Local Government Guide to Understanding the 2015 Florida Peril of Flood Act

Tampa Bay Regional Planning Council

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The 2015 Florida Peril of Flood Act

On May 21, 2015, Governor Rick Scott approved the Committee Substitute for Committee Substitute for Committee Substitute for Senate Bill Number 1094, an act related to the peril of flood. The bill, introduced by State Senator Jeff Brandes of St. Petersburg, passed overwhelmingly in both chambers of the Florida legislature, with a unanimous 39-0 tally in the Florida Senate and an 89-26 vote in favor of passage in the Florida House of Representatives. The governor's signature enshrined the 2015 Florida Peril of Flood Act (CS/CS/CS/SB 1094 [2015]) into law (Laws of Florida 2015-69), effective July 1, 2015.

The 2015 Florida Peril of Flood Act covers three main topic areas. Generally, the Act:

1. Compels municipalities and counties in Florida's coastal areas to adopt goals, objectives, policies, and strategies into the coastal management element of the local government's comprehensive plan related to flood risks to real property and the built environment.
2. Requires surveyors and mappers to submit completed elevation certificates to the Florida Division of Emergency Management
3. Addresses several issues related to flood insurance, including flood insurance products offered by private insurers.

This report focuses solely on Item Number 1 above, which is the requirement for coastal communities in Florida to address flood risks related to high-tide events, storm surge, flash floods, stormwater runoff, and sea-level rise in the coastal management element of the local government comprehensive plan. Specifically, the 2015 Florida Peril of Flood Act outlines six (6) provisions related to flood risks that local governments must address in a redevelopment component that shall be included in the coastal management element of the comprehensive plan. The Act applies only to the jurisdictions in Florida that, pursuant to Section 380.24, Florida

Statutes, are required to have a coastal management element. The six comprehensive planning provisions are listed in Section 163.3178(2)(f), Florida Statutes as follows:

> A redevelopment component that outlines the principles that must be used to eliminate inappropriate and unsafe development in the coastal areas when opportunities arise. The component must:
> 1. Include development and redevelopment principles, strategies, and engineering solutions that reduce the flood risk in coastal areas which results from high-tide events, storm surge, flash floods, stormwater runoff, and the related impacts of sea-level rise.
> 2. Encourage the use of best practices development and redevelopment principles, strategies, and engineering solutions that will result in the removal of coastal real property from flood zone designations established by the Federal Emergency Management Agency.
> 3. Identify site development techniques and best practices that may reduce losses due to flooding and claims made under flood insurance policies issued in this state.
> 4. Be consistent with, or more stringent than, the flood-resistant construction requirements in the Florida Building Code and applicable flood plain management regulations set forth in 44 C.F.R. part 60.
> 5. Require that any construction activities seaward of the coastal construction control lines established pursuant to s. 161.053 be consistent with chapter 161.
> 6. Encourage local governments to participate in the National Flood Insurance Program Community Rating System administered by the Federal Emergency Management Agency to achieve flood insurance premium discounts for their residents.

The 2015 Florida Peril of Flood Act addresses flood risks to real property and the built environment. Flood-related human health and safety issues are not directly addressed in the 2015 Florida Peril of Flood Act. Mitigation of flood risks to human health and safety are covered in other sections of Florida statutes, particularly in those sections that outline the roles and requirements of local and state emergency management agencies and other public safety organizations. In contrast, the 2015 Florida Peril of Flood Act's requirements for local government comprehensive plans provide an increased awareness of the potential economic

impacts of flooding (loss of real property, losses related to structural damage, etc.), especially among local government planning and development services personnel that are charged with managing and regulating growth and land use within Florida's cities and counties.

Scenarios or Opportunities Where Inappropriate or Unsafe Development can be Eliminated or Coastal Flood Risk Reduction Measures can be Implemented

Adoption of comprehensive plan goals, objectives, and/or policies that help to eliminate inappropriate or unsafe development or reduce coastal flood risks can help a local government to meet the requirements of the 2015 Florida Peril of Flood Act. Some example of these types of scenarios and opportunities are provided in this section.

