

CITY OF MIAMI BEACH FLOOD AWARENESS

Amy Knowles, Chief Resilience Officer

Melissa Berthier, Director of Marketing & Communications

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Presenters



Amy Knowles

Chief Resilience Officer,
City of Miami Beach



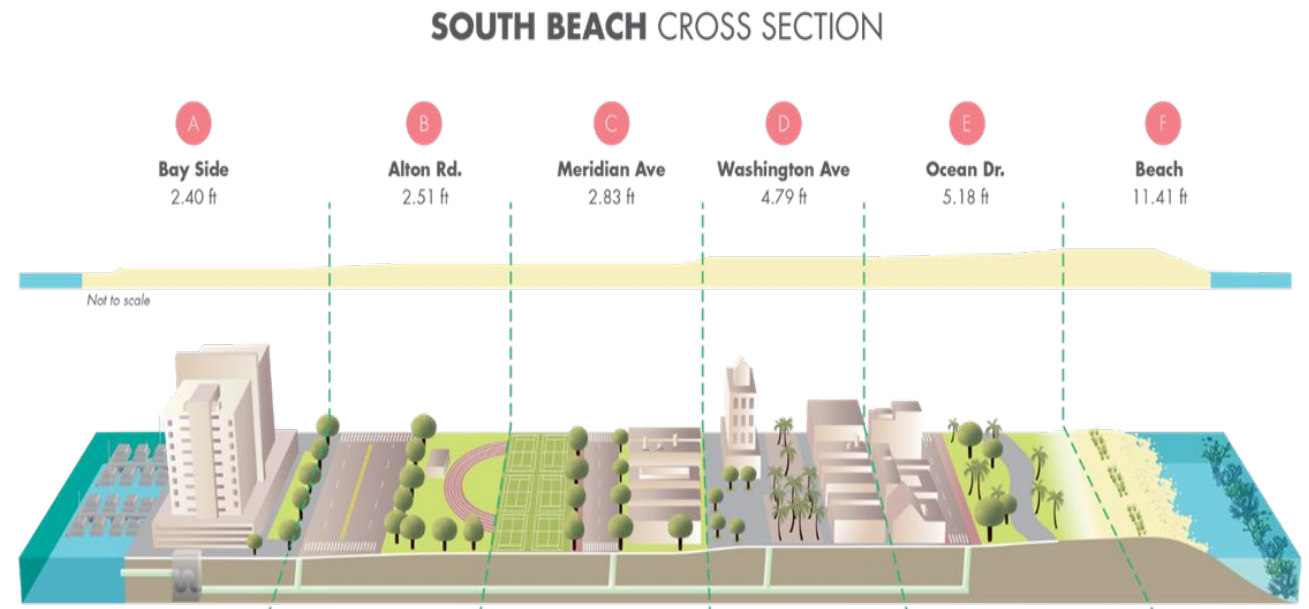
Melissa Berthier

Director of Marketing & Communications,
City of Miami Beach



City of Miami Beach Valuable and Vulnerable

- \$56.4 billion taxable assessed value
- 7-sq. miles coastal barrier island
- 7-miles of beach and dunes
- 55-miles of seawalls
- Low elevation close to sea level (4.5 ft NAVD)
- Densely built and populated
- Over 100-years old
- Porous limestone
- Unique natural resources
- 8.8 million overnight tourists



