Manatee County

LOCAL MITIGATION STRATEGY PLAN

2019 UPDATE









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CURRENT OFFICIALS

of

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Preface

This volume contains the Local Mitigation Strategy Plan (LMS) of Manatee County, Florida, as adopted by the Manatee County Board of County Commissioners. The source material used in the preparation of this volume was the Local Mitigation Strategy Plan, first adopted October 19, 1999, and resolutions subsequently adopted by the Board of County Commissioners.

The source of each section is included in the ***Source*** note appearing either within the body of the text, or at the end thereof. By use of the Historical Evolution of the Plan, (appearing in the back of the Preface), the reader can locate any section of the Plan, as supplemented, and any subsequent ordinance included herein.

Page Numbering System

The page numbering system used in this volume is a prefix system. The numbers to the left of the colon represents a certain portion of the volume. The number to the right of the colon represents the number of the page in that portion.

HISTORICAL EVOLUTION OF THE PLAN

The tables below provide a complete account of the Plan's historical evolution regarding both annual and 5-year updates to the Plan.

The **Adoption History Table** allows users of the Manatee County Local Mitigation Strategy Plan to quickly and accurately determine which resolutions have been considered for each 5-year update.

Res No.:	Date Adopted	Jurisdiction	Purpose	FDEM approval
98-84	05/05/1998	Manatee County	Grant Award to Develop Unified LMS	
99-249	10/19/1999	Manatee County	Conception of LMS	
04-231	09/14/2004	Manatee County	5-year Update	
04-07	09/14/2004	City of Holmes Beach	5-year Update	
04-068	09/20/2004	City of Palmetto	5-year Update	
09-662	10/22/2009	City of Anna Maria Island	5-year Update	
10-037	02/23/2010	Manatee County	5-year Update	03/10/2010 & 12/6/2010
10-02	03/23/2010	City of Holmes Beach	5-year Update	09/7/2010
10-13	04/14/2010	City f Bradenton	5-year Update	06/24/2010
10-762	03/18/2010	City of Bradenton Beach	5-year Update	06/24/2010
2010-14	04/05/2010	Town of Longboat Key	5-year Update	06/24/2010
2010-11	05/17/2010	City of Palmetto	5-year Update	06/24/2010
12-685	05/24/2012	City of Anna Maria		
15-123	8/11/2015	Manatee County	5-year Update	07/15/2015
15-712	09/10/2015	City of Anna Maria	5-year Update	07/15/2015
15-33	09/09/2015	City f Bradenton	5-year Update	07/15/2015
2015-20	08/24/2015	City of Palmetto	5-year Update	07/15/2015
15-842	08/20/2015	City of Bradenton Beach	5-year Update	07/15/2015
15-08	09/22/2015	City of Holmes Beach	5-year Update	07/15/2015
2015-22	10/5/2015	Town of Longboat Key	5-year Update	07/15/2015

The **Annual Update Summary Table** summarizes revisions, amendments or updates to the Plan as part of each annual update cycle.

Year	Summary of revision to the Plan
January 2028	
January 2027	
January 2026	
January 2025	
January 2024	
January 2023	
January 2022	
January 2021	
January 2020	LMS Work Group List - updated, Initiatives Priority List – updated
January 2019	LMS Work Group List - updated, Initiatives Priority List – updated, RLP List – updated, 20 maps – updated, 2 maps – added
January 2018	LMS Work Group List - updated, Initiatives Priority List – updated, RLP List – updated, Hazard Analysis – Sea Level Rise added, Critical Facilities List – updated, 4 maps – updated, SLOSH map – removed
January 2017	LMS Work Group List - updated, Initiatives Priority List – updated
January 2016	LMS Work Group List - updated, Initiatives Priority List – updated, Appendix F Community Guiding Principles & Implementation – updated to reflect LDC amendments, Appendix J Working Structure - updated
January 2015	LMS Work Group List - updated, Initiatives Priority List – updated, Flood Insurance Rate Maps – effective 3/17/14

The **5-Year Update Summary Table** summarizes substantial changes to the Plan as part of each 5-year update period.

2014 Update

Section/ Appendix	Summary of revision to the Plan
Section I	Updated the hurricane/storm information since 2009
Section IV	Updated demographic information from the 2010, the 2007 Florida Statistical Abstract, and Manatee County GIS
Section V	Updated the hazard analysis utilizing the most current information from NOAA National Climatic Data Center (NCDC), National Drought Mitigation Center, National Interagency Fire Center, and the Manatee County Emergency Management Department
Section VI	Critical facility definition, per the www.floridadisaster.org, was added to this section. All facilities were evaluated for compliance to the definition and a map created to show the correct facilities
Section VII	Goals and Objectives were assessed and streamlined to meet the current environment of Manatee County
Section VIII	Two columns were added to the LMS Initiatives List for clarification of the type of hazard that the initiative mitigates and the timeline for the project
Section IX	This section was updated to include the revised Evaluation and Appraisal Report (EAR) deadlines and, where provided, jurisdictional Comprehensive Plan Goals, Objectives, and Policies
Section X	Maps were updated to include the most current data
Appendix B & C	Addition information, since 2009, was included in this update
Appendix D	Updated to include the data from Tampa Bay Regional Planning Council's Statewide Regional Evacuation Study, Manatee County GIS, Labor Market Statistic Center and Manatee County Property Appraisers
Appendix F	The Community Guiding Principles and Implementation were assessed and streamlined by the Committee to meet the current environment of Manatee County
Appendix I	Each jurisdiction reviewed and updated their Hazard Mitigation Roles
Appendix K	Documentation is included to demonstrate how Manatee County reached out to the community and the LMS Committee

2019 Update

Section/ Appendix	Summary of revision to the Plan
Preface	New section added in its entirety.
Section I	Updated to adequately address and better describe *The Planning Process* regulations, as well as include more information on the topic of mitigation, what is LMS, and the connection Emergency Management activities. (Information formerly contained in Section I and II in 2014 Plan)
Section II	Minimal updates to census data and information. (Information formerly contained in Section IV in 2014 Plan)
Section III	Minimal updates to goals and objectives sub-section, to include the addition of new goal #6. Remainder of section updated to adequately address *Mitigation Strategy* regulations. (Information formerly contained in Sections VII and VIII in 2014 Plan)
Section IV	Substantial revisions, additions and updates to include the addition of vulnerable populations sub-section. Additional natural, technological and man-caused hazards are analyzed, and more robust *Risk Assessment* included. (Information formerly contained in Section V and Appendix D in 2014 Plan)
Section V	Minimal updates to adequately address *Plan Evaluation and Maintenance* regulations. (Information formerly contained in Section IX in 2014 Plan)
Section VI	Addition of subsection regarding supporting material provided as part of Certified Meeting Minutes. (Information formerly contained in Section III in 2014 Plan)
Appendix A	Latest working group list provided.
Appendix B	Updated to include hazard events since 2014 Plan.
Appendix C	Latest list provided.
Appendix D	New appendix added in its entirety. (Appendix D formerly contained Risk Analysis in 2014 Plan. Risk Analysis information moved to Section IV with 2019 Plan Update.)
Appendix E	No change.
Appendix F	No change.
Appendix G	No change.
Appendix H	Minimal updates.
Appendix I	No change.
Appendices J-M	New appendices added in their entirety.

SECTION I

INTRODUCTION TO LMS –
THE PLANNING PROCESS

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Section I

Introduction to LMS – The Planning Process

A. BACKGROUND

The State of Florida boasts almost 1,500 miles of ocean coastline and over 8,000 miles when tidal inlets are included, a continually growing population, which has soared to 21.65 million residents - with 65 percent living in coastal areas - and a history of hurricanes, tropical storms, tornadoes, and other natural disasters. Per the U.S. Global Change Research Program's 2018 Fourth National Climate Assessment Volume II: Impacts, Risks, and Adaptation in the United States:

> "America's trillion-dollar coastal property market and public infrastructure are threatened by the ongoing increase in the frequency, depth, and extent of tidal flooding due to sea level rise, with cascading impacts to the larger economy. Higher storm surges due to sea level rise and the increased probability of heavy precipitation events exacerbate the risk. Many coastal communities will be transformed by the latter part of this century, and even under lower scenarios, many individuals and communities will suffer financial impacts as chronic high tide flooding leads to higher costs and lower property values. Actions to plan for and adapt to more frequent, widespread, and severe coastal flooding would decrease direct losses and cascading economic impacts."



Since 1851, Florida has been affected by 500 tropical or subtropical cyclones. The cumulative impact from the storms total over $216.1 billion in damage, primarily from Hurricanes Andrew, Irma and Michael in the 1992, 2017 and 2018 seasons. Prior to Hurricane Andrew in 1992, which incurred over $30 billion in recovery costs, the state's formula for dealing with natural disasters was to clean up the mess and rebuild. However, following that disaster, state emergency managers and community planners realized not only that the "destroy-rebuild-destroy" formula was dangerous, but that it could devastate the state's economy. Hurricane Katrina in 2005 further supported this effort with estimated damages of $81 billion and a death toll that exceeded 1,500.

Hurricane Andrew was the catalyst for a rethinking of the "destroy-rebuild-destroy" methodology since the Lake Okeechobee Hurricane of September 1928. This was further supported by the Storm of the Century ~ Hurricane Opal; flooding spawned by El Niño; Hurricane George; and the deadliest hurricane ~ Katrina. The decision was made that there was a growing need to break the increasingly costly cycle of devastation and rebuilding.

This led to the birth of the Manatee County Local Mitigation Strategy Plan.

B. MITIGATION

Disasters can cause loss of life; damage building & infrastructure; and have devastating consequences for a community's economic, social & environmental well-being. Hazard mitigation reduces disaster damages and is defined as *sustained action taken to reduce or eliminate the long-term risk to human life and property from hazards*. Outreach programs that increase risk awareness, projects to protect critical facilities, and the removal of structures from flood hazard are all examples of mitigation actions.



For mitigation to be effective, action needs to be taken through a community wide effort - analyzing risk, reducing risk, and insuring against risk. Local governments have the responsibility to protect the health, safety, and welfare of their citizens. Proactive mitigation policies and action help reduce risk and create safer, more disaster-resilient communities. Mitigation is an investment in your community's future safety and sustainability.

According to FEMA, effective mitigation requires that *all* understand local risks, address the hard choices, and invest in long-term community well-being. Without mitigation actions, safety, financial security and self-reliance is jeopardized.

- Disasters can happen at anytime and anyplace; the human and financial consequences are hard to predict.
- The number of disasters each year is increasing but only 50% of events trigger Federal assistance.
- FEMA's mitigation programs help reduce the impact of events—and our dependence on taxpayers and the Treasury for disaster relief.

Mitigation is a means to decrease demands for disaster response and recovery resources. This enables our community a quicker lifesaving response and long-term economic recovery because the community infrastructure remains intact. Additionally, it reduces the societal impacts of disaster as a result of less disruption of the social environment. Mitigation is the foundation of sustainable community development.

C. WHAT IS A LOCAL MITIGATION STRATEGY PLAN?

The LMS focuses not only on risk of flooding and hurricanes, but with ALL hazards to which a community might be vulnerable, including natural, technological, and societal hazards. Having a multi-jurisdictional plan offers an opportunity for each sector of a community to plan and prepare for a safer future.

This pre-planning will enable local government to mitigate repetitive damages and be ready to get the community "back on its feet" should a disaster occur. That said, LMS is not something to be done only when disaster strikes - rather it is an ongoing process which must be a part of the community's everyday business. As the population continues to grow and the necessary infrastructure is erected, the impact of disaster multiplies.

The LMS provides a framework to reduce losses by breaking the cycle of "disaster event – rebuild – disaster event – rebuild."

LMS, a Multi-Jurisdictional Plan
What is it & why do we need it?

The Disaster Mitigation Act of 2000 (Section 322) addresses mitigation planning and requires state and local governments to prepare multi-hazard mitigation plans as a precondition for receiving FEMA mitigation project grants.

By having a plan, local government can become pro-active rather than reactive.

It reduces the cost of disasters by identifying mitigation initiatives and locating funding sources for those initiatives.

LMS requires planning and being prepared for something which is not a daily occurrence. It begins with a "blueprint" through which a community can assess its vulnerability to and threat of hazards and begin planning its response for loss reduction.

D. EMERGENCY MANAGEMENT ACTIVITIES



LMS is a natural extension of the duties of Manatee County's Department of Public Safety - Division of Emergency Management, as well as other associated county and local emergency management agencies. The cycles Emergency Management Activities are:

Mitigation. Sustained actions taken to reduce or eliminate long-term risk to life and property from hazards.

Prevention. Actions necessary to avoid, prevent, or stop an imminent threat or actual act of terrorism.

Protection. Actions necessary to secure the homeland against acts of terrorism and manmade or natural disasters.

Preparedness. Actions taken to plan, organize, equip, train, and exercise to build and sustain the capabilities necessary to prevent, protect against, mitigate the effects of, respond to, and recover from those threats that pose the greatest risk to the security of the Nation.

Response. Actions necessary to save lives, protect property and the environment, and meet basic human needs after an incident has occurred.

Recovery. Actions necessary to assist communities affected by an incident to recover effectively.

When one thinks of hazards and emergency planning in Florida, it's logical to immediately think hurricanes, tropical storms, wind and flooding; however, the threat is much larger. As such, the LMS must consider and plan for every contingency. Some of the hazards to consider include:

- Natural and Manmade: Hurricanes and coastal storms; sea level rise, harmful algal bloom, severe storm/weather events; severe storms (lightning, hail storms, etc.); severe winds; tornadoes; floods/severe rain events; coastal and riverine erosion; winter storms/freezes; droughts/heat wave; sinkholes/landslides; wild fires; earthquakes; tsunamis; volcanoes; civil disturbance; mass shooting; terrorist acts; and mass migration.

- Technological: Hazardous materials release; dam/levee failures; airplane crash; cyber incidents; critical infrastructure disruption; urban conflagration; train derailment; terrorism; and power failure.

E. LMS IN MANATEE COUNTY

In October 1999, Manatee County developed and adopted the first multi-jurisdictional plan that served as a strong foundation for protection of lives and property in Manatee County. In 2004 the LMS was updated as required by the Disaster Mitigation Act of 2000. Currently, the Code of Federal Regulations, 44 CFR §201.6 – Local Mitigation Plans, (eCRF.gov, 2014) requires that the LMS be reviewed and revised every five (5) years. The commitment has continued during the 5-year update cycles of 2004, 2009, 2014 and 2019.

It is not a self-sufficient or one-time document. Rather, it is a living, ever changing strategy for the benefit of all County residents. The goal of risk reduction is to reduce the risk to life and property, which includes existing structures and future construction, in the pre and post-disaster environments. The LMS document itself consists of several areas which, when taken together, provide the County with a framework to develop and implement hazard mitigation measures. These areas include:

- The identification of the community's "guiding principles" - These are the laws, ordinances, resolutions, codes, and other guidelines by which the County and the municipalities operate. The adoption of a comprehensive framework of guiding principles will serve the planning process effectively through the years, (including in post-disaster redevelopment), an important part of LMS. (See Appendix F)

- The analysis of mitigation initiatives which are already in place to determine their effectiveness - This provides guidance as to whether they should be continued, changed, or discontinued and replaced by more effective measures. This is an ongoing process and helps to determine what additional mitigation initiatives are required. Once initiatives are determined to be necessary, the next step is to prioritize them for implementation. (See Appendix G)

- The prioritizing mitigation initiatives - Here consideration must be given to risk factors such as whether the entire community, a substantial portion, several areas, or one small area of the community is at risk, economic risk, potential for loss of life and property, etc., as well as the extent and expense of projects. Funding cycles must be watched, so initiatives may be classified as immediate, ongoing, at next fiscal cycle, as State or Federal funding is available, etc. (See Appendices G & H)

- The identification of funding for mitigation initiatives (projects and studies). - To accomplish this task, initiatives must be prioritized, analyzed, and re-prioritized on an ongoing basis as community needs change, population grows, and land development make review of mitigation priorities necessary. Emergency situations can develop, which cause change in priorities, as well as post-disaster situations that can necessitate re-prioritizing initiatives. As funding is located and initiatives are completed, additional initiatives may be added to the list. The list must be prioritized according to the current needs of the community at that time. This is a continuing planning process. (See Appendix G)

F. THE PLANNING PROCESS

Jurisdictional Representation – Including Stakeholders:



The Manatee County unified multi-jurisdictional plan is a result of coordination and partnership among governmental agencies, business partners, and citizen groups. (See Appendix A) In addition to Emergency Management, acting as representative for Manatee County, a partnership exists between the cities of Anna Maria, Bradenton, Bradenton Beach, Holmes Beach, Palmetto, the Town of Longboat Key, and unincorporated area of Manatee County. Ensuring the success of the planning processes for all-hazards and floodplain management planning for the respective communities within the county and with the National Flood Insurance Program Community Rating System also relies on the close involvement of public and private sector organizations and state and federal agencies. Neighboring jurisdictions were invited and attended the planning meetings. Although, not a comprehensive list of participants who were invited and attended, some included: Port Manatee, Sarasota Manatee Airport Authority, Florida Forest Service, and Southwest Florida Water Management District. Relief organizations that were invited to be represented were Manatee Housing Authority, School District of Manatee County, Centerstone of Florida, Inc., and Manatee County Rural Health Services.

Jurisdictional Roles:

Since its adoption in 1999 and through to the approved update in 2015, updating of the LMS is an ongoing process and is performed on an annual basis pursuant to Florida Administrative Code (FAC) 27P-22.004(4)(e). The 2019 five-year update commenced in March 2019 when members of the LMS Working Group were informed by Emergency Management of the need to conduct a major revision update to the plan. A contractor was not used for this process, so the plan is as realistic as

possible using the limited resources that are available to our county. No jurisdiction opted out of the planning process this revision cycle, therefore, each group was tasked with maintaining and increasing community participation in the LMS Working Group through contact with community and business organizations throughout the year. The LMS Working Group coordinated many resources for the update, in addition to being tasked with assisting with the development of the plan, reviewing revisions and updates for accuracy, identifying potential mitigation projects, assisting with project prioritization, reviewing and providing concurrence with proposed risk assessments, and adoption of the plan for their jurisdiction. (See Appendix I)

These records include details of many of the aspects that are incorporated in the required five-year update and include:

- Sub-committee reports
- Updates on continuity planning and critical facilities and infrastructure
- Training announcements
- Updated Project Initiatives List (proposed and completed projects)
- Reports or modifications to the LDC and Comprehensive Plans as they relate to mitigation – Peril of Flood Act
- Available funding and grant application cycles

Preparation of the Plan:

During the most recent 5-year update cycle, the LMS Working Group Utilized FEMA's Local Plan Review Crosswalk Comparison Tool to compare the current LMS against the FEMA crosswalk, and produced a suggested timeline of what needed to be updated/revised in each section. It was decided that three sub-committees (Data & Information, Governance, and Goals & Objective - each consisting of a minimum of three technical employees), were to be formed so that small groups could make recommendations of suggested updates. Simultaneously, one of the Public Safety Department Emergency Management Coordinators was tasked with updating the Hazard Risk and Vulnerability Assessment (See Section IV). This was done with stakeholder participation and feedback with those included in the Manatee Emergency Operations Workgroup. (See Appendix D – Participation, for a narrative description of the meeting process, meeting minutes, and attendance participation)

In addition to the regularly scheduled LMS Working Group Meetings held quarterly every year, each of the sub-committees held multiple meetings to review the information and how to best proceed with the most recent

5-year update of each section. The revised sections were sent to the LMS Working Group for comment, suggested revisions, deletions or additions. Each jurisdiction was represented and participated in the planning process. All suggestions, revisions and corrections were considered in the final document. Upon completion of the tasks, Emergency Management conducted a final review of the LMS using the new criteria and verified the components against the required Mitigation Plan Review Checklist. Emergency Management believes that the Manatee County LMS was/is compliant with the new Federal criteria and submitted the Plan to the Florida Division of Emergency Management for review.

Public Involvement:

Our primary focus is to ensure public involvement in developing and continually updating the Local Mitigation Strategy. Not only has the Federal Emergency Management Agency, as the lead governmental body, expressed this, but logic dictates that it is in the best interest of the general public to be aware of hazard threats, vulnerability, and mitigation. It is recognized that this participation is crucial to the economic recovery of a community following a disaster. Government entities use the input of the private sector to gain the perspective and insight necessary to adequately address the needs of the business and industry. For local governments in Florida, public notice, involvement, and participation is a mandatory element of governance known as "Government in the Sunshine." Section 286.011, Florida Statutes, requires that "all meetings of any board or commission of any state agency or authority at which official acts are to be taken are declared to be public meetings open to the public at all times…" In fulfillment of this requirement, all meetings of the LMS Working Group are duly noticed. In addition, notices are provided to adjacent counties and regional agencies, such as the Tampa Bay Regional Planning Council and Southwest Florida Water Management District, the Airport Authority, School District, all Fire Districts, Manatee Chamber of Commerce and economic development agencies.

To broaden the general public and Non-Governmental Organization's access to LMS information and involvement in the process, Manatee County has a webpage dedicated to Hazard Mitigation information on the Manatee County website. Notice of meetings, agendas, and funding opportunities are posted on this webpage, in addition to posting meetings on the County calendar. The public is welcome to attend and make comments at any of these meetings or utilize the e-mail address on the LMS webpage. During the planning process specific to the 5-year update cycle, additional opportunities are provided to the general public to provide comments, suggested revisions, additions and deletions to the updated plan. These additional opportunities are in the form of in-person

open house public workshops held in the evening at the public library, as well as on-line review periods. Notice of these additional opportunities are provided on the website, newspaper, and posted at the County Administration Building. (See Appendix D)

The following list captures events and successful outreach activities during 2015-2019.

Utilized Manatee County Emergency Management website to provide hazard and mitigation education, information, funding sources and links to additional information.
Participated in the annual Economic Development Business Preparedness Expo held by Manatee County Redevelopment and Economic Opportunity Department.
Used the following forms of notification to bring public awareness regarding both online and in-person public viewing/comment opportunities regarding the 5-year update to the LMS: Press Release, Public Notice in newspaper, Public Notice in the lobby of the County Administration Offices, advertisement in issues of Neighborhood Connection Magazine, advertisement and/or social media posts on Facebook, Instagram and Twitter, and email notifications to large community/stakeholder groups such as, but not limited to, Planning Task Force, Review Agency Meeting group and Homeowners Associations.
Provided an in-depth report to the Board of County Commissioners during one of their regular meetings and welcomed public comment
Held a 1-day workshop – Increasing Community Resilience – to facilitate discussions about SLR, nature-based adaptation options, socio-cultural vulnerability and community resiliency factors not currently addressed in most vulnerability assessments.
Held quarterly LMS Workgroup meetings, each open to the public.
Provided weekly and monthly educational information graphics through social media avenues such as Facebook, Twitter and Instagram.
Published 74,000 copies of English and Spanish annual Disaster Planning Guides, which were distributed to public buildings, grocery stores, post office, many home owner association groups and other public access points.
Mailed notices to repetitive loss property owners.
Conducted 96 presentation/outreach events, including a first ever 1-day event with Girls Scouts of Gulfcoast Florida – Hurricane Heroes Preparedness Badge Day (an all hazards, disasters and severe weather preparedness event).

Review and Incorporation of Existing Plans and Reports:

During the early phases of the update process, the LMS Working Group conducted a preliminary review of the existing plans and reports. Each of the participating jurisdictions reviewed their respective Comprehensive Plan, Land Development Code, and Evaluation and Appraisal Report, for their effectiveness with hazard mitigation. Emergency Management conducted a comprehensive review of the Manatee County Comprehensive Emergency Management Plan, and Community Wildfire Protection Plan, while the Manatee County Floodplain Manager conducted one of the National Flood Insurance Program and Community Rating System.

The Manatee County Comprehensive Emergency Management Plan (CEMP), as well as the Comprehensive Plan serve as companions to detail actions in the period following the disaster. The LMS, along with the various codes, ordinances and plans, provide detailed actions pre-disaster to facilitate in mitigation and post-disaster to assist in the recovery. The post-disaster redevelopment strategy looks at the mitigation during the post-recovery period through the process of building resiliency into the community in preparation for future events.

To ensure the full and complete implementation of the Manatee County LMS, all participating local governments shall incorporate references to the LMS into their respective Comprehensive Plan following the procedures outlined in 163.3191, FS. Such incorporation shall be reflected in the forthcoming preparation of the required Evaluation and Appraisal Reports (Section 163.3191, FS) and adhere to the following due dates:

- Unincorporated Manatee County – December 1, 2020
- City of Anna Maria – December 1, 2021
- City of Bradenton – September 1, 2023
- City of Bradenton Beach – July 1, 2025
- City of Holmes Beach – February 1, 2023
- Town of Longboat Key – December 1, 2021
- City of Palmetto – December 1, 2020

Local governments within Manatee County shall use the provisions of Section 163.3178, FS, to review and update mitigation strategies post-event, considering post-event interagency hazard mitigation reports.

Consistent with the provisions for identifying and funding capital improvement projects found in Section 163.3177, FS, local governments shall continue to develop funding mechanisms which could be used for approved county-wide mitigation initiatives.

Consistent with the provisions of Section 163.3177, FS, local governments shall emphasize mitigation goals during the annual preparation of capital improvement budgets, with special attention paid to the prioritization of regional, interlocal, and local projects.

Participating local governments shall emphasize mitigation funding during the annual budget process pursuant to the provisions of Section 163.3177, FS.

Manatee County

Manatee County has many plans, other than the Comprehensive Plan, that implement hazard mitigation activities including pre-disaster mitigation, event coordination and post disaster redevelopment. In 2004, the Local Mitigation Strategy became the Floodplain Management Plan. The following plan have been developed and adopted:

- Community Rating System (CRS)
- Local Mitigation Strategy (LMS)/Floodplain Management Plan
- Community Emergency Management Plan (CEMP)
- Community Wildfire Protection Plan (CWPP)
- Post Disaster Redevelopment Plan (PDRP)

The Manatee County Comprehensive Plan, Coastal Section states:

Policy: 4.4.1.1 Develop and implement provisions for increasing the rate of evacuee mobilization, in coordination with other local governments within Manatee County and other adjacent counties.

Implementation Mechanism(s):

Coordination between the Tampa Bay Regional Planning Council (TBRPC) and other appropriate Emergency Support Functions (ESF) departments and agencies to:

- Prepare and annually update the Comprehensive Plan (CEMP) in coordination with other local governments. The CEMP, incompliance with Florida Statutes and Florida Administrative Code, shall contain measures for hurricane preparedness, response, and mitigation.

- Distribute bilingual annual disaster guides free of charge to the public which identify emergency preparedness procedures and evacuation shelters. Distribution should include the possibility of mailing disaster guides to all residents in the Hazard Vulnerability Area of the County.

- Implement the Local Mitigation Strategy.

Policy 4.4.2.4. Implement policies and actions of the Local Mitigation Strategy.

Implementation Mechanism(s):

a) Coordination with other member agencies to achieve policy compliance.

b) Interagency hazard reports review and inclusion during development if the Local Mitigation Strategy.

Manatee County was a participant in a pilot program to develop a Post Disaster Redevelopment Plan (PDRP). This plan set up short-, medium-, and long-term redevelopment guidelines. The PDRP was adopted by the Manatee County Board of County Commissioners on August 6, 2009. Since that time and using a consultant in August 2017, Manatee County's PDRP was audited by the University of Florida – Resilient Communities Initiative Department, resulting in recommendations for possible improvements to the current PDRP to suit County's comprehensive planning and emergency management documents. The audit's overall recommendations, as outlined in Appendix K, were:

1. Prioritize repetitive loss properties for adaptive relocation of existing use activities and explore the legality and means by which this can best be accomplished.
2. Adaptation Action Areas as part of the next PDRP update.
3. Include an environmental and/or habitat impact analysis as part of the vulnerability assessment.
4. Conduct an analysis of future sea level rise (SLR) inundation and current assessment methodologies.
5. Expand the scope of criteria included in the capacity assessment, thereby improving the PDRP capacity score.

6. Add tasks to the Recovery and Redevelopment Strategy and Action Plan to reduce disaster vulnerability through land use and development policy and regulations.
7. Combine and reconfigure the Recovery and Redevelopment Strategy and the Recovery and Redevelopment Action Plan to improve the administrative fluidity from goals, objective, policies, and strategies to actions/tasks.
8. Identify a task force of historic and cultural professionals to, *inter alia*, identify significant individual sites, prioritize them by community interest and vulnerability, and advise the County on the results of its tasks.
9. Reevaluate the 34 seats currently allocated to the PDRP task force to assure that every participant has a relevant role and streamline procedures to increase effectiveness and efficiency.
10. Recognize the increased use of social media and websites to improve public involvement in implementing and maintaining the PDRP.
11. Revamp the PDRP Communications Plan to enhance its efficacy by providing processes for accomplishing recovery and redevelopment tasks.
12. Detail how to fund the necessary communications systems.
13. Update the existing funding source list, detailing specifically how to handle potential food and water distribution shortages, including overall food and water systems assessments.
14. Synthesize (and hyperlink) the current documents into one (1) comprehensive planning and emergency management document in two (2) versions—a complete digital and print document including appendices, and a "bare bones" handout version for use in an actual emergency—structurally organized to accord with the NATIONAL PREPAREDNESS SYSTEM.

Appended to the Audit were two resources for additional information: a literature review, and an overview of the Federal Emergency Management Agency's NATIONAL PREPAREDNESS SYSTEM.

City of Anna Maria

The City of Anna Maria participates in the Local Mitigation Strategy.

City of Anna Maria Comprehensive Plan, Coastal and Conservation Element states:

Objective 3.3	Reconstruction and redevelopment strategies shall be considered to promote hazard mitigation during the annual re-evaluation of the Manatee County Local Mitigation Strategy.	
	Policy 3.3.1	The City shall continue to be an active participant in the identification and evaluation of initiatives contained in the Manatee County Local Mitigation Strategy.
	Policy 3.3.2	The City shall diligently pursue the identification and securing of funding for the implementation of those local mitigation strategy initiatives identified by the City for inclusion in the Manatee County Local Mitigation Strategy.

Intergovernmental Coordination Element

Objective 1.1	Policy 1.1.11	The City shall continue to cooperate and coordinate with the Manatee County Division of Emergency management in the development, implementation, and refinement of the County's Local Mitigation Strategy program.

