

Hillsborough County
2019 Floodplain Management Plan (and Repetitive Loss)
Annual Progress -- Activity 510

Annual recertification: This report serves to meet the annual certification requirements of Hillsborough County due to the number of repetitive flood-loss structures and as a participant with the National Flood Insurance Program Community Rating System (NFIP/CRS). The annual certification augments information provided within the Hillsborough County Floodplain Management Plan (FPMP), beginning on page 20 of the FPMP, and within the LMS, Sections I; and Section V. The adopted annual Community Rating System outreach is also identified within respective documents beginning on page 37 of the FPMP and within the Local Mitigation Strategy. References made within documents continue to list accomplishments associated in the implementation of the Floodplain Management Plan. These items serve as minimum outreach tasks and are addressed similarly each annual period.

During the past year, Hillsborough County maintained the FPMP, which was adopted by resolution. The FPMP was re-approved through the resolution adopted on July 15, 2015 and serves to provide guiding goals and objectives to instruct the LMS Working Group through activities how to continue monitoring and implementation of the FPMP. Currently, an update process is underway for the LMS and the Floodplain Management Plan and placed in a final draft format by January/ February 2020 and to have the final approval by July 2020.

Progress report: The progress report was prepared by the Floodplain Administrator and CRS Coordinator (also certified planner). For credit under the Community Rating System, this information has been provided at a public meeting and has been made available to the media and the public. Copies of this report, the Local Mitigation Strategy (as the Floodplain Management Plan) are available for review through the Hillsborough County Technical Services Division, Hazard Mitigation, 601 East Kennedy Boulevard, 22nd Floor, Tampa, Florida 33602. Additionally, the Local Mitigation Strategy (as the Floodplain Management Plan) are availability on the Hillsborough County website.

This report is prepared for submittal for continued credit under the National Flood Insurance Program Community Rating System (NFIPCRS). It is designed to provide a short update and report on accomplishments toward implementing the County's Floodplain Management Plan (and Repetitive Flood-Loss Plan). Copies of this report have been distributed for dissemination and forwarded to the Board of County Commissioners. Additionally, a copy of this report, following adoption, will be submitted to the State and Federal Emergency Management agencies as part the County's annual CRS recertification; unless, identified as distributed through the County's Insurance Service Office (ISO) representative.

1. Name of the Floodplain Management Plan: Hillsborough County Local Mitigation Strategy and Floodplain Management Plan.
2. Date Adopted: The initial adoption of the Floodplain Management Plan was adopted in May 1998, and subsequently with updates to the Local Mitigation Strategy in 2004, 2006, and 2010, and as amended through the adoption of Appendix O as the Supplement to the LMS on September 22, 2010 (readopted on July 15, 2015). The all-hazards document (Local Mitigation Strategy) has been reviewed and approved for content by the State of Florida and the Federal Emergency Management Agency (FEMA). The LMS was initially adopted in 1999 by the Board of County Commissioners. The County completed a major map modernization activity as a Cooperating Technical Partner with FEMA and replaced current effective maps on August 28, 2008 with a countywide Digital Flood Insurance Rate Map (DFIRM). Additionally, a countywide re-study has been completed by FEMA for coastal areas and by the County for inland and riverine areas. Preliminary coastal maps have been distributed to the county for review. Public meetings were conducted with greater than 1,000 persons attending various outreach meetings. Anticipated adoption of the new maps is some time in 2020.
3. Location where copies are available for review: Hillsborough County Technical Services Division, Hazard Mitigation, 601 East Kennedy Boulevard, 22nd Floor, Tampa, Florida 33602.
Summary of any floods that occurred during the year: During the 2018-2019 reporting period, the County did experience some widespread flooding within the northern and eastern area of the county. The affected area of heavy rainfall occurred mostly within the northwest area of the County.

4. During the 2019 reporting period, there was not a significant flood event as per the previous year –. Assessments continue throughout the year and are performed through the Engineering and Operations Department, Stormwater Section. Additionally, the County continues to prepare for the effects of strong and severe tropical thunderstorms and potential tropical cyclones, and County employees have taken the opportunity to work in response and recovery activities associated with potential impacts. Within 2019, County employees through coordination with all local (municipalities included) and participating private entities, performed flood warning exercises for floods, tropical storm emergencies, and other disasters.
5. What impact did floods have on repetitive flood loss areas? During the previous reporting period, there was no flooding event that occurred or impacted known repetitive flood-loss areas.
6. The section objectives and Action Plan lists objectives of the Plan: There is a guiding goal within the Local Mitigation Strategy (the all-hazards guiding document) and number goals that have been approved through the planning process in which floodplain management objectives and action items have been implemented (Tables 2 through 4). Response to goals and objectives are listed below are reviewed on an annual basis to identify the status in meeting actions to implement the County’s participation with the National Flood Insurance Program Community Rating System. A guiding goal and four objectives are a part of the Local Mitigation Strategy (LMS) and are listed below in Table 1 (also within the LMS, Section V, Page V-1 and within the FPMP Table 9 through Table 13), which are accompanied by goals and objectives that have been adopted to specifically address floodplain management.

