



WEST PALM BEACH

Development Services

City of West Palm Beach

Floodplain Management Plan Draft Action Plan

August 3, 2016

The projects in this draft Action Plan are in order by the six categories of floodplain management activities identified by FEMA's *Community Rating System Manual*:

1. Preventive
2. Property Protection
3. Natural Resource Protection
4. Emergency Services
5. Structural Projects
6. Public Information

The projects will be prioritized at a later date, taking into consideration the benefits that would result from the mitigation actions and projects versus the cost of those actions along with other factors, prior to August 18, 2016. The prioritization procedure will be included in the Action Plan, prior to August 18, 2016. At this time, the projects are numbered only for identification purposes.

Preventive

These activities keep problems from getting worse. The use and development of flood-prone areas is limited through planning, land acquisition, or regulation. They are usually administered by building, zoning, planning, and/or code enforcement offices.

1. Implement one (1) foot freeboard regulation, which is a Class 4 pre-requisite in the CRS Program. Currently the City has six (6) inch freeboard. A freeboard requirement adds height above the base flood elevation to provide an extra margin of protection for a building to account for waves, debris, miscalculations, or lack of data. A freeboard requirement of one foot means that the level of protection for the lowest floor, machinery and equipment, etc. is one foot above the base flood elevation.
2. The City will continue to require that installation of stormwater management facilities made necessary by new development is the responsibility of the developer.
3. Evaluate the *Floodplain Management Plan*, particularly the Action Plan, annually.

- 4.** Update the *Floodplain Management Plan* every five years.
- 5.** The City will continue to require designation of open space property for all major development and consider providing incentives.
- 6.** Encourage drainage solutions such as the use of pervious concrete and pavement.
- 7.** Encourage developing provisions for low-impact stormwater design management practices.
- 8.** Continue to support the City's efforts to improve its classification in the Community Rating System, thus enhancing the City's flood mitigation efforts while securing insurance premium rewards for its residents and businesses.
- 9.** Update the City's Watershed Master Plan.
- 10.** Continue to leverage existing and ongoing hydrogeological studies. Perform hydrogeological assessment.
- 11.** Coordinate plan for floodplain and stormwater management. Continue various means of communication, both internal and external.
- 12.** Update any City ordinances that relate to Floodplain Management. Consolidation, updates, and revisions will be considered.
- 13.** Modify the City's climate change practices through the development of better data and more robust partnerships. The City will maintain its aggressive approach in this endeavor.
- 14.** Include Climate Change/Sea Level Rise Planning in the City's Watershed Master Plan.
- 15.** Continue emergency building permit regulations and procedures. After a major storm event the Building Department can issue emergency permits in the field. The resident is required to formally apply for the permit later.

Property Protection

These activities are usually undertaken by property owners on a building-by-building or parcel basis.

- 16.** Continue to prioritize the reduction of repetitive loss properties through various means of mitigation, update repetitive loss forms, and remove properties from the Repetitive Loss List, according to CRS program procedures.
- 17.** Collaborate with the Southeast Florida Regional Climate Change Compact as they make recommendations for land development standards with respect to low-lying coastal areas.
- 18.** Encourage all residents and business owners to purchase flood insurance.
- 19.** Encourage flood-proofing techniques in order to preserve and revitalize neighborhoods.

Natural Resource Protection

These activities preserve or restore natural areas or the natural functions of floodplain and watershed areas. They are implemented by a variety of agencies, primarily parks, recreation, or conservation agencies or organizations.

- 20.** Consider expansion of the City's properties that are designated natural and beneficial areas.
- 21.** Encourage individual property owners to pursue percolation-oriented drainage improvements using best management practices through outreach and education. Drainage that seeps into the soil, rather than being directed out to the ocean, provides multiple benefits. Not only does it mitigate flooding, but it also recharges the aquifer, enhances water quality, and reduces erosion.
- 22.** Implement strict enforcement of best management practices for reducing erosion during development activity.
- 23.** Continue multi-faceted approach to ecosystem protection.
- 24.** Focus on water quality, restoring natural hydrologic regimes, and maintaining the baseline of ecology to avoid natural system degradation.