City of Bradenton

The City of Bradenton participates in the Local Mitigation Strategy.

City of Bradenton Comprehensive Plan, Coastal Management and Conservation Element states:

Objective 6.4	Update Local Mitigation Strategy and coordinate with Manatee County its implementation.

	Policy 6.4.1	Land Use Development Regulations (LUDR). Maintain policies, standards and procedures in the LUDR which reflect the implementation of the Local Mitigation Strategy.

City of Bradenton Beach

The City of Bradenton Beach participates in the Local Mitigation Strategy.

City of Bradenton Beach Comprehensive Plan, Coastal and Conservation Element states:

Objective 3.2	Policy 3.2.1	The City shall continue to be an active participant in the identification and evaluation of initiatives contained in the Manatee County Local Mitigation Strategy.
	Policy 3.2.2	The City shall diligently pursue the identification and securing of finding for the implementation of those local mitigation strategy initiatives identified by the City for inclusion in the Manatee County Local Mitigation Strategy.

Intergovernmental Coordination Element

Objective 1.1	Policy 1.1.11	The City shall continue to cooperate and coordinate with the Manatee County Division of Emergency management in the development, implementation, and refinement of the County's Local Mitigation Strategy program.

City of Holmes Beach

The City of Holmes Beach participates in the Local Mitigation Strategy.

City of Holmes Beach Comprehensive Plan, Coastal Management and Conservation Element states:

Objective 3.2	Reconstruction and redevelopment strategies which will be considered to promote hazard mitigation during the annual re-evaluation of the Manatee County Local Mitigation Strategy.	
	Policy 3.2.1	The City shall continue to be an active participant in the identification and evaluation of initiatives contained in the Manatee County Local Mitigation Strategy.
	Policy 3.2.2	The City shall diligently pursue the identification and security of funding for the implementation of those local mitigation strategy initiatives identified by the City for inclusion in the Manatee County Local Mitigation Strategy.

Intergovernmental Coordination Element

Objective 1.1	Policy 1.1.12	The City shall continue to cooperate and coordinate with the Manatee County Division of Emergency management in the development, implementation, and refinement of the County's Local Mitigation Strategy program.

Town of Longboat Key

Town of Longboat Key participates in the Manatee County Local Mitigation Strategy.

Town of Longboat Key Comprehensive Plan, Coastal Management and Conservation Element states:

Objective 3.3	Policy 3.3.1	In the event of a storm or storm event that requires post-disaster redevelopment actions, the Town will implement its short-term post-disaster redevelopment plant.
	Policy 3.3.3	It is the policy of the town that during long-term reconstruction following a catastrophic storm event, all reconstructed structures will be brought into compliance with the FBC, FEMA requirements and local flood control regulations to the greatest extent practicable while still allowing original density and building cubic volume as described in Policy 3.3.4.
	Policy 3.3.5	The Town will monitor the development of Sarasota County's long-term post-disaster redevelopment plan. The Town will also monitor Manatee County's efforts to develop post-disaster redevelopment plans.

City of Palmetto

The City of Palmetto participates in the Local Mitigation Strategy.

City of Palmetto Comprehensive Plan, Coastal Management Element states:

Objective 8.8	Policy 8.8.1	The City of Palmetto adopted the Local Mitigation Strategy Plan on November 1, 1999. The Coastal Management Plan shall be amended to include appropriate plan strategies and policies in the next round of plan amendments after adoption of the City's Comprehensive Plan.

H. ACKNOWLEDGMENTS OF THE LMS WORKING GROUP

The LMS Working Group acts under the direction of the Public Safety Department, Emergency Management Division. As an added level of balance in the review of programs and projects associated with the LMS, there is equal diligent effort and mutual cooperation between many County departments, the six municipalities of Manatee County, fire districts, Lakewood Ranch Inter District Authority, Tampa Bay Regional Planning Council Comprehensive Resiliency Planner, USF – Sarasota Emergency Management, Clerk of the Circuit Court, and Sheriff's Office.

An important component of the LMS and the success of the hazard mitigation initiatives is the participation of both the public and the private sector in the planning process. It is recognized that this participation is crucial to the economic recovery of a community following a disaster. Government entities use the input of the private sector to gain the perspective and insight necessary to adequately address the needs of business and industry. In turn, businesses and industries gain an increased awareness of the importance of preparedness and mitigation and receive technical assistance for business continuity planning, valuable support, and contact information for additional information. The working group encourages participation from the Manatee Chambers of Commerce, economic development agencies, Sarasota-Bradenton International Airport, Health Department, private utilities and communications companies and large employers. These companies then provide service, technical assistance and outreach to their commercial accounts.

The LMS Working Group assesses risks within the County and maintains an updated list of potential mitigation initiatives that will reduce risks associated with hazards that are most likely to occur in respective communities. The working group meets no less than four times a year (meetings held quarterly) with additional meetings scheduled as dictated by need. All business conducted by the working group is submitted for approval to the active members and is passed or defeated by majority vote. To be considered a participant of the group, members are required to sign-in (documentation retained) and many commit to additional time and resources to develop a mitigation strategy that protects life, property and the environment as well as strategies that contribute to the economic well-being of the County. The Hazard Mitigation Planning and Hazard Mitigation Grant Program dictate that each of the jurisdictions and representatives must show participation in the planning process to qualify for HMGP, Pre-Disaster Mitigation Program (PDM) and Flood Mitigation Assistance Program (FMA) funding.

The Florida Division of Emergency Management (FDEM) and the Federal Emergency Management Agency (FEMA) define local mitigation strategy requirements. The State requires Manatee County Local Mitigation Strategy provide the processes for application, project selection and distribution of funds under the Hazard Mitigation Grant Program. Under Florida Administrative Code, the Local Mitigation Strategy Working Group must meet several conditions to maintain compliance. Requirements include:

1. The LMS Working Group shall be charged with the responsibilities of designating a Chairperson and Vice-Chairperson; developing and revising the Local Mitigation Strategy as necessary; setting an order of priority for local mitigation projects, and submitting an annual LMS update to the FDEM by the last working weekday in January of each year.
2. No later than the last working weekday of each January, the Chairperson of the Board of County Commissioners shall submit to the Florida State Division of Emergency Management, a list of the members of the LMS Working Group and its designated chairperson and vice-chairperson.
3. The Working Group shall include, at a minimum, representatives from various agencies of county government, representatives from all interested municipalities in the county, representatives from interested private and civic organizations, Native American tribes or organizations, trade and commercial support groups, property owners associations, water management districts, regional planning councils, independent special districts and non-profit groups.
4. The County shall submit documentation that indicates that within the preceding year it has issued a written invitation to each group as specified above in the previous bullet.
5. As required under State Statute, meetings are open to the public.
6. All stakeholders are invited to be part of the LMS process from conceptualization to implementation. Stakeholders are invited in a variety of mediums with the intent on reaching as many individuals as possible. Care has been taken to avoid the “digital divide” by not just relying on electronic means to communicate LMS activities. Methods of communication of LMS activities include but are not limited to:

    - Newspaper advertisements
    - Publication on the Manatee County Calendar
    - Email list notification
    - Social media

- Public Notice and/or signage posted at the County Administration Building
- Notifications made through neighborhood groups (e.g. Homeowners Associations)
- Presentations made at local conferences in subject disciplines directly related to mitigation
- Information exchange with non-profit groups working in the discipline of mitigation related activities

This effort could not have been accomplished without the support of the Manatee County Board of County Commissioners and the City Councils/Commissions of Anna Maria, Bradenton, Bradenton Beach, Holmes Beach, Longboat Key, and Palmetto.

During the latest update period (2019/20) of the Manatee County LMS, the active membership of the Working Group was led by:

Chair: Nicole Knapp, Manatee County Public Safety Department – Emergency Management Division, Planning Manager
Vice-Chair: Matthew Myers, Manatee County Public Safety Department – Emergency Management Division, EM Coordinator

Appendix A contains the annually updated list of the committee members and their jurisdiction/association.

SECTION II

PROFILE OF MANATEE COUNTY

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Section II

Profile of Manatee County

A. NATURAL FEATURES AND TOPOGRAPHY

Manatee County is located in west-central Florida, bounded on the north by Hillsborough County, the south by Sarasota County, the east by Hardee and DeSoto Counties and the west by Tampa Bay, Sarasota Bay, and the Gulf of Mexico. The County is approximately 25 miles in length from north to south, 45 miles wide from east to west, and contains a total of 893 square miles. Of this 743 is land and 150 is water (55 inland, 46 coastal, and 49 territorial). In addition, there are 150 miles of waterfront and 27 miles of beaches. The average elevation is 12 feet.



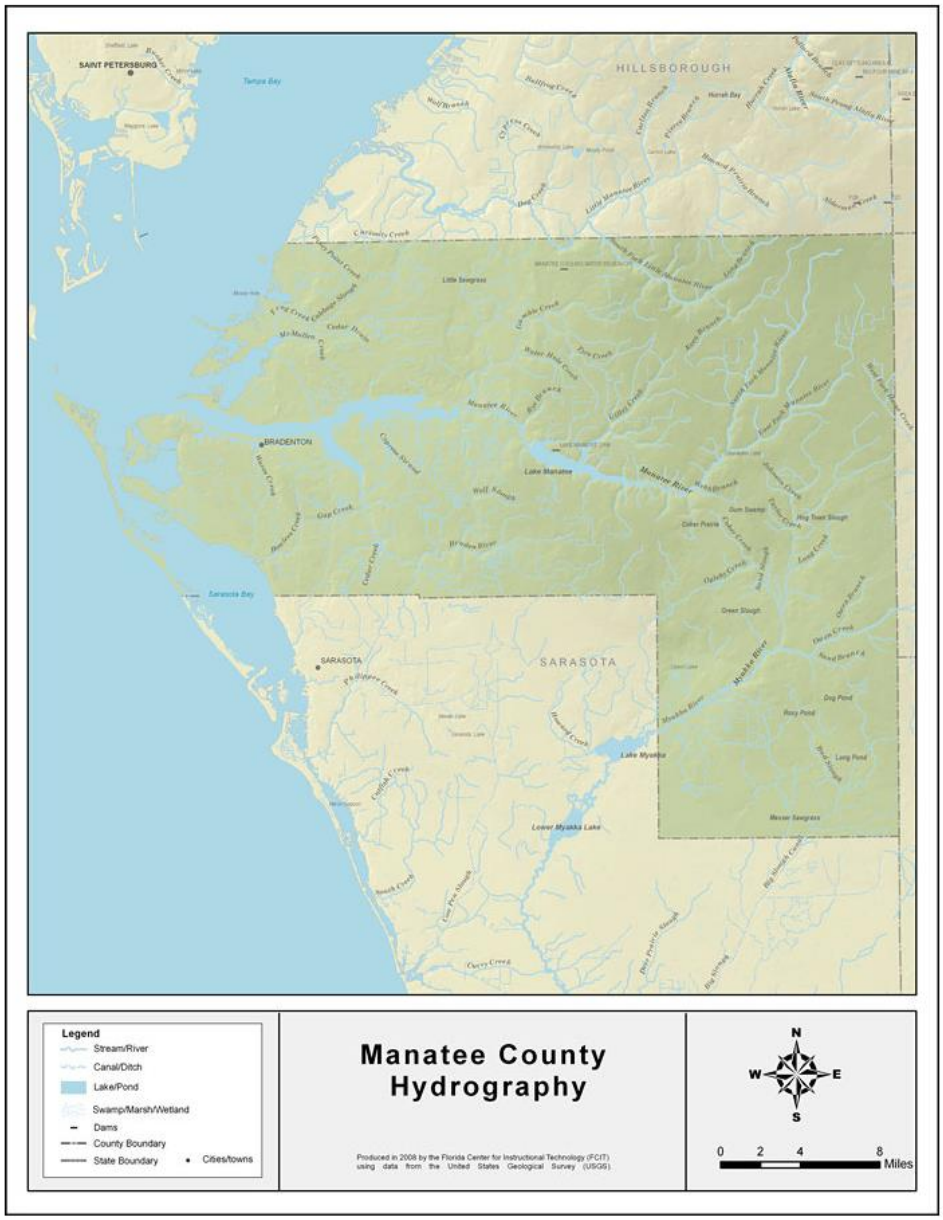
There are six incorporated jurisdictions in Manatee County: Anna Maria, Bradenton, Bradenton Beach, Holmes Beach, Longboat Key (a portion of which is also located in Sarasota County), and Palmetto. Bradenton is the largest in terms of both size and population. There are also several recognized unincorporated areas in the county: Ellenton, Myakka City, Oneco, Parrish, Terra Ceia, and Lakewood Ranch.

According to the Southwest Florida Water Management District there are three physiographic regions within the County. The areas west of Lake Manatee and the southwest corner of the County lie within the Gulf Coastal Lowlands. The northeast corner of the county is located in the Polk Upland zone with the remaining central and southeast sections

within the DeSoto Plain. The Coastal Lowlands are composed of nearly level plains below 40 feet mean sea level while the Polk Upland and DeSoto Plain have a gently rolling topography.

As a result of its subtropical climate and variable hydrology, Manatee County supports a rich and diverse complement of natural resources. There are three major rivers in the County: Manatee River, Braden River, and Myakka River. In addition, a portion of the watershed for the Little Manatee River is in the northeastern corner of the County.

Florida Waterways: Manatee County, 2008



The County is rich in water resources. Along Tampa Bay and Sarasota Bay are several recognized aquatic areas: Terra Ceia Bay, Palma Sola Bay, and Bishops Harbor. Bishops Harbor and Terra Ceia Bay are recognized as aquatic preserves. It should also be noted that located immediately to the north in Hillsborough County is the Cockroach Bay aquatic preserve. Three man-made bodies of water are also worth noting. Lake Manatee, formed by the damming of the Manatee River, serves as the primary source of potable water for Manatee County and a portion of Sarasota County. The Evers Reservoir, formed by the damming of the Braden River, serves as the primary potable water source for the City of Bradenton. Lake Parrish serves as the cooling pond for Florida Power and Light's Manatee generating station. It is also worth noting that most of the coastal waters within Manatee County are also designated as Outstanding Florida Waters (OFW) by the State of Florida. OFW are waters designed worthy of special protection give their natural attributes.

Given its geology, Manatee County does not receive any significant amount of potable water from the Floridan Aquifer. The County does offer two benefits to its residents. The first benefit is economic in the eastern portions of the County - rich with deposits of phosphate rock can be found. Secondly, the County's geology is not favorable to the formation of sinkholes. Within the 17 counties, which comprise the Southwest Florida Water Management District (SFWMD), sinkholes develop more frequently north of Tampa Bay where the limestone base is closest to the land surface and the supporting sand and clay layers are thin. All of Manatee County falls in the area identified as an area where sinkholes are a rare occurrence.

B. DEMOGRAPHICS

In 2010 the United States Census determined Manatee County's population to be 322,833 while the County's six jurisdictions were: 1,503 Anna Maria; 49,546 Bradenton; 1,171 Bradenton Beach; 3,836 Holmes Beach; 6,888 Longboat Key (total based of entire jurisdiction located in both Manatee and Sarasota Counties); and 12,606 Palmetto.

Manatee County has experienced an incredible growth rate since 2012. Current population is estimated to be 394,855 (Manatee County, FL, 2018 U.S. Census Bureau July 2018 Estimate), - rising from 258,211 in 2012, and making Manatee County the 15th largest county in Florida. The Metropolitan Planning Organization's 2035 Long Range Transportation Plan estimates approximately 1,500 dwelling units will be built each year through to 2035. Approximately 15% of the County's population resides in the county seat with most the population living in unincorporated areas.

AREA, POPULATION AND DENSITY BY JURISDICTION

Jurisdiction	Area (per sq. mile)	Population (2018)	Persons (per sq. mile)
Anna Maria	0.86	1,749	2,366
Bradenton	17.16	57,644	4,010
Bradenton Beach	1.19	1,278	2,481
Holmes Beach	1.91	4,261	2,000
*Longboat Key	16	7,326	1,773
Palmetto	5.75	13,717	2,490
Manatee County	893	394,855	431.7

**Numbers based on entire jurisdiction located in both Manatee and Sarasota Counties.*
Source: *United States Census Bureau, Population Estimates Program (2018)*

POPULATION DISTRIBUTION BY AGE

Age Group	Population	Percentage
Under 5	18,781	5.0
5 – 9	18,136	5.26
10 – 14	18,527	5.33
15 – 19	18.100	5.20
20 – 24	16.031	4.96
25 – 29	16,627	5.43
30 – 34	16,126	5.12
35 – 39	17,484	5.14
40 – 44	19,243	5.15
45 – 49	21,723	5.99
50 – 54	22,325	6.56
55 – 59	21,713	7.27
60 – 64	23,367	7.35
65 – 69	21,602	7.93
70 – 74	17,383	6.57
75 – 79	14,633	4.72
80 – 84	11,563	3.41
85 and over	9,928	3.56

Source: *U.S. Census Bureau, Population Est. Program*

The median age in Manatee County is 48.5 years.

As the County continues to grow and thrive, it remains vulnerable to a wide range of natural, technological and man-made hazards. Natural hazards include hurricanes, floods, tornadoes, storm surge, lightning, high winds, sinkholes, wildfires and drought. Technological hazards include electrical failures, sewer failures, radiologic exposures, cyber incidents, and chemical exposures. Human-made hazards include terrorism, mass casualties, bomb threats, hostage situations and workplace violence. Manatee County and its population of almost 395,000 residents need to prepare for all of them.

Identifying both the physical and the cultural geographic features of a region are vital in order to understand and prepare for the impact of the various types of hazards. Section II builds a profile of Manatee County in an effort to identify, understand, and make available information to its citizens to be used to prepare residents to mitigate, respond, and to recover from various types of hazards.

C. HOUSING MIX

The greatest population concentration in Manatee County exists in the areas most vulnerable to impact from specific hazards, such as hurricanes, tropical storms, and transportation/hazardous material spills. Identifying high hazard areas and assessing the number of dwelling units and people living in those threatened areas will indicate how susceptible Manatee County is to displacement following a large-scale disaster.

According to the United States Census Bureau Population Estimates Program (PEP), updated annually, there are 194,539 housing units in Manatee County. This is a 12% increase from the 2010 Census. Of the 194,539 units, 71.4% (138,900) were owner-occupied, which grew from the previous year of 69.6%. Furthermore, approximately 15,000 or 7.7% of the dwelling units are located within a high hazard area.

The average household size is 2.56 for owner-occupied and 2.26 for renter occupied. Manatee County has seen a renewed interest in multi-family rental products since 2012. The average value for housing units, based on the U.S. Census Bureau for 2018; in Bradenton is $150,400, in Longboat Key is $709,300 in Palmetto is $117,200, and countywide is $197,200. No information was located for Anna Maria, Bradenton Beach, or Holmes Beach. The following tables provides a breakdown of housing units by jurisdiction for 2019:

HOUSING OCCUPANCY BY JURISDICTION

Description	Manatee County	City of Anna Maria	City of Bradenton	City of Bradenton Beach	City of Holmes Beach	*Town of Longboat Key	City of Palmetto
Total Housing Units	183,774	1,435	26,780	1,866	4,561	9,347	6,735
Occupied Housing Units	140,255	482	20,885	509	2,205	3,820	4,701
Vacant Housing Units	43,519	953	5,895	1,357	2,356	5,527	2,034
Homeowner vacancy rate	2.7	7.3	2.8	14.7	0.5	3.1	5.1
Rental vacancy rate	10.0	82.8	8.4	69.3	38.3	70.6	8.7

**Numbers based on entire jurisdiction located in both Manatee and Sarasota Counties.*
***Source**: American Community Survey, U.S. Census Bureau -2013-2017 data*

HOUSING UNITS IN STRUCTURE BY JURISDICTION

Description	Manatee County	City of Anna Maria	City of Bradenton	City of Bradenton Beach	City of Holmes Beach	*Town of Longboat Key	City of Palmetto
Total Housing Units	183,774	1,435	26,780	1,866	4,561	9,347	6,735
1-unit, Detached	95,267	1,174	11,369	278	1,935	2,352	2,482
1-unit, Attached	14,799	80	2,464	170	539	596	487
2 Units	4,350	66	606	173	551	113	211
3 or 4 Units	6,150	51	1,333	181	446	208	162
5 to 9 Units	8,885	38	2,861	146	337	718	90
10 or More Units	9,133	9	2,200	265	270	802	209
Mobile Home or RV	29,959	0	1,543	233	0	210	2,092

**Numbers based on entire jurisdiction located in both Manatee and Sarasota Counties.*
***Source**: American Community Survey, U.S. Census Bureau -2013-2017 data*

D. ECONOMIC PROFILE

Majority of the industrial activity in the County is generally associated with, or near Port Manatee - located in the northwestern corner of the County adjacent to Hillsborough County, along the U.S. 41 & 301 corridors, and south of the Manatee River. Additional industrial sites can be found east of U.S. 41 in the area of the Tropicana Products, Inc. Plant. Although not classified as an industrial activity, phosphate mining and associated industries can be found in the eastern portions of the County. Office space is primarily located within the central business district of Bradenton, in downtown Palmetto and near Lakewood Ranch Boulevard and University Parkway. Except for DeSoto Mall and the Ellenton Premium Outlets, commercial activity primarily consists of strip-mall throughout the County.

CIVILIAN LABOR FORCE STATISTICS

Category	County	Florida	USA
Labor Force	179,493		
Labor Force % of County Population	45.46%	n/a	n/a
Unemployment Rate	3.4%	3.5%	4.0%

***Source:** United States Bureau of Labor Statistics, July 2019*

Manatee County has over 30 companies that employ more than 250 people. Some of these major employers include the School District of Manatee County, Manatee County Government, Blake Medical Center, Manatee County Sheriff's Office, Manatee Memorial Hospital, Bealls Inc., IMG Academy, Publix, and Tropicana Products Inc. The two tables below list the major private and public sector employers within the County.

LARGEST EMPLOYERS

Private Sector	**Full-Time employees**
Bealls Inc	1,786
IMG Academy	1,000
Publix	989
Tropicana Products Inc.	910
Sun Hydraulics	700
Feld Entertainment	600
TriNet	600
SYSCO West Coast Florida Inc.	468
Public Sector	**Full-Time employees**
Manatee County School District	6,800
Manatee County Government	2,012
Manatee Memorial Hospital	1,651
Manatee County Sheriff's Dept	1,226
Blake Medical Center	1,486
City of Bradenton	543
State College of FL Manatee Sarasota	475
Source: *Bradenton Area Economic Development Corporation*	

Per the U.S. Census County Business Patterns 2016 dataset, 98.3% of establishments within the County employ less than 50 employees and 99.9% employ less than 500. The ones that employ 500 or more are mostly involved in manufacturing, transportation/warehousing, construction, educational services, health care and assistance, professional, and food services. The following table indicates the employment by industry type for Manatee County:

EMPLOYMENT ESTIMATES BY TYPE OF INDUSTRY

Employment Sector	**# of Businesses**	**# of Employees**
Agriculture, forestry, fishing & hunting	16	1,592
Mining, quarrying, oil and gas	1	Not avail
Utilities	10	Not avail
Construction	999	6,832
Manufacturing	275	8,002
Wholesale trade	390	3,165
Retail trade	1,273	19,583
Transportation/Warehousing	163	2,567
Information	105	1,410
Finance and insurance	507	2,498
Real estate, rental and leasing	587	2,068
Professional, scientific and technical	997	4,309
Management of companies & enterprise	76	1,954
Administrative support	673	6,369
Educational services	124	2,274
Health care and social assistance	912	16,031
Arts, entertainment and recreation	141	2,069
Accommodations and food services	651	13,703
Other services (except public admin)	818	4,240
Industries not classified	11	10
Total for all sectors	8,729	99,027

Historically, agriculture has played an important role in the County's economy. Agricultural activity is concentrated primarily east of the I-75 corridor. The Florida Department of Agriculture and Consumer Services' 2018 Florida Agriculture by the Numbers Reported, has the following information for Manatee County:

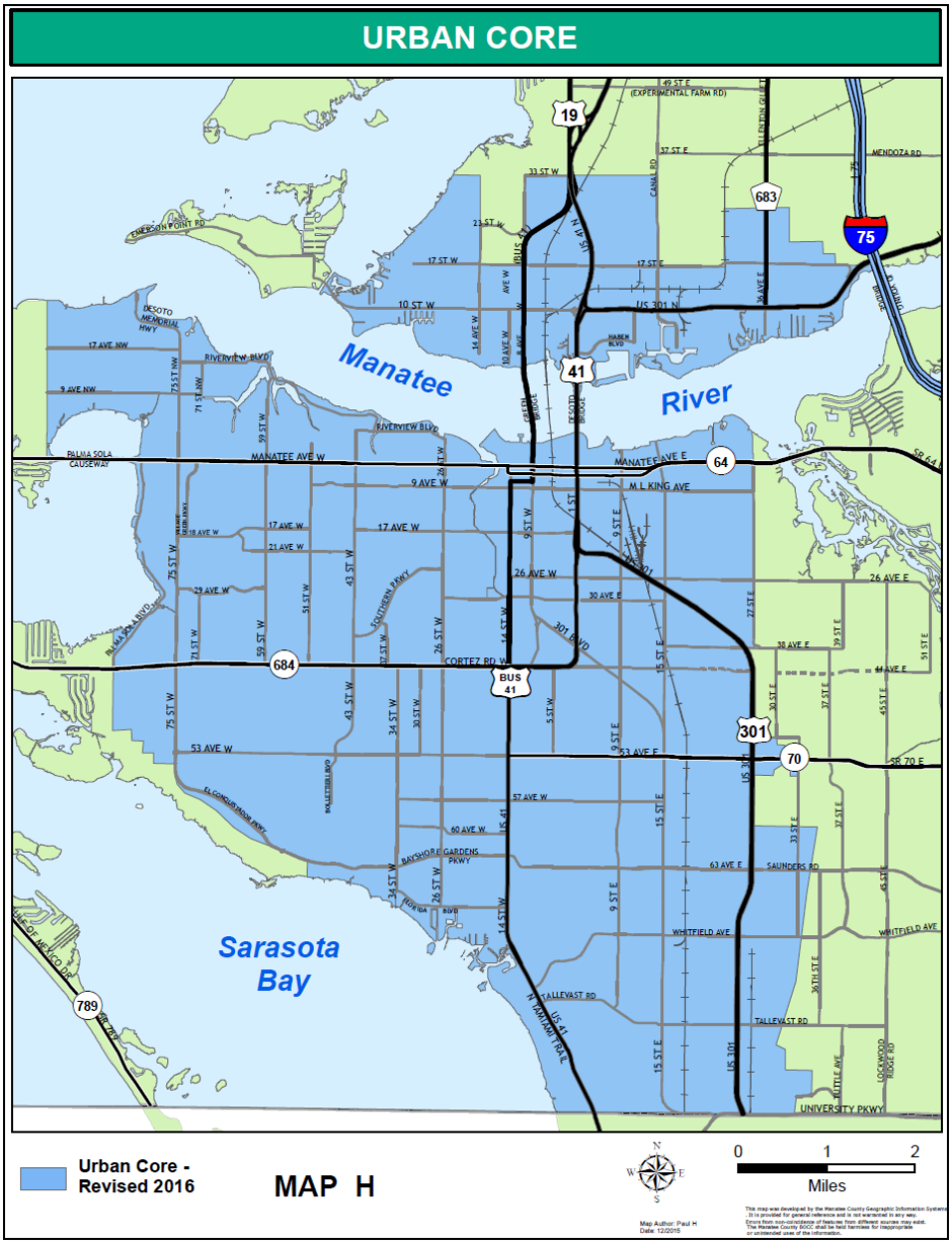
2002, 2007 and 2017 Florida Statistical Abstract			
	2002	2007	2017
Active Farms	852	794	753
Acres in Production	301,231	225,101	192,630
Acre Distribution:			
Cropland	117,173	77,299	71,172
Woodland	38,266	25,946	
Timberland			362
Pasture	104,172	92,184	162,568
Other Uses	41,620	29,672	
Reported Income	$268,480,000	$239,624,000	$360,119,000

Statistical Report	**Unit type**	**County Rank in Florida**
Citrus (production -all types)	3,282,000 boxes	9th
Commercial Citrus	16,231 acres	9th
Citrus Trees	2,110,000 trees	9th
Milk Cows	4,100	7th
Cattle and Calves	31,500	19th
Beef Cows	16,300	14th
Source: *Florida Department of Agriculture and Consumer Services' 2016 Florida Agriculture by the Numbers Report*		

E. FUTURE LAND USE

In 2003 the County published a vision document entitled *Imagine Manatee: A Vision for Manatee County.* It is not possible to anticipate the County's future growth without an understanding of its historic growth trends. The following observation was taken from Imagine Manatee: *"The County's population progressively filled in the areas between the barrier islands and the cities of Palmetto and Bradenton, creating Manatee County's present-day urban core. As the resident population grew, agricultural lands were increasingly replaced by suburban development. Today, the county continues to draw new residents attracted to the county's climate, lower taxes and overall cost of living, availability of housing, proximity to regional markets, and abundant recreational resources. The local economy has developed around tourism, retirement living, retail trade and real estate development."*

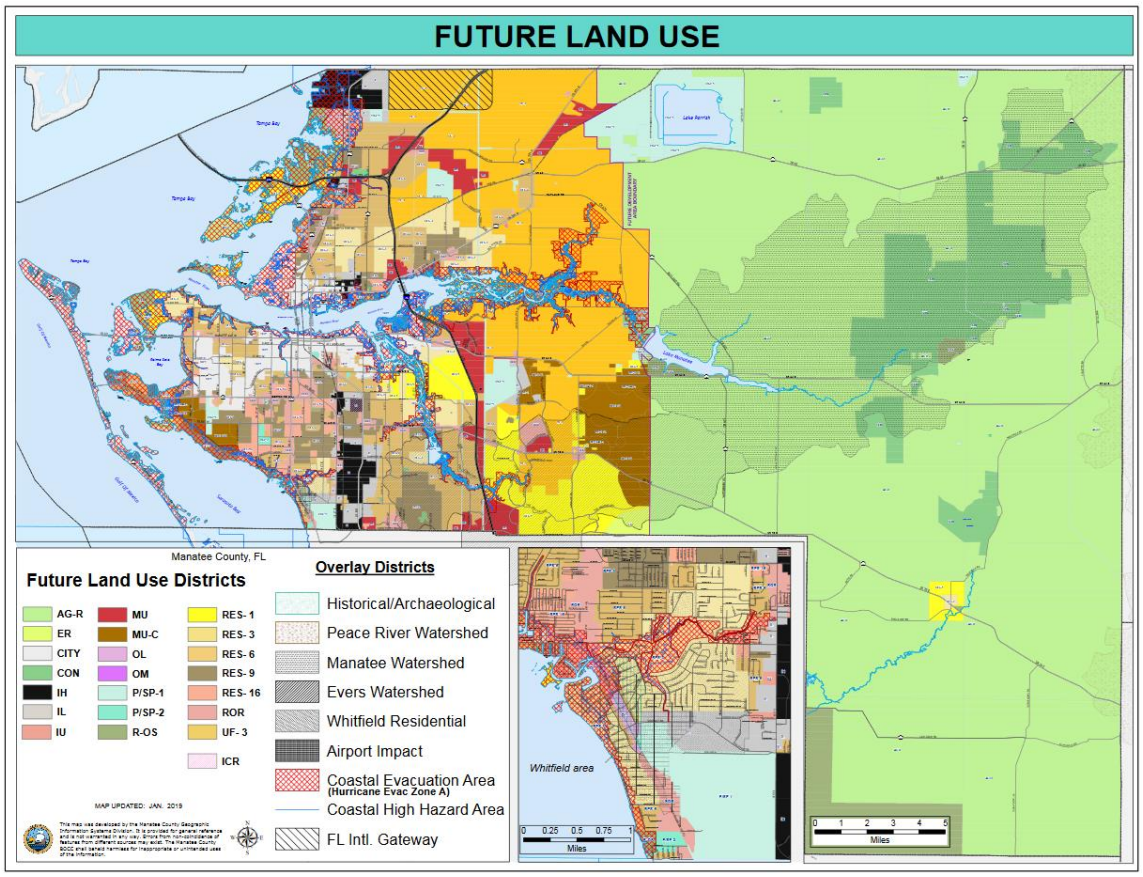
With the enactment of Florida's growth management efforts, the County made a concerted effort to ensure that an urban service boundary was established. As seen in the following map, in 2016 the County updated the area established as the Urban Core:



Apart from Lakewood Ranch, the eastern portion of the County is rural. The developing area (closer to the I-75 corridor) is now transitioning to more suburban uses while the older urban core continues to see development and investment. This development pattern is also reflected on the County's adopted Future Land Use Map.

