



City of Miramar, FL FMP & PPI

FMPC Meeting #3 – Goals & Mitigation Strategy

October 21, 2025

Agenda & Introductions



Introductions

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Floodplain Management Plan

- Planning Process Update
- Capability Assessment
- Public Survey Results
- Set Plan Goals
- Discuss Mitigation Action Plan

Program for Public Information

- Target Areas, Audiences & Messages
- Outreach Projects

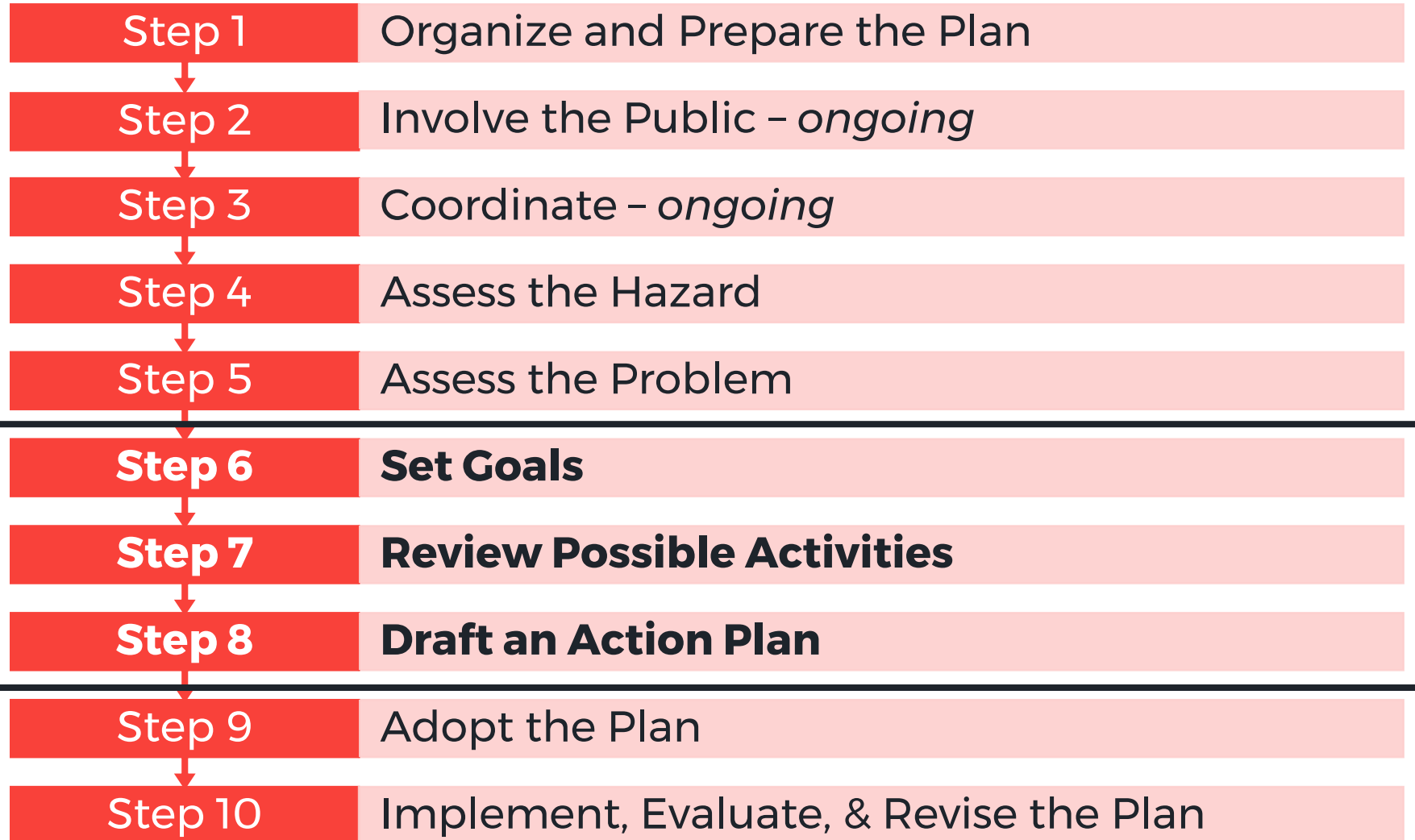
Next Steps



Planning Process Update



Planning Process



Capability Assessment



Capability Assessment

What is Capability?

