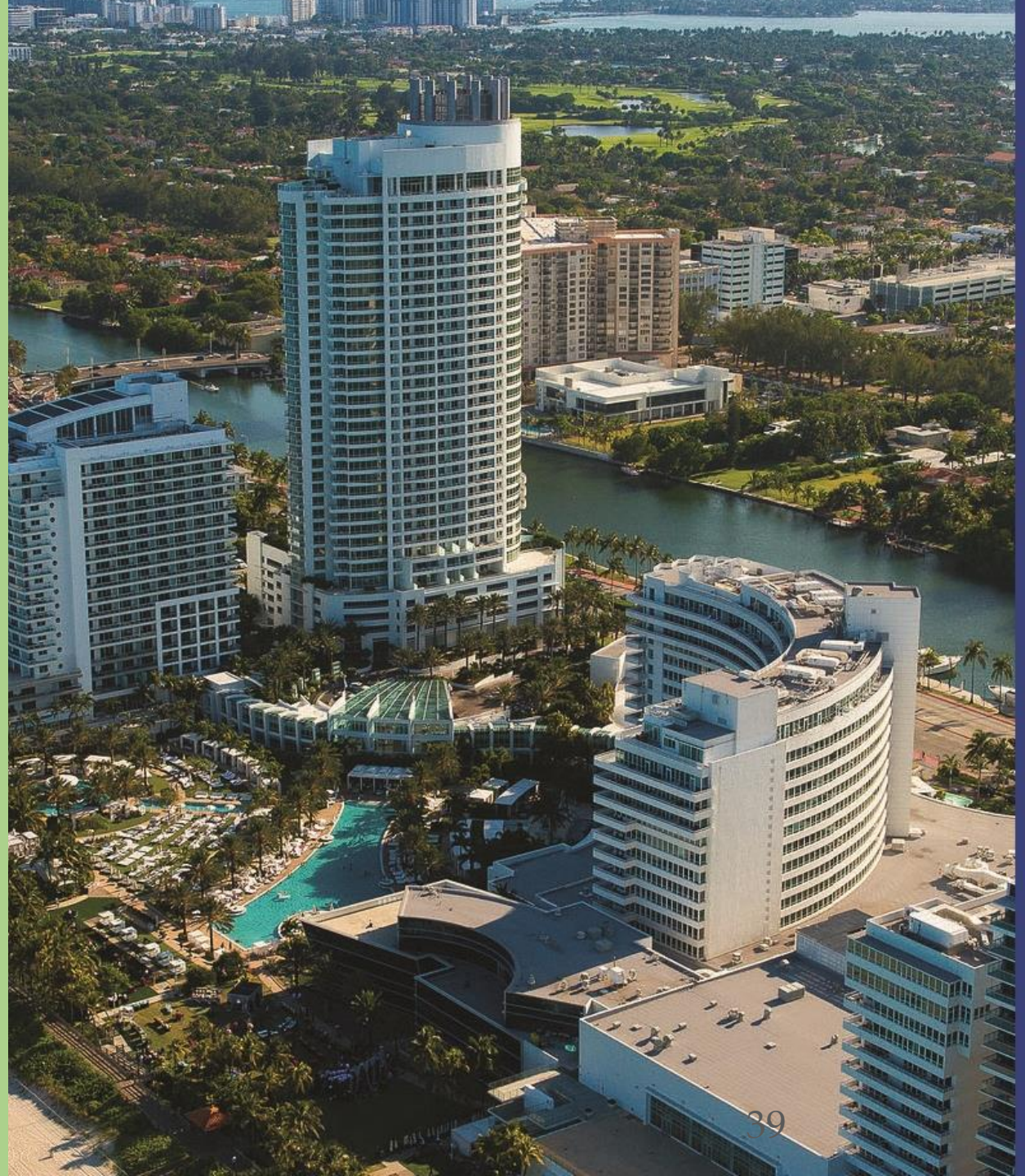
Risk Assessment and Rehabilitation and Repair (R&R) Projects for Sewer Underground Assets



Gravity Collection System Improvements Prioritization

a) Basins selected based on GPDIM

+

b) Basins selected based on RUL

=

c) Basins selected for I/I improvements in the Master Plan

- The Collection System was evaluated using GIS and historical flow data available.
- Basins selected based on Gallons per Day per Inch-Mile (GPDIM) greater than 5,000 were combined with basins selected based on the remaining useful life (RUL) to obtain the recommended basin prioritization in the Master Plan.

Evaluation of Sewer Underground Assets - Risk Analysis Project Prioritization

- R & R Project Prioritization was developed based on a Risk Analysis that combined Consequence of Failure (CoF) and Probability of Failure (PoF) to obtained a combined scored use to rank each project.
- Three levels (Low, Medium and High) were developed for CoF and PoF

Consequence of Failure (CoF)	
	Low
	Medium
	High

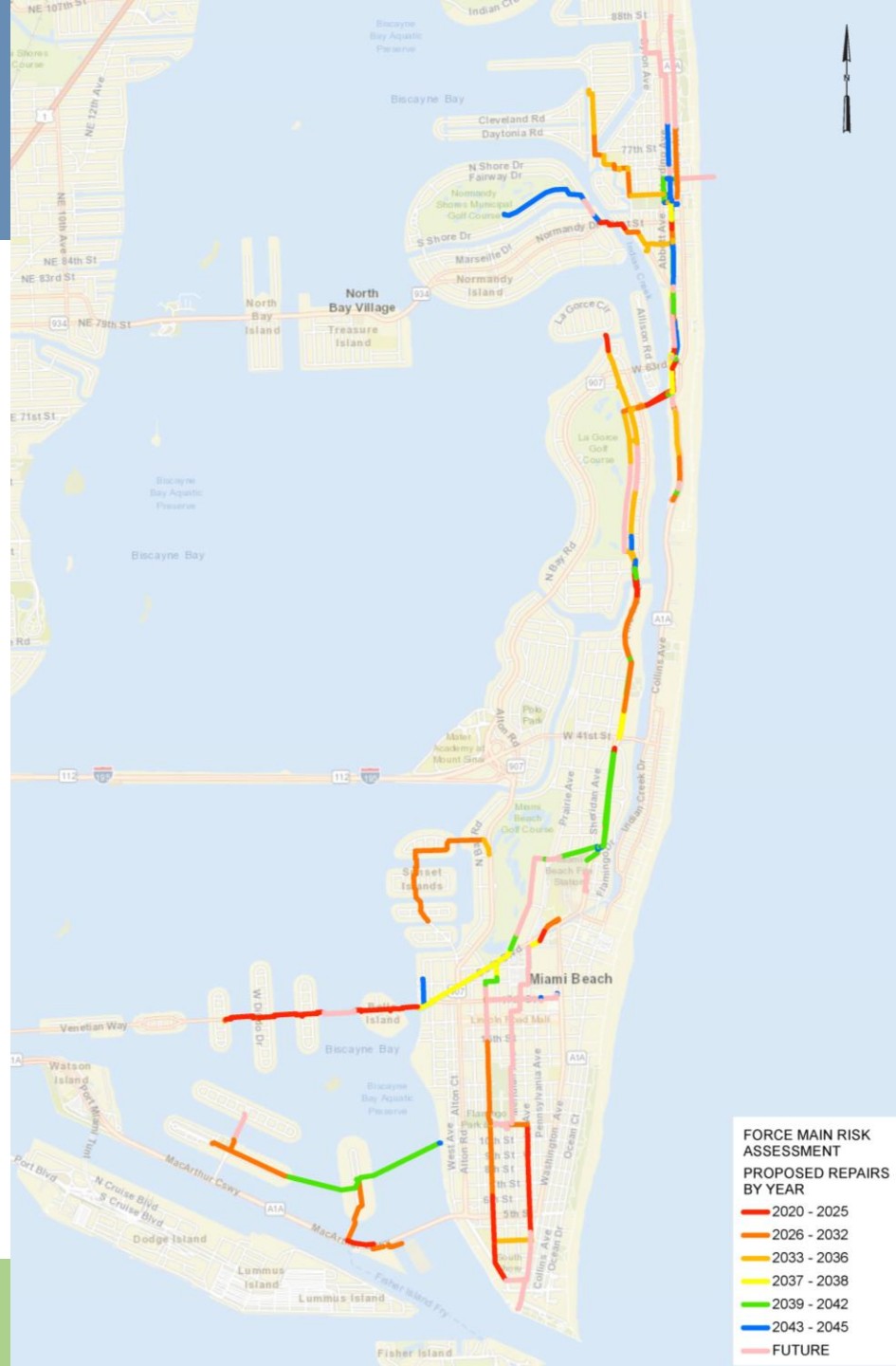
+

Probability of Failure (PoF)	
	Low
	Medium
	High

After both Sewer System PoF and CoF ratings were combined in 3x3 matrix

Consequence of Failure (CoF)	Probability of Failure (PoF): Low	Medium	High
High	5,000 (4%)	10,000 (8%)	18,000 (14%)
Medium	12,000 (10%)	18,000 (14%)	28,000 (22%)
Low	10,000 (8%)	9,000 (7%)	16,000 (13%)

Consequence of Failure (CoF)	Probability of Failure (PoF): Low	Medium	High
High	Future	2037-2038	2020-2025
Medium	Future	2039-2042	2026-2032
Low	Future	2043-2044	2033-2036



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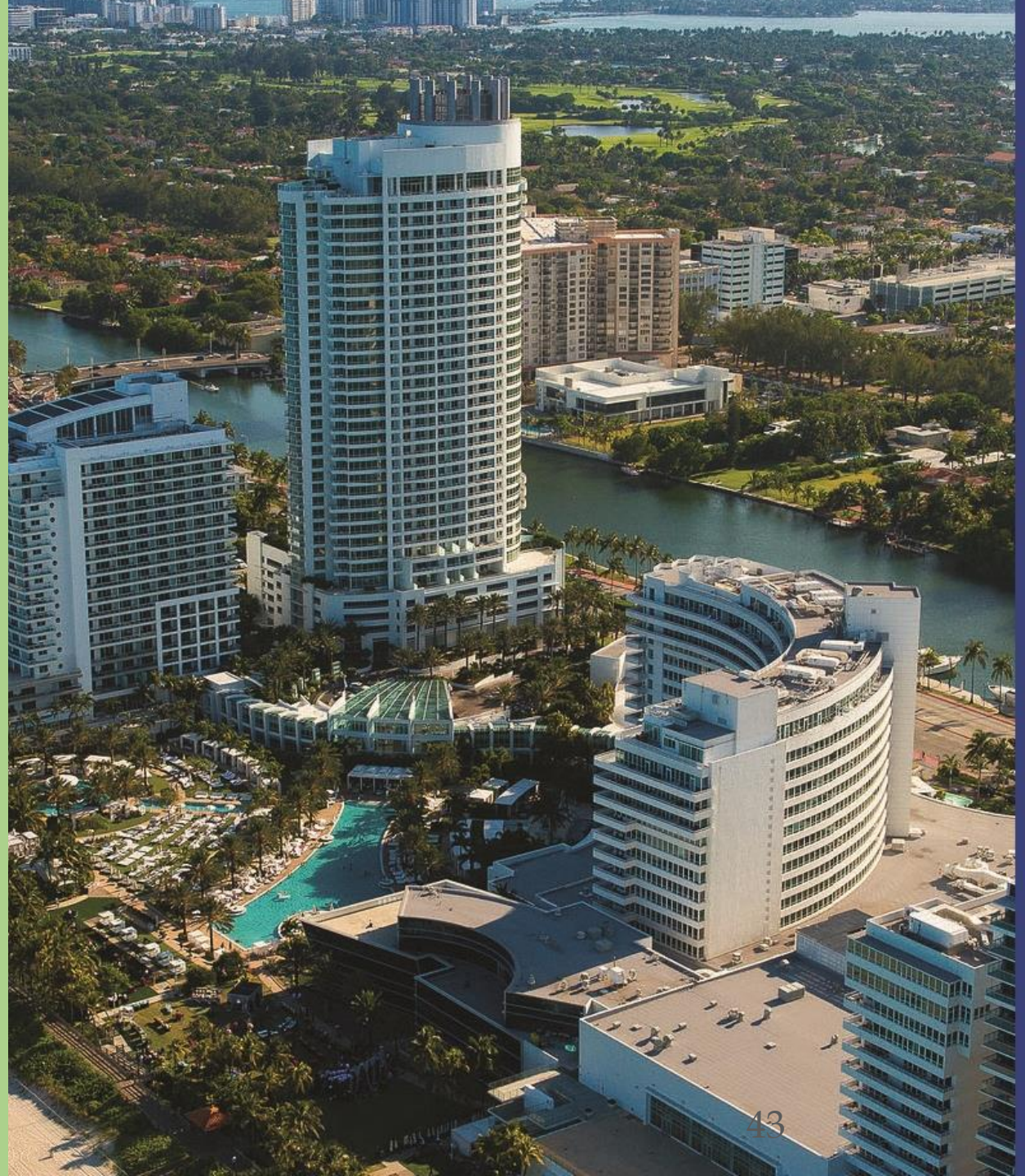
Sewer System Capital Improvement Program



Summary of Sewer System Recommended Improvements

64 CIP Projects Identified

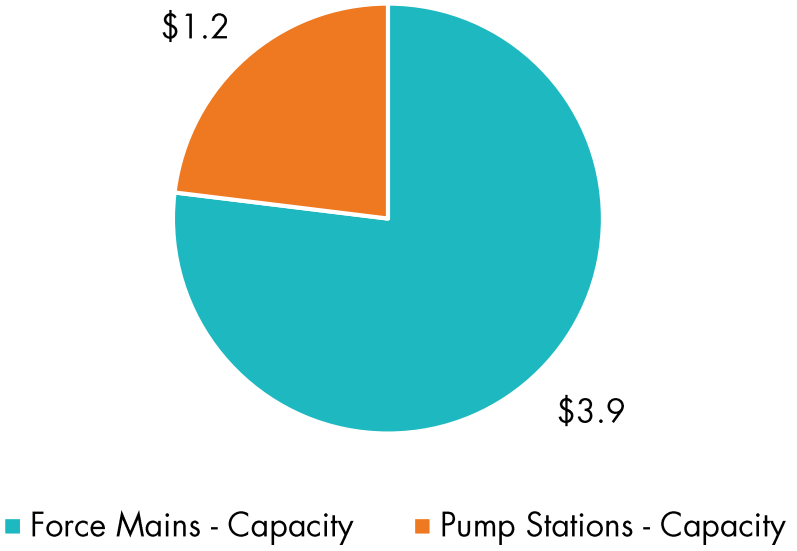
9 Capacity Based Improvements Identified

55 R&R Based Improvements Identified

Total CIP Cost Through 2045 = **$116 M**

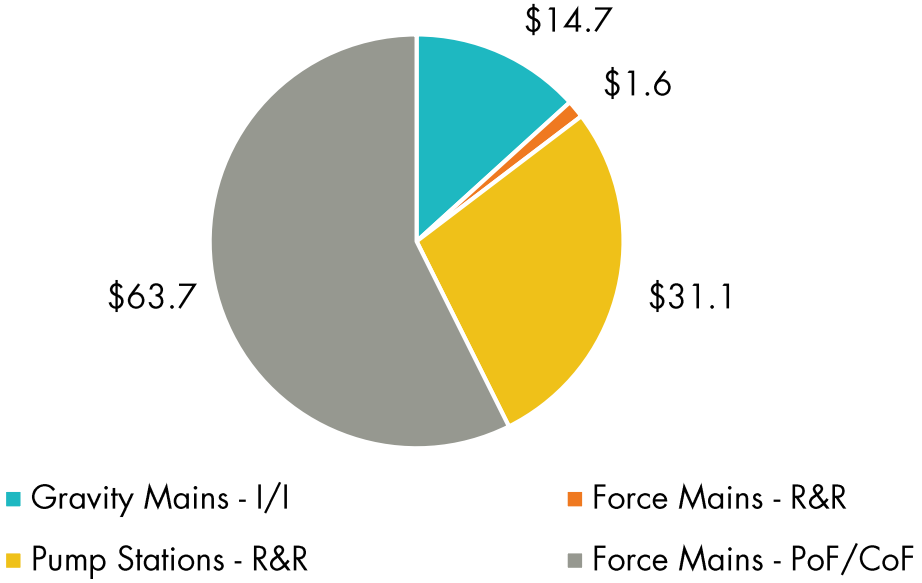
Capacity Based Improvement Projects

(Total Costs = $ 5 M)



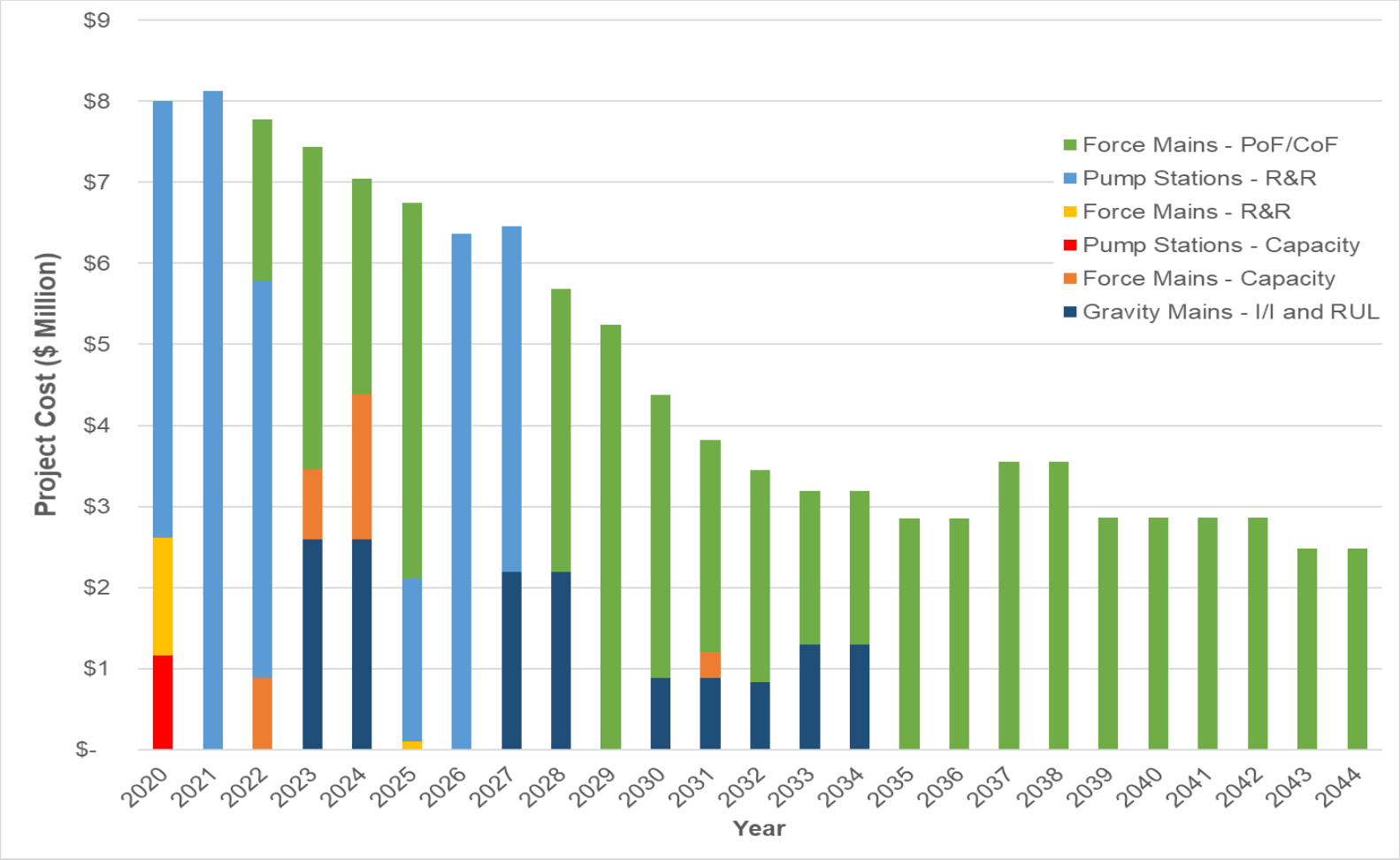
R&R Based Improvement Projects

(Total Costs = $ 111.1 M)



The total cost of the Sewer System recommended projects in the Master Plan is $116 million (2018 dollars):

Sewer System
$116M



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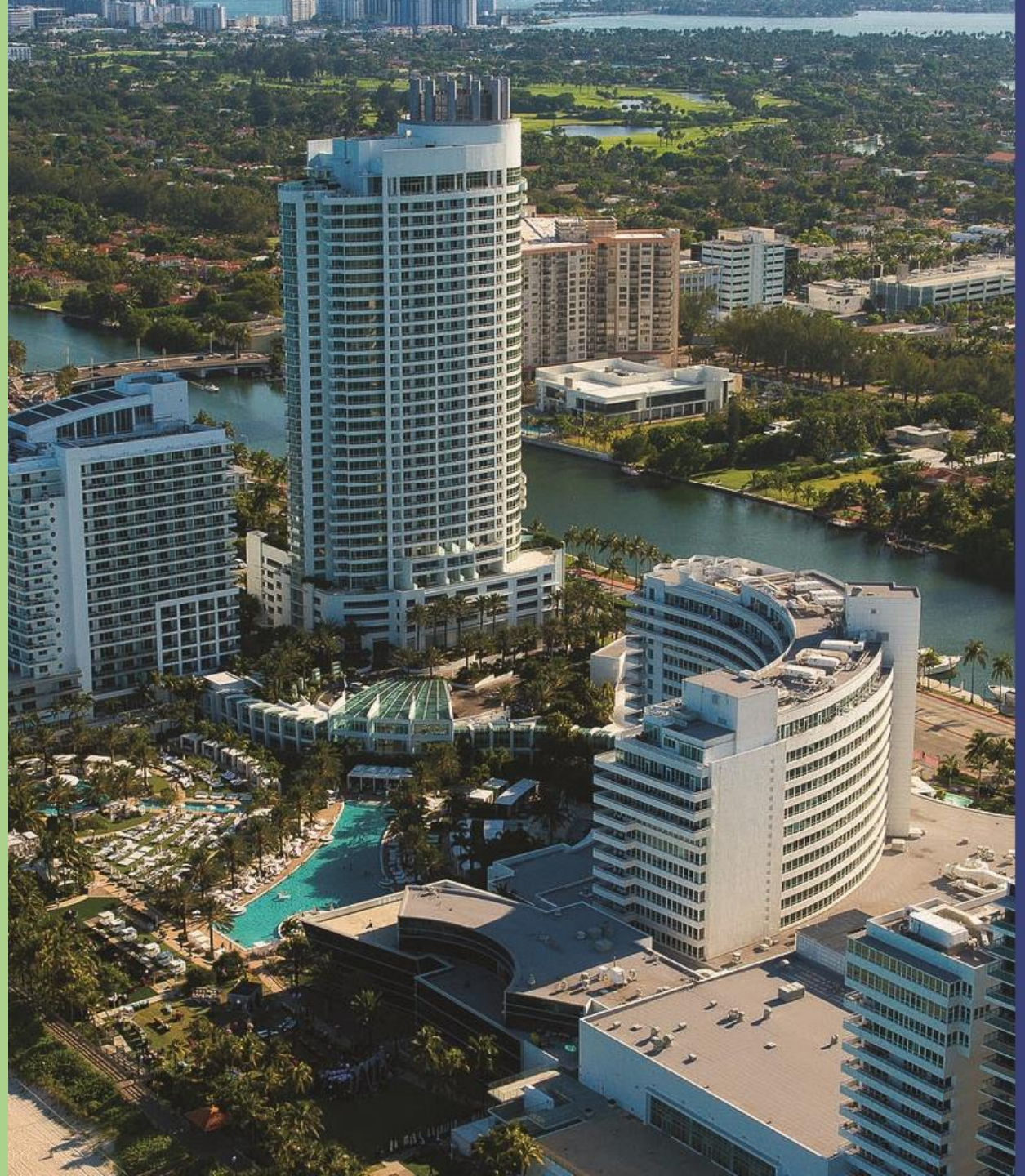
Questions/Comments



City of Miami Beach
Integrated Water Management
Rising to the Challenge

Blue-Green Stormwater Infrastructure Concept Plan Update

September 25, 2019

Presented to: Miami Beach Sustainability and Resiliency Committee

JACOBS

Meeting Agenda

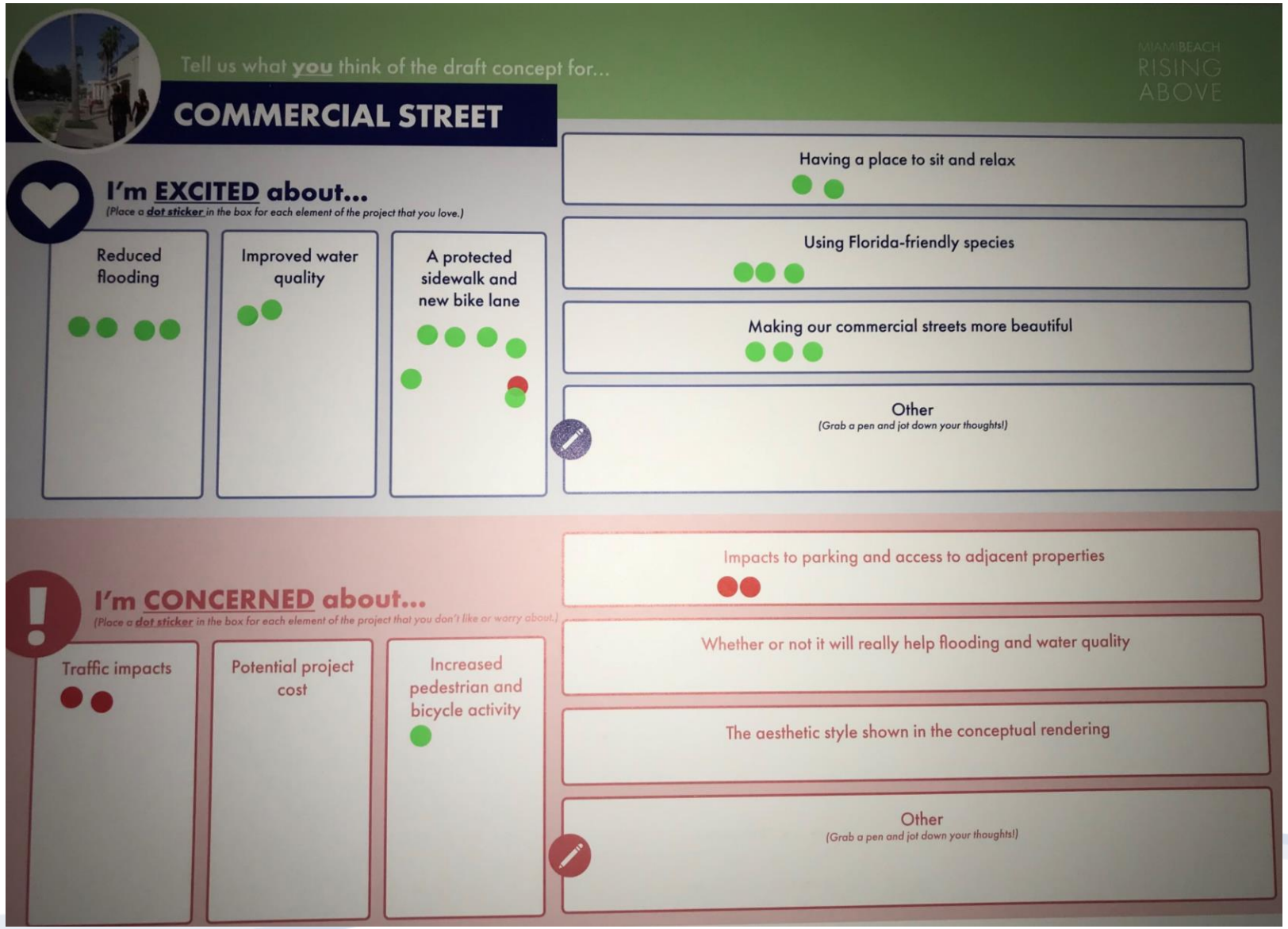
- Summary of comments from public meeting held 9/17
- Outline of blue-green stormwater infrastructure (BGSI) concept plan
- Excerpts from/sample sections of BGSI concept plan
- SRC feedback and endorsement

Initial Summary of Comments from Public Meeting

- The public comment period ended yesterday – comments are still being compiled and reviewed
- Some common themes we have heard thus far include:
  - Who will maintain BGSI?
  - How will City incentivize BGSI implementation on private property?
  - How will BGSI function with high groundwater, as sea level rises?
- A lot of feedback on concept renderings

Examples of Public Comments on Concepts

Mostly excitement about benefits/ improvements, with some concerns about traffic, parking, and access.



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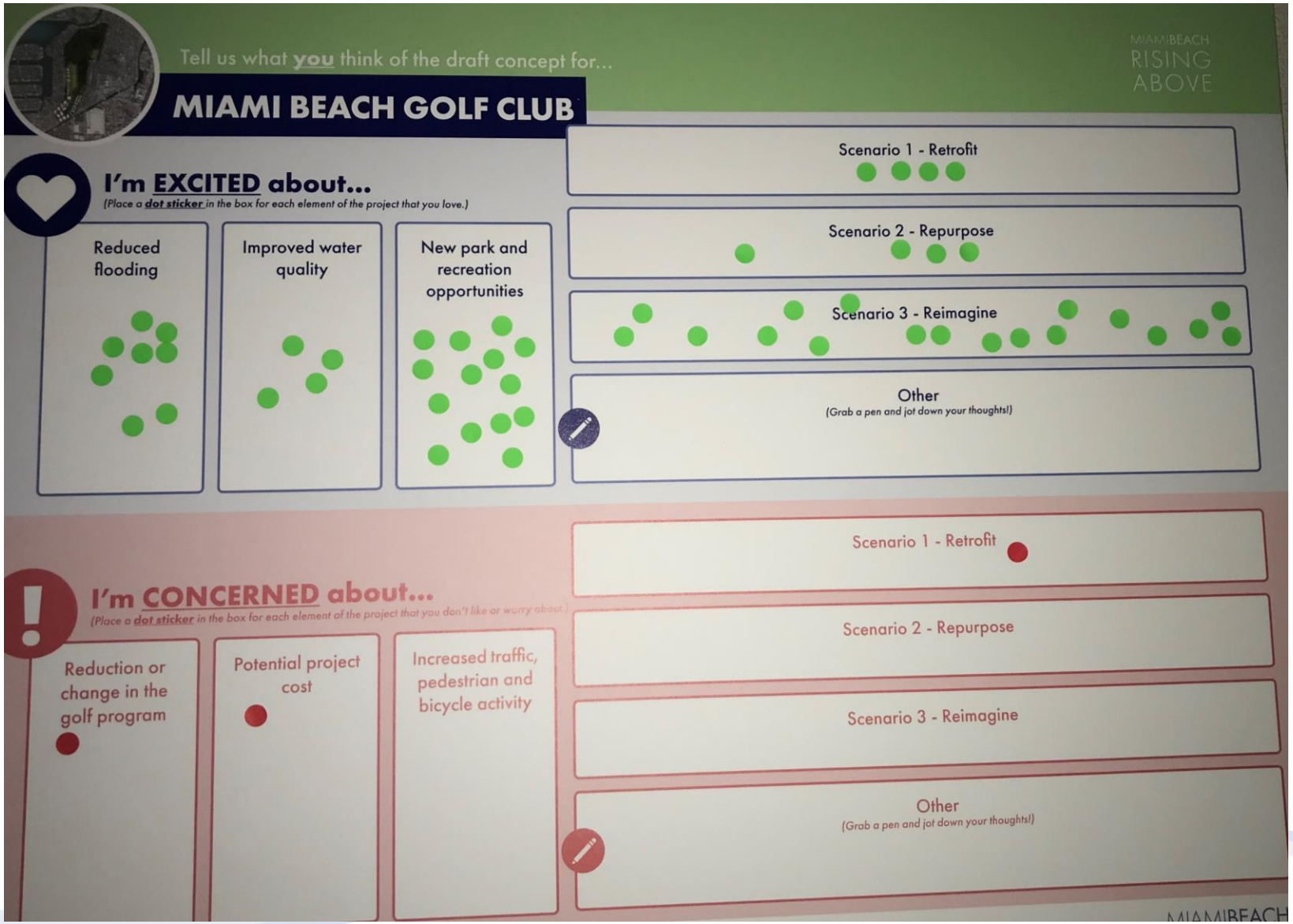
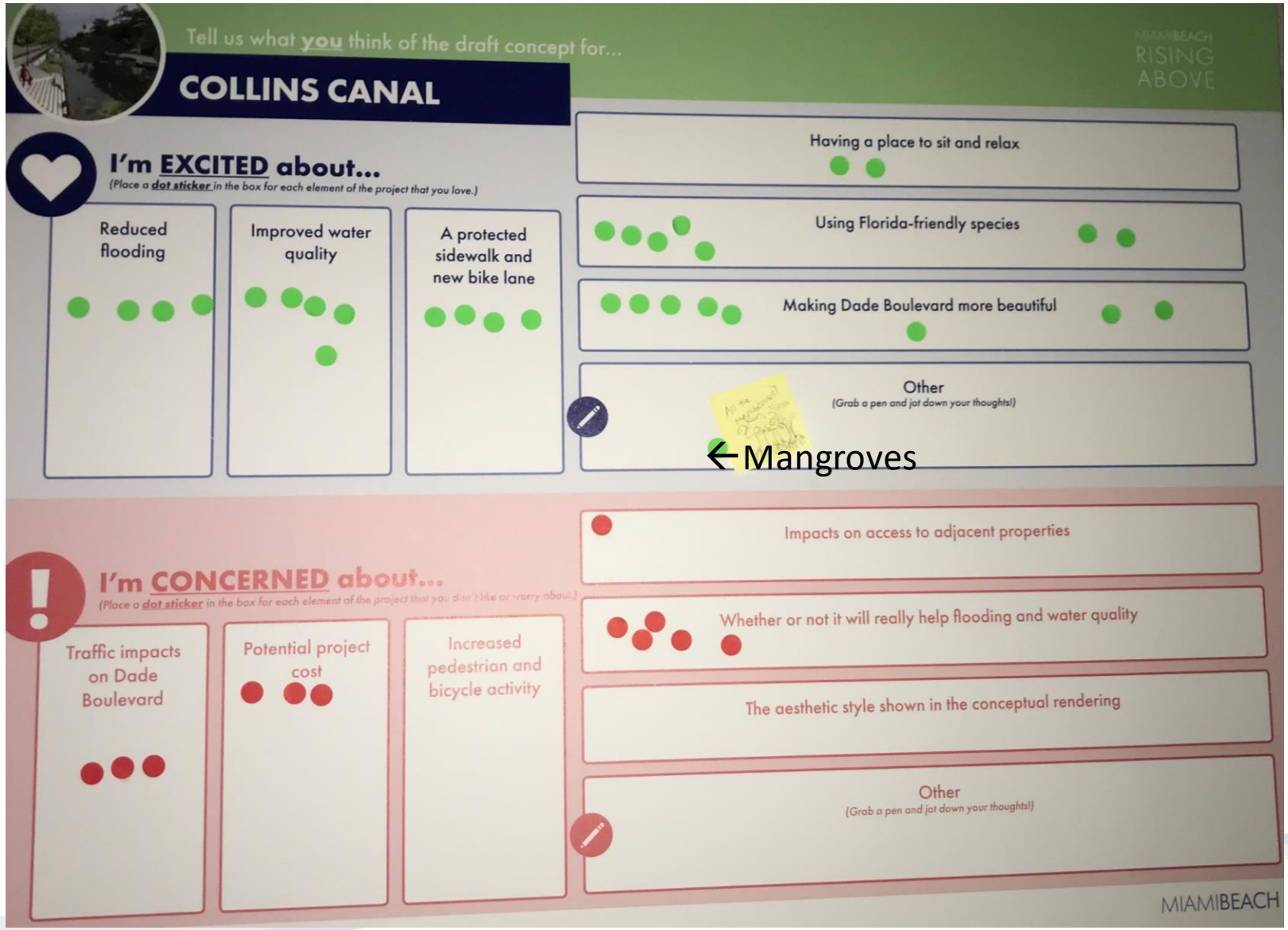
Examples of Public Comments on Concepts

A lot of excitement about the reimagine scenario in which there is no golf.



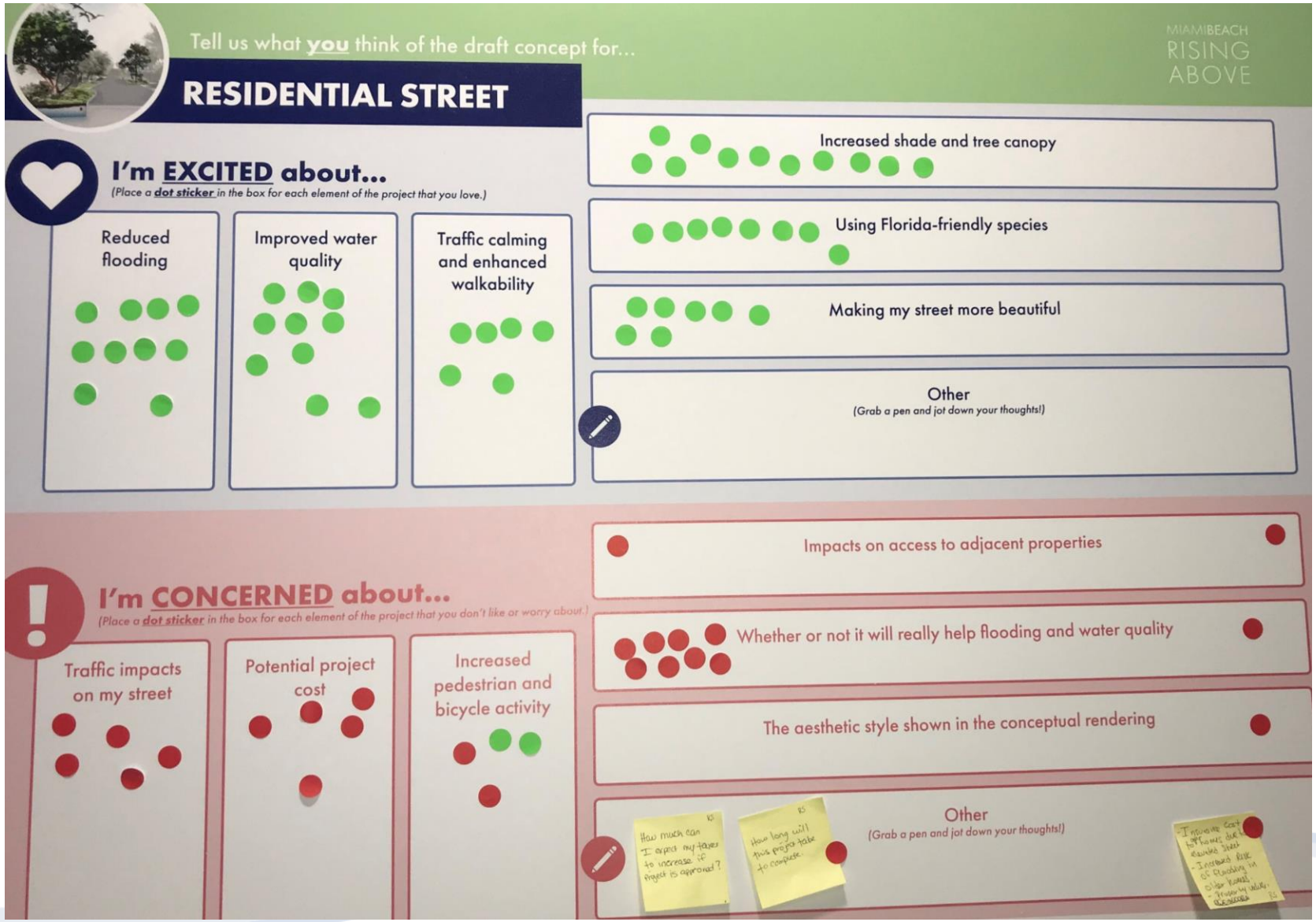
Examples of Public Comments on Concepts

Excitement about benefits and Dade Blvd improvements, but also concerns about cost, effectiveness, and traffic.



Examples of Public Comments on Concepts

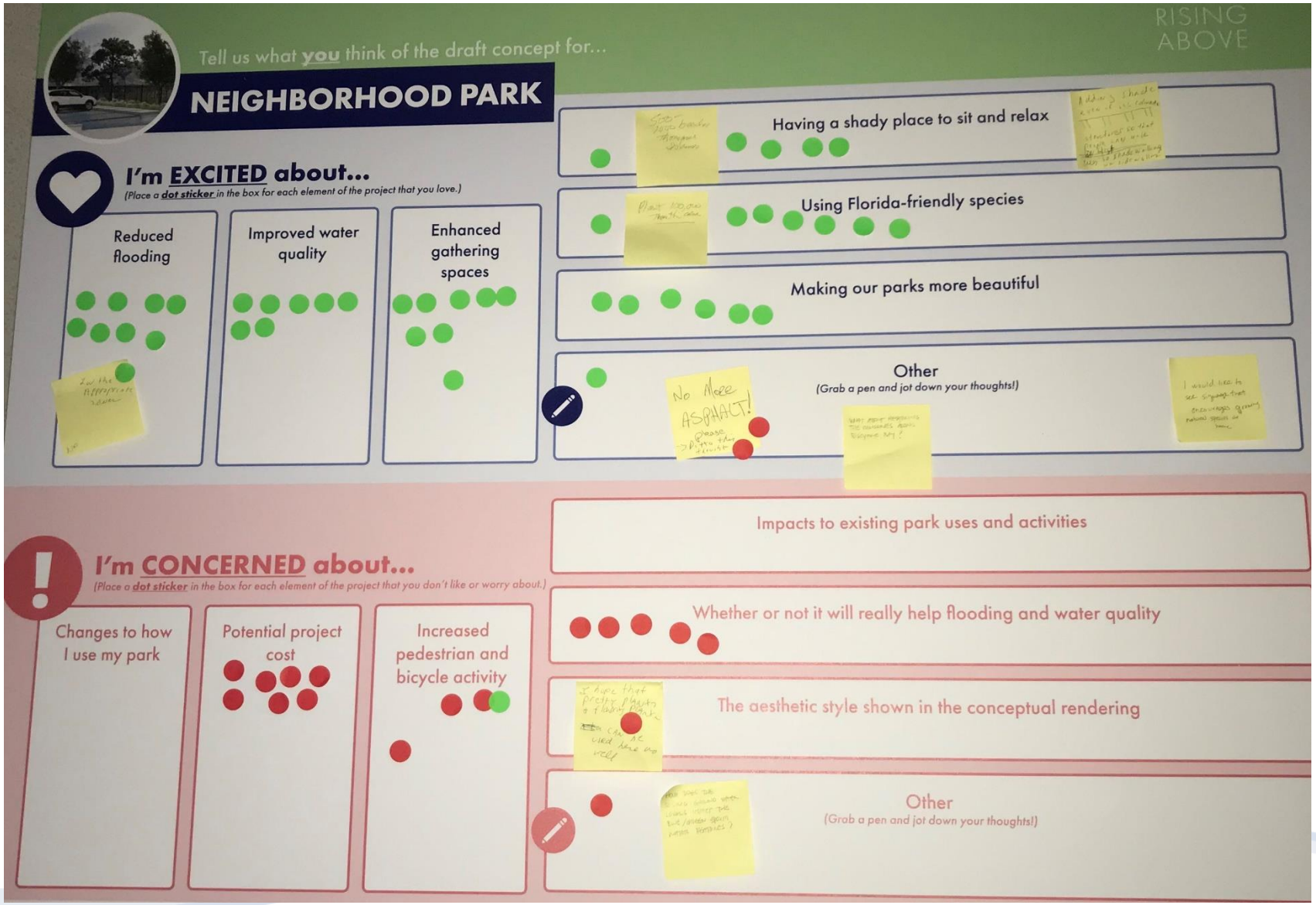
Excitement about trees and benefits, tempered by concerns about cost effectiveness, traffic, etc.



Taxes, construction duration, property values

Examples of Public Comments on Concepts

Excitement about enhancing parks, benches, shade, and educational opportunities; tempered by concerns about cost effectiveness and increased bike /pedestrian activity.



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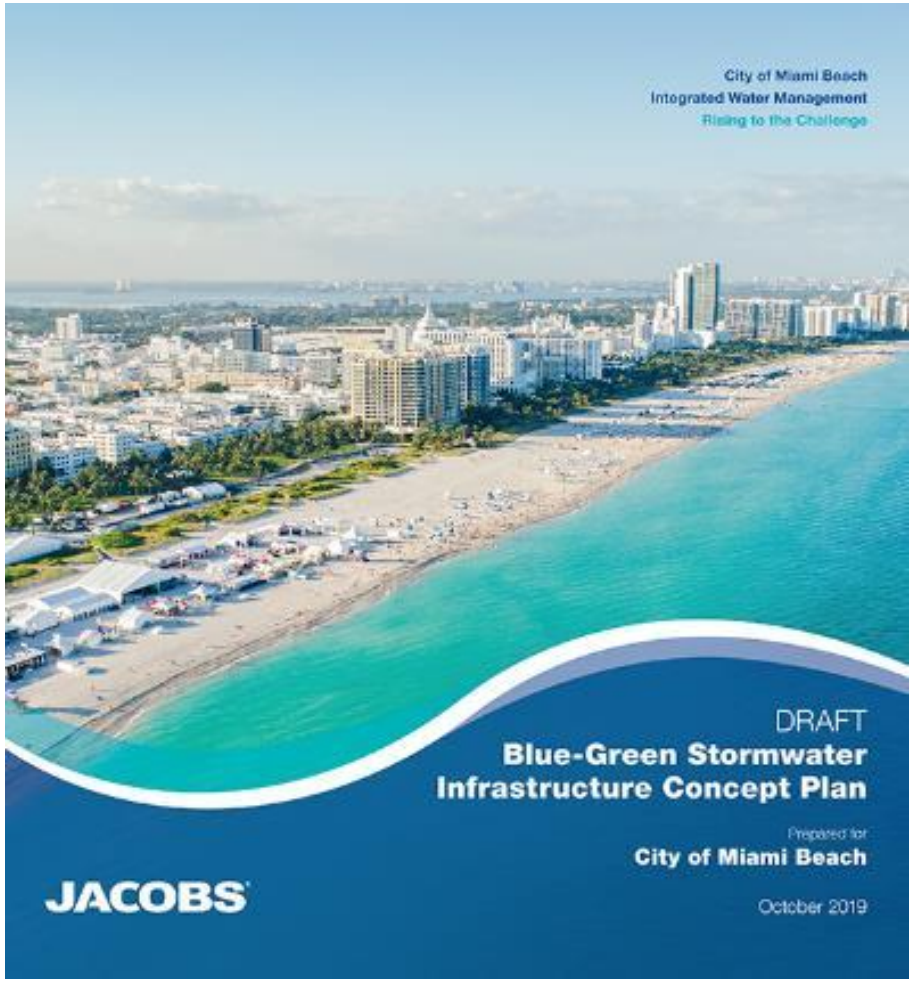
Outline of BGSI Concept Plan

- Introduction
- Miami Beach Context
- BGSI Evaluation Process (most / least applicable practices)
- BGSI Practices and Strategies
- Renderings
- Recommendations

Meant for a Wide Range of Users

Intended to inform Master Planning, CIP Planning, Design Criteria Packages (DCPs), New Development and Other Policies



Introduction

- Definitions
- Objectives
  - Water Quality
  - Groundwater Recharge
  - Detention/Flood Reduction
  - Community Benefits
- User's Guide

Pollutant Removal Varies by Pollutant and Type of BGSI Practice: Phosphorus and Nitrogen Example

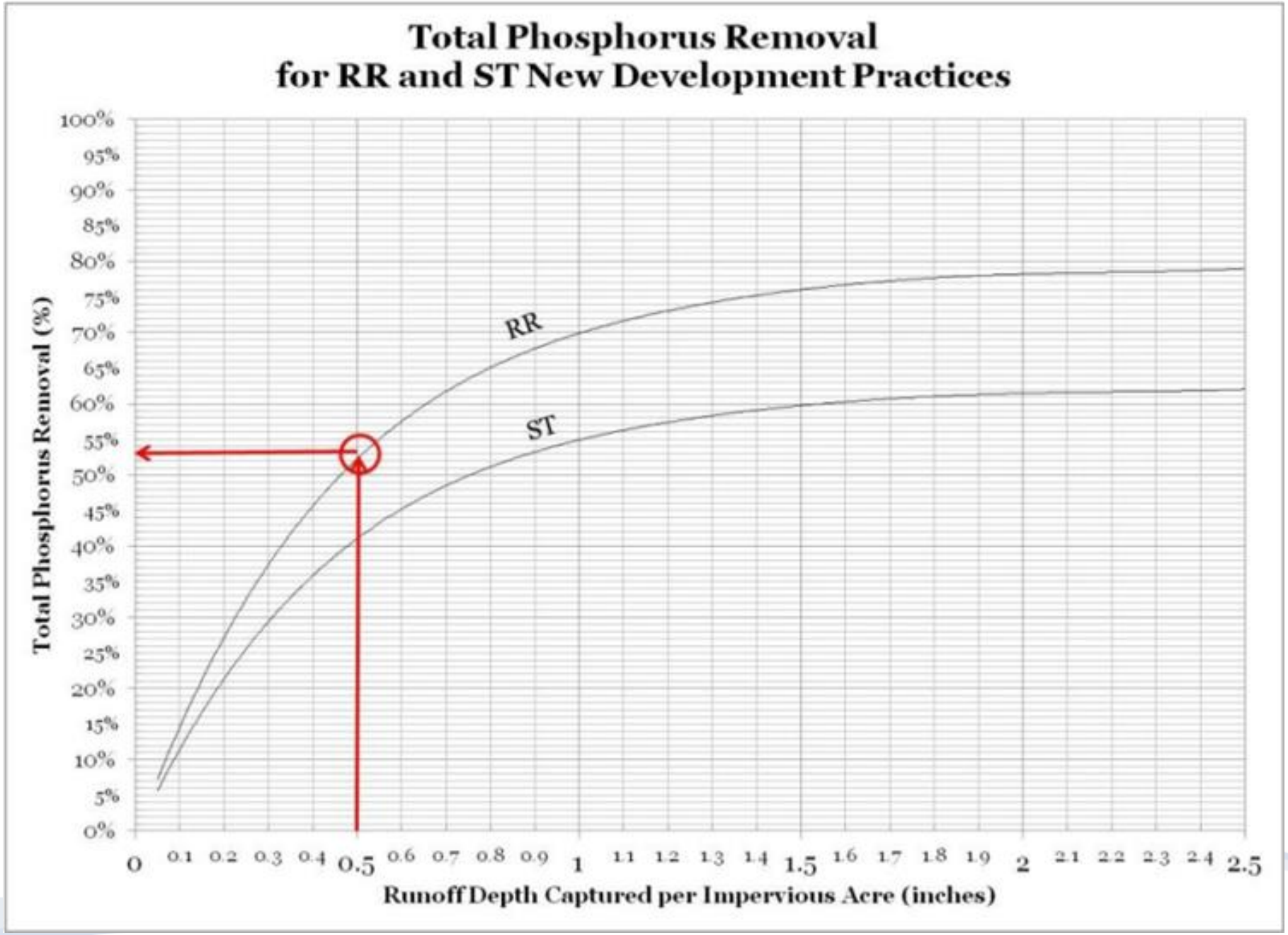
Table C-1 Composite Approach to Derive Nutrient Mass Load Reductions for RR ad ST Practices [1, 2]

PRACTICE	TP Mass Reduction (%)	TN Mass Reduction (%)
Bioretention	73	77
Dry Swale	66	63
Infiltration	75	78
Permeable Pavers	70	70
Green Roof/Rain Tank	55	55
Average RR	**70**	**70[2]**
Wet Ponds	63	35
Const. Wetlands	63	40
Filtering Practice	63	38
Wet Swale	30	30
Average ST	**55**	**35**

Source: Recommendations of the Expert Panel to Define Removal Rates for New State Stormwater Performance Standards (2015)

RR → Runoff Reduction
ST → Stormwater Treatment

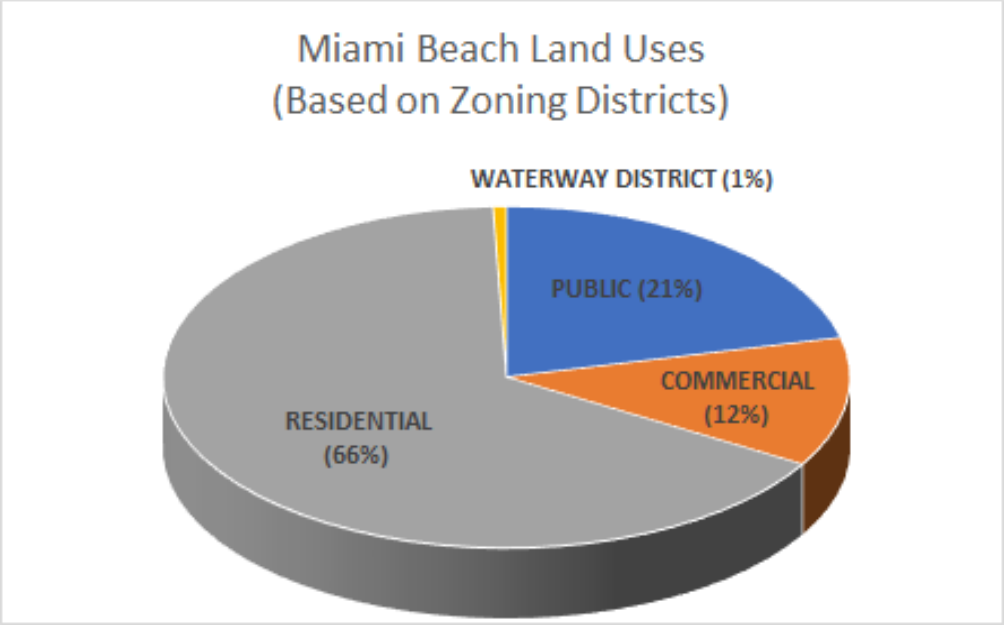
Pollutant Removal Varies by Capture Depth

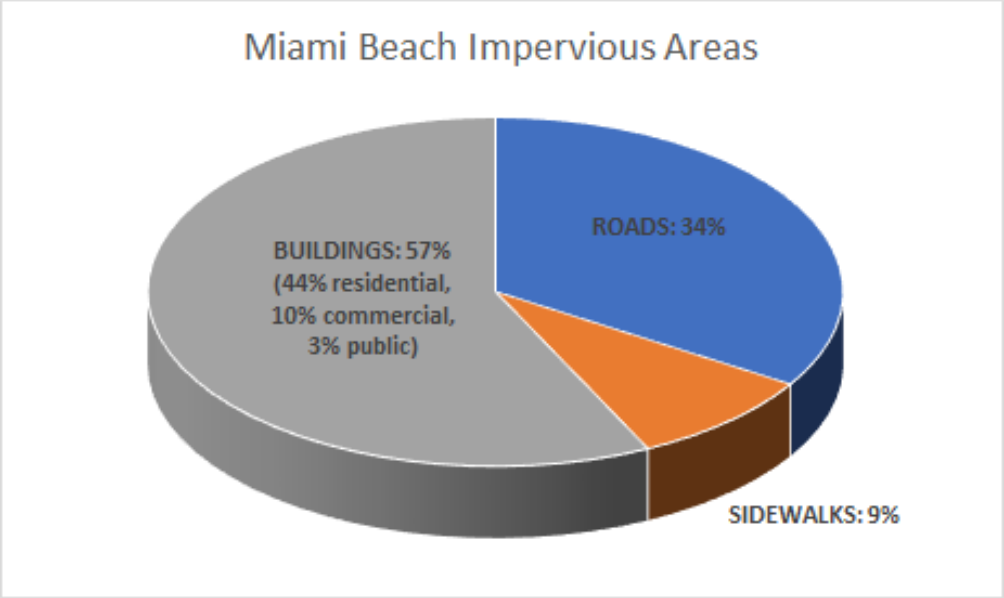


Source: Recommendations of the Expert Panel to Define Removal Rates for New State Stormwater Performance Standards (2015)

Miami Beach Context

- Land use
- Impervious cover
- Hydrology
- Groundwater
- Topography





BGSI Practice Evaluation Process (What are the most and least applicable practices for Miami Beach?)