**TABLE 1
LOCAL MITIGATION STRATEGY GUIDING PRINCIPALS**

MITIGATION	GUIDING PRINCIPAL	DESCRIPTION
OBJECTIVES	Public Education	Increase public awareness in the use of mitigation programs and techniques to reduce the impacts of natural and society-based hazards.
	Coordination	Coordinate public and private sector participation in identifying and managing and/or implementing mitigation projects and measures throughout Hillsborough County.
	Development Management	Identify and implement a combination of regulatory, incentive and initiative programs that will reduce potential loss and would encourage participation in ongoing hazard mitigation.
	Critical Facilities	Develop and maintain an inventory management system on all data affecting hazard mitigation.

The County continues to perform activities to implement guiding principles. Activity 330 of the CRS program provides added insight with respect to performing outreach to the public and industry partners. The County has conducted public workshops to illustrate programs and techniques to reduce impacts of natural (and society-based) disasters. Through working with three groups sanctioned by the Board of County Commissioners, staff has continued to integrate mitigation initiatives into the community. Committees in which the Hazard Mitigation Program stewards and has worked with respect to hazard mitigation are: the Local Mitigation Strategy Working Group (includes the CRS Committee and its Steering Committee) and the Citizen Corps Council. Additionally, the team has worked similarly with the Community Organizations Assisting in Disasters (COAD) and the Hillsborough County Long-term Redevelopment Program (HELP). Two communitywide committees that are instrumental in working with residents and businesses prepare and recover from disasters.

Hillsborough County development review agencies continue to implement higher standards; whereby, developments and structures are developed and constructed to standards that better protect property ownership and property. Levels of implementation continue to include ensuring compensatory storage is required of development approvals that allow for earthen fill to be placed within Special Flood Hazard Areas affected by stormwater, and ensuring new or substantially improved structures are built to a higher elevation than minimum base-flood elevations. With development, the County continues to manage an inventory of critical facilities; through the

Critical Facility database, which is reviewed by public and private entities and the database is officially stored within the County's Geospatial Services Department.

Regarding repetitive flood-losses, the following are specific activities that have been incorporated in the Hillsborough County planning process since the initial adoption of the Floodplain Management Plan in 1998 (revision adopted in 2010, with the LMS update adopted in July 2015). The activities continue and are associated with repetitive flood-loss protection and are:

- Identify repetitive loss properties and monitoring. The official repetitive loss list from the State has been considerably reduced; however, this list is only associated with those properties with Flood Mitigation Assistance grant eligibility. The County continues to work with the FEMA repetitive flood-loss list, which are listed on AW 501 forms. In addition, the County continues to update stormwater models, which have sections that identify County government repetitive flood-loss areas that are consistent with the identification of flood-losses shown through the Federal flood-insurance program. The review of the repetitive flood-loss list and the Federal flood-insurance claim listing to verify flooding events.
- Ensure properties and properties within repetitive-loss areas are sent informational notices annually (Appendix O, Attachment 18 and 19). The listing of properties that receive notices within the repetitive loss areas has increased due to new construction.
- Review records for any new repetitive loss properties. Permit records are researched and AW 501 forms are reviewed when received.
- Request that FEMA annually notify the County of all flood claims processed. Information was requested late in the reporting period. The late request was due to resource constraints.
- At present, Analyses do not show any new emerging patterns of flooding. There are not any added patterns to flooding within Hillsborough County, which such information is tracked within the Engineering and Operations Technical Services Division.

Objective accomplishments of the Floodplain Management Plan (Annual Progress Report), which have been reviewed within the aforementioned. In addition and listed below is a review of the County's progress in meeting specific Floodplain Management Plan (FPMP) goals, objectives and action statements that are more specific to floodplain management. This specificity assists the County in implementing the Community Rating System (CRS), which grades the various community floodplain management programs and reduces flood-insurance premiums in those communities that meet certain requirements. To verify activities in which the County pursues to better protect the community and property, the County is reviewed with respect to compliance with the CRS program by the Insurance Service Office (ISO). In order to reduce the potential for personal/property losses in flood prone areas and ensure the lowest possible flood insurance premiums for residents and businesses, Hillsborough County has developed the FPMP, which has been approved as a part of the Local Mitigation Strategy.

Goal 1 - Provide leadership in protecting low-income properties and public housing from the impacts of floods. The County's Office of Emergency Management, Engineering and Operations, and Development Services have coordinated to review hazards. Furthermore, the County's Engineering and Operations Department is working to repair and enhance drainage in areas that include low to moderately-low income areas.

Additionally, the County's Technical Services and Office of Emergency Management continue to work with the Planning Commission when requested to work with developers in the Coastal Planning Area to analyze protection of new larger developments with respect to flood hazards; however, due to resource constraints and modifications to the organization teams have not been in the position to conduct comprehensive reviews. This is to ensure maximum protection within areas of mandatory evacuation during a severe storm event.

Goal 2 - Prevent new development in the floodplain from increasing runoff and resulting increases in flood volumes in the floodplain. The County protects wetland and significant wildlife habitat areas through regulations implemented through the County's Natural Resources agency and the Environmental Protection Commission. The County's development regulations offer another avenue of protection to persons and property through the Land Development Regulations and plan-review processes. Regulatory processes through agencies under the Board of County Commissioners have worked well in identifying areas of conservation and preservation for the benefit of

protecting persons and property that serve to provide watershed storage areas and buffer areas to flood high-hazard areas. These regulations have also served to protect surrounding.

The County has delegated authority of reviewing requests to deviate from standards identified within the Flood Damage Control Regulations to the Hillsborough County Building Board (Part 9 of the Land Development Code and Chapter 3 of the Construction Code). During the preceding 12 months, the Building Board did not review requests to deviate from the County's minimum standards. It must be noted that the Building Board has not allowed a deviation from regulations to the minimum standards listed in 44 Codes of Federal Regulations associated with the County's voluntary participation in the National Flood Insurance Program.