The County has amended its Comprehensive Plan to ensure that new large-scale development does not occur in the rural area. Similarly, the County has taken steps to protect the Lake Manatee and Evers Reservoirs and Peace River watersheds through the establishment of land use overlay districts. The purpose of these overlays is to limit the type and intensity of development within the watersheds. To protect the

rural character of the eastern portions of the County, the Comprehensive Plan was amended to include provisions intended to recognize and protect the character of the unincorporated communities of Parrish and Myakka City.



What will the future conditions be in Manatee County? By the year 2045 Bureau of Economic Business Research (BEBR) estimates that Manatee County's population will increase to 545,728, an increase of 222,895, or 40.8% over 2010.

In February 2013 the County published a report document analyzing alternative growth plans and their impact on infrastructure and service delivery entitled *How Will We Grow? A Conversation with the Community*. The How Will We Grow? project came about from the challenges that arose from the boom and bust economy during the years 2000-2005. As new leaderships developed, they began questioning the reasoning behind many growth policies as some of the regulations seem to be having the opposite effect.

The County has remained predominately rural with agricultural lands accounting for approximately 56 percent of the County's land area. Urban (developed) land exists primarily in the western portion of the

County and includes commercial, government, industrial, institutional, recreation, and residential land uses. These uses have steadily increased and account for approximately 42 percent of the County. There are approximately 26,026 acres of vacant land with an Agricultural/Rural Future Land Use designation which is outside the utility service area for central potable water and wastewater.

EXISTING LAND USES (2019)

Future Land Use Category	Acres	% of Total
Ag (AG-R)	26,026	56
Commercial (OL, OM, ROR)	7,857	1.6
Government (50% of PSP-1, PSP-2 / 15,510ac)	7,755	1.6
Industrial (IL, IH, IU))	10,321	2.2
Institutional (CON)	33,178	7.1
Recreation (ROS)	13,841	2.9
Residential (ER, RES, UF-3)	124,857	26.7
Utilities (50% of PSP-1, PSP-2)	7,755	1.6
Total Acres – unincorporated county	466,626	
Note: *MU and MU-C account for 16,800 acres and are divided as follows:* *70% residential (11,760 ac)* *15% commercial (2,520 ac)* *5% industrial (840 ac)* *10% recreation (1,680 ac)*		
Source: *Manatee County Government - GIS Systems Analyst and Manatee County Property Appraiser*		

The results of How Will We Grow? generally recognized that past practices of restricting the County to low-rise and low-density development types is not a recipe for a community that wants to attract better employment opportunities, businesses, and a younger and more educated workforce. The report also identified some actions that should be done, no matter what alternative is chosen. The County has already begun to address changes in its land development regulations to provide greater opportunities for growth, to include more locations for greater building heights and density, increasing the variety of land uses in developing areas and allowing the free market to work more in the community.

Based on historical trends remaining in place, most of the population will reside in the unincorporated portions of the County, generally in the area east of I-75 corridor and the area north of the Manatee River.

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SECTION III

THE BLUEPRINT TO –

MITIGATION STRATEGY

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Section III

The Blueprint to Mitigation Strategy

A. GOALS AND OBJECTIVES

The Local Mitigation Strategy (LMS) is Manatee County's program developed to reduce or eliminate all forms of loss from natural or man-made disasters. The goal is to establish and maintain an ongoing process that continually assesses potential disasters, develops corresponding mitigation techniques and incorporates preparedness and response into the consciousness of the entire community. The County's LMS's process has produced the assessed vulnerabilities of the community to a variety of hazards, identified a comprehensive list of plans, programs and projects to decrease the magnitude of those vulnerabilities and prioritized the implementation of respective initiatives.

The preparation of the goals and objectives was undertaken by the LMS Working Group, comprised of staff from both the County and participating local governments. As a result, a wide range of technical expertise was available to provide input into the development of the LMS goals and objectives. In preparing the LMS goals and objectives, the Working Group drew upon information contained in each jurisdiction's Local Government Comprehensive Plan (adopted pursuant to Chapter 163, Part II, Florida Statutes), Community Rating System, Flood Plain Management Plans, Repetitive Loss Initiatives, and other relevant documents. By drawing upon the adopted local government Comprehensive Plans, the LMS effort ensures that the goals and objectives are reflective of the County's and its jurisdictions' long-term vision. In accomplishing its work, the LMS Working Group strove to ensure that the LMS goals and objectives were consistent with, not in conflict with, and/or furthered existing statutory and regulatory requirements. Furthermore, the goals and objectives were structured in a more generalized manner, since to one degree or another, all the jurisdictions in Manatee County are susceptible to the hazardous events described in this LMS. This approach allows for flexibility in the way the participating local governments implement the goals and objectives.

The following list of goals and objectives are the guiding principles that are used to develop the overall strategy of the LMS and to evaluate initiatives for implementation:

Goal 1:	**Maximize hazard prevention and mitigation efforts.**
Objective 1.1	Encourage structure retrofit programs to address identified flood, wind, evacuation vulnerabilities. (maybe by level of risk, income, etc.)
Objective 1.2	Regularly review and update list of vulnerable existing public and private critical facilities and encourage pre-disaster retrofit.
Objective 1.3	Identify post-storm redevelopment options and where feasible, purchase land in known vulnerable areas to prevent future loss to life or property. Purchased land through FEMA's Hazards Mitigation Grant Program or by the County depending upon potential uses.
Goal 2:	**Minimize adverse effects of a disaster/hazard event on the residents and properties of Manatee County.**
Objective 2.1	Develop strategies to address the special needs populations of the county.
Objective 2.2	Update the Post-Disaster Redevelopment Plan.
Objective 2.3	Encourage disaster planning training through collaborative programs with appropriate government agencies and the private sector.
Objective 2.4	Continue to develop training and improve communication of mitigation knowledge between all Emergency Support Function (ESF) agencies.
Objective 2.5	Promote and expand CERT training and service opportunities throughout the county.
Objective 2.6	Periodically evaluate and update new communication technologies with the public and internal response agencies.
Goal 3:	**Reduce the number of repetitive loss properties.**
Objective 3.1	Explore funding opportunities to retrofit, relocate, or acquire properties susceptible to repetitive flooding.
Objective 3.2	Require systematic maintenance programs for stormwater management systems.

Objective 3.3 Look to limit residential development to low density only in repetitive flood loss areas.

Goal 4: Strengthen incentives to protect vulnerable properties and encourage development in less vulnerable areas.

Objective 4.1 Monitor floodplain regulations and enforcement to assess effectiveness.

Objective 4.2 Develop and support economic incentive programs for both public and private sectors promoting benefits of structural retrofitting.

Objective 4.3 Discourage variances and exceptions in flood hazard areas as identified by Flood Insurance Rate Maps, storm surge, and historical flooding.

Objective 4.4 Promote the Florida Building Code standards requiring new developments and construction to meet applicable wind load standards for the county.

Objective 4.5 Promote regulations for new structures in 100-year flood areas to be elevated in conformance with or exceeding current Florida Building Code.

Objective 4.6 Ensure consistency across plans, ordinances and regulations regarding mitigation strategies and initiatives.

Objective 4.7 Encourage enforcement and enhancement of current standards and initiatives.

Objective 4.8 Strengthen existing land use regulations and policies through enhancement of review procedures and enforcement.

Objective 4.9 Review and consider policies to assure more permeable area in development, by limiting construction of paved surfaces and decreasing run-off.

Objective 4.10 Promote and support incentives to encourage higher standards of protection to structures and facilities from hazards.

Goal 5:	**Increase the level of disaster awareness through enhanced public education.**
Objective 5.1	Provide education and information to the public and business community about local efforts in mitigation techniques, planning and programming (i.e. events such as Hurricane Expo and general presentation to community group).
Objective 5.2	Utilize print media, television, radio and computer technology to educate the public on mitigation.
Objective 5.3	Annually provide outreach specifically to properties immediately adjacent to the repetitive loss properties as part of the Community Rating System outreach and repetitive property owner outreach programs.
Objective 5.4	Educate the public that are living or working in defined hazard areas so they understand their vulnerability and know appropriate techniques.
Objective 5.5	Encourage interested individuals to participate in hazard mitigation training.
Goal 6:	**Encourage a disaster-resistant economy that embraces a broad socioeconomic spectrum.**
Objective 6.1	Establish programs, facilities and resources to support business resumption activities by impacted local businesses.
Objection 6.2	Consider the needs of key employers in the County Emergency Management Plan (CEMP) and Post-Disaster Recovery Plan (PDRP).
Objection 6.3	Encourage community businesses to make their facilities and operations disaster resistant.

B. EXISTING POLICIES, PROGRAMS, AND RESOURCES

As the population continues to grow in Manatee County, hazard mitigation regulations must address new structures being built in areas susceptible to unusual occurrences either through prohibition, limitation, or strong codes to reduce potential losses.

The process of developing the LMS includes an assessment of current programs that are associated with hazard mitigation with an emphasis 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 or an objective 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. Section I, along with this section, list the current regulations, plans/policies and/or programs within the County and municipalities. Appendix F – Guiding Principles and Implementation, identifies how the participating municipalities have incorporated mitigation into their planning processes, policies and/or ordinances. The County and communities within continue to strive to expand and improve upon their mitigation measures as is illustrated below, in Appendix F and with the extensive listing of mitigation initiative projects identified in Appendix G.

Guided by the stated goals and objectives, Manatee County and the participating jurisdictions, currently have processes that are effective with respect to hazard mitigation. The understanding of these processes assists in the development of the LMS as well as with maintaining continuity among local growth management and emergency management plans, land-development regulations, building codes and other ordinances and programs. Further development of these programs will bring together the County processes through coordination of programs within County government and through inter-agency coordination with all local governments and businesses within the County.

The following key points are areas where greater attention is required to strengthen regulatory frameworks and better integrate other similar processes:

Regulatory Review:

Local regulatory procedures manage growth through the development review process. These regulations are principally associated with mitigating the impacts of development associated with floodplains/floodways, 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 that are listed below. Some of these topic issues include items that may be better established first through policy within the Comprehensive Plan and then drafting and modifying regulations for consideration to be provided through development-review and building-permitting functions.

At a minimum the following items should be addressed:

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

Plans and Policy Implementation:

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:

a) Limiting development density through limiting public-service provision for various areas within the County – some of which are associated with hazard prone areas
b) Prioritizing areas for protection and implementing a preservation or conservation value
c) Minimizing (non-mitigated) development within high-hazard coastal areas

d) Identifying the need to retrofit and improve stormwater systems
e) Maintaining adequate level-of-service capacities associated with public infrastructure and services
f) Implementing procedures of the Comprehensive Emergency Management Plan

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

a) Redevelopment of existing properties after a disaster to ensure mitigation strategies that would minimize the number of non-conforming uses are considered
b) Modify the Comprehensive Plan to recognize strategies approved within the LMS, per Chapter 163, Florida Statutes and 9J-5, Florida Administrative Code and Post-Disaster Redevelopment Plan (PDRP)
c) Update the Comprehensive Emergency Management Plan to use hazard mitigating strategies as identified through the Local Mitigation Strategy and Post-Disaster Redevelopment Plan (PDRP)
d) Establish a policy direction that encourages removal of septic tanks or hazardous sites from high hazard areas throughout the county after a catastrophic event
e) Establish policy direction to ensure evacuation shelters are addressed per the direction of the CEMP

Program Implementation:

The County has implemented programs that are effective in mitigating hazards, which mostly address the hazards associated with flooding at this time. Currently, some of the plans are not seamless with one another. One of the principal purposes of the LMS is to connect these programs and "identify areas for strengthening" to ensure implementation of the LMS. Plans principally associated with mitigating development that are becoming better integrated are:

a) Post Disaster Redevelopment Plan (PDRP)
b) Greenways and environmental lands acquisition – some areas identified for acquisition may serve a dual purpose (recreation/preservation and hazard mitigation)
c) National Flood Insurance Program and the Community Rating System criteria that provide for the provision of flood insurance
d) Floodplain Management and Stormwater drainage programs – these programs have been established to minimize and mitigate flooding hazards

At a minimum the following items should be continued:

a) Development of more monitoring systems to measure flood levels
b) Expansion of acquisition programs to acquire more hazard prone areas
c) Review of allowances made for nonconforming uses to re-build
d) Update the Comprehensive Emergency Management Plan to include a definition of critical facilities as defined within the Local Mitigation Strategy
e) 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
f) Establish a permanent funding source for mitigation projects within the Capital Improvements Program
g) Identify alternatives (and incentives) in building techniques for development within high hazard areas
h) Identify all potential hazards in the review of new development

C. NATIONAL FLOOD INSURANCE PROGRAMS (NFIP)

In addition to the potential for injury or loss of life from coastal or inland flooding is potential property loss. As of September 2019, Florida residents purchased 35% of all NFIP policies in the Unites States, 12.8% of those being for residents in Manatee County. This illustrates that Manatee County is very vulnerable to coastal and inland flooding.

Manatee County and the jurisdictions within its borders have committed to participating in the NFIP. To ensure continued compliance with the NFIP, each participating community will:

1. Conduct outreach projects for repetitive loss structure owners.
2. Flood protection information.
3. Public outreach on Flood Insurance Rate Maps (FIRM) and changes.
4. Promote the purchase of Flood Insurance by all property owners.
5. Enforce Land Development Code and Flood regulations on new construction and monitor existing construction for compliance.
6. Acquire flood prone properties and promote the relocation of residents from those hazard areas.
7. Mitigate existing stormwater structures to alleviate flooding.

NFIP POLICY INFORMATION

Community Name	Policies In-Force	Insurance In-Force Whole $	Written Premium In-Force $
Anna Maria	941	$295,324,800	$1,902,160
Bradenton Beach	1,441	$282,428,100	$1,608,516
Bradenton	4,247	$1,179,390,400	$2,953,621
Holmes Beach	3,135	$800,286,300	$4,306,981
*Longboat Key	3,626	$793,396,200	$3,712,842
Palmetto	2,228	$555,798,200	$1,607,841
Manatee County	22,188	$6,657,617,900	$13,626,842
** This information reflects the portion of Longboat Key, Florida located within Manatee County, as a portion of the city is located in Sarasota County*			
***Source**: http://www.fema.gov/policy-claim-statistics-flood-insurance (as of Sept 2019)*			

Since flooding, both coastal and inland, is considered the most critical hazard facing the county, all jurisdictions participate in the NFIP, have a floodplain management program and participate in the Community Rating System (CRS). The following table establishes the initial involvement of the communities with the NFIP, current map information and the Community Rating System ranking, while also identifying communities and the county demonstrating compliance with the National Flood Insurance Program.

NFIP PARTICIPATION BY JURISDICTION

Jurisdiction	Joined NFIP	RLP	Current Effect. Maps	Last Community Assist. Visit	CRS Class
Anna Maria	02/01/1984	Appx. C	03/17/2014	12/10/2018	7
Bradenton	06/01/1981	Appx. C	03/17/2014	12/10/2018	6
Bradenton Beach	06/11/1971	Appx. C	03/17/2014	12/10/2018	6
Holmes Beach	06/11/1971	Appx. C	03/17/2014	12/10/2018	6
Longboat Key	04/20/1970	Appx. C	03/17/2014	12/10/2018	5
Palmetto	09/02/1981	Appx. C	03/17/2014	12/10/2018	7
Manatee County	06/26/1971	Appx. C	03/17/2014	12/10/2018	5
***Source:** NFIP Flood Insurance Manual, April 2019*					

CRS provides flood insurance premium discounts to NFIP-participating communities that take extra measure to manage floodplains above the minimum requirements. A point system is used to determine a CRS rating from 10 to 1, with the lower score indicating better ratings. The more measures a community takes to minimize or eliminate exposure to floods, the more CRS points are awarded, the lower their CRS Class Rating and the higher the discount on flood insurance premiums.

Below is the current information on the number of policies and the amount of the insurance in-force as of June 30, 2019.

Community Name	Policies In-Force	Insurance In-Force Whole $	Written Premium In-Force $
Anna Maria	941	$295,324,800	$1,902,160
Bradenton Beach	1,441	$282,428,100	$1,608,516
Bradenton	4,247	$1,179,390,400	$2,953,621
Holmes Beach	3,135	$800,286,300	$4,306,981
*Longboat Key	3,626	$793,396,200	$3,712,842
Palmetto	2,228	$555,798,200	$1,607,841
Manatee County	22,188	$6,657,617,900	$13,626,842
** This information reflects the portion of Longboat Key, Florida located within Manatee County, as a portion of the town is located in Sarasota County*			
***Source**: http://www.fema.gov/policy-claim-statistics-flood-insurance*			

The County and its jurisdictions strive to reduce their vulnerability to flooding and actively seek to assist homeowners and businesses elevate or flood proof their structures.

D. RANGE OF PROJECTS FOR EACH HAZARD

Manatee County has developed a comprehensive range of different types of projects. Each of the LMS projects can be divided into 6 broad categories:

1) **Education, Awareness & Communication** - Actions to educate and inform citizens, officials, business owners, and property owners about the potential risk from hazards and ways to mitigate against them (e.g. providing mitigation education reading materials, outreach programs, etc.).

2) **Structural Retrofits & Additions** - Actions to modify and/or add to existing structures to mitigate against potential risks from hazards (e.g. storm shutters, back-up generators, etc.).

3) **Governmental Prevention** - Governmental actions that influence the way existing/future property and structures are built and developed to help bring forth mitigation goals (e.g. adopting a fire prevention ordinance, building codes that promote hazard mitigation, etc.).

4) **Technology** - Actions that require technological advancements to move mitigation goals forward (e.g. special GIS hazard layers, improved communication devices, etc.).

5) **Study, Research & Updated Information** - Actions that develop new information on risks, vulnerability, etc. to help with mitigation goals (e.g. stormwater drainage efficiency study, survey on how much citizens know about hurricane evacuations, etc.).

6) **Infrastructure Improvements** - Actions that improve infrastructure before and after hazardous events (e.g. new stormwater drainage systems, fixing road wash-out areas, etc.).

Manatee County currently has 85 main mitigation action items (projects) on the Project Priority Initiatives List, and with these, at least 22 projects which mitigation efforts address all identified hazards for the County. Reference Appendix G to see the projects, which incorporate the various hazards, and to see which jurisdiction each project considers.

It is worth noting that at least 32 mitigation action items (projects) address outreach and public education, as well as through all mitigation action items (projects) every category is touched thus making a well-rounded list of mitigation projects. To see which project(s) belongs to each category, view Appendix G.

E. CRITERIA FOR SCORING AND PRIORITIZING

With the creation of the LMS, the sponsoring governments, agencies, and departments developed the initiatives, then prioritized them using a scoring matrix developed by the LMS Working Groups. (See Appendix G)

The sponsor's prioritized initiatives were then presented to the Technical Working Group. The Working Group then reviewed, discussed, revised, and voted on each of the initiative, assigning them with a score and a ranking using the scoring matrix.

The list was then reviewed and revised by the Advisory Working Group. Following further discussion, the decision was made that like initiative should be scored alike and grouped. For this purpose, the scores derived from the matrix would be used as a guide to the grouping, and initiative not grouped would retain their original scores derived from use of the matrix.

In grouping the initiatives, in addition to using the scores derived from the matrix as a guide, considerations such as useful life of the initiative, cost-effectiveness, funding capability, and time required to implement and complete the project were factored.

F. PLANNING MECHANISMS

Manatee County and the communities within have other plans that will be reviewed and integrated into the LMS as they undergo regular updates. As previously mentioned in Section I, each of the participating jurisdiction, including Manatee County, have amended their Comprehensive Plan per the approved Evaluation Appraisal Report (EAR). The following is a list of plans and codes that have, and will continue to, be integrated into the Manatee County LMS.

- Manatee County Comprehensive Plan
- Manatee County Land Development Code
- Manatee County Comprehensive Emergency Management Plan
- Manatee County Floodplain Management Plan (In 2004, the LMS Plan became the floodplain management plan)
- Manatee County Post Disaster Redevelopment Plan
- Manatee County Stormwater Master Plan
- Community Wildfire Protection Plan

Since the last update of the LMS in 2014/2015, there have been no updates to any of the plans that relate to hazard mitigation or the LMS.

G. HISTORY OF PLAN INTEGRATION

One of the methods to most effectively implement the LMS is to propose and implement initiatives that will further the goals and objectives in the LMS. Initiatives, when implemented, will serve to mitigate existing issues. Other current plans, when reviewed and updated will be compared to the initiatives and objectives of the LMS to ensure that all planning activities work toward the common goal. Some identified planning mechanisms that have been utilized in the past include (but have not been limited to) floodplain ordinances, county and municipal comprehensive plans and land development codes, as well as comprehensive emergency management plan. Manatee County's Public Safety Department Emergency Management Division has oversight of the process for incorporating the LMS into other local government planning mechanisms. Some plans, such as the Comprehensive Emergency Management Plan (CEMP) and Continuity of Operations Plan (COOP), have prescribed processes that provide the opportunity for integration of LMS goals and objectives at scheduled intervals. During these planning cycles, Emergency Management reviews the LMS for consistency and identifies opportunities to link the LMS to the revised plans. As an example, information collected for the LMS risk assessment has been used to update the CEMP.

As part of the planning integration process, Emergency Management staff also continuously seeks plan-development opportunities that are not part of existing planning cycles, but are relevant to the goals and objectives of the LMS. The process for linking the LMS is not only relevant to County planning projects, but also to all participating jurisdictions, includes identifying mitigation- related elements in the plans under development, and assuring that policies and initiatives in the LMS are considered and addressed. Strategic planning is an example of this, as the process includes looking at both short- and long-term needs and addressing gaps and initiatives through policy and budget.

The LMS goals are used to help strengthen vulnerable critical facilities by using other grants, funding opportunities, and policy. The State Homeland Security Grant has been used to strengthen interoperable communication systems that are used during disasters. In addition, these grants have strengthened capabilities of the Emergency Operations Center (EOC) to provide redundant communications with other EOCs in the region and the State of Florida EOC in Tallahassee, Florida.

The Building and Development Services Department uses strict building codes to prevent loss from fires, natural disasters, as well as man-made events. Strict planning and building codes are used to minimize the vulnerability of newly constructed buildings throughout Manatee County.

The LMS Working Group looks to implement the Local Mitigation Strategy Plan through other plans and programs including updates to the Comprehensive Emergency Management Plan (using the hazards/risk assessment), and comprehensive future land use plans of Manatee County and municipalities. During the updating process, both of these documents will be revised to limit development in hazard areas, etc. These examples demonstrate that each participating jurisdiction is committed to incorporating mitigation principles and concepts into their normal operations and activities via their existing planning and programming processes. (See Appendix F)

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SECTION IV

HAZARD RISK & VULNERABILITY ASSESSMENT

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Section IV

Hazard Risk & Vulnerability Assessment

This section of the LMS includes the critical element that is the Threats and Hazards Risk Assessment (THIRA), which is a comprehensive and accurate assessment of the overall risk of all hazards and threats, and to determine vulnerability, and predict adverse impact that could potentially affect Manatee County and its communities. To minimize the losses suffered from disasters we must understand the type and severity of hazards that have the potential to affect Manatee County. Although the losses cannot be eliminated, much can be done to reduce the negative impact of a disaster. The THIRA is a tool used to gain the understanding needed to identify hazards, understand their potential severity and plan strategies to lessen the intensity, or mitigate, the damage due to the forces of and aftermath of a disaster. These mitigation strategies are used to develop and maintain the county-wide program called the Local Mitigation Strategy (LMS), as well as to how mitigation initiatives are determined and prioritized.

Consistent with Federal and State Plans and the County Comprehensive Emergency Management Plan (CEMP), the Manatee County LMS reflects an "All-Hazards" approach to mitigation. Consequently, the LMS Working Group researched technological, human-caused, and natural hazards that may affect the County. The THIRA includes the type and severity of hazards and the areas and populations affected. The information was compiled by one of the Public Safety Department Emergency Management Coordinators, along with stakeholder participation and feedback with those included in the Manatee Emergency Operations Workgroup.

One of the important additions to the 2019/2020 update of the LMS was to address hazard impacts to vulnerable populations. Addressing the needs and challenges of vulnerable populations in the County is essential in mitigation activities to increase the likelihood of improving public health objectives, prevent disaster-related economic costs, and reduce loss of life. Vulnerable populations include low income areas, senior citizens, special needs populations, non-English speaking households, and residents living in manufactured/mobile homes.

The Plan addresses those natural and technological hazards as required by FEMA and the State of Florida. Based on meteorological, geological and topological research, two of these hazards – landslides and volcanoes - do not pose any significant threat to Manatee County; however, due to the specific vulnerability of the County, 16 additional hazards have been analyzed during the 2019 update.

For hazards which posed a credible risk to Manatee County and/or any of it's six municipalities, discussion includes background, location, vulnerability, extent of impacts and probability. Rationale for omissions of hazards that are commonly recognized to have little to no affect on Manatee County and its six municipalities are included in subsection H of this Section, Section IV.

A. VULNERABLE POPULATIONS

A major goal of the LMS is to be able to reach every person in a community prior to, during and following an emergency event or disaster. To determine the means to provide effective support to the at-risk groups, we need to know which groups are at risk, where the people in these groups live or work, and the best ways they receive information.

Social vulnerability is defined in terms of the characteristics of a person or group that affect their capacity to anticipate, cope with, resist, and recover from the impact of a disaster in nature or society. A person's vulnerability to disaster is influenced by many factors such as, but not limited to; socioeconomic status, age, gender, race and ethnicity, English language proficiency, medical issues, and disability. Identifying some of these at-risk groups within the community, that could be disproportionately affected by disasters, is key to building a more resilience community profile. ~ Keeping in mind that many people may fit more than one category.

Socioeconomic status is one of the key factors of social vulnerability. It includes employment, income, housing (e.g., homelessness), and education level. People with lower socioeconomic status more likely lack resources needed to follow emergency preparedness instructions. By identifying at-risk groups ahead of time, you can plan more efficient evacuations or those who are unable/unwilling to lose a day's pay, identify people who need resources (e.g. food kits), and identify those who need transportation or special assistance.

Housing:

The greatest population concentration in Manatee County exists in the areas most vulnerable to impact from specific hazards, such as hurricanes, tropical storms, and transportation/hazardous material spills. Identifying high hazard areas and assessing the number of dwelling units and people living in those threatened areas, will indicate how susceptible Manatee County's is to displacement following a large-scale disaster.

According to the United States Census Bureau Population Estimates Program (PEP), updated annually, there are 194,539 housing units in

Manatee County. This is a 12% increase from the 2010 Census. Of the 194,539 units, 71.4% (138,900) were owner-occupied, which grew from the previous year of 69.6%. Furthermore, approximately 15,000 or 7.7% of the dwelling units are located within a high hazard area.

The average household size is 2.56 for owner-occupied and 2.26 for renter occupied. Manatee County has seen a renewed interest in multi-family rental products since 2012. The following table provides a breakdown of housing units by jurisdiction for 2019.

HOUSING OCCUPANCY BY JURISDICTION

Description	Manatee County	City of Anna Maria	City of Bradenton	City of Bradenton Beach	City of Holmes Beach	*Town of Longboat Key	City of Palmetto
Total Housing Units	183,774	1,435	26,780	1,866	4,561	9,347	6,735
Occupied Housing Units	140,255	482	20,885	509	2,205	3,820	4,701
Vacant Housing Units	43,519	953	5,895	1,357	2,356	5,527	2,034
Homeowner vacancy rate	2.7	7.3	2.8	14.7	0.5	3.1	5.1
Rental vacancy rate	10.0	82.8	8.4	69.3	38.3	70.6	8.7

**Numbers based on entire jurisdiction located in both Manatee and Sarasota Counties.*
***Source**: American Community Survey, U.S. Census Bureau -2013-2017 data*

HOUSING UNITS IN STRUCTURE BY JURISDICTION

Description	Manatee County	City of Anna Maria	City of Bradenton	City of Bradenton Beach	City of Holmes Beach	*Town of Longboat Key	City of Palmetto
Total Housing Units	183,774	1,435	26,780	1,866	4,561	9,347	6,735
1-unit, Detached	95,267	1,174	11,369	278	1,935	2,352	2,482
1-unit, Attached	14,799	80	2,464	170	539	596	487
2 Units	4,350	66	606	173	551	113	211
3 or 4 Units	6,150	51	1,333	181	446	208	162
5 to 9 Units	8,885	38	2,861	146	337	718	90
10 or More Units	9,133	9	2,200	265	270	802	209
Mobile Home or RV	29,959	0	1,543	233	0	210	2,092

**Numbers based on entire jurisdiction located in both Manatee and Sarasota Counties.*
***Source**: American Community Survey, U.S. Census Bureau -2013-2017 data*

The average value for housing units, based on the U.S. Census Bureau for 2018, in Palmetto is $117,200, in Bradenton $150,400, in Longboat Key $709,300 and countywide $197,200. No information was located for Anna Maria, Bradenton Beach, or Holmes Beach.