A wide range of BGSI practices were evaluated based on:

- City, regional, and national BGSI experience
- Stormwater performance (water quality, runoff reduction, and groundwater recharge)
- Potential applicability in the City given the Miami Beach context
- Ease of implementation and maintenance
- Community/environmental benefits
- Cost efficiency
- Climate change resilience

BGSI Practices Most Applicable to Miami Beach

- Bioretention/Bioswales/Rain Gardens
- Blue and Green Roofs
- Constructed Wetlands/Floating Wetland Islands
- Detention Basins/Surface Storage
- Enhanced Tree Pits/Trenches
- Injection Wells (Pumped)
- Permeable Pavement
- Rainwater Harvesting (Cisterns, Rain Barrels)
- Stormwater Planters
- Subsurface Infiltration/Storage
- Tree Canopy
- Wet Ponds

Note: The City is also developing an Urban Forestry Master Plan.

General BGSI Practice Information Fact Sheet

- Advantages of BGSI
- Recommended practices
- Other practices
- Mosquito control
- Applicability
- General sizing and cost discussion
- Guide to practice fact sheets
- Additional information sources

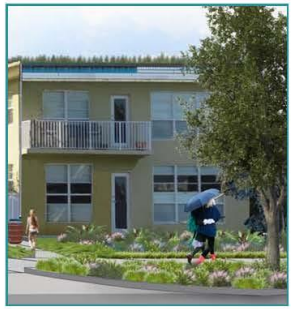
General Information on Blue-Green Stormwater Infrastructure (BGSI) Practices

Green stormwater infrastructure typically uses vegetation and/or soils to treat and reduce stormwater flows. Examples are bioretention and permeable pavement.

Blue stormwater infrastructure temporarily stores and treats stormwater above or below ground without the use of vegetation. Examples are wet ponds and detention basins.

Blue-Green Stormwater Infrastructure (BGSI) utilizes elements from both green and blue stormwater infrastructure. Implemented BGSI can vary greatly in appearance, from high-profile features to those that blend in seamlessly with the surroundings. BGSI is typically designed and sized to capture the more frequent storm events.

The focus of BGSI is stormwater runoff treatment and capture, which makes it different from coastal strategies that target stressors like wave energy, sea level rise, and storm surges (e.g. living shorelines, dunes, mangrove plantings, and oyster or artificial reefs).



Rain garden, green roof, and rain barrel at a garden apartment building

Advantages

BGSI provides several stormwater benefits, as well as co-benefits, that improve regulatory compliance and positively impact the community.

- Water quality - BGSI can reduce many of the pollutants that threaten Biscayne Bay such as heavy metals, nutrients, sediment, and pathogens.
- Groundwater recharge - BGSI recharges the freshwater lens under the island. This can help keep salt water at bay and protect the health of trees.
- Detention/flood mitigation benefits – BGSI helps mitigate flooding from smaller, more frequent storms. Note: BGSI alone will NOT reduce: "sunny day" flooding or flooding from major rainfall events/storm surges.
- Community benefits can include- urban heat island mitigation, air quality improvement, climate resiliency, enhanced aesthetics, and increased ecosystem health and biodiversity.

Permeable pavement, bioswale, and subsurface infiltration next to a park

What are the recommended BGSI practices for Miami Beach?

BGSI practice types were evaluated based on regional/national experience, stormwater performance, ease of implementation/maintenance, community/environmental benefits, cost efficiency, and climate change resilience. Practices that were determined to perform well across these areas and have practical applications in Miami Beach are as follows:

- Bioretention/Bioswales/Rain Gardens
- Blue & Green Roofs
- Constructed Wetlands/Floating Wetland Islands
- Detention Basins/Surface Storage
- Enhanced Tree Pits/Trenches
- Injection Wells (Pumped)
- Permeable Pavement
- Rainwater Harvesting
- Stormwater Planters
- Subsurface Infiltration/Storage
- Wet Ponds

When and where to use each recommended BGSI practice depends on a variety of site-specific factors, such as land use, location, topography, groundwater elevation, soil conditions, and existing infrastructure.

BGSI Practice Fact Sheets

- 1-page overview, including:
  - Description
  - Advantages and Potential Limitations
  - Applicability – where is the practice most effective?
  - Potential Enhancements for Increased Performance in Miami Beach
  - Qualitative Assessment of BGSI Practice Effectiveness

Bioretention/Bioswales/Rain Gardens

Bioretention facilities are sunken landscape beds containing plants in a special soil mix (called *engineered soil*) that sits above a gravel drainage layer. They replicate the natural water cycle by allowing water to enter the soil (*infiltration*), evaporate to the air (*evapotranspiration*), or be ponded for a period of time. Bio-retention facilities use Florida-friendly plants that can withstand both occasional dry periods and flooding. Combined with engineered soil, these plants also provide natural filtration and treatment of stormwater runoff, removing many pollutants that threaten Biscayne Bay. Bioretention can take many forms including bioretention basins, bioswales, rain gardens, vegetated curb extensions, etc. and work well with infiltration/storage facilities below the ground.

Bioretention facility at the University of Florida Southwest Recreation Center

Advantages

- Excellent water quality and freshwater lens recharge capabilities
- Versatile, with broad applicability
- Enhanced site aesthetics, tree canopy, biodiversity, and wildlife habitat

Potential Limitations

- 2 ft of separation to groundwater recommended
- Higher maintenance until plants are established
- If not designed, installed, and maintained correctly, can promote mosquito breeding

Applicability

Bioretention is highly adaptable to most site types and conditions—from large and heavily landscaped features in parks, schools, and other public facilities to small and simple rain gardens at residences. Bioretention can also be implemented along roadways and in medians and parking lots.

Potential Enhancements for Increased Performance

- Real-time controls: dynamic, predictive technology that controls flows in/out of system, improving storage efficiency
- Modular/high-porosity media: increases storage capacity
- Engineered soil enhancements: improve pollutant removal
- High-flow filter media: allows rapid surface infiltration/treatment in tight spaces
- Underdrains (if needed): allow systems to drain within 72 hours

Typical bioretention cross-section with surface depression, Florida-friendly plants, engineered soil, and gravel layer

Performance		Implementation		Community/Environmental		Other	
Water Quality	💧💧💧	Capital Cost	💧💧◖	Improved Aesthetics	💧💧💧	Climate Change Resilience	💧💧
Freshwater Lens Recharge	💧💧	Maintenance Cost	💧💧	Dual Use	💧	Mosquito Vector Resistance	💧💧
Flood Mitigation	💧	Scalability	💧💧◖	Habitat Creation	💧💧		
		Constructability	💧💧◖	Urban Heat Island Reduction	💧💧		

💧 = low 💧💧 = medium 💧💧💧 = high

Miami Beach Integrated Water Management ~ Rising to the Challenge 1

A mix of BGSI practices have variable applicability to all the primary land uses in the City

Land Use	Bioretention / Bioswales / Rain Gardens	Blue & Green Roofs	Constructed Wetlands / Floating Wetland Islands	Detention Basins / Surface Storage	Enhanced Tree Pits / Trenches	Injection Wells (Pumped)	Permeable Pavement	Rainwater Harvesting	Stormwater Planters	Subsurface Infiltration / Storage	Wet Ponds
Commercial											
Commercial Sites (Office, Retail, Restaurant, Hotel, High-Rise Residential, etc.)	●	●	○	○	◐	●	◐	●	●	○	○
Institutional / Public											
Facilities (Police Stations, Fire Stations, etc)	●	●	◐	◐	●	●	●	●	●	●	○
Schools	●	●	○	◐	●	●	●	●	●	●	○

Land Use	Bioretention / Bioswales / Rain Gardens	Blue & Green Roofs	Constructed Wetlands / Floating Wetland Islands	Detention Basins / Surface Storage	Enhanced Tree Pits / Trenches	Injection Wells (Pumped)	Permeable Pavement	Rainwater Harvesting	Stormwater Planters	Subsurface Infiltration / Storage	Wet Ponds
Commercial											
Commercial Sites (Office, Retail, Restaurant, Hotel, High-Rise Residential, etc.)	●	●	○	○	◐	●	◐	●	●	○	○
Institutional / Public											
Facilities (Police Stations, Fire Stations, etc)	●	●	◐	◐	●	●	●	●	●	●	○
Schools	●	●	○	◐	●	●	●	●	●	●	○
Parking											
Parking Garages	○	●	○	○	○	●	○	◐	●	○	○
Parking Lots	●	○	○	●	●	●	●	○	●	●	○
Parks and Open Spaces											
Golf Courses	●	○	●	●	◐	●	◐	●	○	●	●
Open Spaces (unassigned)	●	○	◐	◐	●	●	○	◐	◐	●	◐
Parks	●	◐	●	●	◐	●	●	●	◐	●	●
Pocket Parks / Parklets / Plazas	●	○	○	◐	●	●	●	◐	●	●	○
Residential											
Multi-family	●	●	○	○	○	●	●	●	●	◐	○
Single-family	●	○	○	○	○	○	●	●	◐	○	○
Rights-of-Ways (Street Types Per Miami Beach Street Design Guidelines - 2016)											
Street Ends	●	○	●	○	●	●	◐	◐	◐	○	○
Alleys (commercial)	○	○	○	○	○	●	●	○	○	◐	○
Avenues (suburban)	●	○	○	○	●	●	●	○	●	◐	○
Avenues (urban)	◐	○	○	○	●	●	●	○	●	◐	○
Boulevards	●	○	○	○	●	●	●	○	●	◐	○
Main Streets	◐	○	○	○	●	◐	●	◐	◐	◐	○
Neighborhood Streets (suburban)	●	○	○	○	●	●	●	○	◐	◐	○
Neighborhood Streets (urban)	◐	○	○	○	●	●	●	○	●	◐	○
Non-Motorized Streets	●	○	○	◐	●	●	●	◐	●	◐	○

BGSI Strategy Fact Sheets

- 1st page: description, advantages, limitations, applicable practices
- 2nd/3rd pages: variations with photos of existing Miami Beach sites next to built BGSI in similar settings

Parks and Open Spaces

Miami Beach contains a variety of recreational areas, including golf courses, open spaces, parks, and pocket parks/plazas. These facilities are generally excellent opportunities to implement many types of BGSI practices. Parks can offer more significant water quality, flood mitigation, and freshwater lens recharge benefits by capturing runoff from adjacent areas through gravity drainage or pumping.

Successfully implementing BGSI at parks often involves a balancing act between preserving or enhancing existing recreational uses and providing the space required for BGSI. Given the challenges of Miami Beach (flat topography, high groundwater, etc.), BGSI practices at recreational sites should ideally entail temporarily storing water on the surface and/or raising the ground elevation and storing water underground.

Advantages

- Improved public spaces through aesthetics, amenities, and site restoration
- Increased tree canopy
- Natural source of irrigation for Florida-friendly landscaping
- Less restrictive with respect to existing utilities or other infrastructure
- Potential to capture large volumes of stormwater
- High visibility/educational value
- Dual-use opportunities (e.g., permeable pavement play surfaces)

Potential Limitations

- Accessibility and public safety concerns
- Sediment and trash may impact aesthetics and functionality, especially in dense drainage areas
- Diverse and sometimes unpredictable usage and preferred pathways for park vi
- Due to flat topography, directing runoff into parks can be challenging
- Working around public art/monuments and existing vegetation, especially trees

Applicable Practices

Applicable to Most Sites	Applicable to Some Sites
Bioretention/Bioswales	Constructed Wetlands
Detention Basins/ Surface Storage	Enhanced Tree Pits/Trenches (site perimeter)
Injection Wells	Permeable Pavement
Subsurface Infiltration/Storage	Rainwater Harvesting
	Stormwater Planters
	Wet Ponds

Fact Sheet Parks and Open Spaces

Golf Courses

By their size and open nature, Miami Beach's two public golf courses (Miami Beach and Normandy Shores Golf Clubs) offer unique opportunities to capture large volumes of water. Larger BGSI practices that have limited applicability at most other sites (i.e., detention basins/surface storage, wet ponds, and constructed wetlands) can be readily integrated into golf courses, especially those that can be reconfigured or repurposed. Fairways provide locations for extensive temporary surface storage behind by perimeter earthen berms. Wet ponds can store and treat water before it is used for irrigation.

Miami Beach Golf Club

Constructed wetlands for stormwater capture and treatment

Open Spaces

Miami Beach has a variety of triangular or similarly shaped open spaces that appear to have no defined usage or formal programming. These spaces provide opportunities to implement smaller-scaled BGSI practices, such as bioretention/ bioswales, enhanced tree pits/trenches, and subsurface infiltration/storage. These practices can be seamlessly integrated into the landscape, replacing unused lawn areas and avoiding impacts to existing trees and vegetation. In general, these sites are best suited to capturing stormwater runoff from adjacent streets, though some may be able to store additional runoff.

Triangular open space at 1st Street and Alton Road

Bioretention facility in unused triangular open space that was converted to a public park

Concept Renderings

- Preliminary Renderings for:
  - Residential street
  - Commercial street
  - Neighborhood park
  - MB Golf Course scenario 1
  - MB Golf Course scenario 2
  - MB Golf Course scenario 3
  - Collins Canal
  - Street end
  - Garden apartments

Note: all concepts are preliminary and subject to change during budgeting, design, permitting, etc.

BLUE GREEN INFRASTRUCTURE **PILOT PROJECT CONCEPT**

RESIDENTIAL STREET

STRATEGIC VALUE

In Miami Beach residential streets vary in whether they include on-street parking, curbs, sidewalks, and other improvements, while often accommodating numerous driveways, alleys, and roadway intersections. Permeable pavement, enhanced tree pits, traffic chicanes, and other drainage features such as trench drains can be incorporated within varying residential roadway conditions to **improve water quality, calm traffic**, and **reduce flows to private property**.

HOW IT WORKS

1 PERMEABLE PAVEMENT / DELINEATED ON-STREET PARKING
Stormwater will discharge in defined permeable pavement parking areas. Permeable pavement looks like standard pavement but allows water to drain into an underlying infiltration trench. Permeable pavement will reduce stormwater flowing into private property, minimize soil compaction from parked vehicles on lawns, recharge groundwater, and filter stormwater.

2 ENHANCED TREE PITS/TRAFFIC CHICANES
Enhanced tree pits located in traffic chicanes will provide shade for residents, reduce traffic speeds on local roads, reduce stormwater discharges, and improve water quality. Enhanced tree pits will also provide significant rooting volume for trees and a diverse understory to contribute to a healthier native South Florida ecosystem.

3 TRENCH DRAINS
Trench drains are depressed linear troughs which manage stormwater flows within the public roadway and allow stormwater to drain through into an underlying infiltration trench. Along with valley curbs, enhanced tree pits, and permeable pavement, trench drains can maintain stormwater flows within a raised public roadway and out of private property.

WATER MANAGEMENT BENEFITS

- Capture of roadway runoff helps to reduce peak flows (during high frequency events)
- Treatment of roadway runoff reduces pollutant loads and heavy metal pollution
- Treatment and infiltration of stormwater to recharge groundwater supplies and replenish freshwater lens

ADDITIONAL BENEFITS

- Neighborhood beautification
- Additional shade for walking and biking
- Increased biodiversity
- Traffic calming
- Reduced heat island effect

Miami Beach Golf Course

1 RETROFIT

2 REPURPOSE

3 REIMAGINE

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BGSI Concept Plan – Draft Recommendations

1. Develop/update MB-specific BGSI design guidance, details, specs
2. Collaborate w/ regulators (DERM) to discuss permitting issues
3. Advance BGSI concepts developed to date, implement demonstration projects
4. Continue evaluating planned projects for BGSI opportunities, develop additional BGSI concepts
5. Parks/Open Space:
   - Conduct a "highest and best use" analysis of the public golf courses
   - Perform BGSI evaluation of parks

BGSI Concept Plan – Draft Recommendations

6. Residential:
   - Additional education/outreach activities, technical/funding support
   - Rain barrel and tree giveaways/sales/events (w/ Urban Forest MP)
7. Private: Evaluate/implement ways to further BGSI implementation
8. Roads:
   - Adopt alternative road sections to facilitate BGSI
   - Implement BGSI as feasible as part of other transportation projects
   - Work with the County/FDOT to implement BGSI on their roads
   - Integrate additional BGSI opportunities with Urban Forest MP

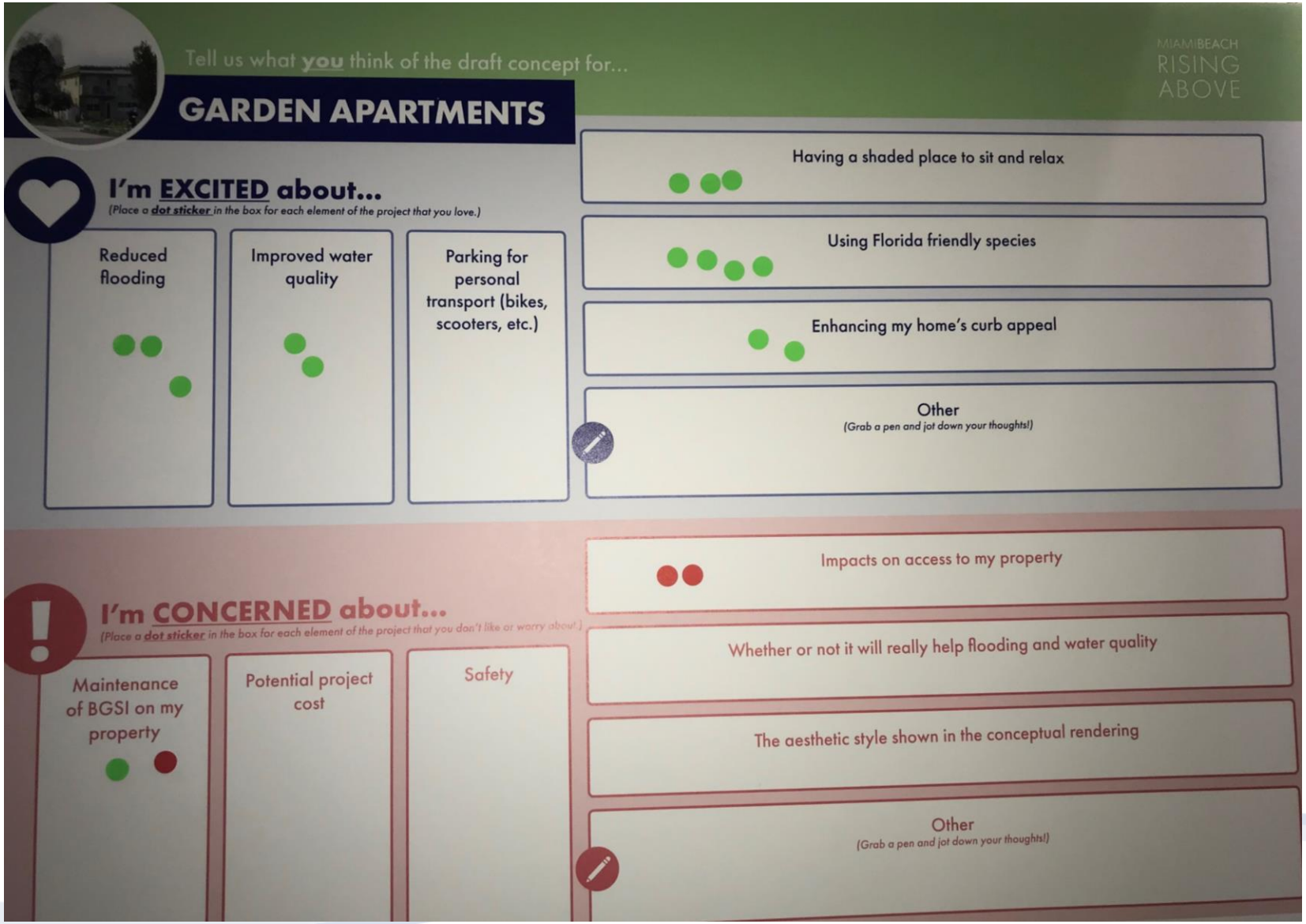
Next Steps for Blue-Green Concept Plan

- SRC feedback & endorsement
- Finish compiling and addressing public input
- Complete BGSI concept plan draft
- Present at Full Commission in October

Additional Slides

JACOBS

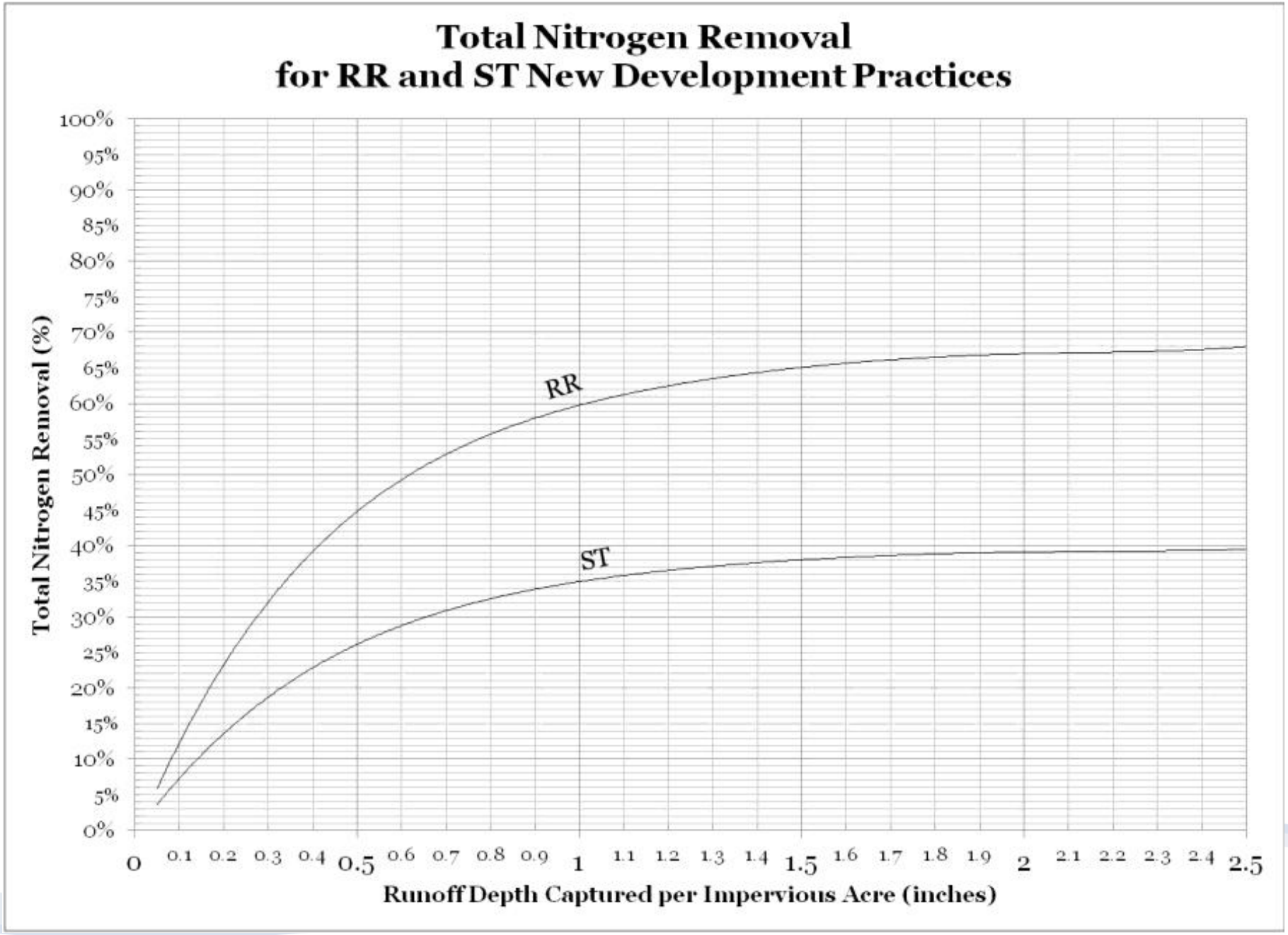
Examples of Public Comments on Concepts



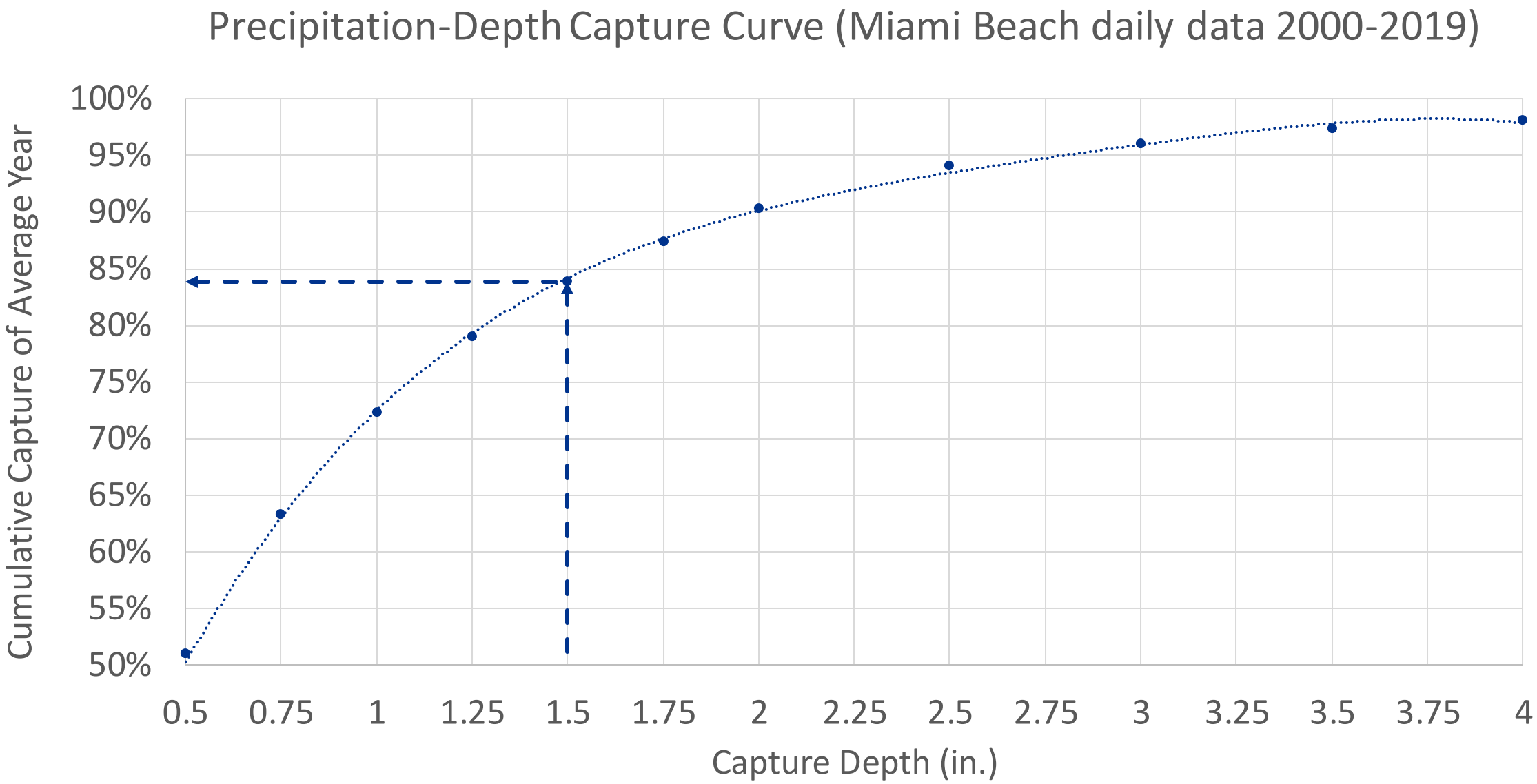
Bacteria (E. Coli) Removal Varies by Type of BGSI Practice

Stormwater Practice	Influent (MPN/100 mL)	Effluent (MPN/100 mL)	% Removal	Statistical Significance
Bioretention	1,200	240	80%	2 of 3 tests
Grass Swale	3,500	4,400	-26%	0 of 3
Retention Pond	2,000	80	96%	3 of 3
Wetland Basin	2,800	1,000	64%	2 of 3
Wetland Basin / Retention Pond	2,300	450	80%	3 of 3

Source: International Stormwater BMP Database, 2016 Summary Statistics

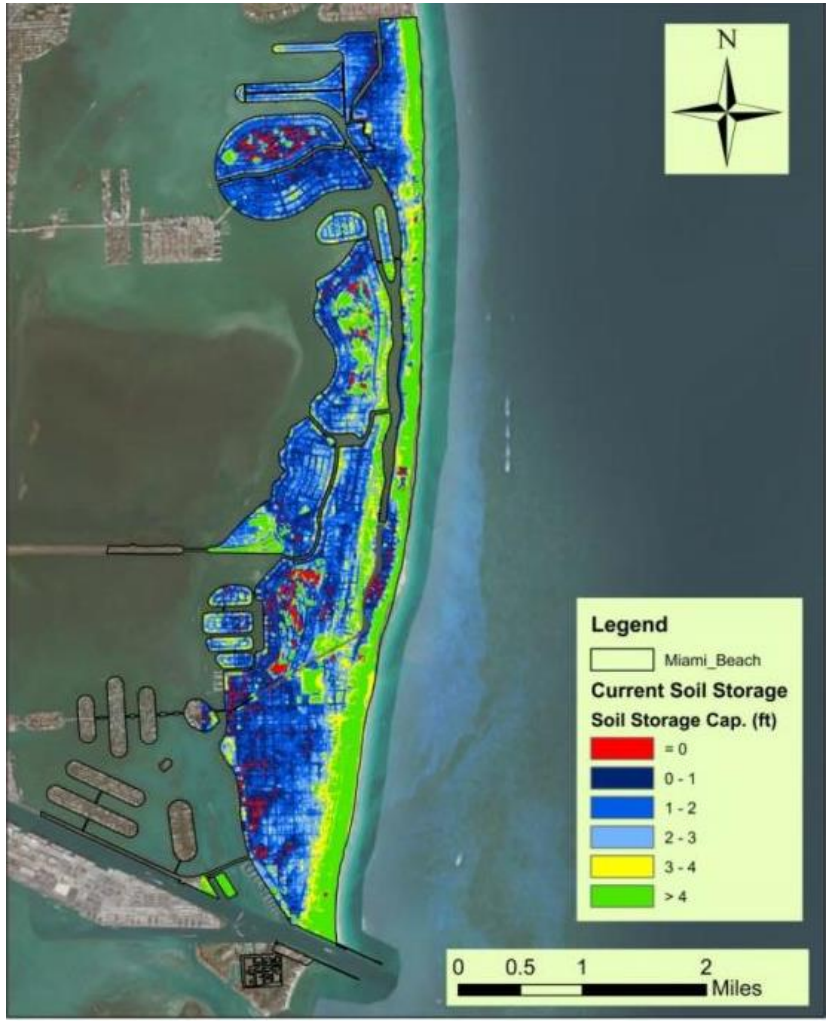

Total Nitrogen Removal
for RR and ST New Development Practices
Total Nitrogen Removal (%)
100%
95%
90%
85%
80%
75%
70%
65%
60%
55%
50%
45%
40%
35%
30%
25%
20%
15%
10%
5%
0%
RR
ST
0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1
1.1
1.2
1.3
1.4
1.5
1.6
1.7
1.8
1.9
2
2.1
2.2
2.3
2.4
2.5
Runoff Depth Captured per Impervious Acre (inches)

Miami Beach Context - Hydrology



Miami Beach Context

- Land use
- Impervious cover
- Hydrology
- **Groundwater**
- **Topography**



What BGSI Practices are Less Applicable to Miami Beach?

- Although **not as readily applicable** to Miami Beach, these might still prove beneficial in certain settings:

BGSI Practice	Why Less Applicable to Miami Beach
Detention Tanks	limited water quality benefit, relatively high costs, lower effectiveness with sea level rise and high tides, proprietary, limited applicability, limited storage capacity
Exfiltration Trenches	
High-Flow Media Filters	
Living/Green Walls	
Gravity Wells	
Subsurface Flow Wetlands	

Qualitative Assessment of BGSI Practice Effectiveness

- General fact sheet for BGSI Practices discusses these criteria and ratings in further detail

Performance		Implementation		Community/Environmental		Other	
Water Quality	💧💧💧	Capital Cost	💧💧◖	Improved Aesthetics	💧💧💧	Climate Change Resilience	💧💧
Freshwater Lens Recharge	💧💧	Maintenance Cost	💧💧	Dual Use	💧	Mosquito Vector Resistance	💧💧
Flood Mitigation	💧	Scalability	💧💧◖	Habitat Creation	💧💧		
		Constructability	💧💧◖	Urban Heat Island Reduction	💧💧		

💧 = low 💧💧 = medium 💧💧💧 = high

A mix of practices are potentially applicable to all the primary land uses in the City

Land Use	Bioretention / Bioswales / Rain Gardens	Blue & Green Roofs	Constructed Wetlands / Floating Wetland Islands	Detention Basins / Surface Storage	Enhanced Tree Pits / Trenches	Injection Wells (Pumped)	Permeable Pavement	Rainwater Harvesting	Stormwater Planters	Subsurface Infiltration / Storage	Wet Ponds
Parks and Open Spaces											
Golf Courses	●	○	●	●	◐	●	◐	●	○	●	●
Open Spaces (unassigned)	●	○	◐	◐	●	●	○	◐	◐	●	◐
Parks	●	◐	●	●	◐	●	●	●	◐	●	●
Pocket Parks / Parklets / Plazas	●	○	○	◐	●	●	●	◐	●	●	○
Residential											
Multi-family	●	●	○	○	○	●	●	●	●	◐	○
Single-family	●	○	○	○	○	○	●	●	◐	○	○

A mix of practices are potentially applicable to all the primary land uses in the City

Land Use	Bioretention / Bioswales / Rain Gardens	Blue & Green Roofs	Constructed Wetlands / Floating Wetland Islands	Detention Basins / Surface Storage	Enhanced Tree Pits / Trenches	Injection Wells (Pumped)	Permeable Pavement	Rainwater Harvesting	Stormwater Planters	Subsurface Infiltration / Storage	Wet Ponds
Commercial											
Commercial Sites (Office, Retail, Restaurant, Hotel, High-Rise Residential, etc.)	●	●	○	○	◐	●	◐	●	●	○	○
Institutional / Public											
Facilities (Police Stations, Fire Stations, etc)	●	●	◐	◐	●	●	●	●	●	●	○
Schools	●	●	○	◐	●	●	●	●	●	●	○
Parking											
Parking Garages	○	●	○	○	○	●	○	◐	●	○	○
Parking Lots	●	○	○	●	●	●	●	○	●	●	○

A mix of practices are potentially applicable to all the primary land uses in the City

Land Use	Bioretention / Bioswales / Rain Gardens	Blue & Green Roofs	Constructed Wetlands / Floating Wetland Islands	Detention Basins / Surface Storage	Enhanced Tree Pits / Trenches	Injection Wells (Pumped)	Permeable Pavement	Rainwater Harvesting	Stormwater Planters	Subsurface Infiltration / Storage	Wet Ponds
Rights-of-Ways (Street Types Per Miami Beach Street Design Guidelines - 2016)											
Street Ends	●	○	●	○	●	●	◐	◐	◐	○	○
Alleys (commercial)	○	○	○	○	○	●	●	○	○	◐	○
Avenues (suburban)	●	○	○	○	●	●	●	○	●	◐	○
Avenues (urban)	◐	○	○	○	●	●	●	○	●	◐	○
Boulevards	●	○	○	○	●	●	●	○	●	◐	○
Main Streets	◐	○	○	○	●	◐	●	◐	◐	◐	○
Neighborhood Streets (suburban)	●	○	○	○	●	●	●	○	◐	◐	○
Neighborhood Streets (urban)	◐	○	○	○	●	●	●	○	●	◐	○
Non-Motorized Streets	●	○	○	◐	●	●	●	◐	●	◐	○

ADDITIONAL INFORMATION

Resource	Source/Location
Rising Above web site	http://www.mbrisingabove.com/climate-adaptation/
Best Management Practices for South Florida Urban Stormwater Management Systems	https://www.sfwmd.gov/sites/default/files/documents/bmp_manual.pdf
Florida Field Guide to Low Impact Development: Bioretention Basins/Rain Gardens	http://buildgreen.ufl.edu/Fact_sheet_Bioretention_Basins_Rain_Gardens.pdf
Florida Field Guide to Low Impact Development: Green Roofs/Eco-roofs	http://www.buildgreen.ufl.edu/Fact_sheet_Green_Roofs_Eco_roofs.pdf
Florida Department of Transportation Drainage Design Guide (Injection Wells covered in Chapter 7)	https://fdotwww.blob.core.windows.net/sitefinity/docs/default-source/roadway/drainage/files/drainagedesignguide.pdf
Sarasota County Low Impact Development Guidance Document	https://www.scgov.net/home/showdocument?id=33258
University of Florida Soil and Water Sciences Video Topics: Green Stormwater Infrastructure	https://soils.ifas.ufl.edu/extension/videos/low-impact-development/
Constructed Floating Wetlands: A review of research, design, operation and management aspects, and data meta-analysis	https://apirs.plants.ifas.ufl.edu/site/assets/files/372369/372369.pdf

Note that the City and Jacobs are not specifically endorsing all of the information provided in these sources but is providing them for general information to be used with discretion.

BLUE GREEN INFRASTRUCTURE **PILOT PROJECT CONCEPT**

COLLINS CANAL

STRATEGIC VALUE

The Collins Canal is an existing, man-made channel that runs parallel to Dade Boulevard, connecting Indian Creek to Biscayne Bay. By adding constructed wetlands, enhanced tree pits and trenches, and permeable pavement to its design, we can **increase the amount of water that is absorbed and treated**.

HOW IT WORKS

1. **MANAGED AQUATIC PLANT SYSTEMS**
   Managed Aquatic Plant Systems (MAPS) provide habitat, enhance aesthetics, and improve water quality in the canal by reducing common pollutants such as nitrogen, phosphorus, and suspended solids. MAPS will be anchored into the canal bottom, allowing them to rise during flood/high-tide conditions and remain functional and resilient.

2. **ENHANCED TREE PITS/TRENCHES**
   Filters and stores stormwater flows to improve water quality prior to discharging into the canal, while providing significant rooting volume for street trees

3. **PERMEABLE PAVEMENT**
   Stormwater from Dade Boulevard will flow onto bike and pedestrian lanes constructed of permeable pavement, which looks similar to standard pavement but allows water to drain through its openings and into an underlying infiltration / storage trench. Permeable pavement will reduce the amount of stormwater flowing into the canal.

TODAY

ENHANCED

WATER MANAGEMENT BENEFITS

- Capture of roadway runoff helps to reduce peak flows (during high frequency events)
- Treatment of roadway runoff reduces hydrocarbons and heavy metal pollution
- Treatment uptakes nitrogen and phosphorus, reducing likelihood of algae blooms

ADDITIONAL BENEFITS

- Neighborhood Beautification
- Walking and biking paths
- Waterfront Seating
- Kayak drop-in points

JACOBS

MIAMIBEACH RISING ABOVE

BLUE GREEN INFRASTRUCTURE **PILOT PROJECT CONCEPT**

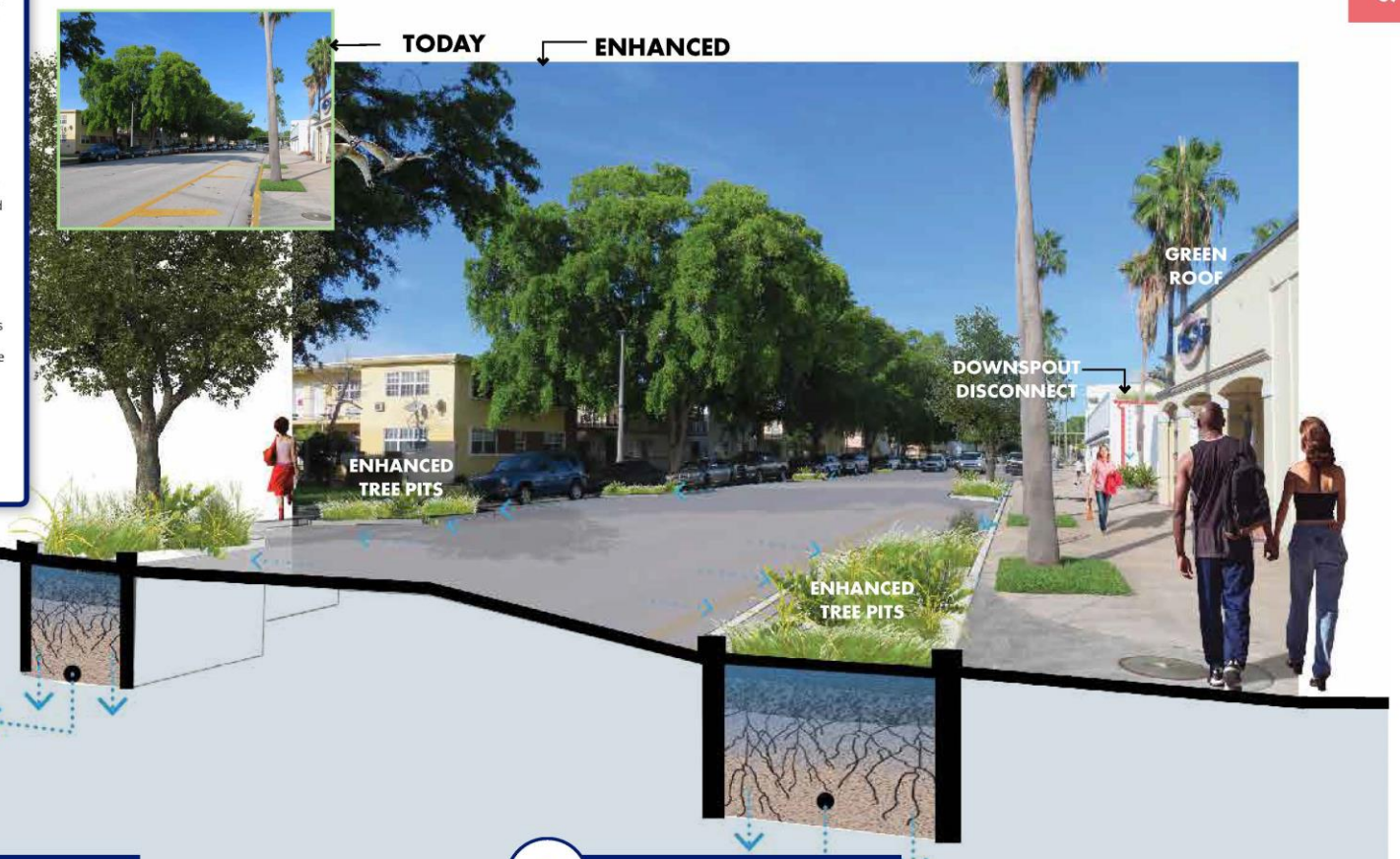
COMMERCIAL STREET

STRATEGIC VALUE

Commercial streets often **accommodate on-street parking**, curbs, and sidewalks serving varying land uses. Lessened driveway conflicts within these corridors provide opportunities for longer segments of **permeable pavement, trees, infiltration and storage trenches** to **improve water quality**.

HOW IT WORKS

1. **PERMEABLE PAVEMENT**
   Stormwater will discharge in defined permeable pavement parking areas. Permeable pavement looks like standard pavement but allows water to drain into an underlying infiltration trench. Permeable pavement will reduce stormwater flowing into private property, minimize soil compaction from parked vehicles on lawns, recharge groundwater, and filter stormwater.
2. **ENHANCED TREE PITS/BUMP-OUTS**
   Enhanced tree pits located in bump-outs will provide increased shade for residents, reduce traffic speeds on local roads, reduce stormwater discharges, and improve water quality. Enhanced tree pits will also provide significant rooting volume for trees and a diverse understory to contribute to a healthier native South Florida ecosystem.
3. **BALANCED ON-STREET PARKING**
   On-street parking will serve various modes of transportation and beenhanced with bump-outs and sidewalks accommodating lush plants to mitigate elevated surface temperatures, manage stormwater, enhance walkability, and improve aesthetics for neighborhood.
4. **GREEN ROOFS**
   Green Roofs accept stormwater to filter and absorb flows, as well as cool urban heat islands and provide habitat



WATER MANAGEMENT BENEFITS

- Capture of roadway runoff helps to reduce peak flows (during high frequency events)
- Treatment of roadway runoff reduces hydrocarbons and heavy metal pollution
- Treatment and infiltration of stormwater to recharge groundwater supplies and replenish the freshwater lens

ADDITIONAL BENEFITS

- Neighborhood Beautification
- Increased walking and biking opportunities
- Traffic calming
- Improved sidewalk seating opportunities

JACOBS

MIAMIBEACH RISING ABOVE

BLUE GREEN INFRASTRUCTURE **PILOT PROJECT CONCEPT**

NEIGHBORHOOD PARK

STRATEGIC VALUE

Parks provide a great opportunity to **collect, infiltrate, and store** stormwater during smaller, more frequent rain events. Permeable pavement, enhanced tree pits, bioswales and infiltration trenches may be used near park perimeters and access points. Rain gardens and constructed wetlands can be utilized within parks to **reduce** stormwater quantities, **improve** water and air quality, and **enhance** gathering spaces.

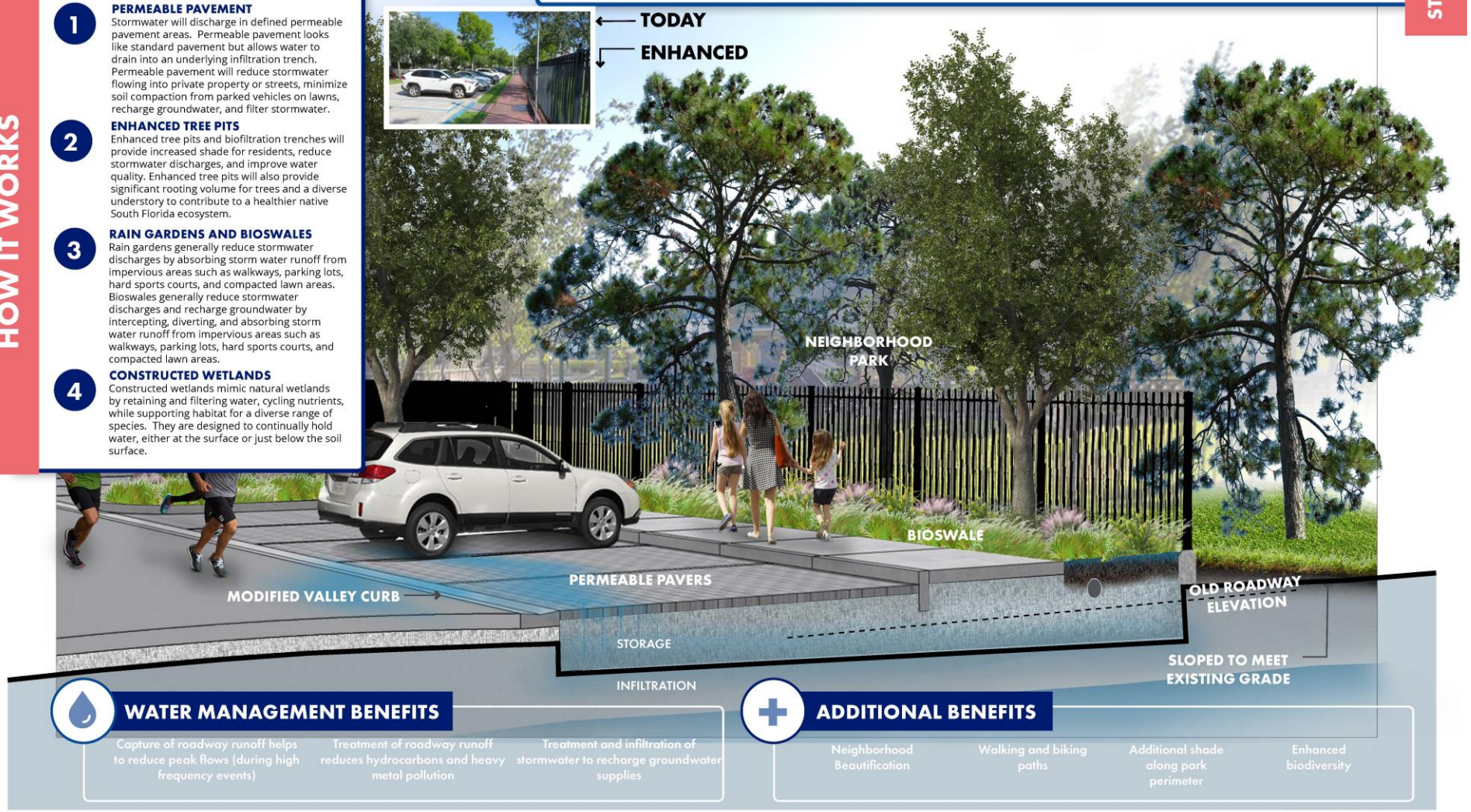
HOW IT WORKS

1. **PERMEABLE PAVEMENT**
Stormwater will discharge in defined permeable pavement areas. Permeable pavement looks like standard pavement but allows water to drain into an underlying infiltration trench. Permeable pavement will reduce stormwater flowing into private property or streets, minimize soil compaction from parked vehicles on lawns, recharge groundwater, and filter stormwater.