- Measures local resources and tools available to support or implement mitigation projects
- Identifies gaps, conflicts, and opportunities in existing local plans, policies, programs, etc.
- Identifies mitigation measures already in place or underway

Capability Indicators:

- Planning & Regulatory – plans, programs, ordinances
- Administrative & Technical – staff, training, expertise
- Fiscal – bonds, fees, taxes, CIP, grants
- Education & Outreach – engaged stakeholders, public outreach, warning & notification
- Mitigation – grants, past mitigation projects performance
- Political – public and leadership support for mitigation, investments, regulation enforcement

What's missing?
Any capability gaps?

Capability Assessment

Strong Administrative Capability

- Planning & Engineering staff
- GIS data and tools
- PIO and communications support
- Coordination with the County

Strong Planning & Regulatory Capability

- City of Miramar Comprehensive Plan, 2021
- Floodplain Ordinance
- Stormwater Management Ordinance
- Capital Improvement Program
- City of Miramar Vulnerability Assessment, 2025
- Broward County LMS, 2023
- Broward County Resilience Plan, 2025

What else to consider:

- Mitigation funding / ongoing grants
- New or updated plans
- New staff or trainings
- Updated flood or open space regulations
- New emergency warning systems or strategies
- Completed mitigation projects

Public Survey Results



Public Survey Results



157 Responses

- Only 41% are very concerned about flooding (23% not concerned)
- 39% of respondents have experienced flooding (61% have not)
 - Flooded backyard due to low elevation
 - Backed up sewers
 - Flooded roadways after heavy rain
 - Flooded streets that impact driveway, or home
 - Canal flooding
 - Palm fronds and branches blocking drainage

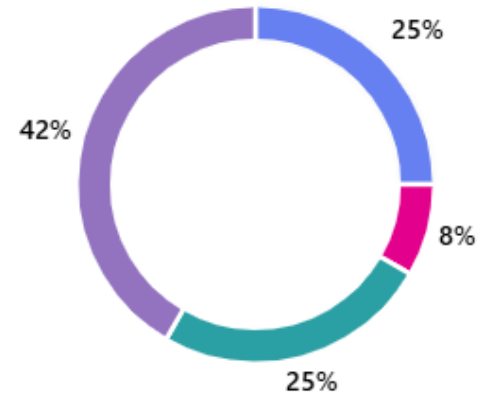
Most reported locations:

- Sherman Cir.
- Montego Bay neighborhood
- Island Dr.
- Miramar Pkwy
- SW 178th Ave
- Miramar Blvd
- Silver Shores neighborhood
- 67th Ter
- Fairway Elementary School

Public Survey Results

- 45% of respondents do not know if their home is located in a flood zone
 - 44% indicated they are located in a flood zone, 11% said they are not
- 76% of respondents have flood insurance
- When asked why respondents do NOT have flood insurance:

- It's too expensive
- I never really considered it
- I don't need it because my home is elevated or otherwise protected
- Other



“other” responses:

- Unsure if home is in flood zone
- Not required
- Flooding is due to poor drainage
- Unable to get insurance
- Covered through HOA

