



BEFORE

Tides: 1.88 ft NAVD | 10/29/12



AFTER

Tides: 1.88 ft NAVD | 10/15/19

2019 PROGRAM FOR PUBLIC INFORMATION (PPI) ANNUAL UPDATE & EVALUATION REPORT

DEVELOPED FOR THE NATIONAL FLOOD INSURANCE PROGRAM (NFIP)
COMMUNITY RATING SYSTEM (CRS)

CITY COMMISSION DECEMBER 11, 2019

MIAMI BEACH
RISING
ABOVE



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Mayor and City Commission

Dan Gelber Mayor	Micky Steinberg Commissioner	Mark Samuelian Commissioner	Michael Gongora Commissioner	Steven Meiner Commissioner	Ricky Arriola Commissioner	David Richardson Commissioner
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Committee 2019

Tonya Daniels Chair Marketing and Communications Director	Scott Diffenderfer Real Estate Representative	Carlos Gutierrez Real Estate Representative	Mohsen Jarahpour Floodplain Manager	John Lee Insurance Representative	Alan Randolph Banking Industry Representative
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INTRODUCTION & BACKGROUND

ANNUAL UPDATE & EVALUATION REPORT OVERVIEW

The Community Rating System (CRS) is a voluntary program under the Federal Emergency Management Agency (FEMA) allowing communities to earn flood insurance discounts. Under FEMA's National Flood Insurance Program (NFIP), communities earn points for conducting activities promoting flood insurance and reducing flood risk. The CRS rating score ranges from 1 to 10 (1 being the highest and 10 the lowest).

Miami Beach pursued an aggressive goal to improve its CRS ranking from a Class 6 to a Class 5 and was officially awarded the new score in 2019. As a result, many new policies and renewals after May 1, 2019 can save 5% more on flood insurance premiums in comparison with last year. This translates into nearly \$2 million in new savings citywide. Miami Beach has participated in the CRS program for many years. With this score improvement, the city receives a 25% discount, that totals \$8.4 million in savings annually. This helps offset increasing federal rates.

As part of the CRS program, the Program for Public Information (PPI) is available to cities as another way of earning points toward the CRS rating. This program allows cities to convene a committee and collaborate to identify communication projects that reduce flood risk and increase flood awareness.

The program complements the city's approach to public participation and is a key part of the *Miami Beach Rising Above Resiliency Communications*. This is one way the city can help with economic resilience- to keep flood insurance as affordable as possible within the current National Flood Insurance Program.

FLOOD INSURANCE FACTS

- The City of Miami Beach participates in the National Flood Insurance Program (NFIP) Community Rating System (CRS).
- Miami Beach has improved its score to a Class 5. This makes the city one of the few municipalities to achieve this score in Miami-Dade County.
- This effort saves residents and businesses 25% on their flood insurance premiums - an estimated \$8.4 million in annual savings.

As a coastal barrier island, 97% of the properties in City of Miami Beach are located within or near a High-Risk Flood Zone Area (Special Flood Hazard Areas- "SFHA") as mapped by FEMA. The flood zone requires flood insurance coverage for any building with a federally-backed mortgage.

The PPI requires a plan for implementation and an annual report updating the Commission about the different outreach programs implemented.

This annual update and evaluation report highlights the progress made toward desired outcomes established on the plan, discusses project implementation status for 2019 and includes an update on existing recommendations as well as new ones. In 2017, the City of Miami Beach released the Resiliency Communications Plan, referred to as a Program for Public Information (PPI) through the Community Rating System (CRS). Since then, the Resiliency Communications Committee has met regularly to monitor and evaluate status of projects and outcomes. In addition, city staff collected data on the PPI project implementation and success measures. This information is included on this report to not only show activities conducted but also understand the impact that outreach projects have in the community. This report allows the committee to keep track of the plan's outcomes, celebrate achievements, identify areas of improvements and continue planning for the future.

The following items are covered in this report, as required by the National Flood Insurance Program:

- A review of projects conducted in 2019
- Progress towards the desired outcomes
- Recommendations for improvement

RESILIENCY COMMUNICATIONS COMMITTEE OVERVIEW

The Resiliency Communications Committee, made up of private and public stakeholders, guided the Program for Public Information (PPI). The committee followed a seven-step planning and public involvement process defined by the Community Rating System Program. Their unique perspectives and expertise helped define target audiences, messages, outcomes, and outreach methods.

The City of Miami Beach has a wealth of knowledge regarding flood hazards and flood risk. The committee is comprised of six stakeholders, each with valuable perspectives and insight on flood risk and insurance. The committee member expertise is specified by the CRS program, which requires representation from the City's Communications Department, the City's Floodplain Office, real estate, banking, and insurance. The committee was previously formed by the City Commission through Resolution No. 2016-29585 on September 27, 2016. The committee was re-created through Resolution No. 2017-30104 on December 13, 2017 and through Resolution No. 2018-30658 on December 12, 2018. The committee is required to be re-created annually.

2019 RESILIENCY COMMUNICATIONS COMMITTEE	
Tonya Daniels, Chair	Director Office of Marketing and Communications
Scott Diffenderfer, CIPS, LCAM	Real Estate Agent Licensed Real Estate Broker Associate, Compass President of the Belle Isles Residents Association Residential Board of Governors for the Miami Association of Realtors
Carlos Gutierrez, PA	Real Estate Agent Sales Manager, Compass 2016 President Miami Association of Realtors
Mohsen Jarahpour, CFM	Floodplain Manager Building Department
John J. Lee	Insurance Agent Vice President, FirstService Financial
Alan Randolph	Banking Industry Representative Regional Director, Bank OZK

PLAN DEVELOPMENT

SEVEN-STEP PROCESS

The committee followed a seven-step process that serves as a roadmap for completing and reviewing the PPI's activities. The committee held its first meeting in October of 2016 and since then staff has continued working diligently in completing several projects outlined on the following pages of this plan.