2. **ENHANCED TREE PITS**
Enhanced tree pits and biofiltration trenches will provide increased shade for residents, reduce stormwater discharges, and improve water quality. Enhanced tree pits will also provide significant rooting volume for trees and a diverse understory to contribute to a healthier native South Florida ecosystem.

3. **RAIN GARDENS AND BIOSWALES**
Rain gardens generally reduce stormwater discharges by absorbing storm water runoff from impervious areas such as walkways, parking lots, hard sports courts, and compacted lawn areas. Bioswales generally reduce stormwater discharges and recharge groundwater by intercepting, diverting, and absorbing storm water runoff from impervious areas such as walkways, parking lots, hard sports courts, and compacted lawn areas.

4. **CONSTRUCTED WETLANDS**
Constructed wetlands mimic natural wetlands by retaining and filtering water, cycling nutrients, while supporting habitat for a diverse range of species. They are designed to continually hold water, either at the surface or just below the soil surface.



WATER MANAGEMENT BENEFITS

- Capture of roadway runoff helps to reduce peak flows (during high frequency events)
- Treatment of roadway runoff reduces hydrocarbons and heavy metal pollution
- Treatment and infiltration of stormwater to recharge groundwater supplies

ADDITIONAL BENEFITS

- Neighborhood Beautification
- Walking and biking paths
- Additional shade along park perimeter
- Enhanced biodiversity

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JACOBS

MIAMIBEACH RISING ABOVE

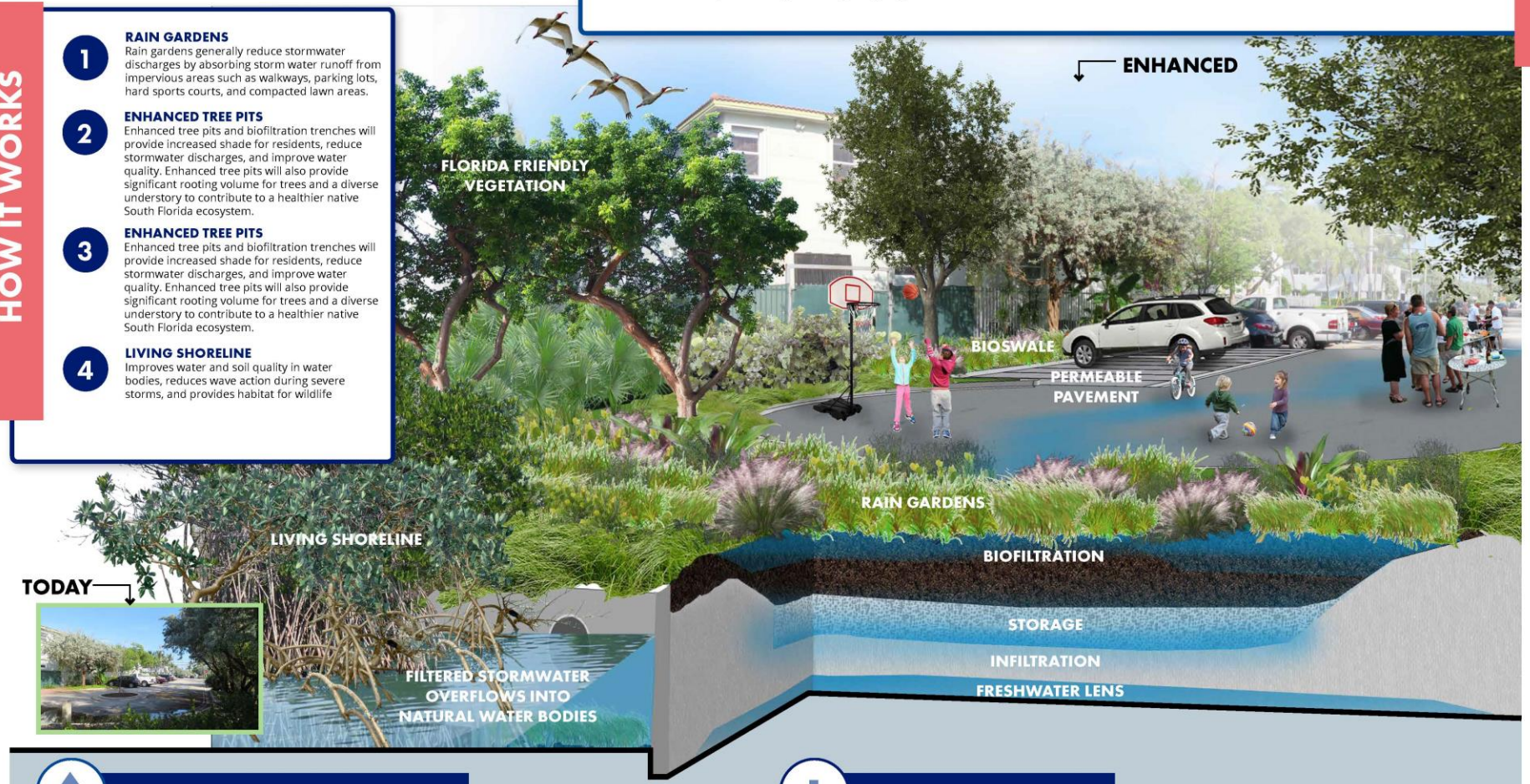
STREET ENDS

STRATEGIC VALUE

Often located at waterfront locations, street ends provide opportunities to incorporate BGSI which **absorb and filter stormwater** prior to discharging into canals, the Biscayne Bay, and the ocean, while **incorporating and enhancing habitat** for land and aquatic species, and **providing flexible parking and play spaces** for residents.

HOW IT WORKS

1. **RAIN GARDENS**
   Rain gardens generally reduce stormwater discharges by absorbing storm water runoff from impervious areas such as walkways, parking lots, hard sports courts, and compacted lawn areas.
2. **ENHANCED TREE PITS**
   Enhanced tree pits and biofiltration trenches will provide increased shade for residents, reduce stormwater discharges, and improve water quality. Enhanced tree pits will also provide significant rooting volume for trees and a diverse understory to contribute to a healthier native South Florida ecosystem.
3. **ENHANCED TREE PITS**
   Enhanced tree pits and biofiltration trenches will provide increased shade for residents, reduce stormwater discharges, and improve water quality. Enhanced tree pits will also provide significant rooting volume for trees and a diverse understory to contribute to a healthier native South Florida ecosystem.
4. **LIVING SHORELINE**
   Improves water and soil quality in water bodies, reduces wave action during severe storms, and provides habitat for wildlife



WATER MANAGEMENT BENEFITS

- Capture of roadway runoff helps to reduce peak flows (during high frequency events)
- Treatment of roadway runoff reduces hydrocarbons and heavy metal pollution
- Treatment uptakes nitrogen and phosphorus reducing likelihood of algae blooms

ADDITIONAL BENEFITS

- Neighborhood Beautification
- Walking and biking paths
- Waterfront Seating
- Kayak drop in points

BLUE GREEN INFRASTRUCTURE **PILOT PROJECT CONCEPT**

MIAMI BEACH GOLF CLUB

Scenario 1 retrofits the Miami Beach Golf Club with tactical blue green infrastructure interventions to reduce stormwater volumes and improve water quality. The existing water hazards and edges of the golf club would be enhanced and redesigned with blue green practices. **All eighteen holes and golf facilities would be maintained** more or less as they are today.

STRATEGIC VALUE

HOW IT WORKS

1. **GOLF CLUB REMAINS INTACT**
   The existing eighteen hole golf course remains largely intact and functioning much the same as it does today.
2. **RETROFIT THE WATER HAZARDS**
   The water hazards and out of bounds areas are redesigned to include BGI interventions such as stormwater detention, wet ponds and bioswales.
3. **TRANSFORM THE EDGES TO BGI**
   The edges of the golf club will be redesigned to include bioretention zones, pervious pavement and facilities may be retrofitted to include rainwater harvesting features.
4. **CONNECT TO DISTRICT SYSTEMS**
   The increased stormwater capacity and water quality treatment facilities may allow for networking the interventions to other BGI projects, such as Collins Canal.

Bioretention Edges

Permeable Pavement

Rainwater Harvesting

Wet Ponds

Detention Basin

1 RETROFIT

JACOBS

MIAMIBEACH RISING ABOVE

BLUE GREEN INFRASTRUCTURE **PILOT PROJECT CONCEPT**

MIAMI BEACH GOLF CLUB

Scenario 2 repurposes the back nine holes of the Miami Beach Golf Club to create a new **signature park** focused on integrating **passive and active recreation** with a robust blue green infrastructure program to mitigate stormwater volumes and improve water quality. In this high-level concept the **front nine holes** of the Golf Club **remain** intact as an executive course.

STRATEGIC VALUE

HOW IT WORKS

1. **GOLF CLUB FRONT NINE STAYS AS-IS**
   The land area of the front nine of the golf club is kept intact and reconfigured as necessary for an executive course.
2. **REPURPOSE THE BACK NINE**
   Consider repurposing the 65 acres comprising the back nine to accommodate BGI interventions and the potential for a substantial open space improvement.
3. **CREATE A SIGNATURE PARK SPACE**
   Repurposing the back nine into a signature modern park space. A park which balances environmental, social and economic considerations and provides a framework for district-wide resiliency.
4. **LINK BGI SYSTEMS IN PARK TO THE NEIGHBORHOOD**
   Stormwater storage and water quality measures may be designed to accept and integrate with adjacent BGI improvements, such as Collins Canal.

Bioretention Edges

Detention Basin

"Green" Recreation Center

Wet Ponds

Constructed Wetlands

2 REPURPOSE

JACOBS

MIAMIBEACH RISING ABOVE

BLUE GREEN INFRASTRUCTURE **PILOT PROJECT CONCEPT**

MIAMI BEACH GOLF CLUB

Scenario 3 reimagines the entire Miami Beach Golf Club to establish a 21st century **"Central Park"** for Miami Beach. This initial concept sketch explores the potential of a **new neighborhood** predicated on a **Living with Water** theme, a **recreation hub**, and a signature **wetland park** with hiking and biking trails and passive and active recreation opportunities.

STRATEGIC VALUE

HOW IT WORKS

1. **REIMAGINE ALL 145 ACRES**
   The entire publicly-owned golf club may be transformed into an amenity for all Miami Beach residents. One that responds to a holistic view of sustainability.
2. **MIAMI BEACH'S CENTRAL PARK**
   Reimagining the golf club as a new central park for Miami Beach. A 21st century open space working to bring people together while improving the city's resiliency.
3. **A POSTCARD DESTINATION**
   The potential is to create a new postcard moment for Miami Beach - one that advertises its proactive approach to mitigating climate change impacts and understanding urban placemaking.
4. **LIVING WITH WATER**
   Additional potential opportunities may include leveraging a portion of the land for public and private development, such as a mixed-use eco-district working to fulfill the City's objectives on sustainability, social equity and environmental justice.

Wetland Park

"Green" Edges

"Green" Recreation Hub

Living Machine Gardens

"Living with Water" Eco-District

3 REIMAGINE

JACOBS

MIAMIBEACH RISING ABOVE

BLUE GREEN INFRASTRUCTURE **PILOT PROJECT CONCEPT**

GARDEN APARTMENTS

STRATEGIC VALUE

Garden apartments as well as other **private properties** can be important partners in augmenting a comprehensive blue-green infrastructure system in Miami Beach. **Property owners can make a difference** citywide taking simple steps such as incorporating downspout disconnections, rain barrels, and tree plantings on their properties. Other BGSI BMPs such as permable pavement for parking spaces, rain gardens, green roofs, and enhanced tree pits can be used to manage stormwater on private property.

HOW IT WORKS

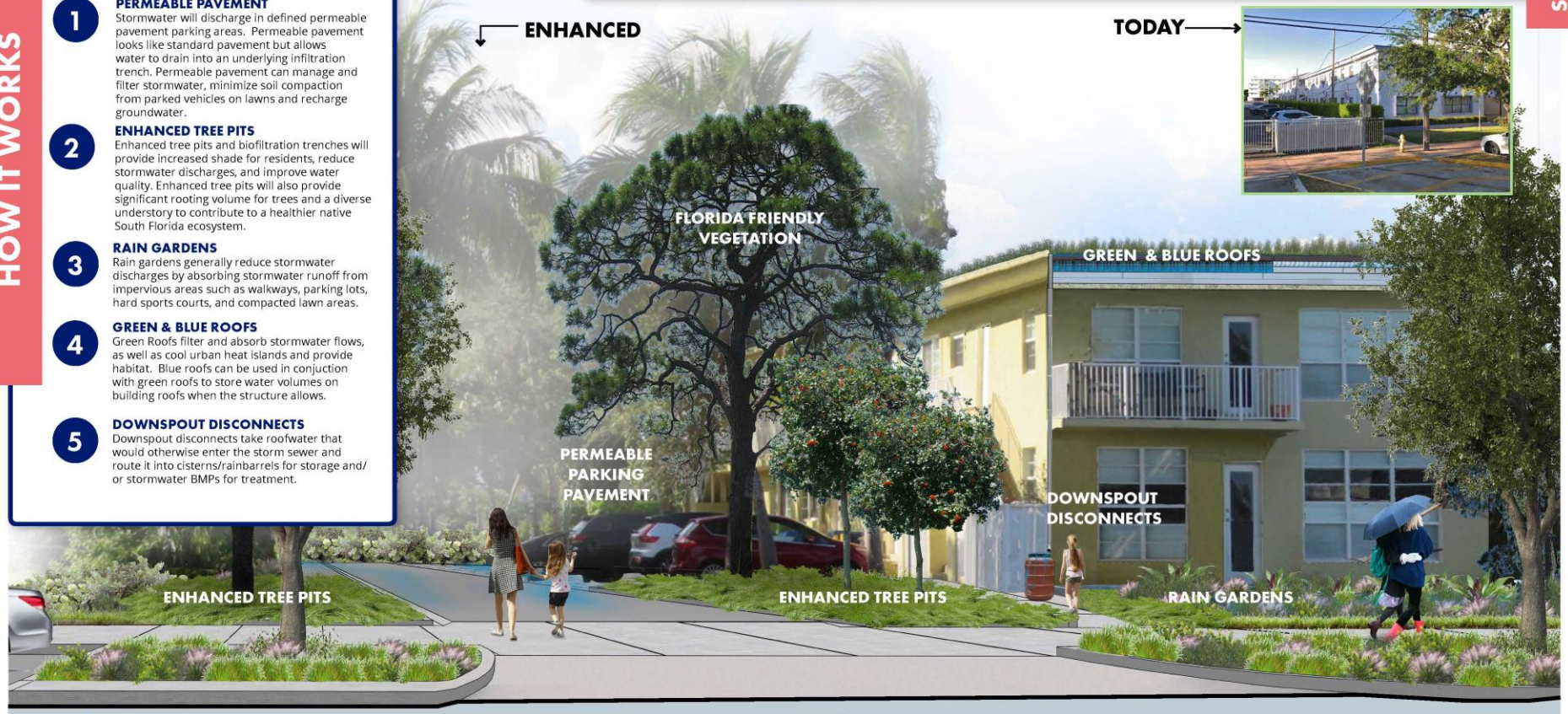
1. **PERMEABLE PAVEMENT**
Stormwater will discharge in defined permeable pavement parking areas. Permeable pavement looks like standard pavement but allows water to drain into an underlying infiltration trench. Permeable pavement can manage and filter stormwater, minimize soil compaction from parked vehicles on lawns and recharge groundwater.

2. **ENHANCED TREE PITS**
Enhanced tree pits and biofiltration trenches will provide increased shade for residents, reduce stormwater discharges, and improve water quality. Enhanced tree pits will also provide significant rooting volume for trees and a diverse understory to contribute to a healthier native South Florida ecosystem.

3. **RAIN GARDENS**
Rain gardens generally reduce stormwater discharges by absorbing stormwater runoff from impervious areas such as walkways, parking lots, hard sports courts, and compacted lawn areas.

4. **GREEN & BLUE ROOFS**
Green Roofs filter and absorb stormwater flows, as well as cool urban heat islands and provide habitat. Blue roofs can be used in conjuction with green roofs to store water volumes on building roofs when the structure allows.

5. **DOWNSPOUT DISCONNECTS**
Downspout disconnects take roofwater that would otherwise enter the storm sewer and route it into cisterns/rainbarrels for storage and/or stormwater BMPs for treatment.



WATER MANAGEMENT BENEFITS

- Capture of driveway and roof runoff helps to reduce peak flows (during high frequency events)
- Treatment uptakes nitrogen and phosphorus reducing likelihood of algae blooms
- Treatment of residential runoff reduces sediment transfer, as well as fertilizer, pesticides, bacteria, and hydrocarbon pollution

ADDITIONAL BENEFITS

- Neighborhood Beautification
- Reduction in urban heat island effect / cooler ambient temperatures
- Enhanced biodiversity and habitat
- Increased shade from trees plantings

JACOBS

MIAMIBEACH RISING ABOVE

MIAMIBEACH

Item 2.

COMMITTEE MEMORANDUM

TO: Sustainability and Resiliency Committee

FROM: Jimmy L. Morales, City Manager

DATE: September 25, 2019

SUBJECT: **SUSTAINABILITY COMMITTEE**

RESPONSIBLE DEPARTMENT:
Dave Doebler, Committee Chair

Analysis
VERBAL REPORT AT COMMITTEE MEETING.

ATTACHMENTS:

Description	Type
No Attachments Available	

MIAMIBEACH

Item 3.

COMMITTEE MEMORANDUM

TO: Sustainability Resiliency Committee Meeting

FROM: Jimmy L. Morales, City Manager

DATE: September 25, 2019

SUBJECT: **DISCUSS THE CITY'S PLAN TO ADDRESS FLOODING AS A RESULT OF EXTREME RAIN EVENTS AS WELL AS ANY LESSONS LEARNED**

RESPONSIBLE DEPARTMENT

Public Works

LEGISLATIVE TRACKING

Item C4 K - June 5, 2019 Commission Meeting

SPONSORED

Commissioner Samuelian

BACKGROUND

On May 16, 2019, the City of Miami Beach experienced an extreme rain event that resulted in some localized street flooding. Subsequently, a LTC was distributed on May 21, 2019 outlining some key facts associated with the event and the City's stormwater system handling of the event. The rain event, at its peak, had an intensity of 1.73 inches in a half hour and 0.50 inches in the subsequent half hour.

At the June 5, 2019 City Commission meeting, an item was referred to the Sustainability and Resiliency Committee to: 1) understand the anticipated frequency of these extreme rain events; 2) review how the City's systems performed during this specific extreme rain event and how the City measures performance; 3) identify any lessons learned for the City and community.

ANALYSIS

Although each rain event is unique, the events are typically categorized by storm frequency. Events whose total rainfall (or rain intensity) fall at or near a 5 year storm, would be categorized as an event with a 5 year return period. Specifically addressing the rain event on May 16, 2019, the peak rain intensity of the event was 2.23 inches per hour or almost a 5 year storm. However, when taking into account the front-loaded precipitation distribution (1.73 inches in the first half hour), the rain event is actually more representative of a 25 year storm.

It is important to note that the nomenclature, which refers to storm events, implies that the return

period of a storm is representative of its frequency. For example, a 10 year storm may imply that the storm will only occur once every ten years. This is not the case. Instead, the 10 year storm has a 10 percent chance of occurring in any given year. Applying this logic to the 5 year storm and the 25 year storm, their probability of occurrence would be 20% and 4%, respectively. Essentially, the storm can occur on a more frequent or less frequent basis than its return period.

Climate change appears to amplify the effects of extreme weather, thereby increasing the frequency of extreme storm events. Unfortunately, there is no clear consensus from the scientific community on the extent to which storm frequencies will increase. Nonetheless, we know that rain events may occur much more frequently than their respective return periods.

During the event in question, the stormwater system functioned as expected. However, the peak precipitation rate exceeded the instantaneous capacity of the drainage system resulting in localized street flooding. Once the rate of precipitation decreased to match system capacity, the standing water subsided in relatively short order.

Stormwater management systems are designed to provide a certain level of service, such as the 10 year 24 hour storm. However, in practice the capacity of these systems may be overwhelmed by larger, more intense, storm events. While these designs mitigate significant risk, they do not entirely eliminate the risk of flooding. Building infrastructure that addresses the most severe events would not be feasible from a cost, siting, permitting, and operational perspective. Additionally, there are events that exceed the capacity of even the most robust infrastructure – drainage systems designed for a 100 year storm cannot handle a 500 year storm event.

Public education and outreach is essential to help our residents and businesses better understand and mitigate risk. It is an important aspect of addressing these severe rain events effectively. This education is particularly important in low-lying areas that are susceptible to an increased risk of flooding. Through the City's various outreach and media channels, flood protection messaging is disseminated which continues to be enhanced and refined.

CONCLUSION

This information is being presented to the members of the Sustainability and Resiliency Committee for discussion and further direction.

Applicable Area

South Beach

Is this a Resident Right to Know item?	**Does this item utilize G.O. Bond Funds?**
Yes	No

ATTACHMENTS:

	Description	**Type**
🗋	Commission After Action	Memo
🗋	Extreme Rain Event Presentation	Memo

MIAMIBEACH

COMMISSION MEMORANDUM

TO: Honorable Mayor and Members of the City Commission
FROM: Commissioner Mark Samuelian
DATE: June 5, 2019

SUBJECT: REFERRAL TO THE SUSTAINABILITY AND RESILIENCY COMMITTEE TO DISCUSS THE CITY'S PLAN TO ADDRESS FLOODING AS A RESULT OF EXTREME RAIN EVENTS AS WELL AS ANY LESSONS LEARNED.

ANALYSIS

On May 16, 2019 the City of Miami Beach experienced an extreme rain event that resulted in disruptive flooding in Sunset Harbour and other neighborhoods and was reported by various media outlets (attached). In order to plan ahead and best prepare for these events, this referral item should:

1. Understand the anticipated frequency of these extreme rain events
2. Review how the City's systems performed during this specific extreme rain event (i.e. amount of flooding, time in the streets, etc) and how the City measures performance (eg. City stormwater management dashboard - example attached)
3. Identify any lessons learned for the City and community

Legislative Tracking

Commissioner Mark Samuelian

ATTACHMENTS:

Description

- Extreme Rain Event - 5/21 LTC
- Resident Email on Flooding
- Stormwater Dashboard Example
- re: Miami Beach Flooding Article

MIAMIBEACH
City of Miami Beach, 1700 Convention Center Drive, Miami Beach, Florida 33139, www.miamibeachfl.gov

Jimmy L. Morales, City Manager
Tel: 305-673-7010 , Fax: 305-673-7782

NO. LTC # **297-2019**

LETTER TO COMMISSION

TO: Mayor Dan Gelber and Members of the City Commission

FROM: Jimmy L. Morales, City Manager

DATE: May 21, 2019

SUBJECT: **CITY EXPERIENCES EXTREME RAIN EVENT**

The purpose of this Letter to Commission is to address the facts associated with the sudden and extreme rain event experienced on Thursday, May 16, 2019, which resulted in acute rain conditions in Sunset Harbour and other Miami Beach neighborhoods.

I would like to dissuade the speculation that pumps either "failed" or "turned on too late." The moment the storm began, the City deployed specialized teams to verify that the stormwater pump system was indeed operating properly. Pumps are not turned on manually; instead, they engage automatically when water in the systems reaches a certain level. The system functioned as expected during this event; however, the amount of rainfall received in a very short time exceeded the stormwater system's capacity.

Key facts associated with this rain event and the stormwater system capacity:

- According to the data captured at our City Hall weather station, 1.73 inches of rain fell in just 30 minutes. This is far greater than 0.30 inches of rain per hour, which is considered "heavy rainfall."
- To provide perspective, the 2.23 inches of rain that fell in just one hour is nearly half of what Miami-Dade has averaged during an entire month of May in the past 30 years. Please visit the South Florida Water Management District for more details. During the peak 30-minute period, we pumped more than 730,000 gallons of water out of the Sunset Harbour Neighborhood, which is more than an Olympic-sized swimming pool and translates to 1.5 million gallons of water per hour.
- The system is designed to deal with two challenges: preventing sunny day flooding caused by king tides and addressing flooding caused by stormwater. The improved system has worked very well with regards to sunny day flooding. In fact, the 12 king tides that we experienced in 2017 did not flood Sunset Harbour, even though they were higher than the most impactful event in 2013, which did cause substantial flooding in Sunset Harbour.
- With regards to stormwater management, the system is designed to drain a certain amount of water during a specific time-period. The critical factors are: the duration of rainfall and the intensity of the rain during that time. High intensity rain during a short period of time can overwhelm the stormwater system by introducing more water than it can process.

JM/ETC/RC/AK/EW/LBM

- The stormwater system will not prevent all flooding and private properties are encouraged to make improvements to reduce flood risks. Properties located below the base flood elevation (BFE) were particularly vulnerable to flooding. Low-lying private properties can reduce the immediate impact of flood water caused by intense rain storms by retrofitting interiors to handle flood waters and installing flood panels during the raining season in anticipation of rain events. Recall that the ULI team suggested that learning to live with water must be part of the resiliency program. There is no guarantee that the area will be dry, regardless of the intensity of a rain storm.
- Many of the photos submitted to the City were of ponding water in the grassy areas of public property or front yards. This is what these areas were intended to do during extreme rainfall events in order to protect the habitable areas of buildings. Consistent with the recommendations of the ULI panel these areas should continue to function in this way and the City will not be doing anything to eliminate short term standing water in green areas.
- We also received many reports of street flooding however the areas that reported street flooding either have not received stormwater improvements or those improvements have not been completed.

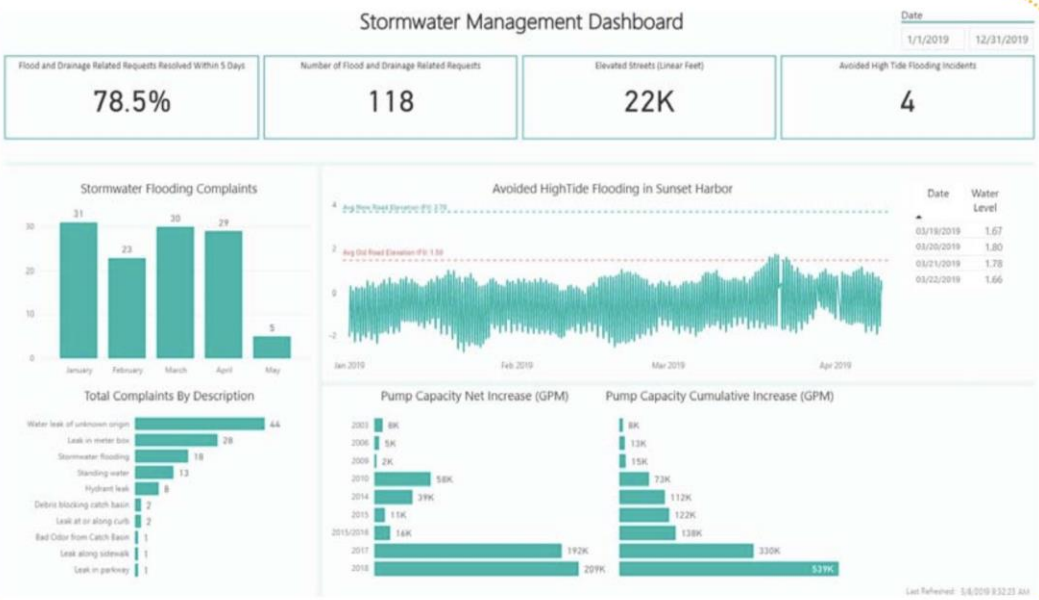
The City takes note of every rain event and is diligently exploring educational opportunities and policies to mitigate flood risks, including disincentivizing new construction from building at low elevations. Elevation is the best way to secure properties from flood risk. At your request, a City team member can offer potential solutions for your property's unique conditions. You may contact the Floodplain Manager, Mohsen Jarahpour at MohsenJarahpour@miamibeachfl.gov.

JM/ETC/RC/AK/EW/LBM

On May 22, 2019, at 9:55 AM, [redacted] wrote:

Hi Mark:
Were you aware of flooding last Thursday in Sunset Harbour? Azul Liquor got about 5 inches of rain. The Pubbelly restaurants, and Market clothing store flooded too, as well as Office Depot. I spoke with Eric Carpenter, who had been on site. He said the pumps worked as intended, but were simply overwhelmed by the sheer volume of water in such a short time. This does not leave the businesses in an enviable position.
Are they supposed to install their own supplemental pumping systems? Would the city allow them to connect, or would they just have to dump the water onto the street, where it would doubtless just flow back into their stores?
Summer time is the season for dramatic cloudbursts, (not to mention hurricanes). and perhaps pumps with greater capacity should be considered.
[redacted]

Example: Resiliency



heavy rain overwhelms miami beach

resiliency

May 18, 2019

susan askew

heavy rain overwhelms miami beach:

city says pumps worked and cleared flooded areas quickly

Once again, a heavy rainfall overwhelmed Miami Beach on Thursday making it difficult for the City's infrastructure, both old and new, to keep up. But City officials say once the rain began to lessen in intensity, the new stormwater pumps worked and cleared flooded areas quickly.

Businesses in the Sunset Harbour area, the first to see its roads raised to combat flooding from sea level rise, have continued to be impacted by heavy rains that even the new pumps can't keep up with sometimes.

Tonya Daniels, Miami Beach Director of Marketing and Communications, wrote in an email, "At 1:00 pm, 1.73 inches of rain fell in 30 minutes, and another 0.5 inches of rain fell in the following 30 minutes" for a total of 2.23 inches in the one-hour period between 1 and 2:00.

"Our team considers 'heavy rainfall' as 0.30 inches of rain per hour," Daniels wrote. "The rainfall intensity of yesterday's event far exceeded this rate."

For comparison, she said, for the last 30 years, Miami-Dade County has average 5.15 inches of rain during the month of May. "In one hour, we experienced approximately half the amount of rain as averaged in an entire month of May." She pointed out what many experts have said, "Recent data suggests that extreme rain events are occurring more often."

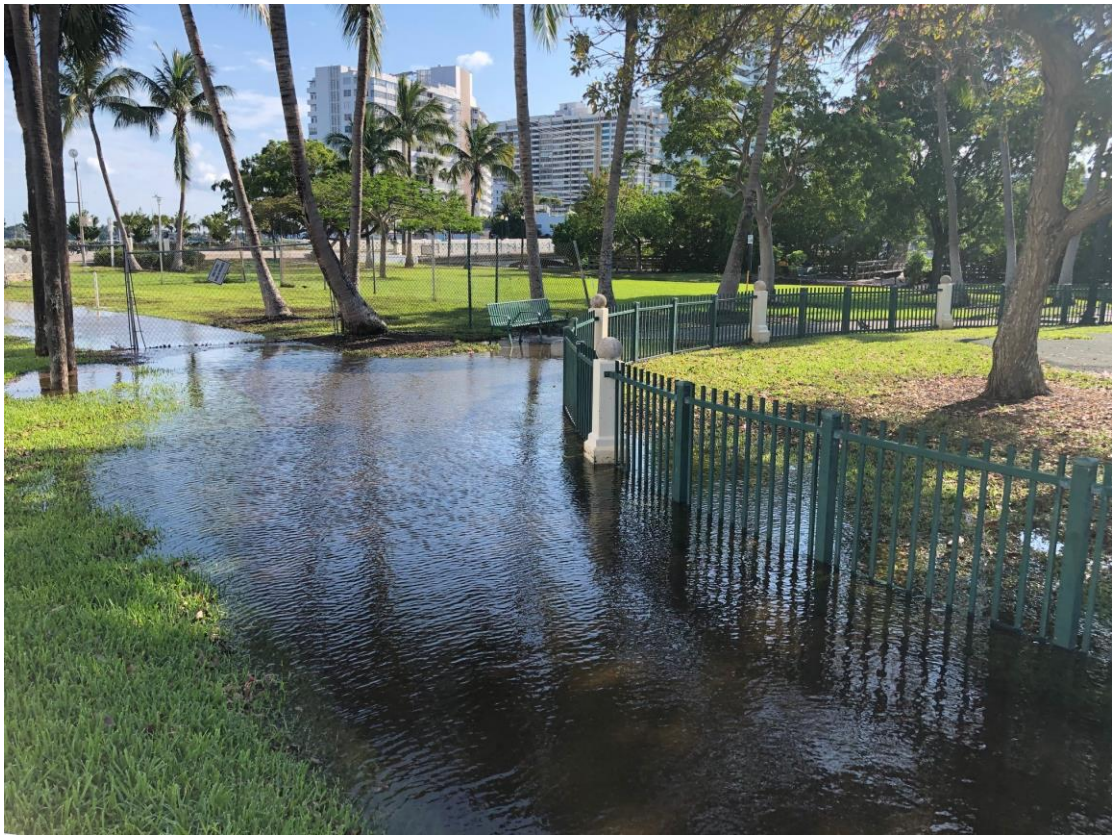
In response to Thursday's rain, Daniels said, "The City immediately deployed specialized teams and verified that pumps throughout the island operated properly. As soon as the rain began to slow down, standing water began to recede quickly. During the peak 30-minute period, we pumped more than 730,000 gallons of water out of the Sunset Harbour Neighborhood, which is more than an

Olympic sized swimming pool (660,000 gallons)."

"Prior to the installation of the pumps, a rainfall event of this magnitude would have caused catastrophic flooding throughout the city – flooding that would not have receded within an hour as we saw yesterday," Daniels wrote.

The City's statement came in too late Friday for us to talk with business owners in Sunset Harbour about the latest flooding.

Photo at top: 31st Street and Indian Creek, Thursday, May 16



Maurice Gibb Park in Sunset Harbour after Thursday's rain.

After Action Review
May 16, 2019 Rain Event

Sustainability and Resiliency Committee
July 19, 2019
Public Works Department
City Manager's Office- Resilience

Summary

The City of Miami Beach experienced a heavy rain event on May 16, 2019 from approximately **10:30 a.m. to 1:20 p.m.**

The stormwater system functioned as expected during this event, but the amount of rainfall received in a short time exceeded the system' s capacity. **High intensity rain during a short period of time overwhelmed the stormwater system by introducing more water than it can process.**

Flooding occurred in areas that have not received stormwater improvements or where those improvements have not been completed. However, low-elevation properties experienced some flooding.

Flood Extent & Impact

City Hall weather station recorded 1.73 inches of rain falling in just 30 minutes.

730,000 gallons were pumped in Sunset Harbour during the half hour peak.

Various businesses and streets were affected by flooding or standing water.

Timeline of Event

10:30 a.m. - Rain event started, and storm water crews were out monitoring the identified low-lying problem areas.

10:56 a.m. - Stormwater staff reported that all systems were operational and areas were free of standing water.

11:30-11:41 a.m.- Significant standing water found on areas of West Avenue. Alton & 5th area was also holding water.

12:30 p.m. - Very intense rain came down.

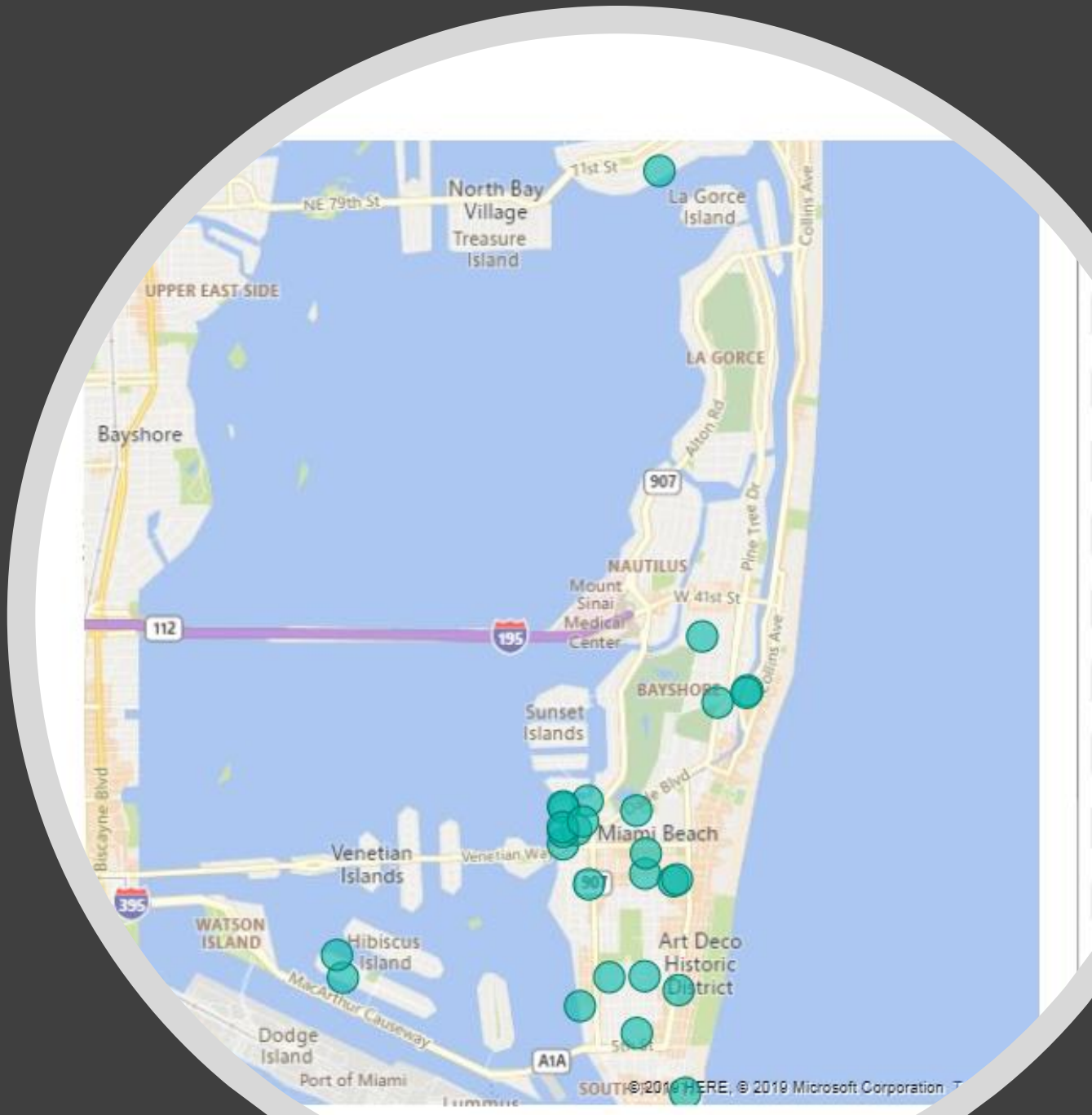
12:38-1:00 p.m. - Roy advised that various areas were flooded in Sunset Harbour. PW electrician confirmed that pumps were running.

1:04 p.m. – Rain started to slow down.

2-2:30 p.m. – Most of Sunset Harbour was dry. Operations moved to other affected areas.

3:40 p.m.- Portable pump was installed in Hibiscus Island to address flooding in the area.

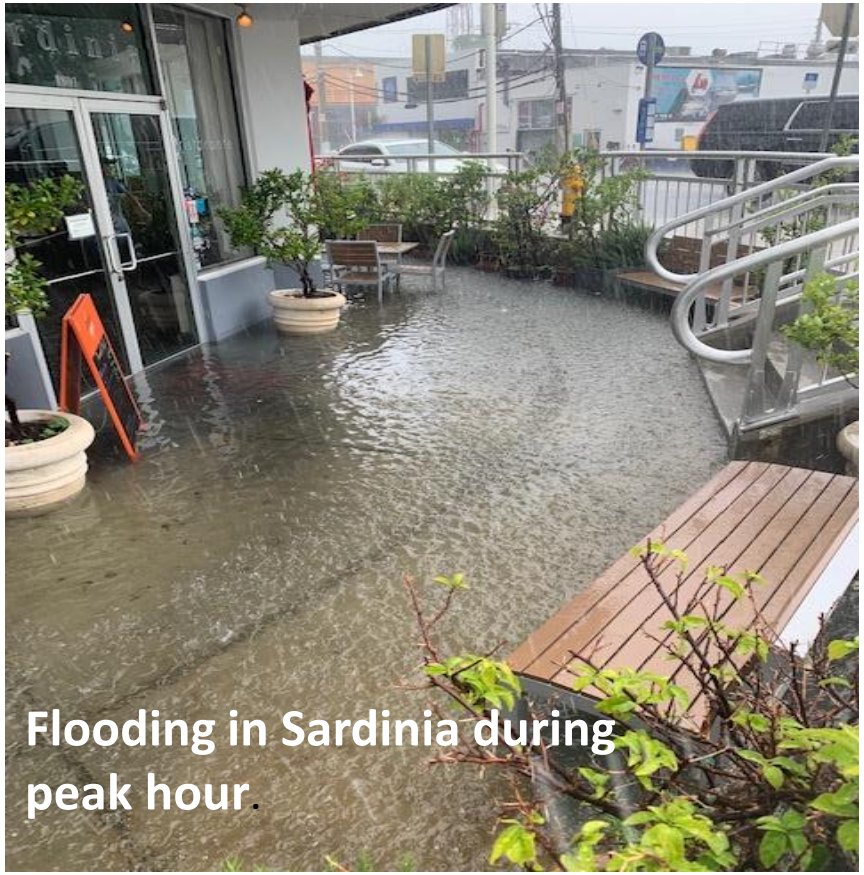
27 Flood/Standing Water Requests from Cityworks (includes EGov and phone calls to the Public Works Control Room)



Areas that Experienced Flooding

The following businesses and areas were affected by flooding or standing water:

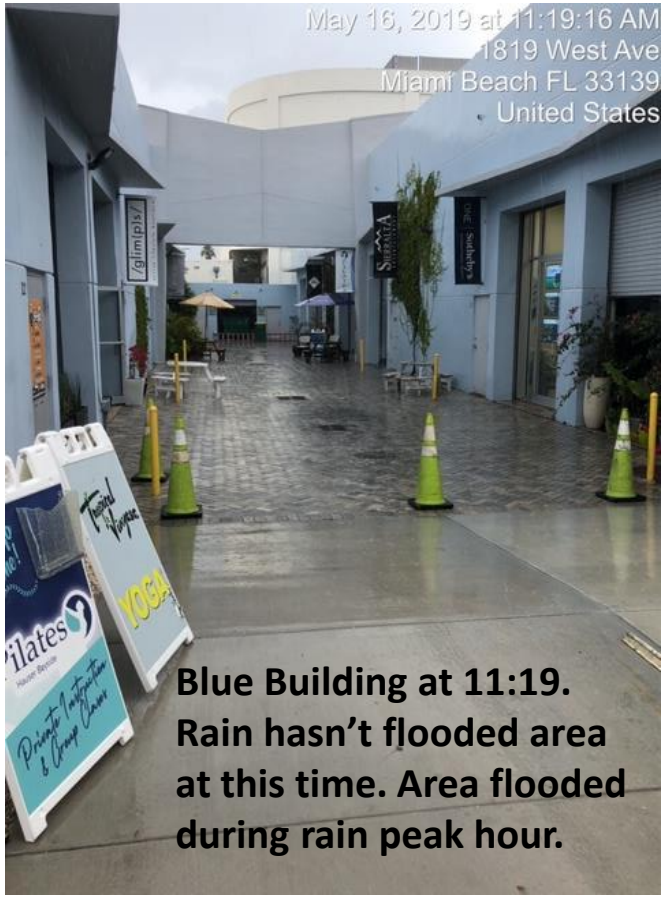
1. **TKS**
2. **Sardinia**
3. **Hibiscus Island**
4. **Sushi Garage**
5. **Blue Building court yard**
6. **Stiltsville**
7. **Office Depot parking lot**
8. **Public storage parking lot**
9. **I95 Exotic Rentals**
10. **Significant standing water in West Ave.**
11. **Standing water in Sunset Harbour**



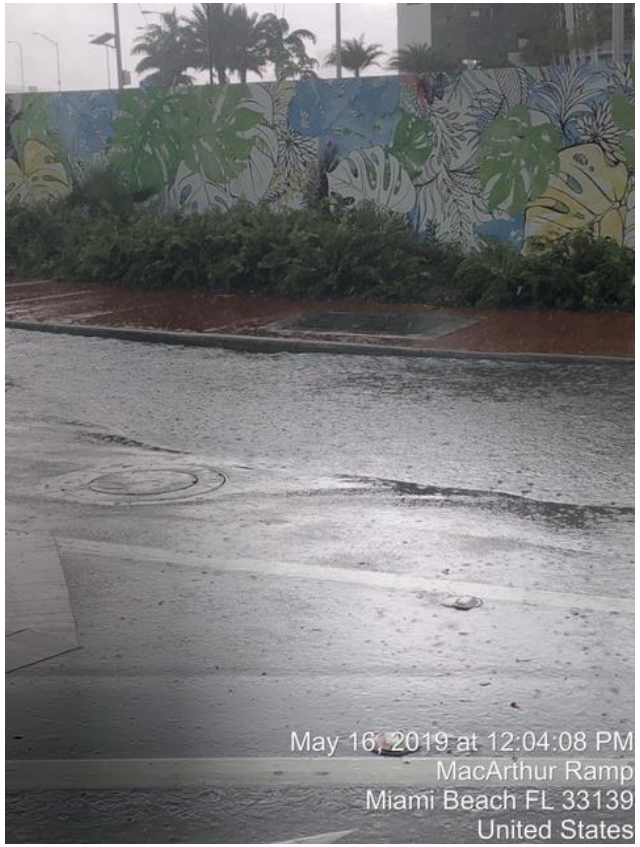
Flooding in Sardinia during peak hour.

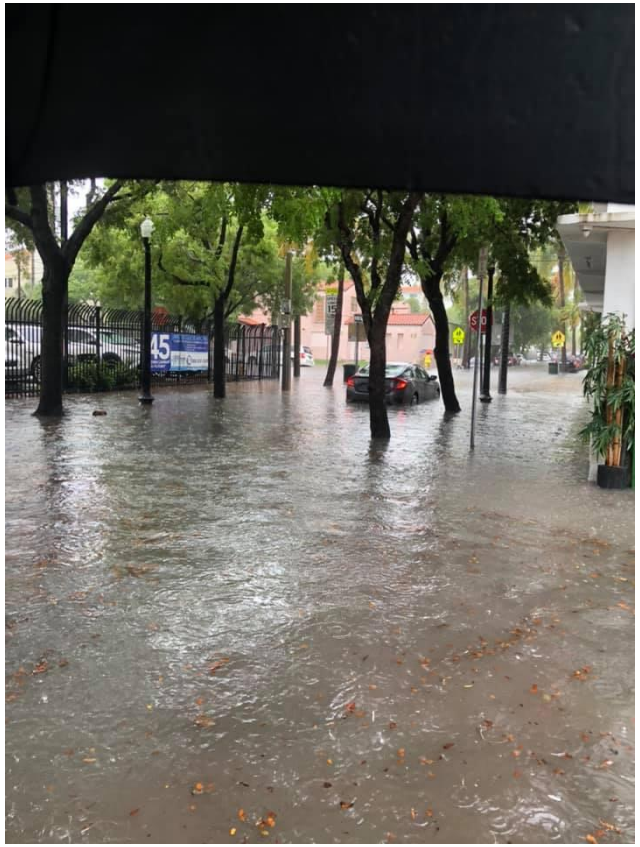
Beginning of Rain Event – Sunset Harbour

There is no flooding in the photographed areas 11:10am – 11:19am



Blue Building at 11:19. Rain hasn't flooded area at this time. Area flooded during rain peak hour.

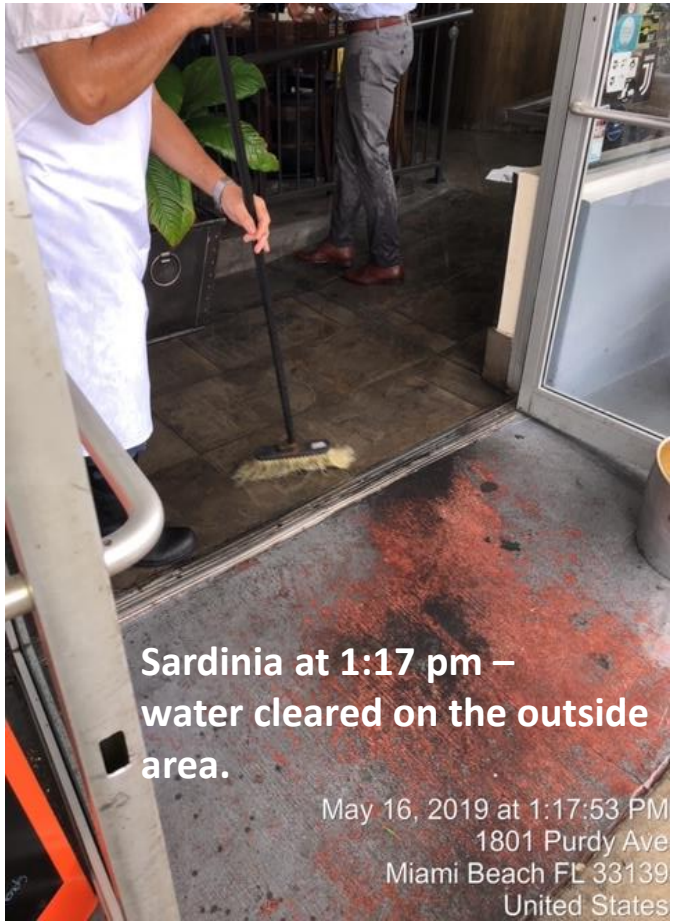




West Avenue, MacArthur ramp, Espanola Way Standing Water 11:12am and 12:04pm

Businesses Affected by Flooding – Sunset Harbour 12:52pm and 1:17pm

Sardinia during peak rain hour. At 12:52 Roy advises of flooding issues at Sardinia. Flooding is addressed by operations.



Sardinia at 1:17 pm – water cleared on the outside area.

Businesses Affected by Flooding – Sunset Harbour 2:01pm and 2:03pm

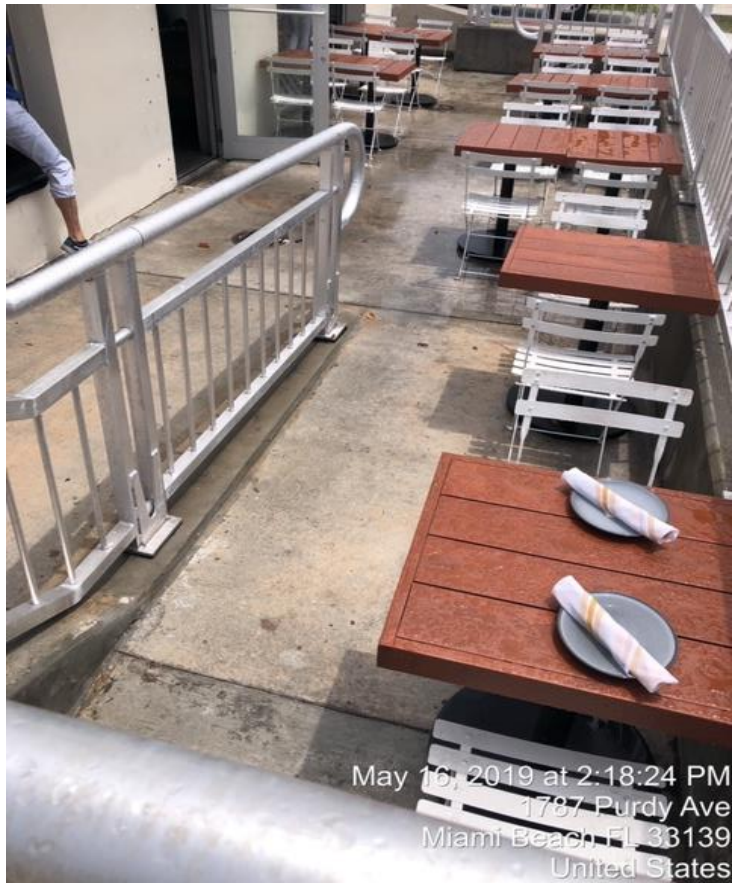
TKS

Public Storage- Private Parking Lot

Businesses Affected by Flooding – Sunset Harbour
At 2 p.m. – 2:18pm water is receding.

Sushi Garage

Stiltsville



Standing Water in Sunset Harbour Area
At 2 p.m. water has receded in most areas of Sunset Harbour.

Removal of Standing Water – Sunset Harbour

Small pump is used to remove standing water from I95 Exotic Rentals.

The photo shows a blue hose used to pump the water to the street.

Response to Rain Event From Staff

31 calls about flooding received in Public Works control room.

27 flooding requests captured in Cityworks

Public Works efforts included deployment of operations to check pumps, removing standing water from flooded areas, taking photos and communicating with businesses.

Temporary pumps were only deployed in Indian Creek Drive and Hibiscus Island. A small City owned pump was used to remove the water from the Blue Building and I95 Exotic Car Rental.