Evacuation Levels and Flood Zones:

The at-risk population living within the County designated evacuation levels (the area that is at risk for severe storm surge flooding during a storm event) or flood zones (the geographic areas that FEMA has defined according to varying levels of flood risk) is shown in the two tables below.

POPULATION BY EVACUATION LEVELS

2017	Level A	Level B	Level C	Level D	Level E
Site-built Homes	53,574	19,822	32,257	74,951	39,571
Mobile/Manuf. Homes	11,262	4,526	6,870	13,109	2,537
TOTAL	64,836	24,348	39,127	88,060	42,108
2020	**Level A**	**Level B**	**Level C**	**Level D**	**Level E**
Site-built Homes	45,051	17,982	29,391	68,576	41,056
Mobile/Manuf. Homes	9,495	3,781	5,793	11,159	2,434
TOTAL	54,546	21,763	35,184	79,735	43,490

Source: *Florida Statewide Regional Evacuation Study Program – Evacuation Transportation Analysis (2017 update)*

BUILDING BY FLOOD ZONES

Land Use Category	High Risk (A or V)	Low Risk (X)	*Mixed	Moderate Risk (X-shaded)	Moderate & Low
Residential	26,016	99,869	2,699	2,800	936
Mobile Homes	7,516	17,407	996	289	146
Multi-Family	1,898	6,094	169	78	25
Commercial	1,025	3,213	131	68	36
Industrial	347	1,640	44	70	21
Agricultural	466	3,286	60	38	21
Institutional	239	1,221	45	37	10
Government	363	1,652	46	51	19
Mixed	1,285	2,755	105	27	9
Other	443	512	10	7	7

Source: Manatee County GIS, 2019
*Mixed – property encroaches in High Risk Zones (A or V)

Seasonal Population:

Manatee County also has a regular influx of seasonal population which includes tourists, short-term or long-term visitors, persons who live here part of the year which includes migrant farm workers. The coastal areas experience concentration of tourist during the winter months. As per the 2010 U.S. Census, Manatee County has 19,126 vacant units as seasonal, recreational, or occasional use.

The Elderly:

Older adults are more likely to have medical problems that put them at an increased risk during a disaster. They might have chronic health problems, limited mobility, limited sight, hearing issues, or limited cognitive ability. Any of these health issues can limit their capacity to follow instructions. Older adults might also have reduced income, putting them at increased risk because of their limited resources. Some older adults are also isolated by their living situations or limited mass media use, making communication with this group difficult.

Over 26 percent of the County's population is of the age 65 and above, out of which 3.5 percent is above the age of 85 (9,928). Moreover, the 65 years and above population has increased by 3 percent since 2010. Most of the 65 year and older population is concentrated along, and west of, the US 41 corridor located both north and south of the Manatee River in Bradenton and Palmetto, as well as the US 301 N. corridor in Ellenton. Majority of the minority low-income elderly are concentrated primarily along the US 41 corridor between Manatee Avenue and Cortez Avenue, as well as east of US 41 in Palmetto. Disasters usually affect older people more disproportionately. As mentioned in a Center for Disease Control (CDC) report, more than 70 percent of those who died as a result of Hurricane Katrina were elderly. Many of the 200 people who died as a result of the hurricane in Mississippi were also older adults. People above 65 years of age are specifically vulnerable due to both physical and financial reasons. In addition, according to the American Medical Association, there is a greater probability that seniors may be more susceptible to fraud and financial exploitation than other populations during times of crisis.

Children:

Young children are also more at risk, as they have yet to develop the resources, knowledge, or understanding to effectively cope with disaster, and they are more susceptible to injury and disease. Young children also are more vulnerable when they are separated from their parents or guardians, for example, at school or in daycare. Children are usually extremely vulnerable due to their high susceptibility to disease and post-disaster contamination. FEMA states that children are particularly vulnerable to post-disaster stress and anxiety and would require special and prolonged care. Also, having children that need to be cared for affects the ability of parents to resume their jobs/businesses in the recovery phase.

Approximately 17.79% of Manatee County's current population is of age 19 years or younger and 5% is below 5 years of age.

Disabled Persons:

Persons with a disability include those with a cognitive, physical, or sensory impairment that limits major life activities. People with physical impairments might include those with limited sight, hearing, or mobility or those who are dependent on electric power to operate medical equipment. For many people with medical conditions and disabilities, their ability to hear, understand, or respond to a warning is impaired. This group also includes those with access and functional needs, irrespective of diagnosis or medical conditions (e.g. cancer).

Approximately 9% of the County's population above the age of 5 years has some form of disability. As of October 2019, almost 1,200 persons were registered with the Manatee County Special Needs Registry (SPNR) for evacuation transportation or shelter assistance. Roughly 62.8% of the people registered (748 people) are either in the hurricane evacuation areas (Level A through E) and 4.2% of the people registered (50 people) are in a mobile home elsewhere in the County.

Recognizing a significant number of disadvantaged and disabled persons living in the County, the Emergency Management Division prepared a unique outreach packet for those who may require special assistance during a time of disaster, including finding a place to shelter and transportation during evacuation. A Special Needs Disaster Preparedness Packet includes a registration form, Special Needs Shelter Fact Sheet, and information the resident would need if driving themselves to the shelter.

Note: The U.S Census Bureau defines disability as a long-lasting sensory, physical, mental, or emotional condition or conditions that make it difficult for a person to do functional or participatory activities such as seeing, hearing, walking, climbing stairs, learning, remembering, concentrating, dressing, bathing, going outside the home, or working at a job.

Homeowner vs. Rental Population:

Understanding the percentage of renters in a community is essential as not owning a home makes this group extremely mobile and most likely to leave the County in the event of a major disaster. According to the 2010 U.S. Census, approximately 20% of the County's population lives in renter occupied housing units.

Losing population following a catastrophic event can have severe impacts on the County's economy making it increasingly difficult to recover quickly. This is a major concern for Manatee County especially since the County has seen a substantial increase of more than 225% in renter occupied housing units from 2000 to 2010.

Income:

A strong socio-economic status enables communities to quickly absorb and recover from losses whereas a weak one hampers their recovery and return to normalcy. As per the U.S. Census Bureau 2017 American Community Survey 5-year Estimates, approximately 32% of Manatee County households had a household income less than $25,000 and around 5.8% had less than $10,000. Moreover, in 2017 approximately 13.4% of the population was below the poverty line in comparison to 12% in 2010.

Low-income and lack of enough affordable housing choices are two factors that can drastically limit our ability to recover quickly from a major disaster. Low-income households are most likely to suffer greater relative losses and face difficulty in finding enough shelter options after a disaster as the available housing stock becomes limited, uninhabitable or too costly to afford.

B ECONOMIC VULNERABILITY

Describing vulnerability in terms of potential dollar loss provides the local government, State, and federal government with a common framework with which to quantitatively measure the effects of hazards on the community and more accurately determine the benefit-cost ration of investments in mitigation activities. It is an essential component to risk assessment and the ability to implement a strategy to prevent or reduce future losses. In Florida, it is a vital tool for decision-makers who must make the sometime difficult decisions regarding growth-management, land development regulations, and funding for infrastructure and mitigation projects.

Identifying employers located within high hazard areas and assessing the number of people employed by each will indicate how susceptible Manatee County's economy is to a large-scale disaster. To understand our economic vulnerability, employer distribution within the County was studied using data from U.S. Census Bureau, American Community Survey Estimates (2017)/ESRI Community Analyst Business Summary (Accessed 2019).

The data outputs determined that approximately 500 businesses (that employ approximately 3,500 employees) exist in the high hazard areas where there already exists a 4.5% unemployment rate.

The vast majority of industrial activity in Manatee County is generally associated with, or in close proximity to Port Manatee. The port is located in the northwestern corner of the County adjacent to Hillsborough County, along the U.S. 41 & 301 corridors, and south of the Manatee River. Additional industrial sites can be found east of U.S. 41 around the

Tropicana Products, Inc. Plant. Although not classified as an industrial activity, phosphate mining and associated industries can be found in the eastern portions of the County. Office space is primarily located within the central business district of Bradenton, in downtown Palmetto, near Lakewood Ranch Boulevard and University Parkway. With the exception of DeSoto Mall and the Ellenton Premium Outlets, commercial activity primarily consists of strip-malls throughout the County.

CIVILIAN LABOR FORCE STATISTICS

Category	Manatee County	Florida	United States
Labor Force	179,493	10,421,251	164.94 million
Labor Force % of County Population	45.46%	n/a	n/a
Unemployment Rate	3.4%	3.5%	4.0%

Source: *United States Bureau of Labor Statistics, July 2019*

Manatee County has over 30 companies that employ more than 250 people. Some of these major employers include School District of Manatee County, Manatee County Government, Blake Medical Center, Manatee County Sheriff's Office, Manatee Memorial Hospital, Bealls Inc., IMG Academy, Publix, and Tropicana Products Inc. The two tables below list down the major private and public sector employers within the County.

LARGEST EMPLOYERS

Private Sector	Full-Time employees
Bealls Inc	1,786
IMG Academy	1,000
Publix	989
Tropicana Products Inc.	910
Sun Hydraulics	700
Feld Entertainment	600
TriNet	600
SYSCO West Coast Florida Inc.	468
Public Sector	**Full-Time employees**
Manatee County School District	6,800
Manatee County Government	2,012
Manatee Memorial Hospital	1,651
Manatee County Sheriff's Dept	1,226
Blake Medical Center	1,486
City of Bradenton	543
State College of FL Manatee Sarasota	475

Source: *Bradenton Area Economic Development Corporation*

Small businesses are at greater risk of not recovering from a major disaster. This is a key concern for Manatee County as a majority of the County's establishments are small businesses. The U.S. Census County

Business Patterns (2016 Business Patterns dataset) show that 98.3% of establishments within Manatee County employ less than 50 employees and 99.9% employ less than 500. The ones that employ 500 or more are mostly involved in manufacturing, transportation and warehousing, construction, educational services, health care and assistance, professional, and Food Services. The following table indicates the employment by industry type for Manatee County.

EMPLOYMENT ESTIMATES BY TYPE OF INDUSTRY

Employment Sector	Total Establishments	# of Employees
Agriculture, forestry, fishing & hunting	16	1,592
Mining, quarrying, oil and gas	1	Not avail
Utilities	10	Not avail
Construction	999	6,832
Manufacturing	275	8,002
Wholesale trade	390	3,165
Retail trade	1,273	19,583
Transportation and warehousing	163	2,567
Information	105	1,410
Finance and insurance	507	2,498
Real estate, rental and leasing	587	2,068
Professional, scientific and technical	997	4,309
Management of companies & enterprise	76	1,954
Administrative support	673	6,369
Educational services	124	2,274
Health care and social assistance	912	16,031
Arts, entertainment and recreation	141	2,069
Accommodations and food services	651	13,703
Other services (except public admin)	818	4,240
Industries not classified	11	10
Total for all sectors	8,729	99,027

Source: *United States Census Bureau, 2016 County Business Patterns*

Historically, agriculture activity, concentrated primarily east of the I-75 corridor, has played an important role in the County's economy. The Florida Department of Agriculture and Consumer Services' 2018 Florida Agriculture by the Numbers Report, has the following information for Manatee County:

AGRICULTURAL ACTIVITY

Statistical Report	Unit type	County Rank in FL
Citrus (production -all types)	3,282,000 boxes	9th
Commercial Citrus	16,231 acres	9th
Citrus Trees	2,110,000 trees	9th
Milk Cows	4,100	7th
Cattle and Calves	31,500	19th
Beef Cows	16,300	14th

Source: *Florida Department of Agriculture and Consumer Services' 2016 Florida Agriculture by the Numbers Report*

2002, 2007 and 2017 Florida Statistical Abstract			
	2002	2007	2017
Active Farms	852	794	753
Acres in Production	301,231	225,101	192,630
Acre Distribution:			
Cropland	117,173	77,299	71,172
Woodland	38,266	25,946	
Timberland			362
Pasture	104,172	92,184	162,568
Other Uses	41,620	29,672	
Reported Income	$268,480,000	$239,624,000	$360,119,000

DETERMINING ECONOMPIC IMPACT

Based on the type and severity of the hazard, the charts below, provided by Manatee County Property Appraiser, 2019 Preliminary Taxing Authority Report, can assist with the general determination of economic impact.

City of Anna Maria			
Property Type	**No. of Lots**	**Assessed Value**	**Average Value**
Vacant Residential	84	$34,354,552	$408,983
Single Family Residential	1,280	$1,023,884,398	$799,910
Multi-Fam (less than 10 units)	132	$98,482,101	$746,076
Condominium	80	$23,204,855	$290,061
Vacant Commercial	7	$2,864,007	$409,144
Improved Commercial	61	$35,108,602	$575,551
Institutional	7	$8,311,531	$1,187362
Government	28	$28,637,073	$1,022753
Miscellaneous	6	$611	$102

City of Bradenton			
Property Type	**No. of Lots**	**Assessed Value**	**Average Value**
Vacant Residential	784	$38,432,617	$49,021
Single Family Residential	12,001	$1,773,609,990	$147,788
Mobile Home	1	$24,156	$24,156
Multi-Fam (less than 10 units)	634	$78,750,332	$124,212
Multi-Fam (10 units or more)	39	$450,603,204	$11,553,928
Condominium	6,359	$869,875,389	$136,794
Cooperatives	392	$12,148,240	$30,990
Ret. Home and Misc Res.	475	$1,165,094	$2,453
Vacant Commercial	242	$27,942,123	$115,463
Improved Commercial	859	$633,391,073	$737,359
Vacant Industrial	1	$100	$100
Improved Industrial	95	$100,035,538	$1,053,006
Agriculture	11	$210,030	$19,094
Institutional	220	$358,670,550	$1,630,321
Government	294	$206,260,105	$701,565
Miscellaneous	42	$2,149,555	$51,180

City of Bradenton Beach			
Property Type	**No. of Lots**	**Assessed Value**	**Average Value**
Vacant Residential	119	$11,847,125	$99,556
Single Family Residential	270	$151,646,525	$561,654
Multi-Fam (less than 10 units)	180	$86,516,642	$480,648
Condominium	1,035	$329,449,979	$318,309
Ret. Home and Misc Res.	120	$18,444,940	$153,708
Vacant Commercial	1	$195,000	$195,000
Improved Commercial	46	$45,460,618	$988,274
Institutional	5	$109,652	$21,930
Government	48	$59,781	$1,245

City of Holmes Beach			
Property Type	**No. of Lots**	**Assessed Value**	**Average Value**
Vacant Residential	126	$23,781,922	$188,745
Single Family Residential	1,880	$1,087,683,357	$578,555
Multi-Fam (less than 10 units)	347	$213,209,229	$614,436
Condominium	1,639	$717,982,669	$438,061
Cooperatives	2	$4,008,020	$2,004,010
Ret. Home and Misc Res.	279	$3,204,641	$11,486
Vacant Commercial	4	$1,071,133	$267,783
Improved Commercial	68	$95,752,386	$1,408,123
Improved Industrial	1	$774,625	$774,625
Institutional	11	$16,378,743	$1,488,977
Government	33	$12,653,116	$383,428
Miscellaneous	24	$641,629	$26,735

Town of Longboat Key			
Property Type	**No. of Lots**	**Assessed Value**	**Average Value**
Vacant Residential	166	$49,386,715	$64,474
Single Family Residential	790	$669,107,052	$846,971
Multi-Fam (less than 10 units)	40	$62,847,260	$1,571,181
Condominium	2,476	$1,045,332,360	$422,186
Cooperatives	2	$5,362,752	$2,681,376
Ret. Home and Misc Res.	134	$25,607	$192
Vacant Commercial	15	$1,435,560	$95,704
Improved Commercial	36	$65,049,182	$1,806,922
Institutional	5	$9,984,428	$1,996,886
Government	53	$18,670,827	$352,280
Miscellaneous	23	$617,573	$26,851

City of Palmetto			
Property Type	**No. of Lots**	**Assessed Value**	**Average Value**
Vacant Residential	660	$22,248,112	$33,709
Single Family Residential	2,600	$413,901,344	$159,193
Mobile Home	151	$12,442,675	$82,402
Multi-Fam (less than 10 units)	135	$16,944,001	$125,511
Multi-Fam (10 units or more)	10	$24,284,270	$2,428,427
Condominium	1,163	$204,472,950	$175,815
Cooperatives	567	$36,276,158	$63,979
Ret. Home and Misc Res.	154	$3,061,000	$19,877
Vacant Commercial	101	$17,006,844	$168,385
Improved Commercial	231	$164,393,795	$711,661
Vacant Industrial	20	$1,842,323	$92,116
Improved Industrial	138	$58,052,181	$420,668
Agriculture	10	$1,208,353	$120,835
Institutional	105	$84,416,587	$803,967
Government	80	$70,019,117	$875,239
Miscellaneous	18	$1,583,460	$87,970

Manatee County (unincorporated)			
Property Type	**No. of Lots**	**Assessed Value**	**Average Value**
Vacant Residential	11,432	$555,124,229	$45,559
Single Family Residential	84,066	$19,644,859,088	$233,684
Mobile Home	4,513	$260,250,914	$57,667
Multi-Fam (less than 10 units)	3,031	$429,918,464	$141,840
Multi-Fam (10 units or more)	95	$1,021,006,177	$10,747,433
Condominium	21,666	$2,632,559,486	$121,506
Cooperatives	6,230	$330,033,306	$52,975
Ret. Home and Misc Res.	8,614	$2,672,982	$310
Vacant Commercial	794	$151,647,924	$190,992
Improved Commercial	2,366	$2,439,688,792	$1,031
Vacant Industrial	389	$52,369,091	$134,625
Improved Industrial	1,177	$1,048,426,370	$890,762
Agriculture	2,243	$294,223,896	$131,174
Institutional	530	$761,794,417	$1,437,347
Government	1,138	$818,515,987	$719,258
Miscellaneous	647	$57,881,060	$89,461
Non-Agriculture Acreage	444	$191,620,369	$431,577

C. NATURAL HAZARDS

Natural hazards are threats stemming from naturally occurring processes that produce a negative impact on life, property, and/or the environment. These processes have been occurring for much of earth's history, however they are typically only considered to be dangerous if they have a negative impact on humans and their way of life. Natural hazards can occur with a rapid onset with little to no warning or can take place over a prolonged period of time.

1. Hurricanes and Coastal Storms



Background: These storms called "tropical cyclones" which forms over tropical or subtropical waters. It is a rotating low-pressure weather system that has organized thunderstorms but no fronts (a boundary separating two air masses of different densities). Tropical cyclones with maximum sustained surface winds of less than 39 miles per hour are called "tropical depressions". Those with maximum sustained winds 39 miles per hour or higher are called "tropical storms". When a storm's maximum sustained winds reach 74 miles per hour, it is called a "hurricane". The higher the category, the greater the hurricanes potential for property damage. Hurricanes originate in the Atlantic basin, which include the Atlantic Ocean, Caribbean Sea, and Gulf of Mexico.

On average, seven hurricanes strike the United States every four years per the NOAA Technical Memorandum NWS TPC-5. Eighteen states along the east and gulf coasts, Hawaii, the U.S. Virgin Islands, the Territories of Guam and American Samoa, and the Commonwealths of Puerto Rico and the Northern Mariana Islands are all affected by hurricanes. More than 50 million people reside along hurricane-prone coastlines with 36 million residing along the Gulf of Mexico and Atlantic coast (Multi-Hazard Identification, FEMA 1997). Powerful wind is only one of the dangerous forces associated with a hurricane. Storm surges, storm tides and heavy rains may lead to flooding and tornadoes. According to the NOAA Technical Memorandum NWS TPC-5, Hurricane Katrina demonstrated that depending on the point of impact, a category 3 storm can be as or more devastating than a category 5. This hurricane was the costliest storm event ever recorded in the United States with $81 billion of damage. Katrina is ranked third in two categories, the third highest number of deaths (1,500) and the third lowest central pressure ever noted at 920 millibars. An event

like Hurricane Katrina can help a community analyze its vulnerability to hurricanes. Hurricane Sandy (unofficially known as "Superstorm Sandy") was the deadliest and most destructive hurricane of the 2012 Atlantic hurricane season, as well as the second costliest in United States history at $65 billion. Much of the impact in the United States was to the Mid-Atlantic and New England States with major impacts to New Jersey and New York coastlines.

Probability: Due to its subtropical location and long coastline, the entire county is particularly susceptible to hurricanes and tropical storms and could experience a Category 5 storm with winds of 156 mph or greater. Information located on the Atlantic Oceanographic and Meteorological Laboratory/National Oceanic and Atmospheric Administration website places the probability of a tropical storm/hurricane striking Manatee County at 36-42 percent annually. The probability of a major storm (Category 3+) is at 2 percent annually.

Hurricane Wilma caused wind damage with 143 insurance claims. Hurricanes Jeanne, Frances and Charley in 2004 caused flooding and wind damage to homes and businesses. Tropical Storm Gabrielle in 2001 had rain up to 9 inches, flooding roads, homes and businesses from Anna Maria Island to Parrish with many downed trees and power lines. Hurricane Gordon flooded homes and businesses in Bradenton Beach. Tropical Storm Josephine in 1996 caused flooding, the heaviest on Anna Maria Island along with road damage in Longboat Key and Bradenton Beach. Tropical Storm Marco in 1990 had up to 6.14 inches of rain, causing flooding with damage to both public and private properties.

According to information from the Manatee County's Emergency Management Division has been affected by eight tropical storms and eleven hurricanes since August 2, 1995. These storms caused an estimated $50,532,089 in property damage.

The greatest threat posed by hurricane or tropical storm to Manatee County is storm surge along the barrier islands, wind damage to homes, businesses, and coastal lands and inland flooding. Storm surge relating to the storms between January 1998 and June 2012 caused $8.050M in property damage in Manatee County and its jurisdictions. (National Climatic Data Center, NOAA). Depending on location within the County, storm surge could vary from 19' at the barrier islands, 18.9' at Manatee Memorial Hospital along Manatee River and 8.8' at Lake Manatee Dam.

SAFFIR/SIMPSON HURRICANE WIND SCALE

Category	Sustained Winds	Types of Damage Due to Hurricane Winds
Tropical Depression	<38 mph	Winds can produce some damage
Tropical Storm	39 to 73 mph <64 kt <119 km/h	Dangerous winds can produce some damage
1	74-95 mph 64-82 kt 119-153 km/h	Very dangerous winds will produce some damage: Well-constructed frame homes could have damage to roof, shingles, vinyl siding, and gutters. Large tree branches will snap, and shallowly rooted trees may be toppled. Extensive damage to power lines and poles likely will result in power outages that could last several days.
2	96-110 mph 83-95 kt 154-177 km/h	Extremely dangerous winds will cause extensive damage: Well-constructed frame homes could sustain major roof and siding damage. Many shallowly rooted trees will be snapped or uprooted and block numerous roads. Near-total power loss is expected with outages that could last from several days to weeks.
3	111-129 mph 96-112 kt 178-208 km/h	Devastating damage will occur: Well-constructed framed homes may incur major damage or removal of roof, decking, and gable ends. Many trees will be snapped or uprooted, blocking numerous roads. Electricity and water will be unavailable for several days to weeks after the storm passes.
4	130-156 mph 113-136 kt 209-251 km/h	Catastrophic damage will occur: Well-constructed framed homes can sustain severe damage with loss of most of the roof structure and/or some exterior walls. Most trees will be snapped or uprooted, and power poles downed. Fallen trees and power poles will isolate residential areas. Power outages will last weeks to possibly months. Most of the area will be uninhabitable for weeks or months.
5	157 mph or higher 137 kt or higher 252 km/h or higher	Catastrophic damage will occur: A high percentage of framed homes will be destroyed, with total roof failure and wall collapse. Fallen trees and power poles will isolate residential areas. Power outages will last for weeks to possibly months. Most of the area will be uninhabitable for weeks or months.
Source: *http//www.nhc.noaa.gov/climo*		

DEPTH AND STORM SURGE AT SELECTED POINTS OF REFERENCE

Location	Elevation	C1 Depth[1]	C2 Depth	C3 Depth	C4 Depth	C5 Depth	C1 Surge[2]	C2 Surge	C3 Surge	C4 Surge	C5 Surge
North approach to Desoto Bridge	6.7	0.0	1.7	4.9	8.3	11.3	3.7	8.3	11.6	14.9	18.0
South approach to Desoto Bridge	15.3	0.0	0.0	0.0	0.0	2.7	3.2	8.8	12.0	15.2	18.0
East approach to Manatee Ave. – Lift Bridge	8.4	0.0	0.3	4.0	7.1	10.4	4.8	8.7	12.4	15.5	18.8
West approach to Manatee Ave. – Lift Bridge	10.1	0.0	0.0	2.2	5.3	8.6	4.8	8.7	12.4	15.4	18.7
East approach to Cortez Bridge	11.7	0.0	0.0	0.9	4.0	7.3	5.0	8.9	12.6	15.7	19.0
West approach to Cortez Bridge	9.7	0.0	0.0	2.8	5.9	9.2	5.0	8.8	12.5	15.6	18.9
Manatee Memorial Hospital	5.3	0.0	2.9	5.8	9.2	12.8	2.3	8.2	11.1	14.5	18.1
Anna Maria City Hall	5.5	0.0	2.9	6.3	9.5	12.7	4.6	8.3	11.8	15.0	18.1
City of Bradenton Beach City Hall	4.0	1.0	4.8	8.4	11.6	14.8	5.0	8.8	12.5	15.6	18.8
City of Bradenton City Hall	9.5	0.0	0.0	1.1	6.4	8.5	3.7	7.2	10.6	15.9	18.0
Manatee County Administration Center	14.8	0.0	0.0	0.0	1.3	3.2	2.7	5.6	9.0	16.1	18.0
City of Palmetto City Hall	15.3	0.0	0.0	0.0	0.5	2.8	3.1	7.9	12.0	15.8	18.1
Lake Manatee Dam	4.4	0.0	0.0	0.0	0.0	4.4	0.8	2.0	2.8	3.6	8.8
City of Holmes Beach City Hall	3.3	1.2	5.2	8.8	11.9	15.1	4.6	8.6	12.1	15.2	18.5
DeSoto Square Mall	16.2	0.0	0.0	0.0	0.0	1.0	0.8	2.0	2.8	13.1	17.2

[1] Depth refers to depth of inundation at the site (storm surge value minus the ground elevation)
[2]Surge refers to the storm surge value from the SLOSH Model

Source: *Florida Statewide Regional Evaluation Study Program, Storm Tide Atlas, Manatee, 2010*

Heavy rain associated with a tropical storm or hurricanes can cause flooding of riverine and low-lying areas. Tropical Storm Gabrielle in 2001 caused $3.3 million in flood damages due to heavy rain from Anna Maria Island to Parrish.

Vulnerability: The barrier islands of Longboat Key and Anna Maria Island are most susceptible to the effects of storm surge created by tropical systems and severe winter storms. The combination of high tides and wind action can create coastal flooding and saltwater inundation of the barrier islands and is considered a significant risk factor. Secondary areas susceptible to these same impacts are the low-lying areas along the Manatee and Braden Rivers. Storm surge can range from 6 feet for a Category 1 storm to 28 feet for a Category 5 storm. Based on the study done by Tampa Bay Regional Planning County, storm surge could go as far inland as Lake Manatee, with a surge of almost 9 feet.

Storm surge, enhanced by a squall line, of 3.0 to 4.0 feet above astronomical tides caused flood damage to 50 homes and pushed a few dry-docked boats into coastal streets, flooding portions of coastal road on Longboat Key, causing $200K in damage in January 1999. Hurricane Dennis, July 10, 2005, produced a storm surge of approximately 3 feet at Port Manatee, with waves eroding an estimated 20 percent of the shoreline on Anna Maria Island. Storm surge from Hurricane Ike in September 2008 caused minor flooding of roads in Holmes Beach. Storm surge and waves associated with Tropical Storm Debby in June 2012 eroded half the sand dunes at the south end of Anna Maria Island, an estimated $5.9M in damage.

EVACUATION LEVELS AND STORM SURGE
(FEET IN NAVD 1988)

Legends	Evacuation Levels	Instructions	Storm Surge Height
	Level A	Evacuate red areas and all manufactured homes	Up to 11 ft.
	Level B	Evacuate red and orange areas and all manufactured homes	Up to 15 ft.
	Level C	Evacuate red, orange and yellow areas and all manufactured homes	Up to 18 ft.
	Level D	Evacuate red, orange, yellow and green areas and all manufactured homes	Up to 28 ft.
	Level E	Evacuate red, orange, yellow, green and blue areas and all manufactured homes	Up to 34 ft.

***Source**: Florida Statewide Regional Evacuation Study Program, TBRPC*

The damage from the storm itself is related to wind speed and the accompanying "pressure" exerted on structures. Wind damage may also occur from hurricane spawned tornadoes. Tornadoes often form on the leading edge of a hurricane and have the potential to cause more destruction than the hurricane itself. Tornadoes are a threat in conditions ranging from tropical storms to the most powerful hurricanes. All of Manatee County is in danger from the cyclone winds of tornadoes, tropical storms and hurricanes. The greatest threat is to the large number of manufactured homes, 29,959, based on information provided by the Manatee County Property Appraisers, throughout the County and to the numerous structures constructed prior to building code changes that resulted from the devastation created by Hurricane Andrew.

The coastal regions of the United States are associated with intense winds from tropical storms and thunderstorms. It is not uncommon to have winds that exceed 100 mph within these areas. Florida, including Manatee

County, is susceptible to winds of greater than 100 mph on a regular basis. According to data from the American National Standards Institute – (1982), the Tampa Bay area is identified as having winds in excess of 100 mph return at an annual probability of 0.2% (a 50-year storm event). The probability is greater for occurrence of a storm with 70 mph winds.