Below is a summary of the seven steps followed by the committee in the last three years:

- 1. Establish the Committee:** The committee was established in 2016 and meets at least twice a year to discuss initiatives within the program and approve documentation.
- 2. Assess the Community Information Needs:** The committee agreed that, for the purpose of the Program for Public Information, the entire city should be considered one target area with six different audiences (property owners, renters, businesses, recently flooded areas, repetitive loss sites, local organizations).
- 3. Formulate Messages:** The committee conducted an insurance coverage assessment and formulated specific messages to those properties that carry a lower rate of flood insurance. In addition, all the Miami Beach area is targeted

with flood awareness messages disseminated through different channels.

- 4. Identify Outreach Projects to Convey the Messages:** The committee identified various outreach projects outlined on the outreach implementation table of this report. The projects are crucial to achieve established outcomes on this plan, such as increasing flood insurance coverage and awareness of flooding in the community.
- 5. Inventory of other Public Information Efforts:** The Program for Public Information requires examining existing information efforts. A list was compiled through staff research and committee members' input. This list is published on the City's Resiliency Communications Plan published in March of 2016 and available on the City's website.
- 6. Prepare the PPI Document:** Preparing the PPI document involved a concerted effort from staff and the committee. PPI documentation is updated every year through the evaluation annual report to make improvements to projects and increase community outreach.
- 7. Implement, Monitor and Evaluate:** The committee meets twice annually to evaluate the program and incorporate revisions. This report specifically addresses steps six and seven and includes a summary of the progress made in 2019.

EVALUATION AND MONITORING

SUMMARY OF OUTREACH PROJECTS

City staff and the committee identified 14 outreach projects and 24 outreach project types, which means variations of the core projects to reach distinct audiences. All the projects planned for 2019 were completed or are on track to be completed, and new projects were identified for additional outreach opportunities.

These projects are a priority for staff who have developed new approaches for helping the community prepare for extreme weather events. For example, an after action review to evaluate the impact of a heavy rain event was conducted this spring. The after action included recommendations for better preparing for these types of events, communicating with the public and documenting flooding. Routine after actions will be conducted for heavy rain or King Tide events.



Another new project includes the Stormwater Management Dashboard Phase I. This dashboard measures the effectiveness of the stormwater program, the impact of extreme events and infrastructure improvements. This data has been used to better prepare for flood events and communicate flood awareness information to the public.

Stormwater Management Dashboard (DRAFT)

How to Use This Dashboard

1. **Boxes:** The boxes at the top provide an overview of the data presented below. These numbers will change as you play with the charts.

To filter data by date, go to "Filter by Date" on the right upper corner and enter a time frame by using the calendar.

You can click on the option "show data" on the three dots on the right upper corner of charts to analyze data in more detail.

2. **Flood and Drainage Charts:** The chart "Flood and Drainage Related Requests by Description" shows flooding and drainage related requests from residents. The chart "Flood and Drainage Related Requests by Date" shows residents requests by date for this year. The chart "Flood and Drainage Related Work Orders by Description" show work orders that have been opened to address flooding issues.

3. **Pump Capacity Chart:** This chart shows the amount of stormwater pumps are able to process in gallons per minute. The graph shows cumulative pump capacity from 2003 to date.

4. **Linear Feet of Elevated Roadways:** This chart shows the linear feet of roads that have been raised since 2015.

5. **Avoided Tidal Flooding in Sunset Harbour:** This graph shows the avoided damage from high tide flooding in Miami Beach's neighborhood, Sunset Harbour. Prior to raising roads, the lowest elevation of the road in this neighborhood was 1.5 feet. (red line) After construction, the new minimum road elevation at the center line of the road is 3.7 feet (green line). The green waves show the highest tide levels in Miami Beach by date. Every time the tide levels exceed the old elevation (red line), that's counted as an avoided incident, meaning the area didn't flood as a result of high tides.

Flood and Drainage Related Requests Resolved Within 5 Days

73.9%

Number of Flood and Drainage Related Requests

205

Number of Tidal Flooding Incidents Avoided Due to Road Raising (Sunset Harbour)

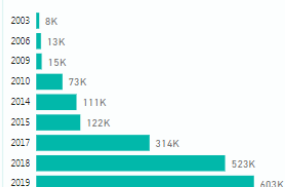
25

Filter Data by Date

1/1/2019

12/31/2019

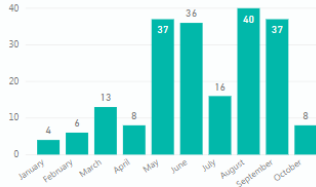
Pump Capacity Cum. Increase (Gallons per Minute)



Flood and Drainage Related Requests By Description



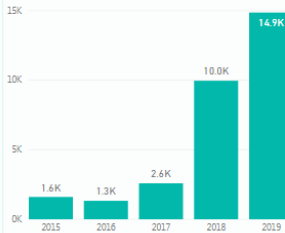
Flood and Drainage Related Requests by Date



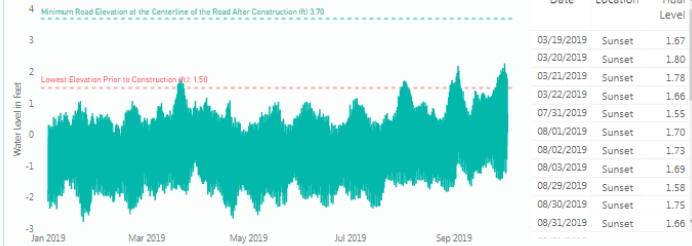
Flood and Drainage Related Work Orders By Description



Linear Feet of Elevated Roadways



Avoided Tidal Flooding in Sunset Harbour



Stormwater Management Dashboard Phase I

Flood awareness information provided to all properties: An important milestone in completing the seven steps of the program was to develop **10 messages** for flood awareness. The 10 messages are included in the Miami Beach Magazine which is mailed directly to 61,000 households every quarter and distributed at city's public facilities. This year, a panel discussion to kick off MB Magazine's resilience issue was held. The discussion focused on informing the public about the city's efforts to adapt to climate change. The 10 flood awareness messages were included in this issue. The entire magazine was dedicated to the importance of increasing resilience and reducing flood risk as one of the city's main stresses.