Impact From Rain Event

Traffic congestion in the following areas:

1. Indian Creek Drive & 29th Street
2. Alton Road & 5th Street
3. West Avenue between 8th – 15th Street

Business closures:

1. Sardinia
2. TKS
3. Sushi Garage
4. Stillsville

No damage to fleet

News Stories About Flooding Event

- Heavy Rain Causes Flooding in Miami Beach, NBC6: https://www.nbcmiami.com/on-air/as-seen-on/Heavy-Rain-Causes-Flooding-in-Miami-Beach_Miami-510032902.html
- Rainy weather causes flooding issues throughout Miami Beach, Channel 10: https://www.local10.com/news/florida/miami-beach/rainy-weather-causes-flooding-issues-throughout-miami-beach

Additional Data Needs

Damage to public infrastructure?

Extent and depth of flooding on roadways. Were there any road closures?

How long did businesses close for? Sardinia closed for 2-3 hours

Additional data on response from staff? (For example, how many people worked during the rain event? What type of equipment was used? What's the estimated cost of resources and equipment?)

Lessons Learned

What went well during event?

What are potential opportunities for improvement?

Opportunities for Improvement

System Information
&
Private Property Adaptation and Protection

No pump failures observed. In areas with new stormwater infrastructure, **the water drained quickly, but we need to better understand the areas where improvements were completed vs. areas displaying flood complaints.**

1. Recommendation: Create a GIS map of planned, completed and in-progress stormwater projects.

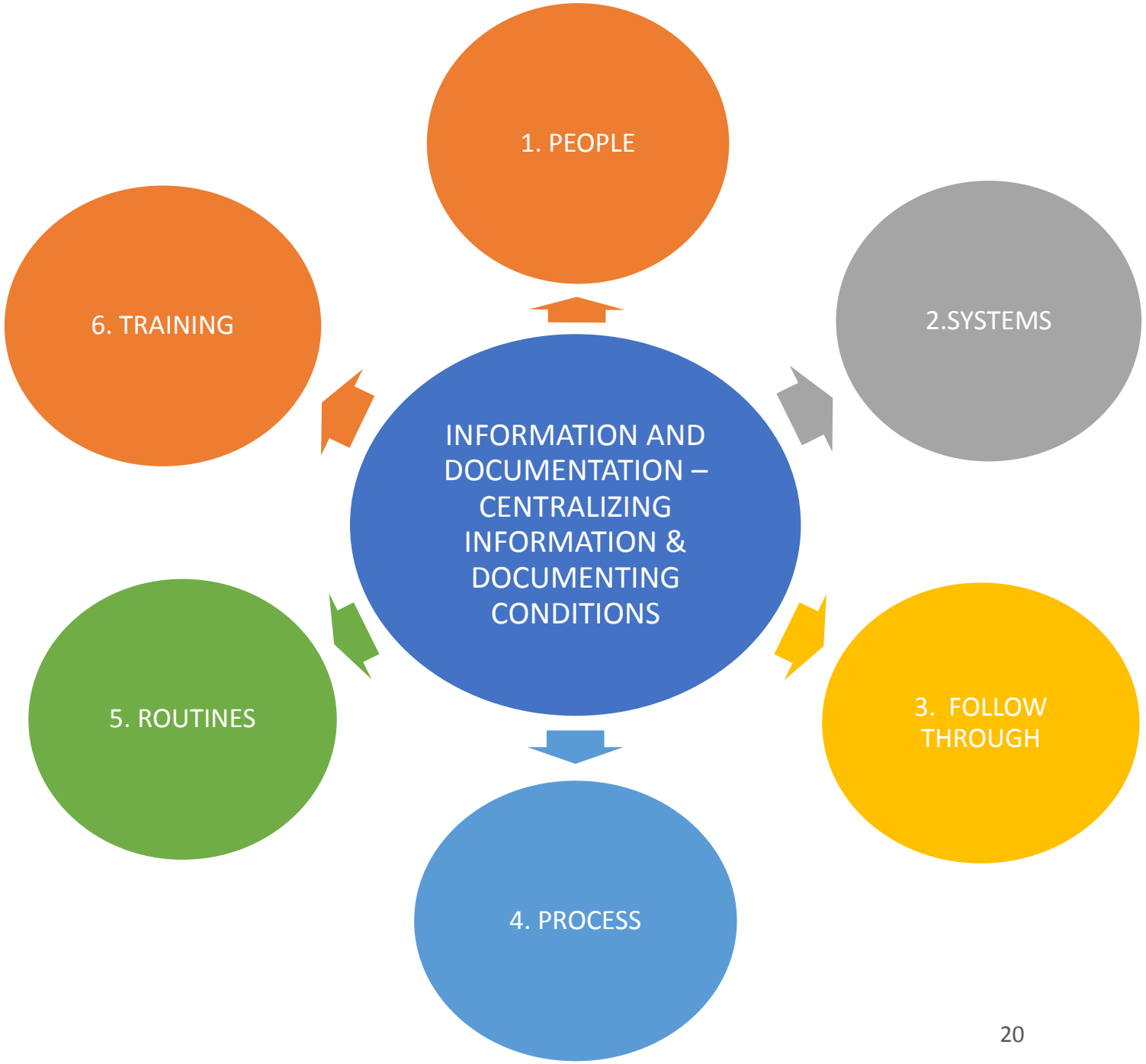
Some **commercial private properties below Base Flood Elevation** experienced minor flooding.

2. Recommendation: Referral at July 31th City Commission to SRC to discuss changes to City Code that may require higher elevation and/or an commercial property owner and tenant affidavit that the property is vulnerable to flooding.

Behavior change is needed

Opportunity for Improvement:

Connect the Dots



Opportunity for Improvement

Information and Documentation –

Analysis of Tracking Systems

Purpose of Tracking Systems

Purpose of the app is to track damage from natural disasters and rain events and report it to FEMA for reimbursement.

Crisis Track – Internal Tracking (employees)

Purpose of system is to manage and track residents' requests and work orders.

CityWorks – Work order management and tracking system

Cityworks®
Empowering GIS

Sources

Narrative from Rodolfo De La Torre and control room – frequent reporting activities.

CityWorks: Requests about flooding.

Photos about flooding from Public Works.

Data can be found in the M drive: M:\$CMB\Resiliency_Strategy_Team under “Rain Events 2019.”

Thank you

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Item 4.

COMMITTEE MEMORANDUM

TO: Sustainability Resiliency Committee Meeting

FROM: Jimmy L. Morales, City Manager

DATE: September 25, 2019

SUBJECT: **DISCUSSION PERTAINING TO AMENDMENTS TO THE CITY CODE REGARDING POTENTIAL REQUIREMENTS FOR HIGHER ELEVATION FOR NEW COMMERICAL CONSTRUCTION THAT IS VULNERABLE TO FLOODING**

RESPONSIBLE DEPARTMENT

Planning

LEGISLATIVE TRACKING

Item CF D - July 17, 2019 Commission Meeting

SPONSORED

Commissioner Aleman

ANALYSIS

VERBAL REPORT AT COMMITTEE MEETING.

Applicable Area

Not Applicable

Is this a Resident Right to Know item?	Does this item utilize G.O. Bond Funds?
Yes	No

ATTACHMENTS:

Description	Type
Commission After Action	Memo

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COMMISSION MEMORANDUM

TO: Honorable Mayor and Members of the City Commission
FROM: Jimmy L. Morales, City Manager
DATE: July 31, 2019

SUBJECT: REFERRAL TO THE SUSTAINABILITY AND RESILIENCY COMMITTEE - DISCUSSION PERTAINING TO AMENDMENTS TO THE CITY CODE REGARDING POTENTIAL REQUIREMENTS FOR HIGHER ELEVATION FOR NEW COMMERCIAL CONSTRUCTION THAT IS VULNERABLE TO FLOODING.

RECOMMENDATION

The administration recommends that the City Commission refer the item to the Sustainability and Resiliency Committee for discussion and recommendation.

ANALYSIS

Under the current city code, the first level of new construction containing non-residential floors is not required to meet the minimum flood elevation requirement of base flood elevation plus minimum freeboard (BFE +1'). In order for commercial floors to be located below this minimum threshold of BFE +1', the property owner must provide a flood panel system along the entire perimeter of the building containing storefront glass and door openings.

While such a system may work in concept, in reality, installing such a system with relatively short notice, is challenging at best. The city code was amended in 2015 to require that new commercial construction provide adequate interior floor to ceiling height to accommodate the future raising of adjacent streets and sidewalks. While this will allow for the interiors of floors of new buildings to be raised at some point in the future, concurrent with the raising of the adjacent street and sidewalk, it does not address the current potential of flooding from extreme rain events and tropical systems.

In order to address the issue of new commercial construction at sidewalk level, the administration is proposing that an amendment to chapter 54 of the city code be considered, to require that all new non-residential construction be built at a minimum of base flood elevation, plus one foot of freeboard.

CONCLUSION

The administration recommends that the City Commission refer the item to the Sustainability and Resiliency Committee for discussion and recommendation.

Legislative Tracking
Planning

Sponsor
Commissioner Aleman

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Item 5.

COMMITTEE MEMORANDUM

TO: Sustainability Resiliency Committee Meeting

FROM: Jimmy L. Morales, City Manager

DATE: September 25, 2019

SUBJECT: **DISCUSSION REGARDING PRIVATE SEAWALLS**

RESPONSIBLE DEPARTMENT:
City Manager's Office | Public Works

LEGISLATIVE TRACKING:
Item R7F - December 12, 2018 Commission Meeting

SPONSORED:
City Commission

Analysis
TO BE SUBMITTED WITH SUPPLEMENTAL.

UPDATE:
Supplemental #1 09.24.19 - Private Seawall Memo

Supplemental #2 09.24.19 - RFI Private Financing Options

Supplemental #3 09.24.19 - Seawall Steps Flyer

Supplemental #4 09.24.19 - Broward County Proposed ARTICLE XXV Resiliency Standards

ATTACHMENTS:

Description	Type
Private Seawalls Memo	Memo
RFI Private Financing Options	Memo
Seawall Steps Flyer	Memo
Broward County Proposed ARTICLE XXV Resiliency Standards	Memo

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City of Miami Beach, 1700 Convention Center Drive, Miami Beach, Florida 33139, www.miamibeachfl.gov

COMMITTEE MEMORANDUM

TO: Sustainability and Resiliency Committee

FROM: Jimmy L. Morales, City Manager

DATE: September 25, 2019

SUBJECT: **DISCUSSION REGARDING PRIVATE SEAWALLS**

BACKGROUND

At the December 12, 2018 City Commission meeting, during Item R7F, private seawalls were discussed and assigned to Public Works for further dialogue at the Sustainability and Resiliency Committee. Subsequently, at the January 29, 2019 Commission goals conference retreat, Commissioner Aleman requested that a financial seawall strategy be developed to encourage private property owners to retrofit seawalls. In addition, the Urban Land Institute's Advisory Services Panel Report (2018) recognized the need to create financing for private seawall enhancements. Private seawall elevation assessment and funding options were discussed at the March 20, 2019 Sustainability and Resiliency Committee and staff committed to conducting research and bringing back a framework of options as an interdisciplinary team.

At the June 26, 2019 Sustainability and Resiliency Committee, the seawall discussion was presented including public financing options such as a special assessment district. The Committee concurred with the staff recommendation to 1) survey the appetite of the financial and banking sector (within the appropriate procurement mechanism) to create innovative and economical financing packages to incentivize owners to invest in their property, and 2) to proceed with purchasing drone LIDAR equipment, as the best of the four options presented, to survey the elevation of sea walls with the purpose of providing adequate information needed for financing options.

ANALYSIS

The staff team has been moving forward with the phased approach presented on June 26, 2019. Phase one of the project is in progress and includes gauging interest with the banking industry and procuring the drone LIDAR equipment. On June 28, 2019, the city issued the Invitation to Industry Review Meeting (2019-316-AY) for Financing Options for Private Property Resiliency Improvements (Attachment 1). In concept, the city's role would be a facilitator assisting property owners obtain private financing and vetting a pool of contractors. Four banks responded and met with staff. While three banks did not have interest, one has experience with community-based partnerships that aggregate private properties, generate working capital, and provide low-interest loans.

As an additional method to encourage property owners to plan for seawall elevation over time, staff created a guidance document to provide steps and resources (Attachment 2). This will be provided on MBRisingabove.com and will be distributed through the city's communication's channels to bring attention to the need to plan for seawall replacements over time and in light of our vulnerabilities to tidal flooding.

Phase one of this effort also includes obtaining an understanding of existing private seawall elevation citywide. Staff utilized budgetary savings to procure drone LIDAR, equipment needed to determine the height of the seawalls. Having this equipment in-house will also be beneficial for multiple programs, such as dune management and disaster recovery surveying. Training will take place in October and flying will begin the first week in November. The time-frame for completion is approximately three-to-four months, weather permitting. Staff will prioritize areas with anecdotally low-lying seawalls that have been overtopped during high tides and storm events and that have impacted public storm drainage infrastructure. The drone LIDAR can be conducted without accessing private property and will provide the highest quality data. Public Works will communicate the purpose and the timing of the project to neighborhoods.

LEGISLATION

Legislation is an important tool to improve resilience through the elevation of seawalls for sea level rise over time. On June 8, 2016, the city established higher elevation standards through Resolution 2016-29454. At this time, the seawall elevation for new construction was changed from 3.2 feet NAVD88 to 5.7 feet NAVD88. For existing seawalls being replaced/ repaired, not associated with new building construction, a minimum of 4.0 NAVD88 elevation is required, with the design to accommodate height to a minimum of 5.7 NAVD. At the time, the city did not address the issue of seawalls being in “good repair” or more specifically the potential for tidal waters overtopping barriers and impacting adjacent property and public right-of-way.

Other governments in our region are also taking action in this area. Recently, on August 22nd, 2019, the Broward County Planning Council approved draft “Resiliency Standards for Tidal Flood Protection” (Attachment 3). The Planning Council will be transmitting the policy to the state for review. The draft standards will then be scheduled for public hearing and for consideration of adoption by the Broward County Commission. Cities within the would then need to adopt their own ordinances within two-years.

The purpose of the draft Broward County standards is to:

(a) Provide a standard for flood mitigation infrastructure that serves as a barrier to tidal flooding, not seepage, by accounting for water levels predicted under combined conditions of sea level rise, high tides and high frequency storm surge through the year 2070; and,
(b) Ensure new shoreline structures and major shoreline improvements are designed for use as tidal flood barriers with application of consistent standards that account for future tidal flood conditions and coastal water levels predicted with sea level rise in accordance with current regional sea level rise projections, as updated and adopted by the Broward County Board of County Commissioners.

Overtopping of flood barriers is addressed within the draft ordinance: “All property owners must maintain a tidal flood barrier in good repair. A tidal flood barrier is presumed to be in disrepair if it allows tidal waters to flow unimpeded through or over the barrier and on to adjacent property or public rights-of-way. Failure to maintain flood mitigation infrastructure shall be a citable offense.” Requirements for correction, including time frames, are provided as well.
The draft Broward standards also includes a definition for tidal flood barriers. It expands the definition beyond seawalls: “Tidal flood barrier means any structure or shoreline feature, including but not limited to, berms, canal banks, green-grey infrastructure, seawalls, seawall caps, upland stem walls, or other infrastructure that impedes tidal waters from flowing onto adjacent property or public rights- of-way, located within or along a tidally-influenced area. This

definition is not meant to include rip rap, derelict erosion control structures or permeable earthen mounds that do not provide an impermeable water barrier to tidal flooding."

RECOMMENDATION

This information is presented to the members of the Sustainability and Resiliency Committee as a status update and recommendation for next steps. Staff will move forward with the drone LIDAR project, continue to conduct meetings with the banking industry, and monitor any funding opportunities. Staff also recommends updating the city's legislation to include 1) an expanded definition of tidal flood barriers, and 2) require tidal flood barriers to be in good repair. For the purpose of resilience, a tidal flood barrier is presumed to be in disrepair if it allows tidal waters to flow unimpeded through or over the barrier and on to adjacent property or public rights-of-way.

Attachments:

Attachment 1: RFI Private Financing Options
Attachment 2: Seawall Steps Flyer
Attachment 3: Broward County Proposed ARTICLE XXV Resiliency Standards

MIAMIBEACH

Procurement Department
1755 Meridian Avenue, 3rd Floor
Miami Beach, Florida 33139

INVITATION
TO
INDUSTRY REVIEW MEETING
2019-316-AY
FOR
FINANCING OPTIONS FOR PRIVATE PROPERTY RESILIENCY IMPROVEMENTS

1. Background. The City of Miami Beach is actively investing in aging infrastructure, adapting to climate change and committing to building resilience on several fronts. The city is improving its aging infrastructure through water, wastewater and stormwater multi-year and multi-million dollar programs. In particular, the stormwater investments are addressing reducing risk for today's storms and flooding issues and tomorrow's sea level rise scenarios. Through the recently approved $439 million general obligation bond program, the city is also investing in public neighborhood improvement projects.

Over the last few years, the city has updated its land use development regulations for new construction to address water retention, setbacks and increase in base flood and freeboard elevation. These measures also contemplate sea level rise scenarios to reduce the risk to the new inventory of buildings.

2. Purpose. While public investments and regulations are fully underway, the city realizes that the private homeowner, business owner and land owner need to take steps to invest in and protect personal private property. These investments, while beneficial in the long run, can be rather expensive in the short term. The City of Miami Beach is interested in gauging market interest in addressing this new challenge and opportunity.

The city is interested in learning about financing options that are currently available or surveying the appetite of the financial and banking sector to create innovative and economical financing packages to incentivize owners to invest in their property. Private property resiliency improvements may include, but are not limited to replacing or constructing seawalls, flood proofing measures, elevation, etc.

The size and scope of potential customer base is the four-county Southeast Florida Climate Change Compact (Compact) region which includes Palm Beach, Broward, Miami Dade and Monroe counties and more than 100 cities. The City of Miami Beach and its Compact partners realize the need to address and invest in private improvements to truly make South Florida resilient and able to bounce back quickly in the event of storms and flooding situations. We also realize that governments are not in the banking and lending business. Through the industry review meetings, it is our hope to create interest and spark creativity to create a fully run third party program option for our private property owners. It is also our intent to help make investment in adaptation as easy as possible for residents and businesses.

Parties that currently offer or may be interested in creating financing options for private property resiliency improvements may schedule an industry review meeting with city representatives by contacting:

Arju Yudasto, Contracting Officer I
City of Miami Beach Procurement Department
ArjuYudasto@MiamiBeachFL.gov
305-673-7490, extension 26695

Meetings will begin to take place as early as July 15, 2019 and may be held in person or via teleconference. If you are interested in scheduling a meeting you may contact Arju Yudasto at your earliest convenience.

Any questions regarding the industry review meeting process, should be submitted Arju Yudasto.

MIAMI BEACH IS RISING ABOVE ARE YOU?

MIAMIBEACH RISING ABOVE

STEPS FOR UPGRADING YOUR OLD SEAWALLS AND OTHER OPTIONS TO REDUCE FLOOD RISK

As the city continues to upgrade aging infrastructure, invest in public spaces and adapt to climate change, you too can play a role and protect your home. The sea level rise projection from the Southeast Florida Climate Change Compact provides information about the importance of short and long-term planning. The city ensures that new seawalls and renovated seawalls are built to a higher elevation.

There are many ways to reduce flood risk. If your seawall is old, in need of repair, or is just not functioning properly over time, here are the steps to upgrade, invest and protect your home. Investing in your seawall can protect against tides now and for years in the future.

WHY IS REDUCING FLOOD RISK IMPORTANT?

- 93% of buildings in Miami Beach are located in a FEMA special flood hazard area (SFHA).
- One out of four residents are not satisfied with their home's flood risk protections. (source: 2019 Resident Survey)

1. Call the City of Miami Beach Floodplain Manager, your local professional expert in FEMA rules related to flood protection and insurance. The manager can provide guidance and common tips to help reduce the risk of flooding now and in the future for your private home and property. It's best to obtain an Elevation Certificate before your site visit. Contact the City's Floodplain Manager to see there is an Elevation Certificate on file and to schedule a site visit. 305.673.7610.

Options include higher seawalls, home elevation, wet flood proofing, dry floodproofing, raising mechanical electrical and plumbing, redirecting rain and flood waters through techniques like elevated driveway edges, providing drainage from the structure, and increasing green space.

2. Call your insurance agent to understand the details of your policy and ask if any investments in your property can reduce flood insurance or other insurance costs.

3. Get quotes by calling a few licensed general contractors, professional engineers, or other construction professionals. Share the ideas from your discussion with the Floodplain Manager and your insurance agent. Do your homework, check references, and compare costs. Your contractor too may have suggestions.

4. Consider financing and payment options. Call your local banker and apply for a home equity loan or construction loan if that is the right move for you.

5. Hire a qualified and knowledgeable contractor. If you are upgrading your seawall, as a start, visit www.MBRisingAbove.com for a list of contractors. While many contractors do work throughout Miami-Dade County, these contractors have performed work on our public seawalls. Permitting is required and is typically handled by the seawall contractor. Permits are needed from the city, the County, the State, and the Army Corps of Engineers.

6. Construct your new seawall, including all inspections to close out your permits. The typical lifespan of a seawall is 30 to 50 years.

Thank you for doing your part and keeping Miami Beach Rising Above!

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PROPOSED:

ARTICLE XXV. - RESILIENCY STANDARDS FOR TIDAL FLOOD PROTECTION

Sec. 39-404 – Purpose and intent.

The purpose of this article is to establish a consistent minimum elevation for tidal flood barriers that will:

(a) Provide a standard for flood mitigation infrastructure that serves as a barrier to tidal flooding, not seepage, by accounting for water levels predicted under combined conditions of sea level rise, high tides and high frequency storm surge through the year 2070; and,
(b) Ensure new shoreline structures and major shoreline improvements are designed for use as tidal flood barriers with application of consistent standards that account for future tidal flood conditions and coastal water levels predicted with sea level rise in accordance with current regional sea level rise projections, as updated and adopted by the Broward County Board of County Commissioners.

Section 39-405 – Applicability. This article applies to all new tidal flood barriers, substantial improvements to shorelines and shoreline structures and the installation of any fixed infrastructure attached to tidal flood barriers (such as mooring structures).

Sec. 39-406 - Definitions. For the purposes of this article, the following terms, phrases, words, and their derivation shall have the meanings given herein, except when the context clearly indicates a different meaning. In the interpretation and application of this article, the definitions provided for herein shall control over definitions which that may be included in other documents or manuals, including, but not limited to, the Florida Building Code. Words used in the present tense include the future tense, words in the plural number include the singular number, and words in the singular number include the plural number. The word "shall" is mandatory and the word "may" is permissive.

Berm means an earthen mound designed with impermeability to resist the flow of tidal waters through to an adjacent property or public rights-of-way.

Canal bank or berm is the level space separating a waterway from an inland area, often elevated and constructed of compacted soil.

Tidal flood barrier means any structure or shoreline feature, including but not limited to, berms, canal banks, green-grey infrastructure, seawalls, seawall caps, upland stem walls, or other infrastructure that impedes tidal waters from flowing onto adjacent property or public rights- of-way, located within or along a tidally-influenced area. This definition is not meant to include rip rap, derelict erosion control structures or permeable earthen mounds that do not provide an impermeable water barrier to tidal flooding.

Green-grey infrastructure or materials is a combination of engineered and natural features that provide environmental qualities and ecosystem value.

Mooring structure means a boat dock, slip, boat davit, hoist, boat lift, floating vessel platform, personal water craft / jet ski platform, mooring pile or a similar structure attached to land or a seawall, to which a vessel can be moored.

North American Vertical Datum (*NAVD88* or NAVD) means the vertical control for datum of orthometric height established for vertical control surveying in the United States of America based upon the General Adjustment of the North American Datum of 1988. NAVD88 replaced the previously used datum, National Geodetic Vertical Datum (NGVD29).

Public nuisance means injurious to the safety or health of the entire community or neighborhood, or any considerable number of persons, or unlawfully obstructs the free passage or use, in the customary manner, of any public right-of-way.

Rip-rap means a foundation of unconsolidated boulders, stone, rubble, concrete without protruding rebar or similar materials placed on or near a shoreline to mitigate wave impacts and prevent erosion.

Seawall means the vertical or near vertical (often interlocking) structures placed between an upland area and a waterway or waterbody for erosion control.

Seawall cap means the concrete box structure (usually reinforced) which connects seawall panels, piles and anchoring system (if present) together at the top.

Shoreline means the tidally influenced area where land meets water.

Substantial repair or rehabilitation means:

a. Any modification to shoreline or shoreline structures along more than fifty percent (50%) of the length of the property's shoreline;

b. Any modifications, alterations or installation of appurtenant structures (such as mooring structures) which exceed 50% of the cost of a tidal flood barrier along the property's shoreline.

Tidally-influenced areas means a waterway with water level changes in response to the daily tide.

Sec. 39-407 - Minimum Elevations for Coastal Infrastructure within Tidally-Influence Areas.

(a) All new or substantially rehabilitated seawalls, seawall caps, canal banks or berms shall perform as tidal flood barriers. Tidal flood barriers shall have a minimum elevation of 5.0 feet NAVD88. Applications for new or substantially rehabilitated tidal flood barriers submitted prior to January 1st 2035 may be permitted a minimum elevation of 4.0 feet NAVD88 if designed and constructed to accommodate a minimum elevation of 5.0 feet NAVD88 by January 1, 2050.

(b) All property owners must maintain a tidal flood barrier in good repair. A tidal flood barrier is presumed to be in disrepair if it allows tidal waters to flow unimpeded through or over the barrier and on to adjacent property or public rights-of-way. Failure to maintain flood mitigation infrastructure shall be a citable offense. The owner of the tidal flood barrier shall demonstrate progress towards repairing the cited defect within sixty (60) days of receiving notification and complete repairs within three hundred sixty-five days (365) of receipt of the citation. If the required repair meets the substantial repair threshold, the property owner shall design, obtain permits, and cause to be constructed seawall improvements that meet

the minimum elevation and design requirements within three hundred sixty-five (365) days of receipt of the citation.

(c) Tidal flood barriers below a minimum 5 feet NAVD88 elevation shall be improved, designed and constructed so as to prevent tidal waters from impacting adjacent properties or public rights-of-way. Causing, suffering or allowing the trespass of tidal waters onto adjacent property (public or private) shall be declared a public nuisance, a citable offense, and require abatement. The owner shall demonstrate progress toward addressing the cited concern within sixty (60) days of receipt of notification and complete the construction of an approved remedy within three hundred sixty-five (365) days of citation.

(d) Tidal flood barriers shall be designed and constructed to prevent tidal waters from flowing through the barrier while still allowing for the release of upland hydrostatic pressure.

(e) To the extent practicable, tidal flood barriers shall be designed and constructed to adjoin immediately proximate tidal flood barriers to close gaps and prevent trespass of tidal water.

(f) A tidal flood barrier along the property's entire shoreline shall be constructed as part of substantial repairs or rehabilitation.

(g) All tidal flood barriers shall be constructed with natural limerock rip-rap, or other approved habitat enhancement, at the waterward face of the structure.

(h) Property owners are encouraged to consider approaches and materials that enhance the biological value of traditional (flat surface) seawalls and flood barriers with the incorporation of living shoreline features and the use of hybrid green-grey materials, and the use of biological forms, where practicable.

(i) This section shall not be construed to require the installation of a seawall where other flood protection measures serve as an equally effective tidal flood barrier.

(j) Tidal flood barriers capable of automatically being elevated in advance of high tides to prevent tidal flooding are permissible. Automation cannot require daily human intervention.

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Item 6.

COMMITTEE MEMORANDUM

TO: Sustainability Resiliency Committee Meeting

FROM: Jimmy L. Morales, City Manager

DATE: September 25, 2019

SUBJECT: **DISCUSS THE USE OF PESTICIDES, HERBICIDES, AND FERTILIZERS ON BOTH PUBLIC AND PRIVATE PROPERTIES.**

RESPONSIBLE DEPARTMENT:
Environment and Sustainability

LEGISLATIVE TRACKING:
Item C4 V - March 13, 2019 Commission Meeting

SPONSORED:
Commissioner John Aleman

Analysis
MEMO ATTACHED.

ATTACHMENTS:

Description	Type
Draft Fertilizer Ordinance Memo	Memo
Draft Fetilizer Ordinance	Ordinance

MIAMIBEACH

City of Miami Beach, 1700 Convention Center Drive, Miami Beach, Florida 33139, www.miamibeachfl.gov

COMMITTEE MEMORANDUM

TO: Sustainability and Resiliency Committee

FROM: Jimmy L. Morales, City Manager

DATE: September 25, 2019

SUBJECT: **DISCUSSION REGARDING THE USE OF PESTICIDES, HERBICIDES, AND FERTILIZERS ON BOTH PUBLIC AND PRIVATE PROPERTIES**

BACKGROUND

On February 27, 2019, the Sustainability and Resiliency Committee (SRC) held a discussion, co-sponsored by Commissioner Mark Samuelian and Commissioner Joy Malakoff, regarding the future neighborhood improvement project in the Lakeview neighborhood. Among other subjects, the discussion initiated a conversation regarding the use of pesticides, herbicides, and fertilizers and their potential to degrade surface water quality.

At the April 23 SRC meeting, staff presented an overview of existing city policies and landscape maintenance strategies, including a ban of herbicides containing glyphosate on public properties, that reduce the impacts of pesticides, herbicides and fertilizers on our waterways. Staff also presented opportunities on private property to build on these existing efforts, including the launch of a water quality campaign in Fall 2019. At the May 20 SRC meeting, staff built upon these strategies by recommending policy changes to ban or restrict the use of pesticides, herbicides, and fertilizers.

The State of Florida, under Florida Statute 482.242(1), preempts municipalities from enacting or enforcing an ordinance that regulates pest control. The Statute defines pest control as any "insect, rodent, nematode, fungus, or weed." As such, Florida municipalities, including the City of Miami, the City of Stuart, and the City of North Miami, have focused on willingly limiting or eliminating pesticide and herbicide use on public property, as Miami Beach has already done. No cities in Florida have passed bans of pesticides or herbicides on private property at this time.

Because fertilizers are not included in the preemption, there are several county and city governments in Florida that have enacted fertilizer bans. Manatee County, Pinellas County, Lee County, Martin County and the cities of Melbourne and Cape Coral are examples of communities that have enacted a blackout period for fertilizer use during the rainy season (June 1 through September 30). The City of Boca Raton also passed an ordinance limiting fertilizer use. However, instead of banning it for the duration of rainy season, their ordinance dictates the type, amount, timing, and locations of allowed fertilizer use. For example, it restricts fertilizer application when two or more inches of rain are forecast in 24 hours.

The City Attorney's Office, in collaboration with staff from the Public Works Department – Greenspace Division, the Parks and Recreation Department, the Code Compliance Department, and the Environment and Sustainability Department, developed the attached draft ordinance for the Committee's consideration. The ordinance was developed using template language provided by the Florida Department of Environmental Protection and existing fertilizer ordinances that are

in place in municipalities throughout Florida. Highlights of the ordinance include a ban of fertilizer purchase and use during the rainy season (June 1 through September 30) and the designation of fertilizer-free zones within 10 feet from any pond, stream, lake or wetland. Enforcement and penalties for violations of the proposed ordinance mirror those from the city's existing polystyrene ban, including its escalating fine schedule.

CONCLUSION

The following is presented to the members of the Sustainability and Resiliency Committee for discussion and adoption.

Attachments:
A – Draft Fertilizer Ordinance

SMT/ESW/MKW

ORDINANCE NO. _____

AN ORDINANCE OF THE MAYOR AND CITY COMMISSION OF THE CITY OF MIAMI BEACH, FLORIDA, AMENDING CHAPTER 46 OF THE MIAMI BEACH CITY CODE, ENTITLED "ENVIRONMENT," TO CREATE ARTICLE VIII THEREOF, TO BE ENTITLED "USE OF FERTILIZER," RELATING TO FLORIDA FRIENDLY FERTILIZER USE WITHIN THE CITY OF MIAMI BEACH, PROVIDING FOR DEFINITIONS, APPLICABILITY, TIMING OF FERTILIZER APPLICATIONS, FERTILIZER FREE ZONES, FERTILIZER CONTENT AND APPLICATION REQUIREMENTS, AND MANAGEMENT OF VEGETATIVE MATTER, OUTLINING CERTAIN EXEMPTIONS, REQUIRING TRAINING AND LICENSING, PROVIDING ENFORCEMENT AND PENALTIES; AND, PROVIDING FOR REPEALER, SEVERABILITY, CODIFICATION, AND AN EFFECTIVE DATE.

WHEREAS, Section 403.9337 Fla. Stat. provides that each municipality located within the watershed of a water body or water segment that is listed as impaired by nutrients pursuant to Section 403.067 Fla. Stat., shall adopt a model Ordinance for Florida-Friendly Fertilizer use on Urban Landscapes or an equivalent as a mechanism for protecting local surface and groundwater quality; and

WHEREAS, the Florida Department of Environmental Protection has identified specific water bodies in the City of Miami Beach as "impaired" as a result of excess nutrients under the Florida Impaired Waters Rule set forth in Chapter 62-303 of the Florida Administrative Code; and

WHEREAS, the detrimental effects of nutrient-laden runoff are magnified in a coastal community such as Miami Beach, due to the proximity of stormwater and drainage conveyances to coastal waters; and

WHEREAS, as a result of impairment to the City of Miami Beach's surface waters caused by excessive nutrients, or, as a result of increasing levels of nitrogen in the surface and/or ground water within the aquifers or springs within the boundaries of the City, the Mayor and the City Commission have determined that the use of fertilizers on lands within the City creates a risk to contributing to adverse effects on surface and/or ground water; and

WHEREAS, the Mayor and City Commission hereby find that it is in the best interest of the public health, safety, and welfare of the residents to regulate landscape management practices, including the application and use of fertilizers containing nitrogen and/or phosphorus within the City of Miami Beach; and

WHEREAS, the quality of our water channels, Biscayne Bay, and the Atlantic Ocean is critical to environmental, economic and recreational prosperity and to the health, safety and welfare of the citizens of the City of Miami Beach.

NOW, THEREFORE, BE IT ORDAINED BY THE MAYOR AND CITY COMMISSION OF THE CITY OF MIAMI BEACH, FLORIDA, AS FOLLOWS:

SECTION 1. Chapter 46 of the Code of the City Miami Beach is hereby amended to create Article VIII thereof, to be entitled "Use of Fertilizer," as follows:

CHAPTER 46
ENVIRONMENT

* * *

Article VIII. Use of Fertilizer.

Sec. 46-212. Purpose and Intent.

This Article regulates and promotes the proper use of fertilizers by any applicator; requires proper training of commercial and institutional fertilizer applicators; establishes training and licensing requirements; establishes a prohibited application period; specifies allowable fertilizer application rates and methods; fertilizer-free zones; low maintenance zones; and exemptions. The article requires the use of best management practices which provide specific management guidelines to minimize negative secondary and cumulative environmental effects associated with the misuse of fertilizers. These secondary and cumulative effects have been observed in and on City of Miami Beach's natural and constructed stormwater conveyances and surface waters. Collectively, these water bodies are an asset critical to the environmental, recreational, cultural and economic well-being of the City's residents and the health of the public. Overgrowth of algae and vegetation hinder the effectiveness of flood attenuation provided by natural and constructed stormwater conveyances. Regulation of nutrients, including both phosphorus and nitrogen contained in fertilizer, will help improve and maintain water and habitat quality.

Section 46-213. Definitions.

For this Article, the following terms shall have the meanings set forth in this section unless the context clearly indicates otherwise.

Administrator means city manager or his/her designee authorized to administer and enforce the provisions of this Article.

Application or *apply* means the actual physical deposit of fertilizer to turf, specialized turf, or landscape plants.

Applicator means any person who applies fertilizer on turf and/or landscape plants in the City.

Board means the Board of Commissioners of City of Miami Beach, Florida.

Best management practices mean turf and landscape practices, or combination of practices based on research, field-testing, and expert review, determined to be the most effective and practicable on-location means, including economic and technological considerations, for improving water quality, conserving water supplies and protecting natural resources.

City of Miami Beach approved best management practices training program means a training program approved pursuant to Section 403.9338, Fla. Stat., or any more stringent requirements set forth in this Article that includes the most current version of the Florida Department of Environmental Protection's "Florida-friendly Best Management Practices for Protection of Water Resources by the Green Industries, 2008," as revised, and approved by the administrator.

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Commercial fertilizer applicator, except as provided in 482.1562(9) F.S., means any person who applies fertilizer for payment or other consideration to property not owned by the person or firm applying the fertilizer or the employer of the applicator.

Fertilize, *fertilizing*, or fertilization means the act of applying fertilizer to turf, specialized turf, or landscape plants.

Fertilizer means any substance or mixture of substances that contains one or more recognized plant nutrients and promotes plant growth, or controls soil acidity or alkalinity, or provides other soil enrichment, or provides other corrective measures to the soil.
Guaranteed analysis means the percentage of plant nutrients or measures of neutralizing capability claimed to be present in a fertilizer.

Fertilizer-free zone means within ten (10) feet of any pond, stream, watercourse, lake, canal, or wetland, as defined by the Florida Department of Environmental Protection, or from the top of a seawall.

Impervious surfaces are mainly artificial structures—such as roads, sidewalks, driveways and parking lots, as well as industrial areas such as airports, ports and logistics and distribution centers, that are covered by impenetrable materials such as asphalt, concrete, brick, stone—and rooftops.

Institutional applicator means any person, other than a private, non-commercial or a commercial applicator (unless such definitions also apply under the circumstances), that applies fertilizer for the purpose of maintaining turf and/or landscape plants on their properties. Institutional applicators shall include, but shall not be limited to, owners, managers or employees of public lands, schools, parks, religious institutions, utilities, industrial or business sites and any residential properties maintained in condominium and/or common ownership.

Landscape plant means any native or exotic tree, shrub, or groundcover (excluding turf).

Low maintenance zone means an area a minimum of fifteen (15) feet wide adjacent to surface waters which is planted and managed in order to minimize the need for fertilization, watering, mowing, etc.

Person means any natural person, business, corporation, limited liability company, partnership, limited partnership, association, club, organization, and/or any group of people acting as an organized entity.

Prohibited application period means June 1st through September 30th, and, otherwise, the time period during which a Flood Watch or Warning, or a Tropical Storm Watch or Warning, or a Hurricane Watch or Warning is in effect for any portion of the City, issued by the National Weather Service, or if heavy rain is likely.

Saturated soil means a soil in which the voids are filled with water. Saturation does not require flow. For the purposes of this ordinance, soils shall be considered saturated if standing water is present or the pressure of a person standing on the soil causes the release of free water.

Slow release, controlled release, timed release, slowly available, or *water insoluble nitrogen* means nitrogen in a form which delays its availability for plant uptake and use after

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application, or which extends its availability to the plant longer than a reference rapid or quick release product.

Surface waters as defined by the Florida Department of Environmental Protection (Chapter 62-340, Florida Administrative Code) means waters on the surface of the earth, contained in bounds created naturally or artificially, including , the Atlantic Ocean, bays, bayous, sounds, estuaries, lagoons, lakes, ponds, impoundments, rivers, streams, springs, creeks, branches, sloughs, tributaries, canals, and ditches.

Turf, *sod*, or *lawn* means a piece of grass-covered soil held together by the roots of the grass.

Urban landscape means pervious areas on residential, commercial, industrial, institutional, highway rights-of-way, or other nonagricultural lands that are planted with turf or horticultural plants. For the purposes of this section, agriculture has the same meaning as in Section 570.02 Fla. Stat.

Sec. 46-214. Applicability.

This Article shall be applicable to and shall regulate any and all applications of fertilizer and areas of application of fertilizer within the City of Miami Beach, unless the applicator is specifically exempted by the terms of this Article from the regulatory provisions of this Article. This Article shall be prospective only and shall not impair any existing contracts.

Sec. 46-215. Timing of fertilizer application.

No applicator shall apply fertilizers containing nitrogen and/or phosphorus to turf and/or landscape plants during a Prohibited Application Period.

Sec. 46-216. Fertilizer-free zones.

(a) Except as provided in subsection (b) below, fertilizer shall not be applied within any Fertilizer-Free Zone other than by hand dispersion which ensures that no fertilizer is dispersed into the water.

(b) Newly planted turf and landscape plants may be fertilized within a Fertilizer-Free Zone only for a sixty (60) day period beginning 30 days after planting if needed to allow the plants to become well established and caution is used to prevent direct deposition of nutrients into the water.

Sec. 46-217. Fertilizer content and application rates.

(a) Fertilizers applied to golf courses and athletic fields shall be formulated and applied in accordance with requirements and directions provided by Rule 5E-1.003(2)(d) Florida Administrative Code, as it may be amended.

(b) Nitrogen or phosphorus fertilizer shall not be applied to turf or landscape plants except as provided in paragraphs (c) and (d) of this section or in UF/IFAS recommendations for landscape plants, vegetable gardens and fruit trees and shrubs, unless a soil or tissue deficiency has been verified by an approved test.

(c) Fertilizers applied to turf and/or landscape plants within the City shall contain no less than 50% slow release nitrogen per guaranteed analysis label.

(d) Except as provided in paragraph (c) of this section, fertilizers applied to turf and landscape plants within the City shall be formulated and applied in accordance with requirements and directions provided by Rule 5E-1.003(2), Florida Administrative Code, *Labeling Requirements For Urban Turf Fertilizers*, as it may be amended.

(e) Fertilizer containing nitrogen or phosphorous shall not be applied before seeding or sodding a site and shall not be applied for the first 30 days after seeding or sodding, except when hydro-seeding for temporary or permanent erosion control in an emergency situation (salt-water floods, etc.) or in accordance with the Stormwater Pollution Prevention Plan for that site.

(f) Fertilizers should be applied to turf and/or landscape plants at the lowest rate recommended by the state. No more than 4 lbs. of nitrogen per 1000 ft2 shall be applied to any turf/landscape area in any calendar year.

Sec. 46-218. Application Practices.

(a) No person shall apply fertilizers containing nitrogen and/or phosphorus to turf and/or landscape plants during the Prohibited Application Period.

(b) Spreader deflector shields are required when fertilizing via rotary (broadcast) spreaders. Deflectors must be positioned such that fertilizer granules are deflected away from all impervious surfaces, any Fertilizer-Free Zones and water bodies, including wetlands.

(c) Fertilizer shall not be applied, spilled, or otherwise deposited on any impervious surfaces.

(d) Any fertilizer applied, spilled, or deposited, either intentionally or accidentally, on any impervious surface shall be immediately and completely removed to the greatest extent practicable.

(e) Fertilizer released on an impervious surface must be immediately contained and either legally applied to turf or any other legal site or returned to the original or other appropriate container.

(f) In no case shall fertilizer be washed, swept, or blown off impervious surfaces into stormwater drains, ditches, conveyances, or water bodies, including wetlands.

Sec. 46-219. Management of grass clippings and vegetative matter.

In no case shall grass clippings, vegetative material and/or vegetative debris either intentionally or accidentally be swept, or blown off into stormwater drains, ditches, conveyances, water bodies, wetlands, or sidewalks or roadway. Any material that is accidentally so deposited shall be immediately removed to the maximum extent practicable.

Sec. 46-220. Exemptions.

(a) The provisions set forth in this Article shall not be applicable to:

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1. Golf courses.

2. Any lands used for bona fide scientific research, including, but not limited to, research on the effects of fertilizer use on urban stormwater, water quality, agronomics, or horticulture.

(b) The provisions set forth in Sections 46-215 and 46-217 of this Article shall not be applicable to:

1. Newly established landscape plants for, for a sixty (60) day period beginning 30 days after planting if needed to allow the plants to become well established.

2. Vegetable gardens, provided they are not within fifteen (15) feet of any water body and/or wetland.

3. Yard waste compost, mulches or other similar materials that are primarily organic in nature and are applied to improve the physical condition of the soil.

4. Reclaimed water used for irrigation (which may contain substantial amounts of nitrogen and phosphorus).

Sec. 46-221. Training.

(A) All commercial and institutional applicators of fertilizer within the City shall abide by and successfully complete the six-hour training program in the "Florida-Friendly Best Management Practices for Protection of Water Resources by the Green Industries" offered by the Florida Department of Environmental Protection through the University of Florida Extension "Florida-Friendly Landscapes" program. Completion of this training program shall be repeated a minimum of once every five (5) years.

(B) Private, non-commercial applicators are encouraged to follow the recommendations of the University of Florida IF AS Florida Yards and Neighborhoods program when applying fertilizers.

Sec. 46-222. Licensing of Commercial Applicators.

(a) All commercial applicators of fertilizer within the City shall abide by and successfully complete training and continuing education requirements in the "Florida-Friendly Best Management Practices for Protection of Water Resources by the Green Industries" offered by the Florida Department of Environmental Protection through the University of Florida IFAS "Florida-Friendly Landscapes" program prior to obtaining a City of Miami Beach Business Tax Receipt for any category of occupation which may apply any fertilizer to turf and/or landscape plants.

(b) All commercial applicators of fertilizer within the City shall always have and carry in their possession when applying fertilizer, evidence of certification by the Florida Department of Agriculture and Consumer Services as a commercial fertilizer applicator per Federal Administrative Code Section SE-14.117(18).

(c) All businesses applying fertilizer to turf and/or landscape plants (including but not limited to residential lawns, golf courses, commercial properties, and multi-family and condominium properties) must ensure that at least one employee has an appropriate "Florida Friendly Best Management Practices for Protection of Water Resources by the Green Industries" training certification prior to the business owner obtaining a Business Tax Receipt.

Sec. 46-223. Enforcement and penalties.

Fines collected shall be deposited in a trust dedicated to fulfilling the purposes of this section. Funds generated by penalties imposed under this section shall be used by the City for the administration and enforcement of Section 403.9337, Fla. Stat., and the corresponding sections of this ordinance, and to further water conservation and nonpoint pollution prevention activities.

(a) If a code compliance officer finds a violation of this article, the code compliance officer shall issue a notice of violation. The notice shall inform the violator of the nature of the violation, amount of fine for which the violator is liable, instructions and due date for paying the fine, that the violation may be appealed by requesting an administrative hearing before a special master within ten (10) days after service of the notice of violation, and that the failure to appeal the violation within ten (10) days of service shall constitute an admission of the violation and a waiver of the right to a hearing.

(b) A violator who has been served with a notice of violation must elect to either

(1) pay the following civil fine:

(a) First violation within a 12-month period.....$150.00;

(b) Second violation within a 12-month period.....$300.00;

(c) Third or subsequent violation within a 12-month period….$500.00; or

(2) request an administrative hearing before a special master to appeal the notice of violation, which must be requested within ten (10) days of the service of the notice of violation. The procedures for appeal by administrative hearing of the notice of violation shall be as set forth in sections 30-72 and 30-73 of this Code. Applications for hearings must be accompanied by a fee as approved by a resolution of the city commission, which shall be refunded if the named violator prevails in the appeal.

(c) Failure to pay the civil fine, or to timely request an administrative hearing before a special master, shall constitute a waiver of the violator's right to an administrative hearing before the special master, and shall be treated as an admission of the violation, for which fines and penalties shall be assessed accordingly.

(d) A certified copy of an order imposing a fine may be recorded in the public records, and thereafter shall constitute a lien upon any real or personal property owned by the violator, which may be enforced in the same manner as a court judgment by the sheriffs of this state, including levy against the violator's real or personal property, but shall not be deemed to be a court judgment except for enforcement purposes. After three months

following the recording of any such lien that remains unpaid, the City may foreclose or otherwise execute upon the lien for the amount of the lien plus accrued interest.

(e) The special master shall be prohibited from hearing the merits of the notice of violation or considering the timeliness of a request for an administrative hearing if the violator has failed to request an administrative hearing within ten (10) days of the service of the notice of violation. The special master shall not have discretion to alter the penalties prescribed in this article. Any party aggrieved by a decision of a special master may appeal that decision to a court of competent jurisdiction.

SECTION 2. REPEALER.

All ordinances or parts of ordinances in conflict herewith are hereby repealed.

SECTION 3. SEVERABILITY.

If any section, subsection, clause or provision of this Ordinance is held invalid, the remainder shall not be affected by such invalidity.

SECTION 4. CODIFICATION.

It is the intention of the Mayor and City Commission of the City of Miami Beach, and it is hereby ordained that the provisions of this Ordinance shall become and be made part of the Code of the City of Miami Beach, Florida. The sections of this Ordinance may be renumbered or relettered to accomplish such intention, and the word "ordinance" may be changed to "section," article," or other appropriate word.

SECTION 5. EFFECTIVE DATE.

This Ordinance shall take effect on the ____ day of _____**,** 2019.

PASSED AND ADOPTED this _____ day of _____, 2019.

ATTEST:

_____
Dan Gelber, Mayor

_____
Rafael E. Granado, City Clerk

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Item 7.

COMMITTEE MEMORANDUM

TO: Sustainability Resiliency Committee Meeting

FROM: Jimmy L. Morales, City Manager

DATE: September 25, 2019

SUBJECT: **DISCUSS THE PUMP STATIONS PLUMES ON WEST AVENUE**

RESPONSIBLE DEPARTMENT

Public Works

LEGISLATIVE TRACKING

Item C4 U - February 13, 2019 Commission Meeting

SPONSORED

Commissioner Gongora

ANALYSIS

VERBAL REPORT AT THE COMMITTEE MEETING.

Applicable Area

South Beach

Is this a Resident Right to Know item?	Does this item utilize G.O. Bond Funds?
Yes	No

ATTACHMENTS:

Description	Type
No Attachments Available	

MIAMIBEACH

Item 8.

COMMITTEE MEMORANDUM

TO: Sustainability Resiliency Committee Meeting

FROM: Jimmy L. Morales, City Manager

DATE: September 25, 2019

SUBJECT: **DISCUSSION ON EXPANDING THE PLASTIC BAG ORDINANCE IN MIAMI BEACH**

RESPONSIBLE DEPARTMENT:
City Attorney's Office | City Manager's Office

LEGISLATIVE TRACKING:
Item C4 T - February 13, 2019 Commission Meeting

SPONSORED:
Commissioner Micky Steinberg I Co-sponsored by Commissioner Michael Gongora

Analysis
VERBAL REPORT AT COMMITTEE MEETING.

ATTACHMENTS:

Description	Type
LTC 474-2019 Third District Court of Appeal Ruling in Florida Retail Federation Inc. v. City of Coral Gables (Fla. 3d DCA Case No. 3D17-0562)	Memo

MIAMIBEACH

OFFICE OF
LTC No. # 474-2019

LETTER TO COMMISSION

TO: Mayor Dan Gelber and Members of the City Commission

FROM: Raul J. Aguila, City Attorney

cc: Jimmy L. Morales, City Manager
Rafael E. Granado, City Clerk

DATE: August 26, 2019

SUBJECT: **Third District Court of Appeal Ruling in *Florida Retail Federation, Inc. v. City of Coral Gables* (Fla. 3d DCA Case No. 3D17-0562)**

The purpose of this memorandum is to advise the City Commission of the Third District Court of Appeal's recent ruling in litigation challenging the Coral Gables Polystyrene Ordinance. In summary, the District Court (i) reversed the trial court ruling finding the Coral Gables Polystyrene Ordinance enforceable, and (ii) upheld three separate State preemption statutes as constitutional. A full copy of the Court's opinion is attached hereto as Exhibit "A".

A. Coral Gables Litigation

On July 18, 2016, Plaintiffs Florida Retail Federation, Inc., and Super Progreso Inc. filed a complaint in Miami-Dade County Circuit Court against the City of Coral Gables, seeking an injunction against enforcement of the Coral Gables Polystyrene Ordinance, and a declaration that the Ordinance was preempted by three separate Florida Statutes: Section 403.708(9) (pertaining to the "packaging of products"); Section 403.7033 (pertaining to "auxiliary containers, wrappings, or disposable plastic bags"); and Section 500.90 (pertaining to "polystyrene products") (altogether, the "Preemption Statutes").

The Circuit Court granted summary judgment in favor of the City of Coral Gables, upholding the Coral Gables Polystyrene Ordinance, and finding all three Preemption Statutes unconstitutional.[1] The Plaintiffs and the State of Florida, as an intervenor, appealed the Circuit Court ruling to the Third District Court of Appeal. The City participated in the appeal by filing an *amicus curiae* ("friend of the court") brief in support of Coral Gables.

On August 14, 2019, the Third District Court of Appeal issued an opinion reversing the Circuit Court's final judgment in favor of Coral Gables, and remanding the case to the Circuit Court to enter final judgment in favor of the Plaintiffs. The District Court held as follows:

1. Sections 403.708(9), 403.7033, and 500.90, Florida Statutes—the "Preemption Statutes"—are constitutional.

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[1] Subsequent to the trial court ruling, on May 9, 2017, the City of Coral Gables adopted Ordinance No. 2017-13, prohibiting the use of single-use carry out plastic bags by special event permittees and prohibiting the sale, use, or distribution of single-use carry out plastic bags by retail establishments within the City.