The National Weather Service will issue a wind advisory with sustained winds at 31-39 mph for at least one hour or any gusts to 46-57 mph; a high wind warning will be issued with sustained winds 40-73 mph for at least one hour or any gusts greater than 58 mph. On the National Climatic Data Center website, the strongest wind gusts were 81 mph in 1969 and 1977.

Tropical Storm Colin made landfall in rural Taylor County, Florida on June 7, 2016, which resulted in 1.3 inches of rain and winds up to 50 mph for Manatee County. Anna Maria Elementary School was closed for one day, private property damage exceeded $300,000, County property damage exceeded $300,000 and the city of Bradenton reported over $200,000 in damages. Hurricane Hermine intensified into an 80 mph Category 1 hurricane just before making landfall in the Florida panhandle September 2, 2016. As a result of Hermine, Manatee County precipitation totals generally ranged from 5 to 10 inches, inundating streets in the eastern parts of the county. Residents in Bradenton, located in the western side of the county, evacuated their homes due to freshwater flooding. Coastal flooding also occurred due to tides of 2–3 ft above average. Winds reached tropical storm force at the Sarasota–Bradenton International Airport, with damage to roofs and porches, especially in Bradenton and Ellenton. Throughout the county, impacts from the storm left 72 homes with minor damage and 21 others with major impact. Damage in Manatee County reached $5.1 million. Tropical Storm Emily was a “pop up” storm on July 31, 2017, which formed and made landfall with 45 mph winds on Anna Maria Island. Local heavy rain caused flooding and a weak tornado caused minor damage. On September 10th/11th, 2017, Hurricane Irma weakened to a Category 3 prior to making landfall in Marco Island, Florida, which dissipated into a Category 2 or 1 by the time the eye wall was near Myakka City. This storm caused Manatee County to open all shelters (first time in history) and dispense the highest number of sandbags ever. This was also the first time in history that Manatee Memorial Hospital was evacuated. There were over 330 structures damaged or destroyed, 85% of the residents went without power for 10 days past the storms occurrence and there was one direct casualty from the storm. Before making landfall near Mexico Beach, Florida, as a Category 5 hurricane, Michael skirted the west coast of Florida. This storm brought wind gusts below 40 mph with high wind surf and rip tide warnings to Manatee County.

2. Severe Storm (Thunder, Lightning, Hail, etc.)

Background: It has been estimated by FEMA that the nation receives approximately 100,000 thunderstorms annually with approximately 10% identified as severe. Florida leads the country with the number of thunderstorms and lightning strikes; however, Florida's thunderstorms are shorter in duration than thunderstorms that develop over western states (Arizona, Utah, and Nevada). Thunderstorms in Florida routinely last approximately 30 minutes and rarely affect an area greater than 15 miles. However, in other areas of the country, multiple storms can develop together and act as a singular system. These types of systems have been tracked for approximately 600 miles.



Hazardous conditions associated with thunderstorms include tornadoes, lightning, hailstorms, downburst and microburst winds and flooding. Strong "downburst" (winds) exist with thunderstorms. These winds are concentrated, straight-line, winds created by falling rain and sinking air and can have winds that exceed 125 mph. A separate wind phenomenon is the "microburst," which is comprised of narrowly concentrated downdrafts that can exceed speeds of 150 mph. Lightning occurs in all thunderstorms and can strike anywhere (air and ground). The air through which lightning passes reaches temperatures of up to 50,000° F.

Hail is a form of precipitation that occurs when updrafts in thunderstorms carry raindrops upward into extremely cold areas of the atmosphere when they freeze into balls of ice. Hail can damage aircraft, homes and cars, and can be deadly to livestock and people.

Lightning is a giant spark of electricity in the atmosphere between clouds, the air, or the ground. In the early stages of development, air acts as an insulator between the positive and negative charges in the cloud and between the cloud and the ground. When the opposite charges build up enough, the insulating capacity of the air breaks down and there is a rapid discharge of electricity that we know as lightning. Lightning can occur between opposite charges within the thunderstorm cloud (intra-cloud lightning) or between opposite charges in the cloud and on the ground (cloud-to-ground lightning). Lightning is one of the oldest observed natural phenomena on earth. It can be seen in volcanic eruptions, extremely intense forest fires, surface nuclear detonations, heavy snowstorms in large hurricanes, and obviously, thunderstorms.

Probability: The probability of a thunderstorm occurring depends on atmospheric and climatic conditions. Information collected by the National Weather Service states that the Manatee County has between 100 and 110 days per year with thunderstorms. The principal season for thunderstorms is similar to that associated with hurricanes – the warmer tropical climate results in unstable air, which is conducive to the development of thunderstorms.

Manatee County's location on the Gulf of Mexico contributes to a high probability of severe thunderstorms, especially in the summer months. The beaches, extensive outdoor parks and recreation areas, Lecom Park, airport, and golf courses are all areas where lightning strikes are more likely to impact residents and tourists alike. Further, lightning is a leading cause of wildfires in the more rural areas of the County. Manatee County's almost 30,000 mobile homes are highly vulnerable to high winds experienced during severe thunderstorms. While hail does not usually cause infrastructure damage, larger sized hail can impact open areas, windows, vehicles parked in open parking lots, and airplanes outside of their hangars.

THUNDERSTORM CLASSIFICATIONS

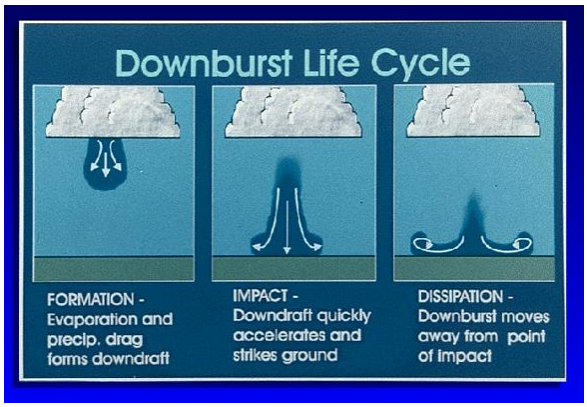
Types Characteristics	**Single Cell Storm**	**Multi-Cell Cluster**	**Multi-Cell Line (Squall Line)**	**Super-Cell**
Severe Weather Occurs As:	Brief, isolated downburst; small hail; heavy rain; weak tornadoes	Downbursts, moderate size hail; flash floods; weak tornadoes	Downbursts; small-moderate sized hail; occasional flash floods; weak tornadoes	Strong downbursts; large hail; occasional flash floods; weak-violent tornadoes
Severe Event Predictability	Low	Moderate	Moderate	High (Once identified as Super-Cell)
Danger to Public	Low	Moderate	Moderate	Extreme
Source: *National Oceanic and Atmospheric Agency*				

Manatee County has about 11-13 lightning strikes per square kilometer a year, about 27,800 a year mainly from June - August based on information from the National Weather Service in Ruskin, FL.

Manatee County could experience hail as large as ping pong ball size or 1-1/2" in diameter. The National Weather Service rates the probability for damaging hail in Manatee County as low, with less than a 1% chance per

year, as demonstrated on the NCDC website with only 2 reports of damages due to hail in 45 years, from 1969 to 2019.

Vulnerability: Manatee County is vulnerable to thunderstorms due to the availability of the ingredients needed to create thunderstorms. There is plenty of sunlight which warms the air, and updraft caused by approaching fronts or a sea breeze boundary off the Gulf of Mexico and many inland rivers, creeks, sloughs and lakes to provide a source of water vapor to feed thunderstorms.



As a result of its subtropical climate, Manatee County is also susceptible to damaging winds associated with thunderstorm activity. These damaging winds can be associated with either tornadoes or downburst (straight-line winds). Both forms of wind can cause a similar degree of damage. Tornado damage is often highly concentrated over a narrow width in relation to its damage length. Downburst damage is normally spread over a broader width but has a shorter damage length. In either case, both can cause substantial damage to structures.

When the right climatic conditions are present, severe thunderstorm/wind events can occur at almost any time during the year in any part of the County. Surprisingly, some of the most severe storms have occurred during the winter due to the dramatic climatic conditions that can arise between warm and cold weather systems. Therefore, it is not surprising that the NCDC reported that between August 14, 1958 and June 27, 2014, there were 115 severe storm/wind events in Manatee County. This is a 48% chance of occurring in a given year. These events resulted in one death and more than $2.63M in property damage.

In addition to heavy rains, winds and tornadoes, there are two additional damaging components of a severe thunderstorm – hail and lightning. Hailstorms occur in every state, but primarily within the mid-western area of the United States. Hailstorms cause more than one billion dollars of damage each year. In Florida, hailstorms occur mostly with the more severe thunderstorms, which occur from early summer through fall. Florida does not routinely receive hailstone greater than two inches in diameter. Large hailstones can be damaging to property and at times life threatening.

Lightning is an extremely dangerous threat to the residents of Manatee County. Lightning striking an individual or property is nearly a totally unpredictable event and it can occur with or without the presence of a storm event. Lightning can occur anywhere in the County.

The greater the number of thunderstorms and/or their duration, the higher the number of lightning and hail occurrences. According to the NOAA National Climatic Data Center (NCDC), central Florida (including portions of the Tampa Bay area) has the greatest probability of lightning strikes within the continental United States and is known as "Lightning Alley". In Manatee County the most dangerous severe storm period is from June 1st through November 30th. It is during this period that the majority of lightning strikes occur. Injuries or deaths from lightning strikes have occurred primarily on golf courses or while fishing at the beach.

Lightning is an everyday occurrence with Florida's thunderstorms, which can result in property damage, injury and death. Since September 10, 1996, the NCDC reports 33 lightning strikes directly related to over $8.7M in property damage, $40,000 in crop damage, 12 injuries, and three deaths in Manatee County.

TORRO HAILSTORM INTENSITY SCALE

	Intensity Category	Typical Hail Diameter (mm)*	Probable Kinetic Energy, J-m2	Typical Damage Impacts
H0	Hard Hail	5	0-20	No damage
H1	Potentially Damaging	5-15	>20	Slight general damage to plants, crops
H2	Significant	10-20	>100	Significant damage to fruits, crops, vegetation
H3	Severe	20-30	>300	Severe damage to fruit and crops, damage to glass and plastic structures, paint and wood scored
H4	Severe	25-40	>500	Widespread glass damage, vehicle bodywork damage
H5	Destructive	30-50	>800	Wholesale destruction of glass damage to tiled roofs, significant risk of injuries
H6	Destructive	40-60		Bodywork of grounded aircraft dented; brick walls pitted
H7	Destructive	55-75		Severe roof damage, risk of serious injuries
H8	Destructive	60-90		Severe damage to aircraft bodywork
H9	Super Hailstorms	75-100		Extensive structural damage. Risk of severe/fatal injuries

				to persons caught in the open
H10	Super Hailstorms	>100		Extensive structural damage. Risk of severe or even fatal injuries to persons caught in the open
*Approximate range (typical max size in bold), since other factors (e.g. number and density of hailstones, hail fall speed and surface wind speeds) affect severity.				

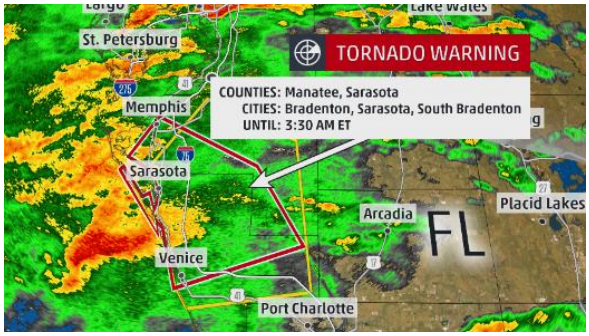
HAIL DIAMETER AND SIZE DESCRIPTION

Hail Diameter	Size Description
1/4”	Pea size
1/2”	Mothball size
3/4"	Penny size
7/8”	Nickel size
1” (severe criteria)	Quarter size
1-1/4”	Half Dollar size
1-1/2”	Walnut or Ping Pong Ball size
1-3/4”	Golf Ball size
2”	Hen Egg size
2-1/2”	Tennis Ball size
2-3/4”	Baseball size
3”	Teacup size
4”	Grapefruit size
4-1/2”	Softball size
***Source**: National Weather Service*	

According to the NCDC, between May 27, 1969, and June 25, 2014, there were 56 hail events reported in Manatee County. Hail can occur anywhere in Manatee County. On May 20, 2009 quarter size hail was reported in downtown Bradenton and penny size reported in west Bradenton. January 17, 2011 quarter size hail was reported near Parrish. June 8, 2012 nickel to half dollar size hail was reported in West Samoset. May 25, 2014 nickel size hail was reported near the City of Bradenton. The worst occurrence of hail was reported as ping pong sized hail on May 4, 1996. This caused significant crop damage from Parrish southeast to Lake Manatee and north to the Hillsborough County line. Most of the cucumber, bell pepper, green bean and tomato crop was destroyed by the large hail.

3. Tornadoes

Background: A tornado is a violently rotating column of air that is in contact with both the surface of the earth and a cumulonimbus cloud or, in rare cases, the base of a cumulus cloud. Tornadoes come in many shapes and sizes, but they are typically in the form of a visible condensation funnel, whose narrow end touches the earth and is often encircled by a cloud of debris and dust.



Tornadoes materialize at the trailing edge of large frontal cyclones that result from the clash of high pressure and low-pressure weather systems moving at continental scales across North America. Because of climatic difference, southern states like Florida experience their most violent tornadoes in winter. A tornado event is not limited to winter, they can also be generated during the summer in association with afternoon thunderstorms. Most tornadoes are of short duration and do not touch down as the Category 4 or 5 events that make national headlines.

ENHANCED FUJITA SCALE FOR TORNADOS

Rating	Wind Speed	DAMAGE
EF-0	40 to 72 MPH	**Light Damage:** Branches broken from trees; chimneys damaged; shallow-rooted trees pushed over; signs and billboards damaged.
EF-1	73 to 112 MPH	**Moderate Damage:** Surface peeled off roofs; mobile homes pushed off of foundations or overturned; moving vehicles pushed off roadways.
EF-2	113 to 157 MPH	**Considerable Damage:** Roofs torn off frame houses; mobile homes demolished; boxcars pushed over; large trees snapped or uprooted; light-object missiles generated.
EF-3	158 to 206 MPH	**Severe Damage:** Roofs and walls torn off well-constructed homes; trains overturned; most trees in forest uprooted; heavy cars lifted off ground and thrown.
EF-4	207 to 260 MPH	**Devastating Damage:** Well-constructed homes leveled; structures with weak foundations blown off some distance; cars thrown, and large missiles generated.
EF-5	261 to 318 MPH	**Incredible Damage:** Strong frame homes lifted off foundations and carried large distance to disintegrate; automobile size missiles fly through air in excess of 300

Source: *National Weather Service*

Probability: According to the NOAA website the United States averages approximately 800 tornadoes per year. Over the last two decades there have been more than 106 federally declared disasters due to tornado damage. Although Florida has between 50 and 100 tornadoes annually, it is not considered within "Tornado Alley." It should be noted that during severe storms, multiple tornadoes can form. Using probabilities of tornadoes based on the total number of tornadoes reported may be somewhat higher than by using the number of storms in which a tornado formed.

The National Weather Service ranks the Tampa Bay area as one of the highest areas in Florida for the occurrence of tornadoes. One of the deadliest tornado events in Tampa history occurred on October 3, 1992 when four people died and more than $100M in property damage occurred. In Manatee County the probability for an F0/F1 tornado is high, but most are the width of a house and on the ground for less than 1 mile, mainly in June-August. The probability of an F3/F4/F5 is very low during the dry season and the probability of an F2/F3 tornado is medium during tropical storms and hurricanes according to the National Weather Service in Ruskin, Florida.

There is a 2% chance in any given year that Manatee County will experience a tornado. While an F5 is possible during a hurricane, Manatee County historically has experienced up to F3 tornadoes.

Since 1955, the National Climate Data Center has recorded 88 tornadoes in Manatee County. These tornadoes resulted in two deaths, 25 injuries and nearly $4.25M in property damage.

According to the Storm Prediction Center, NOAA/NWS, the state of Florida has recorded approximately 3,478 tornadoes since 1950, with 172 fatalities and 3,413 injuries.

The northern portion of the Gulf Coast, between Tampa and Tallahassee as well as the Panhandle region has generally experienced more tornadoes. This is primarily due to the high frequency of thunderstorms making their way east through the Gulf of Mexico.

Vulnerability: As storm events with wind speeds ranging from 40 mph to greater than 318 mph, tornadoes can be expected to inflict a considerable amount of damage over a wide area. Consequently, tornadoes generate a tremendous amount of debris, which becomes airborne and creates additional damage to other structures. Because of extreme winds and the amount of airborne material generated, people living in manufactured or mobile homes are most exposed to damage from a tornado. Pillared and/or unanchored businesses and residential units are at greater risk of damage

from a tornado as well. All of Manatee County is susceptible to the possibility of a tornado.

The following observation from the State of Florida Enhanced Hazard Mitigation Plan, August 2013, is particularly relevant to Manatee County, especially considering the County's anticipated continued growth, particularly in those unincorporated areas east of I-75.

There have been many tornadoes in Florida that could have killed scores of people and caused millions of dollars in property damage, but most of these tornadoes did not hit heavily populated areas. On January 17, 2016, a tornado touched down near Albritton Road and 66th Street NW in Myakka/Duette. There were 7 people injured with one deceased. Damage was estimated at $173,876. The deadliest tornado event in the state's history occurred on February 22 and 23, 1998, in which 45 people were killed. As the state's population continues to increase, particularly in the interior part of the state, the threat of a devastating tornado event grows.

4. Floods



Background: A flood is a general or temporary condition of partial or complete inundation of normally dry land from the overflow of inland or tidal waters, or the unusual and rapid accumulation or runoff of surface waters from any source. Floods can occur in most communities in the United States. Flooding can result from the overflow of major rivers and their smaller tributaries, storm surge from hurricanes and other coastal storms, or inadequate local drainage. Historically, floods have been a factor in over 80 percent of all Presidential-declared disasters. The Nation's strategy for reducing flood damages has evolved from a reliance almost solely on structural flood control projects to a more comprehensive approach that emphasizes non-structural measures such as local land-use planning and zoning, building codes, and acquisition or relocation of flood prone buildings.

The importance of a sound flood management policy is evident when flood and water related damage account for 75% of Federal disaster declarations.

The National Flood Insurance Program (NFIP) has played a critical role in fostering and accelerating this change. NFIP was established by the National Flood Insurance Act of 1968, which makes federally backed flood insurance available in those states and communities that agree to adopt and enforce floodplain management measures that meet or exceed minimum Federal criteria. The NFIP was broadened and modified by the Flood Disaster Protection Act of 1973, which requires the purchase of flood insurance as a condition of receiving any form of federal or federally related financial assistance. The National Flood Insurance Reform Act of 1994 strengthened NFIP by providing for mitigation insurance and establishing a grant program for state and community flood mitigation planning and projects. Forty percent (40%) of the total flood insurance policies are within Florida, with 12% of flood claims made throughout the state. In Manatee County and the incorporated cities, there are 37,806 policies in force, with coverage in excess of 10.5 billion. This information was from the Policy and Claim Statistics for Flood Insurance on the Federal Emergency Management Agency (FEMA) website at https://www.fema.gov/policy-claim-statistics-flood-insurance/policy-claim-statistics-flood-insurance/policy-claim-13.

Probability: Manatee County, due to its topography, has suffered from island flooding from hurricane strength storms and numerous tropical systems since 1922. In addition, severe winter weather systems have caused significant coastal and inland flooding. In Manatee County, flooding can occur from the ocean or rising water of the Manatee River, Little Manatee River, Bowless Creek, Wares Creek, Terra Ceia Bay, Palma Sola Bay and Sarasota Bay. The majority of the land east of I-75 comprises part of the Manatee River Valley floodplain.

The type of flooding events that have occurred within Manatee County include short duration flooding, freshwater flooding, drainage, and coastal tidal.

- Short duration flooding – this is typical of a frontal system, short period of rain, or very intense thunderstorm.
- Freshwater flooding – this type of flooding may occur when an excessive amount of rainfall accompanies a tropical storm or hurricane.
- Drainage – the topography and high-water table of Manatee County can make a small amount of rainfall very significant. Man-caused alterations to the land have disrupted natural flow patterns and can lead to shallow flooding over a large area.
- Coastal tidal – this type of flooding is generated from high tides and wind action and is a chronic problem within the coastal shoreline of Manatee County.

FLOOD ZONES

Zone	Description
A	An area inundated by the 1% annual chance flooding, for which no Base Flood Elevations (BFEs) have been determined. Depth for the 1% probability is not provided on the Flood Insurance Rate Map (FIRM), Flood depths range from 6 to 94 feet North American Vertical Datum of 1988 (NAVD 1988) which are elevations above mean sea level.
AE	An area inundated by the 1% annual chance flooding, for which BFEs have been established. Depth for the 1% probability is provided on the FIRM. Depths range from 6 to 94 feet NAVD 1988 depending on the area being reported.
VE	An area inundated by 1% annual chance flooding with velocity hazard (wave action). The BFEs have been determined. Depths for 1% probability event range from 10 to 17 feet NAVD 1988.
X500	An area inundated by 0.2% annual chance flooding.
X	An area that is determined to be outside the 1% and 0.2% annual chance flood plains

Vulnerability: Heavy rains and flooding have long been a factor of life in Manatee County. In the past, most residents were familiar with Florida Weather patterns, and built their homes accordingly – at least somewhat elevated with shutters. With the population explosion in the past half century, developers have come to Manatee County with little knowledge of its terrain and weather and have, as a result, created serious flooding problems throughout the County. The influx of new residents to the new development areas, have caused a strain on the infrastructure, and drainage problems have resulted countywide. Although coastal areas of the County have had requirements to elevate structures since the mid-1970s, no such restrictions were placed on inland development. Manatee County is experiencing more widespread flooding in residential areas and increased residential flooding due to a combination of rapid development, insufficient infrastructure, and ground-level homes being built in the newly developing areas.

Severe weather over August 26th and 27th of 2017 caused flooding after 23.28 inches of rain fell within a 24-hour period. Over 130 buildings were impacted, a small tornado struck the County Public Work Compound on 26th Ave E, and there was over $1 million in damage to canals and stormwater pipes. Over a 7-day period in August 2019, heavy rain brought upwards of 10 inches to portions of the County that filled storm drains and flooded one home.

5. Coastal and Riverine Erosion

Background: Coastal or riverine erosion is defined as the gradual wearing away of the earth's surface by the natural forces of wind and water. In Manatee County, erosion along the Gulf of Mexico, Tampa Bay, Sarasota Bay, and river shorelines is most noticeable after a significant rain and/or tidal surge event. In general, erosion is the horizontal displacement of soil. Although this is a natural effect, shoreline development is at risk when erosion occurs at a rate greater than the natural rate of soil replenishment.

Probability: Erosion rates and occurrences vary by area and with time. However, the probability of erosion is identified as having a return period directly related to the return period of a coastal storm or tropical cyclone – 100-year storm event.

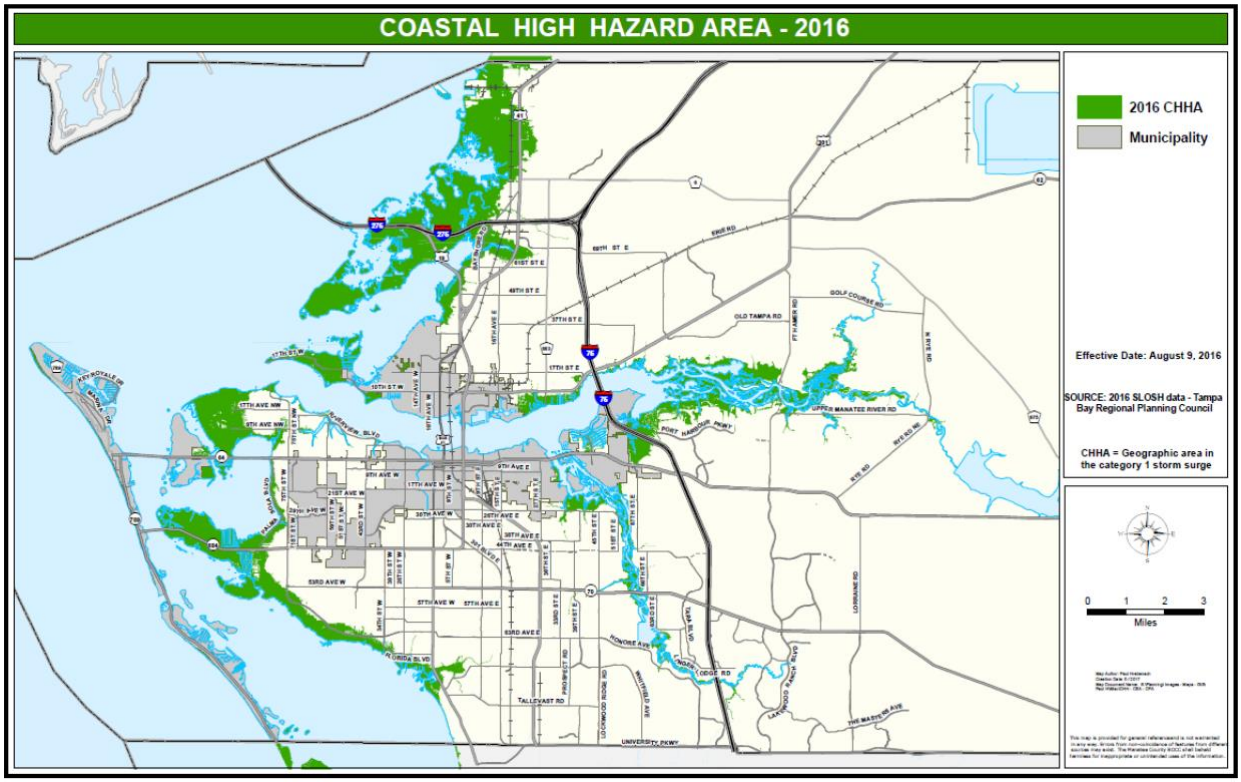
On Anna Maria Island, based on historical measurements going back to 1993, there has been on average of a 10 feet horizontal retreat of the mean high tide line (equating to beach loss) per year (Manatee County Parks and Natural Resources Department).

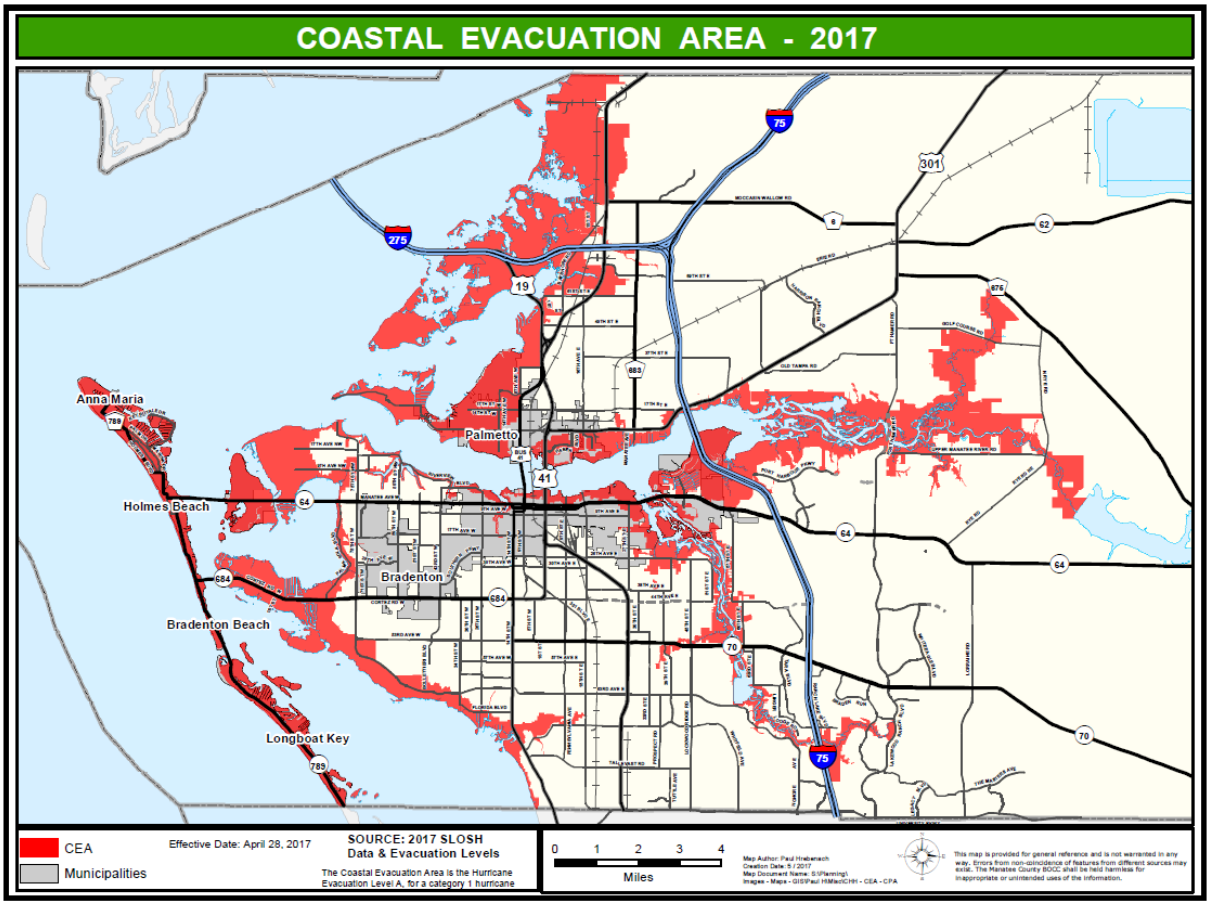
One storm event, depending on wind direction and surge, could erode up to 350,000 cubic yards on Anna Maria Island (Manatee County Parks and Natural Resources). In 2013, Tropical Storm Debby eroded approximately 348,000 cubic yards of beach, on average 20-30 feet of width approximately 3 feet deep along the 7-mile long island. The impacts cost the state and Federal government an additional $37.5 million to restore the dunes and vegetation along with the beach sand. It has been estimated that by the year 2040 the cost on the re-nourishment projects could increase to as much as $1.7 billion due to the rate of sea level rise, not taking into account severe weather that could cause greater increases.