Post-disaster Acquisition of Repetitive Loss Properties

Comprehensive plan policies may be developed that encourage local government acquisition of properties that the Federal Emergency Management Agency (FEMA) has identified as repetitive flood loss properties. Local governments may look to federal grant programs, such as the Hazard Mitigation Grant Program (HMGP), Flood Mitigation Assistance (FMA) grants, or Community Development Block Grants (CDBG) as potential funding sources to help contribute to the costs of property acquisition for repetitive loss properties.

Post Disaster Redevelopment Plans (PDRP)

Post disaster redevelopment plans may identify target areas for development or redevelopment following a disaster such as a major flood or storm surge event. By identifying these areas in advance, the local government may direct development away from flood hazard areas and into areas that are less vulnerable to flood events.

Public Information and Outreach

The local government may encourage education and outreach to its residents and businesses, and to future potential residents and businesses, about the risks and costs involved with owning or leasing a structure in flood vulnerable locations. By doing so, the public may make informed decisions about where they live or the location where they have a business. By understanding the threat to public safety and the increased costs associated with locating in flood-vulnerable areas.

Principles, Strategies, and Engineering Solutions that Reduce Flood Risks in Coastal Areas

There are six requirements mandated by the 2015 Florida Peril of Flood Act for the redevelopment component of the coastal management element of the local government comprehensive plan. The first requirement listed in the Act, and now enshrined in Florida Statutes in Section 163.3178(2)(f), is the inclusion of "development and redevelopment principles, strategies, and engineering solutions that reduce the flood risk in coastal areas which results from high-tide events, storm surge, flash floods, stormwater runoff, and the related impacts of sea-level rise." This section of this report will outline the types of flood risk reduction principles, strategies, and engineering solutions that could fulfill this requirement.

Protect and Maintain Natural Flood Features

Natural resources provide flood protection, and it is important to preserve this type of protection to mitigate the impacts of flooding on an area. The Federal Emergency Management Agency (FEMA) has identified several natural resource protection measures that can be incorporated into coastal management element policies that would likely qualify as principles and strategies that reduce flood risks (FEMA, 2013) . These include:

- Protecting and enhancing landforms that serve as natural mitigation features (i.e., riverbanks, wetlands, dunes, etc.).
- Using vegetative management, such as vegetative buffers, around streams and water sources.
- Protecting and preserving wetlands to help prevent flooding in other areas.
- Establishing and managing riparian buffers along rivers and streams.
- Retaining natural vegetative beds in stormwater channels.
- Retaining thick vegetative cover on public lands flanking rivers

Preserve Floodplains as Open Space

The preservation of natural areas provides habitat and ecosystem benefits. In addition, open space preservation helps to mitigate flood risks. Some principles and strategies that can be incorporated as goals, objectives, and/or policies in the local government comprehensive plan include (FEMA, 2013):

- Developing an open space acquisition, reuse, and preservation plan targeting hazard areas.
- Developing a land banking program for the preservation of the natural and beneficial functions of flood hazard areas.
- Using transfer of development rights to allow a developer to increase densities on another parcel that is not at risk in return for keeping floodplain areas vacant.
- Compensating an owner for partial rights, such as easement or development rights, to prevent a property from being developed.

Limit or Restrict Development in Floodplain Areas

In areas where it is practical, limiting or restricting development in identified floodplains has the effect of reducing future flood losses (FEMA, 2013). The following are examples of

principles and strategies may be incorporated into the coastal management element of the local government comprehensive plan to help meet the requirements of the 2015 Florida Peril of Flood Act. They include:

- Prohibiting or limiting floodplain development through regulatory and/or incentive-based measures.
- Limiting the density of developments in the floodplain.
- Requiring that floodplains be kept as open space.
- Limiting the percentage of allowable impervious surface within developed parcels.
- Developing a stream buffer ordinance to protect water resources and limit flood impacts.
- Prohibiting any fill in floodplain areas.

Adopt Polices to Reduce Stormwater Runoff

Reducing potential stormwater runoff mitigates flood losses (FEMA, 2013). Adoption of polices related to stormwater reduction principles and strategies will help the local government to comply with the 2015 Florida Peril of Flood Act. These include:

- Designing a "natural runoff" or "zero discharge" policy for stormwater in subdivision design.
- Requiring more trees be preserved and planted in landscape designs to reduce the amount of stormwater runoff.
- Requiring developers to plan for on-site sediment retention.
- Requiring developers to construct on-site retention basins for excessive stormwater and as a firefighting water source.
- Encouraging the use of porous pavement, vegetative buffers, and islands in large parking areas.