2. By their plain language, the Preemption Statutes "expressly preempt the [Coral Gables] Polystyrene Ordinance."

B. City of Miami Beach regulations on single-use plastics

Over the past several years, the City has enacted a number of Ordinances restricting the sale or use of single-use plastics. **Importantly, the City's regulations on single-use plastics remain in place, and were not affected by the Third District Court of Appeal ruling in the Coral Gables litigation.** A summary of the City's legislation on single-use plastics is as follows:

1. Expanded polystyrene products
   - City Code Section 46-92(c) prohibits any person from carrying "any expanded polystyrene product . . . onto any beach or park within the city, or onto any city marina, pier, dock, or boat ramp . . . ."

2. Expanded polystyrene food service articles
   - City Code Chapter 46, Article VI prohibits the sale or use of expanded polystyrene food service articles by food service providers and stores.
   - City Code Section 82-7 prohibits the sale or use of expanded polystyrene food service articles by City contractors and special event permittees in City facilities or on City property.
   - City Code Section 82-385(p) prohibits expanded polystyrene food service articles at sidewalk cafes.

3. Single-use plastic beverage straws and single-use plastic stirrers
   - City Code Section 46-92(c) prohibits single-use plastic beverage straws and single-use plastic stirrers at any City beach, park, marina, pier, dock, or boat ramp.
   - City Code Section 82-8 prohibits the sale or use of single-use plastic beverage straws and single-use plastic stirrers by City contractors and special event permittees in City facilities or on City property.
   - City Code Section 82-385(p) prohibits single-use plastic beverage straws and single-use plastic stirrers at sidewalk cafes.
   - On July 17, 2019, the City Commission approved, on First Reading, an Ordinance prohibiting the sale or use of single-use plastic beverage straws and single-use plastic stirrers by food service providers and stores. The Second Reading/Public Hearing is scheduled for September 11, 2019.

4. Single-use carry out plastic bags
   - City Code Section 82-385(z) prohibits single-use carry out plastic bags at sidewalk cafes.

C. Conclusion

My office is monitoring the Coral Gables litigation, and will continue to evaluate opportunities for the City to strengthen its environmental legislation. In the meantime, if Coral Gables seeks review by the Florida Supreme Court, I will place an item on an upcoming City Commission agenda to request direction from the City Commission to file an *amicus* brief, once again, in support of Coral Gables. If you have any questions, please do not hesitate to contact me.

Third District Court of Appeal

State of Florida

Opinion filed August 14, 2019.
Not final until disposition of timely filed motion for rehearing.

No. 3D17-0562
Lower Tribunal No. 16-18370

Florida Retail Federation, Inc., et al.,
Appellants,

vs.

The City of Coral Gables, Florida,
Appellee.

An Appeal from the Circuit Court for Miami-Dade County, Jorge E. Cueto, Judge.

Ashley Moody, Attorney General, and Amit Agarwal (Tallahassee), Solicitor General; Lehtinen Schultz Riedi Catalano De la Fuente, PLLC, and Dexter W. Lehtinen, and Claudio Riedi, for appellants.

Craig E. Leen, City Attorney, and Miriam S. Ramos, Deputy City Attorney; Kozyak Tropin & Throckmorton LLP, and Corali Lopez-Castro, Rachel Sullivan and Mindy Y. Kubs, for appellee.

Erin Deady (West Palm Beach); Derek Howard; Roget V. Bryan, for City of West Palm Beach, Monroe County, and Islamorada, Village of Islands, as amici curiae.

Raul J. Aguila, City Attorney, and Nicholas Kallergis, Assistant City Attorney; Jean K. Olin, for City of Miami Beach, as amicus curiae.

Earthjustice and Bonnie A. Malloy (Tallahassee), for Surfrider Foundation, Campaign to Defend Local Solutions, League of Women Voters of Florida, Legal Scholars, 1000 Friends of Florida, ReThink Energy Florida, Florida Wildlife Federation, Save the Manatee Club, and Center for Biological Diversity, as amici curiae.

Before FERNANDEZ, LINDSEY, and HENDON, JJ.[1]

LINDSEY, J.

I. INTRODUCTION

In 2016, the City of Coral Gables (the "City") passed an Ordinance prohibiting food service providers and stores from selling or using expanded polystyrene (i.e. Styrofoam) containers. The Florida Retail Federation and Super Progreso[2] (collectively "FRF") filed the underlying complaint seeking a declaration that the City's Polystyrene Ordinance was preempted by three separate Florida Statutes: sections 403.708(9), 403.7033, and 500.90. Because the trial court erred in finding the three statutes unconstitutional and concluding that the City's Polystyrene Ordinance was not preempted, we reverse.

II. BACKGROUND

[1] Judge Hendon did not participate in oral argument.

[2] Super Progreso is a Florida Retail Federation member.

This appeal concerns the validity and preemptory effect of the following three state statutes, which the trial court concluded were unconstitutional:

- Section 403.708(9) (enacted in 1974[3]) provides that "[t]he packaging of products manufactured or sold in the state may not be controlled by governmental rule, regulation, or ordinance . . . ."
- Section 403.7033 (enacted in 2008) prohibits local governments from enacting "any rule regulation, or ordinance regarding use, disposition, sale, prohibition, restriction, or tax of . . . auxiliary containers, wrappings, or disposable plastic bags."
- Section 500.90 (effective July 1, 2016) preempts the "regulation of the use or sale of polystyrene products" by local ordinances enacted after January 1, 2016.

The City enacted Ordinance 2016-08 on February 9, 2016.[4] The Ordinance generally prohibits "[f]ood service providers and stores" from selling, using, offering for sale, or "provid[ing] food or beverages in expanded polystyrene

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[3] Originally 403.708(2), Florida Statutes (1975).

[4] Aware of the impending passage of section 500.90, which explicitly preempts local ordinances regulating polystyrene enacted after January 1, 2016, the City enacted an emergency ordinance giving its Polystyrene Ordinance a retroactive effective date of December 8, 2015.

containers." City of Coral Gables, Fla., Code of Ordinances § 34-264(a) (2019).[5] On April 26, 2016, the City passed Ordinance 2016-28, "exercise[ing] its Home Rule powers under article VIII, section 6 of the Florida Constitution of 1968 to conflict with, modify, and nullify the polystyrene pre-emption and grandfathering provisions of Chapter 2016-61, Laws of Florida (F.S. § 500.90) . . . ." Id. at § 34-267.

In July 2016, FRF filed a complaint seeking a declaration that sections 403.708(9), 403.7033, and 500.90, Florida Statutes,[6] preempt the City's Polystyrene Ordinance. The complaint also sought an injunction against enforcement of the Ordinance. The City, in turn, filed a counterclaim seeking a declaration that the same three statutes are unconstitutional. Both sides filed competing motions for summary judgment. Following a hearing, the trial court granted the City's motion. The trial court entered final judgment in favor of the City, finding all three statutes unconstitutional and the City's ordinance valid and enforceable. FRF and the State appeal.

III. JURISDICTION

[5] Before recodification in July 2017, Ordinance 2016-08 was codified in §§ 34-187 to -190.

[6] The trial court granted the State of Florida's motion to intervene "for the limited purpose of advocating the proper interpretation and defending the constitutionality of any statutes challenged" in the action.

We have jurisdiction to review the trial court's entry of final summary judgment in favor of the City pursuant to Florida Rule of Appellate Procedure 9.030(b)(1)(A).

IV. STANDARDS OF REVIEW

We review questions of statutory interpretation and the trial court's grant of summary judgment de novo. See, e.g., Save Calusa Tr. v. St. Andrews Holdings, Ltd., 193 So. 3d 910, 914 (Fla. 3d DCA 2016). We also "review questions of preemption and the validity of an ordinance de novo." D'Agastino v. City of Miami, 220 So. 3d 410, 421 (Fla. 2017) (citing City of Hollywood v. Mulligan, 934 So. 2d 1238, 1241 (Fla. 2006)). Likewise, the "constitutionality of a statute is a pure question of law that is subject to de novo review." Searcy, Denney, Scarola, Barnhart & Shipley, etc. v. State, 209 So. 3d 1181, 1188 (Fla. 2017) (citing City of Miami v. McGrath, 824 So. 2d 143, 146 (Fla. 2002)).

V. ANALYSIS

Because this case concerns the validity of state statutes and local ordinances, we are bound by certain presumptions. The trial court, in finding three state statutes unconstitutional, relied exclusively on the presumption that ordinances are valid, but failed to consider the strong, competing presumption that "statutes come clothed with a presumption of constitutionality and must be construed whenever possible to effect a constitutional outcome." Crist v. Fla. Ass'n of Criminal Def. Lawyers, Inc.,

978 So. 2d 134, 139 (Fla. 2008); see also Lowe v. Broward Cty., 766 So. 2d 1199, 1203 (Fla. 4th DCA 2000) ("A regularly enacted ordinance will be presumed to be valid until the contrary is shown, and a party who seeks to overthrow such an ordinance has the burden of establishing its invalidity." (quoting State ex rel. Office Realty Co. v. Ehinger, 46 So. 2d 601, 602 (Fla. 1950))). Moreover, although Florida municipalities are given broad authority to enact ordinances, "municipal ordinances must yield to state statutes." Masone v. City of Aventura, 147 So. 3d 492, 495 (Fla. 2014).

With these principles in mind, we first consider whether the trial court erred in finding sections 403.708(9), 403.7033, and 500.90 unconstitutional. Because we conclude all three statutes are constitutional, we next evaluate whether the City's Polystyrene Ordinance is preempted. For the reasons that follow, we hold that it is.

A. Sections 403.708(9), 403.7033, and 500.90 Are Constitutional

The trial court's analysis focused almost entirely on the most recent of the three statutes, section 500.90. The court concluded that section 500.90 was unconstitutional because (1) it violates the Miami-Dade County Home Rule Amendment; (2) it is unconstitutionally vague in violation of the nondelegation doctrine; and (3) the statute's classification schemes make it impermissibly arbitrary and capricious. As to sections 403.708(9) and 403.7033, the trial court found that

both statutes were also unconstitutionally vague in violation of the nondelegation doctrine.

The trial court first determined that section 500.90 violated the Home Rule Amendment, which prohibits the Legislature from adopting any act directed solely at Miami-Dade County or its municipalities. See Art. VIII, § 6(e), Fla. Const. Section 500.90 explicitly preempts local ordinances regulating polystyrene enacted after January 1, 2016. The court reasoned that because the City was the only municipality that enacted a Polystyrene Ordinance after January 1, 2016, but before section 500.90's July 1, 2016 effective date, section 500.90 was an impermissible special law aimed only at the City.

We disagree with such an expansive interpretation of the Home Rule Amendment. It is well-established that the Home Rule Amendment must be strictly construed to maintain the supremacy of general laws. Metro. Dade Cty. v. Chase Fed. Hous. Corp., 737 So. 2d 494, 504 (Fla. 1999). Section 500.90 plainly preempts *all* municipalities statewide[7] from enacting local polystyrene regulations after January 1, 2016.[8] Although the City may have been the first municipality to regulate

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[7] Indeed, we note that the City of West Palm Beach, Monroe County, and Islamorada jointly filed an amici curiae brief in which they recognize that section 500.90 would apply to them if the statute were not an "unconstitutional delegation of authority."

[8] Preemption statutes ordinarily apply to previously enacted ordinances. See Chase Fed. Hous. Corp., 737 So. 2d at 504 ("Whenever the legislature acts to supersede a local government's authority to enforce its ordinances, the effect is immediate and

polystyrene after January 1, 2016, section 500.90 does not impermissibly single out the City or Miami-Dade County. See City of Miami Beach v. Frankel, 363 So. 2d 555, 558 (Fla. 1978) ("A general law of local application is a law that uses a classification scheme based on population or some other criterion so that its application is restricted to particular localities. It is clear on the face of this statute that it is a general law applicable statewide.").[9]

Next, we consider the trial court's conclusion that section 500.90 violates the nondelegation doctrine.[10] More specifically, the court held that the statute "is

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applies to both future and pending proceedings and present and past offenses."). Moreover, the Legislature is empowered to set the start date for legislation so long as it acts within constitutionally accepted parameters. Id. at 503.

[9] The trial court relied on several cases where the "Florida Legislature has run afoul of the prohibition in enacting laws directed to Miami-Dade County or its municipalities . . . ." But unlike here, the statutes in those cases all contained a classification scheme that made them impermissibly applicable to Miami-Dade County. See State ex rel. Worthington v. Cannon, 181 So. 2d 346, 347 (Fla. 1965) (finding two statutes unconstitutional because they applied to counties having a population of 750,000 or more); S & J Transp., Inc. v. Gordon, 176 So. 2d 69, 70 (Fla. 1965) (invalidating a statute that applied to counties operating an airport and having more than 900,000 residents); Homestead Hosp., Inc. v. Miami-Dade Cty., 829 So. 2d 259, 262 (Fla. 3d DCA 2002) (invalidating a statute that "as written, is applicable only to Miami-Dade County").

[10] The Florida Supreme Court has explained the nondelegation doctrine as follows:

> [U]nder article II, section 3 of the constitution the Legislature "may not delegate the power to enact a law or the right to exercise unrestricted discretion in applying the law." Sims v. State, 754 So.2d 657, 668 (Fla.2000). This prohibition, known as the nondelegation doctrine, requires that "fundamental and primary policy decisions ... be made by members of the legislature who are elected to perform

unconstitutionally vague because the Legislature delegated preemption authority to the Department of Agriculture . . . without defining guidelines or standards for the exercise of the Department's discretion in implementing the statute."

However, section 500.90 does not, on its face, delegate legislative authority to the Department of Agriculture. The plain text of the statute simply provides that "[t]he regulation of the use or sale of polystyrene products by entities regulated under this chapter is preempted to the department." The statute is silent as to delegation of any authority because the Department's rulemaking authority stems from the separate "Rulemaking" section found in the same Chapter (Chapter 500, the Florida Food and Safety Act). See § 500.09, Fla. Stat. (2018) ("Rulemaking; analytical work.—" not to be confused with *§ 500.90*, the statute at issue here). In contrast to the language in Chapter 500's preemption provision, the rulemaking provision provides, in part, that "[t]he department may adopt rules necessary for the

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> those tasks, and [that the] administration of legislative programs must be pursuant to some minimal standards and guidelines ascertainable by reference to the enactment establishing the program." Askew v. Cross Key Waterways, 372 So.2d 913, 925 (Fla.1978); see also Avatar Dev. Corp. v. State, 723 So.2d 199, 202 (Fla.1998) (citing Askew with approval). In other words, statutes granting power to the executive branch "must clearly announce adequate standards to guide ... in the execution of the powers delegated.["]

Bush v. Schiavo, 885 So. 2d 321, 332 (Fla. 2004).

efficient enforcement of this chapter." § 500.09(4), Fla. Stat. The City does not challenge the delegation of authority in the separate "Rulemaking" section of Chapter 500.

The trial court also concluded that sections 403.708(9) and 403.7033 violate the nondelegation doctrine because they "lack the necessary standards and guidelines for implementation, rendering them unconstitutionally vague . . . ." This conclusion forms the sole basis for the trial court's determination that sections 403.708(9) and 403.7033—statutes enacted in 1974 and 2008, respectively—are unconstitutional. Here again, neither statute delegates any legislative authority. The statutes simply prohibit local governments from regulating "[t]he packaging of products manufactured or sold in the state[,]" section 403.708(9), and "auxiliary containers, wrappings, or disposable plastic bags[,]" section 403.7033. Because the statutes delegate no authority, they cannot be unconstitutional pursuant to the nondelegation doctrine.

Finally, we consider the trial court's conclusion that section 500.90 "creates at least two classification schemes that are not reasonably related to the purpose of legislation, rendering the statute arbitrary and capricious." Article III, section 11(b) of the Florida Constitution provides that "[i]n the enactment of general laws on other subjects, political subdivisions or other governmental entities may be classified only on a basis reasonably related to the subject of the law." The trial court reasoned that

the legislature, in enacting section 500.90, violated the Florida Constitution by "choosing an exemption date of January 1, 2016" and by intending to "liberalize the purportedly strict prohibitions on local polystyrene regulation . . . for certain 'beach towns' that sought to regulate polystyrene use."

As an initial matter, we find no mention of beach towns in the text of section 500.90. Consequently, there was no basis for concluding that a non-existent beach town classification was arbitrary and capricious. More importantly, we do not read anything in section 500.90 to be a classification of "political subdivisions or other government entities" as set forth in article III, section 11(b) of the Florida Constitution. An "exemption date" of January 1, 2016, simply sets the date after which local ordinances regulating polystyrene will be preempted. In other words, the only classification scheme found in section 500.90 applies to ordinances—those enacted before and those enacted after January 1, 2016—there is no classification of any governmental entities.

Having determined that sections 403.708(9), 403.7033, and 500.90 are constitutional, we now turn to the issue of whether the statutes preempt the City's Polystyrene Ordinance.

B. State Law Expressly Preempts the City's Polystyrene Ordinance

The preemption analysis is a matter of statutory interpretation. "Statutory interpretation in any case 'begin[s] with the actual language used in the statute

because legislative intent is determined first and foremost from the statute's text.'" Williams v. State, 186 So. 3d 989, 991 (Fla. 2016) (quoting Raymond James Fin. Servs., Inc. v. Phillips, 126 So. 3d 186, 190 (Fla. 2013)). Moreover, "[w]hen the language of the statute is clear and unambiguous and conveys a clear and definite meaning, there is no occasion for resorting to the rules of statutory interpretation and construction; the statute must be given its plain and obvious meaning." Id. (quoting Bennett v. St. Vincent's Med. Ctr., Inc., 71 So. 3d 828, 837–38 (Fla. 2011)).

The trial court concluded that sections 403.708(9) and 403.7033 do not preempt the local regulation of polystyrene.[11] In so doing, the court's reliance on "principles of legislative interpretation" was in error. According to the trial court, the enactment of section 500.90 "evidences the legislature's understanding that sections 403.708(9) and 403.7033 did not already [preempt the regulation of polystyrene.]" In other words, the court relied on a recent statute to determine the legislative intent behind two older statutes.

There is no need to resort to rules of statutory construction because the statutory text is clear. See State Farm Mut. Auto. Ins. Co. v. Laforet, 658 So. 2d 55, 62 (Fla. 1995) ("It would be absurd, however, to consider legislation enacted more than ten years after the original act as a clarification of original intent . . . ."); Fla.

[11] The trial court did not address preemption in the context of section 500.90 because it concluded the statute was unconstitutional.

Dept. of Revenue v. Fla. Mun. Power Agency, 789 So. 2d 320, 323 (Fla. 2001) ("Legislative intent must be derived primarily from the words expressed in the statute. If the language of the statute is clear and unambiguous, courts enforce the law according to its terms and there is no need to resort to rules of statutory construction.").

Here, the statutes at issue are unambiguous; they expressly preempt[12] the City's Polystyrene Ordinance. Section 403.708(9) preempts regulatory control over "[t]he packaging of products manufactured or sold in the state . . . ." The plain text encompasses all types of packaging, including polystyrene. Similarly, section 403.7033 prohibits local governments from regulating "auxiliary containers." Again, the "polystyrene containers" regulated by the City's Ordinance are a type of "auxiliary container." Finally, section 500.90 specifically preempts the regulation of "polystyrene products." In all three instances, we find the language clear and unambiguous.

VI. CONCLUSION

Because sections 403.708(9), 403.7033, and 500.90 are constitutional and by their plain language preempt the City's Ordinance regulating "polystyrene

[12] "Preemption of local ordinances by state law may, of course, be accomplished by express preemption—that is, by a statutory provision stating that a particular subject is preempted by state law or that local ordinances on a particular subject are precluded." Masone, 147 So. 3d at 495.

containers," we reverse the trial court's final judgment in favor of the City and remand for entry of final judgment in favor of FRF.

Reversed and remanded.

MIAMIBEACH

Item 9.

COMMITTEE MEMORANDUM

TO: Sustainability Resiliency Committee Meeting

FROM: Jimmy L. Morales, City Manager

DATE: September 25, 2019

SUBJECT: **DISCUSS IMPLEMENTING A TOTAL BAN ON SINGLE-USE PLASTICS ON MIAMI BEACH PENDING THE FLORIDA RETAIL FEDERATION'S LITIGATION AGAINST THE CITY OF CORAL GABLES**

RESPONSIBLE DEPARTMENT

City Attorney's Office

LEGISLATIVE TRACKING

Item R9 J - July 17, 2019 Commission Meeting

SPONSORED

Commissioner Arriola | Co Sponsered, Mayor Gelber, Commissioners Gongora, Malakoff, Steinberg

ANALYSIS

VERBAL REPORT AT COMMITTEE MEETING.

Is this a Resident Right to Know item?	Does this item utilize G.O. Bond Funds?
Yes	No

ATTACHMENTS:

	Description	Type
	Commission After Action	Memo
	LTC 474-2019 Third District Court of Appeal Ruling in Florida Retail Federation Inc. v. City of Coral Gables (Fla. 3d DCA Case No. 3D17-0562)	Memo

MIAMIBEACH

COMMISSION MEMORANDUM

TO: Honorable Mayor and Members of the City Commission
FROM: Commissioner Ricky Arriola
DATE: July 17, 2019

SUBJECT: DISCUSS IMPLEMENTING A TOTAL BAN ON SINGLE-USE PLASTICS ON MIAMI BEACH PENDING THE FLORIDA RETAIL FEDERATION'S LITIGATION AGAINST THE CITY OF CORAL GABLES.

ANALYSIS

Please place this item on the July 17 City Commission meeting agenda.

In 2010, the Florida Department of Environmental Protection submitted the attached report to Governor Charlie Crist. It affirmed that "besides being unsightly litter, discarded plastic bags harm land and marine wildlife, interfere with landfill operations, clog flood control systems, and breed mosquitoes." The report also stated that although plastic bag bans might be an "inconvenience for some consumers, bans produce the fastest results, closely followed by user fees and taxes."

Due to the real threat to our environment and our stormwater system, I ask that we implement a ban not only on plastic bags, but also all single-use plastics pending the outcome of the litigation between the Florida Retail Federation and the City of Coral Gables.

Legislative Tracking

Vice-Mayor Arriola & Co-sponsored by Mayor Gelber, Commissioners Gongora, Malakoff & Steinberg

ATTACHMENTS:

Description

- Florida Retail Bag Report

Florida Department of Environmental Protection

Marjory Stoneman Douglas Building
3900 Commonwealth Boulevard
Tallahassee, Florida 32399-3000

Charlie Crist
Governor

Jeff Kottkamp
Lt. Governor

Michael W. Sole
Secretary

February 1, 2010

The Honorable Charlie Crist
Governor of Florida
Plaza Level 05, The Capitol
400 South Monroe Street
Tallahassee, Florida 32399-0001

The Honorable Jeff Atwater, President
Florida Senate
Room 312, Senate Office Building
404 South Monroe Street
Tallahassee, Florida 32399-1100

The Honorable Larry Cretul, Speaker
Florida House of Representatives
420 The Capitol
402 South Monroe Street
Tallahassee, Florida 32399-1300

Dear Governor Crist, President Atwater and Speaker Cretul:

I am pleased to submit the *Retail Bags Report to the Legislature* as required in section 403.7033, Florida Statutes. The Energy, Climate Change, and Economic Security Act of 2008 directed the Florida Department of Environmental Protection (DEP) to analyze, research and report on the "necessity and efficacy" of statewide or local regulation of retail bags. This was in response to concern about the impact of retail bags on the environment and the growing interest among local governments to develop prohibitive ordinances. Pursuant to section 403.7033, Florida Statutes, no state or local retail bag regulations can be enacted until the Florida Legislature takes action.

The information and options in the enclosed report were developed based on extensive research and the invaluable contributions of stakeholders who participated in two public workshops. An even wider range of ideas were submitted through DEP's Web forum and E-mails.

Almost every retail establishment has some sort of bag for its customers and studies show that Americans used almost 90 billion retail bags in 2003. A small percentage of these bags are reused or recycled and while many retail establishments have taken steps

to address this problem, there is still a potential for harm to the environment due to improper handling and disposal. This report explains how improperly discarded plastic bags can affect wildlife, marine life, landfill operation and flood control systems and explores the various approaches that other states and countries have taken to address this issue. Included in the report is a wide-ranging set of options for decreasing the number of bags being used as well as increasing the number of bags being recycled.

DEP believes there are ways to reduce our dependency on these bags and to properly reuse or dispose of them. It is recommended that the Legislature review the available options and take action to discourage the use of single-use paper and plastic retail bags and encourage the use of reusable retail bags. I look forward to working with you as you consider them. With the cooperation and support of the retail industry working closely with local and state government, this goal can be achieved.

If you have questions regarding this report, please contact Mary Jean Yon, Director of DEP's Division of Waste Management, at (850) 245-8693 or Mary.Jean.Yon@dep.state.fl.us.

Sincerely,

Michael W. Sole
Secretary

Enclosure

cc: The Honorable Lee Constantine, Chair, Senate Environmental Preservation Committee
The Honorable Trudi Williams, Chair, House Agriculture and Natural Resources Committee
Mimi Drew, Deputy Secretary, Regulatory Programs, DEP
Cameron Cooper, Director, Office of Legislative Affairs, DEP
Mary Jean Yon, Director, Division of Waste Management, DEP

Retail Bags Report

For the Legislature

Florida Department of Environmental Protection

February 1, 2010

2600 Blair Stone Road MS 4570
Tallahassee, Florida 32399-2400
www.dep.state.fl.us

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2600 Blair Stone Road MS 4570
Tallahassee, Florida 32399-2400
www.dep.state.fl.us

Executive Summary

"Paper or plastic?" Millions of Floridians hear the question every week. Almost every retail establishment has a bag for its customers and Americans used almost 90 billion of them in 2003. Retail bags are most commonly paper and plastic single-use bags. Only a relatively small percentage are reused or recycled (12% of plastic bags and 37% of paper bags) while far too many damage the environment because people improperly handle and dispose of them. Besides being unsightly litter, discarded plastic bags harm land and marine wildlife, interfere with landfill operations, clog flood control systems, and breed mosquitoes. These problems are not unique to Florida. The most dramatic illustration of the environmental damage from plastic bags and other marine debris are the floating "garbage patches" in the Atlantic, Pacific and Indian Oceans—the largest covering an area almost twice that of the United States.

Only 12% of plastic bags and 37% of paper bags are reused or recycled.

As part of the Energy, Climate Change, and Economic Security Act of 2008 (Section 403.7033, Florida Statutes), the Florida Legislature directed the Department of Environmental Protection to undertake an analysis of the need for new or different regulation of auxiliary containers, wrappings, or disposable plastic bags used by consumers to carry products from retail establishments. The information contained within this report provides an assessment of the impacts associated with current use and disposal of these containers as well as an analysis of the efficacy and consequences associated with several potential policy options to provide policymakers the information needed to weigh and balance the effect of proposed actions on the environment, regulated community and the consumer.

The *necessity* of retail bag regulation is determined by examining the impact of retail bags on the environment. *Efficacy* is determined by examining the effectiveness of governments outside Florida in reducing the number and impact of retail bags through regulation. Nationally, retail bag regulations have been enacted or proposed at either the state or local level in 30 states. Retail bag regulations are also found on the six populated continents.

Improper handling and disposal of retail bags has been shown to harm the environment. While plastic bags may appear to be the major problem, the solution is not to switch to paper. Life cycle analyses show a higher level of environmental harm from manufacturing to disposal of paper compared to plastic bags. A switch to biodegradable or compostable bags is not the answer either. Since Florida has no solid waste commercial scale composting facility to handle these bags, they would end up in a landfill just like paper or plastic bags.

There are many locations with different types of retail bag regulations. While all strategies to reduce the use of retail bags have merit, some are more effective than others. Although they initially pose an inconvenience for some consumers, bans produce the fastest results, closely followed by user fees and taxes. Voluntary efforts are more readily accepted by the retail

industry and the public, but take more time to produce results. While voluntary efforts can be helpful in changing behavior patterns, their effectiveness is dependent on the number of retail establishments participating. Public education is crucial to any approach, to illuminate the damages caused by single-use bags, and the cost to undo the harm, and promote reusable bags. Collaboration with the retail sector is also essential.

Plastic and paper bags are not inherently bad but they have terrible consequences in a throw-away society—and there are simple, readily available ways to reduce our dependency and properly reuse, recycle or dispose of them. This report identifies strategies to discourage the use of single-use paper and plastic retail bags and encourage the use of reusable retail bags. With the cooperation and support of the retail industry working closely with local and state government, this goal can be achieved.

Acknowledgments

The Florida Department of Environmental Protection (DEP) extends its gratitude to the many stakeholders from the public and private sectors that invested their time and contributed their insights to the development of this report through public meetings, written comments and electronic submissions.

Two public meetings were held to exchange information and solicit input on the retail bags report and the surrounding issues. These meetings generated lively discussion and valuable information that helped produce this report.
• November 19, 2008 in Orlando - 36 attendees, excluding DEP staff
• November 19, 2009 in Tallahassee - 27 attendees, excluding DEP staff

DEP also established a web-based forum for ongoing public comments and regular stakeholder updates. Meeting summaries, draft notes and other details, as well as access to the web-based forum, can be found at www.dep.state.fl.us/waste/retailbags. This site has been visited nearly 6,000 times.

DEP also appreciates the involvements of the professional associations and trade organizations that effectively represented their members' interests and were critical in identifying options and recommendations:

- American Chemistry Council
- American Forest and Paper Association
- American Paper Bag Council
- Florida Dry Cleaners Coalition
- Florida Recycling Partnership
- Florida Retail Federation
- Recycle Florida Today
- Sierra Club of Florida

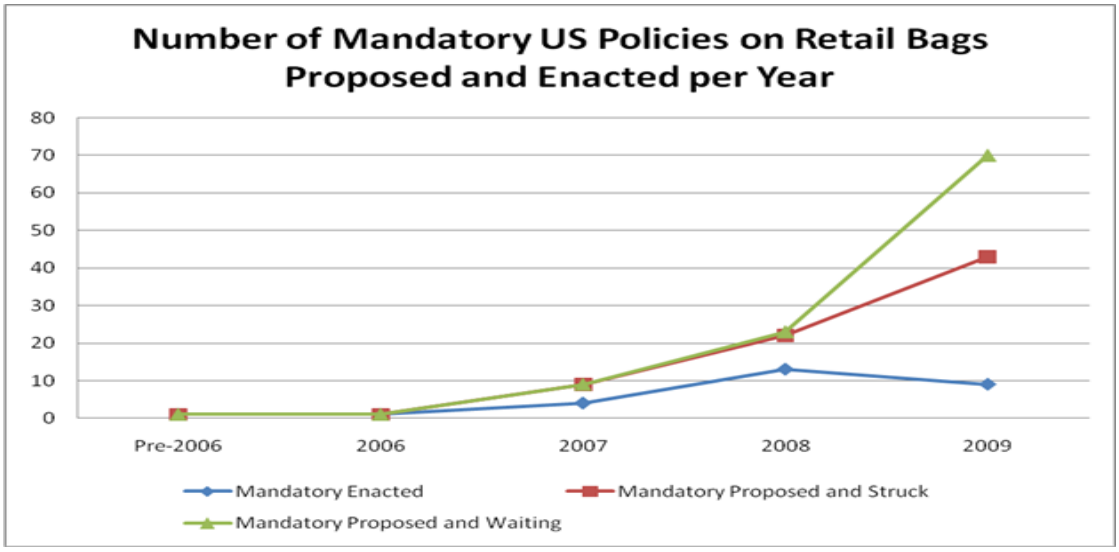
Introduction

Americans used almost 90 billion retail bags in 2003, most of which are used only once and end up in landfills or stormwater systems or littering roadsides, green spaces and beaches across Florida. As part of the Energy, Climate Change, and Economic Security Act of 2008 (Section 403.7033, Florida Statutes, see **Appendix A**), the Florida Legislature directed the Department of Environmental Protection to undertake this analysis of the need for new or different regulation of auxiliary containers, wrappings, and disposable plastic bags used by consumers to carry products from retail establishments. The following explanation of these terms is included to assist the reader. In this report, these are all generally referred to as "retail bags" or "single-use" bags:

- **Auxiliary container:** A secondary container into which a product is placed for transport by a consumer. It includes reusable bags, paper bags, gift bags, gift boxes, hat boxes, and cloth bags--everything but plastic bags.
- **Wrappings:** Includes plastic wrapping for items that are used to protect and transport the items within.
- **Disposable plastic bags:** Includes plastic bags (of any thickness) used by consumers to carry products from establishments. These bags are not necessarily meant to be re-used multiple times, but may have beneficial secondary uses.

The report examines the impact that the improper handling and disposal of retail bags has on wildlife and the environment as a whole. It also includes examples of cities, states, and countries around the world that have taken steps to decrease the use of both plastic and paper retail bags. **Figure 1** shows that the number of mandatory policies for bag reduction in the U.S. has increased steadily since 2006. These actions are considered in light of voluntary measures being taken by various retail establishments in Florida. This review has yielded twelve options to be considered by the Legislature.

Figure 1



Necessity of Regulation

There are two major areas of concern regarding retail bags. First, improper disposal of retail bags hampers recycling, waste management, stormwater management, and litter control. Second, improper disposal damages natural systems and wildlife. These concerns are not unique to Florida, and how Floridians manage retail bags has implications beyond the state's borders. Retail bags fast become pollution affecting Florida's fresh and saltwater resources, animal welfare and, on a grander scale, the health of the world's oceans. Any consideration of regulating retail bags has to account for the worthwhile efforts already underway to reduce the number of bags in circulation or recycle them.

Litter and Waste Management

Litter – Land and Marine

When examining retail bags as litter, DEP looked at previous studies in Florida and neighboring states, including studies that specifically targeted retail bag litter and auxiliary containers such as fast food bags and boxes. The most recent Florida roadside litter study was in 2002 and included plastic bags, paper bags and cardboard containers, referred to as "outer packaging." The study found:

- All types of plastic bags accounted for 1.21% of all large litter items,
- Paper bags, including those that are used specifically to hold take-out food items, accounted for 0.64% of all large litter items,

- When cardboard boxes are included, these "outer packaging items" accounted for 2.23% of all large litter, and
- Plastic film, which may be partially degraded, ripped or shredded plastic bags, accounted for 8.74% of all small liter items found.
- Overall, there was an estimated 25% increase in large item litter density from 2001 to 2002 and a 37% decrease in small item litter density[1].

The 2007 International Coastal Cleanup Report, a publication compiled by the Ocean Conservancy with reporting performed by volunteers, states that bags are the fourth most frequently found item during coastal cleanups worldwide, accounting for 8.1% of all items found[2]. The Florida-specific report from this international effort shows similar results with bags again ranking as the fourth most commonly found item[3]. Roadside litter studies from other areas have retail bags and fast food bags accounting for less than 3%[4]. Clearly, reducing plastic and paper bags will not solve the litter problem, but they are a manageable source that can make a difference.

Bag Reuse

Some people reuse their plastic and paper bags for a variety of purposes. One concern posted often on the DEP web forum is that regulation of paper or plastic bags would prevent people from reusing bags for pet waste pickup and in-home trash. Surveys performed in Australia show that 60-75% of shoppers reuse their plastic shopping bags for one additional use after bringing them home from the store, most commonly for pet waste and trash liners.[5] However, reuse and recycling rates for plastic bags in Florida are far lower, only around 12%.

That said, there are opportunities for reuse of non-retail plastic and paper bags. Frequently, grocery and drugstore products have secondary or primary containment within a plastic or paper bag. Small changes, such as using bread bags instead of plastic retail bags for pet waste pickup, can ease the perceived inconvenience of losing retail bags if regulations were to be enacted. Education is one key to helping consumers make better choices.

According to analyses, between 56.8 and 315.15 disposable plastic bags are replaced by a single reusable bag in one year.

Estimating how many disposable bags would be replaced by one reusable bag is difficult. However, many life cycle analyses and other reports have attempted to do this. The range for the number of "disposable" plastic bags that could be replaced by one reusable bag in a year's time, according to the analyses DEP reviewed, is between 56.8 to 315.15 "disposable" plastic bags replaced by a

[1] Hinkley Center for Solid and Hazardous Waste Management, 2002
[2] Ocean Conservancy, 2007
[3] Ocean Conservancy, 2008
[4] MGM Management, 2002, Southeast Environmental Association, 2009
[5] Environment Protection and Heritage Council, 2002

single reusable bag. The actual number replaced would depend on the shopping habits of the owner of the bag, the material from which the re-usable bag is made, the size of the bag itself and whether or not it is a single trip replacement or lifetime replacement. Still, even at the low end—taking nearly 60 disposable bags out of circulation for every one reusable bag—is remarkable.

Recycling and Retail Efforts

Recycling is another option available to consumers rather than reusing the bags or just throwing them away. Designated retail bag recycling containers are found at several retail stores. The city of Parkland (Broward County) works with local Publix grocery stores and holds a plastic bag recycling contest for schools and coordinates with homeowners' associations to place additional plastic bag recycling bins around the city.[6]

Besides local governments, many large retailers have shown leadership in recycling and reuse. Many have sold or given away millions of reusable shopping bags over the last few years. **Appendix B** lists a few of these retailers and includes their efforts at reducing the use of disposable retail bags. There are also a large number of organizations and grass-roots efforts around the world working to reduce the use of disposable retail bags, recycling or improved technology. **Appendix C** includes a partial list of organizations and their websites.

As noted, the U.S. Environmental Protection Agency (EPA) estimates that 12% of all plastic bags are recycled. More than 4 million tons of plastic bags, sacks and wraps were reported to be generated in the U.S. municipal solid waste (MSW) stream in 2007, with only 11.9% of the high density polyethylene (HDPE) and 12.4% of the low density polyethylene (LDPE) bags, sacks and wraps being recovered (recycled). To derive these data, the EPA used the American Chemistry Council's annual resin reports for generation amounts, and data from the American Chemistry Council and the National Association for PET Container Resources to determine recovery rates.[7]

Waste Management

Retail bags cause equipment and operational problems at recycling facilities, landfills and waste transfer stations. The machinery on trucks and separators is frequently impaired because plastic bags wrap around wheels, gears and other parts of the equipment, forcing work to stop while someone extracts the plastic and restarts the process. This happens daily at recycling facilities and employees risk injury by reaching into sharp or pinching areas to free the plastic from the machinery.

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[6] Archer, 2009
[7] US EPA, 2007

At landfills retail bags also get wrapped around spreaders and other equipment as well as cause problems by becoming airborne. Some waste management professionals consider plastic retail bags to be the number one "fly away" issue at landfills. Litter flying off landfills angers nearby residents, requires extra work to pick up and return the escaped trash, and may require additional daily landfill cover.

Retail bags frequently clog stormwater pipes, clutter stormwater retention ponds, and are regularly found by crews cleaning roadways, ditches and flushing pipes. In Tallahassee (population 172,000) there are three large flush trucks with two-person crews that work every day to keep stormwater drains open.[8] There are more than ten people assigned to perform daily trash pickup from stormwater drains and ditches. The city also employs another six people to pick up roadside trash and utilizes inmates to assist with this job.[9]

In Marco Island, a flood was found to be caused by drains clogged with palm fronds, coconuts and plastic bags.

In Marco Island, an April 2008 flood was found to be caused by drains clogged with palm fronds, coconuts and plastic bags.[10] In other areas of the world, plastic bags have been directly linked to flooding and even to malaria outbreaks.[11] Plastic retail bags are not the only culprit but, again, they are a source that readily can be controlled.

Biodegradable Bags

Biodegradable and compostable bags are gaining attention as alternatives to plastic and paper bags. The technology has improved since first introduced and some manufacturers now market biodegradable bags with a "lifespan." There are multiple types of biodegradable and compostable bags. Compostable bags should meet ASTM D6400-04, the standards for plastics designed to be composted in municipal and industrial aerobic composting facilities.

Biodegradable bags now fall into the following categories:

- Photo-degradable react to ultra-violet light to break down.
- Hydro-biodegradable react to "moist biologically active" environments to break down.
- Oxo-biodegradable use additives to react with the atmosphere in order to break down.[12]

While bags that do not persist in the environment sound like a positive step, there are serious drawbacks. All types of biodegradable and compostable bags must be placed under specific conditions to degrade properly. For instance, a photo-degradable bag will not break down if it is covered by water or otherwise obscured from light and an oxo-biodegradable bag requires

[8] U.S. Census Bureau, 2009
[9] Yarborough, 2009
[10] Dillon, 2008
[11] United Nations Environment Programme (UNEP), 2005
[12] Scott, 2002

direct access to oxygen and sunlight to degrade. Any consumer who places a labeled "biodegradable" bag in the home compost pile will not see the promised degradation because the required high temperatures achieved in municipal composting facilities cannot be achieved with home composting. Additionally, some of these bags leave plastic pieces or other residues when they break down, leftovers that natural systems and wildlife cannot tolerate. Finally, biodegradable bags inadvertently lead to litter because consumers assume the bags will quickly break down or compost, whatever the conditions; they discourage environmental stewardship.

Wildlife and the Environment

The problems caused by throw-away bags do not affect humans alone. Auxiliary containers, retail bags and wrappings can change the ecosystems of rivers, streams, lakes, ponds, estuaries, and oceans. The bags block sunlight from reaching into the depths of the water, leading to stress on aquatic vegetation, plant death and a reduction in the oxygen level of the water. Unnaturally low oxygen levels kill fish and other animals. In addition, filter feeders ingest the plastic particulates that are produced by the degradation of plastic in the water. The effect of this latter phenomenon on the rest of the food chain over the long term is not currently known.[13]

Marine and Land Animals

A major concern about plastic bags is their role in the death of marine animals. Research shows that frequently this number is exaggerated or simply misstated. A commonly stated "fact" that is widespread on the internet is that 100,000 animals are killed annually by plastic bags. The citation for this number is from a Canadian study which did *not* point to plastic bags as the cause of death but instead attributed these deaths to discarded fishing nets.[14]

However, it is true that researchers are finding some animals that have ingested or become entangled in plastic bags, although rigorous scientific research is just beginning. Testimonials from beach cleanups and other litter cleanup efforts, sometimes supplemented with photos or videos, show the suffering and deaths of animals caused by plastic containers—a consequence, however anecdotal at this point, that is difficult to rationalize when solutions are within reach. Many marine animals including sea turtles and the larger predators (whales, seals, sea lions, etc.) are already classified as endangered or protected. A variety of research has shown that turtles and other sea dwelling creatures ingest plastic and plastic bags. One study found plastic in the stomach of 15% of the 66 post-hatchling loggerhead sea turtles surveyed.[15]

There is some evidence that land animals can also be harmed by retail bags and auxiliary containers. Vehicular deaths of scavenging animals, including birds and raccoons, are

[13] Thompson, et al., 2004
[14] Piatt & Nettleship, 1987
[15] Witherington, 2002,Thompson, et al., 2004, Mato, Isobe, Takada, Kanehiro, Ohtake, & Kaminuma, 2001

frequently attributed to the litter thrown out of cars. The accompanying food waste attracts the animals to the road or roadside and they are struck while trying to feed.[16]

In India, plastic bag regulations were enacted in part to preserve the health of cows. The cattle, considered sacred, were similarly attracted to the food waste found inside discarded bags and were consuming the food waste and bag as one. As more cows died, measures were taken to reduce suffering and deaths of animals with stomachs full of plastic bags.[17]
Animals that scavenge at landfills are also injured or killed because of the availability of auxiliary containers, plastic bags and wrappings. Scavenging birds and birds of prey hunting rodents can become entangled in the wrappings or bags or ingest large amounts of plastic.[18]
Deer, raccoons, possums, bears and other garbage and landfill scavengers have also been found with retail bags within their guts or have been seen eating such items. Retail bags, plastic in particular, can cause digestive system obstruction and lead to a variety of deaths, including starvation.[19]

Plastic Bag Degradation

The effect of plastic upon the oceans is not limited to the ingestion of plastics by marine animals. As plastic degrades, it flakes and breaks into small, fairly flat particles. These particles are not unlike plankton in size and appearance and have been found floating in the open ocean. In some places these particles are estimated to outnumber actual plankton. A research ship from the Algalita Marine Research Foundation has preliminary data from 2008 showing a total ratio of plastic to zooplankton for all samples of 8 to 1. In one sample, the ratio was 46:1, plastic to plankton.[20]

A National Oceanic and Atmospheric Administration (NOAA) study in 2008 determined a lower ratio.[21] However these two studies were performed in different areas at different times of the year. As with the filter feeders in brackish and fresh waters, the effect of plastics ingestion on the food chain is unclear. The world's largest marine mammals, blue whales, are filter feeders that eat an estimated 2,000 to 9,000 lbs of plankton and krill—or other things that cross their filters—every day.

Plastic Pellets

In addition to the bags, wrappings and containers that go out as litter or waste and degrade from their useful stage into small plastic particulates, there is another plastic problem in the oceans. The raw materials used in manufacturing can also escape from the manufacturing plant and degrade in the environment. When plastic is created, it starts as large amounts of very small, spherical pellets called "nurdles." Since nurdles are small and light, and therefore

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[16] Harris & Scheck, 1991
[17] Edwards, 2000
[18] Molina & Garrett, 1998, Elliott, Duffe, Lee, Mineau, & Elliott, 2006
[19] Drever, 1997, Stone, Okoniewski, & Stedelin, 1999, Jonkel, 1994, Totton, 1997
[20] Algalita Marine Research Foundation, 2009
[21] Doyle, 2008

highly mobile, a large amount is lost in transport and manufacturing and ultimately washed into stormwater drains or sewers.[22]

When these nurdles reach waterways they degrade similarly to plastic bags but instead of flaking off in small layers they lose small amounts of plastic and gradually become smaller and smaller plastic balls. Nurdles can look like a number of oceanic food items, not the least of which is fish eggs. One study performed on seabirds showed 55% of the bird species studied had ingested plastic particles.[23] It is unknown if any chemicals from the plastic can be absorbed by the bird's body, but it is known that ingestion of large amounts of non-food items can cause gut obstruction and ultimately death by starvation or nutrient deprivation.

The actual number of nurdles released to the environment each year is unknown, but they have been found in the oceans and seas for decades. Researchers began studying nurdles and their effects on the oceans in the 1970s.[24] In 1993, the U.S. EPA Office of Water published a report on plastic pellets that identified them as being of particular concern.[25]

Water Pollution/Chemical Leaching

Plastic bags are made from natural gas or petroleum. Plastic bags made in the U.S. are usually made from natural gas while imported bags are more likely to be made directly from petroleum.[26] In 2004, the U.S. International Trade Commission reported that the trend in plastic bag use in the U.S. was an increase in imported bags and a decrease in domestically produced bags, but an overall increase in bag consumption. Assuming the trend has continued, most bags consumed in the U.S. are made from petroleum.[27]

There are many other chemicals and slight impurities in the composition of plastic bags. As the bags degrade, some of these chemicals are released into the water or atmosphere. It is likely that degradation of plastic bags releases greenhouse gases although estimates as to the amount that may be released could not be found. In addition, the plastic nurdles or pellets have actually been found to absorb and become a transport medium for toxic chemicals, including PCB (polychlorinated biphenyl) and DDE (Dichlorodiphenyldichloroethylene, a DDT breakdown product).[28]

North Pacific Gyre

Plastic-filled "garbage patches" and "plastic gyres" in the oceans have been media topics in recent years and the subject of much discussion. An ocean gyre is a circular ocean current created by the winds. There are five major ocean-wide gyres, the North Atlantic, South

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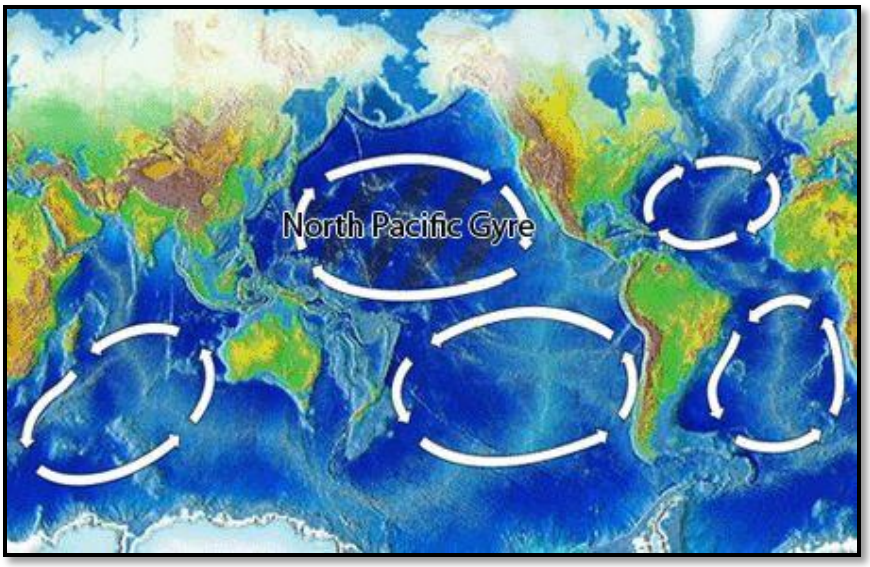
[22] Redford, Trulli, & Trulli, 1997
[23] Lee & Moser, 1992
[24] Carpenter & Smith, 1972
[25] U.S. EPA Office of Water, 1993
[26] U.S. International Trade Commission, 2004, American Chemistry Council, 2007
[27] American Chemistry Council, 2007
[28] Mato, Isobe, Takada, Kanehiro, Ohtake, & Kaminuma, 2001

Atlantic, North Pacific, South Pacific and the Indian Ocean gyres. Drifting items can become a part of the gyre and in some places large amounts of floating debris held within the gyre by currents have been named garbage patches and plastic gyres.



Research from many sources, including the NOAA and an independent research team from Algalita, shows that there are current-produced gyres in the oceans and most of them hold large amounts of marine debris. The most publicized gyre is a North Pacific Gyre, an area roughly twice the size of the U.S. stretching between the coasts of western North America and eastern Asia. Initially it was thought that within the North Pacific Gyre there were smaller gyres, patches about the size of Texas, filled with garbage. Research now shows that the marine debris is not limited to these patches and higher levels of debris density have been found outside these areas.[29]

Life Cycle Analyses

This analysis has primarily focused on the plastic auxiliary containers, wrappings and bags because paper bags and containers more readily degrade, are more readily recyclable, and are less likely to be the cause of death in animals because they can be digested more easily. In 2007 the EPA estimated that 36.8% of all paper bags and sacks generated were recycled, about three times the rate for plastic.[30] The higher rate of recycling for paper bags indicated in **Figure 2** versus the 12% recycling rate for plastic bags shown in **Figure 3** is often attributed to the fact that most local recycling programs will accept paper bags but not plastic bags.

[29] Algalita Marine Research Foundation, 2009
[30] U.S. EPA, 2007

Figure 2

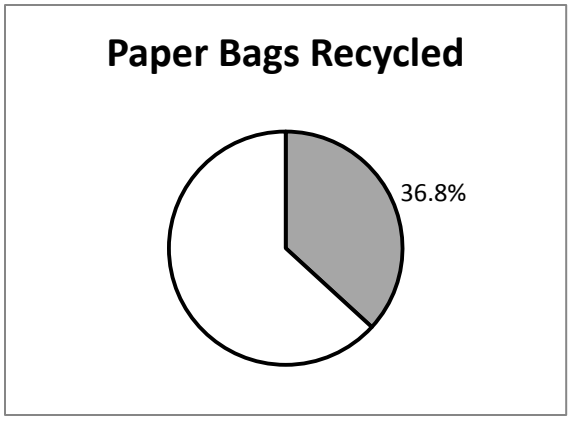


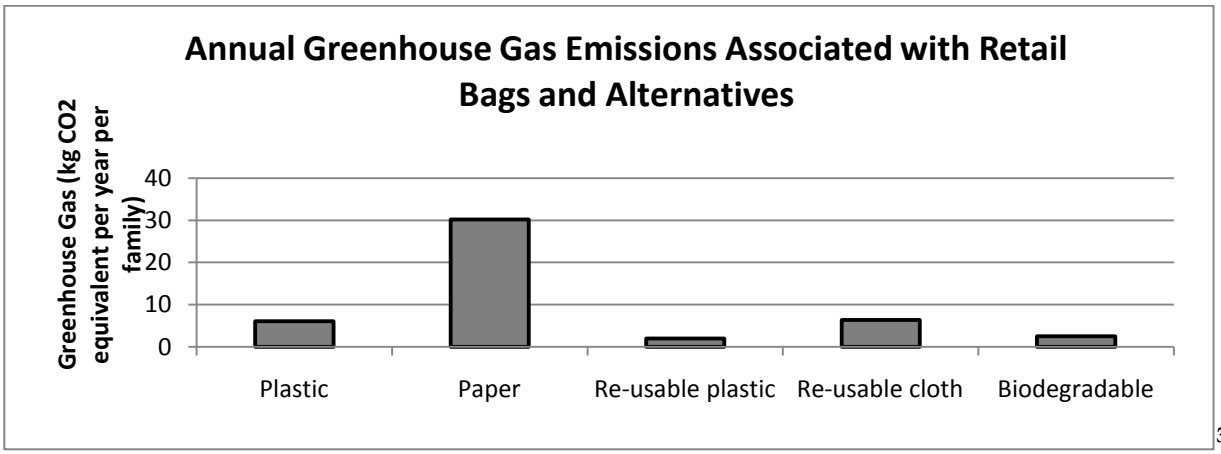
Figure 3

Paper bags are often not considered a problem or, indeed, are sometimes seen as the solution to the plastic problem. Conventional wisdom is wrong. When reviewing life cycle analyses of paper bags and plastic bags, it is evident that there are more negative overall environmental impacts attributed to the transport and production of paper bags. **Figure 4** shows a comparison of the annual greenhouse emissions associated with retail bags. This evidence, and more likely the fact that paper bags are more costly than plastic bags, explain—and even support—the preference of plastic over paper.[31]

Both types of bags comprise approximately the same amount of recycled content. The manufacturing industries for both paper and plastic claim an average recycled content of 30% for the typical bag produced. The life cycle analyses reviewed for this report indicate that increased recycled content does reduce greenhouse gas emissions and related environmental impacts when compared to bags made with virgin materials. However, recycled content is only a step in the right direction—protecting Florida's wildlife and the environment is contingent on better handling and a reduced demand for the manufacture of paper and plastic bags.