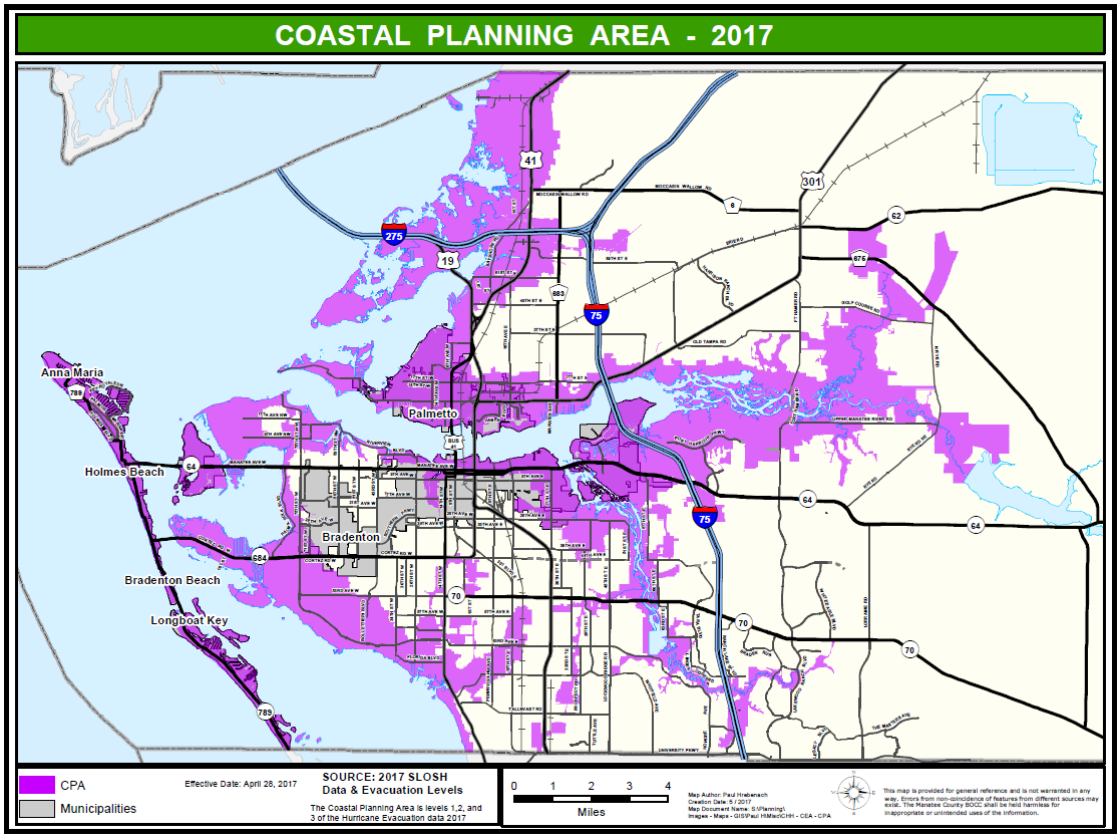
Riverine erosion has a 1% chance of occurring in any given year, up to 2 feet per year.

Vulnerability: While erosion itself is not an imminent threat to public safety, it does impact the quality of life through damage to buildings, roads/bridges, and infrastructure (lifeline systems). Because of the relationship of flooding to erosion, the same structures affected by one are affected by the other.

The local governments in Manatee County identified the areas of greatest risks of erosion within their respective adopted Local Government Comprehensive Plans as follows: Coastal High Hazard Area; Coastal Planning Area; Coastal Evacuation Area; areas found along the Manatee, Braden, and Little Manatee Rivers and associated tributaries; Bowless Creek, Wares Creek; and areas illustrated as being within the velocity zones on the Federal Insurance Rate Maps.


COASTAL HIGH HAZARD AREA - 2016
2016 CHHA
Municipality
Effective Date: August 9, 2016
SOURCE: 2016 SLOSH data - Tampa Bay Regional Planning Council
CHHA = Geographic area in the category 1 storm surge
0 1 2 3
Miles


COASTAL EVACUATION AREA - 2017
Anna Maria
Holmes Beach
Bradenton
Bradenton Beach
Longboat Key
Palmetto
CEA
Municipalities
Effective Date: April 28, 2017
SOURCE: 2017 SLOSH Data & Evacuation Levels
The Coastal Evacuation Area is the Hurricane Evacuation Level A, for a category 1 hurricane
0 1 2 3 4
Miles



The County has experienced several severe storms in the last 25-years: Tropical Storm Debby in 2012 caused significant damage to county beaches. Since Tropical Storm Debby, roughly 600,000 cubic yards were eroded on the County beaches. Thirty to forty feet of beach, 2-3 feet deep was lost along Anna Maria Island during Tropical Storm Debby alone. In 2014, 1.2 million cubic yards were placed with a nourishment project according to the County Parks and Natural Resources Department which oversaw the project. Hurricanes Dennis caused 250,000 cubic yards beach erosion. Hurricane Gordon in 2000 eroded an estimated 100 feet of beach. In 2015, the County started a $4.41M project to replace the groins in the water off Cortez Beach near Coquina Beach. These groins will protect the sand (short term) and keep it in place during storms.

Areas along Braden River in Lakewood Ranch overflow caused the erosion of the banks. In 2013, after Tropical Storm Andres, the Community Development District (CDD) brought in 400 tons of fill dirt to cover the slope and mounted articulated concrete, a mat of black blocks on top of the fill dirt to slow down the erosion at the Greenbrook Adventure Park. Over a ten-year period, the banks of Pearce Canal in the Garden Lakes community lost eight feet in the back yards of the over-55 community located south of State Road 70 East. Manatee County has reinforced the bank with riprap and concrete blocks.

6. **Winter Storms.**



Background: Severe winter storms can affect the Tampa Bay area. Although Manatee County is not affected by snow, significant freezes have occurred and are expected to occur again. Winter storms are accompanied by other hazards, such as coastal flooding, strong winds (tornadoes), wind-chill, and power outages. These effects disrupt commerce, transportation and may result in the loss of life. The winter "No-Name" storm that affected Tampa Bay in March 1993, is considered one of the worst non-tropical storms in United States history. Equivalent to a Category 2 hurricane, it caused a significant amount of flooding and power outages within the Tampa Bay area and accounted for more than $2 billion of damage across the eastern United States. In Manatee County, the storm caused over $1.75M in damage throughout the entire county. In Manatee County, freezes are caused by a dip in the jet stream allowing a cold Canadian front to descend with a strong northeast wind producing wind chills.

Probability: According to the National Climatic Data Center, the chances of a winter storm in Manatee County are rare, typically less than 1% per year. Winds can reach as high as 100 mph, but more typically not higher than 60 mph. Temperatures could get as low as 20 degrees Fahrenheit, but it is noted that typically the winters are mild with low temperatures ranging around 50 degrees. Freezing temperatures can occur on one to two mornings per year during December through February. In some years no freezing temperatures occur. Snowfall is very rare. A wind chill advisory is issued by National Weather Services for wind chills of 26-35 degrees Fahrenheit for 3 or more hours, and a wind chill warning is issued for wind chills of 25 degrees Fahrenheit or lower for 3 or more hours.

Vulnerability: Freezing temperatures in the County have their impact on the citrus and agricultural industry located generally in the northern portion of the County and east of I-75. If temperatures reach freezing level for extended periods of time, combined with other climatic factors, crop damage may occur. This would have a significant impact on the economy and employment base. According to the NCDC, since January 1996, the County has experienced 33 freeze events, seven of which caused crop damage estimated at $15.26M. This amounts to 39% chance of a freeze in any given year. In January 2010, Manatee County experienced an extended period of nights below 40 degrees (14 nights below 40 degrees) with Myakka City as low as 21 degrees and in December 2010 there were two nights that broke records at the Sarasota/Bradenton International Airport with temperatures of 31 and 27 degrees. Myakka City recorded 27

degrees and Duette 20 degrees at that time. Damage estimates to crops was $6.9M. On February 26, 2010 temperatures as low as 27 degrees caused $900,000 in crop damage in East Manatee County. In December 2010, sub-freezing temperatures for 2 to 5 hours, the lowest 23 degrees in Duette caused $4.32M in crop damage. Also, consumer demand for electricity during periods of extreme cold weather may require the electric utility to implement rolling blackouts to selected areas in order to avert a total electrical grid overload.

According to Suncoast Partnership to End Homelessness, with the help of Turning Points, Manatee County has 570 homeless. At times of extreme cold, The Salvation Army opens its doors to single men and the Family Lodge in Bradenton opens up for single women.

7. Droughts/Heat Wave



Background: A drought is a deficiency in precipitation over an extended period, usually a season or more, resulting in a water shortage causing adverse impacts on vegetation, animals, and/or people. Drought is a normal phenomenon of all climates. The technical identification is a water shortage caused by a deficiency of rainfall. A drought can also be aggravated by other factors, such as high temperatures, high winds and low humidity. The severity of drought depends on a multitude of factors, which include duration, intensity, geographic extent, water supply of the region, and demands by the local community on the existing water supply. FEMA has identified four types of droughts: meteorological, hydrologic, agriculture and socioeconomic.

Probability: There are no common techniques for determining the return of a drought event. For Manatee County, droughts are becoming more common, with a 40% chance of occurring per year. The area has experienced several drought events over the last twenty years. The National Drought Mitigation Center indicates that there was a drought that began in 2000 and did not end until 2003 ranging from mild to 14 months at the extreme level. In subsequent years 2004-2014, Manatee County went through cycles of normal to drought and then back to normal status with 2010 with 8 months of incipient dry spell and 17 months of mild to moderate drought beginning in 2011 and ending in 2012.

PALMER DROUGHT SEVERITY INDEX (PDSI)

Classifications	
4.0 or more	Extremely Wet
3.0 to 3.99	Very Wet
2.0 to 2.99	Moderately Wet
1.0 to 1.99	Slightly Wet
.05 – 0.99	Incipient Wet Spell
0.49 to -0.49	Near Normal
-.50 to -0.99	Incipient Dry Spell
-1.0 to -1.99	Mild Drought
-2.0 to -2.99	Moderate Drought
-3.0 to -3.99	Severe Drought
-4.0 or less	Extreme Drought
Source: *National Drought Mitigation Center, http://drought.unl.edu/Planning/Monitoring/ComparisonsIntro/PDSI.aspx*	

Based on previous occurrences, Manatee County could see a drought of -4.0 on the PDSI for up to two years and temperatures as high as 105 degrees Fahrenheit.

Manatee County has a low probability, less than 1% chance, of experiencing a heat wave due to the sea breeze off the Gulf of Mexico as a coastal county.

Vulnerability: Droughts are weather events affecting Manatee County with some degree of regularity. Prolonged dry periods have spurred wildfires, a reduction in the water table, rationing of water, endangerment of wildlife and loss of crops. Economic impact to the community includes reduced farm revenue, and increased prices for produce and other farm-related items. In addition to a drought's social and economic risks, there is also the potential increase in the formation of sinkholes.

According to the 1992 Atlas of Florida, Florida is erroneously thought of as a state with excessively high temperatures. High maximum temperatures are far more frequent in the interior than along either coast. High temperatures are most frequent on the southwest side of the peninsula, where the warm season is long and distance from the Atlantic Ocean is relatively great. The National Weather Service at Ruskin states that we rarely get heat waves in Manatee County. They will issue a "heat warning" when the "heat index" is expected to reach 113 F or higher. The criteria are higher in Florida than the rest of the country as we are acclimated to the heat. Our Heat Index reaches 105 F most days in the summer, but rarely higher than that.

In Manatee County, the average high in June is 90 degrees Fahrenheit, July and August 91 degrees Fahrenheit. In 1998, Manatee County experienced an 18-day period with temperatures 5 -10 degrees above

normal and a heat index reaching 110 F. This information was located on the Southern Region Headquarters for National Weather Service website at www.srh.noaa.gov/tbw/?n=tampabayoriginalclimatepage.

Heat waves can be deadly. NOAA reported that in a normal year, about 175 Americans succumb to the demands of summer heat. Among the large continental family of natural hazards, only the cold of winter, not lightning, hurricanes, tornadoes, floods, or earthquakes, takes a greater toll. In the 40-year period from 1936 through 1975, nearly 20,000 people were killed in the United States by the effects of heat and solar radiation.

According to FEMA, people living in urban areas may be at greater risk from the effects of a prolonged heat wave than people living in rural regions. An increased health problem, especially for those with respiratory difficulties, can occur when stagnant atmospheric conditions trap pollutants in urban areas, adding unhealthy air to excessively hot temperatures. In addition, asphalt and concrete store heat longer and gradually releases heat at night, which produces significantly higher nighttime temperatures in urban areas known as the "urban heat island effect."

As outlined in the Risk Assessment found within Subsection G of this section, when comparing over 30 hazards that the County has the potential to experience impacts from, doubts/heat wave was determined to have an overall risk ranking of 21 when prioritizing hazards compared against others.

In May 2017, the County saw the driest dry season in the past 103 years, which recorded an 11-inch rainfall deficit. rivers and streams are the most impacted, flowing at the lowest rates in about five years.

As Manatee County's population increases and areas east of I-75 becoming more urbanized, such as Lakewood Ranch, the possibility of experiencing the urban heat island effect will increase. This will have to be monitored over the coming years.

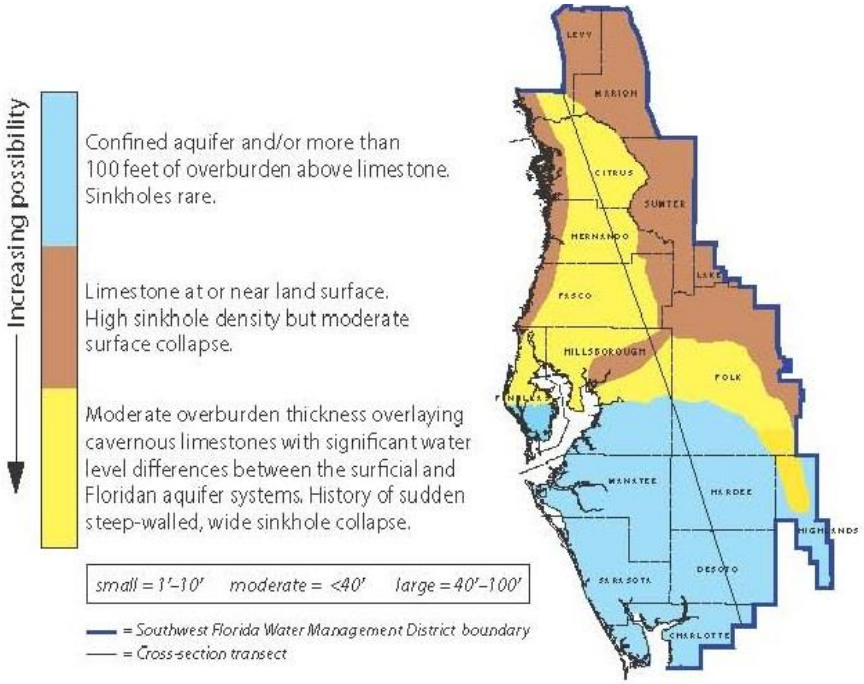
8. Sinkholes

Background: For the residents of Florida the sudden appearance of sinkholes is not an unusual occurrence. The potential magnitude of these occurrences is exemplified by the creation of Paynes Prairie at Gainesville, the loss of the automobile repair facility in downtown Winter Park and the recent de-watering of Lake Jackson north of Tallahassee. Fortunately, most sinkholes are not of the size of these examples. Even so, the destruction resulting from even the smallest sinkhole cannot be underestimated.

Taken from an Issue Paper, the Southwest Florida Water Management District (SWFWMD) noted that sinkholes are "as common in Florida as lakes, rivers and warm weather. In fact, many lakes in central Florida were formed by sinkholes." As the name suggests, sinkholes result from the ground "sinking" and creating a depression. The cause of the depression is underground in the porous limestone base. As rainfall is filtered through the ground to the limestone, it erodes and dissolves the soluble rock and creates cavities in the subsurface. Another cause of sinkholes is the lowering of underground water levels, either by lack of rainfall or over-pumping for water supply. In this case, the water in the underground cavities helps support the layers holding up the land surface.

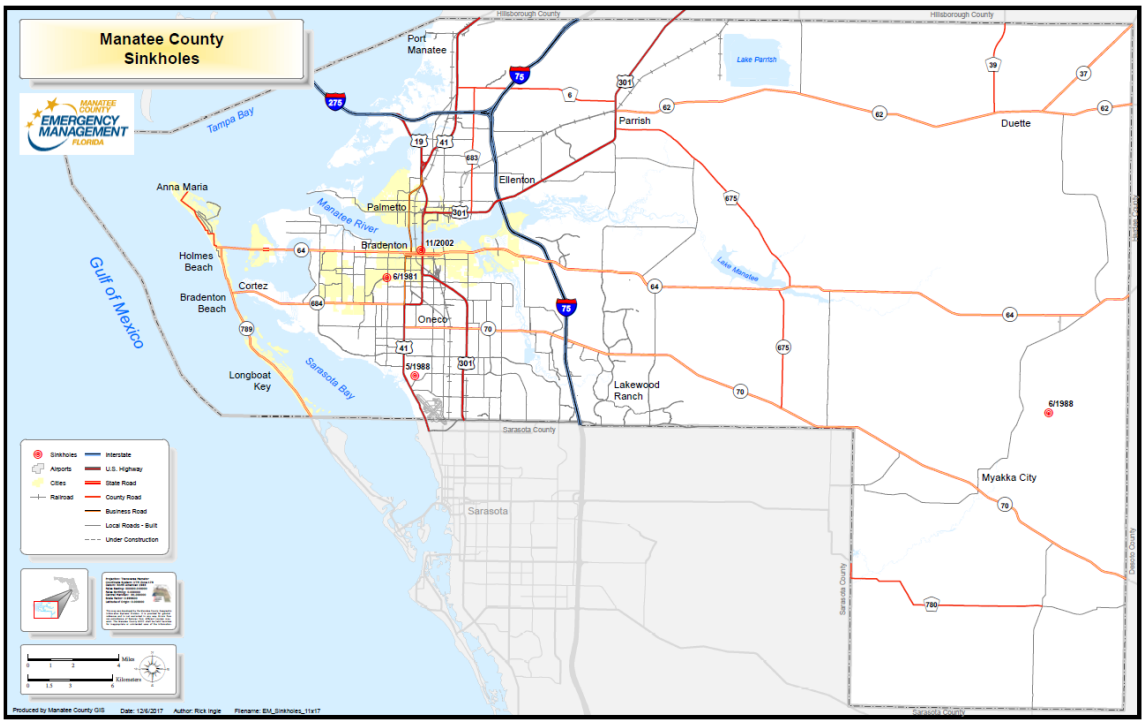
Probability: Within the 17 counties which comprise SWFWMD, sinkholes develop more frequently north of Tampa Bay where the limestone base is closest to the land surface and the supporting sand and clay layers are thin. The following graphic identifies the increasing possibility of sinkhole activity within the SWFWMD. And as also seen in the following graphic, all of Manatee County falls in the area identified as an area where sinkholes are a rare occurrence having a less than 1% chance of occurring in any given year. When they do occur, they are typically 10' in diameter and 6-10 feet in depth though larger ones could occur.

This is validated by the fact that Manatee County has 4 reported sinkholes, according to the Florida Department of Protection/Florida Geological Survey Subsidence Incident Report.



Source: *Southwest Florida Water Management District, 2008*

A sinkhole reported June 20, 1981 in West Bradenton was caused by drought or low water table and measured less than 10 feet in diameter. In May 1988, in southwest Manatee County, a sinkhole was reported, caused by drought or low water table. This sinkhole measured at 20' x 20' with a depth of 1' and caused subsidence to the home, with damage estimated at $6,000. On June 1, 1988 a sinkhole was reported. While drilling a well in Myakka City, they hit a cavity and caused a sinkhole that measured 80' x 80' and a depth of 10'. On November 15, 2002 a sinkhole was reported in the incorporated City of Bradenton that measured 10' x 10' with a depth of 15'. The impact to the house was listed as drought or low water table and there was no impact the house on the property. There have been no recorded sinkholes since 2002.



Vulnerability: Sinkholes may impact structures, damaging them. To date only one structure has been impacted, causing the home to subside, walls and floor cracking. The home was repaired. The difficulty in emergency planning for sinkholes is not being able to know exactly where and when they will occur. Geologists have a good idea where sinkholes are likely to form geographically, but it's much more difficult to accurately predict specifically where sinkholes will occur. While the damage could range from low to high, it is almost impossible to predetermine in Manatee County which individual property could be affected by sinkhole activity.

9. Wildfire



Background: As people search for a place to live, they often desire two conflicting conditions: Live in the country but have urban services readily available. This desire for urban/rural living has been given the name "wildland/urban interface." As described by the Florida Forest Service, the wildland/urban interface "refers to that geographical point where two diverse systems, wildland and urban meet and affect each other and give rise to conflicts between societal values and expectations concerning the management of natural resources." The major problem resulting from the wild/urban interface is wildfire.

Wildfire is the term applied to any unwanted, unplanned, damaging fire burning in forest, shrub, or grass and is one of the most powerful natural forces known to people. While sometimes caused by lightning, looking back over the last 20 years in Manatee County, seven out of ten wildfires are human-caused. Many factors are involved as to why the number of acres burned including past fire suppression policies which allowed for the accumulation of fuel in the form of fallen leaves, branches, and excessive plant overgrowth in forest and wildland areas; increasingly dry, hot weather; changing weather patterns across the country; and increased residential development in the wildland/urban interface. (Source: smokeybear.com)

Per the National Interagency Fire Center, since 1960, there have been over 6.06 million wildfires which have destroyed 226.8 million acres of forests. This is an average of 114,322 wildfires per year and 4.7 million acres burned.

Wildfires in Florida are not an unusual occurrence. According to the Department of Agriculture and Consumer Services website, from 1981 to 2002, there was an average of 218,000 acres impacted by wildfire each year. Between 2002 and 2009, there were 25,847 wildfires that burned over 1,064,500 acres.

Wildfires can be a natural occurrence and costly for example the Mallory Swamp fire in May 2001 was started by a lightning strike, burning more than 60,000 acres and causing over $10 million in timber losses. The 2007 Bugaboo Scrub Fire raged from April to June, becoming the largest fire in both Georgia's and Florida's history, burning over 600,000 acres, forcing closure of three major highways and blanketing areas from central Florida to Atlanta, Georgia, with heavy smoke.

Between 1980 and 2013, Manatee County has experienced 1,250 wildfires which burned a total of 34,335.1 acres. During 2001, over 2,000 acres were lost to wildfires per the Florida Forest Service Reporting System. Manatee County has a three percent (3%) chance any given year of experiencing a wildfire. In recent years, the average size of the wildfires in Manatee County have been kept relatively small. This is in a large part because of the very active prescribed burning program on both public and private lands. These burns are necessary for the ecological health of the preserves and ranches and also reduce the buildup of accumulated fuel on these lands making wildfire control much easier.

Probability: As the population of unincorporated Manatee County continues to grow, particularly east of I-75, the number of residents residing within the wildland/urban interface also grows. The University of Florida's Institute of Food and Agricultural Science has identified the fire characteristics of nine ecosystems found in Florida's wildland/urban interface. There is a 50% chance in any given year a wildfire could occur. A 100-acre fire is realistic for populated areas where residents could be threatened within the wildland/urban interface. A wildfire could grow to 500-acres, but this would be in one of the parks or preserves and would not involve structures at risk (Florida, Forest Service, Florida Department of Agriculture and Consumer Services).

WILDFIRE BY ECOSYSTEM

Ecosystem	Frequency (yrs.)	Wildfire Hazard
Scrub Pine	10 - 1000	Extreme
Pine Rockland	3 - 10	Extreme
Pine Flatwood	1 - 8	Extreme
Dry Prairie	1 – 4	High
Marsh	1 – 5	High
High Pine/Sandhill	1 – 8	Medium
Swamp	5 – 200	Medium
Hardwood Hammock	30 – 50+	Low
Hardwood Rockland/Tropical Hammock	59+	Low
Note: *Three of these ecosystems can be found in Manatee County: Pine Flatwood, High Pine/Sandhill, and Swamp.*		

Fire events are a recurring threat in Manatee County, with approximately 49 fires on average occurring between 1981 and the end of 1999. Prior to 1981, Manatee County recorded 127 fires in 1977 impacting 3,354.6 acres; 54 fires in 1978 impacting 268.1 acres; 55 fires in 1979 impacting 1,566 acres; and 63 fires in 1980 impacting 553.3 acres. Since 1999 the number of Wildland fires are as follows:

WILDLAND FIRES IN MANATEE COUNTY

Year	Number of fires	Acres
2000	59	1,235
2001	35	2,069
2002	27	730
2003	14	97
2004	21	225
2005	18	65
2006	34	436
2007	32	658
2008	22	416
2009	26	496
2010	22	161
2011	28	236
2012	26	463
2013	11	119
2014	21	60
2015	11	483
2016	12	146
2017	28	153
2018	23	211

***Source**: Florida Department of Agriculture & Consumer Services, Division of Florida Forest Service*

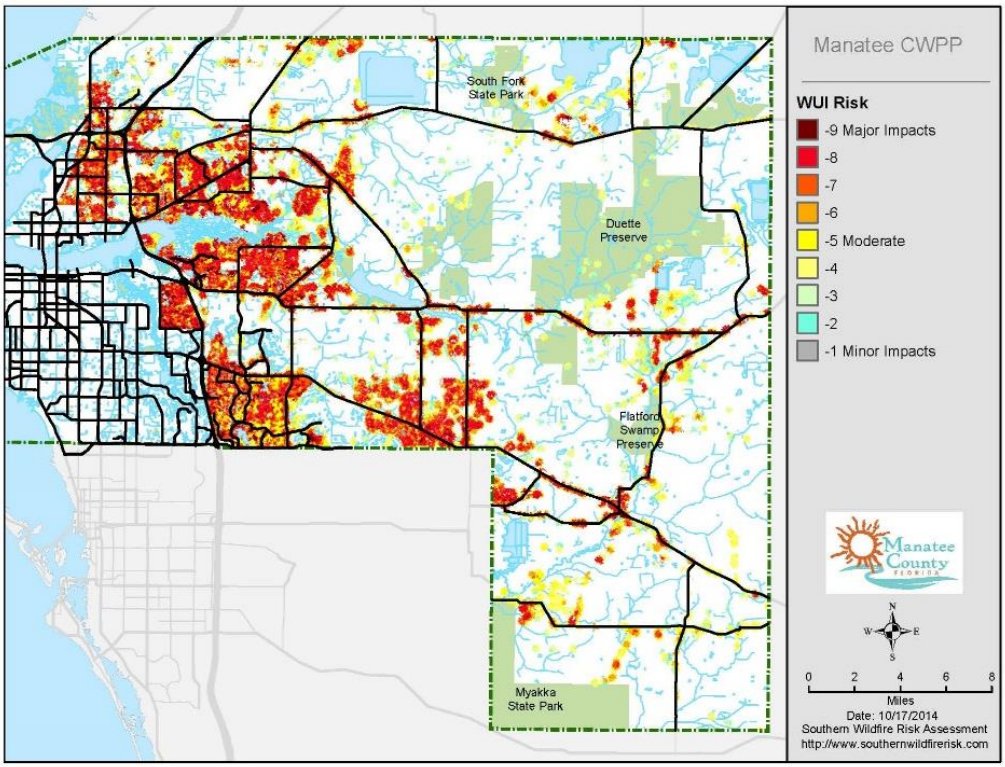
A wildfire burned five acres along I-75 northeast of SR 64 on March 13, 2009. While unsure of the cause, it was felt that it might have been a cigarette butt or spark from a passing vehicle. The fire came within 500 feet of homes in the Heritage Harbour subdivision. The Verna Bethany Fire on March 2, 2011 was started by an unattended campfire and burned 19 acres in a wooded area surrounded by 8 homes. Thirty acres were burned by wildfire causing the evacuation of 10 homes in Myakka City on April 15, 2012.

Vulnerability: While the conditions favorable for wildfires are well known, where and when they will occur cannot be predicted. The three principal ingredients for wildfires are topography, fuel, and weather. According to the Florida Forest Services, Florida is unique in that weather and topography are different from other parts of the country. Florida has a relatively flat terrain and abundant rainfall. These factors normally afford firefighters an opportunity to control interface fires in a timely and effective manner. When rainfall is below normal, a killing frost has decimated vegetation or vegetation can accumulate, the likelihood for a wildfire increase.

Manatee County, particularly east of I-75 in both North County and South County, is susceptible to wildfires throughout the year, particularly during the months with minimal rainfall amounts. The major cause of brush and forest fires is due to lightning and occurs during the months with higher

thunderstorm activity. In recent years, homes and businesses have been threatened by encroaching wildfires. Manatee County is developing a Community Wildfire Protection Plan and this area is generally from I-75 east to CR 675 and from University Parkway to Moccasin Wallow Road. This area includes approximately 88,215 acres with an estimated population of 76,727. The Wildfire Urban Interface area of the County has fifty-one percent of the land in the moderate to high risk areas and 69.7% of the population resides in these moderate to high risk areas. Roughly 15.6% of the total value of structures within the County lies within areas classified as moderate to high risk.