Public Survey Results

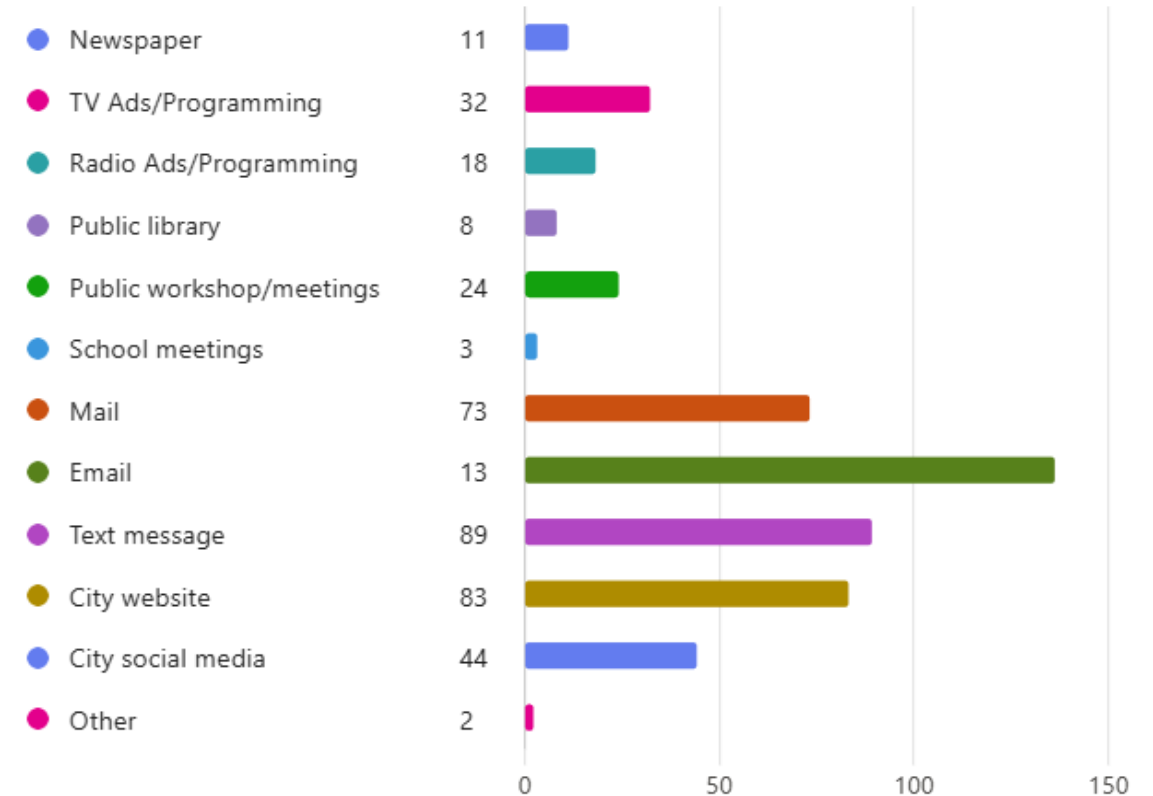
- 60% of respondents have not taken any actions to protect their home from flood damage
- Of the 40% that have implemented protective measures, projects included:
 - Digging a trench
 - Redirect drainage towards the street
 - Sandbags
 - New roof and gutters
 - Stormproof windows and doors
 - Clear debris from yard and drains
 - Elevate valuables
 - Insurance
 - French drains



Public Survey Results

- 69% of respondents do not know what government office or agency to contact regarding flood risk