Flood Awareness and Hurricane Guide: The flood awareness guide has informed hundreds of residents about the different existing flood awareness messages. The guide has been published on the city's website since spring of 2017 and was updated this year along with all fact sheets. The hurricane guide includes flood preparation messages in addition to tips on how to respond to extreme weather events. This year evacuation routes and additional preparedness information were developed and posted on the website to better prepare residents for hurricanes. In addition, messages continue to be sent out through email blasts to the community in advance of anticipated rainfall, King Tides and potential hurricanes.

Response to flood events: Responding to flood events in the community is an important priority for the city. During this year, staff attended various meetings to listen and respond to questions and concerns about flooding. The city's flood plain manager has also engaged with low-lying property owners from the Sunset Harbour area to advise on flood protection strategies.

Social media messages and MB Rising Above Campaign:

As more residents use social media, the city has expanded its reach via Twitter, Facebook and Nextdoor. Tweets related to flood awareness received more than 500,000 impressions in 2019. Impressions mean that Tweets were viewed by users and possibly re-tweeted. In addition, the city started measuring the quality of flood awareness messaging in social media and email to ensure all communications have the desired change of behavior.

78% of respondents rated the quality of flood awareness information received by email as very useful or moderately useful.

This year the Office of Marketing and Communications created an MB Rising Above campaign through additional dedicated funding. The campaign was created in an effort to better educate residents and visitors about the steps the city is taking to become and remain resilient. This education campaign is a comprehensive outreach plan targeted locally through meetings, direct mailings, bold marketing messages designed to spark conversation, custom animated videos and other collateral. As of today, various campaign projects have been completed including the mailing of a 120-page resilience edition of the MB Magazine.

Letter from elected leadership: In 2019, a letter from the Mayor about the importance of purchasing flood insurance was incorporated into the Mayor's newsletter sent out via email. The letter also updated the community on the new citywide flood insurance savings. This effort provides valuable activity points for the CRS Activity 370 Flood Insurance Coverage Improvement Plan.

Fact Sheets: In 2017, different fact sheets were created to reach various types of properties, focusing on the areas with low flood insurance coverage. This year, fact sheets were updated to include new information. Through the flood insurance coverage assessment, 2-4 unit properties were identified as having low coverage. Special fact sheets were sent this fall to all these building types to encourage the purchase of flood insurance. Also, to prepare the community for King Tide season, flood preparation messages are communicated before and during these events. A total of 10,800 subscribers receive this information via email. Additional fact sheets include

information tailored to business owners, real estate agents, tenants, construction industry, potential homeowners and for Biscayne Bay water quality protection.



Resilient Construction Fact Sheet

OUTREACH IMPLEMENTATION TABLE

The following outreach implementation table details the audiences, messages, desired outcomes, projects to support the messages, list of projects, project accomplishments for 2019 and stakeholders that help disseminate the information. The table serves as a tracking mechanism to ensure that projects are completed on a timely manner. In order to evaluate the outreach project status for 2019, the table shows the status of projects for this year, achievements and output measures indicating the level of effort and resources invested for this plan.

OUTREACH IMPLEMENTATION TABLE

Target Audience	Messages	Outcome (Desired Changes in Behavior)	Project(s) to Support Message	Department Assignment	2019 Status of Projects	2019 Project Accomplishments	Stakeholder
Note that the flood awareness messages and outreach projects are important for all of Miami Beach residents and businesses, since 97% of all properties are within a SFHA (Special Flood Hazard Area).	Messages 1-10	Increase comprehensive awareness of flood hazard and Miami Beach messages related to people and properties protection for flood event.	OP #1-Flood awareness information provided to all properties through MB Magazine. Additional outreach through email blasts and meetings.	Communications	Quarterly	Flood awareness information was provided quarterly to all households through MB magazine. The Miami Beach Magazine is mailed directly to 61,000 households every quarter and distributed at City's public facilities. A panel discussion to kick off a special edition of MB Magazine took place in the spring. The event highlighted the city's efforts to adapt to climate change and included flood awareness messages. The 10 messages were also communicated at community meetings and through neighborhood association emails.	Neighborhood associations share messages.
	Messages 1-5		OP #2-Letter from elected leadership encouraging purchase of flood insurance coverage.	City Manager's Office	May-19	In 2019, a letter from the Mayor was incorporated into the Mayor's newsletter to encourage the purchase of flood insurance and update residents on Miami Beach's CRS new score.	No
	Messages 1-10		OP #3-Flood Awareness Guide provided on website.	Building and City Manager's Office	Ongoing	The flood awareness guide has informed hundreds of residents about the different existing flood awareness messages. The guide has been published on the City's website since 2017 and the 10-messages are communicated via MB Magazine to residents. The guide has been updated this year to include updated flood awareness information.	Yes-associations
	Messages 1-7	Increase safety awareness before, during and after flood events. Reduce preventable accidents and damage from flood waters.	OP #4-Hurricane Guide, E-blasts and newsletters including hurricane preparedness messaging are also sent out to the community (Supports Activity 330)	Emergency Management / Communications	Summer 2019	In addition to providing the Hurricane Guide, hurricane evacuation routes were posted on the city's website. This information has been shared with residents and businesses during trainings and community events.	Yes- residents, business owners
	Messages 2, 3, 4, 5, 9		OP #5-FEMA and State of Florida Flood Hazard and Flood Insurance Guides available at City Hall.	Building	Ongoing	Informational fact sheets are provided in highly trafficked areas of city hall.	No
	Messages 1-5, 7		OP #6-For Flood Response (before, during and after a flood) Messages 1-5; 7 provided online, through social media, eblasts to stakeholders, radio/tv.	Communications, Public Works, Emergency Management	Spring and Fall King Tide season emails. Beginning of hurricane season in June and preparation messages. Flood response emails and social media posts. Neighborhood meetings to address flood concerns.	Several emails and social media posts were sent out in 2019 to prepare the community for extreme weather conditions. An after action presentation was created in response to a spring heavy rain event. The project helped staff understand the impact of the event and develop recommendations for improvement. Staff attended neighborhood meetings to discuss extreme weather events and flood awareness messages. This year's meeting include Lakeview and West Avenue improvement projects meetings, MB Magazine release event and a resilience discussion with Jacobs.	Yes- local news and social media sharing.