RISK ASSESSMENT MAP



***Source**: Manatee County Wildfire Protection Plan, 2015*

WILDLAND URBAN INTERFACE RISK TABLE

Class	Acres	Percent
-9 Major Impacts	3,750	3.9%
-8	22,678	23.8%
-7	18,908	19.9%
-6	8,354	8.8%
-5 Moderate	12,669	13.3%
-4	15,455	16.2%
-3	7,892	8.3%
-2	4,943	5.2%
-1 Minor Impacts	479	0.5%
Total	95,128	100.0%

SOURCE: Southern Wildfire Risk Assessment Summary Report

FIRE BY CAUSES

Years 1980-2013				
Cause	**Fires**	**Percent**	**Acres**	**Percent**
Campfire	31	2.48	268.2	0.78
Children	50	4.00	399.6	1.16
Debris Burn*	255	20.40	8,330.9	24.26
Debris Burn-Authorized Broadcast/Acreage	8	0.64	422.4	1.23
Debris Burn-Authorized Piles	13	1.04	94.5	0.28
Debris Burn-Authorized Yard Trash	3	0.24	20.5	0.06
Debris Burn-No auth Broadcast/Acreage	3	0.24	21.5	0.06
Debris Burn-Non auth Piles	28	2.24	49.8	0.15
Debris Burn-Non auth Yard Trash	4	0.32	42.0	0.12
Equipment Use*	42	3.36	559.00	1.63
Equipment-Agriculture	13	1.04	150.6	0.44
Equipment-Logging	0	0	0.0	0
Equipment-Recreation	5	0.40	80.5	0.23
Equipment-Transp.	15	1.20	214.4	0.62
Incendiary	162	12.96	4,309.4	12.55
Lightning	281	22.48	11,903.1	34.67
Miscellaneous-Breakout	5	0.40	73.6	0.21
Miscellaneous-Elec. Fence	0	0	0.0	0
Miscellaneous-Fireworks	1	0.08	1	0.00
Miscellaneous-Power Lines	6	0.48	17.0	0.05
Miscellaneous-Structure	0	0	0.0	0
Miscellaneous-Other	140	11.20	3,621.2	10.55
Railroad	5	0.40	4.5	0.01
Smoking	65	5.20	1,543.4	4.5
Unknown	115	0.20	2,207.3	6.43
Total	**1,250**		**34,335.1**	
Years 1914-2019				
Campfire	5	4.72	10.3	.91
Children	3	2.83	3.8	.33
Debris Burn*	0	0	0	0
Debris Burn-Authorized Broadcast/Acreage	3	2.83	49	4.31
Debris Burn-Authorized Piles	5	4.72	28.5	2.51
Debris Burn- Authorized Yard Trash	4	3.77	2.2	.19
Debris Burn- Non auth Broadcast/Acreage	2	1.89	13	1.14
Debris Burn-Non auth Piles	15	14.15	187.3	16.46
Debris Burn-Non auth	6	5.66	14	1.23

Yard Trash				
Equipment Use*	0	0	0	0
Equipment-Agriculture	10	9.43	69.6	6.12
Equipment-Logging	0	0	0	0
Equipment-Recreation	4	3.77	29.4	2.58
Equipment-Transp.	5	4.72	43.9	3.86
Incendiary	4	3.77	1.7	.15
Lightning	24	22.64	627.7	55.17
Miscellaneous-Breakout	2	1.89	6	.53
Miscellaneous-Elec. Fence	0	0	0	0
Miscellaneous-Fireworks	0	0	0	0
Miscellaneous-Power Lines	2	1.89	4.5	.4
Miscellaneous-Structure	0	0	0	0
Miscellaneous-Other	6	5.66	22	1.93
Railroad	0	0	0	0
Smoking	0	0	0	0
Unknown	6	5.66	24.8	2.18
Total	**106**		**1,137.7**	
Source: *Florida Forest Service, FL Depart. of Agriculture and Consumer Services*				

10. Earthquakes

Background: An earthquake is the result of a sudden release of energy in the Earth's crust that creates seismic waves. The seismic activity of an area refers to the frequency, type and size of earthquakes experience over a period of time.

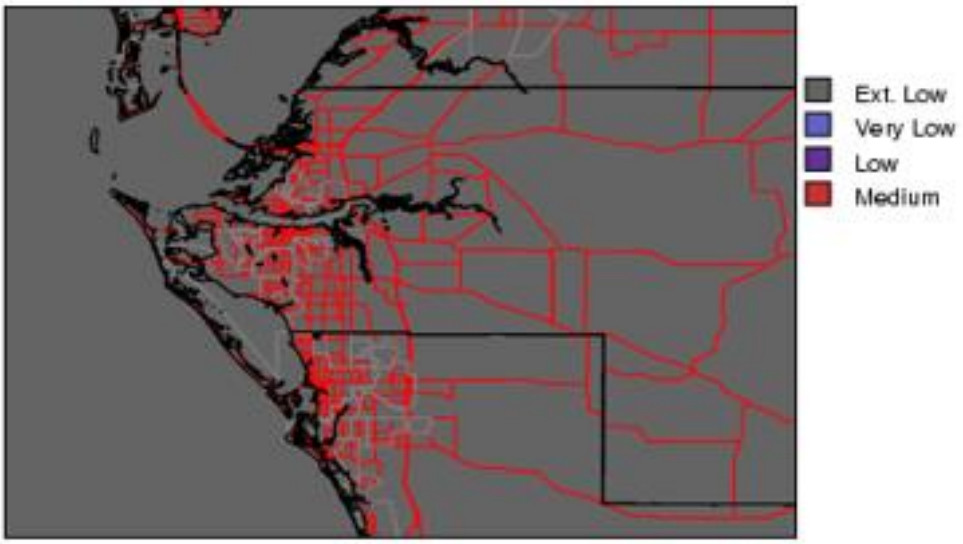
Earthquakes tend to occur in regions near the boundaries of underground plates or at weaknesses in the plates themselves. According to Douglas Smith of the University of Florida Geology Department, "Florida does not include any plate boundaries, and the plate the state occupies is very stable. 'There are no recent volcanoes and there are no known active faults in Florida." Smith noted that the largest earthquake ever recorded in Florida shook the state on January 12, 1879. At 11:45 p.m., two 30-second tremors occurred, possibly centered in the Palatka area. The 1992 Florida Atlas reports that in 1905, an earthquake with its epicenter in west-central Manatee County was recorded. This earthquake registered a I using the Modified Mercalli intensity scale (where VII equates to maximum damage); little to no damage at the surface was reported. The last earthquake happened on September 10, 2006 at 8:56 am approximately 251 WSW from Anna Maria, Florida. The magnitude of the earthquake was 6.0 with no aftereffects. (Source: USGS.gov). There have been no reported occurrences reported since 2006.

Probability: In an article by Anthony Randazzo and Douglas Smith, University of Florida Geology Department, it was noted that Florida is one of the few low-risk areas for earthquakes in the continental United States.

This conclusion is verified by the following 2002 USGS map of seismic hazard probability.

"Although many historical events have been reported as earthquakes in Florida, and some descriptions conclusively suggest actual earthquakes, no damaging events are known to have occurred within the state." The authors noted that reported earthquakes could have been law enforcement officials destroying confiscated explosive or, when atmospheric conditions are right, the vibrations of military jets breaking the sound barrier. Due to low probability of occurrence, this hazard will not be fully profiled.

EARTHQUAKE PROBABILITY MAP



Vulnerability: In terms of vulnerability. Dr. Smith stated that "a region of north Florida bounded roughly by Jackson County in the west, Nassau County in the east, and Volusia and Levy counties in the south appears slightly more likely to experience earthquakes than other parts of the state." Randazzo and Smith concluded their article by noting that the "continued monitoring and documentation of the seismic activity of the Florida Plateau, however small, is essential to the development of the long-term seismic characterization of the state."

11. Tsunamis

Background: When a person hears the term "tsunamis" odds are that they will think of a large wall of water resulting from a major earthquake somewhere in the Pacific Ocean. The unfortunate truth is that this is only partially correct. While tsunamis can be very large, they can also be only a few meters tall. Tsunamis may be generated by any event which results in the vertical displacement of the water column. Although generally

associated with earthquakes, tsunamis may also be caused by underwater landslides, volcanic eruptions, explosions, and even the impact of cosmic bodies, such as meteorites.

Probability: Since tsunamis generally result from earthquakes, it is not surprising they occur most frequently along the boundaries of tectonic plates found along the continental Pacific coast, Alaska and Hawaii. This assumption may not be totally true, however. In an article entitled "Tsunamis and Tsunami-Like Waves of the Eastern United States" (Science of Tsunami Hazards, Volume 20, 2002) it was noted that since 1600, "40 tsunamis and tsunami-like waves have occurred in the eastern United States." The Atlantic coast of Florida was included among those areas feeling the effects of tsunamis.

According to some scientists, certain submarine conditions exist which increase the likelihood of the east coast of the United States experiencing a major tsunami. This belief is not shared by all, however. Tom Hilde of Texas A & M University notes in an article entitled "Tidal Waves Not Likely In Atlantic" that "most of the world's tsunamis are generated at convergent plate margins…the Atlantic margin of the United States is a passive margin, not a plate boundary, and so is not tectonically active. This area has few, and generally low magnitude, earthquakes…" Even so, some scientists, such as George Maul, professor of oceanography at Florida Tech, has noted that "it's not a matter of if; it's a matter of when" the Atlantic will experience a tsunami. In a "Florida Today" article, it was noted that "although tsunamis are rare in Florida and the Caribbean, geologists say the threat is real."

Due to low probability of occurrence, this hazard will not be fully profiled.

Vulnerability: Since Florida is not located along the convergent margins of the tectonic plates, there is no likelihood of earthquake-generated tsunamis. While history has shown that Florida's east coast has experienced some tsunami activity, there is no such record for the Gulf coast due to the large continental shelf located in the Gulf of Mexico, even when the latest 6.0 earthquake happened on September 10, 2006 at 8:56 a.m. approximately 251 WSW from Anna Maria, Florida. There were documented flooding or aftereffects from this event. Consequently, it can be assumed that the Gulf coast has little to fear from this natural occurrence, however there is still a possibility that it could happen.

Of perhaps equal concern would be the danger of a rogue wave. Rogue waves are sudden, extreme waves with wave height well above the background waves. They generally occur in rough sea conditions. A rogue wave estimated to be 18 feet tall, hit Daytona Beach on July 3, 1992. It is

believed that this particular wave was the result of a series of thunderstorms off the Georgia coast.

12. Space Weather

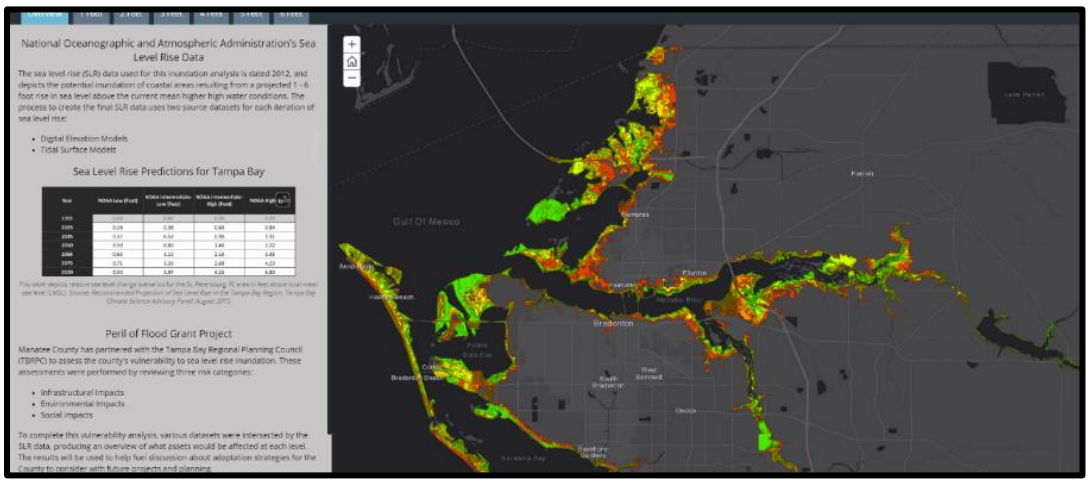
Background: This is a relatively new field of science dedicated to the understanding of interactions between the sun and Earth, and to the forecasting of solar flares, magnetic storms and other space-related phenomena.

The sun is the main source of space weather. Space weather can produce electromagnetic fields that induce extreme currents in wires, disrupting power lines, and even causing wide-spread blackouts. Severe space weather also produces solar energetic particles, which can damage satellites used for commercial communications, global positioning, intelligence gathering, and weather forecasting. According to the National Weather Service Space Weather Prediction Center, Manatee County has not experienced effects of space weather, but the potential exists. Loss of critical systems could severely hinder normal activities in the County.

Manatee County Emergency Management has begun monitoring space weather. As information becomes more available, this will be incorporated into the Local Mitigation Strategy.

13. Sea Level Rise

Background: Sea level rise can have serious adverse effect to our coastal communities and ecosystems. Melting glaciers and ice sheets, contributing to an increase rate of sea level rise, together with expansion of warmer ocean, are causing coastal extreme events to increase in frequency and be more severe. The total amount of water on the earth is not increasing but as the atmospheric temperature rise the temperature of the oceans does also and it causes it to expand.



Probability: As a coastal community, Manatee County is concerned with the changes in the Gulf of Mexico thus we are monitoring SLR. While SLR has risen globally, it is currently rising more than twice as fast – 3.6 mm per year – and accelerating. Manatee County has already experienced about 7 inches of SLR over the past 67 years of records. Even small amounts of SLR make rare floods more common by adding to tides and storm surge. Climate Central has estimated risk by combing local sea level rise projection with historical flood statistics from the NOAA water level station at St. Petersburg, FL, 26 miles from the center of Manatee County. The extreme values analysis indicates that the 100-year flood height is 4.9 feet above local mean higher high water (high tide line). The highest observed flood at this location, in records from 1994 to 2015, reached 4 feet MHHW in 1985. Taken all together, these values suggest that floods above 5 feet likely pose significant concerns.

(***Source:*** *Climate Central (2016). Sea level rise and coastal flood exposure: Summary for Manatee County, FL. Surging Seas Risk Finder file created July 21, 2016. Retrieved from http://ssrf.climatecentral.org.s3-website-us-east-1.amazonaws.com/Buffer2/states/FL/downloads/pdf_reports/County/FL_Manatee_C)*

WHEN COULD A 5-FOOT FLOOD HAPPEN?

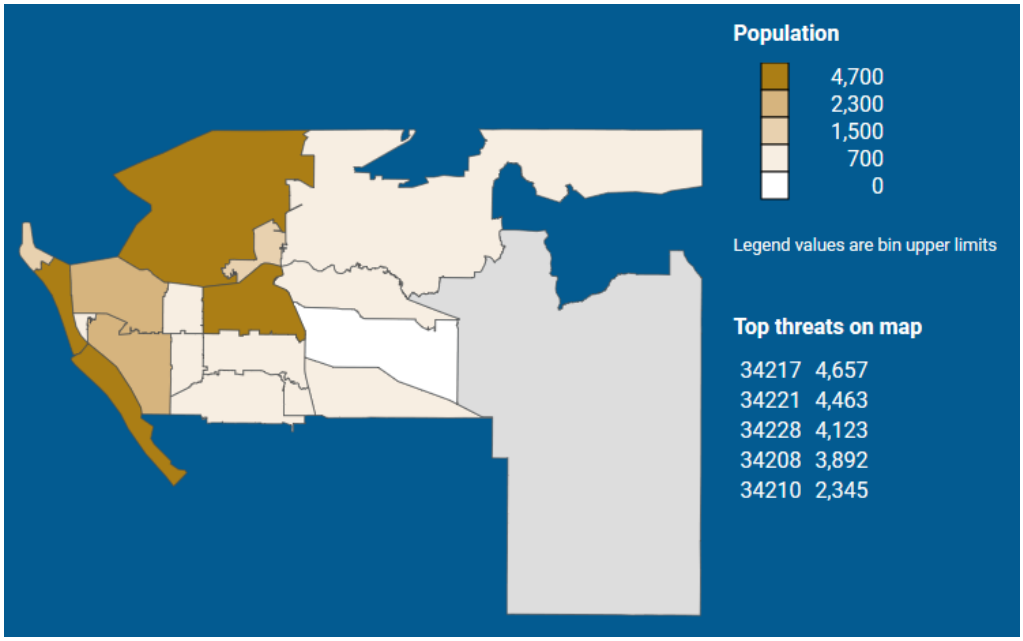
Year	Likelihood
by 2030	20-28%
by 2050	46-71%
by 2100	93-100%
Source*: U.S. National Climate Assessment, 2017 NOAA Technical Report*	

Vulnerability: As sea level rises, the coastal areas and areas around the Manatee River, Braden River, Palma Sola Bay, Terra Ceia Bay and our island community are most at risk. Approximately 31,000 people in the County live on exposed land below 5 feet. Some island nations are likely to become uninhabitable due to climate-related ocean and cryosphere change. These areas are shown to be impacted by 24-inches of rise in sea level by 2030 based on the NOAA models.

WHAT'S AT RISK ON LAND BELOW 5 FT IN MANATEE COUNTY

Population	Total in people
Acres of land	16,663
Population Total	30,978
Housing units	23,020
Property value ($ billions)	9.2
High social vulnerability population	8,133
Road miles	210
Schools	2
Hazard waste sites	7
Source: *U.S. Census, raw population data, elevation data, lidar*	

TOTAL POPULATION BELOW 5 FT IN COUNTY BY ZIP CODE



Source: *U.S. Census, raw population data, elevation data, lidar*

The Center for Climate Integrity states that the fiscal threat that climate change and the impacts of sea level rise could cause the need for upward of almost $2 billion in new sea walls for Manatee County by 2040. As outlined in the Risk Assessment found within Subsection G of this section, when comparing over 30 hazards that the County has the potential to experience impacts from, sea level rise was determined to have an overall risk ranking of 17 when prioritizing hazards compared against others.

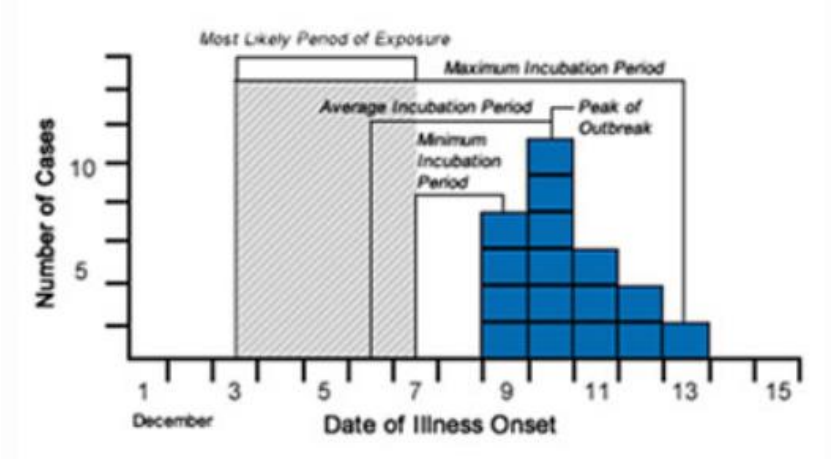
14. Epidemic

Background: Biological hazards are those associated with insect, animal, or pathogen that could pose an economic and/or health threat. There is the possibility of an adverse effect to the general population through naturally occurring pathogens (i.e. influenza, emerging infectious diseases or by way of a terrorist action). Manatee County is potentially vulnerable to influenza outbreaks due to the large annual influx of seasonal residents and tourists. Also, as of July 22, 2016, the Florida Department of Health had identified 321 Zika virus disease cases among Florida residents and visitors, all occurring in either travelers from other countries or territories with ongoing Zika virus transmission or sexual contacts of recent travelers; however, aggressive mosquito control efforts, including aerial adulticide and larvicide, contributed to a decrease in Zika virus transmission. As of 2017, there have not been any reported cases in Manatee County.

Probability: As a coastal community with beaches, Manatee County has a large number of visitors. Accounting for visitors and seasonal residents, outbreak potentials are moderate to high with an estimated 20% occurrence rate per year. The seasonal residents tend to be older in age and therefore are more susceptible to viruses and diseases. The main issues lie with the visitors possibly carrying harmful pathogens. These pathogens could then affect all of the public in service industry thus creating an outbreak.

EPIDEMIC VELOCITY FROM TIME-SERIES DATA

Most Likely Period of Exposure



Source: *CDC.gov*

Vulnerability: The most vulnerable population in Manatee County are the elderly, infantile, and workers close to tourists. These populations would most likely be the first to either contract a virus or disease or be more susceptible to the effects of them. With annual tourism and seasonal residents increasing, Manatee County will face more issues with disease and viruses. Increased temperatures later in the year can result in the longevity of disease carrying insects increasing the vulnerability to the population.

Although the United States has made progress in preparing for an influenza pandemic, considerable challenges remain regarding preparations for populations whose individual and community-level risks lead to vulnerability in health and health care quality. Protection of these populations is essential to effective prevention and mitigation of an influenza pandemic. Because influenza is a highly contagious disease that is spread from person to person, inadequate preparedness or untimely response in vulnerable populations group, can increase the risk of infection for the general population.

Our vulnerable populations are at increased risk for severe epidemic infection because of underlying health conditions commonly associated with these groups. For example, persons with disabilities and our homeless population depend on support from others and may not be vulnerable if they have sufficient support – the loss of support, access to private space, and lack of financial resources for health care, medications, and basic nutritional resources places them at greater risk.

In July 2016, there was one case of the Zika Virus found in Manatee County. The cause was identified as travel related.

A drug epidemic was on the rise in 2019 when Manatee saw 601 overdoses and 61 deaths — more than twice as many deaths as reported during the year prior. As outlined in the Risk Assessment found within Subsection G of this section, when comparing over 30 hazards that the County has the potential to experience impacts from, an epidemic was determined to have an overall risk ranking of 8 when prioritizing hazards compared against others.

First identified in December 2019 as emerging from Wuhan, China, a novel strain of coronavirus (COVID-19) was declared the an outbreak and Public Health Emergency of International Concern on January 30, 2020 and a pandemic on March 11, 2020. Local transmission of the disease has occurred in most countries as an infectious disease caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2). The disease has since spread globally, resulting in more than 3.24 million cases being reported across 187 countries and territories, resulting in more than 230,000 deaths. On March 1, 2020, the Florida Department of Heath (FDOH) announced that the first resident with a confirmed laboratory positive test result in Florida, resided in Manatee County. As of April 30, 2020, Manatee County has had 577 residents test positive, with 148 of those being hospitalized and sadly, 55 have died.

While the majority of cases result in mild symptoms, some progress to viral pneumonia, multi-organ failure, or cytokine storm. The virus is primarily spread between people during close contact, often via small droplets produced by coughing, sneezing, or talking. People may also become infected by touching a contaminated surface and then touching their face. On surfaces, the amount of virus declines over time until it is insufficient to remain infectious, but it may be detected for hours or days. It is most contagious during the first three days after the onset of symptoms, although spread may be possible before symptoms appear and in later stages of the disease.

Recommended measures to prevent infection include frequent hand washing, maintaining physical distance from others (especially from

those with symptoms), covering coughs, and keeping unwashed hands away from the face. Currently, there is no available vaccine or specific antiviral treatment for COVID-19.

On April 1, 2020, the Governor of Florida issued Executive Order #20-91 which limited the movement of Florida residents and their personal interactions outside of their home to only those necessary to obtain or provide essential services or conduct essential activities. On April 29, the Governor issued Executive Order #20-112, which supersedes much of EO #20-91 and includes Phase 1 of the plan to re-open Florida. The Executive Order contains elements that, as of May 4, 2020:

- opens restaurants (up to 25% capacity)
- opens retail, museum, and libraries (up to 25% capacity)
- allows elective surgeries to resume

During the timeframe of mid-March to late-April, the Manatee County Board of County Commissioners and all participating jurisdictions took many actions to help mitigate the spread. Mitigation measures such as, but not limited to, closing public beaches, boat ramps, basketball and tennis courts, skate parks, playgrounds, libraries, public government buildings, gyms, etc., in addition to enacting a temporary curfew to limit movement between the hours of 11:00 p.m. and 5:00 a.m. for a span of 18 days.

Manatee County in coordination with FDOH, operated a minimum of three drive-through testing facilities during the month of April and early-May, in additional to a State operated testing facility on the grounds of the UTC Shopping Center.

Since the pandemic occurred during the final stages of the 5-year update to the Plan, and is still an ever-changing event, the exact extent of the economic and social impacts is not known at this time. Further information on impacts will be provided in subsequent updates to the Plan.

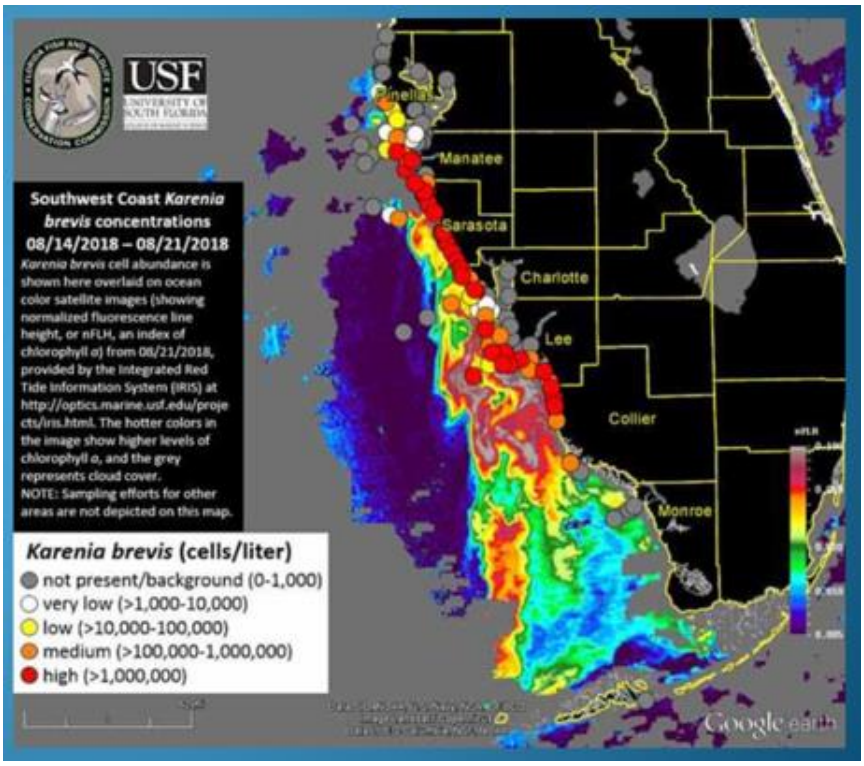
15. Harmful Algal Blooms (HABs)



Background: Harmful algal blooms (HABs) occur when algae — simple photosynthetic organisms that live in the sea and freshwater — grow out of control while producing toxic or harmful effects on people, fish, shellfish, marine mammals, and birds. There are many kinds of HABs, caused by a variety of algal groups with different toxins. The HABs in fresh and marine waters are usually very different, but they overlap in low salinity estuaries (places where rivers meet the sea). The human illnesses caused by HABs, though rare, can be debilitating or even fatal. Manatee County has seen annual blooms in the form of Red Tide (the largest from a discoloration of seawater caused by a bloom of toxic red dinoflagellates) -one of the largest occurring for two months in 2018.

CURRENT STATUS OF ALGAL BLOOM

Description	K. brevis abundance	Possible effects
Not present - background	background levels of 1,000 cells or less	no effects anticipated
Very Low	> 1,000 - 10,000 cells/L	possible respiratory irritation; shellfish harvesting closures when cell abundance equals or exceeds 5,000 cells/L
Low	> 10,000 - 100,000 cells/L	respiratory irritation; shellfish harvesting closures; possible fish kills; probable detection of chlorophyll by satellites at upper range of cell abundance
Medium	> 100,000 - 1,000,000 cells/L	respiratory irritation; shellfish harvesting closures; probable fish kills; detection of surface chlorophyll by satellites
High	> 1,000,000 cells/L	as above, plus water discoloration
Source: *https://myfwc.com/research/redtide/statewide/*		



Source: *http://ocgweb.marine.usf.edu/*

Probability: Being a coastal county in the Gulf of Mexico the probability of occurrence is moderate to high with an estimated 20% occurrence rate per year. Gulf waters contain the correct balance of organisms for blooms to occur, especially in summer months when waters are the warmest.

Vulnerability: The highest vulnerabilities come to those communities along the coast, bay and near estuaries, as well as the population of those living in these communities or part of the County. In 2018, the severity of the red tide and the impacts on fish and wildlife greatly affected the economy in the County, as well as many other counties in Florida. Hotels and restaurants depend on clean air and water to bring visitors to their businesses, and the health concerns created by harmful algal blooms (HABs) kept people away. Residents in these areas suffer when the toxins get blown into the air, constricting the lungs' bronchioles and sending people with asthma and other health issues to emergency rooms with coughs and shortness of breath. While usually not fatal, the HABs can cause serious health concerns and respiratory issues for humans.

The vulnerability in economic loss comes to those that rely on tourism and seafood for income due to lack of marine life and tourism. Even algal blooms that don't release toxins can harm wildlife by depleting oxygen from coastal waters, causing massive fish kills in numbers too vast to count – this is devastating to marine wildlife.

Between August 1st and September 10th, 2018, Manatee County's coastline experienced negative impacts from Red Tide. Over 315 tons of debris was removed from the beaches into dumpsters and transferred to the County landfill. While the economic damage may be hard to calculate — a single, definitive source is lacking — but informal local and state studies show the environmental disaster caused by the harmful algae inflicted millions of dollars in damages to Manatee businesses and took a toll on Florida's tourism. Not-surprisingly, the industries most impacted by the event were rentals such as vacation homes and charter boats, hotels and restaurants. Those restaurants, real estate agents, vacation rentals, marine-based businesses and other establishments reported about $9 million in losses.

The Red Tide event receded after months of significant damage to marine life and coastal businesses. While scientists do not anticipate a return of Red Tide impacts of this magnitude in the near future it is highly likely to impact Florida communities again in the coming years as harmful algal blooms are a regular occurrence in Florida due to combined pollution from septic tanks, fertilizer runoff (from lawns and agriculture) and increased development which all put pressure on the ecosystem.

As outlined in the Risk Assessment found within Subsection G of this section, when comparing over 30 hazards that the County has the potential to experience impacts from, harmful algal blooms was determined to have an overall risk ranking of 10 when prioritizing hazards compared against others.

16. Animal Disease Outbreak

Background: Biological hazards are those associated with insect, animal, or pathogen that could pose an economic and/or health threat to the agricultural community. The possibility exists for the importation of pathogens that could have a widespread effect on the livestock industries. In addition, there is the possibility of an adverse effect to the general population through naturally occurring pathogens (i.e. influenza, emerging infectious diseases or by way of terrorist action). Due to the large agricultural interests in the northern and eastern portions of the County, there may be vulnerability to animal-borne diseases such as Mad Cow and Foot and Mouth Disease; in addition to mosquito and other insect borne diseases. Emerging diseases that little to no counter measures currently exist also pose a serious threat to wildlife and livestock in the County.