Emergency Services

Measures are taken during an emergency to minimize its impact. These measures are usually the responsibility of city or county emergency management staff and the owners or operators of major or critical facilities.

- 25.** Coordinate the update of information pertaining to hurricane and flood warnings. This update responsibility may include, but not be limited to, the following media:
 - City website
 - Email advisements
 - Television Government Access Channel
 - Reverse 911 telephone system
 - e-breaking news
 - Public Service Announcements through local media (radio, newspapers, etc.)
 - Social media

26.Ensure adherence to the City's Comprehensive Emergency Management Plan (CEMP), particularly in the event of evacuation orders. Key components of the procedures should be reviewed before June 1st of each year.

27.Immediately prior to, during and after a hurricane or flood event, post pertinent information concerning major points of interest, such as bridge and road closures, evacuation orders, emergency shelter locations and electrical outages, utilizing the following media:

- City website
- Email advisements
- Television Government Access Channel
- Electronic message boards
- Reverse 911 telephone system
- e-breaking news
- Public Service Announcements through local media
- Brochure handouts at Points of Distribution (PODs)
- Department of Health Emergency Health Inoculations

28.Integrate response to flooded homes with appropriate response organizations (Red Cross, faith-based organizations, other non-profit entities, Community Emergency Response Team (CERT), etc.).

29.Annually update the list of Critical Facilities in the City.

Structural Projects

These activities keep floodwaters away from an area with a levee, reservoir, or other flood control measure. They are usually designed by engineers and managed or maintained by public works staff.

30. Stormwater Bond Capital Improvement Projects to be implemented

Rank	Project ID	Project Name
1	201	26th St and Flagler Dr Storm Sewer Rehab
2	301	Storm Sewer Rehab for Florida Ave and Claremore Dr
3	302	Outfall Rehab for S Flagler Dr at Monroe Dr
4	7A	Datura Green Streets Initiative
5	303	Storm Sewer Rehab on Pinewood Ave
6	54B	Gregory Road Green Streets
7	1J	Pineapple Park Stormwater Improvements
8	304	Storm Sewer Rehab for Windsor Ave Crossing the Rail Lines Near 39th Ct
9	305	Storm Sewer Assessment and Rehab at the WPB Golf Course
10	500	Currie Park Green Streets and Stormwater Improvements
11	308	Storm Sewer Rehab on Ponce de Leon Ave
12	309	Storm Sewer Rehab at Floral Ave and 33rd Ct
13	310	Storm Sewer Rehab for 33rd St
14	311	Storm Sewer Rehab for E Okeechobee Blvd Between Alabama Ave and S Quadrille Blvd
15	312	Storm Sewer Rehab for Greenwood Ave
16	313	Storm Sewer Rehab for Banyan Blvd Near Intracoastal
17	315	Phipps Park Stormwater Improvements
18	316	Storm Sewer Rehab for Cranesnest Way and S Dixie Hwy
19	78A	Marlborough Rd Stormwater Improvements
20	100	Downtown Alley Initiative
21	317	Storm Sewer Rehab for Technology Place
22	30A	Washington Road Outfall Rehabilitation
23	321	Storm Sewer Assessment and Rehab for E. Datura St.
24	324	Storm Sewer Rehab for Hibiscus St
25	325	Storm Sewer Rehab for 25th St
26	326	Storm Sewer Rehab for Manning Ave
27	327	Storm Sewer Rehab for 21st St
28	80A	Sophia Drive Paving and Drainage Improvements: Configuration 1
29	503	Windsor Ave. Drainage Improvements: Configuration 1
30	96A	Grant Street Outfall
31	24B	North Flagler Improvements: Phase II