Regulations enforced through the Development Services Department and the Environmental Protection Commission have restricted and manage development activity in the floodplain by limiting wetlands encroachment while also preserving open space. This process continues through primarily limiting impervious surface and preservation of critical upland habitat and wetland areas with development approvals. The County's Environmental Lands Acquisition Program ELAPP is in the Unincorporated Special Flood Hazard Area and this, along with other preservation and public land, accounts for greater than 30% of the County's entire unincorporated SFHA.

The County did perform a permissive revision to the Stormwater Management Technical Manual during the past year. In the coming year, there may be changes to the Stormwater Technical Manual that will be properly reported.

Goal 3 - Develop a public awareness program that informs all property owners in the flood zones that they are located in a flood zone. The County has provided assistance to residential flood-loss victims through various avenues that have included letters, telephone calls, E-mails and site visits. County staff site visits include providing assistance to residents in evaluating potential hazards to a structure, which is provided through a certified planner or a licensed engineer (most times by both).

Residents, both existing and potential, can access information relating to the floodplains at County Permit Services Centers and via the Internet through FEMA's Hazard Maps and through the Property Appraiser's site. Floodplain determinations can be requested that provide an official determination of whether a property is located, fully or partially, within a floodplain. Additionally, the County has mapped the floodplains on its Geographical Information System (GIS), and has worked with FEMA to update County Flood Insurance Rate Maps – most recent holistic modifications became effective on August 28, 2008 with modifications performed through Physical Map Revisions becoming effective on September 27, 2013 and 2017. Added, the County is in the process of working with FEMA in the implementation of the update to coastal Flood Insurance Rate Maps.

Flood zone and other flood mapping information are available through the County's Technical Services Division and Building Services Divisions. This local information is currently publicized in flood insurance informational brochures located at the County Administration building and at public libraries. The preceding year illustrates customers being assisted in determining whether their properties were designated as within a Special Flood Hazard Area (designated person's assistance to customers, these numbers do not reflect assistance provided through other agencies or indirectly).

Other flood protection measures primarily involve the elevation of pre Flood Insurance Rate Map (FIRM) structures. Information on other floodproofing techniques (such as the use of a berm, flood walls, etc) is mailed to property owners with repetitive flood-loss structures and to known flood prone structures on an annual basis.

Additionally, coordination of emergency services during times of flooding is through the Office of Emergency Management (OEM). The OEM is responsible for coordinating publication of the County's annual evacuation and severe weather warning publication and in activating the County's warning systems. Other groups within the County provide flood information. These groups include the National Weather Service, the State of Florida Department of Emergency Management, the Water Management District, the American Red Cross, the Tampa Bay Regional Planning Council and the various cities (the County and Cities work closely in disseminating information).

Goal 4 - Provide advice and assistance to property owners concerning the protection of their properties from flooding, local drainage and sewer back-up problems. The County has an aggressive public outreach program. During the preceding review period, the County's Community Rating System Outreach Committee identified outreach projects that are directly associated with furthering local efforts in educating residents about flood hazards and the National Flood Insurance Program. Additionally, the County's emergency-management initiatives have included educating various groups about various hazards and measures of protection. Frontier still lists evacuation routes and shelter information in their phone book as well as what to do in case of a storm approaching.

Additionally, the County has provided assistance to residential flood-loss victims through various avenues that have included letters, telephone calls, E-mails and site visits. County staff site visits include providing assistance to residents in evaluating potential hazards to a structure, which is provided through a certified planner and/or a licensed engineer. Also, during the past year staff has assisted one additional resident enter into the Federal Severe Repetitive Loss (SRL) program, which was in addition to two awarded SRL grants and one FMA grant awaiting funding.

Goal 5 - Develop an aggressive program to identify and obtain funding for both pre- and post-disaster mitigation projects. The County currently has an aggressive plan that seeks to relieve flooding problems within the unincorporated area of the county. To augment this effort, staff had received funding to provide notification to those as designated within the Special Flood Hazard Area. This has been identified previously, but is included as a reminder of the continuation of the program. Other projects continued are associated with stormwater capital projects, stormwater master plan updates, and asset management of the stormwater systems and respective weighting of maintenance. The county has received new preliminary Coastal Flood maps which should become effective within the next 18 months. The County also continues to work with other entities in the review of potential impacts to the community due to changes to the National Flood Insurance Program (NFIP) and affects from climate change that includes the review of sea level increase.

Goal 6 - Continue and enhance existing programs that acquire wetland areas for passive recreation uses while providing significant watershed volume storage and buffer areas from the floodplain. The County aggressively pursues the acquisition of significant habitats that benefit the community in numerous avenues. Staff working with the county's Environmental Lands Acquisition and Protection Program continues to aggressively acquire wetland and upland areas that can be used for watershed volume storage and floodplain buffer areas.

Additionally, the County protects wetland and significant wildlife habitat areas through regulations implemented through the County's Environmental Protection Commission. The County's development regulations offer another avenue of protection to persons and property through Land Development Regulations and plan-review processes. Regulatory processes implemented through agencies under the Board of County Commissioners have worked well in identifying areas of conservation and preservation for the benefit of protecting persons and property and that serve to provide watershed storage and designated floodplain buffer areas. These regulations have also served to have developments protect surrounding properties.