Best way to receive information



Plan Goals



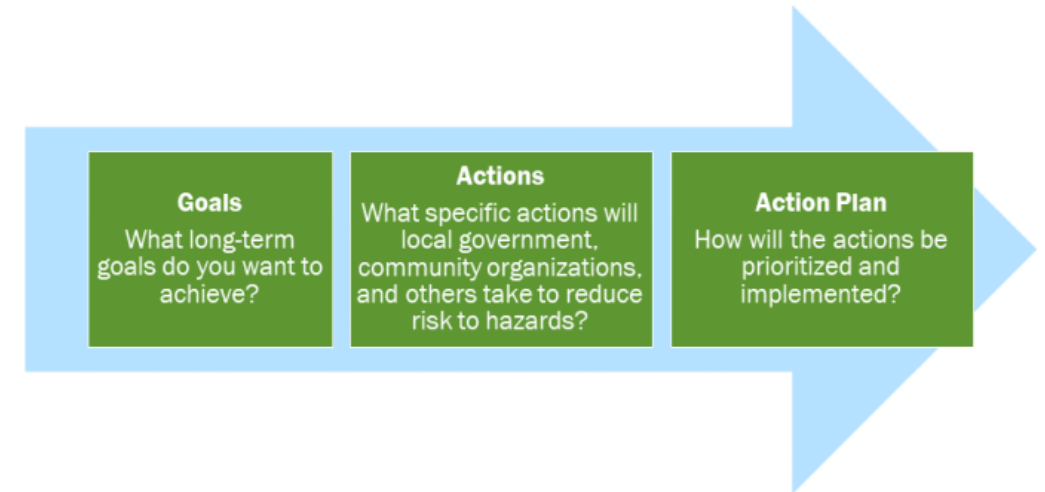
Plan Goals

- Aim for 3-5 broad goals
- Will need at least one project for each identified goal
- Consider existing plans and public feedback

Common Themes

- Help people protect themselves
- Protect wetlands and environmentally sensitive areas
- Make sure future development doesn't make things worse
- Restrict development in hazardous areas
- Educate the public on risk, preparedness, and mitigation
- Protect existing and future buildings, critical facilities and infrastructure
- Protect people and public health and safety

Goals help shape the mitigation action plan



City of Miramar Comprehensive Plan, 2025

- **Stormwater Management Element:** Provide adequate stormwater management capacity to protect current and future residents, and to prevent public and private property damage due to flooding, to the maximum extent practicable.
- **Conservation Element:** Ensure a high quality of life for present and future residents of the City of Miramar through the protective use and conservation of the City's natural resources.

Broward County LMS, 2023

Goal #1: Protect human health, safety, and welfare.

Goal #2: To increase business, residential, and community awareness and implementation of hazard mitigation.

Goal #3: To ensure adequate training opportunities to support hazard mitigation and enhance outreach efforts that educate the public on existing identified hazards as well as new and emerging threats and hazards.

Goal #4: To facilitate preventative measures to mitigation hazards.

Goal #5: To facilitate planning initiatives that ensure effective hazard mitigation programs and policies.

Goal #6: Develop and enhance regional mitigation efforts.

Goal #7: Promote mitigation partnerships and innovative methods of financing mitigation.

Goal # 8: Lower flood insurance premiums through Community Rating System (CRS) Activities.

Goal #9: Encourage resilient infrastructure county-wide.

Proposed Goals



Goal #1: Continue outreach and public awareness on flood risk, preparedness, and mitigation to encourage people to responsibly protect their property and ensure public health and safety.



Goal #2: Improve stormwater management to protect existing property, critical facilities, and infrastructure from current and future flood risk.



Goal #3: Prioritize the use of green infrastructure and seek to integrate such techniques into future development projects to expand greenspace and manage stormwater.

Mitigation Action Plan



Generating New Mitigation Activities

- Four general approaches: ***Alter, Avert, Adapt, Avoid***
- Consider action ideas from each of FEMA's six mitigation categories
 - Identify actions from at least five of the six categories
- Consider existing actions from relevant plans (Comprehensive Plan, CIP, LMS, Vulnerability Assessment)
- Review FMP risk and vulnerability assessment
- Input from key stakeholders
- Consider public feedback

Goal is to brainstorm new potential actions

- Are there any capability gaps?
- What challenges are unique to your field of expertise?
- Think about what personal and professional flood challenges you've faced and how they could be addressed

Priority Risk Index Results

High	Moderate	Low
≥3.0	2.0-2.9	<2.0

Hazard	Probability	Impact	Spatial Extent	Warning Time	Duration	PRI Score
Flood	Likely	Critical	Moderate	6 to 12 hrs	Less than 1 week	3.0
Levee Failure	Unlikely	Limited	Moderate	Less than 6 hrs	Less than 1 week	2.2
Stormwater/Localized Flooding	Highly Likely	Limited	Moderate	Less than 6 hrs	Less than 24 hrs	2.9
Tropical Cyclones	Likely	Catastrophic	Large	More than 24 hrs	Less than 1 week	3.3

