



## **SECTION V: THE LMS MITIGATION BLUEPRINT**

### **A. GUIDING MITIGATION PRINCIPLES**

The Local Mitigation Strategy Working Group has been established to reduce potential losses and to protect county physical and economic resources from natural or man-made catastrophic events. To this end, governments, public and private sectors and citizens within the county developed strategies that will assist citizens and businesses in resuming normal functions after such an event. The following goal and list of objectives are the “guiding principals” that are used to (1) develop the overall strategy of the LMS and (2) to evaluate initiatives for implementation.

#### **Goal:**

Minimize the effects of any potential natural or man-made disasters on our community and its infrastructure.

#### **Objectives:**

1. Public Education  
Increase public awareness in the use of mitigation programs and techniques to reduce the impacts of natural and man-made hazards.
2. Coordination  
Coordinate public and private sector participation in identifying and managing and/or implementing mitigation projects and measures throughout Hillsborough County.
3. 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.
4. Critical Facilities  
Develop and maintain an inventory management system on all data affecting hazard mitigation.

### **B. EVALUATION OF EXISTING AUTHORITIES, POLICIES, PROGRAMS AND RESOURCES**

The process of developing a Local Mitigation Strategy (LMS) includes an assessment of current programs that are associated with hazard mitigation. It is not intended for the LMS to generate a completely new set of directives to

address hazard mitigation, but to emphasize the need to coordinate and unify mitigation policies and programs into a single approach.

The establishment of goals and objectives is critical to the development of the LMS. It is emphasized that any statement of a goal and objectives is subject to revision based upon a broad range of considerations. Economics, political influences and changing demographic factors will influence the environment within which the LMS is developed. Continuing review of goals and objectives to accommodate these factors is essential to the effectiveness of the LMS and its future development.

The purpose of this review is to specifically evaluate the effectiveness of current mitigation processes in the context of goal and objectives implementation, as identified, in the LMS planning process. As part of the adopted growth management initiatives, floodplain management strategies and the countywide emergency management plan, this review is also part of a continuing assessment performed by local governments of current policies, programs and plans.

Appendix B lists the current regulations, plans/policies, and/or programs within the County and municipalities. It should be noted that neighborhood plans (Sector Plans, Visioning Plans, Stormwater Plans, etc.) not specifically addressed in Appendix B are developed and must comply with the State Plan, the local government comprehensive plans (LGCPs) and the floodplain/Community Rating System plans of the local jurisdictions consistent with state law. This includes mitigation initiatives developed as a part of the LGCP process. In addition, all plans must comply with "Government in the Sunshine" regulations including the public participation requirements.

Potential areas which should be strengthened in order to achieve the mitigation goal and objectives are illustrated in Appendix B and summarized below.

Hillsborough County and the cities of Temple Terrace, Plant City and Tampa currently have processes that effectively "work" with respect to hazard mitigation, which are guided by the approved goal and objectives. The understanding of these processes assist in the development of the Local Mitigation Strategy (LMS) and was assisted in maintaining continuity among local growth management and emergency management plans, land-development regulations, building codes and other ordinances and programs. Special emphasis will need to continue for ongoing cooperative action between county and city governments, businesses and industry, and other segments of the community. The LMS development will further these programs through techniques identified on the next page to unify County processes through the coordination of programs within County government and through inter-agency coordination with all local governments and businesses within the county. The following descriptions illustrate topic areas derived from the analyses; and points to areas where greater attention maybe required strengthening regulatory frameworks and bettering integrate other similar processes.

1. **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.

The current regulatory framework continues to address certain issues and techniques that may assist in furthering hazard mitigation initiatives, which are listed on the following pages. Some of these topic issues include items that may be better established first through policy within the Comprehensive Plan, and then through drafting/modifying regulations in order for consideration to be provided through development-review and building-permitting functions.

At a minimum, the following items should be addressed:

- watershed alteration,
- alternatives to redevelopment in high hazard areas,
- development review and building permitting processes that incorporate hazard mitigation alternatives,
- potential flooding from hurricane storm-surges and associated wind and wave action,
- redevelopment, or the prohibition of, non-conforming uses after a disaster (an economic analysis may be required),
- development/redevelopment in areas associated with repetitive losses due to natural disasters, and
- storm surge/ severe winds of greater magnitude storms.

