Sustainability Resiliency Committee Meeting Commission Chambers February 27, 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

<u>REPORTS</u>

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

Susanne Torriente, Chief Resiliency Officer I Roy Coley, PW Director I David Martinez, CIP Director

2. SUSTAINABILITY COMMITTEE (2:30PM)

Dave Doebler, Committee Chair

ACTION ITEMS

3. 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

David Martinez, CIP Director

Item C4V - July 25, 2017 Commission Meeting

4. DISCUSS THE SUSTAINABILITY COMMITTEE MOTION ON REQUIRING WASTE HAULER CONTRACTORS TO HAVE UNIFIED MESSAGING

Jay Fink, Public Works | Elizabeth Wheaton, Environment and Sustainability

Item C4 AI - January 16, 2019 Commission Meeting

DISCUSSION ITEMS

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

Commissioner Micky Steinberg

Margarita Wells, Environment & Sustainability Assistant Director

Item C4U - May 11, 2016 Commission Meeting

6. DISCUSSION REGARDING A POTENTIAL IMPROVEMENT PROJECT IN THE LAKEVIEW NEIGHBORHOOD

Commissioner Mark Samuelian I Co-Sponsor Commissioner Joy Malakoff

Roy Coley, Public Works Director I David Martinez, CIP Director

Item C4V - December 12, 2018 Commission Meeting

VERBAL ITEMS

7. DISCUSSION REGARDING COCA COLA CONTRACT IN REGARDS TO PLASTIC BOTTLE SUPPLY AND OUR SUSTAINABILITY EFFORTS

Vice-Mayor Michael Gongora

Tonya Daniels, Office of Communications Director

Item R9O - November 14, 2018 Commission Meeting

DISCUSSION ON EXPANDING THE PLASTIC BAG ORDINANCE IN MIAMI BEACH.
Commissioner Micky Steinberg I Co-sponsored by Vice-Mayor Michael Gongora
Nick Kallergis, Sr. Assist City Attorney I Elizabeth Wheanton, Environment & Sustianability Director

Item C4 T - February 13, 2019 Commission Meeting

DEFERRED ITEMS

9. 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 & Sustainability

Item C4N - April 13, 2016 Commission Meeting

10. DISCUSS UPDATES TO THE CITY CODE REFERENCING TURTLE NESTING Commissioner John Elizabeth Aleman I Co-Sponsor Commissioner Joy Malakoff Elizabeth Wheaton, Environment and Sustainability Director

Item C4F - September 25, 2017 Commission Meeting

11. DISCUSSION ON PARKING INCENTIVES FOR "SMARTWAY" (ILEV - INHERENTLY LOW EMISSION) VEHICLES

Commissioner Micky Steinberg

Saul Francis, Parking Director

Item C4I - January 17, 2018 Commission Meeting

12. DISCUSSION ON ENSURING MIAMI BEACH SPECIAL EVENTS ADHERE TO ENVIRONMENTALLY FRIENDLY GUIDELINES AND PROCEDURES

Commissioner Michael Gongora

Matt Kenny, Tourism and Culture Department Director

Item C4J - January 17, 2018 Commission Meeting

13. DISCUSSION ON REPURPOSING OUR GOLF COURSES FOR THE FUTURE Commissioner Ricky Arriola

John Rebar, Parks and Recreation Director

Item C4 AB - May 16, 2018 Commission Meeting

14. DISCUSSION ON THE CITYWIDE FLEET ASSESSMENT AND ESTABLISHED POLICIES FOR ENHANCING THE CITY'S FLEET

Commissioner Michael Gongora I Co-Sponsor Commissioner Joy Malakoff

Alyssia Berthoumieux, Sustainability Specialist

Item C4 AH - May 16, 2018 Sustainability and Resiliency Committee

15. DISCUSSION ON ARTIFICIAL REEFS

Commissioner Ricky Arriola

Elizabeth Wheaton, Environment and Sustainability Director | Flavia Tonioli, Sustainability Manager

Item C4 AI - May 16, 2018 Commission Meeting

16. DISCUSSION ON THE MARINE TRASH SKIMMERS (MTS) Commissioner John Elizabeth Aleman Stanley Kolosovskiy, Environmental Specialist

Item C4K - June 06, 2018 Commission Meeting

17. DISCUSSION ON CONSIDERING A NEIGHBORHOOD BIRD SANCTUARY PROJECT Commissioner John Elizabeth Aleman Elizabeth Wheaton, Environment and Sustainability Director

Item C4G - July 25, 2018 Commission Meeting

18. A RESOLUTION OF THE MAYOR AND CITY COMMISSION OF THE CITY OF MIAMI BEACH, FLORIDA, ACCEPTING THE RECOMMENDATION OF THE SUSTAINABILITY AND RESILIENCY COMMITTEE, AND APPROVING AN AMENDMENT TO THE RULES AND REGULATIONS FOR BEACHFRONT CONCESSION OPERATIONS, TO REQUIRE ALL UPLAND OWNER CONCESSIONAIRES AND THEIR THIRD PARTY CONCESSION OPERATORS TO UTILIZE 100% REUSABLE WARES IN CONNECTION WITH THEIR BEACH FRONT CONCESSION OPERATIONS, INCLUDING THE DELIVERY, SERVICE, AND CONSUMPTION OF FOOD AND BEVERAGES; PROVIDED THAT SAID AMENDMENT BE REFERRED TO THE SUSTAINABILITY AND RESILIENCY COMMITTEE, FOR DISCUSSION AND COMMENT, PRIOR TO FINAL APPROVAL BY THE CITY COMMISSION.

Commissioner Micky Steinberg

Susanne Torriente, Assistant City Manager

Item C7H - September 12, 2018 Commission Meeting

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

Commissioner Mark Samuelian I Co-Sponsor Commissioner Joy Malakoff

Elizabeth Wheaton, Environment & Sustainability Director I Susanne Torriente, ACM

Item C4W - December 12, 2018 Commission Meeting

20. A REFERRAL TO THE SUSTAINABILITY & RESILIENCY COMMITTEE REGARDING PRIVATE SEAWALLS

City Commission

Roy Coley, Public Works Director

Item R7F - December 12, 2018 Commission Meeting

21. DUAL REFERRAL TO THE LAND USE AND THE SUSTAINABILITY AND RESILIENCY COMMITTEE TO DISCUSS THE ADDITION OF WATER MANAGEMENT AND CLIMATE ADAPTATION EXPERTS TO CITY LAND USE BOARDS

Commissioner John Aleman

Elizabeth Wheaton, Environment & Sustainability Director

Item C4AG - January 16, 2019 Commission Meeting

22. REFERRAL TO THE SUSTAINABILITY AND RESILIENCY COMMITTEE, TO REVIEW CITY PERFORMANCE, PROGRAMS, AND IMPROVEMENT OPPORTUNITIES AS IT PERTAINS TO LITTER AND CLEANLINESS

Commissioner Mark Samuelian

Roy Coley, Public Works Director I Leslie Rosenfild, Chief Learning & Development Officer

Item C4 AH - January 16, 2019 Commission Meeting

23. REFERRAL TO THE SUSTAINABILITY AND RESILIENCY COMMITTEE TO DISCUSS THE SUSTAINABILITY COMMITTEE MOTION TO INCORPORATE LANGUAGE IN THE SPECIAL EVENTS GUIDELINES SPECIFIC TO NON-PROFIT ORGANIZATIONS THAT ORGANIZE SMALL COMMUNITY SERVICE EVENTS

Commissioner Mark Samuelian I Co-Sponsored by Vice-Mayor Michael Gongora

Matt Kenny, Tourism & Culture Department Director

Item C4 AJ - January 16, 2019 Commission Meeting

24. REFERRAL TO THE SUSTAINABILITY AND RESILIENCY COMMITTEE TO DISCUSS THE GENERATION OF ELECTRICITY FROM TURBINES INSTALLED IN CITY WATER PIPES BY THE CITY OF PORTLAND, OREGON

Commissioner John Aleman

Elizabeth Wheaton, Environment & Sustainability Director I Roy Coley, Public Works Director

Item C4 AK - January 16, 2019 Commission Meeting

<u>Item 1.</u> COMMITTEE MEMORANDUM

TO: Sustainability and Resiliency Committee

FROM: Jimmy L. Morales, City Manager

DATE: February 27, 2019

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

RESPONSIBLE DEPARTMENT:

Susanne Torriente, Chief Resiliency Officer I Roy Coley, PW Director I David Martinez, CIP Director

BACKGROUND:

<u>Analysis</u>

ATTACHMENTS: Description

Туре

<u>Item 2.</u> COMMITTEE MEMORANDUM

TO: Sustainability and Resiliency Committee

FROM: Jimmy L. Morales, City Manager

DATE: February 27, 2019

SUBJECT: SUSTAINABILITY COMMITTEE

RESPONSIBLE DEPARTMENT:

Dave Doebler, Committee Chair

<u>Analysis</u> VERBAL REPORT OF THE SUSTAINABILITY COMMITTEE MEETING.

ATTACHMENTS:

Description

12.18.18 Minutes

Type Other



City of Miami Beach, 1700 Convention Center Drive, Miami Beach, Florida 33139, <u>www.miamibeachfl.gov</u>

Sustainability Committee Chairperson

David Doebler – Appointed by Commissioner Micky Steinberg

Members of the Sustainability Committee

Jeremy Waks- Appointed by Mayor Dan Gelber David Doebler – Appointed by Commissioner Micky Steinberg Mohammed Islam - Appointed by Commissioner Mark Samuelian Luiz Rodrigues- Appointed by Commissioner Michael Góngora Richard Conlin – Appointed by Commissioner Kristen Rosen-Gonzalez Mike Gibaldi - Appointed by Commissioner Ricky Arriola Max Litt - Appointed by Commissioner John Elizabeth Alemán

DATE: December 18, 2018

SUBJECT: Meeting of the Sustainability Committee

A meeting of the Sustainability Committee was scheduled for Tuesday, December 18, 2018 at 3:00 p.m. in the City Manager's Large Conference Room, 4th Floor, City Hall.

The attendees were as follows: Dave Doebler, Mike Gibaldi, Mohammed Islam, Max Litt, and Jeremy Waks

City Staff: Yanira Pineda, Sustainability Specialist

Members Absent: Richard Conlin and Luiz Rodrigues

AGENDA

1. Committee Responsibilities

a. MOTION: Motion to approve the October 30, 2018 Sustainability Committee meeting minutes. Motion made by Jeremy Waks, Seconded by Max Litt.

2. Sustainability and Resiliency Committee Overview

a. Yanira Pineda gave a brief overview of the items listed within the December Sustainability and Resiliency Committee (SRC) agenda which included discussions on reusable wares for beachfront concessionaires, the resiliency strategy, and the city's sponsored beverage contract.

3. Sustainability Committee Work Plan

- a. <u>2018 Items</u>
 - Recap of 2018 Action Items and recap of 2018 Impacts/Wins Dave Doebler requested an update on ongoing projects including requiring unified messaging on waste bins. Ms. Pineda explained this discussion was passed as a motion in 2017 and implementation of this initiative is dependent on the renewal of the waste hauler contracts which is up for renewal in 2019. MOTION: Motion to require future waste hauler contractors to install cityapproved unified messaging on all sides of commercial and multi-family

waste and recycling containers. In addition, the Sustainability Committee recommended implementing the initiatives listed within LTC#316-2017 to further support this effort. Motion made by Dave Doebler, seconded by Mike Gibaldi. Mr. Gibaldi inquired about the distance between trash and recycling bins on the beach. Ms. Pineda explained this item was discussed during a previous SRC meeting and staff was given direction to continue working with Miami-Dade County to expand the existing program given the success of the pilot project. Mr. Doebler inquired on the Special Event Guidelines process and its status. Ms. Pineda explained public meetings with show producers were held to help streamline the existing guidelines. Mr. Doebler mentioned the Convention Center did not have recycling available during Art Basel. Ms. Pineda stated she would inform the correct department to address this issue and further explained that creating an automated process for event permitting would help catch these types of issues. Mr. Doebler inquired on being able to sign up for a special permit specifically for community service events. Mr. Litt inquired on whether additional stipulation should be considered to ensure that corporations or for-profit companies do not circumvent the regular special event process. MOTION: Motion to incorporate language in the Special Events Guidelines to waive special event permit fees, provide expedited permitting, and free parking for non-profit organizations that organize small community service events such as clean-ups. Motion made by Dave Doebler, Seconded by Max Litt. Other items discussed included artificial reefs and Miami-Dade County resolutions on Biscayne Bay task force and unencapsulated docks.