- Conforming pavement to land contours so as not to provide easier avenues for stormwater.
- Encouraging the use of permeable driveways and surfaces to reduce runoff and increase groundwater recharge.
- Adopting policies related to erosion and sedimentation control for construction and farming.

Flood Resistant Design and Construction Engineering Solutions as Identified in ASCE 24-14

Buildings and structures designed according to the standards identified by the American Society of Civil Engineers (ASCE) in the publication *ASCE 24-14: Flood Resistant Design and Construction* are better able to resist flood loads and flood damage (FEMA, 2015). Comprehensive plan policies based on these engineering solutions may be developed to meet the requirements of the 2015 Florida Peril of Flood Act. There are many engineering standards in ASCE 24-14 that apply to structures in Special Flood Hazard Areas. For buildings in FEMA-designated Flood Zone V and in Coastal A zones, some of these specific engineering solutions include:

- Buildings must be supported on piles, drilled shafts, caissons, or other deep foundations (including columns, and shear walls) and foundation depth must take into account erosion and local scour.
- Stem walls supporting floors and backfilled with soil or gravel are allowed in Coastal A Zones if designs provide for the effects of local scour and erosion.
- Walls designed to break away must not produce debris that is capable of damaging structures.

- Erosion control structures (bulkheads, seawalls, revetments) must not be attached to buildings or direct floodwater into or increase flood forces or erosion impacts on structures.
- Pools must be elevated, or designed to breakaway without producing damaging debris, or designed to remain in the ground without obstructing flow that causes damage. Pools must be structurally independent of buildings and structures unless pools are located in or on elevated floors or roofs that are above the design flood elevation.

The complete publication *ASCE 24-14: Flood Resistant Design and Construction* is available for purchase from the American Society of Civil Engineers website: http://www.asce.org/templates/publications-book-detail.aspx?id=6963. Highlights of ASCE 24-14 may be accessed online through FEMA's website: https://www.fema.gov/media-library-data/1436288616344-93e90f72a5e4ba75bac2c5bb0c92d251/ASCE24-14_Highlights_Jan2015_revise2.pdf.

Site Development Techniques that may Reduce Losses to the Local Government and Property Owners Due to Coastal Flooding

The third requirement for the coastal management element of the local government comprehensive plan listed in the 2015 Florida Peril of Flood Act (Section 163.3178(2)(f), Florida Statutes) is to "identify site development techniques and best practices that may reduce losses due to flooding and claims made under flood insurance policies issued in this state." The following are some examples of site development techniques that may be included in Peril of Flood Act-related comprehensive plan amendments. All of the techniques noted below are forms

of low impact development (LID), which utilize vegetation and natural features to minimize surface runoff and reduce flood risks.

Open Space Preservation

As stated previously in this report, open space preservation may help to mitigate flood losses. The Town of Longboat Key's Zoning/Land Development Code contains a section that requires preservation of open space in all residential planned unit developments (§158.069 - Open Space). This section of the Town's code states:

> All residential planned unit developments shall preserve a minimum of 50 percent of the gross land area as open space. Of the required 50 percent open space, only a maximum of 60 percent of the total required open space acreage may be comprised of a golf course. Relative to nonresidential planned unit developments, all such developments consisting of tourist resort/commercial facilities shall provide a minimum of 50 percent of the gross land area as open space. Wetland and landlocked waterbodies may be used in calculating open space, as long as a minimum of 40 percent of the upland property is comprised of open space. In other types of nonresidential planned unit developments a minimum of 20 percent of the gross land area shall be preserved as open space. Wetlands and landlocked waterbodies may be used in calculating open space, as long as a minimum of 15 percent of the upland property is comprised of open space. For all mixed use planned unit developments, a minimum of 50 percent of the residential and 20 percent of the nonresidential gross land area shall be preserved as open space. In all of the above cases, parking areas and vehicle access facilities shall not be considered in calculating open space.