All Miami Beach is considered a target area

OUTREACH IMPLEMENTATION TABLE

Target Audience	Messages	Outcome (Desired Changes in Behavior)	Project(s) to Support Message	Department Assignment	2019 Status of Projects	2019 Project Accomplishments	Stakeholder
1. Repetitive Loss Areas (RLA) (RLAs are defined by FEMA)	Messages 1 through 10	Increase comprehensive awareness of flood hazard and Miami Beach messages related to people and properties protection for flood event.	See OP #1,3,4,5	Building	See OP #1,3,4,5	RLA property owners are part of the greater target audience (see above)	See OP #1,3,4,5
	Messages 1 through 10 (Supports Activity 360 Flood Protection Information)	Increase building retrofits and flood resistant materials inquiries from Repetitive Loss Area property owners.	OP #7-Letter mailed to all RLA properties, (supports Activity 360)	Building	Summer of 2019	Letters to RLA property owners are sent out to encourage flood resistant construction and prevent flood damage. The letter was sent to 370 property owners this summer.	No
	Messages 1, 2, 3, 4, 5 Maps illustrate planned risk reduction improvements in relation to Repetitive Loss Areas (Activity 320)	Increase in map information inquiries from Repetitive Loss Area property owners.	OP #8-Fact Sheet with public infrastructure improvements and guidance for private property resilient building options Activity 320-Map information services provided by the Floodplain Manager	Building, Public Works	Annual, ongoing	The Building Department staff responded to about 300 flood maps information inquiries in 2019.	No
	Messages 1 through 10	Increase comprehensive awareness of flood hazard and Miami Beach messages related to people and properties protection for flood event.	See OP #1,3,4,5, 6	Building, Public Works	Flood response emails and social media posts.	*Described previously in the 'All of Miami Beach' audience	No
2. Recently flooded areas	Messages 1, 2, 3, 4, 5, 7	Increase awareness of being safe before, during and after flood events. Reduce preventable accidents and damage from flood waters.	See OP #6 OP #8-Fact Sheet and messages provided online, through social media, blasts to stakeholders, radio/tv.	Lead: Communications Support: Building, Emergency Management, Environment and Sustainability, Public Works	Spring and Fall King Tide season emails. Beginning of hurricane season in June and preparation messages. Flood response emails and social media posts. Neighborhood meetings to address flood concerns.	As part of increasing awareness about being safe during a flood event, more than 150 tweets and Facebook posts about flood awareness have been posted.	Yes-local news
	Messages 1, 2, 3, 4, 5, 9, 10 Importance of reducing personal flood risk.	Increase insurance coverage Increase building retrofits, and flood resistant materials inquiries.	OP #8-Fact Sheet with resources for the specific flooded area. OP #8-Disseminate Fact Sheet through packets on doors, neighborhood associations, social media. OP #9-Attend community meeting(s) to provide Fact Sheet, and information on reducing flood risk.	Lead: City Manager's Office, Building, Communications, Environment and Sustainability, Public Works	In response to flooding, the floodplain manager visited Sunset Harbour condominiums to discuss flood protections strategies with residents. This year's meeting include Lakeview and West Avenue improvement projects meetings, MB Magazine release event and a resilience discussion with Jacobs.	MBR is ingAbove education campaign, a comprehensive outreach plan to educate residents on resilience was launched in 2019.	Yes-area associations can share

All Miami Beach is considered a target area

OUTREACH IMPLEMENTATION TABLE

Target Audience	Messages	Outcome (Desired Changes in Behavior)	Project(s) to Support Message	Department Assignment	2019 Status of Projects	2019 Project Accomplishments	Stakeholder
3a. Residents: tenants	Mes sages 1 through 8 Importance of ins urance coverage for renters. Discus s storm/flood preparation with landlord.	Increase ins urance coverage Increase flood preparedness awareness Increase in the use of flood resis tant materials by tenants.	See OP #1,3,4,5,6 OP #8-Fact Sheet for tenants provided on website	City Manager's Office, Building	See OP #1,3,4,5,6 OP #8-Ongoing	This fact sheet was created to specifically target tenants and is available on the website. No	
	Mes sages 1 through 10	Increase comprehensive awareness of CRS and Miami Beach flood mes sages.	See OP #1,3,4,5,6	City Manager's Office, Building, Communications	Ongoing	*Des cribed previously in the 'All of Miami Beach' audience	Yes - local news, retweets.
3b. Residents: property owners*	Mes sages 1, 2, 3, 4, 5, 6 The City is investing in flood risk reduction efforts. Know your elevation and your options to reduce risk.	Increase retrofits, use of flood resis tant materials Increase in inquiries/technical assis tance to the Flood Plain Manager	OP #8-Fact Sheet designed for all residents that highlight risk reduction from the sand dune system, new elevation requirements, street elevation and stormwater pumps.	Building, Communications	Ongoing	Through the flood insurance coverage assessment, 2-4 unit buildings were identified as having low coverage. Special Fact Sheets were sent to all these building types to encourage the purchase of flood insurance.	
	Mes sage 1, 2 Ins ure your property from flood loss.	Increase in insurance coverage for 2-4 family unit properties. (Targeted through Flood Insurance Coverage Assessment)	OP #8-Fact Sheet mailed for 2-4 Family Unit properties.	Building, Communications	Fall 2019		Yes-associations share with multi-family bldg. residents