The County also has a very good recreation program. Through this program and similar initiatives through State and Federal agencies, the County contains resource-based open space that also serves as watershed volume storage and buffers to various categories of floodplains.

Goal 7 - Prioritize capital projects that will mitigate flood impacts in those areas of the County that have experienced significant flooding problems. While developing the Local Mitigation Strategy (adopted by the Board of County Commissioners), the Hazard Mitigation Section worked with a countywide LMS Committee to design a prioritization system for mitigation activities. Through the use of this system, the LMS Committee ranked various mitigation projects with respect to the risk to the community, to the number of persons affected, and meeting objectives of the Local Mitigation Strategy. This information has been used in requesting funds from the State and Federal agencies. Additionally, the list of prioritized projects within the LMS was developed by taking into consideration current programs implemented through the Engineering and Operations Department, which included the current county-wide drainage studies and County stormwater programs. Additionally, the County's Engineering and Operations Department's Stormwater Section has aggressively addressed flooding hazards throughout the County through a five-year Capital Improvements Program.

Goal 8 - Develop the ability and personnel to review all capital projects in terms of a comprehensive analysis of hazard mitigation opportunities. This activity should include the assignment of a full-time hazard mitigation planner. This task continues (also see text under Goal 7). The past Planning and Growth Management Department has been dissolved and the Hazard Mitigation Section was moved into the Engineering and Operations Department with a greatly reduced resource base. In the development of the program and in 1998, the first assignment of the Hazard Mitigation Manager was to complete and have the Board of County Commissioners “adopt” a community Local Mitigation Strategy. It is the review of capital projects and prioritizing of mitigation projects within the capital projects list by the Local Mitigation Strategy Working Group that many projects are selected for consideration. These projects many times are associated with stormwater, flood protection, and infrastructure that is associated with floodplain management. The similar process does exist within cities within the County. The initial Strategy was adopted on August 18, 1999 and contains mechanisms that have Section staff evaluate capital improvement projects with respect to fulfilling hazard mitigation initiatives. This Strategy was subsequently used by the City of Tampa to address the need for a Floodplain Management Plan. In addition, members of the staff from Hillsborough County and members of the City of Tampa’s staff have become Certified Floodplain Managers. The plan is in good standing.

Goal 9 – Continue to implement a hazard mitigation plan that will guide and assist the County in reviewing all new requests for development and in establishing priority for hazard mitigation projects. The County is in the process of updating analyses of risks to area residents and businesses. The community-wide document was compiled through an effort with input provided by both private and public sectors. Additionally, the community document identifies mitigation initiatives and lists prioritized projects that will assist in making the county a better prepared area against hazards that impact public/private agencies, businesses, and residents.

Current processes include reviewing areas susceptible to flooding (inland, riverine and coastal) and potential mitigation initiatives to further public safety protection and protect both public and private property. In review of various sources of data, analyses illustrate that post-FIRM structures within the Special Flood Hazard Area have not flooded due to significant natural events. This illustrates that current regulations and development review procedures work with respect to ensuring new development is protected against risks associated with the one-percent probability of flooding.

As identified, a “Local Mitigation Strategy” (LMS) was adopted by the Board of County Commissioners on August 18, 1999. The LMS was updated in 2015 (annually reviewed and updated pursuant to Florida Statutes) to include recent activities and updates (it is recognized as compliant with the Disaster Mitigation Act of 2000 as well). This document was adopted by Hillsborough County and the three municipalities in the summer of 2015. The LMS is currently under review and update for 2020. To further the LMS, the County adopted the Post-Disaster Redevelopment Plan during 2010.

Goal 10 - Review the effects and locations of areas that experience flooding and determine what steps, if any, the County can take to alleviate future impacts. Through work associated with the Local Mitigation Strategy (and the long-term redevelopment ordinance associated with disasters) and the annual review of areas and structures impact by repetitive floods, a review of past (minimal flooding during this reporting period) flooding “problems” was conducted by multiple agencies within the County. County staff principally identified that post-FIRM residential and business structures that are within the Special Flood Hazard Area have not flooded due to significant natural events. This fact illustrates future actions will remain as currently focused, which includes alleviating existing flooding problems, performing studies to better understand drainage patterns to better protect new and old developments, completing stormwater projects and continuing stormwater/drainage maintenance programs. This process is presently occurring.

Although the County is addressing stormwater-flooding issues, the County remains as a Category C jurisdiction with respect to the number of repetitive flood-loss structures. To assist in alleviating this issue, the Building Official will continue to have permit records monitored to ensure that property owners do not substantially improve structures susceptible to flooding unless steps are taken to have the structure brought into code compliance -- monitoring substantial improvements/damage. The current review period included meeting with numerous contractors and residents to review this issue.

Additionally, the County is continuing to assist residents and reduce potential impacts due to flooding disasters. The County will continue to work through its Hazard Mitigation Section efforts to remove structures from the Special Flood Hazard Areas (as resources allow), to educate citizens and businesses about flooding hazards, work with FEMA to update FIRMs and work towards minimizing threats to the community to both natural and society-based hazards. This includes educating citizens about flood and severe weather warning systems.

The County is also providing information on the new preliminary Coastal Flood maps that were recently released. People impacted by any changes will be mailed a letter to explain possible changes to their properties if any. There will also be several public meetings to explain the new maps.