2. **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.

These plans are principally associated with mitigating development by:

- Limiting development density and intensity through limiting public-service provision (indicated through development areas) for various areas within the County – some of which are associated with hazard prone areas,
- Prioritizing areas for protection and have a preservation or a conservation value,
- Minimizing (non-mitigated) development within high-hazard coastal areas,
- Identifying the need to retrofit and improve stormwater systems,
- Maintaining adequate level-of-service capacities associated with public infrastructure and services, and
- Implementing procedures of the Comprehensive Emergency Management Plan.

At a minimum, the following additional items should be addressed:

- Redevelopment of existing properties after a disaster to ensure mitigation strategies that would minimize the number of non-conforming uses are considered,
- Modify the Comprehensive Plan to recognize strategies approved within the Local Mitigation Strategy (and per Chapter 163, Florida Statutes and

9J-5, Florida Administrative Code) and Post-Disaster Redevelopment Plan (PDRP),

- Update the Comprehensive Emergency Management Plan to use hazard-mitigating strategies (where appropriate) as identified through the Local Mitigation Strategy and Post-Disaster Redevelopment Plan (PDRP),
- Establish a policy direction that encourages removal of septic tanks or hazardous sites from high hazard areas throughout the county after a catastrophic event, and
- Establish policy direction to ensure evacuation shelters are addressed per the direction of the CEMP.

3. **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, and

At a minimum the following items should be continued:

- Development of more monitoring systems to measure flood levels,
- Expansion of acquisition programs to acquire more hazard prone areas,
- Review of allowances made for nonconforming uses to rebuild,
- Update the Comprehensive Emergency Management Plan to include a definition of critical facilities as defined within the Local Mitigation Strategy,
- Review repetitive-loss cases to better examine historical patterns of repetitive damage to determine whether the policy should be expanded or modified to other areas,
- Coordinate repetitive loss flood insurance “payouts” from the Federal government to ensure payments are not for nonconforming structures,
- Establish a permanent funding source for mitigation projects within the Capital Improvements Program,
- Identify alternatives (and incentives) in building techniques for development within high hazard areas, and
- Identify all potential hazards in the review of new development.

### **C. COOPERATING TECHNICAL PARTNER (CTP) PROGRAM AND THE DIGITAL FLOOD INSURANCE RATE MAP (DFIRM) CREATION**

The Hazard Mitigation Section of the County's Planning and Growth Management Department has worked with agencies and departments from the Cities of Tampa, Temple Terrace and Plant City in obtaining approval from the Federal Emergency Management Agency (FEMA) to update the Flood Insurance Rate Maps (FIRMs). The FIRMs for Hillsborough County were originally produced in 1979 with partial updates in the 1980s and early 1990s. FIRMs are required for Hillsborough County in order for property owners to obtain Federal flood insurance. Additionally, flood insurance is required by property owners that carry a federally backed loan for structures located within the Special Flood Hazard Area.

Hillsborough County was not scheduled for an update to FIRMs until about 2010. Staff worked closely with FEMA over the years 1999 and 2000 to illustrate currently mapped special flood hazard areas and areas of new development trends within the County. This information in conjunction with illustrating floodplain management programs that amount to more than \$100 million assisted in having the County scheduled for a FIRM update that began in January 2001.

The principal task was conducted using County data to update the Flood Insurance Study, which has been used to update FIRMs. The end-product from FEMA was a new Flood Insurance Study and digital FIRMs (paper maps were provided too). Additionally, the County Administration, the development community and insurance industry were involved throughout the project through a Stakeholders Advisory Group that met 12 times over the years. Their interest was principally due to the County changing the referenced vertical datum (required by FEMA and strongly supported by the County Surveyor), potential impacts to the development and real estate community during the FIRM update period and potential for changes to insurance requirements to thousands of residents.

The Board approved a draft agreement with FEMA in December 2000. The Agreement was the outcome of many months of effort between County agencies and FEMA. One product provided to the County from this effort is a "digital" FIRM. Although this is only one of the major products associated with the project, it is a product in conjunction with Flood Insurance Study (FIS) in which the County is mandated to use in determining flood zones associated with development review and construction approvals.