- b. Plastic Free Rhythm Foundation Item Presented by Benton Galgay and James Quinlan of the Rhythm Foundation. Mr. Quinlan introduced the item and explained a case study was conducted for the annual GroundUp Music Festival which highlighted great recommendations and best practices for this event and other events year-round. Mr. Galgay further explained the case study was carried out in partnership class at Columbia University in New York. His presentation included addressing sustainability practices such as zero waste, reduction of single-use plastics, promotion of reusable items, and understanding greenhouse gas emission impacts. Mr. Galgay explained he met with the city's Communications Department and discussed how the city could use this case study as a guide for other events in the city. Ms. Pineda expressed an interest in seeing the outcome of the practices suggested within the study. She offered to speak to the city's marketing team to understand how the city could assist the Rhythm Foundation with gaining exposure and assistance on accomplishing their sustainability goals.
- 4. Public Comment and Announcements Member of the public addressed the committee.

5. Next Meeting

a. January 29, 2019

<u>Item 3.</u> COMMITTEE MEMORANDUM

TO: Sustainability Resiliency Committee Meeting

FROM: Jimmy L. Morales, City Manager

DATE: February 27, 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:

David Martinez, CIP Director

LEGISLATIVE TRACKING: Item C4V - July 25, 2017 Commission Meeting

SPONSORED: Commissioner John Elizabeth Aleman

BACKGROUND:

<u>Analysis</u> VERBAL DISCUSSION AT COMMITTEE MEETING.

ATTACHMENTS: Description

No Attachments Available

Туре

<u>Item 4.</u> COMMITTEE MEMORANDUM

TO: Sustainability Resiliency Committee Meeting

FROM: Jimmy L. Morales, City Manager

DATE: February 27, 2019

SUBJECT: DISCUSS THE SUSTAINABILITY COMMITTEE MOTION ON REQUIRING WASTE HAULER CONTRACTORS TO HAVE UNIFIED MESSAGING

RESPONSIBLE DEPARTMENT:

Jay Fink, Public Works | Elizabeth Wheaton, Environment and Sustainability

LEGISLATIVE TRACKING:

Item C4 AI - January 16, 2019 Commission Meeting

BACKGROUND:

At the May 30, 2017 resident Sustainability Committee meeting, members discussed difficulty differentiating between the waste and recycling containers (Attachment A) provided by the city's waste haulers for waste collection from residential and commercial properties that are not serviced by the Miami-Dade County's recycling service. They would like to see that effective messaging and identification on carts and dumpsters through unified coloring, multilingual phrasing, as well as detailed labels that depict what can and cannot be recycled. The Committee then passed a motion (Attachment B) recommending that the Sustainability and Resiliency Committee (SRC) support efforts to collaborate with the franchisee waste haulers by implementing the following initiatives:

• The City of Miami Beach should work in partnership with the franchisee waste haulers to develop a solution that increases education, improves recycling rates and reduces contamination;

• The City of Miami Beach should mandate unified color and messaging on all newly purchased bins (not retroactive);

• The City of Miami Beach should design appropriate visual graphics / labels to be used city wide;

• Either the City of Miami Beach or the franchisee waste haulers should produce appropriate visual labels; and,

• The City of Miami Beach or the franchisee waste haulers should install labels on all cans on all sides to achieve consistency.

On October 30, 2017, this item was referred to the SRC for discussion by Commissioner Joy Malakoff. Since that meeting, staff has been working diligently with the city's approved waste haulers, Progressive Waste Services and Waste Management, on improving overall messaging efforts. Both companies have agreed to make improvements as outlined within the motion. The Public Works Department agreed to review the anticipated request for proposals associated with

the franchise waste haulers agreement to incorporate messaging and container standardization in 2019, in conjunction with the anticipated request for qualifications (RFQ) of the waste haulers franchise contracts.

On December 18, 2018, the resident Sustainability Committee passed a similar motion (Attachment C) to the one passed in 2017 with the intent to require future waste hauler contractors to install city-approved unified messaging on all sides of commercial and multi-family waste and recycling containers. On January 16, 2018, the Mayor and City Commission referred a discussion to the SRC requiring waste hauler contractors to have unified messaging. This item was sponsored by Commissioner Mark Samuelian and Co-sponsored by Vice-Mayor Michael Gongora.

<u>Analysis</u>

The Environment and Sustainability Department recently completed the first city-wide recycling assessment. In addition to addressing education, policy and interdepartmental issues, the assessment identified the need to improve upon current bin designs, messaging, and education throughout the city in order to reduce contamination and increase recycling rates. This demonstrates a need for collaboration between the city and contracted waste haulers when choosing and labeling bins. In addition, studies carried out by organizations such as Keep America Beautiful suggest that clear, standardized messaging is imperative to the success of a community recycling program. These studies also support the resident Sustainability Committee's recommendations on bin messaging.

On September 30, 2019, the existing agreement for the Franchise Waste Contractors will expire. A Request For Qualifications (RFQ) is anticipated to be published for a future agreement, allowing the opportunity to support the resident Sustainability Committee's past motions and incorporate language that requires clear, standardized messaging on bins provided and serviced by the contractors.

CONCLUSION:

ATTACHMENTS.

The following is presented to the members of the SRC for discussion with the recommendation to incorporate a requirement for unified messaging and standardized language on commercial and residential bins with the Franchise Waste Contractor RFQ.

	<u>Al l'Adhillent d:</u>					
	Description	Туре				
۵	Attachment A: Current Waste Carts and Dumpsters	Other				
۵	Attachment B: LTC 316-2017	Other				
D	Attachment C: LTC 659-2018	Other				
D	Item C4 AI - January_16_2019 Commission Meeting	Other				

Sustainability Committee Proposal - Unified messaging on waste containers -

Which one is garbage, and which one is recycling? You can't tell from a distance.



Yellow sticker says 'recycling', but it is small



Yellow sticker says 'recycling'. Messaging is different than other waste-haulers



Yellow lid indicates recycling. (although nothing tells anyone that yellow = recycling)

There is no recycling logo. Sticker says 'recycling', and gives very good information (pictures). Messaging is different than other waste-haulers.



Inconsistent messaging, coloring, signage



Page 17 of 118 Prepared by Dave Doebler – Chair City of Miami Beach Sustainability Committee – <u>dave.Doebler@gmail.com</u> – 954-415-7434



All units look alike from different haulers. There is no recycling logo. Sticker says 'Newspaper'. Is it any wonder that contamination rates are so high?



'Comingled Recycling' is worn away. There is no recycling 'logo'. Trash vs. Recycling – it is all the same.

Prepared by Dave Doebler – Chair City of Miami Beach Sustainability Committee – <u>dave.Doebler@gmail.com</u> – 954-415-7434



Sticked on top is great. Still no big universal RECYCLING logo anywhere on the bin.

There is no recycling logo. Sticker says 'Newspaper'. Is it any wonder that contamination rates are so high?

"Warning No Garbage" - Nothing about recycling



No Garbage, but what IS supposed to go in here?





It's obvious no one else can tell either.





What entails good messaging?

- Unified coloring (is green recycle, or blue recycle, or yellow lid?)
- Universal Recycling logo that everyone recognizes
- Either Multi-Lingual Garbage or Recycling words and logo <u>on all sides</u>
- Unified / Detailed sticker showing what can be recycled (with images)





Plastic Bottles ~ **Glass Bottles** \checkmark **Aluminum and Steel Cans** White and Colored Paper ~ Magazines \checkmark Junk Mail \checkmark Envelopes \checkmark **Telephone Books** \checkmark **Post-it Notes** \checkmark Catalogs \checkmark × × × × × × х × ×

YES!

- NO!
- × Food Waste
- × Paper Cups
- × Styrofoam
- × Plant Material
- × Waxed Cardboard
- × Plastic Binders
- × Carbon Paper
- × Food Wrappers
- × Paper Towels
- × Photographs
- × Hazardous Waste
- x Cardboard
- × Foodstuffs





Proposal

- City should work in partnership with Waste Haulers to develop a solution that increases education, improves recycling rates and reduces contamination.
- City should mandate unified color and messaging on all bins on all new purchases (not retroactive) in contract.
- City should design appropriate visual graphics / labels to be used city wide
- Either City or Vendor must print appropriate visual labels
- Vendor must install labels on all cans on all sides to achieve agreed upon consistency.

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 # 316-2017

TO: Mayor Philip Levine and Members of the City Commission

FROM: Jimmy L. Morales, City Manager

DATE: June 13, 2017

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 on May 30, 2017.

LETTER TO COMMISSION

Attachment: Sustainability Committee Motion

SMT/MKW/FCT/YP



City of Miami Beach Sustainability Committee

David Doebler, Chair	TO:	Mayor Philip Levine and Members of the City Commission	
<u>Members:</u> Steve Vicenti	FROM:	David Doebler, Sustainability Committee Chair	
Nancy Bernstein Michael DeFilippi	DATE:	June 12, 2017	
Richard Conlin Scott Diffenderfer Chervl Jacobs	SUBJECT:	Sustainability Committee Motion	

Dear Mayor and Honorable City Commission:

The Sustainability Committee met on May 30, 2017, and passed the motion below regarding messaging on waste/recycling receptacles for the City of Miami Beach:

The Sustainability Committee recommends the Sustainability and Resiliency Committee support efforts to collaborate with the franchisee waste haulers on implementing the initiatives listed below to provide unified coloring and messaging for waste and recycling dumpsters:

a. Develop a solution that increases education, improves recycling rates and reduces contamination;

b. Mandate unified color and messaging on all newly purchased bins (not retroactive) in contract;

c. Design appropriate visual graphics / labels to be used city wide;

d. Print appropriate visual labels;

e. Install labels on all cans on all sides to achieve agreed upon consistency.

As an Advisory Committee, we sincerely ask that consideration be given to the above motion.

Sincerely,

Da/ VL

David Doebler Chairperson, Sustainability Committee

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

659-2018

NO. LTC #

LETTER TO COMMISSION

TO: Mayor Dan Gelber and Members of the City Commission

FROM: Jimmy L. Morales, City Manager

DATE: December 27, 2018

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 December 18, 2018.

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Attachment: Sustainability Committee Motion Attachment: LTC 316-2017

SMT/ESW/FCT/YP



City of Miami Beach Sustainability Committee

David Doebler, Chair	TO:	Mayor Dan Gelber and Members of the City Commission
<u>Members:</u> Jeremy Waks	FROM:	David Doebler, Sustainability Committee Chair
Mohammed Islam Luiz Rodrigues	DATE:	December 18, 2018
Richard Conlin Max Litt	SUBJECT:	Sustainability Committee Motions

Dear Mayor and Honorable City Commission:

The Sustainability Committee met on December 18, 2018 and passed the motions below:

- Motion to require future waste hauler contractors to install city-approved unified messaging on all sides of commercial and multi-family waste and recycling containers. In addition, the Sustainability Committee recommends implementing the initiatives listed within LTC#316-2017 (attached) to further support this effort.
- Motion to incorporate language in the Special Events Guidelines to waive special event permit fees, provide expedited permitting, and free parking for non-profit organizations that organize small community service events such as clean-ups.

As an Advisory Committee, we sincerely ask that consideration be given to the above motion.

Sincerely, David Doebler

Chairperson, Sustainability Committee

LETTER TO COMMISSION

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 # 316-2017

TO: Mayor Philip Levine and Members of the City Commission

FROM: Jimmy L. Morales, City Manager

DATE: June 13, 2017



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 on May 30, 2017.

Attachment: Sustainability Committee Motion

SMT/MKW/FCT/YP



City of Miami Beach Sustainability Committee

David Doebler, Chair	TO:	Mayor Philip Levine and Members of the City Commission
<u>Members:</u> Steve Vicenti	FROM:	David Doebler, Sustainability Committee Chair
Nancy Bernstein Michael DeFilippi	DATE:	June 12, 2017
Richard Conlin Scott Diffenderfer Cheryl Jacobs	SUBJECT:	Sustainability Committee Motion

Dear Mayor and Honorable City Commission:

The Sustainability Committee met on May 30, 2017, and passed the motion below regarding messaging on waste/recycling receptacles for the City of Miami Beach:

The Sustainability Committee recommends the Sustainability and Resiliency Committee support efforts to collaborate with the franchisee waste haulers on implementing the initiatives listed below to provide unified coloring and messaging for waste and recycling dumpsters:

a. Develop a solution that increases education, improves recycling rates and reduces contamination;

b. Mandate unified color and messaging on all newly purchased bins (not retroactive) in contract;

c. Design appropriate visual graphics / labels to be used city wide;

d. Print appropriate visual labels;

e. Install labels on all cans on all sides to achieve agreed upon consistency.

As an Advisory Committee, we sincerely ask that consideration be given to the above motion.

Sincerely,

Ja/ XL

David Doebler Chairperson, Sustainability Committee

COMMISSION MEMORANDUM

- TO: Honorable Mayor and Members of the City Commission
- FROM: Commissioner Mark Samuelian
- DATE: January 16, 2019

SUBJECT: REFERRAL TO THE SUSTAINABILITY AND RESILIENCY COMMITTEE TO DISCUSS THE SUSTAINABILITY COMMITTEE MOTION ON REQUIRING WASTE HAULER CONTRACTORS TO HAVE UNIFIED MESSAGING.