All Miami Beach is considered a target area

OUTREACH IMPLEMENTATION TABLE

Target Audience	Messages	Outcome (Desired Changes in Behavior)	Project(s) to Support Message	Department Assignment	2019 Status of Projects	2019 Project Accomplishments	Stakeholder
3b. Residents: property owners *(continued)	Messages 2, 3, 4, 7 King Tides are normal in coastal areas but can cause flooding. Protect your family, home, and your vehicles.	Reduce preventable accidents and damage from flood waters.	OP #8-Fact Sheet designed for King Tide seasons. Fact sheet messages distributed through social media, eblasts to stakeholders.	Communications, Environment and Sustainability	Spring and Fall King Tide messages sent by email and social media.	King Tide fact sheet messages are communicated before and during King Tide season. More than 4,000 subscribers receive these email blasts.	Yes - associations share with members
	Messages 1 through 10	Increase insurance coverage Increase retrofits, flood resistant materials	See OP #1, 3, 4, 5. OP #8-Fact Sheet provided in person at meetings, and also shared by associations with members.	Building, Communications	Ongoing	*Described previously in the 'All of Miami Beach' audience	Yes - associations share with members
3c. Residents: Condo/Neighborhood Associations	Messages 1 through 10 Importance of insurance coverage and discussing storm/flood preparation with landlord.	Increase insurance coverage Increase retrofits, flood resistant materials (Targeted through Flood Insurance Coverage Improvement)	See OP #1, 3, 4, 6 OP #8-Fact Sheet emailed and mailed with the Business Tax Receipt (BTR) renewals.	Building, Communications, Finance			No
4a. Businesses: tenants*	Messages 1 through 10 Importance of insurance coverage and discussing storm/flood preparation with tenants.	Increase insurance coverage Increase retrofits, flood resistant materials (Targeted through Flood Insurance Coverage Assessment)	See OP #1, 3, 4, 6 OP #8-Fact Sheet emailed and mailed with the Business Tax Receipt (BTR) renewals. (Supports Activity 360)	City Manager's Office, Building, Finance	Summer 2019	This fact sheet is mailed to businesses renewing their Business Tax Receipts. Approximately 6,069 copies were mailed to businesses in 2019.	No
4b. Businesses: property owners*	Resources to understand elevation, public infrastructure improvements, resources for retrofits. (Supports Activity 360 Flood Protection Information)						

All Miami Beach is considered a target area

OUTREACH IMPLEMENTATION TABLE

Target Audience	Messages	Outcome (Desired Changes in Behavior)	Project(s) to Support Message	Department Assignment	2019 Status of Projects	2019 Project Accomplishments	Stakeholder
4c. Businesses: contractors	Message 1 through 8 Importance of protecting equipment and vehicles. Education in retrofits and flood resistant materials.	Increase resilient retrofits, flood resistant materials.	See OP #6 OP #8-Fact Sheet for "building resiliently" is used with building permits.	Building	Ongoing	The retrofit fact sheets have been handed out to homeowners, contractors, architects and engineers through the building permitting process and the community industrial construction meetings.	Yes-contractors share with property owners
	Message 8 Importance of keeping the Biscayne Bay clean and the storm drain system clean. (Supports Activity 540 Drainage System Maintenance- Compliments National Pollution Discharge Elimination System (NPDES) outreach.)	Reduce dumping and pollutant discharges to storm drains and Bay.	OP #8-Fact Sheet for Biscayne Bay and storm drain system cleanliness is used with building permits (Supports Activity 540) Activity 540-Included as a condition in Right of Way and Building Permit Condition.	Building, Environment and Sustainability	Ongoing	This fact sheet is available at the City's website and physical copies can be found at the Building Department.	Yes-contractors share with sub-contractors
5. Real Estate Agents and Insurance Agents	Messages 1 through 8 The City is investing in flood risk reduction efforts. Know your elevation and your options to reduce risk. Resources to understand personal property elevation, if there is any history of flooding. (Supports Activity 340 Real Estate Agents Brochure)	Maintain or increase flood insurance coverage rates. Increase resilient retrofits with renovations. Increase in information inquiries/technical assistance to the Flood Plain Manager.	See OP #1,3 OP #10-Real Estate Fact Sheet available on City website OP #10-Real Estate Fact Sheet to be distributed to MB agencies, and by the Miami Association of Realtors. OP #11-Letter to Real Estate Agents, Insurance Agents, and Banks.	Building, Communications	Letter to Real Estate and Insurance Agents was mailed August of 2019. The Real Estate Agent Fact Sheet will be shared during the fall of 2019.	Targeted letter sent to more than 90 real estate agents, insurance agents, and banks on Miami Beach advising about flood zone information.	Yes-Real Estate agencies and agents share