All Factors



King Tide



Waves



Rainfall



Storm Surge



Sea Level Rise



Rising Groundwater

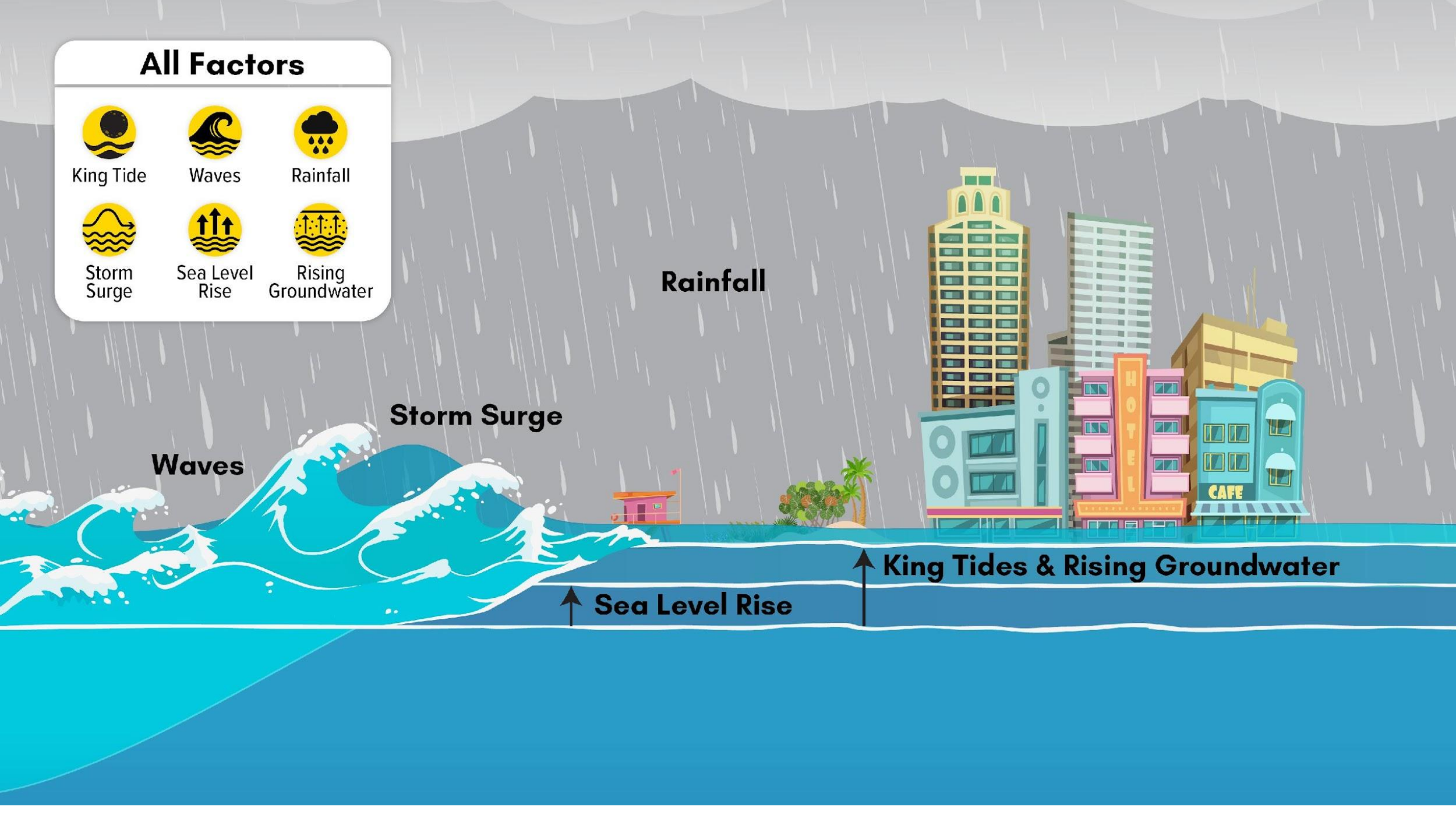
Rainfall

Storm Surge

Waves

King Tides & Rising Groundwater

Sea Level Rise



As We Plan for Sea Level Rise, We Address Broader Resilience:

1 BEST AVAILABLE SCIENCE AND ENGINEERING

2 GUIDING PLANS & POLICIES: PUBLIC + PRIVATE

3 IMPLEMENTATION PROJECTS

- Social and Economic Resilience
- Safety: Reducing flood risk and avoiding damage
- City asset vulnerability
- Aging Infrastructure: W&S, Roads, etc
- Blue-Green Infrastructure
- Aesthetics
- Urban Tree Canopy
- Water Quality, Sustainability and Environmental Resources
- Mobility
- Historic Preservation
- Private Property Adaptation