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On December 18, 2018 the Sustainability Committee passed a motion asking the City to look into requiring waste hauler contractors to install City-approved unified messaging on all sides of commercial and multi-family waste and recycling containers. In addition, the committee also recommended implementing initiatives on waste hauling passed as a motion on June 12, 2017:

a. Develop a solution that increases education, improves recycling rates and reduces contamination

- b. Mandate unified color and messaging on all newly purchased bins (not retroactive) in contract
- c. Design appropriate visual graphics I labels to be used Citywide
- d. Print appropriate visual labels
- e. Install labels on all cans on all sides to achieve agreed upon consistency

Legislative Tracking

Commissioner Mark Samuelian

Sponsor

Co-sponsored by Vice-Mayor Michael Gongora

ATTACHMENTS:

Description

Sustainability 12/18 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

659-2018

NO. LTC #

LETTER TO COMMISSION

TO: Mayor Dan Gelber and Members of the City Commission

FROM: Jimmy L. Morales, City Manager

DATE: December 27, 2018

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 December 18, 2018.

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Attachment: Sustainability Committee Motion Attachment: LTC 316-2017

SMT/ESW/FCT/YP

Page 57706fl 2868



City of Miami Beach Sustainability Committee

David Doebler, Chair	TO:	Mayor Dan Gelber and Members of the City Commission
<u>Members:</u> Jeremy Waks	FROM:	David Doebler, Sustainability Committee Chair
Mohammed Islam Luiz Rodrigues	DATE:	December 18, 2018
Richard Conlin Max Litt	SUBJECT:	Sustainability Committee Motions

Dear Mayor and Honorable City Commission:

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- Motion to require future waste hauler contractors to install city-approved unified messaging on all sides of commercial and multi-family waste and recycling containers. In addition, the Sustainability Committee recommends implementing the initiatives listed within LTC#316-2017 (attached) to further support this effort.
- Motion to incorporate language in the Special Events Guidelines to waive special event permit fees, provide expedited permitting, and free parking for non-profit organizations that organize small community service events such as clean-ups.

As an Advisory Committee, we sincerely ask that consideration be given to the above motion.

Sincerely, David Doebler

Chairperson, Sustainability Committee

ATTACHMENT

LETTER TO COMMISSION

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 # 316-2017

- TO: Mayor Philip Levine and Members of the City Commission
- FROM: Jimmy L. Morales, City Manager

DATE: June 13, 2017

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 on May 30, 2017.

Attachment: Sustainability Committee Motion

SMT/MKW/FCT/YP



City of Miami Beach Sustainability Committee

David Doebler, Chair	TO:	Mayor Philip Levine and Members of the City Commission
<u>Members:</u> Steve Vicenti	FROM:	David Doebler, Sustainability Committee Chair
Nancy Bernstein Michael DeFilippi	DATE:	June 12, 2017
Richard Conlin Scott Diffenderfer Cheryl Jacobs	SUBJECT:	Sustainability Committee Motion

Dear Mayor and Honorable City Commission:

The Sustainability Committee met on May 30, 2017, and passed the motion below regarding messaging on waste/recycling receptacles for the City of Miami Beach:

The Sustainability Committee recommends the Sustainability and Resiliency Committee support efforts to collaborate with the franchisee waste haulers on implementing the initiatives listed below to provide unified coloring and messaging for waste and recycling dumpsters:

a. Develop a solution that increases education, improves recycling rates and reduces contamination;

b. Mandate unified color and messaging on all newly purchased bins (not retroactive) in contract;

c. Design appropriate visual graphics / labels to be used city wide;

d. Print appropriate visual labels;

e. Install labels on all cans on all sides to achieve agreed upon consistency.

As an Advisory Committee, we sincerely ask that consideration be given to the above motion.

Sincerely,

Da/JL

David Doebler Chairperson, Sustainability Committee

MIAMIBEACH

<u>Item 5.</u> COMMITTEE MEMORANDUM

TO: Sustainability Resiliency Committee Meeting

FROM: Jimmy L. Morales, City Manager

DATE: February 27, 2019

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

RESPONSIBLE DEPARTMENT:

Margarita Wells, Environment & Sustainability Assistant Director

LEGISLATIVE TRACKING:

Item C4U - May 11, 2016 Commission Meeting

SPONSORED:

Commissioner Micky Steinberg

BACKGROUND:

At the City Commission meeting on May 11, 2016, the Mayor and City Commission referred a discussion to the Sustainability and Resiliency Committee (SRC) regarding stormwater Best Management Practices. This item was sponsored by Commissioner Steinberg. On July 15, 2016, the SRC requested regular updates on the city's stormwater management activities.

The city operates a Municipal Separate Storm Sewer System (MS4), meaning the stormwater is separate from the sanitary sewer system. The Miami Beach MS4 is comprised of over 90 miles of pipes that carry rainwater collected from inlets on city streets and discharges it via more than 300 outfalls into our waterways and Biscayne Bay. Stormwater systems are a tool used by cities around the world for managing the runoff from rainfall. The city's stormwater system is designed to reduce the likelihood of flooding and keep streets dry. However, stormwater systems are also point sources of pollutants that carry contaminants picked up by rainwater.

The National Pollution Discharge Elimination System (NPDES) permit program addresses water pollution by regulating point sources that discharge pollutants to the waters of the U.S. The city is one of more than 30 co-permittees with Miami-Dade County for NPDES Permit No. FLS000003, the latest version of which was issued in June 2018. The Miami-Dade County NPDES permit covers a combined total of more than 8,000 outfalls throughout Miami-Dade County that discharge into Biscayne Bay, of which the city's outfalls constitute 3.8%.

<u>Analysis</u>

UPDATE:

As part of our permit to operate our stormwater system, all permit holders are required to develop a stormwater management program that reduces potential pollution through education and outreach, good housekeeping, as well as the use of cutting edge technology and industry-vetted operational practices. The city has established a program that meets and, where feasible, exceeds the requirements of our permit. One example is the voluntary launch of our water quality sampling program in late 2016, which expands upon Miami-Dade County's existing sampling network.

The Miami Beach water quality sampling program added more than sixty stations to cover areas of Biscayne Bay closer to our shoreline and within our waterways for which data has historically not been collected. The data from this program gives a more robust snapshot of local water quality and allows city staff to make better informed stormwater management decisions.

In 2018, the city completed the first year of data collection and retained an outside water quality expert, Dr. Charles Rowney, to review the data and draw initial conclusions about the health of our waterways. Dr. Rowney presented the results of his analysis, as well as a report with the results, his observations and his recommendations to the SRC and a roundtable of technical stakeholders on September 26, 2018. Based on his analysis of the Miami Beach water quality sampling program and the data collected during the monitoring period, there is no indication of gross or persistent sanitary system contamination into Biscayne Bay from Miami Beach (Attachment A).

The city's current water quality program design is useful as a screening-level program and according to Dr. Rowney, "could and should be enhanced if uses of data beyond the present screening level are contemplated." As such, staff is proposing the following six enhancements to the program:

1. Training in-house staff to execute and oversee sample collection.

Dr. Rowney's report revealed the need for increased oversight during sampling to ensure consistency and protect the integrity of the data. Staff is coordinating with Miami-Dade County to shadow their field crew during the next sampling event and will be pursuing the same industry certifications currently held by their sampling program staff. Trained staff will then be responsible for overseeing all sampling activities and for deploying immediately to collect samples in emergency situations (i.e., illicit discharges). Having trained staff in-house will not only allow the city greater control over our program, but it will also allow staff to respond more quickly and fully to water quality violations, improving enforcement.

2. Removing all "outfall" sampling stations.

When the city initially designed the current water quality sampling program, one of its goals was to identify if a difference exists between outfall and ambient conditions. However, Dr. Rowney's analysis of the Year 1 data showed that the results from outfall and ambient stations are not statistically different. Therefore, the outfall samples do not reflect true outfall conditions and are solely functioning as duplicates of the ambient samples. Staff is proposing to keep all the ambient sampling stations, remove all the duplicative "outfall" sampling stations, and redirect the program savings toward other types of data collection that will enhance the program beyond the present

screening level, in accordance with Dr. Rowney's recommendations.

3. Adding stations in areas where data is not currently collected.

With some of the savings generated from removing duplicative stations, staff is proposing to add sampling stations at new locations. Specifically, staff is proposing to add ambient stations throughout North Beach that will be sampled on a monthly basis so we have a better understanding of waterway health in the area. Additionally, staff is proposing to collect samples on a quarterly basis from six locations within the stormwater system to better understand the composition of stormwater leaving the city and develop pollutant loading estimates.

It should be noted that water quality monitoring programs do not typically sample within municipal stormwater systems because stormwater is expected to carry pollutants and the primary concern is how those pollutants may affect the receiving waterbody. However, staff is proposing to voluntarily sample inside our system at select locations so we have more detailed information with which to refine our pollution prevention programs. The following six locations were strategically selected to provide a broad picture of in-system conditions from a wide range of upstream land uses:

- Palm Island pump station wet well single-family residential.
- 10th Street pump station wet well mixed use entertainment, low intensity multifamily residential, low intensity commercial, and high intensity multifamily residential.
- Sunset Harbour pump station wet well urban light industrial, medium intensity commercial, and high intensity multifamily.
- Collins Avenue and 41st Street manhole low and medium intensity residential.
- Bay Drive and Normandy Drive manhole residential office, low and medium intensity residential, and medium intensity commercial.

4. Sampling for more parameters at existing and new stations.

The current sampling program analyzes for 12 parameters that are physical, chemical and biological indicators of bay health, consistent with the County's sampling program. Staff is proposing to add parameters to existing and new stations, as applicable. For example, Chlorophyll a is a great indicator of algae growth and can serve as an early warning system that the ecosystem is seeing an increased input of nutrients like Total Nitrogen and Total Phosphorous. Sampling for additional parameters like Chlorophyll a will provide a more holistic picture of bay health.

5. Sampling during rain events.

The new NPDES permit issued in 2018 requires all permit holders to estimate the event mean concentrations (EMC) during rain events. That is, all permit holders must calculate the average loading of nutrients into their stormwater systems during a discharge event such as a rainfall. Staff is proposing to collect samples during a minimum of four rain events per year at major outfalls to account for quarterly variations in rainfall discharges.

6. Installing constant monitoring probes in areas requiring in-depth investigation.

Occasionally, the city will observe illicit discharges and other plumes emanating from an outfall which require further investigation. In these cases, staff conducts in-depth investigations to track the source of and stop the discharge, as well as to enforce upon violators. One facet of these investigations is installing constant monitoring probes that can consistently track physical water quality parameters,

such as temperature, dissolved oxygen, turbidity, and conductivity, over time. The use of these sensors, which record data on one-minute intervals, has helped staff determine if the observed discharges are systematic or sporadic by showing the fluctuation of these parameters and also provided insight into the composition of the discharges. As such, staff is proposing to purchase two constant monitoring probes that the city can deploy as needed in areas requiring in-depth investigation.

CONCLUSION:

The following is presented to the members of the Sustainability and Resiliency Committee as an update.

ATTACHMENTS:

Description

Attachement A

Type Other CITY OF MIAMI BEACH SURFACE WATER QUALITY MONITORING PROGRAM REVIEW FEBRUARY, 2019

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Surface Water Quality Monitoring Program Review City of Miami Beach February, 2019

Executive Summary

This report describes a project that was launched by the City of Miami Beach (City) to develop a scientifically based evaluation of stormwater quality monitoring being conducted by the City at points of discharge (outfalls) and nearby waters. The evaluation was based on an examination of available monitoring data, a field observation of the present stormwater monitoring program, and information provided by City staff.

The existing monitoring program was found to be a useful screening level program, apparently adequate to provide a warning in the event that a substantial (e.g. long term and large) contamination event is experienced. The program is not conducted at a sufficient spatial density to immediately identify all instances of significant contamination, but with several dozen stations located about the City, including locations near stormwater outfalls and locations more removed from those outfalls, it is likely to provide a warning in the event that truly massive and persistent contamination is encountered. It is not reasonably possible to sample all locations at all times, so a perfect warning system is not a reasonable prospect, but the present program is a pragmatic and scientifically defendable approach that provides useful information in a balanced way given the present state of knowledge of the system. In short, the basic characteristics of the program are sound, results are useful, and it is recommended that it be continued and enhanced if a screening program is of continuing interest to the City.

Conduct of the field program was directly observed as a part of this assessment. The field crew that was observed was professional and effective in its actions, professional staff were clearly knowledgeable and intent on using the data to best effect, and the field sampling program over all was found to be well conceived and executed given its role as a screening or warning system.