All Miami Beach is considered a target area

OUTREACH IMPLEMENTATION TABLE

Target Audience	Messages	Outcome (Desired Changes in Behavior)	Project(s) to Support Message	Department Assignment	2019 Status of Projects	2019 Project Accomplishments	Stakeholder
6. Local Organizations (Schools, Neighborhood Associations, Civic Organizations, Cultural Organizations, etc.).	Messages 1 through 10 Importance of flood insurance and building resiliently.	Increase in information provided at organization meetings.	See CP #1,3,4 CP #8-Fact Sheet provided at meetings by Community Outreach Specialist	Building, Communications	Ongoing/as needed	Marketing and Communications Department attends meetings and provides fact sheets.	Yes - organizations share
	Importance of being prepared through signing up with City communications channels for information on flood, hurricane, and King Tide preparedness.	Increase in organizations signed up for Social Media and E-Blasts.	See CP #6	Communications	Spring and Fall King Tide season emails. Beginning of hurricane season in June and preparation messages. Flood response emails and social media posts.	In 2019, messages about King Tides were shared at least three times in social media in addition to email blasts. Tweets related to flood awareness received more than 500,000 impressions in 2019.	Yes - organizations, media share.
	Messages 1,4,5 Stormwater Management Dashboard (new initiative) Importance of reducing flood risk, measuring the effectiveness of stormwater program and responding to flooding.	Increase safety awareness before, during and after flood events. Reduce preventable accidents and damage from flood waters.	Additional Project: Stormwater Management Dashboard (new initiative)	City Manager's Office (Resilience), Public Works, IT	2019 Phase I completed	The dashboard's purpose is to measure how the city is becoming more resilient over time, track the effectiveness of the stormwater program and understand the impact of extreme events as well as the city's response. The dashboard has a section on resilient improvements such as number of properties that have been built above BFE and number of properties with resilient improvements.	No
7. Special Projects All audiences	Messages 1,5,7 After Action: May 16 Extreme Rain Event Presentation and Recommendations Importance of understanding the impact of heavy rain events and how the city can better respond and document.	Increase safety awareness before, during and after flood events. Reduce preventable accidents and damage from flood waters. Increase retrofits, flood resistant materials. Increase flood preparedness awareness.	Additional Project: After Action: May 16 Extreme Rain Event	City Manager's Office (Resilience), Public Works	May 2019 Routine after actions will be ongoing starting this fall	Understanding the impact of heavy rain events allows the city to better prepare, communicate and improve. The after action includes recommendations to improve the city's response to flooding and tracking of event.	Shared in Sustainability and Resilience Committee - open to residents.

All Miami Beach is considered a target area

SUCCESS MEASURES

The following success measures show progress toward the desired outcomes described on the outreach implementation table. The measures not only serve as a tracking mechanism, but they are also important to celebrate successful initiatives and identify areas of improvement. The measures help illustrate the city's stormwater program resilience initiatives and efforts undertaken in the last year. The PPI plan's outcomes are highlighted below based on importance, alignment with the city's goals and data availability. The tables show the plan's desired outcomes (at the top) and are followed by measures indicating progress made and corresponding data.

Outcomes:

1. Increase comprehensive awareness of CRS and Miami Beach flood messages
2. Increase awareness of being safe before, during and after flood events.

Success Measures	2017	2018	2019
	Actual	Actual	Actual
Number of Twitter impressions about flood awareness messages	256,224	410,747	577,678*
Number of pageviews on MB Rising Above website	N/A	13,255	21,725
Usefulness of City of Miami Beach's flood awareness information shared through Facebook (by percent of respondents rating the item as very useful or moderately useful)	N/A	N/A	47%
Usefulness of City of Miami Beach's flood awareness information shared through Twitter (by percent of respondents rating the item as very useful or moderately useful)	N/A	N/A	53%
Usefulness of City of Miami Beach's flood awareness information shared through city email (by percent of respondents rating the item as very useful or moderately useful)	N/A	N/A	78%

*Data about Twitter impressions reported as of end of August. Data was obtained from the City's Communications Department.

Using various channels to reach different audiences has been a key part of this outreach plan. Since social media is such an important communication channel for various demographics, the city is reaching several residents through this outlet and raising awareness of flooding issues. Promoting flood awareness materials online has also been an important way of communicating with residents and businesses. In 2019, the city measured the usefulness of flood awareness information shared in Twitter, Facebook and email through an online poll noted above. This will help the city tailor messaging

for different channels and audiences. Of note, the number of pageviews on MB Rising Above increased from 13,255 in 2018 to 21,725 in 2019. Pageviews increased primarily due to the MB Rising Above education campaign created to better educate residents and visitors about the city's resiliency efforts.

Outcome: Reduce preventable accidents and damage from flood waters

Success Measures	2016	2017	2018	2019
	Actual	Actual	Actual	Actual
Linear feet of elevated roadways (cumulative) ¹	2,930	5,516	15,474	30,337
Total pump capacity (cumulative increase in gallons per minute) ²	138,051	329,815	539,015	619,015
Percent of flood and drainage complaints resolved in 5 days from initiation date	71%	88%	73%	73%
% of catch basins and associated piping cleaned annually	85%	95%	100%	100%
Total NFIP (National Flood Insurance Program) claims	15	445 ³	N/A ³	N/A ³

¹ This data considers all roads elevated in linear feet. The data doesn't take into consideration the different number of lanes per street raised and their width. Past years' figures were updated to reflect improved tracking methodology and data accuracy. Project completion methodology is provided by the Public Works Department.

² Pump capacity measured includes only stationary pump stations. Data provided by the Public Works Department. The data available does not include portable pump stations capacity. This measure was updated to reflect improved tracking methodology and data accuracy.

³ Data from 2017 reflects claims associated with Hurricane Irma. Data for 2018-2019 data was requested from FEMA and is not yet available.

Reducing preventable accidents and damage from flood waters is an important desired outcome of the plan and the stormwater program. The measures above help the city track progress on this area but also reflect the various efforts dedicated to improving the storm water system, responding to flooding more efficiently and building resiliently.

The City of Miami Beach reduces potential pollution and continuously improves its stormwater management through a combination of education and outreach, good housekeeping, as well as the use of cutting-edge technology and industry-vetted operational practices. As it relates to the operations of its stormwater system, the city has made a commitment to inspect, clean and maintain the entire stormwater system at least once per year. Public Works Operations staff responsible for overseeing these activities is evaluated annually on their ability to meet this metric. In addition, every year Environment and Sustainability Department staff conducts an audit of these activities as part of the National Pollution Discharge Elimination System (NPDES) annual reporting.