Setbacks and Buffers

Setbacks and buffers are commonly used by local governments to protect the long-term viability of natural protective features, such as floodplains, wetlands, and dunes (Florida Department of Community Affairs, 2005). These specified areas provide undisturbed land cover and reduce the impacts of construction and subsequent use of developed lands adjacent to natural protective features. Flood losses may be reduced by minimizing impacts to floodplains, wetlands, dunes, and other natural protective features within a community.

Landscape Retention Areas

Stormwater retention areas that are integrated into a site's landscaping provides the dual benefits of reducing flood risks and reducing the amount of harmful stormwater pollutants making their way into creeks, streams, rivers, bays, and other waterways (Florida Department of Environmental Protection and Florida Department of Community Affairs, 2002). This type of retention area maintains a site's hydrology while allowing stormwater to infiltrate into the soil or evaporate. Landscape retention areas in parking lot medians, along the edges of impervious surfaces, and at the base of buildings can be effective in reducing flood risks by reducing surface runoff while maintaining an aesthetically-pleasing look for the developed site.

Pervious Pavement/Porous Concrete

Pervious (porous) concrete pavement is a paving material containing void spaces that allows stormwater run through it and seep into the soils beneath the paved surface (National Ready Mix Concrete Association, 2011). Because stormwater flows through the pavement, surface runoff is reduced. Pervious pavement is generally not as strong as other concrete and asphalt paving materials, so it may not be suitable for all site applications. However, the risk of localized flooding may be reduced in those sites where the use of pervious pavement is applicable (Florida Department of Environmental Protection and Florida Department of Community Affairs, 2002).

Examples of Communities that have Implemented Flood Risk Reduction Policies and Measures

Broward County

Adopted into is comprehensive plan in 2013, the Broward County Climate Change Element identifies flood- and sea level rise-vulnerable areas and develops adaptation strategies for the built environment, natural systems, and green infrastructure. The climate change element contains policies that:

- Protect coastal investments and infrastructure.
- Maintain shoreline protection and erosion control.
- Works to make sea level rise-vulnerable areas more climate resilient by discouraging density increases and encouraging the use of adaptation and mitigation strategies.
- Calls for the designation of Adaptation Action Areas
- Encourages municipalities within Broward County to develop policies to improve resilience to coastal and inland flooding, salt water intrusion, and other related impacts of climate change and sea level rise.

The complete Broward County Climate Change Element may be accessed online here: http://www.broward.org/Planning/FormsPublications/Documents/Climate-Change-Element.pdf.

City of Miami Beach

Miami Beach is often singled out in media reports and other information sources as a community that is already having to deal with the effects of sea level rise. "Blue sky" flooding during astronomical high tides is a somewhat regular occurrence in Miami Beach, necessitating the use of pumps to remove sea water from parts of the city.

In addition to other adaptation measures, the City of Miami Beach has adopted a Peril of Flood Act-related comprehensive plan amendment that adds objectives and policies to the coastal management element of the City's comprehensive plan related to flooding and the related effects of sea level rise. The adopted amendment contained one objectives and eleven policies related to implementation of the City's adaptation action areas (AAAs). Another new policy gives preference to "highly water absorbent, native, and Florida friendly plants" over other planting materials in the design review process.

City of Satellite Beach

In May 2016, the City of Satellite Beach adopted a comprehensive plan amendment to meet the requirements of the 2015 Florida Peril of Flood Act and to form a unified strategy to address the City's vulnerabilities in reference to coastal erosion, flooding, storm surge, and sea level rise. The new and updated policies to the City's coastal management element:

- Identifies the lands to be included in the City's Inland Flooding Adaptation Action Area (IFAA) and Erosion Adaptation Action Area (EAAA).
- Directs the City to develop a strategic plan to address recurring flooding issues within the IFAAA.
- Identifies potential tools and adaptation measures the City may use to address flooding issues within the IFAAA and the EAAA.

The same comprehensive plan amendment, identified by the state land planning agency as DEO #16-1ESR, also adds policies to the infrastructure element of the City's comprehensive plan that: Establishes a 2070 planning horizon and the U.S. Army Corps of Engineers High scenario for sea level rise for consideration of new infrastructure projects with a life span of 50 years or more.

- Directs the City to develop a standard process for evaluating and recommending new design development standards for new infrastructure projects proposed to be located in the IFAAA and the EAAA.
- Establishes that sea level rise shall be considered for all infrastructure projects located in the IFAAA and considered among design standards for all stormwater management projects in the City.
- Prohibits the construction of public infrastructure or public buildings, with the exception of minor structures, seaward of the Coastal Construction Control Line (CCCL).