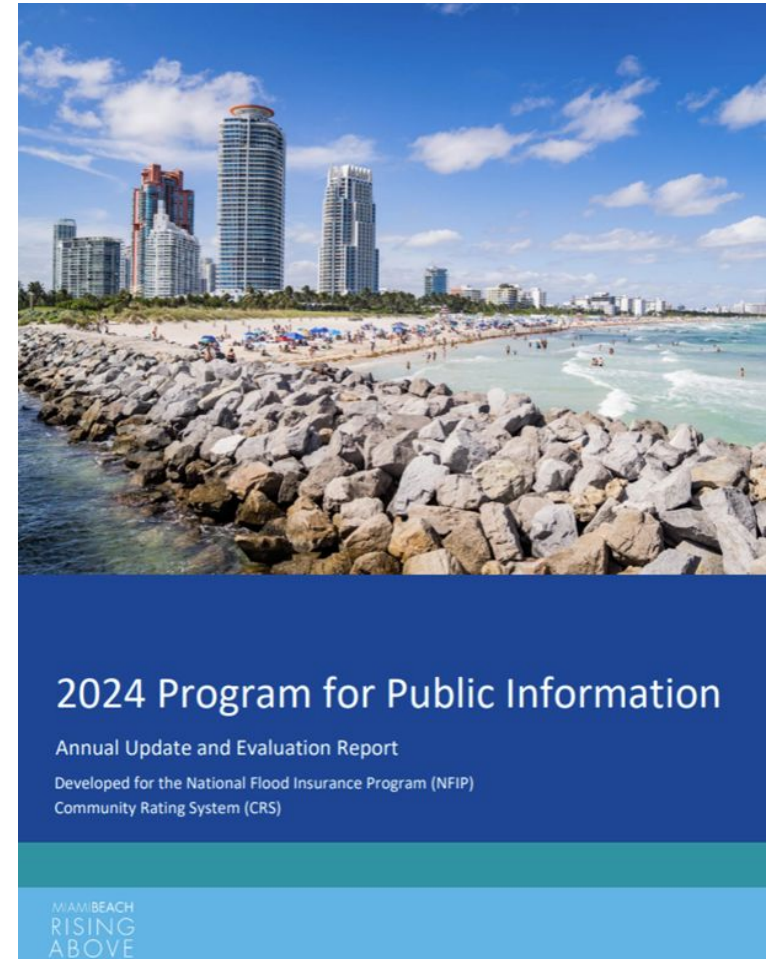
Policies and Plans

- Vulnerability Assessment Update/ draft Adaptation Plan (2024)
- Resilience Code (2023)
- Stormwater Master Plan Update (2023)
- Seawall Action Plan (2021)
- Sea Level Rise Projections Update (2020)
- Urban Forestry Master Plan (2020)
- Neighborhood Prioritization Plan (2020)
- Road Elevation Plan (2020)
- Blue-Green Infrastructure Plan (2020)
- Water and Wastewater Critical Needs Plan (2020)
- 2040 Comprehensive Plan (2019)
- Resilient305 Strategy (2019)
- Strategic Plan through the Lens of Resilience (2019)
- Buoyant Cities Study (2020)
- Dune Management Plan (2016)



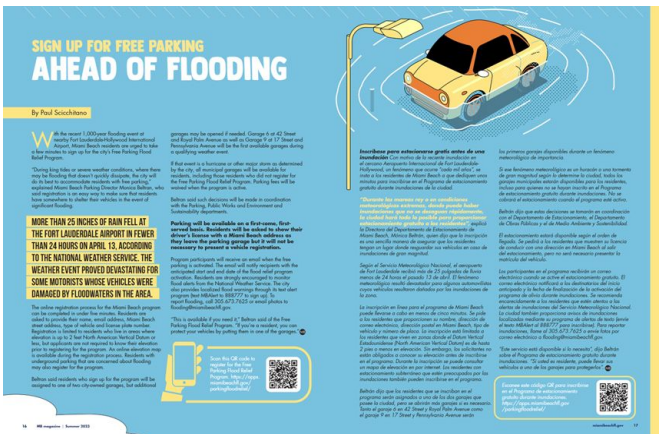
FEMA CRS PPI Committee: Established 2016