31. Smaller rehab Capital Improvement Projects to be implemented:

Rank	Alternative ID	Alternative Name
1S	307	Outfall Rehab At Greenwood Dr
2S	314	Storm Sewer Rehab for 59th St at Broadway Ave
3S	318	Outfall Rehab for Arkona Ct at the Intracoastal
4S	319	Outfall Rehab for S. Dixie Hwy at the C-51 Canal
5S	320	Outfall Rehabilitation for Sunset Road and S. Flagler Dr.
6S	322	Storm Sewer Rehab for Sunset Rd Crossing S Dixie Hwy
7S	323	Storm Sewer Rehab for Georgia Ave
8S	328	Storm Sewer Rehab for Fern St
9S	329	Storm Sewer Rehab for Alabama Ave
10S	24A	North Flagler Improvements: Phase I
11S	70C	Omar Road Green Streets Pilot Project
12S	82A	Avenida Drainage Improvements: Configuration 1
13S	69A	Andrews Road Drainage Improvements: Configuration 1
14S	70A	Omar Road Drainage Improvements: Configuration 1
15S	84C	Flagler Drive Storm Sewer (Near 35th St.): Configuration 3

32. Prioritize addressing of flooding issues in repetitive loss areas and implement capital projects to mitigate flooding. Drainage issues should continue to be given top priority in the Capital Improvement Program, particularly in repetitive loss areas. In order to supplement funding, the City must continue to be proactive in obtaining funding for this program. The following sources are recommended:

- Community Development Block Program
- Community Redevelopment Agency
- Flood Mitigation Assistance Grant (FMA)
- Hazard Mitigation Grant Program (HMGP)
- Pre-Disaster Mitigation Grant Program (PDM)
- South Florida Water Management District (SFWMD) Cooperative Funding Program Grants
- Urban Small Waters Grant
- Waterways Assistance Program
- US Economic Development Administration (EA)
- Florida Recreation Development Assistance Fund
- Land and Water Conservation Fund
- Five Star/Urban Waters Restoration
- Florida Communities Trust
- Recreational Trails Program
- Urban and Community Forestry
- Coastal Partnership Initiative
- Section 319 Grants
- Florida Department of Environmental Protection TMDL grant
- Community Budget Issue Request (Florida Legislature direct application for water-related projects)

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Public Information

These activities advise property owners, potential property owners, and visitors about the hazards, ways to protect people and property from the flood hazard, and the natural and beneficial functions of local floodplains. They are usually implemented by a public information office.

- 33.**Based on availability and prioritized needs, provide knowledgeable staff to assist citizens before, during, and after a flood event to help them understand their options for repairing/rebuilding/flooding/mitigation.
- 34.**Post the *Palm Beach County Hurricane Survival Guide* on the City website in a location that is easily accessed by the community.
- 35.**Advertise the availability of evacuation assistance provided by the West Palm Beach Police Department.
- 36.**The City should expand its current policy of conducting a public outreach campaign, utilizing:
 - chambers, civic groups and other stakeholders in the City
 - handouts, brochures, newspapers in City Hall lobbies
 - handouts available during City public events
 - code enforcement personnel
 - outreach to homeowners' associations
 - outreach to lower-income neighborhoods
 - Sustainability outreach meetings
 - Create a flood insurance kit, similar to the conservation kit already in place
 - Local Meteorologists
- 37.**Work with City Housing Program to provide education to homebuyers regarding flood information.
- 38.**Develop early warning systems and social media applications to both inform residents and visitors of extreme high-tide events and to raise overall awareness on sea level rise and climate change issues.
- 39.**Consider roadway signage prior to the events for tidal flooding zones.
- 40.**Develop a reverse 911 system, such as CodeRed, to deliver warning messages.
- 41.**Consider flood sensors to be placed in water bodies.
- 42.**Initiate a regional public education campaign to educate residents, business owners, and policy makers on the merits of planting trees and preserving open land such as Grassy Waters Preserve, as a means of adaptation to sea level rise in South Florida.