However, there were some areas where practices could be improved, and a range of enhancements were identified for consideration. These include development of a comprehensive set of Standard Operating Procedures (SOPs) with associated Quality Control elements, encompassing among other things implementation of training standards for staff in the field, increased supervision, and improvements in some specific aspects of field technique.

In addition, recommendations are made for consideration in the event that there is interest in using the data for purposes beyond simple screening/warning functions. Tracking changes over time, for example, would likely best be served by extending and supplementing the current program. Recommendations are made as to refinements to the sampling program which will continue the existing useful monitoring results but better position it for uses beyond basic screening/warning functions.

After the SOPs noted above are developed and implemented, a moderate approach to enhancing the monitoring program is recommended, rather than any immediate dramatic changes. Moderation is suggested for two basic reasons. First, the sampling that has been done has not disclosed a major problem requiring dramatic action. Second, the existing data are not sufficient to confidently suggest what major changes to the program might be indicated. Therefore, a set of initial steps that will significantly improve data and results, while maintaining the essential vision of the present program, is recommended. In the future, if needed, more extensive revisions can be

made on a foundation of better information and more clearly demonstrated need. Of course, if the City develops a need for extended or different data in the short term, a more immediate update to the program may be warranted.

As well as recommendations regarding the conduct of field work, recommendations are made to explore the potential for improved laboratory outcomes; the conduct of the laboratory work carried out to date is not questioned as such, but there may be value in exploring the potential for alternative tests and improved resolution near detection limits.

Once the monitoring program was evaluated in the field, the available data arising from the program were assessed. Despite the limitations discovered during the field component of this assessment, and the screening level nature of the program, it was considered useful to explore the available data to determine if significant trends or other interpretations might emerge. Charts provided by the City of all parameters measured (appended to this report) were examined. The limited number of available observations made it difficult to demonstrate a cause and effect link between such factors as rainfall and stormwater quality, or to identify causes of observed bacterial concentrations. However, some basic information could be developed. For example, a review of the indicator bacteria data suggested the following:

- Statistically, there were few instances where there was reason to conclude that the stations nearest the outfalls differed from those further away. On the contrary, most of the data suggest that there is no statistical difference between these two cases from a cause and effect perspective.
- However, by aggregating data into larger sets, and by partitioning the data effectively, some added indications emerged. Generally, it was determined that in the aggregate, indicator bacteria at stations in close proximity to outfalls do not for the most part behave differently than those further away. There is an apparent increase in excursions from base conditions at locations closer to the outfalls compared to locations further away, but this increase is not universal. This preliminary finding requires further investigation.
- The system for the most part displays water quality characteristics consistent with typical stormwater discharges. Values measured in the field were largely unremarkable from this perspective.

With added data in the future, the present findings may change, and new findings may emerge.

In summary, for the present it seems reasonable to conclude that the available data, interpreted with an understanding of the field procedures employed to date, do not support a conclusion that there is a major difference in behavior during wet and dry periods. Further, the data do not support a conclusion that there is a continuing massive discharge of sanitary flows into this system.

Since the available data are not definitive, it would be appropriate to continue and potentially expand the present program if more concrete statistically defendable conclusions are desired. It is suggested that if monitoring does continue, analyses of the type contained herein should be extended and enhanced as data accumulates. In addition, supplementary monitoring might be indicated if and when the monitoring program begins to define patterns of behavior more certainly than is presently possible. For example, a strategy for targeted sampling at specific catchments might be considered if a particular outfall is found to discharge objectionable levels of contaminants of interest or if other indicators suggest a need for further investigation of water quality conditions and possible causal factors.

Introduction

This report describes a project that was launched by the City of Miami Beach (City) to develop a scientifically based evaluation of current monitoring practices associated with stormwater quality discharges from the City. Findings include an assessment of the adequacy of present monitoring practices, recommendations as to improvements to monitoring practices that might be considered, and an evaluation of the monitoring data gathered to date.

Approach

This project was carried out in a set of sub-tasks that included review of data provided by the City, site investigations, and analysis, as follows:

Review of Existing Analyses of Monitoring Data:

The City has been gathering water quality monitoring data at numerous stations near points of stormwater discharge, and as City staff have completed some analyses of the data. These analyses were provided by the City (see charts appended to this document), and reviewed as a part of the present evaluation. Initial impressions about the nature of the sampling program were developed based on this content, the conduct of the monitoring program to date was discussed with staff, and a site visit was planned accordingly.

Site Visit:

The site was visited at monitoring locations. With the aid of City staff, sampling locations were visited from the water by means of a boat and crew provided by the City. This was done at a time when sampling was being conducted. Factors relevant to potential sources of contamination were sought, and sampling technique was observed.

Analysis of Existing Data:

The City provided all available water quality data, as well as related meteorological data, obtained in the monitoring program noted above. Those data were examined, including all parameters but with an emphasis on indicator bacteria results, and statistical analyses were employed in an attempt to find meaningful correlations between locations and circumstances prevailing at each sample location. In addition, the data were scanned to determine if a meaningful assessment of positive or negative trends over time could be made.

Interviews:

Discussions were held with City staff to confirm information gained regarding conduct of the monitoring program, to better understand observations made in the field, and to verify related questions that arose as water quality data were examined.

Reporting:

This report was drafted, based on outcomes of the above steps.

The above series of steps were considered to constitute a useful basis for comment on the monitoring program and present monitoring results; however, wider resources were also available and considered.

Over all, it should be noted that the present work was necessarily limited to the interpretation of monitoring data from a program that is in its early stages, and that it cannot be considered to be the final determination of water quality behavior in this system; as time goes on, and added data are obtained, new insights may emerge. The project was not designed to extend or amend any monitoring or stormwater quality plans already in place, or to address questions of engineering design or interpretation. All content developed and communicated in this report is scientifically founded opinion based on information provided to the reviewer supplemented by activity viewed during field observations.

Field Observations

Monitoring Locations and General Observations

The monitoring sites were visited from the water, in a pattern that reflected practices during regular monitoring conducted by City staff with support from PACE. Locations monitored by the City are shown in Figure 1.

General Outfall Observations

All cases observed were on a calm and sunny day with no major rainfall or wind conditions. Although all locations were designated as either 'ambient' or 'outfall' by the City, it was evident that the nature of the outfalls themselves varied considerably from place to place. For reasons related to design, maintenance, and operations, the City outfalls display a range of configurations, and at the time of observation they were affected by a range of temporary operating conditions. Figures 2 through 7, provided by the City, provide a few representative examples of what was observed at the time of the visit. Some general observations are:

- In some cases, outfalls were fully submerged, while in others they were fully exposed. This will vary to some extent as affected by tide, but has the potential to impact monitoring results from location to location.
- In some cases, plastic barriers are in place, while in others they are not.
- Some outfalls are pumped, while some are gravity fed (pumping locations were not generally visible during the field visit, but were known to the City and identified as such).
- Active construction in the vicinity of some locations had left significant areas of bare earth and sediment in locations likely to enter the water at or near an outfall.
- Active construction in the vicinity of at least one location included a dewatering pump which discharged in the immediate vicinity of an outfall.
- Watercraft and moorings were adjacent to some outfalls, but were absent or less marked in others.
- Land uses near the points of outfall varied, including grassed areas, slip ways, urban construction, roadways, and so on.

In addition, it was noted that there were apparent outfall pipes (with active discharge observed) that were not among the City stormwater discharges of interest in this project but that nevertheless do, or could, contribute flows to the receiving water system. Over all, it was clear that there is a substantial possibility of variations in monitoring results as a function of the variations in conditions that prevail at each outfall location. The variability observed in outfall characteristics is a common fact of life in coastal environments, since needs and constraints vary from place to place and from time to time, so this observation should not be construed as a negative reflection on City practices. It is, however, a factor that complicates implementation of a comprehensive and consistent monitoring program.



Figure 1 City Monitoring Locations



Figure 2: Submerged outfall



Figure 3: Outfall below grassed right-of-way



Figure 4: Watercraft dockage near outfall



Figure 5: Rip-rap energy dissipation near outfall





Figure 7: Outfall with active dewatering under way during sampling

Figure 6: Outfall below construction with open soil surface

Monitoring Procedures

The monitoring crew which was present at the time of the field observations carried out in this review were visibly experienced in working together and were professional in their conduct. They worked smoothly and efficiently together, and there seemed to be no moments where activities were new, or unusual, or unpracticed. This comfort with established process is a desirable indicator for two major reasons. One is that it suggests that what was observed was indeed what is normally done; steps had been taken to minimize the likelihood that the crew would feel the added participants constituted a performance review, for exactly this reason. The other is that it suggests that the monitoring is carried out in a way that is consistent over time, which is fundamental to obtaining meaningful results in the long term.

It was also noted that there was no sense of a merely perfunctory attention to the monitoring process. Crew members were attentive, observant of each other's actions, and in vocal contact as they each played their part. Each person had a defined set of activities to fulfil, and they seemed to expect each other to follow a sequence of established patterns as samples were taken and results recorded. Field notes were legible and entered with evident care. It seemed apparent that the monitoring process had not degraded into a rote activity, which is a risk in prolonged programs of this type.

It was not visible that there was a crew chief, although each member carried out their functions in harmony and no intervention was required during the period where operations were observed. How decisions would be made in the event of an anomalous procedural outcome is therefore not known. In terms of boat discipline, however, the operator was clearly in charge and potentially might fill a leadership role in a broader context if needed.

Boat handling itself was masterful, with minimal wake, careful attention to rules of the waterway, and an efficient approach to and departure from each monitoring location. The boat was a highly effective and stable working

platform, and clearly able to support operations in conditions much more adverse than were experienced during this field program. Although not within the scope of this investigation, it is noted that the boat was in good order, with safety devices apparently correct and in place, which speaks in part to the professional foundation of the field activity over all.

Sample labeling and sampling in the field appeared to be consistent with effective practices, with little likelihood of inadvertent mixups between samples or use of inappropriate sample containers. It must be recognized, however, that lab prep prior to field sampling, and transport and analysis after sampling, were not reviewed in the course of this project and cannot therefore be confirmed as either adequate or inadequate for purpose.

One facet of the team composition that was unexpected is that there seemed to be a gap in formal training. The individual doing the actual sampling was very consistent from instance to instance, and evidently intent on effective sampling in each case. However, when questioned, it was determined that the individual had had no formal training, but had been allocated to the crew at one point and had learned by observation bit by bit on the job. The individual in question was seen as a positive, professional, and effective crew member, but the apparent lack of formal training raises questions, not answerable at this time, about the efficacy of SOPs and QC measures guiding the monitoring program. Subsequent discussions with the City suggest that the person doing this aspect of the field work was not formally tasked with this function but was attempting to contribute to the program in an effective way; if so, and if this contribution is to be continued, a formal shift in training and preparation should be considered. If, however, this allocation of resources is not what was anticipated by the City, then it appears a major function is not being fulfilled by whoever was expected to undertake it. Resolution of this point is unclear at the time of writing.

Taken together, the review of field procedures suggests that the program is in most ways appropriate for a screening program which is in place to identify gross excursions of common water quality indicators.

The points of detail below outline factors that should be reviewed and perhaps adjusted, particularly if the monitoring data being gathered might be used at some point in the future for wider purposes than a general screening program.

Factor: Sample location consistency

Explanation

• In some cases, sampling was done immediately in front of an outfall, while in others it was offset by a few feet. Since the potential to sample directly from the outfall itself apparently exists, the reason for this variable designation of location is unknown.

Significance

- If the intent is that monitoring is only intended to provide a gross indicator of conditions in the general vicinity of an outfall, this is not necessarily a major problem. However, the shift in position relative to the outfall itself raises the possibility of sampling a mix of outfall flow and ambient flow, or missing an outfall plume altogether. This raises a question as to what exactly was being sampled in those stations identified as 'outfall'. It is less of an issue in those stations identified as 'ambient'.
- For someone attempting to analyze monitoring results, this undocumented variability in orientation relative to the outfall pipes constitutes an uncertainty in the meaning of a particular sample that could materially interfere with the ability to interpret monitoring data.

Factor: Sample recovery

Explanation

• In all cases, the sample recovery was taken by lowering a container into the water and allowing flow from the top inch or so of water to flow into the container.

Significance

• This factor means that surface skimming was generally what was being sampled. With a submerged outfall, particularly where temperature gradients might be significant, or where wind conditions might materially affect the top of the water column, this is a practice that could have the sample less reflective of what is coming out of the outfall, and more indicative of local conditions affected by wind and sunlight.

Factor: Sample cross-contamination

Explanation

• Between samples, the container was seldom rinsed in even a perfunctory way. It was generally emptied after sampling, and then dropped into the boat. It was then picked up and used for the next sample without substantial agitation or cleaning.

Significance

• When measuring such things as nutrients, this practice is probably of more theoretical interest than practical impact. However, when sampling bacteria, or (for example) perhaps when moving from a high turbidity location to a low turbidity location, it could have a consequence of 'blurring' results between one location and the next.