- The Program for Public Information (PPI) is an activity of the FEMA National Flood Insurance Program (NFIP) Community Rating System (CRS) that allows communities to earn points for conducting activities that **communicate reducing flood risk and the importance of flood insurance**.
- **The Program for Public Information lays the framework for year round and supports emergency flood awareness communications; including a multi-departmental process.**
- The City of Miami Beach has retained its Class 5 rating, which amounts to a 25% discount on flood insurance for qualifying policies.
- Program has **evolved** over time!



MB Magazine

- Bilingual, quarterly publication distributed to residents and recognized as the top source for city news, according to resident surveys.
- Each issue is printed in 65,000 copies and includes articles covering important topics such as flooding, storm season preparedness, and other helpful safety and resilience tips for residents.



10 STEPS TO FLOOD AWARENESS

MIAMI BEACH RISING ABOVE

1. KNOW MIAMI BEACH'S FLOOD RISK.

93% of Miami Beach properties are in a FEMA Special Flood Hazard Area. The city is reducing risk by investing in public infrastructure and encouraging flood mitigation for private properties.

2. KNOW YOUR FLOOD INSURANCE COVERAGE.

Flood insurance is required for federally backed mortgages. Miami Beach saves residents and businesses 25% on flood insurance premiums through the Community Rating System (CRS). For more information, check [floodsmart.gov](#).

3. BE SMART IF YOU SEE FLOOD WARNINGS!

Avoid driving through or coming in contact with flood waters as they could be hazardous. Check your local weather and text MABLET to 888777.

4. KEEP YOUR HOME AND BELONGINGS DRY.

Protect your property by investing in flood risk mitigation, such as using flood-resistant materials, elevating major appliances, and elevating your home.

5. BUILD RESILIENTLY.

Follow the Florida Building Code and the Miami Beach Building Code to minimize flood risk. Learn more about your flood risk by obtaining an elevation certificate calling 305.673.7610.

6. OUR NATURAL SYSTEMS ENHANCE OUR FLOOD PROTECTION.

The dune system, coral reefs, and other nature-based infrastructure all contribute to flood protection.

7. HAVE A PLAN! MIAMI BEACH CAN EXPERIENCE FLOODING FROM HURRICANES AND KING TIDES.

Know evacuation routes and prepare for storms to protect yourself and your loved ones. Learn more at [miamibeachfl.gov/emergency-preparation](#).

8. KEEP STORM DRAINS CLEAN!

Don't litter! Keep storm drains clear of litter and debris to prevent flooding and keep Biscayne Bay clean. Report issues on the free Miami Beach e-GoV app or call 305.604.CITY.

9. FINANCIAL ASSISTANCE.

Federal financial assistance may be available for damaged properties. Contact the Grants Office at 305.673.7466 to learn more. The city also has a Private Property Adaptation (PPA) grant program for flood mitigation. Call 305.673.7084 to learn more.

10. MIAMI BEACH IS HERE TO HELP.

The Building Department offers free technical assistance to identify ways to reduce flood hazards. Call 305.673.7610 to learn more.



Dedicated Newsletters

The City of Miami Beach e-newsletters keep residents informed about important flood updates, emergency alerts, and preparedness efforts.

Subscribers receive timely emails about King Tides, Heavy Rainfall, Parking Relief, How to Stay Safe Before, during, and after a flood.

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The header features a blue and green wavy background with a lifeguard stand on the left and the word "MIAMIBEACH" in white capital letters on the right.