Repetitive Flood Loss Section: The unincorporated area of Hillsborough County has been identified as a National Flood Insurance Program category “C” community by the Federal Emergency Management Agency. A repetitive loss is defined as two (2) or more insurance claims in excess of \$1,000 each for the same property. A category “C” community is one in which ten (10) or more repetitive losses have occurred in the community. Because repetitive flood-loss properties represent approximately one third of the flood insurance claims processed by FEMA, they have made the adoption of a plan to address the specific properties in this classification a mandatory requirement for participation in the Community Rating System (CRS).

The possible activities that could be undertaken to reduce potential flooding to repetitive loss properties must be balanced with rights of property owners, the ability of the County to finance various activities and the potential benefits of those activities. Considering these variables, the County has undertaken the following:

- The Technical Services Division, Engineering and Operations Department has resource constraints and did perform some levels of work to update the list of repetitive loss properties, which in the past has requested to have permit records appropriately identified. The permit tracking system is used in the process of monitoring permit activity associated with specific structures to ensure construction activity (based upon reported values). (This process is as defined in the Flood Damage Control Regulations.)
- Pursuant to the requirements of the National Flood Insurance Program, the County through the Community Rating System Coordinator anticipates sending properties within repetitive-loss areas a brochure that that their homes are susceptible to flooding and include information on retrofitting, elevation, relocation and stormwater protection. In addition, these residences have routinely, in the past, been provided notice when potential funding becomes available to mitigate future losses to their structures. Added, properties within repetitive-loss areas have received the County’s outreach brochure. Additionally, repetitive flood-loss properties are identified within the County’s permit system, which information is made available to teams when permit applications for respective properties is requested.
- The Technical Services Division, Engineering and Operations Department during the past year did provide a cursory review AW forms. Because of resource constraints, the result of this assessment did not result in a comprehensively update.
- The Community Rating System Coordinator worked with the Stormwater section of Engineering and Operations to review flood losses. Although, a comprehensive review of areas susceptible to flooding were reviewed in the context of updates to Stormwater Master Plans, respective reviews have not provided significantly different data from what has been identified within the work that was performed in the past decade to address flood-protection along with supporting infrastructure. The actual process of reviewing flood-loss data is an annual task to identify to County managing staff any emerging patterns of flooding – no new patterns other than those associated with known areas have not been identified. These patterns are used in the decision process for zoning changes and prioritization of capital projects listed (includes those that are listed within the LMS and is provided to the Engineering and Operations Department’s Stormwater Section). There has not been a change to currently known patterns.

Flood Damage Prevention Action Plan: Taking into consideration the existing fiscal constraints in Hillsborough County and the realization that all floodplain management activities are conducted through various agency-operating budgets, the following action plan is designed to serve as a balanced, comprehensive program to mitigate and manage the impact of development activity in the floodplain.

- Prevention – Development Services Department, Planning and Zoning Division conducts County regulatory review activities associated with land-development requests, which includes reviewing the need

for preservation of open space for mitigating impacts associated with development in identified floodplain area. The County's Land Development Code (LDC) and the Construction Code provide regulations that limit and manage development activity in the floodplain by limiting encroachment into wetlands and preserving open space. This is primarily accomplished by ensuring limitations on impervious surface and preservation of critical areas.

- Stormwater Management -- The enforcement of the Land Development Code to ensure requests for development retains and attenuates stormwater impacts. Specifically, the Stormwater Technical Manual continues to be used to regulate all development, whether it is located within or outside of the floodplain. The Stormwater Management Section of the Engineering and Operations Department evaluates each flood event to determine the effectiveness of recently constructed projects and identify potential additional projects or improvements. The County's budget includes funding for the alternatives identified in the revised Watershed Management Plans for the County's seventeen basins as identified in the Stormwater Management Element of the County's Comprehensive Plan, which have been adopted.
- Drainage System Maintenance -- The County continues to take the appropriate actions to maintain the County's stormwater management systems. The Water and Engineering and Operations Departments, through maintenance programs funded by its operating budget, maintains the stormwater conveyance systems to ensure that flooding impacts are minimized. Maintenance is done on a rotating 10 year schedule.
- Property Protection through Acquisition – There were no acquisitions during the current reporting period. Since 1998, the County has used matching funds with State and Federal Funding (initiated through the Hazard Mitigation Program) to acquire or elevate 23 properties that have experienced repetitive losses due to flooding. Additionally, through land acquisition purchases by the Environmental Land Acquisition Program, the County will continue to remove property located in the floodplain from the impacts of development. The continuing implementation of this program regarding flood mitigation is important because the removal of property located in the floodplain and its preservation as resource-based recreation maintains storage capacity and removes respective floodplain areas from potential development. A complimentary benefit is the acquisition of adjacent uplands as open space further reduces the introduction of impervious surfaces that can contribute to flooding problems -- buffer to floodplains.
- Building Elevation -- Through the enforcement of the County's Flood Damage Control Regulations (Ordinance) and in conjunction with its participation in the National Flood Insurance Program Community Rating System, structures located in floodplains will continue to be identified for elevation to mitigate for their location in flood-prone areas. Previously, the Hazard Mitigation program looked into acquiring a repetitive flood-loss structure during the various reporting years; whereby, an award to a resident was obtained but the County could not identify the public good that outweighed the individual good for this situation due to associated continued maintenance. This activity has been minimized due to resource constraints; however, approved funding for the coming biennial budget period has approved funding to provide resources to continue with this activity. The County views this activity as a major contribution toward mitigating the impacts of flooding.
- Insurance -- The County will continue to actively participate in the National Flood Insurance Program. However, the program has limited resources at this time. To this end, the County has developed a Hazard Mitigation program. As part of the program, it is recognized that a major emphasis should be placed on the education of those property owners who are located in the floodplain that they should secure flood insurance. Increased insurance policies will add protection to policyholders during times of flooding.
- Emergency Services -- The coordination of emergency services during times of flooding is through the Office of Emergency Management (OEM). The OEM is responsible for coordinating publication of the County's annual evacuation and severe weather warning publication and in activating the County's warning systems.
- Flood Warning -- When the National Weather Service issues flood watch or warnings, the Emergency Operation Center (EOC) initiates those activities appropriate to the potential threat of the event.
- Flood Response -- Through the EOC, the Engineering and Operations Department as an Emergency Service Function within the EOC furnishes sandbags to County residents at Engineering and Operations Department facilities located throughout the county. If evacuation is deemed necessary, the EOC opens shelters in affected areas and coordinates activities of the Sheriff's Office, the Health Department, the Red Cross Emergency Medical services and other agencies as required to accomplish a safe evacuation.