The Federal Emergency Management Agency (FEMA) Flood Hazard Mapping Program has specific mandates within the Housing and Urban Development Act of 1968 (also known as the National Flood Insurance Act of 1968), as amended; the Housing and Urban Development Act of 1969; the Flood Disaster Protection Act of 1973, as amended; the National Flood Insurance Reform Act of 1994; and the Bunning-Bereuter-Blumenauer Flood Insurance Reform Act of 2004, which amended the National Flood Insurance Act of 1968. These Acts authorize FEMA to identify, publish, and update information with respect to all flood prone areas in the nation. FEMA has complied with this mandate by publishing and updating flood maps for more than 23,000 communities, which are referred to as map modernization.

One of the key objectives of the FEMA Map Modernization Program was to increase local involvement in, and ownership of, the flood mapping process. To meet this objective, FEMA developed and implemented the Cooperating Technical Partners (CTP) program.

As part of this modernization process, FEMA also approached Hillsborough County in 2005 to partner with FEMA and Flood Smart to develop and test outreach material that focused on the effects of map changes on flood insurance. The Flood Smart team worked with county officials over several years to create materials that would help community officials inform various stakeholder groups, the media, and the public about map changes and their implications. The Stakeholder Advisory Group weighed in on these pieces, which were then used to shape Hillsborough County's presentations, outreach materials, and organizational meetings. These pieces have now been packaged into generic pieces that can be used by communities across the nation undertaking flood map modernization efforts.

**1. Benefits of the CTP program**

The following are beneficial reasons for partnering with State, local, and regional organizations to produce National Flood Insurance Program (NFIP) maps:

- The data used for local permitting and planning is also the basis for the NFIP map, facilitating more efficient floodplain management.
- The CTP program provides the opportunity to interject a tailored, local focus into a national program; thus, where unique conditions may exist the special approaches to flood hazard identification that may be necessary can be taken.
- The partnership mechanism provides the opportunity to pool resources and extend the productivity of limited public funds.

**2. Objectives of CTP program**

In support of the CTP program, FEMA has committed to the following:

- Recognize the contributions made by FEMA's State, regional, and local community Partners by providing timely and accurate flood hazard information.
- Maximize the use of Partner contributions as a means of leveraging limited public funds to the fullest extent while maintaining essential NFIP standards.
- Fully integrate Partners into the flood hazard data development process with the corresponding authorities and responsibilities.
- Provide training and technical assistance to Partners when appropriate.
- Facilitate mentoring to increase capability for existing and potential Partners.

**3. Administration**

FEMA and its Partners administer activities under the CTP program through close and frequent coordination. There are three types of formal agreements- Partnership Agreements, Mapping Activity Statements, and Cooperative Agreements. Each Partner enters into an overall Partnership Agreement with the appropriate FEMA Regional Office for their area. The Partnership Agreement is a broad statement of principle, emphasizing the value of the NFIP's three components of insurance, floodplain management, and mapping.

The Partnership Agreement recognizes the fundamental importance of flood hazard identification in the successful reduction of future flood losses and the Partner's commitment to the effort. The Partnership Agreement is a

prerequisite to any further activities under the CTP program. For projects that meet eligibility requirements, FEMA may award funds through the mechanism of a Cooperative Agreement. The Cooperative Agreement provides for the disbursement of Federal funds and defines the legal responsibilities associated with it.

As the Partner and FEMA identified specific tasks to undertake, Mapping Activity Statements were developed to define roles and responsibilities of all Partners involved in a particular flood mapping project. Developing the Mapping Activity Statements was a collaborative effort where both the Partner(s) and FEMA contribute data and units of work to maximize the extent, accuracy, and usability of flood hazard studies to best meet local, State, and Federal needs, while minimizing costs for all parties. The Mapping Activity Statement is a key component of the Cooperative Agreement package because it defined the activities that were accomplished, the entity responsible for them, how the activities were funded, and the nature of the working relationship between FEMA and its Partners. The next level of partnership with FEMA through this process will be to enter into a task arrangement; whereby, the county will assist in updating the DFIRMs.