Heavy Rainfall Expected: Parking Garages Will Open Tomorrow at 11 a.m.
Sandbags will be available at two locations from 8 a.m. to 2 p.m. on Sunday, October 6

Heavy rainfall is expected to impact our area starting tomorrow, October 6.

A Flood Watch will be in effect for Miami Beach from 11 a.m. on Sunday, October 6 through the morning of Thursday, October 10.

Separately, the National Hurricane Center has issued an advisory for [Tropical Storm Milton](#) in the southwest Gulf of Mexico. The Miami Beach Fire Department's Division of Emergency Management is actively monitoring Tropical Storm Milton, which is expected to develop into a hurricane before making landfall midweek. The system is forecast to strengthen into a major hurricane as it moves slowly east. The earliest reasonable arrival time of Tropical Storm force winds to Miami Beach is Tuesday night. Areas of heavy rainfall will impact our area Sunday and Monday ahead of Milton, followed by heavy rainfall directly related to the storm expected later Tuesday and into Wednesday night.

For real-time weather updates, please visit [the National Weather Service's website](#) or [the National Hurricane Center's website](#). You can also follow [NWS Miami](#) on [Facebook](#) or [X](#).

View [our webpage](#) for more information on understanding flood alerts.

Parking Garages Will Open to Residents and Employees of Miami Beach Businesses
The Miami Beach Parking Department will open public garages for residents and employees of Miami Beach businesses wishing to keep their cars out of flood-prone areas.

The logo consists of a blue square with a white letter "P" and the word "MIAMIBEACH" in small white capital letters below it.

King Tides

The City of Miami Beach keeps residents informed through MB Alerts, e-newsletters, and community meetings, providing real-time updates on tide forecasts, flood risks, and mitigation efforts.

- Letter to Commission
- Newsletters
- Social Media
- MB Text Alerts
- www.mbrisingabove.com/climate-science/king-tides/



MIAMI BEACH: King tides are expected today, 9/16 through 9/22. Avoid floodwaters & report flooding to 305.673.7625 or flooding@miamibeachfl.gov.



MB Alerts

The City of Miami Beach sends MB Alerts via text messages to keep residents informed about flooding, severe weather, and public safety updates.

Residents can sign up by texting "MBALERT" to 888777 to receive real-time notifications.