The city goes above-and-beyond in its stormwater management. For reference, the NPDES permit that governs the system's operation requires the entire system be inspected, cleaned and maintained a minimum of once every three years. The NPDES annual reports for most municipalities show that they clean their system approximately once every five to seven years. In addition to exceeding the required NPDES frequency three-fold, the city cleans certain structures more frequently than once a year. For example, pump stations are cleaned at a minimum once per quarter as required by their maintenance manuals. The city elects to clean certain pump stations more frequently, as needed. Pump stations connected to higher trafficked drainage basins like the Entertainment Districts are cleaned once per week to ensure they are preventing as much pollution from entering the receiving water body, as well as operating as designed.

Outcome: Increase awareness of being safe before, during and after a flood event

Success Measures	2016	2017	2018	2019
	Actual	Actual	Actual	Actual
Household is prepared with food/water/supplies for an emergency (percent of strongly agree and agree)	58%	No survey	No survey	66%
I know where to get information during an emergency (percent of strongly agree and agree)	65%	No survey	No survey	71%
I'm comfortable with my building(s) flood risk protections (new 2019 measure)	N/A	No survey	No survey	43%

Increasing awareness of being safe before, during and a after a flood event is important to ensure residents have the information needed to remain safe and protect their property during extreme weather events. The Resident Survey measures emergency preparedness and awareness as it relates to weather events and emergencies, and results in both areas increased. The survey is conducted routinely to measure residents' satisfaction with city services and perceptions about various issues. The most recent survey was conducted in the spring of 2019.

Outcome: Reduce preventable accidents and damage from flood waters

Success Measures	2009	2012	2014	2016	2017	2018	2019
	Actual	Actual	Actual	Actual	Actual	Actual	Actual
Percent of residents observing increased flooding	N/A*	N/A*	N/A*	74%	No survey	No survey	40%
Resident satisfaction with efforts to address stormwater and drainage (rating of excellent or good)	44%	37%	25%	46%	No survey	No survey	50%

*Resident Survey data not available.

In order to understand if residents are experiencing issues with flooding and drainage, survey questions related to these areas are provided to households in Miami Beach. In addition, data related to the satisfaction with stormwater program is provided above.

- The percent of residents observing flooding decreased by 34% since 2016. This means residents observed less flooding than in 2016.
- Satisfaction with efforts to address stormwater and drainage improved by 4% since 2016. This issue ranked also as a top priority item for respondents.

Outcome: Increase insurance coverage for 2-4 units and non-residential units

Success Measures	2017	2018
	Actual	Actual
% of units with NFIP insurance policies in AE and X areas*	84%	80%
% of units with NFIP insurance policies in AE areas*	86%	81%
Percent of units with NFIP insurance policies in X areas*	58%	63%
Percent of 2-4 units with NFIP insurance policies*	46%	47%
Percent of non-residential units with NFIP insurance policies*	17%	15%

*Data accuracy is affected by various factors explained below. The flood insurance coverage assessment is required every five years for CRS credit.

Property data was obtained from the Miami-Dade County Property Appraiser. National Flood Insurance Coverage data was obtained from FEMA National Flood Insurance Program. The assessment was not conducted in 2019, as it's only required every five years.

Ninety-three percent of Miami Beach's buildings are located in the Special Flood Hazard Area (SFHA) AE Flood Zone. Location in the AE flood zone means that insurance is

required for units with federally backed mortgages. The remaining buildings, 7%, are located in Zone X. Buildings in the X zone, adjacent to the AE flood zone, are not required to carry insurance, however, they are vulnerable to flooding and they are encouraged to purchase insurance. The committee examined the flood insurance coverage in Miami Beach in both 2017 and 2018 to identify where coverage can be improved. Specifically, the committee focused on 2-4 units and non-residential units due to a lower rate of coverage. These properties were actively targeted to increase insurance coverage.

Miami Beach has an overall high rate of flood insurance coverage. The insurance coverage rate has remained stable in the last two years with minor changes in percent of units covered. The table above shows:

- The overall % of units with NFIP Insurance Policies in AE and X areas slightly decreased to 80% in 2018 from 84% in 2017.
- The percent of units with NFIP Insurance Policies in AE areas decreased from 86% in 2017 to 81% in 2018. From 2017 to 2018, there was an increase of approximately 1,634 units in the AE area. The spike in units from one year to the next one affects the percent of units insured in 2018, as this percent is calculated as number of policies over number of units. This was further impacted by 1,323 fewer policies for this area.
- The percent of units with NFIP Insurance Policies in X areas increased to 63% in 2018 compared to 58% in 2017. For the X zone, the change in units from 2017 to 2018 was 15 fewer units and the change in policies was 197 more policies in 2018. The decrease of new units in this area resulted in a higher percent for the measure "Percent of units with NFIP Insurance Policies in X areas." The increase in policies also impacted the percent of units covered by flood insurance.
- The percent of 2-4 units with NFIP Insurance Policies increased to 47% in 2018 compared to 46% in 2017.
- The percent of non-residential units with NFIP Insurance Policies decreased to 15% in 2018 from 17% in 2017.

Two factors affecting the accuracy of data were identified in this analysis. First, both data sources, Miami-Dade County Property Appraiser and NFIP, are external to the city. For this reason, the reliability of the data is not within the city's control. Another factor is the number of units obtained for this report which was captured in two different points of time for comparison purposes. Both systems likely have reporting lag times as well. Changing the time frames to account for increase in new units may result in slightly different insurance coverage rates.

The committee also discussed reasons that may be impacting the rate of flood insurance coverage in the city. For example, properties without a federally backed mortgage do not require flood insurance. Homeowners of these properties may decide to drop flood insurance or seek a private insurer. Another reason is that NFIP flood insurance policies in the AE zone are more expensive than in 2017. The flood insurance assessment shows that the average policy for the AE zone costs \$49 more in 2018 than in 2017. This increase may be a reason for homeowners to seek lower rates in the private market. Private insurance coverage for flooding is not part of this assessment. It is likely that the inclusion of this data may change the coverage rate results.

This analysis also compliments the flood insurance coverage assessment, coverage improvement plan, and coverage implementation plan as part of the CRS Activity 370 Flood Insurance Coverage Improvement Plan.