#### **4. Timeline/Current Status (As of August 2009)**

- 2003-2004 – Reviewed sample paper and digital FIRM maps from FEMA. Resolved issues associated with floodways, data requirements, and vertical datum (referenced height) change. Continue to update new floodplain for recent subdivisions built above the base flood elevation (BFE).
- Early 2005 – FEMA and Flood Smart partners with Hillsborough County to create effective outreach process for flood map modernization effort that can be replicated in other communities nationwide. Planning for public outreach effort begins
- Fall 2005 – Draft flood maps received from FEMA, County elected officials asked staff to work with FEMA to review flood maps and complete more revisions before maps are made public
- Fall 2006 – County completed additional review and updated work with FEMA, released preliminary maps to public. Maps placed on website for first time to allow residents to easily review their own property's status and potential changes.
- January 2007 – 29,000 letters mailed to owners of single-family properties being affected by potential updates, notifying them of public information and protest opportunities. Other extensive public outreach efforts began, including availability of information call center, 20-page interactive website and more than 15 informational brochures and fact sheets were distributed to community in both English and Spanish.
- December – February 2007 – Nine public meetings and 18 Open Houses held around County, 90-day public comment period completed

- March – November 2007 – 2,100 protests received, County works with FEMA to finalize maps based on protests and other changes requested by County and industry.
- November 2007 – July 2008 – County received final draft maps and began final review and adoption process
- August 2008 – Final flood maps become effective, with 18,000 moving into the high-risk flood zone for the first time and approximately 17,000 properties moving out of the high-risk flood zone
- 2009 – Anticipate adding a mechanism in which the county will assist in updating the DFIRMs.

**D. 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.

**Table V.D.1 NFIP Policy Information**

<b>Community Name</b>	<b>Policies In-force</b>	<b>Insurance In-Force Whole \$</b>	<b>Written Premium In-Force \$</b>
Hillsborough County	43,508	\$10,158,484,300	\$22,409,253
City of Tampa	26,839	\$6,384,046,400	\$18,959,834
Plant City	590	\$141,562,200	\$357,501
Temple Terrace	475	\$125,036,600	\$188,553

Source: FEMA Community Information System, Current as of June 5, 2009

**Table V.D.2 NFIP Participation by Jurisdiction**

<b>Community Name</b>	<b>NFIP Date</b>	<b>Floodplain Administrator</b>
Hillsborough County	June 18, 1980	Hazard Mitigation Section Manager
City of Tampa	June 18, 1980	Construction Services Center Manager
Plant City	April 29, 1983	City Engineer
Temple Terrace	March 15, 1977	Public Works Director

Source: FEMA Community Status Book Report – Florida

**E. REPETITIVE LOSS INITIATIVE**

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 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).

**Table V.E.1 Repetitive Loss Structures by Type and Jurisdiction**

Community Name	Repetitive Loss Structures	SF	2-4 Family	Other Res	Condo Assoc.	Non-Res.
Hillsborough County	215	192	13	0	2	8
Tampa	210	179	7	3	3	18
Temple Terrace	1	1	0	0	0	0
Plant City	1	1	0	0	0	0

Source: Florida Division of Emergency Management, NFIP (Numbers based on latest Repetitive Loss List dated 06/30/09.)

Hillsborough County is a coastal county that is affected by storm surge along its coastline and riverine flooding principally from three rivers: the Alafia, Hillsborough and the Little Manatee. Additionally, certain low-lying inland areas in the northwest, north and southeast are considered flood-prone areas.

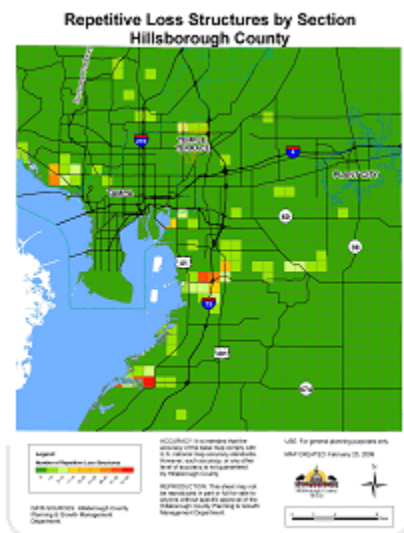
The last major storm surge was from the “no-name” storm in 1993 and Tropical storm Josephine in 1996. The most recent significant fresh water flooding occurred in December 1997, impacting hundreds of homes countywide and resulting in a Federal Disaster Declaration on January 6, 1998. Although no official flooding depth measurements were taken during the events, it has been estimated that storm surge flooding during the “no name” storm of 1993 caused tidal waters to rise five to six feet above mean high tide. Subsequent significant inland freshwater flooding was noted in 2002 and 2004. Flooding during the 2004 did affect one segment of the Alafia River; whereby, three structures were substantially damaged and were either removed or elevated (one structure was elevated). On July 1, 2009, the County did have a significant rain event that affected a non repetitive flood-loss area. The event was not considered a one-percent rainfall event, but the county had isolated rainfall that equated to approximately eight inches in a four to six hour period. Two homes were documented as having flood water; however, residents did not have flood insurance.