Public Survey Results



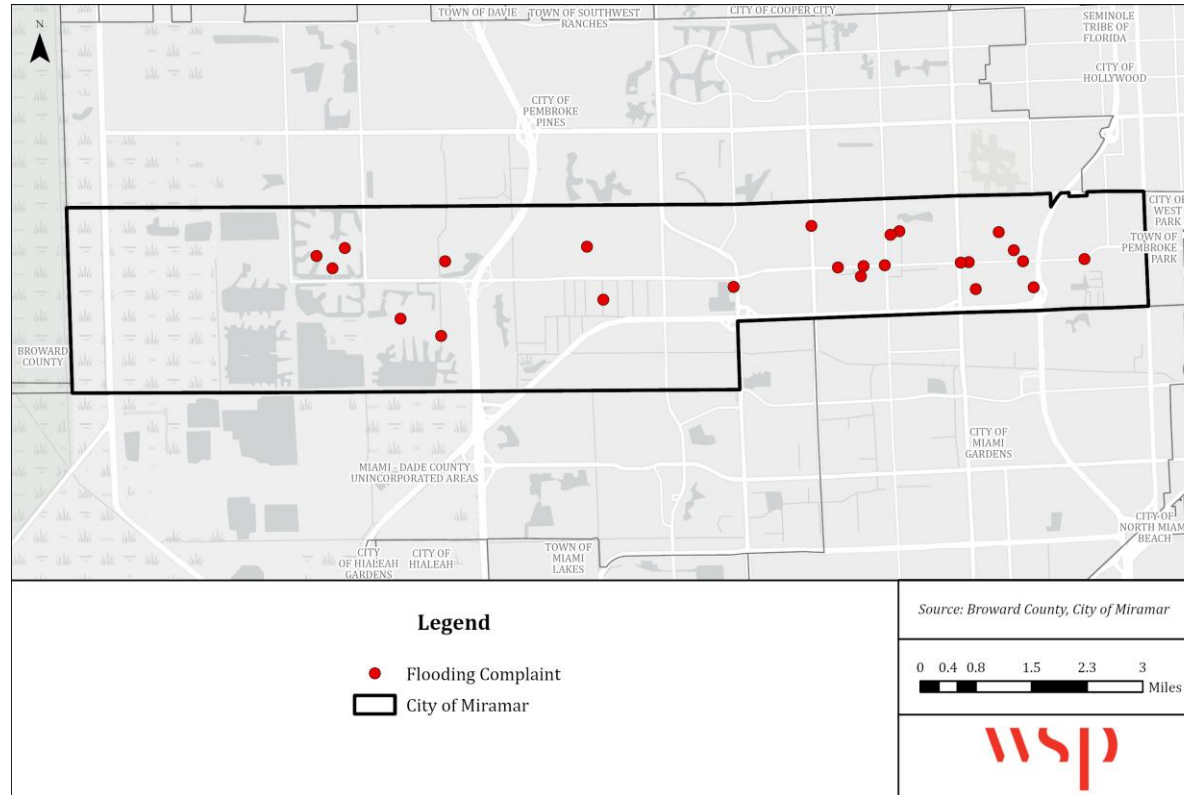
- What are some steps the City could take to reduce risk of flooding in your neighborhood?

- Debris management (trees/clippings)
- Drain cleaning
- Drainage improvement
- Monitor water levels in lakes and canals/lower water levels
- Home elevation ← Publicize Elevate Florida Program
- Everglades preservation
- Have sandbags available
- Remove asphalt driveways ← Incentivize replacement of impervious surfaces

Establish debris management program

Majority of responses centered around drainage maintenance and improvements

Flooding Hotspots & Capital Improvement Projects



Areas/locations for new CIP projects:

- Locations noted in public survey
- Areas impacted by the April 2023 floods
- Expand or build off existing CIP projects/locations
- Create inventory of problem areas?

- Any additional hot spot data the City maintains?
- Any additional locations to note?

Mitigation Action Plan

FEMA Hazard Mitigation Categories

Prevention

- Ordinances / Development Regulations (Land use planning)

Potential Actions

- *Adopt a post-disaster recovery ordinance based on a plan to regulate repair activity*
- *Limit allowable impervious surface within developed parcels*
- *Develop a substantial damage plan*

Property Protection

- Weatherproofing/Floodproofing
- Elevation/Acquisition of flood-prone homes (high-cost for slab-on-grade)

Potential Actions

- *Develop a voluntary property acquisition plan and program for repetitive loss areas*
- *Establish rain barrel program*
- *Coordinate with SFWMD and Broward County to identify problem locations during inspections and maintenance of canals*

Chapter 6 - FLOOD DAMAGE PROTECTION

601. General administration.

601.1.