SUMMARY OF RECOMMENDATIONS FOR IMPROVEMENT

STATUS OF 2018 RECOMMENDATIONS

As part of the 2018 annual evaluation report, seven recommendations were developed with the committee to make improvements to the implementation of the plan. The following paragraphs provide updates on the status of existing recommendations. Two new recommendations have been developed in this section as part of this year's annual report.

1. **Focusing on tracking flood insurance** coverage is a lesson the city learned while completing this report for the first time. The city conducted analysis to understand coverage for 2018, however, there are data variables that need to be further analyzed in future years to better understand the rate of flood insurance.

STATUS: ONGOING

Among the recommended actions from 2018 were to connect with private insurance companies to analyze private coverage. This effort is still underway. As the city and committee members obtain more access to private insurance companies, flood insurance coverage will be further explored.

2. **Being able to better track building retrofits** to help staff track upgrades that reduce flood risk.

STATUS: COMPLETE

The Building Department continues tracking the use of flood resistant materials, elevation of equipment, flood retrofits and other improvements in Miami Beach. The department has worked with the resilience team to create a dashboard that

shows this data through interactive visualizations that update real-time. The dashboard helps staff to further analyze trends and communicate how the city is becoming more resilient. In order to capture the first living floor elevation of Miami Beach properties, the city began to input elevation certificates data dated before 2016 into GIS to have this information in an accessible and readable format.

3. **Implementing tracking mechanisms** for measuring the quality of information disseminated as part of the outreach projects.

STATUS: COMPLETE

UPDATE: This year the city started tracking the usefulness of social media and email flood awareness messaging through an online poll. The city also measured the top flood awareness topics of interest to the community. Efforts to reduce flood risk messages ranked as the preferred topic. This initiative will help the city to better tailor messaging to different audiences and channels. Flood communications messaging has also expanded through additional communication channels, such as text message alerts through MBTraffic, MBAlerts, and through Nextdoor.

4. **Continue implementing outreach projects** to reduce flood risk and help reduce the cost of flood insurance premiums.

STATUS: ONGOING

As mentioned above, this year the city added additional projects that use data to better prepare for flooding and communicate more effectively about this issue.

5. **Implementing the Urban Land Institute's recommendations** to improve the stormwater management program, communication with residents and integrating green and blue infrastructure.

STATUS: ONGOING

The City Manager's READY (Resilient Enhancement Design for YOU) Team studied the feasibility of these recommendations, many of which require policy-level action and funding. The team continues to meet monthly to review projects with the purpose of integrating resilience. There were 83 distinct recommendation in the report, of these 48 are complete or in-progress, 11 were explored and not recommended at this time, and 24 need to be considered in the future.

6. **Implementing a holistic approach to resilience** in the organization through the implementation of the 100 Resilient Cities- Resilience Strategy and updating the city's strategic plan with a resilience focus on addressing our shocks and stresses.

STATUS: ONGOING

This year, both strategic plans (Resilient305 and Miami Beach Strategic Plan Through the Lens of Resilience) were officially adopted by the City Commission on July 17th, 2019 and implementation is underway. The actions within these plans will help drive efforts to reduce flood risk.

7. **Sharing the “Are You Interested in Purchasing Property on Miami Beach?” Fact Sheet** with real estate agents. The Fact Sheet targets potential property buyers in Miami Beach, and serves as a guide to prepare homeowners for extreme weather events and flooding.
8. **STATUS: ONGOING**
UPDATE: Fact sheets were updated in 2019 to reflect the most current flood awareness information. In addition, the MB Magazine focusing on resilience was shared with local real estate agencies. Real estate members of the committee will be visiting different real estate agencies in Miami Beach to distribute the updated fact sheet and build awareness of flood risk and risk reduction. This effort provides valuable activity points and can lead to important resilience investments from buyers.

NEW RECOMMENDATIONS

1. **Developing phase II of the Stormwater Management Dashboard** to further understand extreme weather events and the effectiveness of the stormwater program. As mentioned earlier in this report, the draft stormwater management dashboard is currently tracking how the city responds to flooding, infrastructure improvements and avoided tidal flooding incidents. Phase II will include additional tidal and rainfall data to better understand the impacts of extreme weather events. In addition, it will leverage existing data to present additional performance measures.
2. **The city selected Jacobs Engineering** to take steps toward achieving an integrated stormwater strategy. The consultant will develop an integrated blue-green concept plan, evaluate the city's road elevation policy, and prioritize the current neighborhood project list. As part of the first task, Jacobs will analyze various blue-green strategies and provide a list of vetted design approaches that are applicable to Miami Beach. Jacobs will also assess the City's policy of raising the crown of roadway elevations to 3. 7' NAVD. The evaluation will provide an objective analysis and result in a recommended approach to road elevations within the City. Finally, Jacobs will develop weighted criteria to rank neighborhood projects.

CONCLUSION & NEXT STEPS

Overall, the Program for Public Information (PPI) Plan's activities were implemented successfully in 2019. Various outreach projects were completed and continue to be scheduled for upcoming years. New projects have been added with the purpose of using data for better decision-making and more effective communication.

Miami Beach is committed to reducing the cost of flood insurance, reducing flood risk and increasing flood awareness. The efforts complement the stormwater program, land use amendments to reduce flood risk, and the *Miami Beach Strategic Plan Through the Lens of Resilience*.

This Program for Public Information (PPI) Annual Update & Evaluation Report, developed for the National Flood Insurance Program Community Rating System program, opens the doors for increased integration of initiatives that go hand in hand with resilience practices and provides the city with opportunities to improve its programs. The committee and staff will continue to implement the plan, track progress and make recommended improvements.

For more information, visit MBRisingabove.com, and select the Flood Awareness tab. MBRisingabove.com is the City of Miami Beach's resource for climate change adaption and mitigation efforts.