Base flood elevations have been calculated through a partnership between the County and the Federal Emergency Management Agency (FEMA); whereby, the County remodeled the entire unincorporated county and established flood elevations. Elevation information from the County was verified by FEMA and subsequently used respective information to develop digital Flood Insurance Rate Maps. Associated with elevations and areas identified within high-risk flood areas and repetitive flood-loss areas, coastal flooding caused by tropical storms,

hurricanes and unusually high tides combined with strong westerly or northwesterly winds remain a continuing threat to the County and the greatest significant factor to areas designated as repetitive flood-loss areas. Storm surge produces most of the flood damage and loss of life associated with storms that make landfall or that closely approach a coastline. Of the hurricane hazards, the storm surge is considered to be the most dangerous since nine out of ten hurricane related deaths are attributed to drowning. The principal tool utilized in assessing the hazard of storm surge is the Sea, Lake and Overland Surges from Hurricane (SLOSH) model.

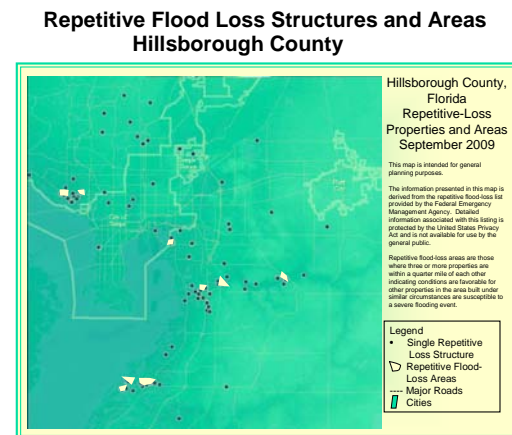
The next significant cause associated with repetitive flood-losses is associated with inland riverine flooding, which is caused when riverine systems are overwhelmed due to significant rain events within a specific drainage basin. A significant fact to note is post-FIRM structures built to a required design-flood elevation have not been recorded as receiving flooding due to a one-percent flooding event. The third significant impact within repetitive flood-loss areas is associated with closed inland basins; whereby, homes either built before flood-damage control regulations were adopted or not built to a designated design flood elevation have received flood waters internal to the structure.

**Figure V.E.1**



Source: Hillsborough County Hazard Mitigation, 2009; FEMA AWS Forms

**Figure V.E. 2**



Source: Hillsborough County Hazard Mitigation, 2009; FEMA AWS Forms

## 1. 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:

- The Planning and Growth Management Department works to update the list of repetitive loss properties. A tracking system (Permits Plus) is used in the process of monitoring permit activity associated with specific repetitive loss structures to ensure construction activity (based upon reported values) does not exceed 50% of the structure's values unless

actions are taken to have the entire structure brought into code compliance. (This process is as defined in the Flood Damage Control Regulations.) The City of Temple Terrace has mitigated the single repetitive loss property identified in the NFIP report as shown in Table V.E.1.