Factor: Sample equipment handling

Explanation

- It was observed that the sample container was at times picked up with the user putting fingers inside the vessel and a thumb outside.
- Particularly when sampling bacteria, and when not otherwise rinsing or cleaning the sampling apparatus between samples, this kind of handling of the container invites false positives arising from contamination not related to local waterway conditions.

Factor: Sediment resuspension

Explanation

• It was observed that in some locations, the propeller on the boat used was close enough to the bottom to mobilize significant visible quantities of sediment, despite care and attention by the operator to reduce or eliminate this effect.

Significance

• This resuspension, if sufficient to reach the surface (it was apparent but unproven that this was the case) could in effect have samples in such a case reflect whatever accumulated on the bottom, not what was discharged from the outfall.

Factor: Sample event selection

Explanation

• It was explained by the team that sampling excursions were planned for a particular sampling date in the future based on calendar availability. There has been no attempt to sample immediately after rainfall events.

Significance

• Lack of a conscious effort to sample during or immediately after rainfall events could be viewed as insignificant in the sense that it is a semi-random way to schedule a sampling event. However, it sharply reduces the opportunity to sample discharge conditions truly representative of a storm. In the very long term, it will probably be possible to estimate post event conditions that are randomly sampled according to the existing protocol, but it will make it a much less efficient process when it comes to determining what happens as a result of storm events.

Factor: Sample event exclusion

Explanation

• In cases where there is a significant rain/thunder/lightning condition, samples are not taken.

Significance

• This is a prudent safety factor. However, it further reduces the opportunity to gather data indicative of storm event conditions and therefore imposes a bias in the data. Auto-sampling, or a commitment to sampling immediately after the weather clears, would reduce this bias. It is not quantitatively known how often wet weather exclusion has been a factor in the past, but it should be avoided, if possible, in the future.

Factor: Sample sequence timing bias

Explanation

• During discussions with the crew, it was learned that sampling generally (but not perfectly) takes the same pattern each time the crew is deployed. There was a tendency to sample at one end of the system and efficiently work forward from there. The start and end times for each sampling episode were apparently reasonably consistent from instance to instance.

Significance

• Since this is a tidal system, and since sunlight intensity varies during the day, this raises the possibility of inserting a systematic bias into results because sampling at a given location will exhibit a correlation with tidal phase and time of day at different times of the cycle. Also, it suggests that a different crew with a different sampling sequence might inadvertently insert a counter-bias. Consideration should be given to evaluating sample patterns in ways that specifically address the potential of an internal bias based on timing.

Factor: Minimal record keeping during sampling

Explanation

- During sampling, a variety of conditions may be present which could affect results.
 - As shown in figure 7, there may be de-watering under way from activity in the catchment.
 - In some cases plastic silt barriers are in place, in some cases they are not, and in some cases they have failed.
 - There may be maintenance activity at the capture tanks above some of the outfalls.

None of these factors, or other observable factors that might affect water quality, are recorded by the sampling crew.

Significance

• The disturbances identified above, and others (observed waterfowl, marine activity, etc.) have the potential to affect water quality, some of them very significantly. It is a resonable prospect to train crews to identify and record such instances, and such information could be very helpful in interpreting anomalous monitoring results after the fact. A simple photograph of each site at the time of sampling could add to the ability to understand results. It might also make it easier to detect variations in sampling technique from person to person or from time to time during future reviews of the data and monitoring program.

Factor: Sample location resolution

Explanation

- Navigation to each sample point was essentially by visual position estimation. Known points on the shore or nearby were used to establish location along the shore, and visual estimates were used to establish position outward from the shore. Quantitative navigational aids were not observed in use for sample point station keeping, and questioning of the crew suggests that visual reference points are the basis for navigation.
- In some cases, the boat was noted to drift significantly while samples were being taken. In one case, a drift of about 40-50 feet was observed between the time a physical sample was taken, and the time an in-situ probe was read.

Significance

- From a larger perspective, approximating location as has been done might be adequate. As a gross indicator of major events, the lack of a tight definition of known sample location might be acceptable. However, if the data are eventually to be interpreted for modeling or cause/effect assessments, this 'fuzzy' approach to location could easily become problematic. The degree to which this matters is quite case specific. In one case, when the so-called ambient location was substantially off shore and in an open channel area, 50 feet or so might be insignificant. In another case, for example while sampling in a boat docking area where 50 feet was a substantial proportion of the distance to the outfall, or where other physical factors vary over short scales, it may not be. Either way, with location varying substantially during actual sampling, it can be interpreted that more than one point is actually being measured.
- If more than one person does the navigating, the question of interpretive consistency becomes material. It is likely that without quantitative direction, or a long and careful overlap so that a consensus on location is obtained, results developed by one person might reflect a consistently different set of locations from another.
- In any case, it is concluded that actual sample location varies from instance to instance, and that this variability needs to be acknowledged as a part of the monitoring data record keeping.

General Conclusions and Recommendations Regarding the Existing Field Monitoring Program

The overall conclusion gleaned from observation of the monitoring program techniques is that the results are able to deliver a screening level of understanding that there is or is not an episode of gross contamination at the times and places sampled. While the resolution is not fine enough to detect every possible instance of a high exceedance of desirable water quality parameter limits across the extent of the receiving water body, the sampling as it stands appeared to be a reasonable way to track conditions and detect major excursions. There is some likelihood of a false positive from time to time for bacteria, arising from the techniques employed, but there is only a limited chance of a

false negative at the times and locations sampled. It is noted that the approach used might be considered to be inherently conservative method as a result.

Even if the present sampling program is to be supplemented by an expanded or more sophisticated approach, consideration should be given to maintaining it. It is sound in concept and has value in its own right.

Nevertheless, there are several things which should be considered from the perspective of preferred practice.

- If the present general approach to sampling is to be maintained, an alternative nomenclature to 'outfall' and 'ambient' should be considered to avoid confusion or inadvertent misrepresentation of results, and this nomenclature should be fully defined. For example, the stations presently termed 'outfall' might better be termed 'close proximity to outfall' and this new term might be defined as 'within a 15 foot (*estimated for purposes of this report*) radius of the outfall termination point'.
- A written SOP should be devised which formally specifies locations, techniques, QC requirements, and other details of sampling. This is a substantial task but is a necessary co-requisite to this kind of monitoring program. The SOP should include:
 - specific attention to recording observed factors or conditions that might affect water quality, such as the construction and dewatering examples that were observed in this case,
 - o protocols for sample container refreshing between sample instances,
 - stated positioning requirements, including positive mechanisms to ensure different crews obtain similar results,
 - reconciliation of duplicate vs split sample techniques (uncertainty exists on the point in the present sampling), and
 - attention to standard QC elements characteristic of this kind of sampling program (there are established protocols for most of the elements of this program).
- Staff should be trained and confirmed fit for purpose before they are allocated to sampling. This training should include a thorough familiarity with the SOP.
- Periodic QC checks of sampling should be implemented, not because of doubts in the crew but because of the inherent need to verify technique in programs of this type. Annual refresher training should be considered.
- Consideration might be given to supplementing the outboard motor on the sampling craft with a trolling motor so that shallow locations can be approached with minimal chance of bottom sediment disturbance.
- If more than one crew is mobilized, periodic cross-appointments should be considered so as to surface possible differences in practice between crews.
- The striking professional motivation of the crew observed in this review should be respected and preserved with careful management, as it is largely attitude that translates an SOP into reality. The starting point in this case is strong, and a good place to build from.

Other aspects that should be considered, particularly if the results of the monitoring are to be used to track progressive changes over time, cause and effect, or other water quality behavior beyond a screening function, are:

- Consider a mechanism to directly sample from the outfall pipe itself. Even though exchange with the surrounding water will be a reality due to tidal swings, this will lead to a better understanding of true outfall contributions. For example, a tube driven by a peristaltic pump might be an effective option (provided suitable purging is implemented) and other techniques are available. It may be that sampling at the most immediate upstream junction is possible, and could be accomplished even in adverse weather conditions.
- Consider implementing a closer positioning protocol, so that a single and repeatable sample point is truly obtained.
- Consider definition of timing for successive sampling episode sequences (potentially a rotating sequence) to better account for periodic phenomena in the receiving system.

- As well as continuing to sample during dry weather, consider improvements leading to better capture of wet weather conditions. Internalizing field sampling by the City so that wet weather events can be reliability captured, or contracting with the current provider in a way that enables sampling immediately after (if not during) storm events, are two options that could lead to a better understanding of stormwater discharge contributions. This stronger discrimination of wet weather conditions could be done as a separate exercise from the screening program, and it could potentially be discontinued once a sufficient understanding of stormwater discharges is obtained.
- Consider adjusting sample points or sampling frequency according to potential contributing land uses and/or likely contaminant sources. There is significant variability in and around the extent of the City, and it is reasonable to consider this in refining sampling strategy.

It is noted that in this technical area, there are a vast number of field techniques that can add understanding to the complex set of factors that govern water quality in the receiving system. These include such things as dye studies, tracers, more complex parameter sets, and even quantitative modeling of transport and ecosystem response. These are not considered responsive to the immediate need as defined for the present assessment. Suggested improvements listed above are all intended to provide improvements in quality and dependability, leading to better and more useful results, without a massive upscale in level of effort.

A moderate approach is suggested for two reasons. First, the existing monitoring has not (as is discussed in the chapters below) disclosed that there is a massive problem to remedy. Second, the existing data do not provide enough information to confidently design a major monitoring program. Until one or both of these conditions is encountered, or until needs of the City change, it is suggested that a prudent and step by step approach is indicated. The set of suggested improvements outlined above constitute such an approach.

Examination of Existing Data

The available data were assessed in a two step evaluation process. First, time series plots and synoptic data for all parameters at all stations were examined in the form of results obtained by City staff. Second, a deeper examination of parameters of interest was conducted, considering all parameters but focused on indicator bacteria because of current questions as to potential sanitary discharges. It is noted that the data do not suggest that major sanitary discharges are a present issue, but that this second step was undertaken to determine to the extent possible what can be learned about indicator bacteria behavior in this system given the interest in this subject. Throughout this discussion, it should be noted that the screening level program which is in place, particularly given the early stage of data gathering, is not necessarily a preferred basis for interpretations beyond the immediate use as an indicator of emerging adverse conditions.

Review of Synoptic Data and Charts Made Available by the City

Parameters considered included:

- Fecal coliforms
- Enterococcus
- pH
- NH3
- Salinity
- Specific Conductance
- Dissolved Oxygen
- Total Kjeldahl Nitrogen

- Nitrate plus Nitrite
- Total Phosphorus
- Turbidity

Data and images made available by the City will not be appended to this report, but are available from City sources.

Over all, the available data demonstrate variability over the course of the year. There are instances where the data do suggest some variability in behavior between sites, but statistical tests show that for the most part, the available data are not numerous enough that, when partitioned, confident statements can be made as to the differences between locations or conditions. This limitation does not reflect an inadequacy in the monitoring program. It is a consequence of a short monitoring period, multiple cause and effect mechanisms, and limited sample density.

For example, an attempt to assess results in terms of precipitation, which is a major candidate cause of water quality impairment, was statistically undefendable because of the limited number of sample cases clearly associated with rainfall cases. There are few instances where the time lapse between a rainfall event is small enough that the sample can be considered reflective of rainfall conditions. Similar limitations exist with the other parameters. Temperature and salinity vary substantially due to the natural mixing processes in this type of water body, and the chosen sampling methods do not lend themselves to a useful cause and effect evaluation of presence or association with stormwater events. The Nitrogen and Phosphorus species do have short term implications (for example NH3 as a directly toxic constituent) but express themselves in the long term as the nutrient cycle proceeds and a series of complex reactions with biological intermediaries take place. Dissolved oxygen may differ in stormwater and the receiving water, but the surface skimming approach to sampling which has been used makes it difficult or impossible to attribute what is measured to an outfall discharge or to simple reaeration near the surface. It is tempting to present the data none the less, but as the statistical underpinnings are limited, this is a potentially misleading course to take. The underlying causes for these results are discussed in the evaluation of the sampling program provided above. The sampling procedures, for reasons of design and safety, do not reliably occur during periods representative of stormwater discharges except incidentally, and the screening/warning nature of the sampling does not lend itself to cause and effect analysis. With the present sampling program, it will take time for the data base to accumulate substantial numbers of events associated with rainfall. Recommendations have been made to enhance the data base by adjusting the monitoring program if a quicker resolution of this issue is desired. With alternative sampling strategies and SOPs in place, it should be possible to relatively quickly identify stormwater discharges which contribute significant quantities of contaminants of interest.