[31] Hyder Consulting Pty Ltd., 2007, Herrera Environmental Consultants, Inc., 2008

Figure 4



[32]

Conclusions on the Necessity of Regulation

While evaluating the necessity of bag regulations, the good practices that citizens and retail establishments are already undertaking to reduce the number of retail bags in circulation must be recognized. As previously noted, current efforts among grocery stores, such as Food Lion, Publix, Albertsons and Winn Dixie to offer the opportunity to recycle and use reusable bags help change the mind-set of a throw-away society. Large retailers such as Target and Walmart employ similar practices and help increase the number of shoppers exposed to this way of thinking and acting. Nationwide, Walmart has committed to reducing plastic bag usage in their stores by 25% per store by 2013.

Walmart has committed to reducing plastic bag usage in its stores by 25% per store by 2013.

The question then becomes—will these actions be enough to rule out the need for any retail bag regulation? About thirty states have enacted or proposed regulations statewide or at the local level. In April 2009, Congress introduced the "Plastic Bag Reduction Act of 2009" (H.R. 2091). Retail bag regulations are also found on all six populated continents. Worldwide, the number of countries with retail bag regulations has been steadily increasing since the early 1990's. There are 41 locations with bans, 16 with taxes or fees, 28 with other restrictions or regulations, and 52 that currently have one or more proposed regulations.

Of the eight states in Environmental Protection Agency (EPA) Region IV, including Florida, there is one that has enacted retail bag regulation. In June 2009 the North Carolina General Assembly passed Senate Bill 1018, which bans retail stores in the Outer Banks from distributing plastic bags to customers and allows paper bags to be given away only if the bag is made of recycled content.

[32] James & Grant, 2005, Environment Protection and Heritage Council, May 2008

Of the nation's ten most populous states (Florida is #4), eight have proposed or enacted retail bag regulations at either the state or local level: California (#1), Texas (#2), New York (#3), Illinois (#5), Pennsylvania (#6), Ohio (#7), Michigan (#8) and North Carolina (#10). There has been some interest in regulating retail bags at the local level in Florida. Bonita Springs (Lee County) considered including retail bag bans as a legislative priority in 2009. Additionally, the cities of Sarasota (Sarasota County), Parkland (Broward County), Miami (Miami-Dade County) and Key West (Monroe County) all considered regulations on retail bags before the Legislature enacted a stay on local government regulations in 2008 and directed DEP to prepare this report.

Efficacy of Regulation

Many citizens, businesses and governments across the U.S. and the world have already decided that retail bags have to be better managed. What, then, are the most efficient and effective ways to do so? Regulatory and non-regulatory options, and the ways they can be integrated, have to be examined to answer the question. So do the incentives and disincentives that could be applied at the retail and consumer levels.

There are several things to consider when assessing the efficacy of statewide and local regulation of retail bags. Clearly the effectiveness of regulations would be measured by the reduction of single-use retail bags. Perhaps efficacy could also be measured by behavior change. If consumers simply no longer have the option of receiving a single-use bag, is the effort effective? Without behavior change and education, it is possible that consumers may make choices that are equal to if not worse than the current situation. To avoid this, consumers must have sustainable options to compensate for single-use retail bags. It would also be helpful to have a combination of incentives and disincentives supported by the retail industry to increase the use of reusable bags.

The following sections discuss various regulatory and non-regulatory approaches used by other cities, states and countries, including twelve options posed for consideration in Florida.

Regulatory and Non-Regulatory Options

Bans

Banning auxiliary containers, wrappings or plastic bags has rarely been enacted into law at higher than local levels. In the U.S., with one notable exception, only a few small villages in Alaska, a small town and a county in Hawaii, a county in Iowa, four cities in California, and one other town in Washington have enacted bans on retail bags. Many other places have proposed or considered bans. A few communities in Florida, including Parkland in Broward County, considered a ban before the stay on retail bag legislation was enacted by the 2008 Legislature.

The most publicized location in the U.S. with a ban is San Francisco, California. The city passed an ordinance in April 2007 that requires pharmacies and supermarkets with gross annual sales of $2 million or more to provide only paper, compostable bags or reusable bags. Proponents of the ban assert that there has been a 5% to 10% reduction in the amount of plastic bags reaching the landfill. Ross Mirkarimi, the City Supervisor and primary author of the ban, has been quoted to say that up to 127 million fewer plastic bags have been distributed in San Francisco just one year after the ban went into effect. [33]

[33] Eskenazi, 2009

More recently, as noted earlier, the North Carolina Legislature passed a ban for the Outer Banks. The ban prohibits retail stores having more than 5,000 square feet of retail space or that are part of a retail chain from distributing plastic bags to consumers and allows paper bags to be given away only if the bag is made of 100% recycled content. Because the ban only went into effect September 1, 2009, data on its impact is not yet available.

Fees and Taxes

Several places worldwide have passed fees or taxes on auxiliary containers, wrappings, or plastic bags. There are no locations in the United States that have enacted a fee or a tax on retail bags, but several locations have proposed or considered a retail bag tax. In all cases the proposal was dropped or voted down.

There have been some successes and some unintended consequences that merit examination.

- The Seattle, Washington City Council passed a twenty cent "green fee" on all disposable shopping bags in July 2008, but the fee would not become effective until approved by voters. On August 18, 2009 the citizens of Seattle voted against the "green fee" by a margin of 58% to 42%.
- Perhaps the most notable plastic bag tax was enacted in Ireland in 2002. The first year of the tax saw a 90% or greater reduction in plastic bag usage but an increase in the purchase of trash bags and dog waste pickup bags. Additionally, each successive year saw increased plastic bag usage. Because of this, the government increased the tax in 2007. After that, plastic bag litter was reduced from 5% of all litter to less than 0.3% percent the first year and to less than 0.25% in successive years.
    - Despite the initial setback, the levy was very popular. A 2003 national survey found that 91% of those surveyed were in support of the tax. A previous study performed in 1999 showed that 40% of survey respondents would have been willing to pay such a tax.[34]
    - All the funds from the Irish levy, in an effort to make the tax more acceptable to consumers, were placed in the "Environment Fund" and are used solely for environmentally related purposes. As reported in 2007, the levy has raised more than €85 million ($120 million) and has been used for many projects ranging from creating recycling facilities and return centers to educational campaigns. The revenues have also been used to help fund recycling facility operational costs and enforcement of waste management laws.[35]
- More recently, the City Council of the District of Columbia voted to create a five cent tax on both paper and plastic bags. The bill was signed by the mayor in July 2009 and will go into effect on January 1, 2010. The purpose of the bill is two-fold: to promote the use of reusable shopping bags and to add funding to the Anacostia River Cleanup and Protection Fund. One cent per bag is to stay with businesses and four cents is to go to the fund to help clean up the Anacostia River.

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[34] Kildare County Council, 2008

[35] McDonnell, Convery, & Ferreira, 2007

Voluntary Measures

Voluntary measures are important but difficult to quantify. Many retailers in Florida have enacted campaigns to reduce plastic bag usage. Reusable bags are available for purchase at nearly all the major chain retailers and a number of retailers have given reusable bags as promotional items. Albertsons gives customers five cents back on their purchase for every non-plastic bag used. Target and CVS have also recently implemented programs to give cash back to customers who bring in their own bags. Started in November 2009, the Target program gives customers a five-cent discount for every reusable bag used at checkout. In October 2009, CVS customers began to receive a one dollar bonus on their CVS cards for every four times a reusable bag is used. Publix, Food Lion, and Walmart all offer in-store or on-premises plastic bag recycling receptacles for customers. **Appendix B** is a list from the Florida Retail Federation describing current efforts of retailers in Florida.

Target gives customers a five-cent discount for every reusable bag used at checkout.

In Austin, Texas there is a voluntary plastic bag use reduction and recycling program developed in partnership with Keep Austin Beautiful, The Texas Retailers Association, the Progressive Bag Affiliates, local retailers and the city of Austin. According to the city, Austin shoppers at participating retailers increased plastic bag recycling by more than 20% from 2006 to 2008 and stores gave out 40% fewer plastic bags at checkout. The program utilized an awareness campaign that included a campaign logo and reusable bag design contest, a kick-off event, a youth art contest, reusable bag day promotion, and a campaign website.[36]

Phase-Out

Phasing out retail bags is another method used to reduce the number of single-use retail bags and to help increase awareness. Typically, a phase-out is a multi-part approach often combining fees and bans progressively. There are no locations in the U.S. that have enacted a phase-out but several have proposed language with increasing fees or yearly requirements for decreasing retail bag usage.

The Ministers of the Environment Protection and Heritage Council (EPHC) in Australia agreed in October 2002 to pursue a number of actions relating to reducing the adverse impacts of plastic bags on the Australian environment. A number of work groups were put together to address different aspects of the issue. On July 1, 2005, after reviewing the research and report on the issue, the EPHC agreed to a phase-out of lightweight plastic shopping bags by the end of 2008. All shoppers and retailers were expected to have alternatives in place by December 31, 2008. However, after an analysis in April 2008 showed the economic costs of a regulatory

[36] Austin City Connection, 2008

phase out would significantly outweigh the environmental benefits, the EPHC resolved not to endorse uniform regulatory action at this time.

Local Government Regulations

As previously stated, there are no local regulations enacted in Florida due to the legislative preemption enacted in 2008. But there are local efforts outside the state, the majority being less than two years old. **Appendix D** lists all known locations with local regulations.

Since there are so many types of local regulations that affect varying populations and varying numbers of retailers and the regulations are so new, there is little data regarding their efficacy. However, there are some effects common to all local regulations. Differing local regulations are more difficult for chain retail stores to implement because they are regionally managed covering many communities or even states. Additionally, it is more difficult to realize widespread environmental benefits from local regulations if the affected areas are small. Enacting retail bag policies at the state level is easier for retailers to implement and can have broader environmental benefits. However, these considerations have to be balanced with the needs and demands of local citizens, and the expertise of local governments in preserving their local environment. The approaches are not mutually exclusive.

Other National and International Regulations

DEP has researched and compiled a summary of retail bag regulations throughout the United States and other countries. There are 33 countries worldwide that have enacted or proposed retail bag regulations. This information can be found in **Appendix E** and more information, with interactive maps is available on the DEP Retail Bag Report website at: www.dep.state.fl.us/waste/retailbags. These maps are regularly updated as DEP receives information regarding retail bag policies worldwide.

Conclusions on Efficacy of Regulations

The pros and cons associated with each option in the report are included to provide policymakers with the information needed to balance the effect of any actions taken in the future.

While all mechanisms to reduce retail bag usage have merit, some are more effective than others. Bans produce the fastest results in reducing plastic bag use; fees or taxes follow closely behind. Governments with fees or taxes usually devote at least some of the revenue to environmentally-related funds, although some allow retail stores to keep a portion of the proceeds. Many people and retailers prefer voluntary efforts simply because they are voluntary and because no new fees or administrative costs are required.

An effective educational campaign promoting reusable bag use and educating the public about the problems caused by single-use plastic and paper bags cannot be underestimated. Appropriately accounting for the legitimate concerns and entrepreneurial creativity of the retail sector is also essential to any successful campaign. The following table summarizes twelve options for reducing the use of single-use paper and plastic retail bags. The options should be considered both on their own merits and as they integrate well with other options to reverse the current practice of widespread use of disposable retail bags.

Finally, an assessment of the efficacy and consequences (pros and cons) associated with each option is included to provide policymakers the information needed to weigh and balance the effect of any potential actions on the environment, regulated community and the consumer.

Options for Discouraging and Reducing the Use of Single-Use Retail Bags

Option	Pros	Cons	Additional Comments
1. Enact an educational campaign	• Easy to implement	• Limited impact unless coupled with other option(s)	
2. Encourage In-Store Recycling	• Utilizes infrastructure that already exists in many stores • Increases recycling • Produces moderate quality feedstock • Material is in demand	• May be costly to stores • Does not accommodate compostable /biodegradable alternatives • Low to moderate participation in existing programs	
3. Retail Stores offer Reusable Bag Credit	• Allows retailers to be proactive • Gives retailers flexibility • Attractive to customers • Incentive aimed at changing behavior – reducing consumption	• Not attractive to all retailers • Credit is usually small (1 to 5 cents) and therefore undervalued by consumers	• Target performed a pilot study of a reusable bag policy at 100 stores and found a 58% reduction in the number of plastic bags used
4. Require biodegradable bags as an option at checkout	• Bags are easy for stores to purchase • Customers feel "greener"	• Bags are expensive, cost will be passed on to customers • Confusing for consumers who don't realize that the bags will not biodegrade in backyard composters • Can contaminate plastic recycling	

Option	Pros	Cons	Additional Comments
5. Require a certain additional amount of recycled content in bags	• Easy to accomplish for paper bags • Reduces some environmental concerns from manufacturing	• More difficult for plastic bags • Increased recycled content bags are more expensive • Does not address end-of-life concerns • Minimally addresses environmental concerns from manufacturing	• Current average recycled content for paper bags is 30% • Current average recycled content for plastic bags is 30%
6. Implement pilot program(s) of any of these options in a few key communities that have already expressed interest	• There are some communities in Florida that have already expressed interest	• Difficult for retail chains to implement something in just a small area	
7. Set a recycling rate goal (number of bags recycled per year)	• Increases recycling • Material is in demand	• Hard to track • Does not reduce the number of bags consumed • Does not address environmental concerns from manufacturing	
8. Require bag consumption reduction with plan to enact ban or fees if not reached	• Reduces bag consumption • Gives retailers flexibility	• Hard to establish a baseline • Very difficult for smaller stores to track	
9. Deposit System	• Customer gets amount of deposit back when bags are turned in for recycling • Increases recycling	• Requires stores to take bags back for recycling • Doesn't reduce the number of bags consumed	• No successful examples

10. Increasing fee over time	• Incentive to reduce consumption • Could provide funding for recycling programs and educational campaigns • Reduces litter • Reduces costs associated with clogged storm and sewer drains	• Fees may be perceived as a tax • May transfer business to surrounding locations • Potential job losses in plastic bag manufacturing and plastic recycling industries	
11. Flat fee *(no increase over time)*	• Reduces consumption • Reduces litter • Reduces costs associated with clogged storm and sewer drains	• Consumers get used to paying and consumption creeps back up, especially if inflation reduces the value of the fee • Fees may be perceived as a tax • May transfer business to surrounding locations • Potential job losses in plastic bag manufacturing and plastic recycling industries	
12. Ban	• Reduces consumption • Reduces amount of demand so amount of supply and resulting environmental damages should be reduced • Reduces litter • Reduced costs associated with clogged storm and sewer drains	• Some consumers like the convenience of store-provided bags • May promote shift to other disposable alternatives • Potential job losses in plastic bag manufacturing and plastic recycling industries	

Appendices

Appendix A: Energy, Climate Change, and Economic Security Act of 2008

Section 403.7033, Florida Statutes:
Departmental analysis of particular recyclable materials -- The Legislature finds that prudent regulation of recyclable materials is crucial to the ongoing welfare of Florida's ecology and economy. As such, the Department of Environmental Protection shall undertake an analysis of the need for new or different regulation of auxiliary containers, wrappings, or disposable plastic bags used by consumers to carry products from retail establishments. The analysis shall include input from state and local government agencies, stakeholders, private businesses, and citizens, and shall evaluate the efficacy and necessity of both statewide and local regulation of these materials. To ensure consistent and effective implementation, the department shall submit a report with conclusions and recommendations to the Legislature no later than February 1, 2010. Until such time that the Legislature adopts the recommendations of the department, no local government, local governmental agency, or state government agency may enact any rule, regulation, or ordinance regarding use, disposition, sale, prohibition, restriction, or tax of such auxiliary containers, wrappings, or disposable plastic bags.

Appendix B: Current Efforts of Retailers in Regards to Bags

This list of the current efforts conducted by retailers with stores in Florida was provided to DEP by the Florida Retail Federation. The numbers and data are listed as reported. DEP notes that many of the numbers may not be Florida-specific but may reflect regional or national results.

A. Albertsons:

- Sells or gives away reusable bags (42,405 bags since January 1, 2009).
- Offers a free promotion every week – buy X item and get a free reusable bag.
- Instituted a Bag Reuse Program:
    - Since January 1, 2009 324,760 bags have been reused.
    - Gives the customer 5 cents for every paper bag or reusable bag they use.
    - Has saved 649,520 bags so far this year.
    - Top areas in Florida for bag reuse in Albertsons stores: Sarasota/Bradenton, Venice Beach, Vero Beach and Gainesville.
- Uses Paper Handle Bags made with 45% recycled material and certified by the Sustainable Forest Industry in seven stores (cost is higher than traditional paper and plastic).
- Working with plastic bag manufacturer to source a stronger plastic bag made of at least 25% recycled plastic material. This bag is stronger and can hold more items. It is predicted that this bag will soon be made of 45% recycled plastic material.

B. Food Lion:

- Began selling reusable shopping bags on April 22, 2008, Earth Day.
- Has a current promotion for reusable bags being given away when a customer buys one of the following three products: Brita®, Greenworks®, or Scotts® towels. This promotion was ongoing until the end of June 2009 and put 17,000 free bags in the hands of consumers since April 22, 2009.
- Currently recycles all corrugated cardboard and plastic that can be recycled at the store.
- Offers in-store recycling of plastic bags, and a recycling message on the store's plastic bags. On the front of the bag on the bottom left hand corner is a "consider reusable bags" message and on the back is "please bring your plastic bags back to Food Lion for recycling."
- In 2007, recycled 7,730,869 pounds of plastic.

C. Publix:

- Offers in-store recycling of paper and plastic bags at all retail locations. Not only can customers drop off any brand plastic shopping bag for recycling, they can recycle plastic sleeves from dry cleaning and newspapers.
- Recycled 6,700 tons of plastic in 2008.

- Has sold reusable shopping bags made of canvas for many years. Since first offering the 99-cent reusable bag in mid-2007, Publix has sold over 7.5 million and given away many more.
- Initiatives to reduce the use of plastic bags include improved training for front service clerks; bag reduction goals for every store; monthly progress reporting; communication campaigns to encourage the use of reusable bags; and the distribution of free reusable bags through various partnerships.
- These initiatives have helped reduce Publix's use of plastic bags by over two-hundred million per year.

D. Target:

- Has given away or sold over 8.5 million reusable bags.
- Does participate in recycling programs in certain markets, but none currently in Florida.
- Currently reviewing its bag program to determine future plans.

E. Walgreens:

- Supports goal adopted by Progressive Bag Affiliates to increase recycled content of plastic bags supplied in stores to 40% by 2015 and make in-store recycling available to customers.

F. Walmart:

- Sells reusable bags (Walmart estimates it has sold enough reusable bags to eliminate the need for more than one billion plastic shopping bags.) Sells bags at two price points: one for $1.00 and a second for $0.50.
- Offers in-store recycling of plastic bags.
- Recycles shrink wrap, garment bags, and other loose plastic.
- All plastic and plastic bags collected for recycling are pressed between cardboard stacks in Walmart's "sandwich baler" process and sent to certified recyclers for processing. It is estimated this has eliminated more than 44 million pounds of plastic from landfills since 2006.
- Committed to reducing plastic bag usage in U.S. stores by 25% per store by 2013.
- Using a comprehensive approach to reduce plastic bag usage, including training associates regarding bagging efficiency and reduction of bag use.
- Has a company-wide sustainability goal to generate zero-net waste.

G. Winn Dixie:

- Sells reusable bags.
- Offers in-store recycling of plastic bags.
- Adopted use of Junior Bag in express and self checkout, which uses 20% less resin. (This is equivalent to a reduction of 308,000 pounds used on an annual basis.)

Appendix C: List of Groups, Organizations and Grass-Roots Efforts

Groups Interested in Reducing the Use of Disposable Retail Bags:

- Sierra Club Florida (Waste Minimization) www.florida.sierraclub.org
- www.reusablebags.com (Sells Reusable Bags)
- ChicoBag www.chicobag.com (Sells Reusable Bags)
- Audubon Society (Support Waste Minimization/Litter Reduction for Land Conservation Purposes) www.audubon.org
- Californians Against Waste www.cawrecycles.org (Non-profit environmental research and advocacy organization)
- Heal the Bay www.healthebay.org (Non-profit organization)
- Blogs/Grassroots
    - Group on Facebook "Reduce the Use of Plastic Bags"
    - www.natural-environment.com
    - 64 petitions on www.thepetitionsite.com that relate to plastic bag use reduction
    - http://noplasticbags.blogspot.com
    - www.bringyourown.org
    - www.squidoo.com/noplasticbags
    - www.conserveplasticbags.blogspot.com

Groups Interested in Increasing Bag Recycling:

- American Chemistry Council (www.plasticbagrecycling.org, www.americanchemistry.com, www.plasticsmythbuster.org, www.plasticbagfacts.org)
    - Operation Clean Sweep www.opcleansweep.org Plastics Industry initiative to help prevent the release of plastic resin pellets (nurdles) into the environment
- Hilex Poly (Plastic Bag Manufacturer) www.hilexpoly.com
- Raymond Communications www.raymond.com Recycling Policy Consultant firm
- American Forest & Paper Association (Paper Bag Manufacturers) www.afandpa.org - generally support bans that only relate to plastic because then paper bag use goes up
- NAPCOR (National Association for PET Container Recyclers) www.napcor.com support plastic recycling
- Save the Plastic Bag www.savetheplasticbag.com group of businesses and citizens opposed to plastic bag bans
- SPI (The Society of the Plastics Industry)/Film and Bag Federation – www.plasticbag.com Plastics Manufacturing Industry
- www.myrecycledbags.com – blog about crocheting plastic bags into other products

Groups Interested in Improving Bag Technology:

- American Chemistry Council (www.plasticbagrecycling.org, www.americanchemistry.com, www.plasticsmythbuster.org, www.plasticbagfacts.org)
- Hilex Poly (Plastic Bag Manufacturer) www.hilexpoly.com
- Raymond Communications www.raymond.com Recycling Policy Consultant firm

- American Forest & Paper Association (Paper Bag Manufacturers) www.afandpa.org
- NAPCOR (National Association for PET Container Recyclers) www.napcor.com support plastic recycling
- Save the Plastic Bag www.savetheplasticbag.com group of businesses and citizens opposed to plastic bag bans
- SPI (The Society of the Plastics Industry)/Film and Bag Federation – www.plasticbag.com Plastics Manufacturing Industry
- BASF www.basf.com - makes "Performance Polymers" aka biodegradable plastics
- Symphony Environmental www.degradable.net - makes degradable plastics
- BPI (Biodegradable Products Institute) www.bpiworld.org – professional association promoting biodegradable plastics

Appendix D: Local Enacted Regulations in the United States

Location Name	Estimated Population	Year Effective	Ban	Fee	Recycling Requirement	Voluntary	Provide alternatives*
30 small communities, AK	16,500	1998	X				
Albany County, NY	298,130	2008			X		
Austin, TX	656,562	2007				X	
Chicago, IL	2,853,114	2008			X		
Edmonds, WA	40,158	2009	X				
Fairbanks, AK	35,132	2010		X			
Fairfax, CA	7,066	2008	X				
Kauai County, HI	63,689	2011	X				
Lake County, IL	712,453	2007			X		
Los Angeles, CA	3,833,995	2008				X	
Madison, WI	231,916	2009			X		
Malibu, CA	13,009	2008	X				
Manhattan Beach, CA**	36,605	2008	X				
Marshall County, IA	39,523	2009					X
Maui County, HI	143,574	2011	X				
Nassau County, NY	1,351,652	2008			X		
New York City, NY	8,363,710	2008			X		
Oakland, CA**	404,155	2007	X				
Outer Banks, NC	33,518	2009	X				
Paia, HI	2,752	2008	X				
Palo Alto, CA	59,395	2009	X				
Phoenix, AZ	1,567,924	2007				X	
Rockland County, NY	298,545	2008			X		
San Francisco, CA	808,976	2007					X
Solana Beach, CA	12,825	2008				X	
Suffolk County, NY	1,512,224	2007			X		
Tempe, AZ	175,523	2008				X	
Tucson, AZ	541,811	2009			X		
Washington, DC	591,833	2010	X	X			
Westchester County, NY	953,943	2008			X		
Westport, CT	26,051	2009	X				
Total***			13	2	10	5	2
*Provide alternatives means to provide alternative bags such as compostable or reusable bags							
** Under lawsuit, not in effect							
***Washington DC has both a ban and a fee							

Appendix E: National and International Bag Regulations

The following is the detailed information that is available to the public on DEP's dedicated Retail Bag Report website. These lists are associated with the maps and can be accessed in two ways—the user can directly go to the lists, or can click on the country, state or city of interest on the map and go directly to that location's information. This information is updated regularly as DEP receives information about retail bag policies worldwide.

North America

UNITED STATES OF AMERICA

- United States – H. R. 2091, the "Plastic Bag Reduction Act of 2009" was introduced in the U.S. Congress on April 22, 2009 and is still in committee. This act would place a five cent fee on "single-use" bags from grocery stores and other retail outlets. The act goes on to increase the fee in 2015 to twenty-five cents. Some of the money from the fee would go to the Land and Water Conservation Fund, some to state and local programs and some to reduce national debt.
  http://moran.house.gov/apps/list/press/va08_moran/Plastic.shtml

Alaska

- Alaska – In 2009, Senate Bill 22 was introduced to the Alaskan Legislature. This bill would charge a fifteen cent fee for disposable plastic bags given out by retailers. The fee would fund the "Alaska litter and marine debris reduction and recycling fund." This bill was referred to the Resources and Finance Committees as of January 21, 2009. The bill remained in this committee at session adjournment.
  - 30 villages/communities in Alaska, US - In Western Alaska, at least 30 communities have banned plastic bags since 1998. The ban was in response to plastic bag litter from dumps and ill-effects on Alaskan wildlife including salmon and seals.
  - Fairbanks, Alaska – On September 10, 2009 the Fairbanks North Star Borough Assembly voted to enact a five cent tax upon each plastic bag given out by all retail sellers in the community of Fairbanks. The tax will be effective January 1, 2010. The retail sellers are allowed to keep three percent of the total amount collected while the rest of the money will go to a local recycling program special revenue fund. The ordinance cites that some municipalities have estimated a collection and disposal cost of seventeen cents per plastic bag.

Arizona

- Arizona - In 2008, bills were introduced in the Arizona state government for review that proposed to place a surcharge on plastic and paper bags and asking retailers to offer recycling collection of the bags. These bills did not pass during the 2008 legislative session.
  - Phoenix, Arizona – In Phoenix, the city and the Arizona Food Marketing Alliance worked together with stores to create Bag Central Station. This program, started in

2007, is a voluntary program in which stores encourage reusable bags and must accept plastic bags for recycling.

- Tempe Arizona – In Tempe, the Bag Central Station program has been expanded from its start in Phoenix. The program started in Tempe in 2008 and is a voluntary program in which stores encourage reusable bags and must accept plastic bags for recycling.
- Tucson, AZ - In Tucson, the Bag Central Station program was codified in March 2009. The city council adopted a new city code requiring retail establishments of over 10,000 square feet to provide recycling bins for plastic bags.

California

- California – In 2006, the state of California passed a law, effective July 1, 2007, mandating that all retail establishments of a certain size or larger label their bags for return to the store for recycling, have recycling bins available to customers and to provide reusable bags for customers to purchase.
- California - In 2009, Assembly Bill 1141 was introduced in the California Legislature. The bill would require that all plastic carryout bags contain a specified percentage of recycled plastic. Plastic bag producers would be charged a producer's responsibility fee of one-half cent per bag. The bill was held without recommendation by the Assembly Committee on Natural Resources (April 27, 2009).
- California - In 2009, Senate Bill 228 was introduced in the California Legislature. The bill would require all marine degradable or compostable plastic bags to be readily distinguishable from non-biodegradable plastic bags. The bill remains in the Senate Appropriations Committee (May 28, 2009).
- California - In February 2009, Senate Bill 531 was introduced in the California Legislature. Initially, the bill would have required suppliers of paper or plastic single-use carryout bags to pay a fee of one cent per bag to the State Board of Equalization. Monies generated would fund grants for litter reduction education. The bill was amended in April 2009 to only add details to existing plastic bag manufacturer obligations regarding recycling education. The bill was referred to the Committee on Natural Resources on June 15, 2009.
    - Fairfax, California – The City Council of Fairfax, California passed a ban on plastic bags in 2007 only to withdraw the ban because of a threatened lawsuit regarding the environmental benefit of such a ban. Subsequently, the Council asked stores to voluntarily stop giving out plastic bags. In response, citizens of Fairfax made the issue a ballot initiative. In November 2008, voters passed the initiative.
    - Los Angeles, California – In 2008, the LA County Supervisors initially proposed a ban on plastic bags. After discussion the ban was supplanted by a voluntary program asking retailers to encourage consumers to use reusable bags. The ban will be revisited if the use of bags in LA County does not decrease by 30% by July 2010 and by 65% by July 2013.
    - Manhattan Beach, California – In July 2008, the City Council of Manhattan Beach passed a ban on all plastic bags used for carrying purchased goods. Currently, the

ban is on hold due to a lawsuit. One clause of the suit states that the city did not perform an Environmental Impact Report (EIR) and the second states that the city does not have the power to ban plastic bags.

- Oakland, California - In June 2007, the city of Oakland passed an ordinance banning non-biodegradable plastic take-away bags. This ban applied only to retail establishments that gross $1 million in annual sales. The ordinance allows paper bags provided that they meet recycled content requirements. The ordinance has been rescinded after a lawsuit against the city was upheld in April 2008. The suit cites that the city had not performed adequate environmental study regarding the possible adverse effects of a ban.
- San Francisco, California – The city of San Francisco passed an ordinance in April 2007 requiring retail stores (pharmacies and supermarkets) that gross annual sales of $2 million to provide paper bags, compostable bags and/or reusable bags.
- Malibu, California – In May 2008 the Malibu City Council approved a ban on all non-reusable plastic bags excluding produce bags. The ban went into effect in November 2008.
- Solana Beach, California – In August 2008, the city of Solana Beach began a voluntary recycling program for plastic bags. The program utilizes three collection bins in public buildings and sends the clean plastic bags directly to Trex Co. Inc. Trex makes deck boards and fencing from wood and recycled plastic fibers. Previously, in December 2007, the city enacted a law prohibiting plastic bags used for advertising that are thrown onto driveways and yards or hung on doorknobs.

Connecticut

- Connecticut – In 2009, House Bill 5466 was introduced in the Connecticut General Assembly. The bill would require all retailers that give out plastic shopping bags to also accept the bags back and have those bags recycled.
- Connecticut – In 2009, House Bill 5273 was introduced in the Connecticut General Assembly. The bill would ban all retailers from using non-biodegradable bags starting January 1, 2011.
- Connecticut – In 2009, House Bill 5207 was introduced in the Connecticut General Assembly. The bill would require a tax to be paid on all paper and plastic bags. The purpose of this bill is to help reduce waste, litter, dependence on foreign oil and to help foster sustainability and environmental responsibility.
- Connecticut – In 2009, House Bill 5107 was introduced in the Connecticut General Assembly. The bill would require retail stores to charge a tax of five cents per plastic bag. Money from this tax would be used for the renewable energy fund.
- Connecticut – In 2009, House Bill 5479 was introduced in the Connecticut General Assembly. The bill would also require a five cent fee per plastic bag. This is intended to encourage the use of reusable bags and to reduce plastic waste.

- Connecticut – In 2009, House Bill 5492 was introduced in the Connecticut General Assembly. The bill would require the recycling of plastic shopping bags and charge a fee on each plastic or paper shopping bag.
- Connecticut – In 2009, House Bill 6314 was introduced in the Connecticut General Assembly. The bill would require a five cent fee per bag given out at grocery stores. This is intended to reduce the amount of plastic waste that enters landfills.
- Connecticut – In January 2009, House Bill 5005 was introduced in the Connecticut General Assembly. If enacted, this bill would prohibit retail establishments from providing plastic bags for purchased goods at the point of sale. This bill was referred to the Joint Committee on Environment and stayed there until adjournment of the Assembly.
- Connecticut – In January 2009, House Bill 5215 was introduced in the Connecticut General Assembly. The bill would require a five cent fee per bag given out at grocery stores. Monies generated from the tax would be transferred to the Department of Environmental Protection. It remains "Tabled for the Calendar" in the Committee on Finance, Revenue, and Bonding (May 2009).
    - Westport, Connecticut – In 2008, Westport Connecticut passed a ban on most plastic shopping bags beginning in 2009. Bags used for produce are exempted.

Colorado

- Colorado – In 2009, Senate Bill 156 was introduced in the Colorado General Assembly. This bill would ban retail stores of a certain size from providing free plastic bags. The bill would also charge a fee of six cents per plastic bag of which the store would keep half the money and the state would receive the other half for use in plastic bag use reduction education.

Delaware

- Delaware - In March 2009, the Delaware House of Representatives passed House Bill 15, requiring stores exceeding 7,000 square feet to establish an at-store recycling program for plastic bags. The governor signed the bill into law on August 17, 2009.

Florida

- Florida - The Energy, Climate Change, and Economic Security Act of 2008 (House Bill 7135) signed into law by Governor Crist created Section 403.7033, Florida Statutes. This section requires the DEP to perform an analysis and submit a report to the Legislature by February 1, 2010 regarding the necessity and efficacy of both statewide and local regulation of bags used by consumers to carry products from retail establishments. Until such time that the Legislature adopts the recommendations of DEP, no local or state government may enact any regulation or tax on the use of such retail bags.

Hawaii

- Hawaii - In 2009, House Bill 1357 (same as Senate Bill 1292) was introduced in the Hawaii Legislature proposing a ban on all non-biodegradable/compostable plastic bags and

requiring retailers to provide either recyclable paper bags, compostable plastic bags or reusable bags. If enacted this ban would apply only to stores that gross at least $250,000 in revenue annually. This bill remained in the House Energy and Environment Committee at Legislative adjournment.

- Hawaii - In January 2009, House Concurrent Resolution 43 was offered to the Hawaii House of Representatives. This resolution requires the Hawaii Food Industry Association to form a working group with a representative from each County, the Department of Health, producers of polystyrene and plastic bags made in Hawaii, affected trade organizations and environmental organizations. The working group would establish minimum statewide standards for biodegradability of plastic grocery bags and food containers. This resolution remained in the Senate Committee on Health at Legislative adjournment.
- Hawaii - In February 2009, House Concurrent Resolution 61 was offered to the Hawaii House of Representatives. House Concurrent Resolution 61 (same as House Resolution 49) urges Honolulu and Kauai Counties to reduce the use, sale, and environmental degradation caused by non-compostable plastic bags. This resolution remained in the House Energy and Environment Committee at Legislative adjournment.
- Hawaii - In January 2009, Senate Bill 244 was introduced in the Hawaii Legislature. If enacted this bill would have required each retail establishment to provide the consumer with either a refund or a store credit if the consumer purchased goods or products and declined to use a plastic shopping bag that the retail establishment offers at no additional charge. In February, the Senate Committee on Energy and Environment deferred the measure.
- Hawaii - In January 2009, Senate Bill 245 was introduced in the Hawaii Legislature. This bill would have established a statewide at-store plastic carryout bag recycling program. The program would have been implemented at stores with over 10,000 square feet of retail space and a licensed pharmacy or a store with annual sales of $2,000,000 or more. This bill was deferred by the committee on Energy and Environment.
- Hawaii - In January 2009, Senate Bill 584 was introduced in the Hawaii Legislature. This bill would have prohibited retail stores and supermarkets from distributing plastic shopping bags. The bill was referred to the Energy and Environment Committee where the measure was recommended to be passed with amendments. From the Energy and Environment Committee, the measure was sent to the Judiciary and Government Operations Committee where it remained at Legislative adjournment.
- Hawaii - In January 2009, Senate Bill 1163 was introduced in the Hawaii Legislature. This bill would have required distributors that sell and distribute plastic shopping bags to stores for the stores to give to consumers to pay a fee of five cents per bag. This fee would be payable to the Department of Health and would be remitted to the "keiki first steps trust fund." This bill was referred to the Energy and Environment Committee and the Human Services Committee. Both committees deferred the measure in February.
- Hawaii - In January 2009, Senate Bill 1292 (same as House Bill 1357) was introduced in the Hawaii Legislature. This bill would have required all businesses that gross over $250,000

annually to cease distributing non-biodegradable plastic shopping bags and only distribute recyclable paper bags, compostable plastic bags or reusable bags. This bill was referred to the Energy and Environment Committee and the Judiciary and Government Operations Committee where the measure remained at Legislative adjournment.

- Paia, Hawaii – In 2008, the town of Paia became "plastic bag free" when all of the town traders agreed to cease handing out plastic takeaway bags.
- Maui County, Hawaii – In 2008, Maui County voted to ban plastic bags by 2011.
- Hawaii County, Hawaii – In August 2008, the Hawaii County Council voted to ban businesses from offering plastic checkout bags. The ban needed the signature of the mayor to go into effect but the mayor opposed the ban and vetoed it. The County Council then voted again in October 2008 but there were not enough votes to override the mayor's veto.
- Kauai County, Hawaii - In October 2009, the Kauai County Council voted to ban plastic carryout bags. Stores must now offer only biodegradable, 100% recyclable paper or reusable tote bags at checkout. The stores are allowed to charge for the bags. The ban will go into effect on January 11, 2011.

Illinois

- Illinois – House Bill 0334 was introduced in the Illinois Legislature in January 2009. The bill was referred to the Rules Committee, then assigned to the Environmental Health Committee and then Re-referred to the Rules Committee in March 2009. If enacted, this bill would create the "Grocers' Mandatory Plastic Bag Recycling Act," which would require grocery stores to implement recycling programs for plastic bags. The bill remained in committee at session adjournment.
    - Chicago, Illinois – In May 2008, the City Council of Chicago enacted an ordinance requiring certain retail establishments to establish an in-store plastic bag recycling program. The program must include specific labeling on the bags, recycling bins available to customers for bag drop-off and provide reusable bags for customers to purchase.
    - Lake County, Illinois - In August 2007, the Governor of Illinois signed the Plastic Bag Bill creating a pilot program in Lake County requiring retailers over a certain size that give out plastic bags to take the bags back for recycling.

Iowa

- Marshall County, Iowa - On September 16, 2008, the Marshall County Board of Supervisors voted to require the use of compostable plastic, recyclable paper and/or reusable checkout bags by all retail stores in unincorporated areas of the county. This requirement went into effect on April 9, 2009.

Maine

- Maine – In 2009, Legislative Document 367, An Act to Reduce the Amount of Plastic Introduced into the Waste Stream, was introduced. This bill would require retailers to

charge ten cents for each plastic bag given to a customer. The money would be deposited into the Waste Reduction and Recycling Loan Fund. This bill was revised to resolve that the Executive Department, State Planning Office should create a work group, through a partnership with state agencies and other appropriate entities to work to create an overall reduction of disposable checkout bag distribution and waste. This resolution was signed by the governor on May 19, 2009. (Resolve Chapter 54)

- Maine – In 2009, Legislative Document 622 (equivalent to HP 436) was introduced in the Maine Legislature. This bill would require retailers with more than 30,000 square feet of retail sales area to provide a cloth or durable fabric bag to customers at least twice a year. This bill went to committee and was unanimously voted "ought not to pass."

Maryland

- Maryland - In 2009, House Bill 1210 was introduced in the Maryland Legislature. If enacted, this bill would have required stores to charge and collect a five cent fee for each carryout bag (paper or plastic) provided to a customer. Of this fee, one cent would be retained by the store if the store did not have a Customer Bag Credit Program or if the store did have such a program then the store could retain two cents. The remaining amount would be remitted to the Chesapeake and Atlantic Coastal Bays 2010 Trust Fund. The Customer Bag Credit Program is a voluntary program for stores in which the store would pay a customer at least five cents for each bag that is provided by the customer. This bill was read in the Environmental Matters Committee but was never moved out of committee.
    - Annapolis, Maryland – In 2007, Annapolis Maryland lawmakers proposed a plastic bag ban. The ban did not pass but an alternative plan passed involving an expanded recycling campaign, encouraging use reduction and free reusable bag giveaways.
    - Baltimore, Maryland - In 2008, two bills were introduced to the Baltimore City Council in order to regulate plastic bag use. Bill 08-0208 proposes levying a twenty-five cent tax per plastic bag distributed by any retail establishment. Monies collected from the tax would go into the general fund. Bill 08-0205 would prohibit all stores from distributing plastic bags. Both bills are now in committee and were scheduled for a public hearing to the Judiciary and Legislative Investigations Committee on January 5, 2010.

Massachusetts

- Massachusetts – On March 12, 2009, the Massachusetts Department of Environmental Protection signed a Memorandum of Understanding (MOU) with the Massachusetts Food Association. The Massachusetts Food Association is an industry organization that represents more than 500 individual grocery stores. The MOU sets a goal to see a 33% reduction in the distribution of paper and plastic disposable grocery bags by 2013. This reduction is to be achieved through incentives to customers to reduce demand and increased reusable bag usage, improved recycling of bags at stores, and increased recycled

content or use of biodegradable bags offered for distribution. This effort is voluntary for all stores that are members of the Massachusetts Food Association.

- Massachusetts – In January 2009, House Bill 719, "An Act Relative to Plastic Bag Reduction," was introduced in the Massachusetts Legislature. If enacted this bill would have required stores grossing more than $2,000,000 annually to provide only recyclable paper bags, compostable plastic bags or reusable bags to customer. This bill has been referred to the Joint Committee on Environment, Natural Resources and Agriculture. A public hearing was held on this bill on May 14, 2009.
- Massachusetts – In January 2009, House Bill 798, "An Act relative to decreasing environmental hazards, toxins and litter," was introduced in the Massachusetts Legislature. This bill calls for the responsible reduction of plastic carryout bags by prohibiting any store with a gross income of more than $500,000 in the previous tax year from providing plastic carryout bags to consumers. This bill has been referred to the Joint Committee on Environment, Natural Resources and Agriculture. A public hearing was held on this bill on May 14, 2009.
- Massachusetts – In January 2009, House Bill 2686, "An Act relative to an excise on plastic carryout bags in supermarkets," was introduced in the Massachusetts Legislature. This bill would excise five cents per plastic carryout bag provided to customers, from any supermarket with a gross income of more than $1,000,000 in the previous tax year. The funds excised would be credited to the General Fund. This bill has been referred to the Joint Committee on Revenue. A public hearing was held on this bill on April 12, 2009.
- Massachusetts – In January 2009, Senate Bill 395, "An Act relative to the responsible reduction in the use of plastic bags," was introduced in the Massachusetts Legislature. This bill would prohibit any store located or doing business in Massachusetts from giving, providing or making available plastic carryout bags to consumers. This bill has been referred to the Joint Committee on Environment, Natural Resources and Agriculture. A public hearing was held on this bill on May 14, 2009.
- Massachusetts – In January 2009, Senate Bill 1284, "An Act relative to the selection and use of plastic bags in certain stores," was introduced in the Massachusetts Legislature. This bill would require every store to pay to the commissioner an excise equal to two cents per plastic carryout bag provided to customers. This bill has been referred to the Joint Committee on Revenue. A public hearing was held on this bill on April 12, 2009.
    - Plymouth, Massachusetts – The Board of Health in Plymouth Massachusetts reviewed a ban on plastic bags in late 2008. The board ultimately decided not to pass the ban.
    - Sturbridge, Massachusetts – In 2008, the Board of Selectmen, in Sturbridge Massachusetts, sponsored an article to ban the use of plastic bags in stores of or larger than 35,000 square feet within the city limits. At a town meeting in April 2008, the article was voted down.
    - Boston, Massachusetts - In late 2007, Boston Massachusetts lawmakers proposed both a ban and a required collection and recycling plan. None of the proposals passed but most grocery stores accept plastic bags for recycling.

Michigan

- Michigan – In December 2008, bill number SB 1611 was introduced in the Michigan Legislature. If enacted the bill would phase out the retail distribution of "noncompostable plastic carryout bags" by 2012. This bill was referred to the Committee on Natural Resources and Environmental Affairs on November 6, 2008. The bill remained in committee at session adjournment.

Minnesota

- Minnesota - HF0041 was introduced in the Minnesota State Legislature in January 2009. If enacted, this bill would require in-store recycling programs for plastic carryout bags. Additionally, manufacturers of plastic carryout bags would be required, if requested by store operators, to make arrangements for collection, transport, and recycling of all plastic carryout bags and other film plastic that is collected as part of the in-store recycling program. This bill was referred to the Environment Policy and Oversight Committee where it stayed until legislative adjournment.
- Minnesota - HF403 (companion SF0383) was introduced in the Minnesota State Legislature in January 2009. If enacted, this bill would not only require that any bag or container used to deliver yard waste to a yard waste compost facility be compostable but also require specific labeling for all compostable, biodegradable, and degradable plastic bags, including those used in retail stores. The bill was referred to a number of committees and ended up in the Environment and Natural Resources Finance Division Committee at legislative adjournment.
- Minnesota - HF576 (companion SF267) was introduced in the Minnesota State Legislature in January 2009. If enacted this bill would have required in-store recycling programs for all plastic carryout bags and have required labeling of plastic carryout bags to say "Please Reuse or Recycle at a Participating Store." This bill was referred to the Environment Policy and Oversight Committee where it remained at legislative adjournment.
- Minnesota - SF383 was introduced in the Minnesota State Legislature in 2009. This bill requires that plastic bags used for yard waste or source-separated compostable materials meet ASTM Standard Specification for Compostable Plastics. Additionally, this bill requires that until standards are created, plastic bags sold in the state of Minnesota may not be labeled as biodegradable or degradable. Any bags labeled as compostable must meet the ASTM Standard Specification for Compostable Plastics and labeled to reflect that the bag meets the standard. This bill was added to HF2123 and was signed by the governor in May 2009.

Missouri

- Missouri – In 2009, Senate Bill 340 was introduced to the Missouri General Assembly. If enacted this bill would require stores to only provide recyclable paper bags, compostable plastic bags, reusable bags or any combination of the three. This bill was referred to the

Commerce, Consumer Protection, Energy and the Environment Committee on February 11, 2009. The bill remained in committee at session adjournment.

Nevada

- Nevada – In 2009, Senate Bill 397 was introduced in the Nevada State Legislature. This bill, if passed, would establish a Plastic Bag Environmental Cleanup Fund and impose both a fee and a ban on certain types of bags. Customers would pay a fee on non-biodegradable and on non-compostable plastic bags from October 1, 2009 through June 30, 2011. Beginning July 1, 2011, all non-biodegradable and non-compostable plastic bags would be banned from distribution. This bill was referred to the Commerce and Labor Committee and was not heard again as of session adjournment.

New Hampshire

- New Hampshire – In 2008, both the House and the Senate of New Hampshire passed "A Resolution Encouraging the Use of Reusable Shopping Bags." This resolution encourages both consumers and retailers alike to switch to reusable bags. The resolution was promoted by a group of teenagers from Hanover, New Hampshire as part of the group "Kids for a Cooler Planet."

New Jersey

- New Jersey – In 2007, New Jersey lawmakers proposed a ban on retail bags. The ban was not passed during the 2008 session.

New York

- New York – In 2009, Senate Bill 544 was introduced in the New York State Legislature. This bill would require retail businesses to restrict the use of non-compostable plastic bags by 50% of their current use volume by 2012. The bill goes on to completely ban non-compostable plastic bags by 2014.
- New York – In 2009, Assembly Bill 6537 was introduced in the New York State Legislature. This bill would enact a tax on plastic shopping bags that are used to transport every sale of tangible personal property by consumers. The tax would be fifteen cents per plastic bag.
- New York – In 2009, Assembly Bill 6070 was introduced in the New York State Legislature. This bill would effectively ban plastic bags at retail stores by requiring that all stores provide only paper, compostable plastic and/or reusable bags as checkout bags.
- New York - In 2009, Assembly Bill 6937 was introduced in the New York State Assembly. If passed, this bill would establish a state commission to evaluate and make recommendations regarding the reduction of improper disposal of plastic and paper merchandise bags.
- New York -In April 2009, a bill (AB7844/SB4866) was introduced in the Assembly and Senate proposing a five cent tax on plastic carryout bags. The tax would apply to all stores located within cities with populations exceeding 1 million. The bill has been forwarded to the Committee on Cities.

- New York- In April 2009, Senate Bill 5067 was introduced in the New York State Legislature. This bill would enact a five cent sales tax on all plastic shopping bags. The first $75 million generated from the tax would be deposited in an environmental fund. The remaining monies would be deposited into the NY State General Fund. This bill has been referred to the Investigations and Government Operations Committee.
- New York - In 2009, Senate Bill 4595 was introduced in the New York State Legislature. If passed this bill would amend the 2008 law that requires all large grocery store chains and retailers to implement recycling of plastic bags. The amendment would, among other things, remove preemption for local laws enacted by a city of one million or more. In April 2009 the bill was referred to the Environmental Conservation Committee.
- New York - Assembly Bill 6144 was introduced in the New York State Legislature in 2009. If passed, this bill would require store operators to pay customers at least two cents per carry-out bag brought in by the customer to carry out goods purchased. This bill was referred to the Environmental Conservation Committee in February 2009.
    - Albany County, New York – Albany County, in New York State passed an in-store recycling program for plastic bags in March of 2008. This program requires stores to have collection bins and to recycle the bags.
    - Nassau County, New York – In Nassau County, a county on Long Island in New York, a local plastic bag reduction and recycling law was passed in June 2008. This law requires that plastic bags be labeled with specific language, requires stores to have a bin for collection and to recycle the bags.
    - New York City, New York – In 2008, the New York City Council passed a bill requiring retail chains and large stores to collect and recycle plastic retail bags.
    - Rockland County, New York – In May 2008, the County Legislature in Rockland County, New York passed a law requiring stores to recycle plastic bags and plastic film, have collection bins available for customer use and make reusable bags available for purchase.
    - Suffolk County, New York – Suffolk County, in New York State passed a carryout bag reduction and recycling initiative in 2007.
    - Westchester County, New York – In October 2008, a law went into effect in Westchester County, New York that requires all retailers that provide plastic carry-out bags to customers to have a collection bin and to recycle the bags.
    - Ulster County, New York – Local Law No. 3 of 2009 was introduced to the Legislature of the County of Ulster to impose a minimum fee of ten cents for each plastic bag provided to customers at the point of sale. The measure was referred to the Environmental Committee and a public hearing was held May 6, 2009. A number of proposed changes were offered at the public meeting and the proposed law was sent back to the Environmental Committee for reconsideration.

North Carolina

- North Carolina – In 2009, Senate Bill 1018 (equivalent to House Bill 810) was introduced in the North Carolina General Assembly. This bill, if passed, would ban retail stores from

providing plastic bags to customers and would allow paper bags to be given away only if the paper bag is recyclable. This bill was revised to ban retail stores in the Outer Banks of North Carolina from distributing plastic bags to customers and allows paper bags to be given away only if the bag is made of recycled content.

- North Carolina - In 2009, House Bill 1288 was introduced in the North Carolina General Assembly. If enacted, this bill would increase the state goal for plastic bag recycling from 25% to 75% and require retailers to provide in-store recycling. This bill has been referred to the Committee on Commerce, Small Business and Entrepreneurships as of April 9, 2009.

Ohio

- Ohio – For Earth Day 2009, the Ohio Department of Natural Resources (DNR) and Ohio Grocers Association (OGA) announced the cooperative Plastic Bag Recycling Program. The OGA will provide recycling bins to its retail members in order to collect plastic from consumers and to recycle pallet and shrink wrap.