- Structural Projects -- The County's Stormwater Program was approved by the Board of County Commission in fiscal year 1998 and continues to be funded for implementation. These activities include projects that implement the County's Master Drainage Plan. County staff reviews, evaluates and prioritizes needs so that available funding is allocated to those projects that are most critical in alleviating flood impacts.
- Storm Sewers -- The County, as part of its Capital Improvements Program continuously provides funding for the reconstruction of obsolete storm sewer systems. This activity includes the replacement of storm pipes, manholes, end walls, culverts and conveyance systems. The CIP also provides funding for individual projects designed to alleviate flooding problems in specific locations in the County.
- Retention -- Each development, whether private or public, is required to meet the provisions of the Stormwater Technical Manual. Instead of providing reservoirs to store stormwater runoff, each project must provide on-site retention of its runoff and/or tie into the County's stormwater system. As part of the County's effort to retrofit its stormwater system, funding in the Capital Improvement Program is provided to acquire property and construct stormwater retention facilities to alleviate flooding impacts to roads and private property.
- Public Information -- The County has undertaken various activities that advise property owners concerning the hazards and potential mitigating activities associated with building in the floodplains. This is evident through the County's participation with FEMA as a Cooperating Technical Partner and through the annual mailout to all property owners of floodplain properties.
- Map information -- Residents, both existing and potential, can access information relating to the floodplains at the Permit Services Center. Floodplain determinations can be requested that provide an official determination of whether a property is located, fully or partially, within a floodplain. Additionally, the County has mapped the floodplains on its Geographical Information System (GIS). The County has also mapped the storm surge from hurricanes based on the SLOSH model.

Conclusion: During the period, the County exercised the flood-warning system for the county. Additionally, the County is completing the update of all watershed master plans to better identify flood-hazard boundaries, and is in the process of the update to the Local Mitigation Strategy. These updates will be used to further update FIRMs in the future working with FEMA. FEMA is also currently in an update of coastal FIRMs, which may illustrate added areas of Velocity Zones and the area associated with limited or moderate wave action. The analysis, and assessment of other funding sources for mitigation, will continue during the next review period, but it must be mentioned that limited funds exist due to the recovery from the recession still underway. Recommendations associated with this effort may be forwarded to the County's Administrator's Office for further direction if appropriate.

OBJECTIVES

Local Mitigation Strategy, Floodplain Management Plan Implementing Objectives		Provide leadership in protecting low-income properties and public housing from the impacts of floods.
		Prevent new development in the floodplain from increasing runoff and resulting in increases in flood volumes in the floodplain.
		Develop a public awareness program that informs <u>all</u> property owners in the flood zones that they are located in a flood zone.
		Provide advice and assistance to property owners concerning the protection of their properties from flooding, local drainage and sewer back-up problems.
		Develop and aggressive program to identify and obtain funding for both pre and post disaster mitigation projects.

		Continue and enhance existing programs that acquire wetland areas for passive recreation uses while providing significant watershed volume storage and buffer areas from the floodplain.
		Prioritize capital projects that will mitigate flood impacts in those areas of the County that have experienced significant flooding problems.
		Develop the ability and personnel to review all capital projects in terms of a comprehensive analysis of hazard mitigation opportunities. This activity should include the assignment of a full-time hazard mitigation planner.
		Continue to implement a hazard mitigation plan that will guide and assist the County in reviewing all new requests for development and in establishing priority for hazard mitigation projects, which includes flooding.
		Review the effects and locations of areas that experience flooding and determine what steps, if any, the County can take to alleviate future impacts.

Source: Hillsborough County Planning and Growth Management, Hazard Mitigation, 2010.

Review Plan Activities

FPMP Tables 9 through 13 illustrates flooding mitigation activities within the Local Mitigation Strategy (LMS, Section V, beginning on page V-10). Mitigation activities are both specific to the type of flooding and general to flood mitigation that is applicable throughout the community.