Title. These regulations shall be known as the Floodplain Management Ordinance of the City of Miramar, hereinafter referred to as "this chapter."



CITY OF MIRAMAR COMPREHENSIVE PLAN PART 1: GOALS, OBJECTIVES AND POLICIES

TO GUIDE FUTURE GROWTH AND COMMUNITY IMPROVEMENT

CITY OF MIRAMAR COMMISSION:

WAYNE M. MESSAM, MAYOR

ALEXANDRA P. DAVIS, VICE MAYOR

WINSTON F. BARNES, COMMISSIONER

YVETTE COLBOURNE, COMMISSIONER

MAXWELL B. CHAMBERS, COMMISSIONER

ADOPTED JANUARY 2021

FEMA Hazard Mitigation Categories

Structural Projects

- Drainage improvements (increase capacity)
 - Historic Miramar Drainage improvements
- Floodwalls, small berms, other minor structural projects in areas that cannot otherwise be mitigated

Potential Actions

- *Increase drainage capacity in known problem areas*
- *Existing or upcoming CIP projects*

Public Education/Awareness

- Ask residents to help keep storm drains clear of debris before storms

Potential Actions

- *Targeted outreach to vulnerable populations*
- *Develop accessible information on ways to protect homes from flooding (FEMA Brochures)*



Here in South Florida, water is everywhere - the Everglades; miles of beaches; heavy rains in the summer. But have you ever considered what happens to stormwater when it rains? Do you know how the rain that falls on your yard and in your neighborhood is carry away? Where does it go and how does it get there?

FEMA Hazard Mitigation Categories

Natural Resource Protection

- Maintain open space in/around high flood risk areas
- Increase urban tree coverage

Potential Actions

- *Create plan for improved vegetative management around canals to improve water quality*
- *Coordinate open space opportunities with flood control needs for new developments and repetitive loss areas (coordination between parks and rec and stormwater department)*

Emergency Services

- Improved hazard warning systems
- Redundant power systems for critical facilities

Potential Action

- *Work with organizations serving functional/access needs populations to provide support during disasters*



Relevant Actions: Comprehensive Plan

Conservation Element

- **Policy 3.2** – Continue to manage and improve the existing Stormwater Utility District to finance drainage improvements, particularly in eastern Miramar.
- **Policy 5.1** – Use land dedications, long-term lease agreements, open space requirements, easements, fee-simple purchase and other mechanisms to preserve environmentally sensitive lands or areas of native vegetation, which warrant preservation pursuant to the Land Development Code.
- **Policy 5.2** – Pursue with the appropriate entities, for the purposes of preserving undeveloped land, the acquisition of land in the vicinity of I-75 and Pembroke Road, and for the purposes of a nature center or similar educational use, the acquisition of land in the Everglades Buffer, west of S.W. 196th Ave
- **Policy 7.8** – As part of the Land Development Code, protect present and future environmentally-sensitive lands by requiring their dedication for preservation in perpetuity and by designating them as natural reservations on both the Future Land Use and Zoning Maps.

Any specific improvements?

Recreation & Open Space Element

- **Policy 2.1.1** – Maintain and enhance the Miramar Parkway Scenic Corridor, providing for landscape easements and installation of lush landscape improvements along the corridor that balance aesthetics with function of the existing and future land use.

Could include LID techniques or green infrastructure

Relevant Actions: Broward County Resilience Plan

- **Develop Green Streets Program** – Increase available green space for drainage along roadways, including bioswales, by providing guidance and incentives to convert selected neighborhoods from two-way to one-way or one-lane roads and widen the drainage areas along the ROW.
- **Increase Pervious Percentages** – Implement a program that provides incentives for property owners to convert impervious areas to pervious areas on private property for purposes of drainage.
- **Increase Stormwater Storage Management Requirements** - Enhance on-site storage capacity requirements for land being developed or redeveloped, promoting better stormwater management and resilience.
- **Promote Resilient Land Use on Private Properties** – Provide development incentives and variances at new developments and redeveloping properties in exchange for additional storage and/or significant green infrastructure if a “net benefit” to the community would be achieved.