Recent Event

Flood Awareness Communications in Action

+ Lessons Learned

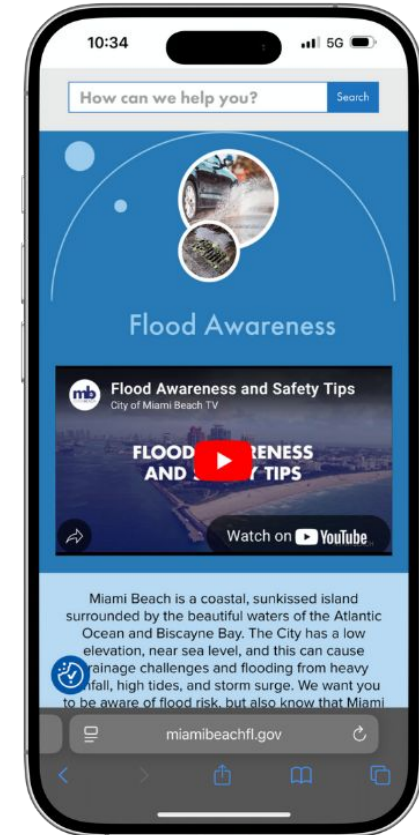
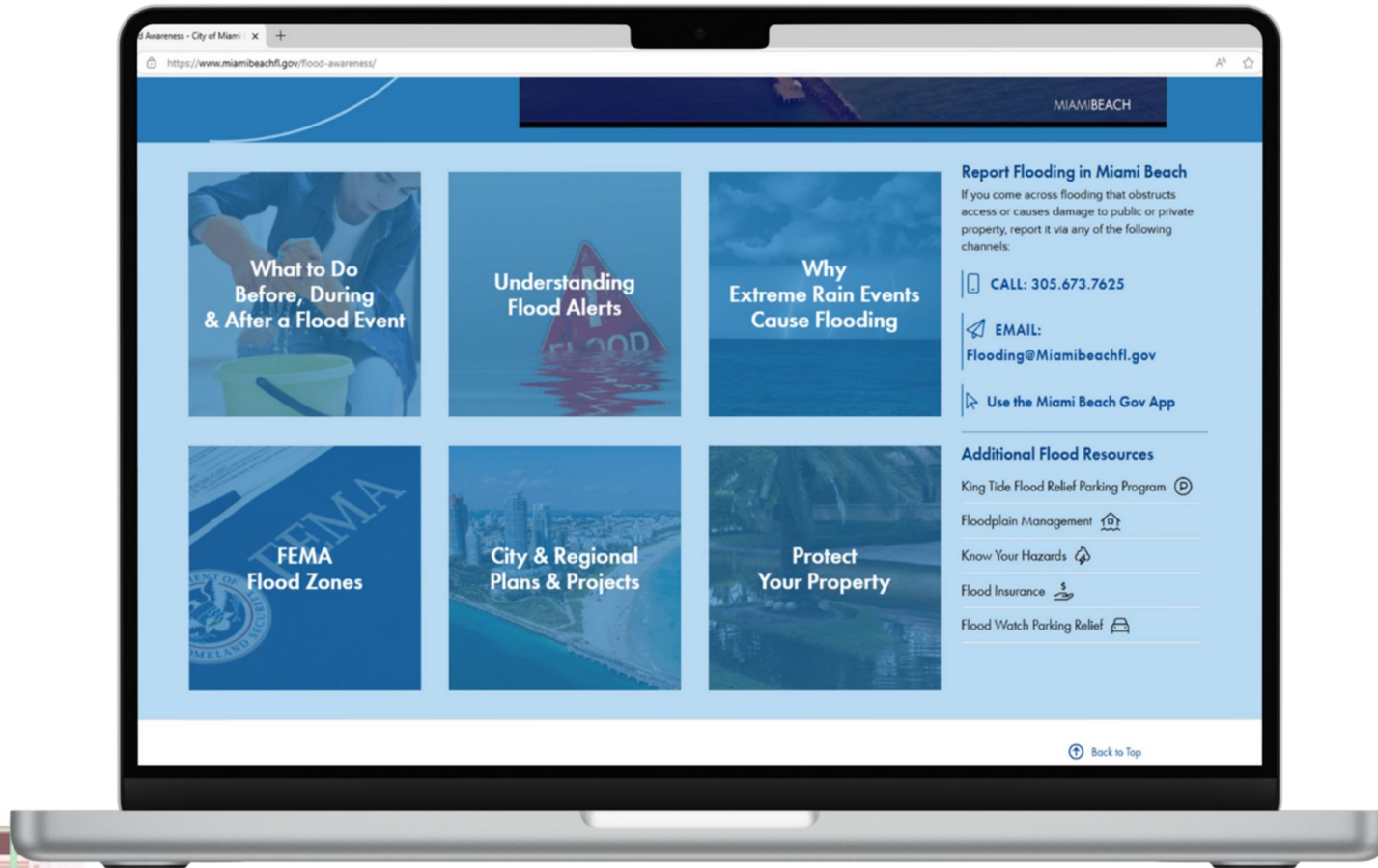
June 10–15, 2024, Rain and Flood Event

For six days, the National Weather Service issued **flood watch, flood warning, flood advisory, flash flood warning and flash flood emergency**. The forecast was for 7–10 inches of rain. When the rains had subsided, a reported **22.5 inches of rain** fell in Miami Beach. Streets became inundated, causing stranded cars, flooded homes and prompting emergency responses. The worst of it timed with rush hour on Wednesday.



Updated the Flood Awareness Webpage

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www.miamibeachfl.gov/flood-awareness/



Flood Advisory

Be aware! A Flood Advisory is issued when flooding is not expected to be severe enough to issue a watch but it may cause significant inconvenience, and if caution is not exercised, it could lead to situations that may threaten life and/or property. The National Weather Service sometimes issues Advisories independently of Flood Watches or Warnings. They often are issued to specific locations if forecasters see the possibility of localized impacts.