Oregon

- Portland, Oregon – In 2007, a ban on plastic bags was proposed in Portland, Oregon. The ban did not pass and neither did the alternative plan of a tax on plastic bags.

Pennsylvania

- Pennsylvania - In May 2009, Senate Bill 864 was introduced in the state legislature. The bill proposes a two cent tax on all plastic retail bags from retail establishments that gross over $1,000,000 in sales per year. Proceeds from this tax would be divided equally between the State and the retail establishments in order for each to fund programs that would improve recycling practices and education. This bill has been forwarded to the Committee on Finances.
- Pennsylvania - Senate Bill 609 was introduced to the Pennsylvania Legislature in 2009. This bill, if enacted, would prohibit grocery stores from providing consumers with paper and plastic bags. The bill was referred to the Environmental Resources and Energy Committee on March 19, 2009.
    - Philadelphia, Pennsylvania – In 2009, bill 090075 was presented to the City Council of Philadelphia that would enact a twenty-five cent fee on all plastic bags received by a customer at retail stores within the city. Large businesses, with more than $1 million in annual sales, would send 75% of the fees back to the city while smaller businesses would be able to keep the money. This bill was referred to the Committee on the Environment and a public hearing was held on June 10, 2009. It is in council for a second reading.
    - Philadelphia, Pennsylvania – In February 2009, Bill 090074 was introduced in the City of Philadelphia Council. This bill if it had been enacted would have banned supermarkets and pharmacies from providing bags other than recyclable paper bags, compostable plastic bags or reusable bags. This bill was referred to the

Committee on the Environment and two hearings were held. The bill was read but did not pass the Council vote on June 18, 2009.

- Philadelphia, Pennsylvania - On November 19, 2009 a resolution titled "Calling on All Philadelphia Retail Stores to Implement Plastic Bag Recycling" was introduced to the City Council of Philadelphia. This resolution is currently "in council" or ready for consideration by the council.

Rhode Island

- Rhode Island – In 2004, the state of Rhode Island established a statewide voluntary recycling program for plastic bags. This program utilized an anti-litter campaign called "Why Knot." This campaign encouraged residents to tie plastic bags into knots to reduce the likelihood that the bags would become litter. In 2008 the legislation was amended to expand the program to all large retailers, require reporting and to expand the products accepted for recycling.
- Rhode Island - Senate Bill 804 was introduced in the Rhode Island Legislature in January 2009. If enacted, this bill would require retail establishments to provide a five cent per bag rebate for every reusable bag a customer provides in order to carry purchases from the establishment. Additionally, retailers would be required to charge a fifteen cent fee per plastic bag provided to customers in order to carry purchases from the establishment. This bill was referred to the Senate Environment and Agriculture Committee on March 24, 2009.
- Rhode Island - In 2008, House Bill 7630 was introduced in the Rhode Island Legislature. The bill would have promoted paper bag usage by imposing a tax equal to one cent per plastic bag used by consumers for grocery or other purchases. This bill was referred to the House Finance Committee and in May 2008 the committee recommended the measure be held for further study.

Texas

- Texas – In February 2009, House Bill 1361 was filed in the Texas Legislature. This bill, if enacted would impose a seven cent fee for certain plastic bags provided to customers by retailers. Retailers would retain part of the money and the rest would go to fund a Local Recycling Program Assistance Account. In March 2009, the bill was referred to the "Ways & Means" committee where the bill was left pending as of April 22, 2009.
- Texas – Senate Bill 338 was filed in late 2008 with the Texas Legislature. If enacted, this bill would place requirements upon businesses with more than 51 employees that offer plastic checkout bags to customers. These requirements would include offering a reusable bag for sale at a reasonable price, asking customers if they would like to purchase a reusable bag before offering the customer a plastic checkout bag and having a recycling program for those plastic checkout bags. The bill also provides for civil and administrative penalties for those businesses that do not comply with the requirements. In April 2009, the bill went to the Business and Commerce Committee and was passed and then referred to the Environmental Regulation Committee. In May 2009, the bill was left pending in that committee.

- Texas - House Bill 3427, introduced in the Texas Legislature in 2009, would have required businesses or shopping malls that offer plastic checkout bags to customers to offer reusable bags at a reasonable price for sale to customer and establish in-store checkout bag recycling programs. The bill also required the Texas Commission on Environmental Quality to establish an online clearinghouse of information relating to the use and recycling of plastic checkout bags. Lastly, the bill required a study to (1) examine the bill's impact on businesses and the environment, (2) determine what happens to plastic checkout bags after they are collected in bins at the in-store recycling programs, (3) determine how many businesses are collecting the plastic checkout bags and recycling them, and (4) determine the feasibility and costs to businesses of using alternative material checkout bags. This bill was left pending in the House Environmental Regulation Committee at Legislative adjournment.
    - Austin, Texas – In 2007, the city of Austin passed a voluntary use reduction and recycling of plastic bags program. Since that time, the retailers have reported a 40% reduction in the use of plastic bags as well as a 20% increase in recycling of plastic bags at the stores participating.

Vermont

- Vermont – In 2009, House Bill 262 was introduced in the General Assembly. This bill would enact a seventeen-cents tax on each plastic bag purchased or received during a retail transaction in Vermont. If passed, the tax will go into effect on January 1, 2010.
- Vermont – In 2009, Senate Bill 33 was introduced in the General Assembly. This bill would enact a three cent tax on each plastic bag purchased or received during a retail transaction in Vermont. If passed, the tax will go into effect on January 1, 2010.
- Vermont – In 2008, both the House and the Senate of Vermont passed a joint resolution that supported the Hanover High School Kids for a Cooler Planet reusable shopping bag campaign. This resolution encourages both consumers and retailers alike to switch to reusable bags. The resolution was promoted by a group of teenagers from Hanover, New Hampshire as part of the group "Kids for a Cooler Planet."

Virginia

- Virginia – In 2009, bills that would have banned disposable plastic bags from being distributed to customers or that placed a fee on the bags were both pulled by their sponsors.
- Virginia – House Bill 1814 (same as SB873) was filed with the Virginia Legislature in January 2009. If enacted the bill would have banned the use of plastic carryout bags by retailers at the point of sale unless the bags were durable plastic bags with handles, at least 2.25 mils thick and were specifically designed and manufactured for multiple reuse. This bill was referred to the Committee on Agriculture, Chesapeake and Natural Resources where it remained at Legislative adjournment.
- Virginia – House Bill 2010 was filed with the Virginia Legislature in January 2009. If enacted the bill would have imposed a five cent fee on paper and plastic bags used by

customers to carry items from the place of purchase. Durable, reusable plastic bags and bags used for ice cream, meat, fish, and poultry would have been exempt from the fee. The revenues raised by the fee would have been deposited in the Water Quality Improvement Fund. This bill was referred to the Committee Finance where it remained at Legislative adjournment.

- Virginia – Senate Bill 971 was filed with the Virginia Legislature in January 2009. If enacted the bill would have required on-premises recycling for plastic bags be available at stores that are part of a chain or occupy more than 5,000 square feet and distribute plastic bags to consumers. This bill was referred to the Committee on Agriculture, Chesapeake and Natural Resources where it was stricken at the request of a Patron in Agriculture, Chesapeake and Natural Resources.
- Virginia – Senate Joint Resolution 445 was offered February 13, 2009. This resolution commended Farm Fresh Food and Pharmacy for its exceptional environmental leadership and its commitment to reducing plastic bag use by encouraging customers to switch to reusable bags.

Washington

- Washington – House Bill 1189 was introduced in the Washington Legislature in January 2009. The bill, if it had been enacted, would have banned retail stores from providing free carryout bags unless the carryout bags were compostable plastic, recyclable paper or reusable. This bill would also have pre-empted any local city, town, county or municipality within the state from enacting more restrictive laws on retail bags. This bill was referred to the House Committee on Environmental Health where it failed to receive action at a final public hearing.
    - Seattle, Washington – In July 2008, the City Council of Seattle passed a twenty cent "green fee" on all disposable shopping bags starting in 2009. This fee has been placed on hold until August 2009, when a city-wide vote allowed Seattle voters to vote for or against the "green fee." On August 18, 2009 the "green fee" was voted down 58% to 42%.
    - Edmonds, Washington - In July 2009, the City Council of Edmonds, Washington voted unanimously to ban retail establishments from distributing single use plastic bags. The ordinance was effective August 27, 2009.

West Virginia

- West Virginia – In 2008, a ban on plastic bags from retail establishments was proposed in the state of West Virginia. The bill was not passed during the 2008 session.
- West Virginia - In March 2009, House Bill 3058 was introduced in the West Virginia Legislature. If enacted this bill would phase out the use of light plastic bags by July 1, 2012. Retailers would be required to provide customers with compostable bags, label bags to return to the store for recycling and place recycling bins for customer use or make reusable bags available for purchase. This bill was referred to the Energy, Industry and Labor, Economic Development and Small Business Committee.

Washington, DC

- Washington, DC – In 2009, the "Anacostia River Clean Up and Protection Act of 2009," was introduced in the Council of the District of Columbia. This act would ban the use of disposable, non-recyclable plastic retail bags as well as establish a five cent fee for all other disposable bags, including but not limited to paper and plastic retail bags. If passed, part of the money would be placed in the Anacostia River Cleanup and Protection Fund. On June 2, 2009, the City Council of Washington DC voted unanimously to create a five cent tax on both paper and plastic bags in order to promote the use of reusable shopping bags. One cent per bag would stay with the business which sold the bag and four cents would go to fund a cleanup of the Anacostia River. In order to become law the bill was again voted upon in late June when the DC Council unanimously voted to pass the bill. The Mayor of DC signed the bill on July 7, 2009. The fee went into effect January 1, 2010.

Wisconsin

- Wisconsin - In March 2009, Assembly Bill 170 was introduced to the Wisconsin Legislature. If enacted this bill would ban retail stores from providing any bag for a customer's purchase unless that bag is a compostable plastic bag, a cloth or plastic bag intended for multiple reuses or a recyclable paper bag. This bill was referred to the Committee on Jobs, the Economy and Small Business.

CANADA

British Columbia

- Vancouver, British Columbia, Canada – In 2008, the city of Vancouver proposed a ban on plastic disposable shopping bags. Currently, the proposal is under review by the British Columbia government in the legal department. In addition, the Retail Council of Canada, the Canadian Grocery Distributors, the Canadian Federation of Independent Grocers and the Canadian Association of Chain Drug Stores have submitted a plan to reduce plastic bag distribution by 50% over a five year period.

Manitoba

- Leaf Rapids, Manitoba, Canada – In April 2007, the municipality of Leaf Rapids in Manitoba, Canada banned plastic shopping bags. Initially, the town started with a levy on the bags and then moved to an outright ban.

Nova Scotia

- Nova Scotia, Canada – All liquor stores in Nova Scotia, Canada agreed to cease giving out plastic bags as of fall 2008.

Ontario

- Toronto, Canada – The Toronto City Council has approved a charge on plastic shopping bags that took effect on June 1, 2009.

Quebec

- Quebec, Canada – All liquor stores in Quebec, Canada agreed to ban plastic bags by 2009.
    - Montreal, Quebec, Canada – Montreal Canada planned to ban plastic shopping bags some time in 2009. Additionally, a popular liquor store, SAQ, instituted a surcharge policy on plastic and paper bags as of September 2008. This surcharge is expected to reduce the use of such bags by 4%. The policy goes on to ban plastic and paper bags from stores by January 2009.
    - Huntingdon, Quebec, Canada – In January 2008, the small town of Huntingdon Quebec passed a bylaw that bans plastic bags.
    - Amqui, Quebec, Canada – In 2008, the town of Amqui, in Quebec, Canada had a voluntary plastic bag use reduction pact with merchants and instituted a small tax on the bags.

MEXICO

- Mexico City, Mexico - On August 19, 2009, a new ordinance was enacted that prohibits businesses from giving out thin plastic bags that are not biodegradable. The law affects all stores, production facilities and service providers within the city limits.

Africa

Eritrea

- Eritrea – In 2005, the Eritrean government banned plastic bags outright.

Ethiopia

- Ethiopia - In 2008, the Ethiopian government passed a new law (Proclamation 513) that bans the manufacture and import of plastic bags less than 0.33mm in thickness.

Ghana

- Ghana - In July 2004 the Ghanaian government created a Recycling Taskforce to hire waste collectors to collect and deliver plastic bags to warehouses for recycling. The plastic producers are required to help fund the project. One quote regarding plastic bags in Ghana: "Plastic waste has had a terrible impact on tourism, particularly on the beaches east of Accra, where rain water carries the waste," Ghana's Tourism Minister Jake Obetsebi Lamptey told the IRIN News Service. "And the visible mountains of refuse in Accra give foreign tourists the impression that Ghana is a filthy country."

Kenya

- Kenya – In January 2008, the country of Kenya applied a thickness rule to plastic bags.

Lesotho

- Lesotho - Lesotho has proposed a thickness rule on plastic bags. The outcome of this proposal is not known at this time.

Rwanda

- Rwanda – In 2005 the Rwandan government banned plastic bags outright.

Somaliland

- Somaliland, an autonomous region of Somalia banned plastic bags completely as of March 2005.

South Africa

- South Africa – In 2003, the country of South Africa applied a thickness rule to plastic bags.

Tanzania

- Tanzania – In 2006, Tanzania banned plastic bags.
    - Zanzibar – Zanzibar, a city within Tanzania, banned plastic bags in 2006.

Uganda

- Uganda – In June 2007, Uganda imposed a thickness rule on plastic bags.

Asia

Bangladesh

- Bangladesh – The country of Bangladesh banned plastic bags in March 2002.
    - Dhaka, Bangladesh banned plastic bags in January 2002.

Bhutan

- Bhutan – The country of Bhutan banned plastic bags in June 2005. They did this to help reduce litter and thus raise the national happiness quotient.

China

- China – In January 2008, the country of China imposed a ban on specific plastic bags and also imposed a minimum thickness rule.
    - In Hong Kong, China a tax or charge is levied on plastic bags.

India

- India – In 2002, the Indian government mandated a thickness rule on plastic bags. All bags must be greater than 20 microns in thickness. This rule was implemented to reduce malaria outbreaks, aid in storm water runoff management and also to prevent the sacred cows of India from inadvertently ingesting plastic bags.
    - Maharashtra, India – In June 2005, the government in the state of Maharashtra enacted a plastic bag ban. This was done in response to localized flooding that was caused by plastic bags clogging waterways.
    - Delhi, India – In January 2009, the city of Delhi, India announced a ban on the use, storage and sale of all plastic bags. There are heavy fines for violators while citizens

and visitors are encouraged to use alternative material bags such as jute, cotton, recycled-paper and compostable bags.

Israel

- Israel – In June 2008, the Israeli government enacted a tax or charge upon plastic bags.

Maldives

- Baa Atoll - In 2009, Baa Atoll initiated "Say no to plastic bags", a campaign that distributes cloth bags to all residents.

Philippines

- Philippines - In 2008, bill 4134 was introduced to House legislature that would place an excise tax on non-biodegradable plastic bags. All money generated from the tax would be used to support government initiated environmental protection programs. This bill was referred to committees and is pending there as of June 2009.
- Philippines - In 2007 SB1443 was introduced to the Senate that would have created the Plastic Bag Recycling Act. This bill was left pending in committee.

Taiwan

- Taiwan – In Taiwan, a plastic bag ban and tax or charge was enacted in January 2003.

Australia

- Australia (whole country) – In December 2002, the country of Australia enacted a reduction and phase out plan for plastic retail bags.
    - Victoria – In 2006, the state of Victoria opted to charge consumers for each plastic bag used at a store. The fee went into place as a trial in 2008 in a few locations.
    - South Australia – In 2008 South Australian government considered a proposal to ban polyethylene plastic bags that are 35 microns or less thick. Compostable and biodegradable bags would be exempted from the ban. The ban was passed and went into effect May 2009.
    - Coles Bay, Tasmania – Coles Bay, Tasmania is a tourist town, famous for the close proximity to whale migration. The town opted to go "plastic bag free" in April 2003. This move effectively banned plastic takeaway bags. Retailers offer reusable paper bags for a fee and also sell fabric bags.
    - Huskisson – A seaside location and whale watching tourism helped prompt the town of Huskisson to ban plastic bags in November 2003.
    - Kangaroo Valley – In November 2003, all retailers in the town committed to banning plastic bags. Reusable cloth bags are available for purchase at all shops.
    - Mogo – In September 2003, local retailers and the Mogo Progress Association worked together to go "plastic bag free."

- Loddon Shire – In December 2005, Loddon Shire became "plastic bag free". Effectively, a ban on take away plastic bags, the Loddon Shire Council purchased reusable shopping bags and distributed these bags free to retailers to kick start the program.

Europe

Belgium

- Belgium – The country of Belgium passed a tax on plastic bags in 2007 along with a tax on plastic films (like dry cleaning bags), aluminum foil, and disposable cutlery. The tax went into effect July 1, 2007.

Denmark

- Denmark – In Denmark, there is a tax on plastic bags. Starting in 1994 with a tax on packaging materials that was charged to retailers, it progressed to a tax in 2005 on waste. This waste tax makes it more expensive to send waste to a landfill or to incinerate it.

England

- London, England – In 2007, a proposed ban on plastic bags was introduced in London. By November 2008, the proposal was withdrawn. This ban withdrawal came after the ministers of the London Councils supported the implementation of a minimum charge on plastic bags. The government pledged that it would impose a minimum charge on shopping bags should retailers fail to make a voluntary and significant cut in the number of bags they give out. If the retailers fail to comply, the minimum charge will be imposed across England and Wales – this should bring about an even greater reduction in bag usage than London Councils' Bill, which would only have affected London.
- Modbury, England – On May 1, 2007, the small town of Modbury and the resident shops and businesses enacted a ban on plastic bags (self-regulated). Shops offer reusable bags as well as compostable bags for items like fruit and meats.
- Girton, England- The shops in the village of Girton have stopped giving out free plastic bags as of January 2008. Reusable cotton bags were handed out to residents and shops will have cotton bags in stock to offer in place of plastic.
- Kew, England – In July 2008, the town of Kew began a plastic bag free campaign that encourages shops to forgo free giveaway bags and asks residents to bring their own reusable bags.
- Aylsham, England – On May 3, 2008, the historic market town of Aylsham went plastic bag free. The shops charge a fee for disposable bags including plastic, cornstarch and paper (shop determined fee and type of bag).
- Henfield, England – In May of 2008, the town of Henfield gave a free cotton bag to each household and all shops went "plastic bag free". Shops charge for the use of paper or cornstarch bags and also have reusable cotton and canvas bags for sale.

- Hebden Bridge, England – This historic market town went "plastic bag free" in December 2007 using a campaign encouraging reusable bags. Residents were also given a free cotton bag as a kickoff for the program.
- Tisbury, England – In January 2008, the village of Tisbury went "plastic bag free;" shops encourage reusable bags and residents were charged with making the change from getting free bags at the store to bringing their own bags.
- Overton, England – Shopkeepers in the village of Overton switched from plastic bags to biodegradable cornstarch bags in October 2007.

France

- France – By 2010, plastic bags will be completely outlawed in France.
    - Corisca, France – The French island, Corsica, banned plastic bags in large stores in 1999.
    - Paris, France – In January 2007, the city of Paris banned non-biodegradable plastic bags in large stores. This was done in order to help reduce pollution in the city.

Germany

- Germany – In Germany, all stores that provide plastic takeaway bags must pay a recycling fee to the government to help enhance recycling programs.

Ireland

- Ireland – In March 2002, the Republic of Ireland passed a law enacting a tax on plastic bags. This tax, known widely as the "PlasTax," caused a reduction in plastic bag use of 90%. Since 2002, the reduction has become markedly less (meaning that consumers are using more plastic bags) and so in 2007, the government opted to increase the tax.

Italy

- Italy – In May 2007, Italy passed a law banning non-biodegradable plastic bags starting in 2010. Previously, the country had a plastic bag tax from 1989 to 1992.

Macedonia

- Macedonia – Beginning in January 2009, plastic bags were banned by the Environmental Ministry from the retail and food sectors as well as at markets. For heavier items, plastic bags of a 14 micron thickness with a carrying capacity of at least 5kg (about 11 lbs) can be purchased by customers. A review of this order in early 2009 showed a reduction of the use of plastic bags by retailers of up to 82% as compared to numbers from November 2008. The review also showed that there was a need to increase the minimum thickness for the bags used to carry heavier items and so starting in May 2009, the thickness for such bags is 21 microns.

Scotland

- Scotland – In 2006, the Plastic Bag Levy Bill was introduced in the Scottish Executive. The bill would have required supermarkets and other retailers to charge a fee for every plastic bag supplied to a customer. The bill was withdrawn before it could be voted upon.
    - Banchory, Scotland – In January 2008, the town of Banchory started a campaign to encourage consumers to bring reusable bags to shops and also asked shop owners to cease carrying free plastic bags.
    - Selkirk, Scotland – On April 4, 2008, this town became plastic bag free. The town encourages the use of reusable bags and funded local shops to buy paper bags made with recycled content for general shopping bag use and compostable cornstarch bags for food, meat and fish.

Spain

- Spain - Spain has enacted a law to halve the country's consumption of plastic bags by the end of 2009.

Wales

- Wales - The Environmental Minister of Wales proposed a plastic bag charge between 5-15pence at all retail establishments. Revenues generated from the tax would be used to fund environmental programs. Currently, supermarkets are working on a voluntary basis to reduce the amount of distributed plastic bags by 50%. It is estimated that Wales uses 480 million plastic bags per year. On November 3, 2009 the Environmental Minister confirmed that by May 2011, shoppers will be charged up to 15pence each for single-use plastic bags.
    - Hay-On-Wye, Wales – In December 2007, the Chamber of Commerce and citizens of Hay-On-Wye decided to go plastic bag free. The shops charge for cornstarch takeaway bags and the town is encouraging the use of reusable bags.
    - Llandysilio, Wales - In 2007, the small village of Llandysilio in Pembrokeshire Wales banned plastic bags from being given out at all shops including the post office.

South America

Argentina

- Buenos Aires province, Argentina – The government of Buenos Aires province mandated biodegradable bags and banned give away polyethylene plastic bags in September 2008.

Brazil

- Brazil – A bill (PL 612/2007) was introduced in the Brazilian Chamber of Deputies in March 2007. The bill promoted the replacement of conventional bags with biodegradable bags in retail outlets throughout Brazil. This bill was not passed.
- Brazil - In March 2008 an agreement was signed between the Government of the State of São Paulo and the São Paulo Association of Supermarkets (APAS), which provides for joint environmental awareness campaigns promoted by the Environment Ministry of St. Paul and retail entities. Also in March 2008 the Ministry of Environment launched the campaign

"Conscious Consumption of packaging", with the exhibition "Best practices and innovations in packaging," organized as a starting point of educational work that will spread across Brazil.

Chile

- Chile – In 2008, Senators in the Chilean government proposed a bill that prohibits the distribution of non-degradable plastic bags and a tax or fee on non-degradable bag producers that cannot be passed onto customers.

Uruguay

- Uruguay – In 2008, Uruguayan lawmakers proposed a tax on plastic bags and a transition from plastic bags to biodegradable bags in a two-year period. The bill was passed by the House of Representatives on September 17, 2009 and was transferred to the Senate for review. In addition, on September 2, 2009 the Ministry of Housing and Environment launched a campaign called "Get Bags Out of the Environment" ("Sacá la Bolsa del Medio").
- Uruguay - In 2007, Ordinance No. 260/2007 was adopted which required merchants to implement actions to minimize waste, generation of plastic bags, and to develop management plants for their rational use, reuse and recycling.

Appendix F: Bibliography

Algalita Marine Research Foundation. (2009). Retrieved 2009, from Algalita Marine Research Foundation web site: www.algalita.org.

Allen Consulting Group. (May 2006). *Phasing Out Light-Weight Plastic Bags Costs and Benefits of Alternative Approaches.*

Allen Consulting Group. (June 2006). *The ANRA proposal on plastic bag management Supplementary economic analysis to the EPHC report.*

American Chemistry Council. (2007). *Info Sheet: Recyclable Plastic Bags.* Arlington, VA: American Chemistry Council.

Archer, B. (2009, August 28). Environmental Resource Director, City of Parkland. (J. Scarborough, Interviewer)

Austin City Connection. (2008, 11 18). City of Austin, Keep Austin Beautiful and Texas Retailers Association announce encouraging preliminary results of plastic bag program. Austin, TX, USA.

Bangladesh Centre for Advanced Studies. (n.d.). *Banning Polyethylene Shopping Bags: A Step Forward to Promoting Environmentally Sustainable Development in Bangladesh.*

Carpenter, E., & Smith, K. (1972). Plastics on the Sargasso Sea Surface. *Science , 175*, 1240-1241.

Dillon, L. (2008, July 16). Combination of heavy rain, high tide caused extreme flooding on Marco on Wednesday. *Naples Daily News*.

Doyle, M. (2008). *An Investigation of Micro-Debris in Plankton Samples Collected During NOAA Surveys in the Southeast Bering Sea and off the U.S. West Coast, 2006-2007, with special attention to Plastic Particles.*

Drever, M. C. (1997). *Ecology and Eradication of Norway Rats on Langara Island, Queen Charlotte Islands.* Simon Fraser University.

Edwards, R. (2000). *The Ecologist*.

Elliott, K. H., Duffe, J., Lee, S. L., Mineau, P., & Elliott, J. E. (2006). Foraging Ecology of Bald Eagles at an Urban Landfill. *The Wilson Journal of Ornithology* , 380-390.

Environment Protection and Heritage Council. (May 2008). *Decision Regulatory Impact Statement: Investigation of options to reduce the impacts of plastic bags.* Adelaide, SA: Environment Protection and Heritage Council.

Environment Protection and Heritage Council. (2002). *Plastic Shopping Bags in Australia National Plastic Bags Working Group Report to the National Packing Covenant Council.*

Eskenazi, J. (2009, 01 07). Baggage: The city's politicos made the enviros happy by banning plastic bags, but left us with more pollution and cost. *SF Weekly*.

Harlow, R. F., Hooper, R. G., Chamberlain, D. R., & Crawford, H. S. (1975). Some Winter and Nesting Season Foods of the Common Raven in Virginia. *The Auk* , 298-306.

Harris, L., & Scheck, J. (1991). From implications to applications: the dispersal corridor principle applied to the conservation of biological diversity. In D. Saunders, & R. Hobbs, *Nature Conservation 2: The Role of Corridors* (pp. 189-220). Surrey, Beatty, Chipping Norton, Australia.

Herrera Environmental Consultants, Inc. (2008). *Alternatives to Disposable Shopping Bags and Food Service Items Volume I.*

Hinkley Center for Solid and Hazardous Waste Management. (2002). *Roadside Litter in Florida.*

Hinkley Center for Solid and Hazardous Waste Management. (1999). *The Florida Litter Study: Economic Impacts of Litter on Florida's Businesses.* Gainesville, FL: State University System of Florida.

Hyder Consulting Pty Ltd. (2007). *Comparison of existing life cycle analysis of shopping bag alternatives.*

James, K., & Grant, T. (2005). *Life Cycle Assessment of Degradable Plastic Bags.* Melbourne, Australia: Melbourne Institute of Technology.

Jonkel, C. (1994). *Grizzly/Brown Bears.* Missoula, Montana: Ursid Research Center.

Kildare County Council. (2008, April 14). *Kildare County Ireland.* Retrieved 2009, from Kildare County Ireland Web Site: http://kildare.ie/CountyCouncil/Environment/PlasticBagLevy/LinktoDocument,14656,en.doc.

KPMG Transaction Services. (2008). *Trial of a Government and Industry Charge on Plastic Bags. Report of Findings.*

KPPM Organisational Strategists. (2006). *ZWSA Plastic Bags Phase Out Market Research Project. Final Report.*

Lee, D., & Moser, M. (1992). A Fourteen-Year Survey of Plastic Ingestion by Western North Atlantic Seabirds. *Colonial Waterbirds , 15* (1), 83-94.

Mato, Y., Isobe, T., Takada, H., Kanehiro, H., Ohtake, C., & Kaminuma, T. (2001). Plastic Resin Pellets as a Transport Medium for Toxic Chemicals in the Marine Environment. *Environmental Science , 35*, 318-324.

McDonnell, S., Convery, F., & Ferreira, S. (2007). *The Irish Plastic Bag Levy - A Review of its Performance 5 years on.*

MGM Management. (2002). *Toronto Litter Survey 2002.* Toronto: Toronto Works and Emergency Services, Solid Waste Management Services Division.

Molina, K. C., & Garrett, K. L. (1998). California Gull . *Section of Vertebrates* . Los Angeles , CA, USA: Natural History Museum of Los Angeles County.

Moore, C., Lattin, G., & Zellers, A. (2006). *Measuring the Effectiveness of Voluntary Plastic Industry Efforts: AMRF's Analysis of Operation Clean Sweep.* Long Beach, CA: Algalita Marine Research Foundation.

Nolan-ITU Pty Ltd. (2002). *Plastic Shopping Bags - Analysis of Levies and Environmental Impacts Final Report.* Melbourne, Australia: Environment Australia, Department of the Environment and Heritage.

Ocean Conservancy. (2008). *International Coastal Cleanup - Start a Sea Change Summary Report Florida.* Washington DC: Ocean Conservancy.

Ocean Conservancy. (2007). *International Coastal Cleanup Report - Start a Sea Change.* Washington DC: Ocean Conservancy.

Piatt, J., & Nettleship, D. (1987). Incidental catch of marine birds and mammals in fishing nets off Newfoundland, Canada. *Marine Pollution Bulletin , 18*, 344-349.

Planet Ark. (2004, April 26). Coles Bay celebrates one year without plastic bags. Sydney, Australia.

Redford, D., Trulli, H., & Trulli, W. (1997). Sources of plastic pellets in the aquatic environment. In J. Coe, & D. Rogers, *Marine Debris -- Sources, Impacts and Solutions* (pp. 335-343). New York: Springer-Verlag.

Scott, G. (Ed.). (2002). *Degradable Polymers Principles and Applications.* Dordrecht, The Netherlands: Kluwer Academic Publishers.

Southeast Environmental Association. (2009). *Roadside Litter Survey Report 2009.* Prince Edward Island, Canada: Provincial Department of Environment, Energy and Forestry.

Stone, W. B., Okoniewski, J. C., & Stedelin, J. R. (1999). Poisoning of Wildlife with Anticoagulant Rodenticides in New York. *Journal of Wildlife Diseases , 35* (2), 187-193.

Thompson, R., Olsen, Y., Mitchell, R., Davis, A., Rowland, S., John, A., et al. (2004). Lost at Sea: Where is All the Plastic? *Science , 304*, 838.

Totton, S. (1997). *Spatial and Contact Behaviour of Raccoons Using a Common Feeding Area.* Kingston, Ontario, Canada: Queen's University.

U.S. Bureau of the Census. (2002). *2002 Economic Census.* Washington, DC: U.S. Bureau of the Census.

U.S. Census Bureau. (2009, July 20). 2008 Population Estimates. Suitland, Maryland, United States of America.

U.S. International Trade Commission. (2004). *Polyethylene Retail Carrier Bags from China, Malaysia, and Thailand.* Washington, D.C.: U.S. International Trade Commission.

United Nations Environment Programme (UNEP). (2005). *Selection, Design and Implementation of Economic Instruments in the Solid Waste Management Sector in Kenya, The Case of Plastic Bags.*

US EPA. (2007). *Municipal Solid Waste in the United States, 2007 Facts and Figures.*

US EPA Office of Water. (1993). *Plastic Pellets in the Aquatic Environment: Sources and Recommendations (EPA 842/B-92/010).* Cincinnati, OH: U.S. Environmental Protection Agency.

Witherington, B. (2002). Ecology of neonate loggerhead turtles inhabiting lines of downwelling near a Gulf Stream front. *Marine Biology , 140*, 843-853.

Yarborough, J. (2009, May 5). City of Tallahassee Streets and Maintenance. (J. Scarborough, Interviewer)

MIAMIBEACH

OFFICE OF
LTC No. # 474-2019

LETTER TO COMMISSION

TO: Mayor Dan Gelber and Members of the City Commission

FROM: Raul J. Aguila, City Attorney

cc: Jimmy L. Morales, City Manager
Rafael E. Granado, City Clerk

DATE: August 26, 2019

SUBJECT: **Third District Court of Appeal Ruling in *Florida Retail Federation, Inc. v. City of Coral Gables* (Fla. 3d DCA Case No. 3D17-0562)**

The purpose of this memorandum is to advise the City Commission of the Third District Court of Appeal's recent ruling in litigation challenging the Coral Gables Polystyrene Ordinance. In summary, the District Court (i) reversed the trial court ruling finding the Coral Gables Polystyrene Ordinance enforceable, and (ii) upheld three separate State preemption statutes as constitutional. A full copy of the Court's opinion is attached hereto as Exhibit "A".

A. Coral Gables Litigation

On July 18, 2016, Plaintiffs Florida Retail Federation, Inc., and Super Progreso Inc. filed a complaint in Miami-Dade County Circuit Court against the City of Coral Gables, seeking an injunction against enforcement of the Coral Gables Polystyrene Ordinance, and a declaration that the Ordinance was preempted by three separate Florida Statutes: Section 403.708(9) (pertaining to the "packaging of products"); Section 403.7033 (pertaining to "auxiliary containers, wrappings, or disposable plastic bags"); and Section 500.90 (pertaining to "polystyrene products") (altogether, the "Preemption Statutes").

The Circuit Court granted summary judgment in favor of the City of Coral Gables, upholding the Coral Gables Polystyrene Ordinance, and finding all three Preemption Statutes unconstitutional.[1] The Plaintiffs and the State of Florida, as an intervenor, appealed the Circuit Court ruling to the Third District Court of Appeal. The City participated in the appeal by filing an *amicus curiae* ("friend of the court") brief in support of Coral Gables.

On August 14, 2019, the Third District Court of Appeal issued an opinion reversing the Circuit Court's final judgment in favor of Coral Gables, and remanding the case to the Circuit Court to enter final judgment in favor of the Plaintiffs. The District Court held as follows:

1. Sections 403.708(9), 403.7033, and 500.90, Florida Statutes—the "Preemption Statutes"—are constitutional.

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[1] Subsequent to the trial court ruling, on May 9, 2017, the City of Coral Gables adopted Ordinance No. 2017-13, prohibiting the use of single-use carry out plastic bags by special event permittees and prohibiting the sale, use, or distribution of single-use carry out plastic bags by retail establishments within the City.

2. By their plain language, the Preemption Statutes "expressly preempt the [Coral Gables] Polystyrene Ordinance."

B. City of Miami Beach regulations on single-use plastics

Over the past several years, the City has enacted a number of Ordinances restricting the sale or use of single-use plastics. **Importantly, the City's regulations on single-use plastics remain in place, and were not affected by the Third District Court of Appeal ruling in the Coral Gables litigation.** A summary of the City's legislation on single-use plastics is as follows:

1. Expanded polystyrene products
   - City Code Section 46-92(c) prohibits any person from carrying "any expanded polystyrene product . . . onto any beach or park within the city, or onto any city marina, pier, dock, or boat ramp . . . ."

2. Expanded polystyrene food service articles
   - City Code Chapter 46, Article VI prohibits the sale or use of expanded polystyrene food service articles by food service providers and stores.
   - City Code Section 82-7 prohibits the sale or use of expanded polystyrene food service articles by City contractors and special event permittees in City facilities or on City property.
   - City Code Section 82-385(p) prohibits expanded polystyrene food service articles at sidewalk cafes.

3. Single-use plastic beverage straws and single-use plastic stirrers
   - City Code Section 46-92(c) prohibits single-use plastic beverage straws and single-use plastic stirrers at any City beach, park, marina, pier, dock, or boat ramp.
   - City Code Section 82-8 prohibits the sale or use of single-use plastic beverage straws and single-use plastic stirrers by City contractors and special event permittees in City facilities or on City property.
   - City Code Section 82-385(p) prohibits single-use plastic beverage straws and single-use plastic stirrers at sidewalk cafes.
   - On July 17, 2019, the City Commission approved, on First Reading, an Ordinance prohibiting the sale or use of single-use plastic beverage straws and single-use plastic stirrers by food service providers and stores. The Second Reading/Public Hearing is scheduled for September 11, 2019.

4. Single-use carry out plastic bags
   - City Code Section 82-385(z) prohibits single-use carry out plastic bags at sidewalk cafes.

C. Conclusion

My office is monitoring the Coral Gables litigation, and will continue to evaluate opportunities for the City to strengthen its environmental legislation. In the meantime, if Coral Gables seeks review by the Florida Supreme Court, I will place an item on an upcoming City Commission agenda to request direction from the City Commission to file an *amicus* brief, once again, in support of Coral Gables. If you have any questions, please do not hesitate to contact me.

Third District Court of Appeal

State of Florida

Opinion filed August 14, 2019.
Not final until disposition of timely filed motion for rehearing.

No. 3D17-0562
Lower Tribunal No. 16-18370

Florida Retail Federation, Inc., et al.,
Appellants,

vs.

The City of Coral Gables, Florida,
Appellee.

An Appeal from the Circuit Court for Miami-Dade County, Jorge E. Cueto, Judge.

Ashley Moody, Attorney General, and Amit Agarwal (Tallahassee), Solicitor General; Lehtinen Schultz Riedi Catalano De la Fuente, PLLC, and Dexter W. Lehtinen, and Claudio Riedi, for appellants.

Craig E. Leen, City Attorney, and Miriam S. Ramos, Deputy City Attorney; Kozyak Tropin & Throckmorton LLP, and Corali Lopez-Castro, Rachel Sullivan and Mindy Y. Kubs, for appellee.

Erin Deady (West Palm Beach); Derek Howard; Roget V. Bryan, for City of West Palm Beach, Monroe County, and Islamorada, Village of Islands, as amici curiae.

Raul J. Aguila, City Attorney, and Nicholas Kallergis, Assistant City Attorney; Jean K. Olin, for City of Miami Beach, as amicus curiae.

Earthjustice and Bonnie A. Malloy (Tallahassee), for Surfrider Foundation, Campaign to Defend Local Solutions, League of Women Voters of Florida, Legal Scholars, 1000 Friends of Florida, ReThink Energy Florida, Florida Wildlife Federation, Save the Manatee Club, and Center for Biological Diversity, as amici curiae.

Before FERNANDEZ, LINDSEY, and HENDON, JJ.[1]

LINDSEY, J.

I. INTRODUCTION

In 2016, the City of Coral Gables (the "City") passed an Ordinance prohibiting food service providers and stores from selling or using expanded polystyrene (i.e. Styrofoam) containers. The Florida Retail Federation and Super Progreso[2] (collectively "FRF") filed the underlying complaint seeking a declaration that the City's Polystyrene Ordinance was preempted by three separate Florida Statutes: sections 403.708(9), 403.7033, and 500.90. Because the trial court erred in finding the three statutes unconstitutional and concluding that the City's Polystyrene Ordinance was not preempted, we reverse.

II. BACKGROUND

[1] Judge Hendon did not participate in oral argument.

[2] Super Progreso is a Florida Retail Federation member.

This appeal concerns the validity and preemptory effect of the following three state statutes, which the trial court concluded were unconstitutional:

- Section 403.708(9) (enacted in 1974[3]) provides that "[t]he packaging of products manufactured or sold in the state may not be controlled by governmental rule, regulation, or ordinance . . . ."
- Section 403.7033 (enacted in 2008) prohibits local governments from enacting "any rule regulation, or ordinance regarding use, disposition, sale, prohibition, restriction, or tax of . . . auxiliary containers, wrappings, or disposable plastic bags."
- Section 500.90 (effective July 1, 2016) preempts the "regulation of the use or sale of polystyrene products" by local ordinances enacted after January 1, 2016.

The City enacted Ordinance 2016-08 on February 9, 2016.[4] The Ordinance generally prohibits "[f]ood service providers and stores" from selling, using, offering for sale, or "provid[ing] food or beverages in expanded polystyrene

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[3] Originally 403.708(2), Florida Statutes (1975).

[4] Aware of the impending passage of section 500.90, which explicitly preempts local ordinances regulating polystyrene enacted after January 1, 2016, the City enacted an emergency ordinance giving its Polystyrene Ordinance a retroactive effective date of December 8, 2015.

containers." City of Coral Gables, Fla., Code of Ordinances § 34-264(a) (2019).[5] On April 26, 2016, the City passed Ordinance 2016-28, "exercise[ing] its Home Rule powers under article VIII, section 6 of the Florida Constitution of 1968 to conflict with, modify, and nullify the polystyrene pre-emption and grandfathering provisions of Chapter 2016-61, Laws of Florida (F.S. § 500.90) . . . ." Id. at § 34-267.

In July 2016, FRF filed a complaint seeking a declaration that sections 403.708(9), 403.7033, and 500.90, Florida Statutes,[6] preempt the City's Polystyrene Ordinance. The complaint also sought an injunction against enforcement of the Ordinance. The City, in turn, filed a counterclaim seeking a declaration that the same three statutes are unconstitutional. Both sides filed competing motions for summary judgment. Following a hearing, the trial court granted the City's motion. The trial court entered final judgment in favor of the City, finding all three statutes unconstitutional and the City's ordinance valid and enforceable. FRF and the State appeal.

III. JURISDICTION

[5] Before recodification in July 2017, Ordinance 2016-08 was codified in §§ 34-187 to -190.

[6] The trial court granted the State of Florida's motion to intervene "for the limited purpose of advocating the proper interpretation and defending the constitutionality of any statutes challenged" in the action.

We have jurisdiction to review the trial court's entry of final summary judgment in favor of the City pursuant to Florida Rule of Appellate Procedure 9.030(b)(1)(A).

IV. STANDARDS OF REVIEW

We review questions of statutory interpretation and the trial court's grant of summary judgment de novo. See, e.g., Save Calusa Tr. v. St. Andrews Holdings, Ltd., 193 So. 3d 910, 914 (Fla. 3d DCA 2016). We also "review questions of preemption and the validity of an ordinance de novo." D'Agastino v. City of Miami, 220 So. 3d 410, 421 (Fla. 2017) (citing City of Hollywood v. Mulligan, 934 So. 2d 1238, 1241 (Fla. 2006)). Likewise, the "constitutionality of a statute is a pure question of law that is subject to de novo review." Searcy, Denney, Scarola, Barnhart & Shipley, etc. v. State, 209 So. 3d 1181, 1188 (Fla. 2017) (citing City of Miami v. McGrath, 824 So. 2d 143, 146 (Fla. 2002)).

V. ANALYSIS

Because this case concerns the validity of state statutes and local ordinances, we are bound by certain presumptions. The trial court, in finding three state statutes unconstitutional, relied exclusively on the presumption that ordinances are valid, but failed to consider the strong, competing presumption that "statutes come clothed with a presumption of constitutionality and must be construed whenever possible to effect a constitutional outcome." Crist v. Fla. Ass'n of Criminal Def. Lawyers, Inc.,

978 So. 2d 134, 139 (Fla. 2008); see also Lowe v. Broward Cty., 766 So. 2d 1199, 1203 (Fla. 4th DCA 2000) ("A regularly enacted ordinance will be presumed to be valid until the contrary is shown, and a party who seeks to overthrow such an ordinance has the burden of establishing its invalidity." (quoting State ex rel. Office Realty Co. v. Ehinger, 46 So. 2d 601, 602 (Fla. 1950))). Moreover, although Florida municipalities are given broad authority to enact ordinances, "municipal ordinances must yield to state statutes." Masone v. City of Aventura, 147 So. 3d 492, 495 (Fla. 2014).

With these principles in mind, we first consider whether the trial court erred in finding sections 403.708(9), 403.7033, and 500.90 unconstitutional. Because we conclude all three statutes are constitutional, we next evaluate whether the City's Polystyrene Ordinance is preempted. For the reasons that follow, we hold that it is.

A. Sections 403.708(9), 403.7033, and 500.90 Are Constitutional

The trial court's analysis focused almost entirely on the most recent of the three statutes, section 500.90. The court concluded that section 500.90 was unconstitutional because (1) it violates the Miami-Dade County Home Rule Amendment; (2) it is unconstitutionally vague in violation of the nondelegation doctrine; and (3) the statute's classification schemes make it impermissibly arbitrary and capricious. As to sections 403.708(9) and 403.7033, the trial court found that

both statutes were also unconstitutionally vague in violation of the nondelegation doctrine.

The trial court first determined that section 500.90 violated the Home Rule Amendment, which prohibits the Legislature from adopting any act directed solely at Miami-Dade County or its municipalities. See Art. VIII, § 6(e), Fla. Const. Section 500.90 explicitly preempts local ordinances regulating polystyrene enacted after January 1, 2016. The court reasoned that because the City was the only municipality that enacted a Polystyrene Ordinance after January 1, 2016, but before section 500.90's July 1, 2016 effective date, section 500.90 was an impermissible special law aimed only at the City.

We disagree with such an expansive interpretation of the Home Rule Amendment. It is well-established that the Home Rule Amendment must be strictly construed to maintain the supremacy of general laws. Metro. Dade Cty. v. Chase Fed. Hous. Corp., 737 So. 2d 494, 504 (Fla. 1999). Section 500.90 plainly preempts *all* municipalities statewide[7] from enacting local polystyrene regulations after January 1, 2016.[8] Although the City may have been the first municipality to regulate

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[7] Indeed, we note that the City of West Palm Beach, Monroe County, and Islamorada jointly filed an amici curiae brief in which they recognize that section 500.90 would apply to them if the statute were not an "unconstitutional delegation of authority."

[8] Preemption statutes ordinarily apply to previously enacted ordinances. See Chase Fed. Hous. Corp., 737 So. 2d at 504 ("Whenever the legislature acts to supersede a local government's authority to enforce its ordinances, the effect is immediate and

polystyrene after January 1, 2016, section 500.90 does not impermissibly single out the City or Miami-Dade County. See City of Miami Beach v. Frankel, 363 So. 2d 555, 558 (Fla. 1978) ("A general law of local application is a law that uses a classification scheme based on population or some other criterion so that its application is restricted to particular localities. It is clear on the face of this statute that it is a general law applicable statewide.").[9]

Next, we consider the trial court's conclusion that section 500.90 violates the nondelegation doctrine.[10] More specifically, the court held that the statute "is

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applies to both future and pending proceedings and present and past offenses."). Moreover, the Legislature is empowered to set the start date for legislation so long as it acts within constitutionally accepted parameters. Id. at 503.

[9] The trial court relied on several cases where the "Florida Legislature has run afoul of the prohibition in enacting laws directed to Miami-Dade County or its municipalities . . . ." But unlike here, the statutes in those cases all contained a classification scheme that made them impermissibly applicable to Miami-Dade County. See State ex rel. Worthington v. Cannon, 181 So. 2d 346, 347 (Fla. 1965) (finding two statutes unconstitutional because they applied to counties having a population of 750,000 or more); S & J Transp., Inc. v. Gordon, 176 So. 2d 69, 70 (Fla. 1965) (invalidating a statute that applied to counties operating an airport and having more than 900,000 residents); Homestead Hosp., Inc. v. Miami-Dade Cty., 829 So. 2d 259, 262 (Fla. 3d DCA 2002) (invalidating a statute that "as written, is applicable only to Miami-Dade County").

[10] The Florida Supreme Court has explained the nondelegation doctrine as follows:

> [U]nder article II, section 3 of the constitution the Legislature "may not delegate the power to enact a law or the right to exercise unrestricted discretion in applying the law." Sims v. State, 754 So.2d 657, 668 (Fla.2000). This prohibition, known as the nondelegation doctrine, requires that "fundamental and primary policy decisions ... be made by members of the legislature who are elected to perform

unconstitutionally vague because the Legislature delegated preemption authority to the Department of Agriculture . . . without defining guidelines or standards for the exercise of the Department's discretion in implementing the statute."

However, section 500.90 does not, on its face, delegate legislative authority to the Department of Agriculture. The plain text of the statute simply provides that "[t]he regulation of the use or sale of polystyrene products by entities regulated under this chapter is preempted to the department." The statute is silent as to delegation of any authority because the Department's rulemaking authority stems from the separate "Rulemaking" section found in the same Chapter (Chapter 500, the Florida Food and Safety Act). See § 500.09, Fla. Stat. (2018) ("Rulemaking; analytical work.—" not to be confused with *§ 500.90*, the statute at issue here). In contrast to the language in Chapter 500's preemption provision, the rulemaking provision provides, in part, that "[t]he department may adopt rules necessary for the

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> those tasks, and [that the] administration of legislative programs must be pursuant to some minimal standards and guidelines ascertainable by reference to the enactment establishing the program." Askew v. Cross Key Waterways, 372 So.2d 913, 925 (Fla.1978); see also Avatar Dev. Corp. v. State, 723 So.2d 199, 202 (Fla.1998) (citing Askew with approval). In other words, statutes granting power to the executive branch "must clearly announce adequate standards to guide ... in the execution of the powers delegated.["]

Bush v. Schiavo, 885 So. 2d 321, 332 (Fla. 2004).

efficient enforcement of this chapter." § 500.09(4), Fla. Stat. The City does not challenge the delegation of authority in the separate "Rulemaking" section of Chapter 500.

The trial court also concluded that sections 403.708(9) and 403.7033 violate the nondelegation doctrine because they "lack the necessary standards and guidelines for implementation, rendering them unconstitutionally vague . . . ." This conclusion forms the sole basis for the trial court's determination that sections 403.708(9) and 403.7033—statutes enacted in 1974 and 2008, respectively—are unconstitutional. Here again, neither statute delegates any legislative authority. The statutes simply prohibit local governments from regulating "[t]he packaging of products manufactured or sold in the state[,]" section 403.708(9), and "auxiliary containers, wrappings, or disposable plastic bags[,]" section 403.7033. Because the statutes delegate no authority, they cannot be unconstitutional pursuant to the nondelegation doctrine.

Finally, we consider the trial court's conclusion that section 500.90 "creates at least two classification schemes that are not reasonably related to the purpose of legislation, rendering the statute arbitrary and capricious." Article III, section 11(b) of the Florida Constitution provides that "[i]n the enactment of general laws on other subjects, political subdivisions or other governmental entities may be classified only on a basis reasonably related to the subject of the law." The trial court reasoned that

the legislature, in enacting section 500.90, violated the Florida Constitution by "choosing an exemption date of January 1, 2016" and by intending to "liberalize the purportedly strict prohibitions on local polystyrene regulation . . . for certain 'beach towns' that sought to regulate polystyrene use."

As an initial matter, we find no mention of beach towns in the text of section 500.90. Consequently, there was no basis for concluding that a non-existent beach town classification was arbitrary and capricious. More importantly, we do not read anything in section 500.90 to be a classification of "political subdivisions or other government entities" as set forth in article III, section 11(b) of the Florida Constitution. An "exemption date" of January 1, 2016, simply sets the date after which local ordinances regulating polystyrene will be preempted. In other words, the only classification scheme found in section 500.90 applies to ordinances—those enacted before and those enacted after January 1, 2016—there is no classification of any governmental entities.

Having determined that sections 403.708(9), 403.7033, and 500.90 are constitutional, we now turn to the issue of whether the statutes preempt the City's Polystyrene Ordinance.

B. State Law Expressly Preempts the City's Polystyrene Ordinance

The preemption analysis is a matter of statutory interpretation. "Statutory interpretation in any case 'begin[s] with the actual language used in the statute

because legislative intent is determined first and foremost from the statute's text.'" Williams v. State, 186 So. 3d 989, 991 (Fla. 2016) (quoting Raymond James Fin. Servs., Inc. v. Phillips, 126 So. 3d 186, 190 (Fla. 2013)). Moreover, "[w]hen the language of the statute is clear and unambiguous and conveys a clear and definite meaning, there is no occasion for resorting to the rules of statutory interpretation and construction; the statute must be given its plain and obvious meaning." Id. (quoting Bennett v. St. Vincent's Med. Ctr., Inc., 71 So. 3d 828, 837–38 (Fla. 2011)).

The trial court concluded that sections 403.708(9) and 403.7033 do not preempt the local regulation of polystyrene.[11] In so doing, the court's reliance on "principles of legislative interpretation" was in error. According to the trial court, the enactment of section 500.90 "evidences the legislature's understanding that sections 403.708(9) and 403.7033 did not already [preempt the regulation of polystyrene.]" In other words, the court relied on a recent statute to determine the legislative intent behind two older statutes.

There is no need to resort to rules of statutory construction because the statutory text is clear. See State Farm Mut. Auto. Ins. Co. v. Laforet, 658 So. 2d 55, 62 (Fla. 1995) ("It would be absurd, however, to consider legislation enacted more than ten years after the original act as a clarification of original intent . . . ."); Fla.

[11] The trial court did not address preemption in the context of section 500.90 because it concluded the statute was unconstitutional.

Dept. of Revenue v. Fla. Mun. Power Agency, 789 So. 2d 320, 323 (Fla. 2001) ("Legislative intent must be derived primarily from the words expressed in the statute. If the language of the statute is clear and unambiguous, courts enforce the law according to its terms and there is no need to resort to rules of statutory construction.").