In the mean time, the overall finding from the data that are available is still a useful one. There are indications of perturbations in the parameters measured from time to time, and some areas where there may be a difference between samples in the near vicinity of outfalls vs conditions further away; however, the clearest outcome is that there is no substantial support for a finding that there is a continuing instance of large discharges of raw sewage into the stormwater system. This result is consistent with the intent of the monitoring program, and inherently effective in that context.

Evaluation of Indicator Bacteria Records

The parameter of most interest in this instance is fecal coliforms (FC). The reality of indicator bacteria survival in the environment is a highly complex and evolving field and will not be explored further in this document, but for present purposes it is noted that FC are the first choice for exploration in this case in part due to the greater likelihood that FC in a sample gathered as a part of the present program reflects recent conditions more effectively. There are still many potential contributing sources of FC, and the elimination of FC due to natural processes (die-off) is still a complex result of many factors, so this remains a complex and difficult problem to assess. Nevertheless, some basic conclusions can be gleaned from the available data.

The first step in assessing the data was to explore the statistical behavior of the available records. Over all, there was little support for the hypothesis that there is a statistical difference between the stations in close proximity to outfalls and those further away. The figure below illustrates this outcome for a set of stations in the south-west quadrant of the system. It is noted that this set displayed the greatest potential differences between so-called 'outfall' and 'ambient' stations; extensive testing elsewhere tended to produce much worse results.

Outfall/Ambient	P-value
11/10	0.52
15/17	0.64
16/17	0.37
55/56	0.80
21/22	0.13
23/24	0.05
25/26	0.11
55/56	0.80
Outfall1/Outfall2	P-value
21/23	0.86
21/25	0.97
21/55	0.96
23/25	0.92
23/55	0.89
25/55	1.00
Ambient1/Ambient2	P-value
22/24	0.77
22/26	0.40
22/56	0.24
24/26	0.53
24/56	0.16
24/00	

Figure 8: P-Values associated with various sample site pairs

As shown, in the first set of pairings, only one of the data sets showed a significant difference at a 5% level, which was marginal, namely stations 23 and 24. Examining the underlying data shows that this difference is statistically reasonable, as there is an apparent factor differentiating the two; the limited numbers of observations, and the significant variations in values, are the reason that the difference is found to be significant but statistically not as strong as it might be. None of the other stations, however, show such a difference. Station 25 and 26, for example, not only fail the statistical test, but an examination of the data shows that the difference which is present is largely due to a few outliers and that part of the data shows one station higher and part of the data shows the other station higher. So there is poor support when considering station pairs (nominally 'outfall' and 'ambient' pairs) to accept the conclusion that there is a difference between outfall stations and ambient stations.

This raised an option for consideration. Another way to view the data is that there are two sets, namely one representative of outfalls, and one representative of ambient conditions. It is physically reasonable to pursue this line of exploration. The second two tables in figure 8 provide added support. None of the permutations of the ambient and outfall stations considered were different enough to reject the notion that they were statistically

unrelated; or in more conversational language, none of the pairs were proven to be different. Hence, there is conceptual as well as statistical support for aggregating outfall and ambient stations, and comparing the results.

It is acknowledged that there are a number of statistical questions raised by this approach, but as noted above it has the virtue that it enables comparison of the data in terms of two basic groups, which might be thought of as 'discharge dominated' and 'receiving system dominated'.

To evaluate this data set, two sets of stations were aggregated.

Ambient	Outfall
22	21
24	23
26	25
28	27
30	29
32	31
34	33
36	35
38	37
40	39
63	62

Figure 9: Groups aggregated as outfall or ambient representatives

These were stations in the general south-west of the area, and were considered to have enough physical similarity to support this aggregation. The result was two sets of 221 readings per group, considerably more significant than the 20 or so readings available in each individual station.

The test which was then performed showed that the groups could be taken as statistically different at a 5% level (P close to 0). A plot of the frequency of the two sets of data appears in figure 10 below.



Figure 10: Frequency of FC Readings in Class Intervals

The results suggest that the records in close proximity to outfalls may tend to be higher, more often, than those somewhat removed from outfalls. Given the short duration of the sample set this is not an unequivocal result, but it is at least intuitively reasonable. It is notable that the highest values in this chart (equivalent to about 20,000 no/dL) are consistent with stormwater discharges and well below what might be expected from significant sanitary system discharges.

An interesting element of this graph is that it suggests that the reason for the difference between the two groups is mostly associated with higher values (50 no/dL, about 1.7 on the above graph). This suggestion led to a secondary analysis. The data were split into two groups, one at and below 50 no/dL, the other greater than 50 no/dL). The result is shown below. The data are not statistically distinguishable at a 5% level (P=.31).



Figure 11: Frequency of FC Readings in Class Intervals, Data Limited to instances <50 no/dL)

As shown, when the data are partitioned to reflect conditions below 50 no/dL, there is little difference between them. In three intervals, ambient is clearly higher, in three intervals outfall is clearly higher, and in one interval there is a marginal difference in favor of ambient being higher.

Enterococcus was not considered to be a preferred candidate for deeper analysis, it was considered reasonable to assess the data in a manner comparable to what was done with FC for the sake of completeness and comparison. In this case, a close examination of the underlying data showed that both the ambient and outfall stations displayed a large number of values which appeared to be compromised by lower detection limits. Consequently, the data were partitioned to eliminate these values. With that done, the results shown in Figure 12 emerged. In this case, the data nearer the outlet were found to be statistically indistinguishable from the data farther from the outlets. Figure 12 supports this interpretation, in that there appears to be an essentially random tendency for either case (ambient or outfall) to dominate any particular class interval.



Figure 12: Frequency of Enterococcus Readings in Class Intervals

General Conclusions and Recommendations Regarding Available Data and Laboratory Results

A reasonable interpretation of these results is that the two populations (stations in close proximity to outfalls, and stations further away) behave in ways that are essentially the same, except for instances where the stations in close proximity to the outfalls may show somewhat lower excursions compared to those further away. As noted, these excursions do not tend to extend outside the bounds of what might be expected in stormwater, and tend to be well below levels indicative of substantial sanitary system contributions. Beyond that, however, the data are not adequate to support a meaningful cause/effect interpretation and are marginal in their ability to reflect system state.

Some improvements to the existing program can be considered:

- While the laboratory analyses carried out in support of the monitoring conducted in this assessment are assumed to be effective, it is suggested that there may be benefits to considering some adjustments to the program.
 - One is that there should be a discussion with the laboratory to evaluate the potential for improved results by specifying different analyses; this may resolve the apparent frequency of questionable results near the end of the analytical scales employed.
 - Another is that there is merit in considering, at least for some period of time, use of more advanced techniques to develop a refined data set better indicative of the likely sources and causes of contamination.
- It is clear that a wide range of statistics and other analytical tools could be further employed using these data. Among other things, the class intervals could be re-defined, partitioning could be re-visited, and alternative tests of significance employed. However, the limitations in data gathering noted above, and the

limitations in the ability to retain statistically significant sample sets with further partitioning of data, both indicate that the present analysis is a reasonable result for the present.

- It is suggested that as further data accumulate, the present results can be reviewed, and further analyses attempted to add support or to refute the conclusions and interpretations herein.
- In particular, an attempt may be made to explore excursions (high values) in association with stormwater events.
- The 'near miss' nature of paired station comparisons in the south-west quadrant suggests that with more data, more convincing interpretations of similarities and differences may emerge. This could be considered in the future as well.
- It is likely that if the enhancements suggested in this assessment are implemented, particularly in terms of ways to better resolve actual outfall contributions, distinct differences in outfall discharges will emerge. These may be elusive to track. In such a situation, an enhanced testing element may prove to be useful (along with more specific laboratory analyses noted above). On a targeted basis, measurement of surface inflows to the conveyance system, together with selected measurements along the system, may make it possible to infer contaminant locations and types, and therefore zero in on specific contaminant sources. This kind of expansion should be considered if and when elevated contaminant concentrations are reliably encountered at specific discharge points.

For the present, it seems reasonable to conclude that the available data, interpreted in light of the field procedures employed, do not support the notion that there is a major difference in behavior during wet and dry periods, and do suggest that there is no support for the contention that a continuing massive discharge of sanitary flows is present in this system.

Throughout the foregoing discussion, it should be recognized that the monitoring program presently in place is a screening program, and that the use of the data for wider purposes brings with it a range of questions of intent and applicability.

Finally, it is noted that other monitoring activity undertaken by the City but not a part of the present work may lead to results that supplement or affect the conclusions and recommendations in this report. For example, it is understood that the City has elected to experiment with continuous monitoring of selected water quality parameters by means of recording probes placed at locations of interest in the waterways of interest. This kind of activity has the potential to improve the understanding of behavior governing water quality, and it is reasonable to recommend that results of this added monitoring be evaluated in concert with the other observations made by the City once it has been established that it has produced valid results.

Causes of Elevated Parameters in Stormwater Discharges

As noted throughout the foregoing text, present data do not support an analytical approach to evaluating contributing sources of contaminants. However, the problem at hand is by no means new or unique. It is clear, based on direct observations and on discussions with City staff, that a common range of potential contributors to undesirable discharges are present in this system. For indicator bacteria and many other sources these include:

- parks and greenways
- blueways (at road and bridge crossings)
- dog walkers (apparent commercial and private activity)
- residents (including homeless traffic, and potential illegal residential and/or industrial discharges)
- improper connections (cross connections)
- construction sites and/or unprotected soil surfaces
- waste pile storage and transfer points

- dog waste and trash receptacles in park areas
- formal and managed marine craft mooring areas
- ad hoc marine craft mooring zones
- beaches, dunes and associated vegetative cover areas
- other anthropogenic sources (grease traps, sanitary sewer overflows)

For other contaminants, and to some degree for nutrients and indicator bacteria, other land surfaces (roof tops, parking areas, roadways, urban surfaces etc.) all play their parts.

Some of these candidate sources raise the specter of direct human contamination, some are associated with wildlife (particularly avian, feline or canine sources), and some with other anthropogenic or other activities. The Stormwater Master Plan already in place addresses most of these, and the recent Stormwater Report Card provides a current update to practices followed by the City.

The City is clearly aware of these potential issues and working to eliminate problematic areas; this should be continued and encouraged. In addition, however, it is noted that the monitoring program has the potential to substantially improve the efficacy of measures targeting the above list. If receiving water consequences can be interpreted in terms of specific sources, it becomes reasonable to prioritize remediation efforts in favor of those sources. For this reason, the extensions and improvements in monitoring that are discussed in this report are recommended, not just as improvements in their own right, but as direct ways to more effectively eliminate problem areas within the control of the City.

Appendix A: Monitoring Data Made Available by the City of Miami Beach

MIAMIBEACH

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

TO: Dr. Charles Rowney

FROM: Elizabeth Wheaton, Environment and Sustainability Director

DATE: December 14, 2018

SUBJECT: Water Quality Data Sampling Parameters and Scatter Graphs

In late 2016, the city launched a voluntary water quality sampling program to build upon Miami-Dade County's existing ambient water quality sampling network. We modeled the design of our sampling program on the County's program design, including using the County's contract with PACE Analytical, to keep the program consistent with existing practices and allow the city's data to become a part of the regional monitoring network. This decision provides for a deeper understanding of conditions throughout the bay and allows an apples-to-apples comparison between sampling stations within the network.

With these goals in mind, we established more than 60 water quality stations throughout the city's waterways, distributed along stormwater discharge points connected to different neighborhood types (commercial, single-family residential, multi-family residential), upstream land uses, and stormwater structure types in an effort to discern what differences, if any, exist among these. We tasked PACE Analytical with sampling monthly for the twelve parameters listed below. These parameters consist of biological, physical and chemical indicators of waterway health, are the most commonly sampled parameters by the industry, and mirror those sampled by the County.

Table 1 – List of Parameters Sampled in Miami Beach Water Quality Program				
Ammonia, Nitrogen	Total Kjeldahl Nitrogen			
Nitrite and Nitrate	Total Phosphorus			
Salinity	Specific Conductance			
Ph	Dissolved Oxygen			
Turbidity	Temperature			
Enterococci	Fecal Coliforms			

Attached to this memo are scatter graphs of the parameters for each sampling station to provide the public with a general understanding of the range in the sampling results. In the development of the graphs, the sampling stations were grouped into general areas, such as South Beach, Collins Canal, Venetian Islands, Indian Creek, Middle Beach and North Beach, that represent relatively similar upstream and in-water conditions in an attempt to provide a deeper understanding of the parameter ranges within each area and highlight the potential for variability between samples.

We opted for a visualization of the data using a scatter graph instead of a line graph due to the limited amount of data available after only one year of sampling and the variability between points for certain parameters. This approach provides a more scientifically-sound and accurate picture

of how data at such a small sample size can be processed. Multiple years of data need to be collected to ensure that outliers do not skew the data set. These outliers can be influenced by variables such as field conditions and sampling methodologies. For example, Miami-Dade County reviews seven years-worth of data to produce their annual water quality sampling report. A logarithmic scale is provided on some of the parameters for a better visualization of the data by reducing the effect of outliers.