- Pursuant to the requirements of the National Flood Insurance Program, the Hillsborough County Planning and Growth Management Department and the City of Tampa sent each repetitive loss property identified by FEMA a personal warning letter. These letters explained that their homes are susceptible to flooding and included information on retrofitting, elevation, relocation and stormwater protection. In addition, the County sent an informational brochure regarding flooding to each property owner in the entire Special Flood Hazard Area (SFHA). The mail out for FY'09 was 56,566 brochures. The folio numbers for these properties are flagged to ensure that permits were not issued until the property received further review pursuant to Hillsborough County's Construction Code, Chapter 3, Flood Damage Control Regulations.
- The Planning and Growth Management Department performs reviews and site visits, where appropriate, for all repetitive loss structures. The result of this analysis was comprehensively addressed in the previous reporting period and did not call for an update to be sent to the County's ISO Coordinator. Additionally, this review is a part of the County's annual process of (existing and newly identified) repetitive loss properties to ascertain the cause of flooding and suggest possible methods to prevent future flooding of these properties.
- The Community Rating System Coordinator performs an analysis of flood losses. Information obtained from this analysis is reviewed for the inclusion into the Local Mitigation Strategy (adopted by the Board of County Commissioners). This is an annual task to identify any emerging patterns of flooding if different from that identified within the LMS. Identified patterns are used in the decision process for zoning changes and prioritization of capital projects listed within the LMS and is provided to the Public Works Department's Stormwater Section.

## **2. 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 -- The Planning and Growth Management Department (PGMD), Planning and Zoning Division conducts County regulatory review activities associated with land-development requests, which includes reviewing the need for preservation of open space and 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 and more specifically the Stormwater Management Technical Manual (SMTM) by PGMD ensures development retains and attenuates stormwater to minimize impacts. The SMTM continues to be used to regulate all development, whether it is located within or outside of the floodplain. Occasionally, the Stormwater Management Section of the Public Works 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. Likewise, the City of Tampa Stormwater Department and the Construction Services Department review all new development and applies the appropriate level of treatment and attenuation as stipulated in the city's Stormwater Technical Standards. In addition, the City of Plant City through their development review process evaluate the impact of development with regard to increased runoff and impact to stormwater management systems and requires mitigation of any impact.
- Drainage System Maintenance -- The County and the City of Tampa continue to take the appropriate actions to maintain their stormwater management systems. The County's Water and Public Works Departments and the City's Stormwater Department, through maintenance programs funded by its operating budget, maintains the stormwater conveyance systems to ensure that flooding impacts are minimized.
- Property Protection through Acquisition – Since 1998, the County used matching funds with State and Federal Funding (initiated through the Hazard Mitigation Program) to acquire or elevate numerous properties that have experienced repetitive losses due to flooding.
- Additionally, through land acquisition purchases by the Environmental Land Acquisition and Protection Program (ELAPP), 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. During the past five years the City of Tampa has acquired over 15 properties that previously flooded. These properties are used as sites for stormwater pump stations or retention ponds.
- Building Elevation -- Through the enforcement of the County's Flood Damage Control Regulations (Ordinance) and the City of Tampa Code, Chapter Five, in conjunction with their 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. The County and the City view this activity as a major contribution toward mitigating the impacts of flooding and is currently in the process with the State and FEMA to elevate additional structures. The City of Plant City

through their development review process verify finished floor elevations of all structures and prohibits building of structures in the floodway.

- Insurance -- The County will continue to actively participate in the National Flood Insurance Program. A major contribution to this effort is the recognition of the Community Rating System program that is managed through the Hazard Mitigation Section. To this end, the County has developed a Hazard Mitigation program staffed full-time. 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 and coastal planning area that they should secure flood insurance. Increased insurance policies will add protection to policyholders during times of flooding; for example, the magnitude of potential flooded structures during a 1% probability flood event may include 42,000 structures indicated by FEMA or estimated 56,000 parcels that are (or could be) built upon (County data). The City of Tampa is also an active participant in the NFIP CRS program that promotes the value of flood insurance to its citizens, especially those who live in a Special Flood Hazard Area.
- Emergency Services -- The coordination of emergency services during times of flooding is through the Emergency Management Department (EMD). The EMD 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 EOC initiates those activities appropriate to the potential threat of the event.
  - ❖ Flood Response -- Through the EOC, the Roads and Streets Department furnishes sandbags to County residents at Maintenance Stations 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 Red Cross Emergency Medical services and other agencies as required to accomplish a safe evacuation.
- Structural Projects -- The County's Stormwater Program is approved by the Board of County Commissioners. 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 well as the City of Tampa, 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 or the City.
- On-Site Attenuation -- Each development, whether private or public, is required to meet the provisions of the Stormwater Management Technical Manual. Instead of providing reservoirs to store stormwater runoff, each project must provide on-site attenuation of its runoff prior to discharge 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 management 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 Project Impact partner. The City of Tampa participates in several public outreach programs throughout the year to educate their citizen about flood-related issues. The City of Temple Terrace performs minimum services pursuant to their participation with the NFIP.
- Map information -- Residents, both existing and potential, can access information relating to the floodplains on the web or 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 FEMA 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. Map information in the City of Tampa can be obtained at the Construction Services or Stormwater Departments.