Here, the statutes at issue are unambiguous; they expressly preempt[12] the City's Polystyrene Ordinance. Section 403.708(9) preempts regulatory control over "[t]he packaging of products manufactured or sold in the state . . . ." The plain text encompasses all types of packaging, including polystyrene. Similarly, section 403.7033 prohibits local governments from regulating "auxiliary containers." Again, the "polystyrene containers" regulated by the City's Ordinance are a type of "auxiliary container." Finally, section 500.90 specifically preempts the regulation of "polystyrene products." In all three instances, we find the language clear and unambiguous.

VI. CONCLUSION

Because sections 403.708(9), 403.7033, and 500.90 are constitutional and by their plain language preempt the City's Ordinance regulating "polystyrene

[12] "Preemption of local ordinances by state law may, of course, be accomplished by express preemption—that is, by a statutory provision stating that a particular subject is preempted by state law or that local ordinances on a particular subject are precluded." Masone, 147 So. 3d at 495.

containers," we reverse the trial court's final judgment in favor of the City and remand for entry of final judgment in favor of FRF.

Reversed and remanded.

MIAMIBEACH

Item 10.

COMMITTEE MEMORANDUM

TO: Sustainability Resiliency Committee Meeting

FROM: Jimmy L. Morales, City Manager

DATE: September 25, 2019

SUBJECT: **DISCUSS TERMINATING THE CITY'S CONTRACT WITH COCA-COLA**

RESPONSIBLE DEPARTMENT

Communications and Marketing

LEGISLATIVE TRACKING

Item R9 I - July 17, 2019 Commission Meeting

SPONSORED

Commissioner Arriola

ANALYSIS

VERBAL REPORT AT COMMITTEE MEETING.

Is this a Resident Right to Know item?	Does this item utilize G.O. Bond Funds?
Yes	No

ATTACHMENTS:

Description	Type
Commission After Action	Memo

Motion seconded by Commissioner Alemán.

Vice-Mayor Arriola restated the motion, which is to let Mr. Kenny work with the collective group for the 2020 Spring Break, but also grant Mr. Kenny permission to issue a 2021 RFLI, because the feedback that Mr. Kenny received from the industry is that 2020 is too short of a window as they are already planning for 2021.

Mr. Kenny added that the City received interest from some very big names; they just could not turn it around in time.

Voice vote: 6-0. Absent: Mayor Gelber.

2:53:34 p.m.

R9 I DISCUSS TERMINATING THE CITY'S CONTRACT WITH COCA-COLA.

Vice-Mayor Ricky Arriola
Deferred from June 26, 2019 - R9 A

ACTION: Discussion held. See action with R9 J.

2:36:48 p.m.

R9 J DISCUSS IMPLEMENTING A TOTAL BAN ON SINGLE-USE PLASTICS ON MIAMI BEACH PENDING THE FLORIDA RETAIL FEDERATION'S LITIGATION AGAINST THE CITY OF CORAL GABLES.

Vice-Mayor Ricky Arriola & Co-sponsored by Mayor Dan Gelber and
Commissioners Michael Góngora, Joy Malakoff, and Micky Steinberg
Deferred from June 26, 2019 - R9 B

ACTION: Discussion held. Item heard in conjunction with Items R9 I and R9 F. Motion to refer to committees (see below) made by Vice-Mayor Arriola; seconded by Commissioner Alemán; Voice vote: 7-0.

REFERRALS:

1. Sustainability and Resiliency Committee – 1) The Office of the City Attorney to propose Ordinance(s) addressing banning single-use plastics (including plastic bags) in Miami Beach. 2) Discuss the environmental and health aspects of having Coca-Cola as the City's major corporate sponsor. 3) Discuss the Coca-Cola sponsorship in light of the City's #PlasticFreeMB branding. **Elizabeth Wheaton to place on the Committee Agenda. Office of the City Attorney, John Woodruff, Elizabeth Wheaton, and Tonya Daniels to handle.**

2. Finance and Citywide Projects Committee – 1. The Office of the City Attorney to discuss potential costs (including damages, costs, and attorney's fees) of enacting legislation banning single-use plastic (including plastic bags). 2. Discuss the economic details of the Coca-Cola sponsorship. 3. Discuss the environmental and health aspects of having Coca-Cola as the City's major corporate sponsor. 4) Discuss the Coca-Cola sponsorship in light of the City's #PlasticFreeMB branding. **John Woodruff to place on the Committee Agenda. Office of the City Attorney, John Woodruff, Elizabeth Wheaton, and Tonya Daniels to handle.**

Mayor Gelber suggested having an open discussion about plastics since the items are related. (See Items R9 F, R9 I, and R9 J.) One option would be instead of trying to resolve the issue from the dais today, during the recess they could refer the issue of plastics to the Sustainability and

Resiliency Committee and they Committee members can come up with some good ideas; but he thinks it is appropriate to discuss now.

Commissioner Góngora stated that this discussion item (R9 F) has been on the Agenda for three or four months, and it keeps rolling over. Other cities, such as Bal Harbour and now Surfside, have come forward with plastic bans. Commissioner Góngora wants to discuss possibly enacting a total ban on plastic, such as is being implemented up and down the coast by other cities. His item is analogous to Item R9 J, which has unanimous sponsorship. Commissioner Góngora thinks it is time for the City Commission to take the next step forward, be leaders on this issue, and enact a total ban on single-use plastics in the City.

Mayor Gelber asked City Attorney Aguila what the Legislature preempts.

Raul J. Aguila, City Attorney, explained that currently he has to advice the City Commission that there is a potential preemption issue on single-use plastic bags, as well as polystyrene, which incorporates plastic utensils. He has been speaking to the City Commission about this on a regular basis. His Office has also been tracking what Surfside and Bal Harbour have done. This City Commission urgently wants to make a legislative statement regarding banning single-use plastics. As he said, there is a case pending on the Third District Court of Appeals where Coral Gables was successful in the trial from court in upholding its plastic bag ban. That case is under appeal in the Third District Court of Appeals. In answering Mayor Gelber, he explained that Miami Beach has a plastic bag ban covering its sidewalk café permits, City special event permits, and City lessees. The theory is that the City regulates those entities contractually, so the ban is incorporated in their leases, sidewalk café permits, and in special events policies. The Commission is talking about, like with polystyrene and plastic straws, going the next step, which would eventually prohibit Citywide businesses from utilizing plastic bags. If that were the direction of this City Commission, he would like to bring back legislation in September. Ideally, he needs to think about the effective date. This Commission has been very prudent in doing an education period and a warning period before starting to enforce its Ordinances banning polystyrene and plastic straws. The position that Bal Harbour and Surfside have taken with regard to their bans is that if it were challenged, then they would repeal the legislation prior to the challenge. He wanted to mention that legislation passed this last session by the Florida Legislation went one step further and says that if a City were to enact a ban on plastic that the State considers preempted under State law, and it is challenged, the City, if they lose in Court, could be responsible for attorney's fees, cost, and damages to the prevailing party. City Attorney Aguila added that anyone could make such a claim.

Mayor Gelber thinks that he and all his colleagues are interested in exploring such a ban. Miami Beach's advantage is that they have a superb Legal Department, which most cities do not since most other cities rely on outside counsel. Mayor Gelber would be very grateful if the Office of the City Attorney could come with a proposed Ordinance(s) that could be referred to and discussed at the Sustainability and Resiliency Committee that would move Miami Beach closer to goal line. Mayor Gelber does not want enact an Ordinance that is solely symbolic, that does not work. **Raul J. Aguila to handle.**

Commissioner Steinberg stated that these are already standing items at the Sustainability and Resiliency Committee. Probably the reason these items are in front of the City Commission today is because the Committee did recommend going forward. Now that there is consensus to move the item forward, perhaps, they can be more hopeful that something will happen.

City Attorney Aguila is stated that he committed to this issue, and he accepts the challenge to bring something back in September that works. The Office of the City Attorney is tracking the preemptions carefully, and Elizabeth Wheaton forwarded a letter sent by the County, putting on notice that polystyrene and plastic bag bans was preempted, which is the first step prior to a challenge. The

challenge comes from the Florida Retail Federation, a huge conglomerate that lobbies on behalf of entities opposing plastic bans. City Attorney Aguila will come back in September with something the Commission can agree on.

Mayor Gelber added that the folks that lobby against the banning of single use plastic and plastic bag adopted by cities are generally the Florida Retail Federation and Publix. It was their push against such legislations that resulted in the State preemption on plastic bag bans. When Mayor Gelber was a member of the Florida Legislature, those entities lobbied him against these bans. Mayor Gelber suggested that the City ought to go to local hoteliers and urge them to go to Florida Retail Federation to notify them that Miami Beach hotels do not support preemption and back bans on single use plastics. Local hoteliers can communicate with the Florida Retail Federation and explain that they are not representing them when they create a preemption that destroys beaches and infiltrates stormwater systems.

Raul J. Aguila, City Attorney, stated that even though the Coral Gables case is on appeal, the Publix stores in Coral Gables have agreed to use paper bags instead of plastic bags, although the Ordinance has not been enforced.

Discussion held.

Vice-Mayor Arriola is concerned about the risks associated with adopting this type of legislation, due to potential damages that could be imposed against the City. One possible solution could be imposing a future effective date on such legislation. By doing this, parties would not incur damages until the law becomes effective, and the parties could not sue the City until the law is in effect.

City Attorney Aguila agrees that the damages would be minimal, but he is concerned that the City would be sued upon passing such legislation, since a prevailing plaintiff could be awarded attorney's fees and costs. He agrees that by following Vice-Mayor Arriola's suggestion, the damages claim would be negligible. He added that doing something successful comes when they actually make the Ordinance effective versus the education and warning campaign that they do prior to that. City Attorney Aguila wants to explore this further.

Vice-Mayor Arriola explained that they are trying to craft legislation, and because this is winding itself through the courts and they do not know when that will ultimately be resolved or if they can change legislation in Tallahassee, they need to give themselves time so that this could be an effective legislation. He asked if they could craft legislation to take effect upon the earlier of a certain date or the resolution of the case cited.

City Attorney Aguila agreed that this is the best track to go on, and he agrees that it is the direction he is headed in.

Discussion continued.

Commissioner Góngora asked if this is open for public input.

Mayor Gelber would like to refer this to the Sustainability and Resiliency Committee and the Finance and Citywide Projects Committee because they have a great deal to unravel on this. The Commission is not acting today, and they all agree that the Commission needs to do all they can do. He wants to refer all these items to committees and asked if the Coca-Cola issue should also be bundled with the other issues. (See item R9 I.) Mayor Gelber took a moment to announce that the City began a program at South Pointe Elementary where they gave all the kids a packet of non-plastic cutlery that they can use. The students then had a rally, and all the kids at South Pointe Elementary are now keeping track of all the plastic that they are not using. This August, the City will

give every child in the City's feeder pattern schools a package of plastic free utensils and straw, along with curriculum to help the students track how the amount of plastic they are not using. As an incentive, the City committed to ice cream parties and tree plantings. Mayor Gelber added that it is not easy to convince adults to change behavior, but children are great. The PTAs have been tremendous supporters of this initiative. Mayor Gelber announced that the City is about to bring a major sponsor to fund the program; the sponsor will be allowed them to place their insignia on the plastic free utensil cases. He urged the City Commission to go to the schools when they hear about it.

Elizabeth Wheaton, Environment and Sustainability Department Director, explained that the current kit is made out of wheat straw, which is a bio product from wheat, and they selected this product because it does not have a hard case. Some of the feedback received with the bamboo utensils was that it had splinters. The City did not want that issue. Additionally, the parents wanted a harder case that could be washable. The City went with the wheat straw case with a fork and a spoon, and a silicone straw that is soft. The package is easily washable.

Mayor Gelber stated that the approximate cost is about $20,000 to supply the entire feeder pattern. The City will have a major local sponsor who is also plastic free.

Item R9 I

Vice-Mayor Arriola is in favor of referring Item R9 I to both the Sustainability and Resiliency Committee and the Finance and Citywide Projects Committee. As sponsor, he explained that they are branding the City as #PlasticFreeMB, yet they have a situation where their major corporate sponsor delivers its products in plastic bottles. How do they reconcile the two? How do they resolve banning plastic straws but not plastic bottles? He wants to try to be as intellectually pure as he can be, but also fair for what has been traditionally a good partner of the City, and that is the Coca-Cola Corporation. He had conversations with representatives of the company about possible solutions. No matter what they do as the City, whether it is banning plastic straws or plastic bags, it is merely a drop in the ocean, to use an appropriate metaphor. They are not doing enough, but are trying to use the international limelight that Miami Beach has to change consumer behavior, the State Legislature and the Federal Government's behavior, and corporate America's behavior. If they can make the Coca-Cola company part of the solution, that would be a better course than terminating the contract. They talked about innovative things the corporation is exploring and they may be able to bring to the City in other ways to achieve the goals they all want, which is a more sustainable environment, free of pollution, and cleaner oceans. That is what the discussion should be about more than anything else.

Percy L. Wells, Vice President, Corporate Development and Government Relations for Coca-Cola Beverages Florida, LLC (Coke Florida) clarified that he worked for Coca-Cola beverages Florida, which is the independent franchise for the State. They own the distribution rights, produce products in the State, and sell it. He retired from the Coca Cola Company after 25 years last July, and then joined Coca Cola Beverages Florida. The contract and agreement the City has is with them, not the Coca-Cola Company. However, they work closely together in research and development. His colleague Begonia will share more about the contract and plastics, but he just wanted to introduce himself. When he heard about the issue, he wanted to share the importance of the relationship they have had over years. This is something they do not take lightly. The Coke system works closely with research and development. They are at the forefront of development of how they use plastics. Their products are not single-use plastics; they are fully 100% recyclable, including the cap and label. Their packaging is what drives recycling in the community, as it is valuable. They are working on ways to have better sustainability and recycling, because if they can get that package back, it can be reused for carpets, for clothing, and other items they produce. They work closely with the recycling industry.

Begonia (no last name given), Coca Cola Beverages Headquarters in Miami, South Florida, and Tampa office, wanted to clarify different plastics. Not all plastics are created equal. She explained that in the current language in the Bill to ban plastic, PET (*made entirely from plant materials*) which is what their bottles are made of, is not on there. These are bottles created in partnership with recycling facilities that love their packaging, because they have been design to work seamlessly in their recycling stream. Just as they know that a can is 100% recyclable, this PET bottle is 100% recyclable. Not only that, but they work with engineering, so the bottle is made 30% of plant based biomaterial, which means less material used, less CO2 used in the development, and frankly they cannot even get enough of them back, as they have to compete with the textile, shoe, clothing and carpeting industry to get back some of that recycled PET. She showed shirts made out of the same material, so a great deal of fabric, such as polyester is made out of recycled PET. It is a valuable commodity and they do not like to see it in the trash or on the streets either. They want to help residents and tourists understand that recycling is the key and they want to make sure that this stays in the supply chain. It is a circular economy and they can continue to support recycling facilities and recycling infrastructure in Florida, which is very important. Without this material recycling might not be able to continue to grow and to remain strong in Florida. There is a difference between this and a straw, a stirrer, or a plastic bag. Additionally, different materials have different pros and cons. Paper cups actually have plastic lining on them and are not recyclable; same thing with boxed water or other products inside a box, such as aseptic carton, which is paper, aluminum, and plastic glued together and is not recyclable. Recycling facilities have a hard time working with those. They understand every package anyone creates will have some weight, but to them is to be able to offer consumers packages that are 100% recyclable, so that recycling can continue and therefore creating less waste. Packaging and sustainability have been a focal point of Coca-Cola and the beverage industry for a long time. They are committing as an industry millions of dollars to support recycling infrastructure, education of consumers, so they understand this is a valuable resource and not throw it away on the streets. They also have volunteer activities throughout the year doing coastal clean ups, and these are not the items usually seen on the beach. They know City residents do not want to litter; they want to be able to have the ability to recycle items. They appreciate the Miami Beach partnership that has had great results and great programs, such as the recyclable bins along Lincoln Road and in City Hall, educational programs, and entertainment programs for residents. They want to continue to grow that partnership and maybe work together to focus this partnership towards more sustainability, educating the public on recycling, as well as reducing waste, which are common goals.

Vice-Mayor Arriola explained that they are not talking about recycling; they are talking about biodegradability. When they compare one thing to another, the problem is that the plastic bottles do not biodegrade, which is the problem. Paper will disappear into the environment within a year. If they are going to go down this route, be prepared to be challenged. Coca-Cola as a company produces 200,000 plastic bottles per minute; that is a problem. It is a problem that this company will have to solve, because our oceans are swimming in plastic. He suggested cautiousness as they discuss at the Committees.

Begonia added that glass or aluminum, even though they are great packages, have a higher CO2 footprint than PET. They understand different packages having different uses, for example, being able to reseal them or be able to take them to the beach without them breaking, and they need to understand what the CO2 footprint of each of these is. The paper cups or paper boxes are not biodegradable as they have aluminum and plastic in them. They are working as an industry to try to address this.

Vice-Mayor Arriola stated they are going the wrong route. At the Finance and Citywide Projects Committee, they will have to discuss not only the environmental aspect, but as a City, they want to promote health and wellness. They have as a major corporate sponsor a product that contributes

to diabetes, which they have an epidemic in the country. They will have to address that, in addition to the economics of this deal and whether or not it is good for the City.

Percy L. Wells stated that they certainly understand and appreciates the concerns with these issues. Begonia makes valid points, but he suggested and offered that they allow their company, Coca-Cola Beverages Florida, as well as Coca-Cola Company to collaborate on something that will work for the City. Unfortunately, packaging is an important commodity that is being used across the globe, and they have the responsibility to make sure that what they produce has the best return on the community investment. They will love to talk with the City about it.

Vice-Mayor Arriola stated that it is a better approach, because if they talk about partnerships, how do they both make themselves better. That is better than just trying to defend plastic bottles. That is not going to be a winning strategy, and he advises Coca-Cola not to go that route.

Mr. Wells stated that, to be transparent, he does not think Begonia was defending but simply sharing the facts about what they deal with every day.

Mayor Gelber added that the items would be referred to the Sustainability and Resiliency Committee and the Finance and Citywide Projects Committee. He thinks it will be an opportunity to elevate their knowledge of these issues. By the way, he thinks one of the things they probably do better in the City is their recycling efforts. They also do a great deal of beach cleanups in the City and they do find plastic bottles are there.

Motion to refer to the Sustainability and Resiliency Committee and the Finance and Citywide Projects Committee by Vice-Mayor Arriola; seconded by Commissioner Alemán. Vote taken.

10:27:55 a.m.

R9 K DISCUSSION AND REFERRAL TO THE NEIGHBORHOOD/COMMUNITY AFFAIRS COMMITTEE ANTI-BULLYING TASK FORCE RECOMMENDATIONS.

Commissioner Michael Góngora

ACTION: Discussion held. Item referred. Motion to approve the concept plan and refer the item to Neighborhood/Community Affairs Committee made by Commissioner Góngora; seconded by Commissioner Steinberg; Voice vote: 7-0. **Eric Carpenter to place on the Committee Agenda**. **Michael Smith to handle.**

Commissioner Góngora suggested the creation of the Anti-Bullying Task Force Committee, and as someone who has seen bullying throughout his life, he thought this was an important topic for the City to tackle. The Anti-Bullying Task Force members got together and issued recommendations and a comprehensive report that will take some time to complete. This will set them further on their course. He suspects the Commission will have to refer the implementation to Neighborhood/Community Affairs Committee, but today they want to set it. Commissioner Góngora introduced Task Force members Danila Bonini and Scott Bader.

Motion to approve the concept plan and refer the item to Neighborhood/Community Affairs Committee made by Commissioner Góngora; seconded by Commissioner Steinberg.

Scott Bader stated their recommendations are very strict; it can be integrated with MB Kindness. They recognized the Parks and Recreation Department as they are using their template. They thanked Wendy Rich-Goldschmidt from the Miami Beach Police Department, who is the City the Task Force liaison, with her help in navigating the process.

MIAMIBEACH

Item 11.

COMMITTEE MEMORANDUM

TO: Sustainability Resiliency Committee Meeting

FROM: Jimmy L. Morales, City Manager

DATE: September 25, 2019

SUBJECT: **DISCUSS THE STATUS AND IMPLICATIONS OF THE ACTION ITEMS ASSOCIATED WITH ONGOING WATER QUALITY COORDINATION WITH MIAMI-DADE COUNTY.**

RESPONSIBLE DEPARTMENT

Environment and Sustainability

LEGISLATIVE TRACKING

Item C4U - July 17, 2019 Commission Meeting

SPONSORED

Commisioner Samuelian | Co-Sponser Commissioner Michael Gongora

ANALYSIS

VERBAL REPORT AT COMMITTEE MEETING.

UPDATE

Supplemental 09.29.19 - DERM Water Quality Coordination Memo

Applicable Area

Not Applicable

Is this a Resident Right to Know item?	Does this item utilize G.O. Bond Funds?
Yes	No

ATTACHMENTS:

Description	Type
DERM Water Quality Coordination Memo	Memo

MIAMIBEACH

City of Miami Beach, 1700 Convention Center Drive, Miami Beach, Florida 33139, www.miamibeachfl.gov

COMMITTEE MEMORANDUM

TO: Sustainability and Resiliency Committee

FROM: Jimmy L. Morales, City Manager

DATE: September 25, 2019

SUBJECT: **DISCUSS THE STATUS AND IMPLICATIONS OF THE ACTION ITEMS ASSOCIATED WITH ONGOING WATER QUALITY COORDINATION WITH MIAMI-DADE COUNTY**

At the July 17, 2019 City Commission meeting, Commissioner Mark Samuelian referred a discussion to the Sustainability and Resiliency Committee (SRC) on the status and implications of the action items associated with on-going water quality coordination with Miami-Dade County. An initial discussion was held at the July 19, 2019 SRC meeting.

BACKGROUND

Staff from the City Manager's Office, the Environment and Sustainability Department, and the Public Works Department have been holding monthly coordination meetings with Miami-Dade County Division of Environmental Resources Management (DERM) leadership since 2016. The purpose of these meetings is to increase communication between the two entities and allow county and city staff to proactive address potential issues through high-level coordination. One of the discussion items on the monthly meeting agendas relates to protecting and improving water quality.

The city reduces potential pollution through a combination of education and outreach, good housekeeping, as well as the use of cutting-edge technology and industry-vetted operational practices. The city's stormwater management program focuses heavily on preventing pollution at its source: people. It is easier and less expensive for each person to do their part by picking up after their pets, tossing trash into designated bins, and properly applying landscape maintenance chemicals than to capture and remove pollutants in larger concentrations from within the stormwater system. Nevertheless, the city plays an important role in protecting water quality and has a well-rounded strategy to remove pollutants outside and inside the stormwater system before they reach Biscayne Bay.

On Thursday, April 25, interdepartmental staff met with DERM leadership to discuss water quality and talk through the city's plans to improve upon our current efforts. The city began by highlighting the progress we have made over the last five years to improve water quality, including:

- In science, such as the voluntary launch of a municipal water quality sampling program
- In design, such as the modification of pumped outfall designs to include dissipator boxes that reduce discharge velocities from those approved in the city's first new generation pump stations;

- In operations, such as increasing stormwater system maintenance from once every three years to once every year;
- In policy, such as the citywide bans on polystyrene and plastic straws; and,
- In compliance, such as the creation of the city's environmental inspection programs to reduce sanitary sewer overflows and construction run-off.

During the meeting, DERM and city staff identified several action items to take our stormwater management program to the next level.

ANALYSIS

Following the April 25 meeting, City staff compiled a list of the 24 action items identified to facilitate tracking their progress. The 24 action items are divided into four types:

- **14 administrative** (i.e., providing copies of our standard operation procedures for stormwater system maintenance);
- **Five regulatory** (i.e., close out open permits that have completed construction);
- **Three education and outreach** (i.e., develop a flyer for homeowners that will have yard drains on their private property); and,
- **Two engineering** (i.e., evaluate options for enhanced stormwater treatment before discharge).

To date, 13 actions items have been completed, 8 are in progress and three have not been started, including one that requires DERM action. This action item is for DERM to provide the city with a list construction projects that are pending close-out of DERM permits. Per city records, these include the following:

- 72-inch 17 Street and Washington
- 19 Street Pump Station
- 25 Street Outfall
- 29 Street Seawall
- Brittany Bay Park Seawall – Phase I
- Miami Beach Botanical Garden Seawall
- Miami Beach Convention Center Renovation
- Normandy Shores Park Seawall
- Palm and Hibiscus Island Neighborhood Improvements
- 96-inch RCP Washington Avenue
- Sunset Harbour Neighborhood Improvements
- Sunset Islands 3 and 4 Neighborhood Improvements
- Venetian Islands Neighborhood Improvements
- Washington Avenue Pump Station and Seawall
- West Avenue Bridge

The city anticipates requesting DERM permits for the following projects in the next six months:

- Indian Creek Drive Roadway and Drainage
- Maurice Gibb Park Redesign
- West Avenue Neighborhood Improvements

In addition to the on-going water quality coordination, the city has also been working with DERM to bring three construction projects into compliance. These projects are listed on the following page along with their respective status.

Status of Construction Projects Compliance	
Project Name	**Status**
Cherokee Avenue Seawall	DERM approved corrective action proposal. Pending U.S. Army Corps of Engineers (USACE) permit to begin construction of corrective action (application submitted on May 31, 2019).
Indian Creek Drive Seawall	Pending modification of DERM Class I permit, South Florida Water Management District Environmental Resources Permit, and USACE permit to begin construction of corrective action.
Palm and Hibiscus Island Neighborhood Improvements	Pending issuance of DERM permit modification to resolve (modification package submitted on September 16, 2019).

CONCLUSION

City staff will continue to work with DERM to close out permits as projects are completed; to address all open compliance issues; and to properly permit new upcoming projects. This report is presented to the members of the Sustainability and Resiliency Committee as a status update. Staff recommends concluding this item and directing staff to provide regular progress updates via LTCs.

SMT/ETC/ESW/RWC/MKW

MIAMIBEACH

Item 12.

COMMITTEE MEMORANDUM

TO: Sustainability Resiliency Committee Meeting

FROM: Jimmy L. Morales, City Manager

DATE: September 25, 2019

SUBJECT: **DISCUSSION ON REPURPOSING OUR GOLF COURSES FOR THE FUTURE**

RESPONSIBLE DEPARTMENT

Parks and Recreation | Public Works | Environment and Sustainability

LEGISLATIVE TRACKING

Item C4 AB - May 16, 2018 Commission Meeting

SPONSORED

Commissioner Ricky Arriola

ANALYSIS

ITEM DEFERRED.

Applicable Area

Not Applicable

Is this a Resident Right to Know item?

Yes

Does this item utilize G.O. Bond Funds?

ATTACHMENTS:

Description	Type
No Attachments Available	

MIAMIBEACH

Item 13.

COMMITTEE MEMORANDUM

TO: Sustainability Resiliency Committee Meeting

FROM: Jimmy L. Morales, City Manager

DATE: September 25, 2019

SUBJECT: **DISCUSSION REFERRING A TASK TO THE CITY MANAGER'S READY TEAM IN ORDER TO BOTH OPTIMIZE PUBLIC ENGAGEMENT AND FACILITATE TIMELY COMPLETION OF PROJECTS**

RESPONSIBLE DEPARTMENT

CIP I Marketing & Communications

LEGISLATIVE TRACKING

Item C4V - July 25, 2017 Commission Meeting

SPONSORED

Commissioner John Elizabeth Aleman

ANALYSIS

ITEM DEFERRED.

Is this a Resident Right to Know item?	Does this item utilize G.O. Bond Funds?
No	No

ATTACHMENTS:

Description	Type
No Attachments Available	

MIAMIBEACH

Item 14.

COMMITTEE MEMORANDUM

TO: Sustainability Resiliency Committee Meeting

FROM: Jimmy L. Morales, City Manager

DATE: September 25, 2019

SUBJECT: **DISCUSSION REGARDING EXPLORING THE CITY OF MIAMI BEACH JOINING THE AMERICAN FLOOD COALITION**

RESPONSIBLE DEPARTMENT

City Manager's Office | Environment & Sustainability

LEGISLATIVE TRACKING

Item C4W - December 12, 2018 Commission Meeting

SPONSORED

Commissioner Mark Samuelian I Co-Sponsor Commissioner Joy Malakoff

ANALYSIS

ITEM DEFERRED.

Applicable Area

Not Applicable

Is this a Resident Right to Know item?

Yes

Does this item utilize G.O. Bond Funds?

ATTACHMENTS:

Description	Type
No Attachments Available	

MIAMIBEACH

Item 15.

COMMITTEE MEMORANDUM

TO: Sustainability Resiliency Committee Meeting

FROM: Jimmy L. Morales, City Manager

DATE: September 25, 2019

SUBJECT: **DISCUSSION TO REVIEW THE PALM HIBISCUS ROAD ELEVATION EXPERIENCE**

RESPONSIBLE DEPARTMENT

Capital Improvement Projects

LEGISLATIVE TRACKING

Item C4 Q - September 11, 2019 Commission Meeting

SPONSORED

Commissioner Samuelian

ANALYSIS

ITEM DEFERRED.

Is this a Resident Right to Know item?	Does this item utilize G.O. Bond Funds?
Yes	No

ATTACHMENTS:

Description	Type
Commission After Action	Memo

MIAMIBEACH

COMMISSION MEMORANDUM

TO: Honorable Mayor and Members of the City Commission
FROM: Commissioner Mark Samuelian
DATE: September 11, 2019

SUBJECT: REFERRAL TO THE SUSTAINABILITY AND RESILIENCY COMMITTEE TO REVIEW THE PALM HIBISCUS PROJECT ROAD ELEVATION EXPERIENCE.

ANALYSIS

The City's road raising policy is a critical issue for our stormwater program and is currently being reviewed by Jacobs Engineering. We should always seek to improve our program by learning from our projects and Palm Hibiscus is our most recent experience. Therefore, we should review:

- The impact of road raising on project duration (i.e., what was incremental project duration?)
- The costs of road raising (i.e., how much money was spent on road raising activities and what would have been costs to implement pumps, new pipes/ infrastructure, etc. with nominal changes to road elevation?)
- The impacts on private property and actions required by property owners
- Palm Hibiscus Project results to-date with respect to effectiveness of road raising
- Lessons learned to inform policy making

Legislative Tracking

Commissioner Mark Samuelian

MIAMIBEACH

Item 16.

COMMITTEE MEMORANDUM

TO: Sustainability Resiliency Committee Meeting

FROM: Jimmy L. Morales, City Manager

DATE: September 25, 2019

SUBJECT: **DISCUSSION ON CITY OF MIAMI BEACH STORMWATER, SANITARY SEWER, AND WATER INFRASTRUCTURE BEST MANAGEMENT PRACTICES**

RESPONSIBLE DEPARTMENT

Environment and Sustainability

LEGISLATIVE TRACKING

Item C4U - May 11, 2016 Commission Meeting

SPONSORED

Commissioner Micky Steinberg

ANALYSIS

ITEM DEFERRED.

Applicable Area

Not Applicable

Is this a Resident Right to Know item?	Does this item utilize G.O. Bond Funds?
No	No

ATTACHMENTS:

Description	Type
No Attachments Available	

MIAMIBEACH

Item 17.

COMMITTEE MEMORANDUM

TO: Sustainability Resiliency Committee Meeting

FROM: Jimmy L. Morales, City Manager

DATE: September 25, 2019

SUBJECT: **DISCUSSION REGARDING HOW GREEN INFRASTRUCTURE INCLUDING LIVING OR HYBRID SHORELINES CAN COMPLEMENT GREY INFRASTRUCTURE IN OUR CLIMATE ADAPTATION ON-GOING WORK**

RESPONSIBLE DEPARTMENT

Environment and Sustainability

LEGISLATIVE TRACKING

Item C4 N - April 13, 2016 Commission Meeting

SPONSORED

Commissioner Micky Steinberg

ANALYSIS

ITEM DEFERRED.

Applicable Area

Not Applicable

Is this a Resident Right to Know item?	Does this item utilize G.O. Bond Funds?
Yes	No

ATTACHMENTS:

Description	Type
No Attachments Available	

MIAMIBEACH

Item 18.

COMMITTEE MEMORANDUM

TO: Sustainability Resiliency Committee Meeting

FROM: Jimmy L. Morales, City Manager

DATE: September 25, 2019

SUBJECT: **DISCUSSION ON ARTIFICIAL REEFS**

RESPONSIBLE DEPARTMENT:
Environment and Sustainability

LEGISLATIVE TRACKING:
Item C4 AI - May 16, 2018 Commission Meeting

SPONSORED:
Commissioner Ricky Arriola

Analysis
ITEM DEFERRED.

ATTACHMENTS:

Description	Type
No Attachments Available	

MIAMIBEACH

Item 19.

COMMITTEE MEMORANDUM

TO: Sustainability Resiliency Committee Meeting

FROM: Jimmy L. Morales, City Manager

DATE: September 25, 2019

SUBJECT: **DISCUSS HAVING THE CITY PURSUE MITIGATION PROJECT FUNDING FROM THE DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT**

RESPONSIBLE DEPARTMENT

Environment & Sustainability

LEGISLATIVE TRACKING

Item C4 P - September 11, 2019 Commission Meeting

SPONSORED

Commissioner Samuelian

ANALYSIS

ITEM DEFERRED.

Is this a Resident Right to Know item?	Does this item utilize G.O. Bond Funds?
Yes	No

ATTACHMENTS:

Description	Type
Commission After Action	Memo

MIAMIBEACH

COMMISSION MEMORANDUM

TO: Honorable Mayor and Members of the City Commission
FROM: Commissioner Mark Samuelian
DATE: September 11, 2019

SUBJECT: REFERRAL TO THE SUSTAINABILITY AND RESILIENCY COMMITTEE TO DISCUSS HAVING THE CITY PURSUE MITIGATION PROJECT FUNDING FROM THE DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT.

ANALYSIS

As per an 08/06/2019 Miami Herald article (attached), the Department of Housing and Urban Development (HUD) is giving the State of Florida funding to mitigate disasters,

"We've allowed states in the past to use their disaster money on mitigation, but this is the first time it's been specifically allocated for mitigation projects that are focused on future events," the HUD official said...Examples of mitigation projects include hardening electrical grids and building roads that are better suited to withstand storms."
So far, HUD has allocated $633 million to the State of Florida. This funding can greatly complement the City's ongoing resiliency and storm water plans, and should be aggressively pursued to ensure the City gets its fair share.
This referral should discuss City work to-date and planned actions to secure this and any other related new funding sources to support our resiliency programs.

Legislative Tracking

Commissioner Mark Samuelian

ATTACHMENTS:

Description

- Miami Herald Article on HUD Project Mitigation Funds

POLITICS

HUD is giving Florida money to mitigate disasters. But Puerto Rico will have to wait

BY ALEX DAUGHERTY

AUGUST 02, 2019 02:46 PM

WASHINGTON

The Department of Housing and Urban Development is doling out $16 billion to states and territories for projects that prevent future disaster damage, including $633 million to Florida.

But Puerto Rico, which is set to receive $8.29 billion, will have to wait.

“We were particularly concerned about the controls Puerto Rico had in place,” a senior HUD official said on a background call with reporters Friday. “We’re giving them $20 billion, which is larger than Louisiana received after Hurricane Katrina. It’s a huge sum of money which increases our risk.”

HUD officials are concerned that recent protests in Puerto Rico that caused Gov. Ricardo Rosselló to announce his resignation along with a potential constitutional crisis over naming his successor will make it harder to ensure that funds are being spent properly.

While state officials in Florida and other states like Texas and Louisiana will be officially notified of the new grant program within weeks, an action that allows them to start submitting proposals to federal officials responsible for giving out the money, Puerto Rico and the U.S. Virgin Islands will get access to the money at a later time. The HUD official wouldn’t say when the money would be available for the territories.

“We’ve allowed states in the past to use their disaster money on mitigation, but this is the first time it’s been specifically allocated for mitigation projects that are focused on future events,” the HUD official said.

Examples of mitigation projects include hardening electrical grids and building roads that are better suited to withstand storms. HUD said it wants to give states and territories "as much flexibility as possible" when deciding which projects will best use the federal funds.

HUD typically allocates funds for disaster recovery, such as helping people rebuild homes. In Florida, HUD was given $1.8 billion from Congress after Hurricane Irma and the agency has allocated $615 million to the state so far. In Puerto Rico, HUD was given $19 billion from Congress after Hurricane Maria and the agency has allocated $1.5 billion to the territory so far.

States like Florida that receive notice from the federal government of the funds in the next few weeks must submit grant applications by early next year. After HUD reviews and approves the application, which typically takes about 60 days, the funds will be available to spend through a line of credit.

It's not clear when Puerto Rico and the Virgin Islands, which is set to receive $774 million from HUD, can begin applying for their allocated funds or what the deadline for grant applications will be. HUD officials said they have a team of five to six people in Puerto Rico monitoring grant applications to prevent a misuse of funds.

President Donald Trump has falsely claimed on multiple occasions that Puerto Rico received more than $90 billion in Hurricane Maria relief. The actual figure is $42.4 billion, according to the Federal Emergency Management Agency.

"We have serious concerns and we want to make sure we're pumping the brakes and being prudent," the HUD official said. "We feel that we owe that to the American taxpayer."

MIAMIBEACH

Item 20.

COMMITTEE MEMORANDUM

TO: Sustainability Resiliency Committee Meeting

FROM: Jimmy L. Morales, City Manager

DATE: September 25, 2019

SUBJECT: **DISCUSS THE MOTION MADE BY THE SUSTAINABILITY COMMITTEE TO MAKE THE REDUCTION OF CO2 EMISSIONS A PRIMARY FOCUS ON THE FLEET ASSESSMENT**

RESPONSIBLE DEPARTMENT

Fleet Management

LEGISLATIVE TRACKING

Item C4 S - July 17, 2019 Commission Meeting

SPONSORED

Commissioner Samuelian

ANALYSIS

ITEM DEFERRED.

Is this a Resident Right to Know item?	Does this item utilize G.O. Bond Funds?
Yes	No

ATTACHMENTS:

	Description	Type
	Commission After Action	Memo

MIAMIBEACH

COMMISSION MEMORANDUM

TO: Honorable Mayor and Members of the City Commission
FROM: Commissioner Mark Samuelian
DATE: July 17, 2019

SUBJECT: REFERRAL TO THE SUSTAINABILITY AND RESILIENCY COMMITTEE TO DISCUSS THE MOTION MADE ON MAY 28, 2019 BY THE SUSTAINABILITY COMMITTEE TO MAKE THE REDUCTION OF CO2 EMISSIONS A PRIMARY FOCUS OF THE FLEET ASSESSMENT.

ANALYSIS

The Sustainability Committee met on May 28, 2019 and passed the following motion:

Motion to support all efforts to make the reduction of C02 emissions a primary focus of the fleet assessment, including providing appropriate funding, considering total cost of ownership, and prioritizing the use of electric vehicles.

Legislative Tracking

Commissioner Mark Samuelian

ATTACHMENTS:

Description

- Sustainability Committee Motion

MIAMIBEACH

City of Miami Beach, 1700 Convention Center Drive, Miami Beach, Florida 33139, www.miamibeachfl.gov

Jimmy L. Morales, City Manager
Tel: 305-673-7010 , Fax: 305-673-7782

NO. LTC # **353-2019**

LETTER TO COMMISSION

TO: Mayor Dan Gelber and Members of the City Commission

FROM: Jimmy L. Morales, City Manager

DATE: June 18, 2019

SUBJECT: Sustainability Committee Motions

The purpose of this Letter to Commission is to provide you with correspondence received from the Sustainability Committee regarding the motions made at the meeting held May 28, 2019.

Attachment: Sustainability Committee Motions

SMT/ESW/FCT/YP

MIAMI BEACH
RISING
ABOVE

City of Miami Beach Sustainability Committee

David Doebler, Chair

Members:
Jeremy Waks
Mohammed Islam
Luiz Rodrigues
Max Litt

TO: Mayor Dan Gelber and Members of the City Commission

FROM: David Doebler, Sustainability Committee Chair

DATE: June 18, 2019

SUBJECT: Sustainability Committee Motions

Dear Mayor and Honorable City Commission:

The Sustainability Committee met on May 28, 2019 and passed the motion below:

- Motion to support all efforts to make the reduction of CO_2 emissions a primary focus of the fleet assessment, including providing appropriate funding, considering total cost of ownership, and prioritizing the use of electric vehicles

As an Advisory Committee, we sincerely ask that consideration be given to the above motion.

Sincerely,

David Doebler
Chairperson, Sustainability Committee

MIAMIBEACH

Item 21.

COMMITTEE MEMORANDUM

TO: Sustainability Resiliency Committee Meeting

FROM: Jimmy L. Morales, City Manager

DATE: September 25, 2019

SUBJECT: **DISCUSSION ON THE CITY PARTNERING WITH FPL EVOLUTION PROGRAM TO EXPAND EV-CHARGING STATIONS IN MIAMI BEACH**

RESPONSIBLE DEPARTMENT

Environment and Sustainability

LEGISLATIVE TRACKING

Item C4 N - September 11, 2019 Commission Meeting

SPONSORED

Commissioner Samuelian

ANALYSIS

ITEM DEFERRED.

Is this a Resident Right to Know item?	Does this item utilize G.O. Bond Funds?
No	No

ATTACHMENTS:

Description	Type
Commission After Action	Memo

MIAMIBEACH

COMMISSION MEMORANDUM

TO: Honorable Mayor and Members of the City Commission
FROM: Jimmy L. Morales, City Manager
DATE: September 11, 2019

SUBJECT: REFERRAL TO THE SUSTAINABILITY AND RESILIENCY COMMITTEE - DISCUSSION ON THE CITY PARTNERING WITH FPL EVOLUTION PROGRAM TO EXPAND EV-CHARGING STATIONS IN MIAMI BEACH.

RECOMMENDATION

The administration recommends that the City Commission refer the item to the Sustainability and Resiliency Committee for discussion and recommendation.

Legislative Tracking

Environment and Sustainability

Sponsor

Commissioner Mark Samuelian

MIAMIBEACH

Item 22.

COMMITTEE MEMORANDUM

TO: Sustainability Resiliency Committee Meeting

FROM: Jimmy L. Morales, City Manager

DATE: September 25, 2019

SUBJECT: **DISCUSSION ON REQUIRING ALL NEW CITY VEHICLES PURCHASED AFTER 2020 TO BE 100% ELECTRIC (EXCEPT EMERGENCY VEHICLES)**

RESPONSIBLE DEPARTMENT

Fleet Management

LEGISLATIVE TRACKING

Item C4 R - September 11, 2019 Commission Meeting

SPONSORED

Commissioner Gongora

ANALYSIS

ITEM DEFERRED.

Is this a Resident Right to Know item?	Does this item utilize G.O. Bond Funds?
Yes	No

ATTACHMENTS:

Description	Type
Commission After Action	Memo

MIAMIBEACH

COMMISSION MEMORANDUM

TO: Honorable Mayor and Members of the City Commission

FROM: Commissioner Michael Gongora

DATE: September 11, 2019

SUBJECT: REFERRAL TO THE SUSTAINABILITY AND RESILIENCY COMMITTEE - DISCUSSION ON REQUIRING ALL NEW CITY VEHICLES PURCHASED AFTER 2020 TO BE 100% ELECTRIC (EXCEPT EMERGENCY VEHICLES).

ANALYSIS

Please place on the September 11 Commission agenda, a referral to the Sustainability and Resiliency Committee to begin the process of requiring all new City vehicles purchased after 2020 to be 100% Electric (except emergency vehicles). The Sustainability Committee passed a motion in May to support fleet management reductions of CO2 emissions. These vehicles have a lower total cost of ownership than traditional gasoline vehicles. New York City now operates more than 1,224 on-road EVs and plug-in hybrids and released a report that says "Electric cars are now the cheapest option for its fleet" https://qz.com/1571956/new-york-city-says-electric-cars-cheapest-option-for-its-fleet/. Please feel free to contact Diana Fontani should you have any questions regarding this item.

Applicable Area

Citywide

Is this a Resident Right to Know item?

Yes

Does this item utilize G.O. Bond Funds?

No

Legislative Tracking

Commissioner Michael Gongora

MIAMIBEACH

Item 23.

COMMITTEE MEMORANDUM

TO: Sustainability Resiliency Committee Meeting

FROM: Jimmy L. Morales, City Manager

DATE: September 25, 2019

SUBJECT: **DISCUSSION REGARDING THE FREQUENCY OF WATER TESTING IN MIAMI BEACH**

RESPONSIBLE DEPARTMENT

Public Works | Environment and Sustainability

LEGISLATIVE TRACKING

Item R9 S - September 11, 2019 Commission Meeting

SPONSORED

Commissioner Steinberg

ANALYSIS

ITEM DEFERRED.

Is this a Resident Right to Know item?	Does this item utilize G.O. Bond Funds?
Yes	No

ATTACHMENTS:

Description	Type
Commission After Action	Memo

MIAMIBEACH

COMMISSION MEMORANDUM

TO: Honorable Mayor and Members of the City Commission

FROM: Commissioner Micky Steinberg

DATE: September 11, 2019

SUBJECT: DISCUSSION AND REFERRAL TO THE SUSTAINABILITY AND RESILIENCY COMMITTEE REGARDING THE FREQUENCY OF WATER QUALITY TESTING IN MIAMI BEACH.

ANALYSIS

Please add to the September 11, 2019 Commission Agenda a discussion and referral to the Sustainability and Resiliency Committee regarding the frequency of water quality testing in Miami Beach.

Applicable Area

Citywide

Is this a Resident Right to Know item?

No

Does this item utilize G.O. Bond Funds?

No

Legislative Tracking

Commissioner Micky Steinberg

MIAMIBEACH

Item 24.

COMMITTEE MEMORANDUM

TO: Sustainability Resiliency Committee Meeting

FROM: Jimmy L. Morales, City Manager

DATE: September 25, 2019

SUBJECT: **DISCUSSION ON THE GRAND JURY REPORT REGARDING HEALTH OF BISCAYNE BAY WITH FOCUS ON HARD DEBRIS AND AN UPDATE ON WHAT THE CITY OF AVENTURA IS DOING IN RESPONSE**

RESPONSIBLE DEPARTMENT

Environment and Sustainability | Public Works

LEGISLATIVE TRACKING

Item C4 S - September 11, 2019 Commission Meeting

SPONSORED

Commissioner Samuelian

ANALYSIS

ITEM DEFERRED.

Is this a Resident Right to Know item?	Does this item utilize G.O. Bond Funds?
Yes	No

ATTACHMENTS:

	Description	Type
🗋	Commission After Action	Memo

MIAMIBEACH

COMMISSION MEMORANDUM

TO: Honorable Mayor and Members of the City Commission
FROM: Commissioner Mark Samuelian
DATE: September 11, 2019

SUBJECT: REFERRAL TO THE SUSTAINABILITY AND RESILIENCY COMMITTEE TO DISCUSS THE GRAND JURY REPORT REGARDING HEALTH OF BISCAYNE BAY WITH FOCUS ON HARD DEBRIS AND AN UPDATE ON WHAT THE CITY OF AVENTURA IS DOING IN RESPONSE.

ANALYSIS

The Grand Jury Report regarding the health of Biscayne Bay was issued on August 9, 2019. While the report does not specifically mention the City of Miami Beach nor its pumps, it does assert the following:

"We urge all levels of government to participate in earnest efforts to implement whatever recommendations they can to ensure a healthy future for our Bay and our groundwater. The broad and beautiful lagoon that we know today as Biscayne Bay has always had a special magnetism...Yet, as we express our love for Biscayne Bay's beauty, marine life and its ecology, we too often shy away from our daily actions that may be slowly strangling this thing we say we cherish."

We should seek to learn from this report and take action. Specifically, the discussion should focus on hard debris as well as any other opportunities (e.g., capturing excessive nutrients). In addition, the City of Aventura has already begun taking measures,

“Grates have been installed on all storm drains in the City of Aventura, to block debris from entering into the drainage system. Consequently, the quality of the water emptying into the intra-coastal waterways in that area has improved.”

The City of Miami Beach should look into and inform the Commission with an update on the ongoing actions of City of Aventura in this matter.

The report may be found in the link below:

https://docmgmt.miamibeachfl.gov/WebLink/DocView.aspx?id=256139&dbid=0&repo=CityClerk

Legislative Tracking

Commissioner Mark Samuelian

MIAMIBEACH

Item 25.

COMMITTEE MEMORANDUM

TO: Sustainability Resiliency Committee Meeting

FROM: Jimmy L. Morales, City Manager

DATE: September 25, 2019

SUBJECT: **DISCUSS UPDATES TO THE CITY CODE REFERENCING TURTLE NESTING**

RESPONSIBLE DEPARTMENT

Environment and Sustainability

LEGISLATIVE TRACKING

Item C4F - September 25, 2017 Commission Meeting

SPONSORED

Commissioner John Elizabeth Aleman I Co-Sponsor Commissioner Joy Malakoff

ANALYSIS

ITEM DEFERRED.

Is this a Resident Right to Know item?	Does this item utilize G.O. Bond Funds?
No	No

ATTACHMENTS:

Description	Type
No Attachments Available	

MIAMIBEACH

Item 26.

COMMITTEE MEMORANDUM

TO: Sustainability Resiliency Committee Meeting

FROM: Jimmy L. Morales, City Manager

DATE: September 25, 2019

SUBJECT: **DISCUSS THE CURRENT STATUS OF THE CITY'S TRANSITION PLAN FOR GAS BLOWERS**

RESPONSIBLE DEPARTMENT

Public Works | Parks and Recreation

LEGISLATIVE TRACKING

Item C4 O - September 11, 2019 Commission Meeting

SPONSORED

Commissioner Samuelian

ANALYSIS

ITEM DEFERRED.

Is this a Resident Right to Know item?	Does this item utilize G.O. Bond Funds?
Yes	No

ATTACHMENTS:

Description	Type
Commission After Action	Memo

MIAMIBEACH

COMMISSION MEMORANDUM

TO: Honorable Mayor and Members of the City Commission
FROM: Commissioner Mark Samuelian
DATE: September 11, 2019

SUBJECT: REFERRAL TO THE SUSTAINABILITY AND RESILIENCY COMMITTEE TO DISCUSS THE CURRENT STATUS OF THE CITY'S TRANSITION PLAN FOR GAS BLOWERS.

ANALYSIS

The Sustainability and Resiliency Committee should review the City's current plans and status of said plans to transition away from gas blowers. This topic was discussed during a previous Neighborhoods and Community Affairs Committee meeting and, given that it is a topic of frustration for residents due to noise levels and potential pollution, a more comprehensive update is warranted.

Legislative Tracking

Commissioner Mark Samuelian

MIAMIBEACH

Item 27.

COMMITTEE MEMORANDUM

TO: Sustainability Resiliency Committee Meeting

FROM: Jimmy L. Morales, City Manager

DATE: September 25, 2019

SUBJECT: **DISCUSSION ON REQUIRING ALL COMMERICAL LANDSCAPERS WORKING ON MIAMI BEACH TO ABIDE BY FLORIDA FRIENDLY LANDSCAPING STANDARDS**

RESPONSIBLE DEPARTMENT

Public Works | Environment and Sustainability | Parks and Recretions

LEGISLATIVE TRACKING

Item C4 T - September 11, 2019 Commission Meeting

SPONSORED

Commissioner Arriola

ANALYSIS

ITEM DEFERRED.

Is this a Resident Right to Know item?	Does this item utilize G.O. Bond Funds?
Yes	No

ATTACHMENTS:

Description	Type
Commission After Action	Memo

MIAMIBEACH

COMMISSION MEMORANDUM

TO: Honorable Mayor and Members of the City Commission

FROM: Vice-Mayor Ricky Arriola

DATE: September 11, 2019

SUBJECT: REFERRAL TO THE SUSTAINABILITY AND RESILIENCY COMMITTEE TO DISCUSS REQUIRING ALL COMMERCIAL LANDSCAPERS WORKING ON MIAMI BEACH TO ABIDE BY FLORIDA FRIENDLY LANDSCAPING STANDARDS.

ANALYSIS

The Miami-Dade State Attorney's recent Grand Jury Report on "The Health of Biscayne Bay" highlighted the sensitive state of our marine ecosystem. In an effort to reduce herbicide and fertilizer runoff that was mentioned in the report, I am asking the Sustainability and Resiliency Committee to consider requiring all commercial landscapers conducting business on Miami Beach to abide by Florida Friendly Landscaping (FFL) standards. FFL emphasizes the use of salt-tolerant and drought-tolerant plants that do not require harmful chemicals to thrive and also promotes other environmentally sustainable landscaping practices.

Applicable Area

Citywide

Is this a Resident Right to Know item?

Yes

Does this item utilize G.O. Bond Funds?

No

Legislative Tracking

Vice-Mayor Ricky Arriola