**TABLE 3
FLOODPLAIN MANAGEMENT, MITIGATION SPECIFIC TO FLOODING EVENTS**

Coastal or Riverine Erosion	While the County has miles of coastline, a large majority of the developed coastal shoreline has been hardened by seawalls. The seawalls, while not an environmentally preferred mitigation option, do minimize erosion from minor to moderate flooding events. Strategies to protect the more pristine coastal areas of the community against erosion include: acquisition of sensitive coastal areas through either the county-wide Environmental Lands Acquisition Preservation Program or various state programs such as Florida Forever; adherence to current engineering standards, vegetation and setbacks.
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Hurricanes and Tropical Storms	<p>There is a multitude of approaches to mitigate effects from hurricanes. The following illustrates mitigation initiatives that have been the most effective within the region and throughout the U.S. • <i>Public awareness and evacuation plans</i> -- The loss of life due to hurricanes has been reduced due to warning and forecast advances, public awareness programs and the development of evacuation plans. Evacuation efforts and the knowledge of the evacuation process assist in moving residents from areas vulnerable to storm surge, historically the major hurricane “killer”. However, local officials recognize that public education is key to the success of any response plan especially in the densely populated metropolitan communities such as Tampa Bay. • <i>Building construction</i> -- Mitigation of property damage has been most successful in areas specifically designated special flood hazard areas through the implementation of construction codes, land-development regulations and growth management policies. • <i>Special flood hazard area setbacks</i> -- Land-development regulations developed in response to the county and cities participation in the National Flood Insurance Program have ensured structures constructed within the previous 20 years are elevated above base flood elevations and can withstand potential wave action. In addition, the implementation of Comprehensive Plan policies and the creation of a local Environmental Protection Commission have further minimized flooding impacts. • Development prior to the adoption of various mitigation policies and regulations remains more susceptible to damage. Public education programs have been initiated to assist businesses and residents learn about retrofitting techniques. Mitigation strategies have also included repetitive loss acquisitions, structural elevations, wind retrofit projects, critical facility retrofits and acquisition of designated conservation areas.</p>
Flooding	<p>Warnings of potential flooding, or of an actual flood, are the responsibility of the National Weather Service (NWS) and the Florida Division of Emergency Management (DEM). Warning time for flood events may vary significantly. The least warning time would be with severe thunderstorms, which occur frequently in our area, but give little notice as to the extent of rainfall that can be produce in various parts of the County. With regard to riverine flooding as little as 4-6 hours of warning are possible. An average warning time for coastal flooding would be about 12 - 18 hours, however certain systems could produce more or less warning time. In addition to warnings and public notification, there are other measures of protecting against floods. All the jurisdictions in Hillsborough County participate in the National Flood Insurance Program (NFIP). Through this participation, standards exist for mitigation development in areas designated as flooding. About 54% of the vacant acres in the 100-year floodplain are to be developed for residential, commercial, industrial uses or public facilities, indicating risk reduction strategies should be considered prior to development of this vacant land. Source: Hillsborough County Profile /Integration of the Local Mitigation Strategy into the Local Comprehensive Plan/Florida Department of Community Affairs/2015 update. Through the NFIP, development regulations have been approved that assist in ensuring new development is designed and constructed in a fashion that is more flood-resistant and out of the 100-year floodplain.</p>
Tsunamis	<p>As noted above, the likelihood of a tsunamis affecting Florida is slight. Even so, the possibility of a tsunami affecting the eastern coast of Florida is real. Consequently, emergency management professionals should remain on alert to those events which may result in a tsunami.</p>
Dam/Levee Failures	<p>The State and industry have in-place federally approved dam inspection processes (Federal Insurance Agency, 1998). Areas associated with mining have been identified on growth management maps and within the Hillsborough County Comprehensive Plan. Use of these programs and continued cooperation between the County, State, and industry will serve to minimize the risks of dam failures within Hillsborough County.</p>

In review of the above generalized mitigation techniques, a review of mitigation guiding principles are reviewed and included within the Local Mitigation Strategy, Section 5, pages V-1 through V-15. Within the review, the following mitigation subject areas are analyzed and have been affirmed by the Board of County Commissioners as mitigation guidance for respective subject areas.

**TABLE 4
GUIDING PRINCIPALS**

MITIGATION	GUIDING PRINCIPAL	DESCRIPTION
OBJECTIVES	Public Education	Increase public awareness in the use of mitigation programs and techniques to reduce the impacts of natural and society-based hazards.
	Coordination	Coordinate public and private sector participation in identifying and managing and/or implementing mitigation projects and measures throughout Hillsborough County.
	Development Management	Identify and implement a combination of regulatory, incentive and initiative programs that will reduce potential loss and would encourage participation in ongoing hazard mitigation.
	Critical Facilities	Develop and maintain an inventory management system on all data affecting hazard mitigation.
EVALUATION OF EXISTING AUTHORITIES . . . RESOURCES	Regulatory Review	Local governments employ regulatory procedures that manage growth through the development review process. These regulations are principally associated with mitigating the impacts of development associated with floodplains/floodways (includes the establishment of base-flood elevations or identification of floodproofing), wetlands, and coastal high-hazard areas.
	Plans and policy implementation	The adopted Local Government Comprehensive Plans are used to guide growth based upon factors such as: development limitations, public-service provision and environmental resource protection. Additionally, the County and municipalities have adopted other plans for use in mitigating hazards and in the Development review process.
	Program implementation	The County has implemented programs that are effective in mitigating hazards, which are mostly confined to hazards associated with flooding, at this time. Some plans are not unified or integrated. One of the principal purposes of the Local Mitigation Strategy is to unify these programs and “identify areas for strengthening” to ensure implementation of the Local Mitigation Strategy. Plans principally associated with mitigating development that are becoming better integrated are: Post - Disaster Redevelopment Plan; Greenways and environmental lands acquisition – some areas identified for acquisition may serve a dual purpose (recreation/preservation and hazard mitigation); National Flood Insurance Program and the Community Rating System criteria provides for the provision of flood insurance; Floodplain Management and Stormwater drainage programs – these programs have been established to minimize and mitigate flooding hazards.
COOPERATING TECHNICAL PARTNER (CTP) PROGRAM AND THE DIGITAL FLOOD INSURANCE RATE MAP (DFIRM)	CTP Program	2009 – Anticipate adding a mechanism in which the county will assist in updating the DFIRMs.