Possible Actions – Stakeholder Input

- **Engineers:** *What types of studies and/or structural projects would you like to see completed in the long-term?*
- **Developers:** *What are some flood mitigation techniques you would like to see used more often in new development? How can the City provide support? What are your challenges with implementation?*
- **Insurance:** *What advice would you give homeowners in order to protect their homes (outside of purchasing insurance)? Are there gaps in people's understanding of flood insurance?*
- **Response agencies:** *What types of emergencies are you most often responding to during flood events? What trainings, tools, other resources would be useful?*
- **Schools:** *Are there opportunities for education/outreach to your students and community?*
- **Residents/community:** *What successful mitigation projects have you observed in your community that could be expanded across the City?*
- **Public health/medical:** *Who have you found to be most vulnerable/in need of support during flood events and what could be done to aid them?*
- **Are there any projects you would like to implement/lead?**

Mitigation Action Plan

Strategy Submission Form

Please fill out and submit by: **Friday, December 12th**

Scan QR code



<https://forms.office.com/e/Lp6Brw0dmF>

City of Miramar FMP Strategy Submission Form

Please use this form to submit your recommendation(s) for mitigation strategies to be included in the forthcoming City of Miramar, FL Floodplain Management Plan. Add as much detail as you feel is necessary on how the project will be implemented. Feel free to submit multiple forms if you would like to recommend multiple strategies.

When you submit this form, it will not automatically collect your details like name and email address unless you provide it yourself.

* Required

1. Your Name, Department, and Contact Information *

Enter your answer

2. Flood Mitigation Strategy/Project Title *

Enter your answer

3. Strategy Description, Background, Issue, Benefits *

Enter your answer

Program for Public Information



PPI – Target Areas/Audiences & Topics/ Messages

Target Areas:

1. Special Flood Hazard Areas (SFHA)
2. Repetitive Loss Areas
3. Realtors, Lenders, and Insurance Agents (Audience)

Target Audiences:

1. *Homeowners Associations*
2. Non-English-Speaking Populations
3. *Landscapers & Property Managers*

CRS Priority Topics:

- Know your hazard
- Insure your property
- Protect yourself and your family
- Protect your property
- Build responsibly
- Protect natural floodplain functions

Additional Topic Ideas:

- Hurricane Preparedness
- General Preparedness
- Reduce Stormwater Flooding
- Flood Education

PPI – Outreach Projects

- 10-topic brochure
 - Mailed to SFHA; RLAs; Realtors, lenders, & insurance agents
- Hard copy brochures at five static locations
 - Locations?
- Outreach/presentations to HOAs
- Presentations to schools
- Landscaping brochures to property managers?



The Stormwater Management program encompasses canal management, flood mitigation, pollution control, drainage installation and guardrail maintenance.

Next Steps





Next Steps

Project Schedule

June

Project Kickoff Meetings
Committee & Public Meetings

August

Meeting 2
FMP Risk Assessment Review
PPI Target Areas/Audiences and Topics

October

Meeting 3
FMP Capability & Mitigation Strategy
PPI Outreach Projects

January

Final Draft Plan Review Meetings
Committee & Public Meetings

Next Steps

What's Next

- Review the draft HIRA and submit comments by Friday, November 21st
- Submit mitigation actions via email or submission form by Friday, December 12th
- Send revisions/comments on Plan Goals by Friday, December 12th

Schedule next FMPC Meeting & Final Public Meeting

City of Miramar FMP Strategy Submission Form



<https://forms.office.com/e/Lp6Brw0dmF>

Thank you

Questions?

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Planner: Abby Moore – abigail.moore@wsp.com

Planner: Ranger Ruffins – ranger.ruffins@wsp.com



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