The City of Satellite Beach Peril of Flood Act-related amendment may be accessed online using the following link: http://www.satellitebeach.org/Departments/City%20Clerk/City%20Council%20Documents/2016%20Packets/CC%2005-04-6%20Packet%20-%20Workshop%20&%20Regular%20(Items%201-8).pdf#page=17.

Key Lessons and Findings

In the period March through May 2017, the Tampa Bay Regional Planning Council (TBRPC) conducted a series of four (4) workshops on the requirements of the 2015 Florida Peril of Flood Act for local government comprehensive plans. Through the course of conducting these workshops, and in developing this report, TBRPC staff identified several key lessons and findings related to local government implementation of the Peril of Flood Act's requirements. These include:

- Nearly two years after the 2015 Florida Peril of Flood Act took effect, only a handful of Florida's local governments have adopted comprehensive plan amendments related to the Act, and even fewer have adopted amendments that completely comply with the updated Florida Statutes (Section 163.3178(2)(f), Florida Statutes).

- Many local government planners in the Tampa Bay region are looking for clear guidance on the provisions and policy language to include in their coastal management element to bring their comprehensive plan into compliance with Section 163.3178(2)(f), Florida Statutes.
- Many of the requirements for local government comprehensive plans listed in the 2015 Florida Peril of Flood Act are typically not found in the high-level direction-setting goals, objectives and policies of local government comprehensive plans. Instead, many of the required provisions of the Peril of Flood Act are normally found in other local government regulations, such as building codes, land development regulations, zoning codes, and/or floodplain management ordinances. However, coastal management element policies related to the Peril of Flood Act can be written in such a way that both meets the Peril of Flood Act requirement and is also appropriate for the local government comprehensive plan.
- There is a general lack of awareness among local government planners that hazard vulnerability assessments are a necessary part in providing the supporting data and analysis for the development of Peril of Flood Act-related comprehensive plan amendments.
- There are several sources of flood vulnerability analysis information that have already been developed for local governments. Key among these are multijurisdictional Local Mitigation Strategies, which provide a wealth of information about flood and storm surge vulnerability, typically at the both the county and municipal level.

- Information on the potential areas to be affected by sea level rise are readily available. However, analyses of the potential impacts of sea level rise inundation for individual local government jurisdictions will likely have to be developed by the local government.
- In addition to being an excellent source of flood vulnerability data, the Local Mitigation Strategy also contains policies that may be integrated into the local government comprehensive plan to meet Peril of Flood Act requirements. In this way, the 2015 Florida Peril of Flood Act provides an important role in integrating hazard mitigation policies into the comprehensive plan.
- Many local governments have already adopted regulations in their land development code, zoning code, and other plans and ordinances that meet one or more provisions of the 2015 Florida Peril of Flood Act. By developing policies for the coastal management element that are based on these adopted regulations, local governments will find they do not have to "start from scratch" to comply with the provisions of the Peril of Flood Act.
- Not all local governments that are required to have a coastal management element pursuant to Section 380.24, Florida Statutes are also subject to Coastal Construction Control Lines (CCCLs).

References

FEMA. (2013). *Mitigation Ideas: A Resource for Reducing Risk to Natural Hazards.* Washington, D.C.

FEMA. (2015). *Highlights of ASCE 24-14 Flood Resistant Design and Construction.* Accessed April 17, 2017: https://www.fema.gov/media-library-data/1436288616344-93e90f72a5e4ba75bac2c5bb0c92d251/ASCE24-14_Highlights_Jan2015_revise2.pdf.

Florida Department of Community Affairs. (2005). *Protecting Florida's Communities: Land Use Planning Strategies and Best Development Practices for Minimizing Vulnerability to Flooding and Coastal Storms.*

Florida Department of Environmental Protection and Florida Department of Community Affairs. (2002). *Protecting Florida's Springs: Land Use Planning Strategies and Best Management Practices.*

National Ready Mix Concrete Association. (2011). *Pervious Concrete Pavement: An Overview.* Accessed June 5, 2017: http://www.perviouspavement.org/.