NATIONAL FLOOD INSURANCE PROGRAM (NFIP)	Compliance	All jurisdictions are active participants in the NFIP. In an effort to ensure continued compliance with the NFIP, each participating community will: 1. Continue to enforce their adopted Floodplain Management Ordinance requirements, which include regulating all new development and substantial improvements in Special Flood and Coastal High Hazard Areas (SFHAs and CHHAs); 2. Continue to maintain all records pertaining to floodplain development, which shall be available for public inspection; 3. Continue to notify the public when there are proposed changes to the floodplain ordinance or Flood Insurance Rate Maps; 4. Maintain the map and changes identified through Letters of Map Amendment; Revisions or changes; 5. Continue to promote Flood Insurance for all properties; 6. Continue their Community Rating System outreach programs
	Repetitive Loss Initiative	Implementation of the Floodplain Management Plan
	Flood Mitigation Activities	The possible activities that can be undertaken to reduce potential flooding to repetitive loss properties must be balanced with rights of property owners, the ability of the County to finance various activities and the potential benefits of those activities. Considering these variables, the County has undertaken the following steps: update the list of repetitive loss properties on an annual basis; provide properties within repetitive-loss areas a bulletin or personal warning of risk in the respective area; perform reviews and site visits, where appropriate, for all repetitive loss structures; and perform an analysis of flood annual losses.
	Flood Damage Prevention Action Plan	Taking into consideration the existing fiscal constraints in Hillsborough County and the realization that all floodplain management activities are conducted through various agency-operating budgets, the following action plan is designed to serve as a general design to mitigate and manage the impact of development activity in the floodplain: Prevention; Stormwater Management; Drainage System Maintenance; Property Protection through Acquisition; Land acquisition purchases by the Environmental Land Acquisition and Protection Program (ELAPP); Building Elevation; Insurance; Emergency Services; Structural Projects; Storm Sewers; On-Site Attenuation; Public Information; and Map information.
	Community Rating System (CRS) Overview	Implementation of tasks per activities: 300, 400, 500, and 600.

Were any objectives not reached or is implementation behind schedule? If so, state why: Goals and actions are being met with resource constraints and reduced speed in which activities are conducted: The following illustrates those items addressed in the preceding period either fully or partially. The County is again in the process of completing watershed master plans for the 17 watershed basins in Hillsborough County. These will be used to direct Capital Improvement Projects, utilize Community Investment Taxes, eventually update models used to update Flood Insurance Rate Maps, and assist in creating new flood response systems. The County has permanently funded a Hazard Mitigation Program; although, two positions associated with daily implementation have been moved to another agency but remain assigned to the program's implementation.

Should new projects be started or should any of the recommendations or objectives be revised? The following are activities that did not fully meet objectives; whereby, respective activities are continuing:

- Each year the County sends flood-hazard area and repetitive flood-loss property owners a brochure regarding respective areas. The letters were sent out in August 2018.

- Each year the Hazard Mitigation Program has integrated activities with other agencies to provide information at various citizen meetings, which includes Hispanic community meetings. These events are at schools, churches, and other areas with easy access for the public. Because of limited resources, the County was unable to attend all outreach opportunities. However, flood and disaster preparedness was provided to meet with residents at schedule workshops no less than seven times.
- The County has maintained National Flood Insurance Program (NFIP) resource libraries within local permitting offices with minimal maintenance. The lack of resources and also in demand for materials, maintenance to this program will be made on a per request basis. The materials are taken to meetings and other community events, which augments the provision of information. Also, citizens may request materials through any of the County's Development Services and Engineering and Construction Services Offices.
- As part of the educational program, information is anticipated to increase through media avenues such as through the various notifications and links to FEMA (www.fema.gov) and the State of Florida (www.floridadisaster.org). Requests for such participation were affected by resource allocations during the past reporting cycle; however, with newer team members an aggressive program is developing. The County has limited its use of printed newsletters. The County is also using social media resources now to disseminate information about flooding and other disaster related activities and preparation for the Hurricane Season.
- The County is currently completing the update to watershed master plans to better identify flood-hazard boundaries. These updates have begun and will continue to further update FIRMs through FEMA.
- An assessment of grant-funding sources for mitigation will continue during the next cycle period; except at a slower pace due to resource constraints.
- The County has been delayed in meeting long-term post-disaster redevelopment plan activities associated with mitigation to disasters. This process adds to flood protection to better rebuild following a disaster, but will also build greater resiliency into these areas due to action pre- and post-disaster. In addition to the aforementioned, refer to the report with Activity 330, which provides greater detail with the following items to seek to achieve in the coming year:

Progress Report discussed and/or made available at a public meeting: Information contained within this year's cycle package was discussed during public sessions. Meetings were identified on the County Calendar with date and times published so to ensure proper notice was provided to the public. Additionally, the Communications Department provided informational signage in advance of each meeting.