The city will continue to collect water quality samples on a monthly basis, using a refined methodology that takes into account the recommendations provided in your report and those received during the technical roundtable held on September 26, 2018. We are also leading discussions with other local municipalities and working with Miami-Dade County to expand upon and refine existing water quality monitoring efforts throughout the region. The data collected by these programs is critical in helping us making scientifically-based management decisions, focusing our stormwater management efforts where they are most needed, and in crafting a regional management framework to protect Biscayne Bay.

Parameter ₊▼ General Area ₊▼ Units ₊▼

Average of Results Numerical Only

Oxygen, Dissolved Collins Canal
























Enterococci Venetian Islands













Parameter 🐺 General Area 🐺 Units 🐺

Average of Results Numerical Only







Parameter →▼ General Area →▼ Units →▼



Parameter ↓▼ General Area ↓▼ Units ↓▼

Average of Results Numerical Only





Parameter . Y General Area . Y Units . Y





Parameter . Y General Area . Y Units . Y





Parameter . T General Area . T Units . T

Average of Results Numerical Only Nitrogen, NO2 plus NO3 Collins Canal 0.35 0.3 : 0.25 Sample ID 🔹 mg∕L • • 10 • 11 • 12 0.15 • 13 • 14 -1 . 8 . i 8 8 . . 0.05 2 : . Feb Qtr1 Aug Sep Oct Nov May Jun Jul Aug Nov Jan Jar Mar Ap Oct Otr3 Otr2 Otr4 Otr1 Otr2 Otr3 Otr4 Years + Quarters + Collected Date + + -





Parameter 🐙 General Area 🐺 Units 🐺













Parameter .▼ General Area .▼ Units ▼ Average of Results Numerical Only



Field pH Venetian Islands











Parameter →▼ General Area →▼ Units →▼







Parameter ₊▼ General Area ₊▼ Units ₊▼





Parameter .▼ General Area .▼ Units .▼







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Parameter .▼ General Area .▼ Units .▼





<u>Item 6.</u> COMMITTEE MEMORANDUM

TO: Sustainability Resiliency Committee Meeting

- FROM: Jimmy L. Morales, City Manager
- DATE: February 27, 2019

SUBJECT: DISCUSSION REGARDING A POTENTIAL IMPROVEMENT PROJECT IN THE LAKEVIEW NEIGHBORHOOD

RESPONSIBLE DEPARTMENT:

Roy Coley, Public Works Director I David Martinez, CIP Director

LEGISLATIVE TRACKING: Item C4V - December 12, 2018 Commission Meeting

<u>SPONSORED:</u> Commissioner Mark Samuelian I Co-Sponsor Commissioner Joy Malakoff

BACKGROUND:

<u>Analysis</u> VERBAL REPORT AT COMMITTEE MEETING.

ATTACHMENTS:

Type Other

Let C4V - December_12_2018 Commission Meeting

COMMISSION MEMORANDUM

- TO: Honorable Mayor and Members of the City Commission
- FROM: Commissioner Mark Samuelian
- DATE: December 12, 2018

SUBJECT: REFERRAL TO THE SUSTAINABILITY AND RESILIENCY COMMITTEE TO DISCUSS A POTENTIAL IMPROVEMENT PROJECT IN THE LAKEVIEW NEIGHBORHOOD.

ANALY SIS

Current plans have identified the Lakeview Neighborhood as a likely upcoming Neighborhood Improvement project. Some residents have raised initial questions and concerns. The upcoming Flooding/Stormwater Management work with Jacobs Engineering is going to include neighborhood project sequencing, as well as design. This referral will:

- provide neighbors with the latest information possible

- offer a forum for their initial feedback
- identify opportunities to fully incorporate Lakeview into the Jacobs Engineering work

Legislative Tracking

Commissioner Mark Samuelian

<u>Item 7.</u> COMMITTEE MEMORANDUM

TO: Sustainability Resiliency Committee Meeting

- FROM: Jimmy L. Morales, City Manager
- DATE: February 27, 2019

SUBJECT: DISCUSSION REGARDING COCA COLA CONTRACT IN REGARDS TO PLASTIC BOTTLE SUPPLYAND OUR SUSTAINABILITY EFFORTS

RESPONSIBLE DEPARTMENT:

Tonya Daniels, Office of Communications Director

LEGISLATIVE TRACKING: Item R90 - November 14, 2018 Commission Meeting

<u>SPONSORED:</u> Vice-Mayor Michael Gongora

BACKGROUND:

<u>Analysis</u> VERBAL REPORT AT COMMITTEE MEETING.

ATTACHMENTS:

Description

Lem R90_11.14.2018 Commission Memo

Type Memo

COMMISSION MEMORANDUM

TO: Honorable Mayor and Members of the City Commission

FROM: Vice-Mayor Michael Gongora

DATE: November 14, 2018

SUBJECT: DISCUSSION REGARDING COCA COLA CONTRACT IN REGARDS TO PLASTIC BOTTLE SUPPLY AND OUR SUSTAINABILITY EFFORTS.

ANALYSIS

Please place on the November 14th Commission agenda, a discussion regarding the Coca Cola contract with the City of Miami Beach which expires in 2022 in regards to plastic bottle supply and our sustainability efforts. It is my understanding that we have approached Coca Cola to provide another solution for plastic bottles but they have not provided one. When we enter into any future contracts we should always ensure that all companies we contract with are environmentally friendly. Although this contract renewal is some time away, we should start now with eliminating plastic and looking to alternate solutions. Please feel free to contact my Aide Diana Fontani for any additional information.

Legislative Tracking

Vice-Mayor Michael Gongora

<u>Item 8.</u> COMMITTEE MEMORANDUM

TO: Sustainability Resiliency Committee Meeting

- FROM: Jimmy L. Morales, City Manager
- DATE: February 27, 2019

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

RESPONSIBLE DEPARTMENT:

Nick Kallergis, Sr. Assist City Attorney I Elizabeth Wheanton, Environment & Sustianability Director

LEGISLATIVE TRACKING:

Item C4 T - February 13, 2019 Commission Meeting

SPONSORED:

Commissioner Micky Steinberg I Co-sponsored by Vice-Mayor Michael Gongora

Analysis

VERBAL REPORT AT COMMITTEE MEETING.

ATTACHMENTS:

	Description	Туре
D	Item C4T - February_13_2018 Commission Meeting	Other

COMMISSION MEMORANDUM

- TO: Honorable Mayor and Members of the City Commission
- FROM: Commissioner Micky Steinberg
- DATE: February 13, 2019

SUBJECT: REFERRAL TO THE SUSTAINABILITY AND RESILIENCY COMMITTEE OF A DISCUSSION ON EXPANDING THE PLASTIC BAG ORDINANCE IN MIAMI BEACH.

ANALY SIS

Please add to the February 13, 2019 Commission Meeting Agenda, a referral to the Sustainability and Resiliency Committee of a discussion on expanding the plastic bag ordinance in Miami Beach.

Legislative Tracking Commissioner Micky Steinberg

Sponsor

Co-sponsored by Vice-Mayor Gongora

<u>Item 9.</u> COMMITTEE MEMORANDUM

TO: Sustainability Resiliency Committee Meeting

- FROM: Jimmy L. Morales, City Manager
- DATE: February 27, 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 & Sustainability

LEGISLATIVE TRACKING: Item C4N - April 13, 2016 Commission Meeting

SPONSORED: Commissioner Micky Steinberg

Analysis

ATTACHMENTS: Description

No Attachments Available

<u>Item 10.</u> COMMITTEE MEMORANDUM

TO: Sustainability Resiliency Committee Meeting

FROM: Jimmy L. Morales, City Manager

DATE: February 27, 2019

SUBJECT: DISCUSS UPDATES TO THE CITY CODE REFERENCING TURTLE NESTING

RESPONSIBLE DEPARTMENT:

Elizabeth Wheaton, Environment and Sustainability Director

LEGISLATIVE TRACKING:

Item C4F - September 25, 2017 Commission Meeting

SPONSORED:

Commissioner John Elizabeth Aleman I Co-Sponsor Commissioner Joy Malakoff

<u>Analysis</u>

ATTACHMENTS: Description

No Attachments Available

<u>Item 11.</u> COMMITTEE MEMORANDUM

TO: Sustainability Resiliency Committee Meeting

FROM: Jimmy L. Morales, City Manager

DATE: February 27, 2019

SUBJECT: DISCUSSION ON PARKING INCENTIVES FOR "SMARTWAY" (ILEV -INHERENTLY LOW EMISSION) VEHICLES

RESPONSIBLE DEPARTMENT:

Saul Francis, Parking Director

LEGISLATIVE TRACKING: Item C4I - January 17, 2018 Commission Meeting

<u>SPONSORED:</u> Commissioner Micky Steinberg

<u>Analysis</u>

CONCLUSION:

ATTACHMENTS:

Description

No Attachments Available

<u>Item 12.</u> COMMITTEE MEMORANDUM

TO: Sustainability Resiliency Committee Meeting

FROM: Jimmy L. Morales, City Manager

DATE: February 27, 2019

SUBJECT: DISCUSSION ON ENSURING MIAMI BEACH SPECIAL EVENTS ADHERE TO ENVIRONMENTALLY FRIENDLY GUIDELINES AND PROCEDURES.

RESPONSIBLE DEPARTMENT:

Matt Kenny, Tourism and Culture Department Director

LEGISLATIVE TRACKING: Item C4J - January 17, 2018 Commission Meeting

SPONSORED: Commissioner Michael Gongora

Analysis

ATTACHMENTS: Description

No Attachments Available

<u>Item 13.</u> COMMITTEE MEMORANDUM

TO: Sustainability Resiliency Committee Meeting

- FROM: Jimmy L. Morales, City Manager
- DATE: February 27, 2019

SUBJECT: DISCUSSION ON REPURPOSING OUR GOLF COURSES FOR THE FUTURE

RESPONSIBLE DEPARTMENT:

John Rebar, Parks and Recreation Director

LEGISLATIVE TRACKING:

Item C4 AB - May 16, 2018 Commission Meeting

SPONSORED:

Commissioner Ricky Arriola

Analysis

ATTACHMENTS: Description

No Attachments Available

<u>Item 14.</u> COMMITTEE MEMORANDUM

TO: Sustainability Resiliency Committee Meeting

FROM: Jimmy L. Morales, City Manager

DATE: February 27, 2019

SUBJECT: DISCUSSION ON THE CITYWIDE FLEET ASSESSMENT AND ESTABLISHED POLICIES FOR ENHANCING THE CITY'S FLEET. (ITEM C4 AH)

RESPONSIBLE DEPARTMENT:

Alyssia Berthoumieux, Sustainability Specialist

LEGISLATIVE TRACKING:

Item C4 AH - May 16, 2018 Sustainability and Resiliency Committee

SPONSORED: Commissioner Michael Gongora I Co-Sponsor Commissioner Joy Malakoff

<u>Analysis</u>

ATTACHMENTS: Description

No Attachments Available

<u>Item 15.</u> COMMITTEE MEMORANDUM

TO: Sustainability Resiliency Committee Meeting

FROM: Jimmy L. Morales, City Manager

DATE: February 27, 2019

SUBJECT: DISCUSSION ON ARTIFICIAL REEFS

RESPONSIBLE DEPARTMENT:

Elizabeth Wheaton, Environment and Sustainability Director | Flavia Tonioli, Sustainability Manager

LEGISLATIVE TRACKING:

Item C4 AI - May 16, 2018 Commission Meeting

SPONSORED:

Commissioner Ricky Arriola

BACKGROUND:

<u>Analysis</u>

ATTACHMENTS: Description

<u>Item 16.</u> COMMITTEE MEMORANDUM

TO: Sustainability Resiliency Committee Meeting

FROM: Jimmy L. Morales, City Manager

DATE: February 27, 2019

SUBJECT: DISCUSSION ON THE MARINE TRASH SKIMMERS (MTS)

RESPONSIBLE DEPARTMENT:

Stanley Kolosovskiy, Environmental Specialist

LEGISLATIVE TRACKING:

Item C4K - June 06, 2018 Commission Meeting

SPONSORED:

Commissioner John Elizabeth Aleman

BACKGROUND:

The use of Marine Trash Skimmers (MTS) was presented on the July 11, 2018 Sustainability and Resiliency Committee meeting where the Committee asked staff to contact MTS users and come back with feedback on their experiences. This item was sponsored by Commissioner Aleman.

<u>Analysis</u>

Maintaining clean waterways is a priority for the City of Miami Beach. The city has a waterway maintenance contractor who services the city's waterways three times a week removing litter and large plant debris. Litter in the waterways harms marine wildlife, creates unpleasant conditions for recreation, and is an aesthetic concern for residents and visitors. This problem is an issue for many coastal communities and with no one-size-fits-all solution.