Flood Watch

Be prepared! A Flood Watch means that conditions are favorable for flooding to occur in the designated area. It is a cautionary alert indicating that residents should be prepared and stay informed about weather conditions. Monitor weather updates regularly, know routes to higher ground/shelter and be ready to take action if a Flood Warning is issued.

Flood Warning

Take action! A Flood Warning indicates that flooding is imminent or already occurring in the specified area. It is issued when flooding poses a threat to life and property and immediate action is required. Take prompt action to protect yourself and your property. This may involve moving to higher ground, securing belongings, and following evacuation orders if necessary.

Flash Flood Warning

Take immediate action! A Flash Flood Warning is issued when a flash flood is imminent or occurring. Flash floods are sudden and can happen within minutes or hours of excessive rainfall. Move to higher ground immediately and avoid areas prone to flooding. Avoid driving during flash floods as roads can quickly become impassable.

Flash Flood Emergency

You are in danger! This rare alert is issued when flooding could cause additional significant impacts. Seek immediate shelter on high ground. Pull over if you are driving, especially in areas that typically flood. Wait for conditions to improve.

Flood Awareness

Flood Plans & Projects

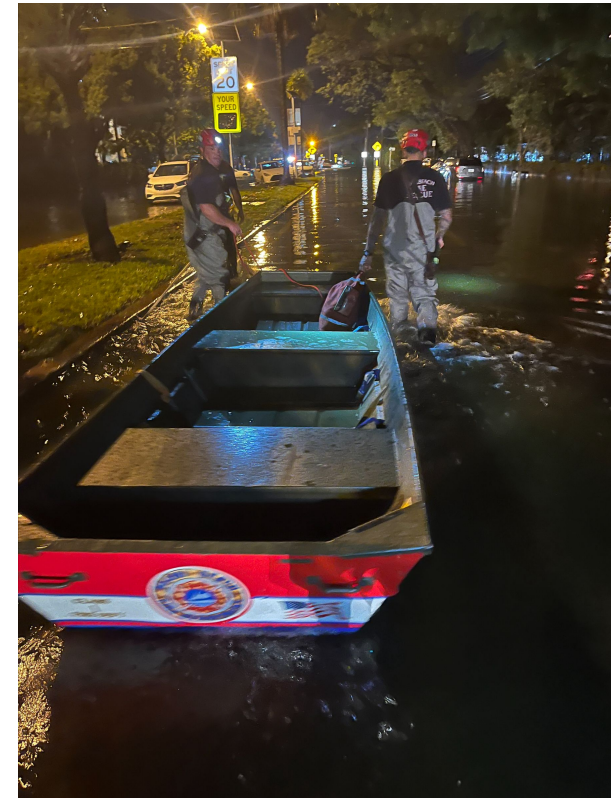
Understanding Flood Alerts

What to do Before, During & After a Flood Event

Why Extreme Rain Events Cause Flooding

Flood Watch Parking Relief

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Flood Awareness

Miami Beach is a coastal, sun-kissed island surrounded by the beautiful waters of the Atlantic Ocean and Biscayne Bay. The City has a low elevation, near sea level, and this can cause drainage challenges and flooding from heavy rainfall, high tides, and storm surge. We want you to be aware of flood risk, but also know that Miami Beach is leading the way locally and nationally to reduce flood risk today and in the future from climate change and sea level rise projections.



[www.miamibeachfl.gov/
flood-awareness/](http://www.miamibeachfl.gov/flood-awareness/)



[Music]
flood awareness and

MIAMIBEACH

Flood Watch Parking Relief

The City of Miami Beach will open public parking garages to residents and employees of Miami Beach businesses when a Flood Watch is issued by the National Weather Service (NWS). Residents and employees may park vehicles at no cost with proof of residency or employment when exiting the parking facility.