### **3. Community Rating System (CRS) Overview**

The County and the City of Tampa continued to work with FEMA and its contractors, to complete the update to the Flood Insurance Rate Maps in 2008 and continues to update maps through cooperation with FEMA into 2009 and 2010. A stakeholder group was created that represented citizens, realtors, insurance agents, lenders, and engineers. This group assisted with the outreach and education of citizens and industries on the implementation of the new maps and flood vulnerability in general. The County also continued to work with grants for planning and structural efforts for flood protection. The effective date of the new Digital Flood Insurance Rate Maps was August 28, 2008. Subsequent revisions are conducted through Letter of Map Revisions or map changes.

As part of the County's continued proactive efforts toward improving flood mitigation through education and coordination of citizens, businesses, government agencies, and regional and national organizations, the Hillsborough County Building Services Division of the Planning and Growth Management Department is available to provide information on activities that can be taken to reduce or eliminate long-term risks to residents and their property from natural and manmade hazards (and their effects), which includes providing information regarding flood protection. Likewise the City of Tampa, Construction Services Department, actively responds to citizens requesting information related to protecting their property from flooding hazards and storm surge.

Flooding is Hillsborough County's most repetitive disaster and maintaining compliance with the Program delivers greater than \$10.1 billion in property protection to business owners and residents throughout Hillsborough County. Participation in the Program provides the ability to obtain Federal flood insurance, which is required by lenders if you live in the Special Flood Hazard Area (also known as the 100-year floodplain).

The mandatory flood insurance purchase requirement applies to all forms of federal or federally related financial assistance for buildings located in a 100-year Floodplain. This requirement affects loans and grants for the purchase, construction, repair or improvement of any publicly or privately owned building in a Special Flood Hazard Area. Maintaining compliance with the Program, has placed the County within the top three-percent of participating communities within the Nation, and provides greater than \$5.5 million in annual savings from the Federal flood-insurance premiums; premium payments are made directly by residents. The Program is monitored by both the State and Federal governments, requiring strict adherence.

Through this Program, flood hazard information is offered to all citizens and businesses located within the unincorporated areas of Hillsborough County. The County maintains the most current Flood Insurance Rate Maps (FIRM) and maintains FIRM Amendments and Revision that have been approved by the Federal Emergency Management Agency. All information, including how to research FEMA Letters of Map Amendments or other approved updates to the FIRM and constructing within the Special Flood Hazard Area or Coastal High Hazard Area is available through the Planning and Growth Management Department, Building Services Division, Hazard Mitigation Section.

The county intends to maintain its Class 5 rating under the CRS program. Communities are rated from 10 to 1, with 1 being the best. The Class 5 rating provides a 25% discount to National Flood Insurance Program (NFIP) policy-holders in the SFHA and a 10% discount to policy-holders outside the SFHA. The City of Tampa is currently a Class 6 community and the City of Temple Terrace remains a Class 8 community. The City of Plant City does not currently participate in the CRS program.

**Table V.E. 2 Community Rating System by Jurisdiction**

Community Number	Community Name	CRS Entry Date	Current Effective Date	Current Class	% Discount for SFHA(1)	% Discount for Non-SFHA(2)	Status(3)
120112	Hillsborough County	10/01/92	08/28/08	5	25	10	C
120113	Plant City	n/a	n/a	n/a	n/a	n/a	n/a
120114	City of Tampa	10/01/91	08/28/08	6	20	10	C
120115	Temple Terrace	10/01/93	08/28/08	8	10	5	C

Source: FEMA Community Information System

(1) For the purpose of determining CRS discounts, all AR and A99 zones are treated as non-SFHAs.

(2) Increase in discount for Classes 1-6 effective May 1, 2001. (3) Status: C= Current, R= Rescinded.

It must be emphasized that in many cases, detailed information regarding the areas potentially impacted by a specific hazard, as well as its potential health and safety, property, and environmental and economic impacts of that hazard may not have been available at the time of this analysis.