Marine Trash Skimmers (MTS) is a product designed to keep waterways clean by skimming trash from the surface of waterways. The most commonly collected items by this device include styrofoam, glass bottles, cans and containers, plastic bags and wrappers, cardboard, floating organic material, fishing products, cigarettes, and oil (if an oil pad is included). The MTS can clean about 300 gallons of water a minute for 24 hours every day which is the equivalent to about 20 swimming pools of water. The unit uses about 25 Kwh/day which translates to approximately \$2/day in energy costs. The unit cost of the MTS is approximately \$12,000 with a warranty provided on the molded parts (10 yr), water pump (2yr), and control panel (3yr). The unit is 6' wide x 4' deep x 18" freeboard which gives it a 24 square foot area. All of the trash is retained within the footprint of the MTS. Another benefit of the MTS is that it aerates the water near the unit via the circulating pump.

The MTS unit requires electricity and daily maintenance. The typical application of this product is in

marinas. The City reached out to five different marinas to find out what kind of experiences they had with MTS. Three of the marinas were in California, one was in Texas, and one in Hawaii. The response from the marina operators was primarily positive. They all stated that MTS are very effective at removing floating debris and organic material from the waterways. Some of the marinas have even installed more units due to their effectiveness. The MTS removed a varying amount of debris from each marina ranging from 10 to 50 gallons per day.

One point that all the marina operators stressed was the maintenance the MTS requires. These are not units that can run for extended periods of time without an operator present. Most of the marinas clean out their units once per day. This requires an operator to scoop out any accumulated debris from the bin to prevent any clogging of the unit. Along with daily maintenance, every three to six months the unit needs to be removed from the water to be thoroughly cleaned from any biological organisms that have grown on the unit. This process requires a crane to remove the unit from the water and place it on land to be cleaned with a pressure washer which takes about two hours per unit. The unit can also be towed to a boat ramp to be removed.

CONCLUSION:

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

ATTACHMENTS:

Description

Attachment A Marina Trash Skimmer

Type Memo


Marina Trash Skimmer

A Product Who's Time Has Come

Is trash cluttering your marina? Do you notice oil sheen on your water's surface? Or do you have a lot of free floating organic material piling up or sinking to the water floor? The Marina Trash Skimmer was created to tackle these very problems.

The MTS is a stationary unit that is strategically placed at different points within marinas and harbors. Working with the natural flow of water, skimmers work round the clock to collect trash and oil sheen into one easy to access location.

Operating on common 20 Amp 125 Volt power, Skimmers employ a patented technology of water displacement. Moving over 300 gallons of water a minute, the MTS retains all floating debris in its vicinity. With its relatively small footprint (6' wide x 4' deep x 18" freeboard) the skimmers fit comfortably into any area of a marina or water way, and their whisper quiet operation will not disturb the neighbors.







Marina Accessories Inc is an international supplier of accessories and equipment for marinas, contractors, and private dock owners. An affiliate of Bellingham Marine Industries, their offices are located at Bellingham Marine's headquarters in Bellingham, Washington, USA.

> Marina Accessories, Inc. 1323 Lincoln Street Bellingham, WA 98229

Telephone: Toll-Free 1 (800) 585-6890 Intl 1 (360) 676-7500 Fax 1 (360) 734-2417

Email Address: mai@marina-accessories.com

For more information: www.marinatrashskimmer.com

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Marina Trash Skimmer

Aarina Trash Skimm



Debris Collected by Marina Trash Skimmers

Over 308,880 gallons in 2017

That's over 1,389,960 pounds!



TRASH:

A Problem Of Global Dimensions



TRASH: A Problem Of Global Dimensions

If you're lucky enough to spend any time around our waterways, you've most likely witnessed the buildup of plastics, oil and other debris.

- Over 300 billion pounds of plastics are produced each year and large amounts reach our oceans. Most forms of plastic float, don't break down and are hard to catch.
- One teaspoon of fuel can extend oil sheen over a one-acre area, and the buildup of small drops can have adverse effects on water quality.
- FFOM (free-floating organic material) can clutter a marina and create eyesores for customers. If left alone, this material will sink to the bottom of your harbor resulting in expensive dredging costs.

Problems like these can be solved in an affordable and environmentally friendly way. Log on to www.MarinaTrashSkimmer.com to get more information on the MTS, and see what you can do to help protect our waterways.

"The trash skimmers on Aquidneck Island combined with hands-on experiential environmental education activities have generated an enormous island-wide wave of stewardship momentum. Everyone loves the technology & purpose of the skimmers, and each visit, social media post, outreach event, and discussion brings the community together with a common recognition that the global issue of plastic and marine debris in the ocean is a solvable problem and it starts with each of us making better decisions on land."

Dave McLaughlin, *Executive Director* Clean Ocean Access • Middletown, Rhode Island

"...This program is deemed a success because of the sheer volume of debris removed from the marina water, the increased observable clarity of the water and the satisfaction of the marinas and their tenants has shown that the marine trash skimmers have been a valuable asset for each marina. Each marina manager has indicated how satisfied they are with their skimmer. Not only do they improve the aesthetics of their marina but the skimmers are easy to use, silent, and save the marina time and money by reducing the marina staff's workload."

AMEC Earth & Environmental, Inc. Final Report • Marina Trash Skimmer Monitoring

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Installation

- The Trash Skimmer can be mounted to any floating dock system using the mounting brackets provided.
- MAI will work with any customer to ensure there is a secure mounting system in any other situation.

Displacemen

 300 gallons of water per minute, 24 hours a day

Operating Cost Estimate

 The Trash Skimmer has used approximately 25Kwh/day. In the USA North West this works out to \$1.30/day.

Water Circulation Unit

• 3/4 HP 120 Volt motor

Aeration System

• Vacuum Driven Aerator (VDA)

Varranty

- Roto-Molded Parts 10 years
- Water Circulation Unit 2 years
- Control Panel 3 years



<u>Item 17.</u> COMMITTEE MEMORANDUM

TO: Sustainability Resiliency Committee Meeting

FROM: Jimmy L. Morales, City Manager

DATE: February 27, 2019

SUBJECT: DISCUSSION ON CONSIDERING A NEIGHBORHOOD BIRD SANCTUARY PROJECT

RESPONSIBLE DEPARTMENT:

Elizabeth Wheaton, Environment and Sustainability Director

LEGISLATIVE TRACKING: Item C4G - July 25, 2018 Commission Meeting

SPONSORED:

Commissioner John Elizabeth Aleman

<u>Analysis</u>

ATTACHMENTS: Description

<u>Item 18.</u> COMMITTEE MEMORANDUM

TO: Sustainability Resiliency Committee Meeting

- FROM: Jimmy L. Morales, City Manager
- DATE: February 27, 2019
- SUBJECT: A RESOLUTION OF THE MAYOR AND CITY COMMISSION OF THE CITY OF MIAMI BEACH, FLORIDA, ACCEPTING THE RECOMMENDATION OF THE SUSTAINABILITY AND RESILIENCY COMMITTEE, AND APPROVING AN AMENDMENT TO THE RULES AND REGULATIONS FOR BEACHFRONT CONCESSION OPERATIONS, TO REQUIRE ALL UPLAND OWNER CONCESSIONAIRES AND THEIR THIRD PARTY CONCESSION OPERATORS TO UTILIZE 100% REUSABLE WARES IN CONNECTION WITH THEIR BEACH FRONT CONCESSION OPERATIONS, INCLUDING THE DELIVERY, SERVICE, AND CONSUMPTION OF FOOD AND BEVERAGES; PROVIDED THAT SAID AMENDMENT BE REFERRED TO THE SUSTAINABILITY AND RESILIENCY COMMITTEE, FOR DISCUSSION AND COMMENT, PRIOR TO FINAL APPROVAL BY THE CITY COMMISSION.

RESPONSIBLE DEPARTMENT:

Susanne Torriente, Assistant City Manager

LEGISLATIVE TRACKING:

Item C7H - September 12, 2018 Commission Meeting

SPONSORED:

Commissioner Micky Steinberg

Analysis

ATTACHMENTS: Description

No Attachments Available

<u>Item 19.</u> COMMITTEE MEMORANDUM

TO: Sustainability Resiliency Committee Meeting

FROM: Jimmy L. Morales, City Manager

DATE: February 27, 2019

SUBJECT: DISCUSSION REGARDING EXPLORING THE CITY OF MIAMI BEACH JOINING THE AMERICAN FLOOD COALITION

RESPONSIBLE DEPARTMENT:

Elizabeth Wheaton, Environment & Sustainability Director I Susanne Torriente, ACM

LEGISLATIVE TRACKING:

Item C4W - December 12, 2018 Commission Meeting

SPONSORED:

Commissioner Mark Samuelian I Co-Sponsor Commissioner Joy Malakoff

<u>Analysis</u>

ATTACHMENTS: Description

<u>Item 20.</u> COMMITTEE MEMORANDUM

TO: Sustainability Resiliency Committee Meeting

- FROM: Jimmy L. Morales, City Manager
- DATE: February 27, 2019

SUBJECT: A REFERRAL TO THE SUSTAINABILITY & RESILIENCY COMMITTEE REGARDING PRIVATE SEAWALLS

RESPONSIBLE DEPARTMENT:

Roy Coley, Public Works Director

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

SPONSORED: City Commission

<u>Analysis</u>

ATTACHMENTS: Description

No Attachments Available

<u>Item 21.</u> COMMITTEE MEMORANDUM

TO: Sustainability Resiliency Committee Meeting

FROM: Jimmy L. Morales, City Manager

- DATE: February 27, 2019
- SUBJECT: DUAL REFERRAL TO THE LAND USE AND THE SUSTAINABILITYAND RESILIENCY COMMITTEE TO DISCUSS THE ADDITION OF WATER MANAGEMENT AND CLIMATE ADAPTATION EXPERTS TO CITY LAND USE BOARDS

RESPONSIBLE DEPARTMENT:

Elizabeth Wheaton, Environment & Sustainability Director

LEGISLATIVE TRACKING: Item C4AG - January 16, 2019 Commission Meeting

SPONSORED: Commissioner John Aleman

Analysis

ATTACHMENTS: Description

No Attachments Available

<u>Item 22.</u> COMMITTEE MEMORANDUM

TO: Sustainability Resiliency Committee Meeting

FROM: Jimmy L. Morales, City Manager

DATE: February 27, 2019

SUBJECT: REFERRAL TO THE SUSTAINABILITY AND RESILIENCY COMMITTEE, TO REVIEW CITY PERFORMANCE, PROGRAMS, AND IMPROVEMENT OPPORTUNITIES AS IT PERTAINS TO LITTER AND CLEANLINESS

RESPONSIBLE DEPARTMENT:

Roy Coley, Public Works Director I Leslie Rosenfild, Chief Learning & Development Officer

LEGISLATIVE TRACKING: Item C4 AH - January 16, 2019 Commission Meeting

SPONSORED:

Commissioner Mark Samuelian

<u>Analysis</u>

ATTACHMENTS: Description

No Attachments Available

<u>Item 23.</u> COMMITTEE MEMORANDUM

TO: Sustainability Resiliency Committee Meeting

- FROM: Jimmy L. Morales, City Manager
- DATE: February 27, 2019
- SUBJECT: REFERRAL TO THE SUSTAINABILITY AND RESILIENCY COMMITTEE TO DISCUSS THE SUSTAINABILITY COMMITTEE MOTION TO INCORPORATE LANGUAGE IN THE SPECIAL EVENTS GUIDELINES SPECIFIC TO NON-PROFIT ORGANIZATIONS THAT ORGANIZE SMALL COMMUNITY SERVICE EVENTS

RESPONSIBLE DEPARTMENT:

Matt Kenny, Tourism & Culture Department Director

LEGISLATIVE TRACKING:

Item C4 AJ - January 16, 2019 Commission Meeting

SPONSORED:

Commissioner Mark Samuelian I Co-Sponsored by Vice-Mayor Michael Gongora

<u>Analysis</u>

ATTACHMENTS:

Description

Type

No Attachments Available

<u>Item 24.</u> COMMITTEE MEMORANDUM

TO: Sustainability Resiliency Committee Meeting

FROM: Jimmy L. Morales, City Manager

- DATE: February 27, 2019
- SUBJECT: REFERRAL TO THE SUSTAINABILITY AND RESILIENCY COMMITTEE TO DISCUSS THE GENERATION OF ELECTRICITY FROM TURBINES INSTALLED IN CITY WATER PIPES BY THE CITY OF PORTLAND, OREGON

RESPONSIBLE DEPARTMENT:

Elizabeth Wheaton, Environment & Sustainability Director I Roy Coley, Public Works Director

LEGISLATIVE TRACKING: Item C4 AK - January 16, 2019 Commission Meeting

SPONSORED: Commissioner John Aleman

Analysis

ATTACHMENTS: Description

No Attachments Available