In the event the NWS issues a Flash Flood Warning for Miami Beach, the city's two approved towing companies — Beach Towing and Tremont Towing — will offer a \$50 towing service for any Miami Beach resident to any location within city limits. Residents must provide proof of residency and their vehicle registration address must match their driver's license.

[Flood Awareness](#)

[Flood Plans & Projects](#)

[Understanding Flood Alerts](#)

[What to do Before, During & After a Flood Event](#)

[Why Extreme Rain Events Cause Flooding](#)

[Flood Watch Parking Relief](#)



The **Flood Safety Awareness and Safety Tips Brochure** provides guidance on how residents can prepare for and respond to flooding events. The city now distributes the brochure at sandbag distribution events and routine neighborhood association meetings.



Lessons Learned

- Understanding Flood Alerts: **Flood warning can quickly shift to flash flood emergency**
- Expanding **parking relief program** has multiple benefits- moving cars off the road = action and less cars on the road = safety
 - **King Tide Parking + Flood Watch Parking + \$50 towing program**
- Expanded **Sandbag Distribution + Flood Awareness Brochures**
 - **How you can help** such as removing debris from stormdrains
- **“PSA” Video** created to explain alerts and on MBTV
- Increased awareness: applications to **Private Property Adaptation Program doubled in 2025**

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Community Perspectives of Flooding: Climate Change and Sea Level Rise

Vulnerability Assessment and Adaptation Plan

Overview of Community Engagement Efforts

- Community Sensitivity Focus Group Interviews (8)
 - Two for residents in each region (North, Mid, and South Beach)
 - Business Community + local Subject Matter Experts
- Pop-up Workshops
 - Hispanic Heritage Festival, Culture Crawl, Chess Challenge
- Community Meetings: Salon Series with UM, FIU
- Engaged over 150 residents
- Topics Discussed:
 - Experiences with flooding
 - Flooding impacts to community spaces
 - Influence of sea level rise and community concerns
 - Priorities for flood protection
- Presented at:
 - Sustainability Committee, Resilience Committee, FEMA PPI Committee, and Chamber of Commerce, Land Use and Sustainability Committee



What We Heard

Community Coping Mechanisms

I'm 54 and don't want to deal with adaptation when I'm 80. I already raised my dock twice and it doesn't look like I will have reprieve...

-NB Resident

...having an SUV to navigate flooded streets is a must.

-MB Resident

I remember seeing water come over the canal for the first time and thought it was crazy. Now it happens every high tide and I think nothing of it.

-NB Resident

When people come to shop, they don't want to swim to the store.

-SB Business Owner

In 2010, Miami Beach was coined as ground 0 for climate change, and all eyes are on us to see how we are dealing with this.

-SB Resident

- Clearing debris from local stormwater drains prior to storm events
- Carrying flip-flops or rubber boots for wading through water
- Purchasing large vehicles to navigate flooded streets
- Carrying children through flooded school pickup zones
- Elevating private homes, docks, and seawalls

Adaptation Plan Structure

- There are 6 **pathways**, each **pathway** is made up of multiple **strategies**



Bayfront Flood Protection



Roadways



Critical Infrastructure



Critical Facilities



Stormwater



Oceanside Flood Protection

Bayfront

Primary Flood Hazards:

- King Tide Flooding
- Coastal Storm Flooding

Example Strategies:

- Elevate seawalls
- Add living shorelines to seawalls
- Restore natural shorelines

Inland

Primary Flood Hazards:

- Rainfall Flooding
- High Groundwater

Example Strategies:

- Floodproofing or elevating buildings
- Incremental roadway elevation
- Stormwater improvements
- Blue green stormwater infrastructure

Oceanside

Primary Flood Hazards:

- King Tide Flooding
- Coastal Storm Flooding
- Waves

Example Strategies:

- Beach nourishment
- Dune enhancement
- Offshore wave attenuation



Questions? Thank You!

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www.MBRisingAbove.com

www.miamibeach.gov/flood-awareness