Probability: Manatee County is not home to a large amount of livestock as neighboring counties are, thus there is a low probability of an outbreak an estimated 14% probability rate. Most animal agriculture is located in the eastern part of the County leaving less interaction with humans. This decreases the chances of pathogens transferring to livestock. The animals

would most likely contract disease from insects. The part of the county that is home to livestock is very rural thus water management systems have not been installed creating the increased likelihood of large amounts of insects being able to breed rapidly. The County does target the areas with adulticide and larvicide to decrease amounts.

OUTBREAK CONTROL AREAS

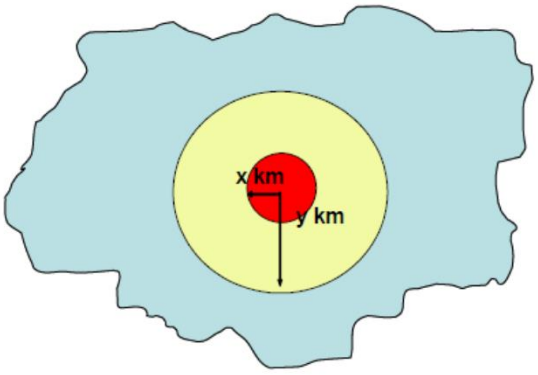


Figure – Illustration of movement control areas centered on a disease outbreak indicating an infected zone around an outbreak.

***Source**: OIE World Organization Protection Animal Health*

Vulnerability: With increased aerial insecticide in the rural areas, the most vulnerable populations of livestock are in the areas less treated. These would be the most likely to contract diseases and spread them.

The distribution of infectious animal disease and the timing and intensity of disease outbreak is often closely linked to climate. Climate change may affect livestock disease through several direct, and indirect paths:

a) Pathogens: higher temperatures and greater humidity generally increase the rate of development of parasites and pathogens. Changes to wind can affect spread of pathogens. Flooding that follows extreme climate events provides suitable conditions for many water-borne pathogens. Droughts have a tendency to affect most pathogens.
b) Vectors: vector-borne diseases are especially sensitive to climate change. Changes in rainfall and temperature regimes may affect both the distribution and the abundance of disease vectors, as can changes in the frequency of extreme events.
c) Hosts: climate stress (heat, inadequate food and water) can also lower immunity.

d) Ecosystem services: climate change can also influence disease transmission by altering ecosystem structure and function.
e) Humans: peoples' behavior may change as the result of climate change and this may affect how they keep animals, which in turn may affect the exposure or vulnerability of animals to pathogens.

The direct effects of climate on animal disease are likely to be most pronounced for disease that are vector-borne, soil associated, water or flood associated, rodent associated, or air temperature/humidity associated.

Over the past 20 years, headlines have documented an increasing number of emerging diseases; most have an animal source (zoonoses). Recent examples include West Nile virus, severe acute respiratory syndrome (SARS), avian influenza, and monkeypox. While some emerging diseases occur among both humans and animals, others affect only animals or only humans. Nevertheless, all these new or reemerging infections have societal implications, often tied to local and national economies. The economic losses caused are proportional to the scale of farming; (e.g. the greater the farm size, the higher are the losses.) The share of livestock income in total farm income is around 50%, which makes this sector vital to the survival of the farming community, especially the small farmers.

As outlined in the Risk Assessment found within Subsection G of this section, when comparing over 30 hazards that the County has the potential to experience impacts from, animal disease outbreak was determined to have an overall risk ranking of 29 when prioritizing hazards compared against others. There have been no previous recorded occurrences of animal disease outbreaks in Manatee County.

D. TECHNOLOGICAL HAZARDS

A technological hazard is a direct result of the failure of a man-caused system or the exposure of the population to a hazardous material. Technological hazards may affect a large segment of the population and/or interfere with critical government, law enforcement, public works and public health/medical functions. Several things occur daily within the County which could produce a threat to the population or produce widespread unmet needs. Each of these potential hazards requires a coordinated and speedy response, as well as attention to the short- and long-term effects. The hazards associated with this category include airplane crash, critical infrastructure disruption/failure, dam/levee failure, hazardous materials release, power failure, radioactive release, train derailment, major transportation incident and urban conflagration.

a. Hazardous Materials

Background: There are a large number of sites in Manatee County where hazardous materials are stored, processed, used for industrial purposes, and otherwise handled. A large concentration of hazardous materials can be found associated with Port Manatee and at Tropicana. Smaller amounts can be found associated with such commercial establishments as dry cleaners, pool services and hardware stores.

Probability: Industry has taken great steps to minimize the risk associated with the storage and transportation of hazardous materials. Although every precaution is taken and all safety and reporting regulations followed, spills, seepage and leaks can still occur as a result of human error or natural phenomena. For Manatee County, the probability of a hazardous material spill or release is high based on the County's transportation system and the type of industries located within the County requiring transportation.

Vulnerability: Hazardous material releases pose short and long-term toxicological threats to humans, to terrestrial and aquatic plants and to wildlife. Toxic materials affect people through inhalation, ingestion and/or direct contact. The population directly impacted by a hazardous materials accident will be dependent upon the specific location of the accident and the climatic conditions at the time of the accident. Since these are unknown factors, mitigating the extent of the area impacted requires continued dialogue between industry and emergency responders.

b. Dam/Levee Failures

Background: Dam/Levee failure is a collapse or breach in the dam or levee. When the term "dam" is used, it is normal to think only of structures associated with the impounding of rivers for use as drinking water reservoirs, the production of electricity or flood control. In Florida, the term can take on an additional meaning, that of impounding clay settling ponds or phosphogypsum stacks associated with the mining and processing of phosphate. Both types of dams can be found within Manatee County.

The Lake Manatee Dam is located along the Manatee River, approximately 10 miles east of I-75. Built between 1965 and 1967, this dam forms the 2,400-acre Lake Manatee Reservoir. With a depth of 40 feet and containing approximately 7.5 billion gallons of water, this reservoir serves as the primary source of drinking water for approximately 330,302 residents of Manatee County (U.S. Census Bureau 2012 estimate) and Sarasota County.

In August 2003 following several days of intense rainfall, a flood gate at the Manatee River Dam jammed opened. This resulted in the evacuation of several residences downstream as a precautionary action. While roads and some yards flooded, there was no reported flood damage to buildings.

Located south of SR 70, the 359-acre Bill Evers Reservoir was built in 1939 to serve the water needs of the City of Bradenton. The reservoir was created by the construction of Ward Dam across the Braden River. Ward Dam is located approximately five miles south of the junction of the Braden and Manatee Rivers.

Located approximately five miles east of US 301 and one-half mile north of SR 62 is the Florida Power and Light Manatee generative facility. Constructed in 1977, Lake Parrish is a 4,000-acre diked lake which serves as the cooling pond for this facility.

Phosphate mining activities can be found in the eastern portions of the County. As noted above, phosphate mining and processing requires the need for dams to impound water associated with clay settling ponds. The only phosphogypsum stack in the County is located at the closed Piney Point processing plant.

Probability: The construction and safety of dams and levees in Florida is governed by 62-672 FAC and 373, FS. There have been no threats of failure associated with Ward Dam. In 2014, contract engineers inspecting Lake Manatee Dam, determined the dam to be in a severely distressed state due to erosion and has since been repaired at a cost of $15 million. This remediation should extend the life of the dam 50 years. Phase 1 was the emergency phase which required the re-establishment of the core of the dam and was completed 2014. Phase 2 will address downstream issues but is not considered emergency remediation. This work will be defined and start in November 2021.



***Source**: www.srh.noaa.gov/.../photos/manatee%20dam.jpg*

Active phosphate mining areas in Manatee County are in the Lake Manatee watershed area, specifically clay settling areas and there is no mining within the Evers Reservoir watershed. It is unlikely that a dam failure would impact the watersheds of Lake Manatee or the Evers Reservoir.

The closing of the Piney Point processing plant has raised concerns regarding the maintenance of the phosphogysum stack. Of particular concern is the capacity of the stack being exceeded following major or long-duration rainfall events.

Per the Florida Department of Environmental Protection (FDEP) the closure activities will be complete by 2010. The owner "…will take over long-term care responsibilities as portions of the stack system are closed."

According to information from Manatee County Utilities Department, Lake Manatee Dam holds enough water to flood approximately 14.5 square miles of land in the event of a dam breach. Flood elevations range from 21 feet above the banks of Manatee River at the Rye Bridge crossing as the topography at this location is deeply incised. As the water moves downstream the topography becomes flatter and the flood depth becomes much less (Map 29). Lake Parrish is located in an area that even a full breach of the dyke would not pose a flooding impact to residents.

Vulnerability: County residents living downstream from the Lake Manatee and Ward Dams are the most vulnerable should there be a dam failure. The number of residents affected by such an event would depend on the degree of the failure. Due to their isolated locations, there is little likelihood that the failure of a clay settling pond would adversely impact county residents. The same would apply to a dike failure at Lake Parrish. The number of residents affected by such an event would depend on the area of the dike which failed and the direction of flow.

Concerns with the Piney Point phosphogypsum stack are centered primarily on the potential for the contaminated water flowing into Tampa Bay and its subsequent environmental impacts.

The FDEP reported the following "summary of key activities that have been completed and current status:

- All of the ponded process water that was contained within the compartments of the phosphogypsum stack system has been removed and disposed. The water was treated and discharged using a combination of traditional double lime treatment, and reverse osmosis treatment technologies. All phosphogypsum stack compartments have

- been lined with a synthetic, high density polyethylene (HDPE) liner. Stack side slopes have been amended and grassed for routing stormwater runoff to the outfall structures. The stack compartments can serve as reservoirs with a total storage capacity of up to 1.3 billion gallons for future environmental or compatible uses that may be beneficial to the State or local community.

- The discharge of treated process water to waters of the state from Outfall 003, ended on March 31, 2007. One of the lined compartments is currently being used for treatment of remnant process water that results from seepage collected at the base of the stack system. The seepage water is afforded the necessary pretreatment prior to being discharged into the Manatee County Sewer System.

- The at-grade cooling ponds previously used for the storage, cooling and recirculation of process water, have been lined with HDPE, covered with clean soil and grassed. Upon completion of all other closure activities, the NCP, which holds lime sludge used in treatment of process water, will be capped with a liner, covered with clean soil and grassed as the rest of the ponds.

- Plans for closure of the last portion of the Piney Point "plant area watershed" that includes the return channel and seepage ditch west of the OGS, the footprint of Aeration Ponds A-D, and the watershed area immediately north of Outfall 003 (and immediately east of the SCP Process Water Sump) have been prepared by the geotechnical engineering consultant Ardaman & Associates, Inc. These plan drawings reflect the full scope of work and can be used for HRK's review as well as CDM's initial quantity take-offs and pricing evaluation.

- A bentonite slurry cut-off wall has been installed on the North, and south property boundary, along Buckeye Road to isolate groundwater within the former process area. A wire fence with wood posts has been constructed between the road and the slurry wall to ensure security.

- Under the supervision of HRK personnel, the former chemical plant has been demolished and clean-up activities are ongoing. The maintenance building is undergoing renovation to serve as a trucking terminal."

c. Port Vessel Collision or On-Water Hazardous Materials Spill

Background: Manatee County is susceptible to the impacts associated with port vessel collisions or on-water hazardous material spills. This conclusion is based on its location at the mouth of Tampa Bay, amount of Gulf coastline, site of a major deepwater port, and location adjacent to the main shipping channel into the Port of Tampa. As a consequence of the latter two items, there is a substantial amount of maritime shipping involving ocean and barge traffic carrying a wide variety of hazardous materials such as fuel oil, gasoline, aviation fuel, and ammonia.

Probability: Because Port Manatee is an active port, two factors are present which contribute to the need for vigilance. First, hazardous materials will always be present, either in transit or storage. Second, the potential for accidents is always present, either in the transfer of hazardous materials from ship-to-shore, storage, or transfer to storage to overland transport. Given the amount of hazardous materials at the port and its location, should a spill or fire/explosion occur, the impact on the surrounding population and natural environment could be catastrophic.



Vulnerability: As the home to a major deepwater port, the probability of an accident involving hazardous materials does exist. However, mitigation measures for in-route transportation are in place to minimize exposure to the general populace and to the environment. Thus, the probability of a serious event is considered to be low.

d. Utility Failure/Power Outages

Background: As growth continues in Manatee County, there is an increasing demand for electrical power. Through the 10-year Site Plan process, Florida Power and Light (FP&L) addresses growth in their expansion plans. Still, there may be situations where their power generating capability may not meet total demand during extreme weather conditions or after a severe storm.

Probability: It is difficult to predict when a power outage may occur, as the northeast power failure showed in 2003. What can be predicted are the types of situations which could contribute to such a failure. This situation was highlighted during the Christmas weekend of 1989 as the extremely cold weather caused extended outages throughout the state. Although the cold weather scenario is the only most likely to result in power shortage emergencies, similar problems may occur during extremely hot weather as well.

Vulnerability: While a power failure is most likely to occur during an extreme weather event, local governments and FP&L must be prepared to respond in order to maintain the public safety and health and welfare of the County's residents.

e. Airplane Crash

Background: Manatee County is home to an international airport. The Sarasota-Bradenton International Airport is split between Manatee and Sarasota Counties. Any incident would result in life safety issues, economic issues, and transportation issues. These types of incidents do not solely have to do with malfunction. They can be associated with terrorism, human error, and even sabotage.

f. Critical Infrastructure Disruption

Background: Critical infrastructure is the body of systems, networks and assets that are so essential that their continued operation is required to ensure the security of a given nation, its economy, and the public's health and/or safety. Energy, water and wastewater systems, and transportation systems are a few examples of Manatee County's critical infrastructure. Loss or disruption in any system can result in life safety and economic issues.

g. Radiological Releases

Background: Radiological releases pertain to any release of radiological material into the air, water, or land. These incidents are of great concern to public health and the environment and can have lasting effects on the community.

h. Train Derailment

Background: A derailment occurs when a vehicle such as a train runs off its rails. Although many derailments are minor, all result in temporary disruption of the proper operation of the railway system and they are potentially seriously hazardous to human health and safety. Tropicana and other industrial companies regularly use trains to transport and receive goods. The largest concern for an incident would be that of a derailment involving hazardous materials. These incidents would affect public and economic health as well as transportation systems.

i. Major Transportation Incidents

Background: Manatee County has two major transportation lines (Interstate 75 and US-41). These major roads provide transportation to public and commercial entities. Any major incident gives concern to life safety and economic loss for the County and region. Additionally, public safety uses these roads for response.

j. Urban Conflagration

Background: A conflagration is a large and destructive fire that threatens human life, animal life, health, and/or property. It may also be described as a blaze or simply a large fire. A conflagration can begin accidentally, be naturally caused wildfire, or intentionally created arson. Arson can be for fraud, murder, sabotage or diversion, or due to a person's pyromania. A very large fire can produce a firestorm, in which the central column of rising heated air induces strong inward winds, which supply oxygen to the fire. Conflagrations can cause casualties including deaths or injuries from burns, trauma due to collapse of structures and attempts to escape, and smoke inhalation. The County has very little areas where wildland and urban interfaces are joined lowering concern for wildfire to urban conflagration.

E. HUMAN-CAUSED

Human-caused incidents result from several origins, but all incidents have human behavior, technological/industrial mistakes, or intentional acts of an adversary as their root cause. Lack of knowledge regarding technology, human error, the inability to identify potential cascading effects, or simply deficient response systems for technological catastrophes are common drivers of the incidents. Humans targeting other humans with acts of violence or disruption is another common source of human-caused incidents.

a. Terrorism/Homeland Security

Background: The events on September 11th, 2001 has shown, the United States is no longer exempt from the threat of terrorist attack on its home shore. While there are no major facilities of national importance in the County, Manatee County is located near MacDill Air Force Base with Central Command and Special Operations, and the Port of Tampa which must be considered potential terrorist targets. While the types of weapons a terrorist may use are varied, the most fearful are those classified as weapons of mass destruction. Of these, the greatest threat comes from those classified as NBC or nuclear, biological and chemical.

Conventional wisdom is that obtaining the material to create nuclear weapons would be difficult for a terrorist group. Still, it is possible of obtain sufficient qualities of radioactive material to make what are known as “dirty bombs.” Similarly, the chemical agents or biological agents are relatively easy to obtain, and thus pose a greater threat than that associated with nuclear material weapons. The availability and the impact of chemical and biological threat materials are both high and can have potentially devastating impacts.

Probability: As 9/11 and subsequent worldly events have shown, there is no way of predicting when, where, or how a terrorist attack may occur.

Vulnerability: The devastation of a nuclear attack is clearly understood. A terrorist attack using a dirty bomb or chemical or biological agents could prove to be equally devastating. In addition to the large numbers of people either killed or injured, there is also the long-term economic impact of such an attack. Large sections of a community could be contaminated for an extensive period of time.

Post 9/11 has placed a greater urgency on the need for vigilance and preparation. Federal, state, and local law enforcement, public safety, and emergency management officials and agencies are working in greater cooperation to coordinate pre-event preparation and potential post-event response.

b. Civil Disturbance

Background: Civil disturbance, also known as civil disorder or civil unrest, is an activity arising from a mass act of civil disobedience (such as a demonstration, riot, or strike) in which the participants become hostile toward authority, and authorities incur difficulties in maintaining public safety and order, over the disorderly crowd. These incidents give rise to concerns of life safety and property.

c. Coastal Oil Spill

Background: An oil spill is the release of a liquid petroleum hydrocarbon into the environment, especially the marine ecosystem, due to human activity, and is a form of pollution. The term is usually given to marine oil spills, where oil is released into the ocean or coastal waters, but spills may also occur on land. Spills not only can create public health issues but create long lasting economic issues for fishing and tourism.

d. Cyber Incidents

Background: Cyber-attacks include the use of electronic devices to attack, cripple or damage information systems held by governmental or private institutions, as well as individual citizens. Cyber-attacks are largely achieved through one of three means: 1) through wired and wireless Internet connections, 2) through the uploading of malicious software, and 3) through hardware transfer devices such as thumb drives. The sources of cyber-attacks include criminal groups seeking financial gain, nation states involved with espionage and plans to undermine foreign governments through a weakening of national defenses, activist groups bent on gaining public opinion or punishing those who disagree with their agenda as well as lone individuals seeking fame or fortune. Terrorist

groups can also be a source of cyber-attacks; however, their current capabilities are somewhat limited. A sharp increase in the number of cyber intrusions into government and corporate computer networks has caused the United States to launch a number of new initiatives in cyber security. Many of the initiatives have focused on protecting critical infrastructure control and command systems, preventing access to sensitive government information, and thwarting acts of fraud and theft targeting business financial systems.

e. Mass Migration

Background: Mass migration occurs when a large population moves from one regional area to another. These moves are not limited to country to country movement. They can be within countries and event within states. The issues of concern during these events are public health and economic hardships.

f. Sabotage

Background: Sabotage is a deliberate action aimed at weakening a policy, effort, or organization through subversion, obstruction, disruption, or destruction. One who engages in sabotage is a saboteur. Saboteurs typically try to conceal their identities because of the consequences of their actions. Sabotage can be linked to many different types of incidents.

g. Mass Shootings

Background: A mass shooting is an incident involving multiple victims of firearm violence (not necessarily death). There is no widely accepted definition of the term shooting but the FBI defines a "mass murder" as "four or more murdered during an event with no "cooling-off period" between the murders." The response to an event can span for a long period of time and the effects span even longer.

h. Special Events

Background: Special events refers to any event not typically done regularly. These can include marathons, fairs, and parades. While the actual event doesn't necessarily cause major issues, the events within the event can give rise to life safety issues as well as transportation issues. Since these events are generally planned in advance, safety can be added into the planning process early.

F. VULNERABILITY BY JURISDICTION

Attempting to access the vulnerability of multiple jurisdictions to natural and man-caused risks is a difficult task. To one degree or another, all the jurisdictions in Manatee County are susceptible to the hazardous events described in this LMS. The level of vulnerability is dependent upon a multitude of circumstances and conditions which are beyond the ability of this study to address. In order to provide additional clarity, the following is a brief description of the method used in determining the degree of vulnerability faced by the individual jurisdictions in Manatee County. A matrix of this information can be found at the conclusion of this section. Reference Appendix B for a list of historical events throughout the County.

- **Hurricane/Coastal Storms/Severe Winds**

  Due to their location on barrier islands, the cities of Anna Maria, Bradenton Beach, Holmes Beach, and Longboat Key and the coastal areas of the City of Bradenton, and unincorporated Manatee County are the most vulnerable to the effects of a hurricane or coastal storm. Depending on the severity of the storm, additional areas in Bradenton, Palmetto, and unincorporated Manatee County near the mouth of the Manatee River could also be vulnerable. All areas of the County are vulnerable to severe winds caused by thunderstorms.

- **Severe Storms**

  All jurisdictions in Manatee County are susceptible to the various components which comprise severe storms. As noted previously, the greatest threats come from lightning and strong winds. Although associated with severe thunderstorms, hail presents less of a threat.

- **Tornadoes**

  All jurisdictions in Manatee County are susceptible to tornadoes, particularly during the threat of severe thunderstorms. In addition, the four barrier island communities are also susceptible to the threat of waterspouts. While a typical tornado in Florida is small when compared to those in the mid-west, recent history has shown that severe tornadoes can occur.

- **Floods/Severe Rain Events**

  To some degree, all jurisdictions in Manatee County are susceptible to flooding events. Naturally, properties adjacent to water bodies or in low lying areas would be expected to experience flooding. The severity of the flooding is directly related to the amount and duration of the rainfall

event. The areas affected by flooding could increase. For the barrier island communities, should a severe rainfall event occur at the same time as high tide, onshore winds, or a combination of both, the severity of the flooding is compounded. In all of Manatee County, 38,768 buildings are within the high risk and mixed (high risk on property) zones and have the potential of experiencing the 1% chance flood event.

- **Coastal and Riverine Erosion**

  In Manatee County, coastal and riverine erosion is a possibility for those areas located along the Gulf of Mexico, Tampa Bay, Sarasota Bay, Manatee and Braden Rivers and Bowless and Wares Creeks. The severity of the coastal and riverine erosion is directly related to the amount and duration of the storm event. For the barrier island communities, should a severe storm event occur at the same time as high tide, onshore winds, or a combination of both, the severity of the erosion is compounded. Given the mass area of possibility along the Gulf of Mexico, Tampa Bay, Sarasota Bay, Manatee and Braden Rivers and Bowless and Wares Creeks, this event could affect the planning area equally.

- **Winter Storms/Freezes**

  The same areas of Manatee County affected by hurricane and coastal storms are also affected by winter storms. Surprisingly, some of the most severe and destructive storm events in recent years have been associated with winter storms. The planning areas most affected by this event would be the agricultural areas of unincorporated Manatee County, as well as these same area in the cities of Bradenton and Palmetto.

- **Droughts/Heat Wave**

  All of Manatee County is affected by drought conditions. As noted above, drought conditions are occurring throughout Florida with increased regularity. It is not unusual for Manatee County to experience temperatures above normal during the summer. When combined with the natural high humidity, conditions associated with a heat wave can occur. Given that Manatee County is a coastal county with a sea breeze off the Gulf of Mexico, all jurisdictions within the planning area have an equal likelihood of less than a 1% chance of experiencing a heat wave.
  ***Source**: www.weather.gov/floodsafety/Drought-wh.jpg*

- **Sinkholes**

  As identified by the Southwest Florida Water Management District, the occurrence of sinkholes is a rare event in Manatee County. The only recorded sinkholes are located in the unincorporated county. As noted previously, the geologic structure of Manatee County does not lend itself to the formation of sinkholes. Thus, the locations reported as sinkholes by SWFWMD are considered ground subsidence in the form of washouts, potholes, and similar formations.

- **Wildfires**

  The areas of greatest threat to wildfires are in unincorporated Manatee County, primarily east of I-75. The area south of the Manatee River and east of I-75 is experiencing the greatest growth in what is considered the urban/rural interface.

- **Earthquakes, Tsunamis**

  Since Florida is not located along the convergent margins of tectonic plates, there is no likelihood of earthquake-generated tsunamis. There is no record of the Gulf Coast of Florida experiencing this natural occurrence.

- **Space Weather**

  Manatee County Emergency Management has begun monitoring space weather. As information becomes more available, this will be incorporated into the Local Mitigation Strategy.

- **Sea Level Rise**

  May be the result of climate change, which can have serious adverse effect to our coastal communities and ecosystems. As a coastal community, Manatee County is concerned with the changes in the Gulf of Mexico thus we are monitoring Sea Level Rise. As sea level rises, the coastal areas and areas around the Manatee River, Braden River, Palma Sola Bay, Terra Ceia Bay and Anna Maria Island are most at risk.

- **Epidemic**

  All jurisdictions are vulnerable to epidemics. An epidemic is human based, and any persons can be exposed through multiple avenues. Although, all jurisdictions are vulnerable, those with lower and spread populations like Myakka City are less vulnerable than population dense areas.

- **Harmful Algal Blooms**

  The areas of direct vulnerability in the County are coastal communities. These include Anna Maria, Holmes Beach, Bradenton Beach, and Longboat Key. These jurisdictions would be directly affected with public health concerns as well as economic loss. The remaining jurisdictions would be indirectly vulnerable through economic loss.

- **Animal Disease Outbreak**

  Unincorporated areas in the far eastern portion of Manatee County are the most vulnerable to an outbreak due to the fact that livestock is kept in those areas. Most of these areas included are generally far east of interstate 75 in rural areas.

- **Hazardous Materials**

  Due to the fact that ground transportation is the primary method for the transport of hazardous materials, all areas of Manatee County are potentially susceptible to a hazardous material event. The greatest probability of such event would be in those areas with the highest concentration of hazardous material users. Such areas would include the Port Manatee areas of northwestern unincorporated Manatee County and the industrial areas east of US 41/301 in eastern Bradenton and unincorporated Manatee County.

- **Dam/Levee Failures**

  The areas of Manatee County vulnerable to a dam failure are located west of Lake Manatee and north of the Bill Evers Reservoir in the unincorporated county and the cities of Bradenton and Palmetto. There have been several minor events where limited evacuations have been necessitated due to dam overflows. The latest was in August 2003 when a flood gate jammed opened following several days of intense rainfall.

  The areas of Manatee County vulnerable to clay settling area (CSA) breaches are located east of Lake Manatee from the northern county boundary south to State Road 64.

  The area of unincorporated Manatee County near the Florida Power and Light Manatee Generating Station are vulnerable should the cooling pond known as Lake Parrish fail.

  A dam failure at Lake Manatee would also impact the municipalities as this is their drinking water supply. Failure at Bill Evers Reservoir would impact Bradenton and also some areas of the unincorporated area who receive their drinking water from that source.

- **Port Vessel Collision or Open Water Hazardous Material Spill**

  When considering port vessel collisions or open water hazardous material spills, it would be natural to narrow the potential vulnerability area to that in the immediate vicinity of Port Manatee. Taking this approach, the vulnerability area would be limited to northwest unincorporated Manatee County and southwest Hillsborough County. This area includes the Bishops Harbor and Terra Ceia Aquatic Preserves in Manatee County and the Cockroach Bay Aquatic Preserve in Hillsborough County. This approach does not take into consideration that much of northern Manatee County is exposed to Tampa Bay and the main shipping channel into not only Port Manatee but also the Port of Tampa and Port of St. Petersburg. As a consequence, should a vessel collision or open water hazardous material spill occur in the main shipping channel west of the Skyway Bridge and climatic conditions be right, the unincorporated areas of Terra Ceia and Snead Island, the City of Anna Maria and the Palma Sola and the Perico Island areas of the City of Bradenton could be impacted. Should such an event occur west of Egmont Key, it is possible that in addition to Anna Maria, the cities of Holmes Beach, Bradenton Beach, and Longboat Key could also be impacted.

- **Terrorism/Homeland Security**

  With the exception of Port Manatee and the Florida Power and Light Manatee Generating Station, there are no facilities in the County which could be considered of strategic importance. Hence, the vulnerability to a terrorist attack would have to be considered low. However, as recent history has shown, this may in fact not be the case. It cannot be forgotten that Manatee County is located in proximity to MacDill Air Force Base and the main shipping channel for the Port of Tampa. Thus, while the threat of a direct attack may be considered low, the vulnerability to the effects of an attack on a target outside of the County must be recognized as a possibility.

- **Utility Failure/Power Outages**

  To some degree all of Manatee County is vulnerable to a utility failure or power outage. The actual extent of such vulnerability is dependent upon the cause and scope of the failure.

The table on the following page was developed based on local knowledge and historical occurrence of the jurisdiction's vulnerability of the identified natural and man-caused hazards.

HAZARD IMPACT BY JURISDICTION

Natural and Man-caused Hazards	Manatee County	Anna Maria	Bradenton	Bradenton Beach	Holmes Beach	Longboat Key	Palmetto
Hurricane/Coastal Storms	H	H	H	H	H	H	H
Severe Storms	H	H	H	H	H	H	H
Tornadoes	M	M	M	M	M	M	M
Floods	H	H	H	H	H	H	H
Coastal and Riverine Erosion	M	M	M	M	M	M	M
Winter Storms/Freezes	M	M	M	M	M	M	M
Drought	M	M	M	M	M	M	M
Sinkholes	L	N	L	N	N	N	L
Wildfires	H	N	H	N	N	N	H
Earthquakes	N	N	N	N	N	N	N
Space Weather (no data to report)							
Sea Level Rise	H	H	H	H	H	H	H
Harmful Algal Bloom	M/H	H	M/H	H	H	H	M/H
Epidemic	M/H	M/H	M/H	M/H	M/H	M/H	M/H
Animal Disease Outbreak	M	L	L	L	L	L	L
Hazardous Materials	M	M	M	M	M	M	M
Dam/Levee Failures	L	N	L	N	N	N	L
Port Vessel Collision or Open Water Hazardous Material Spill	H	M	M/L	L	L	L	L
Terrorism/Homeland Security	L	L	L	L	L	L	L
Utility Failure/Power Outages	M	M	M	M	M	M	M

Key:

H = High – Likely to experience threat of vulnerability, effect, or reoccurrence of event. Most of the population affected, major damage to old, poorly maintained, and mobile home structures, some damage to newer structures built to code likely.
M = Moderate – Average to better than average likelihood of experiencing threat of vulnerability, effect, or reoccurrence of event. Around 50% of the population affected, mobile homes and poorly built or maintained structures most at risk.
L = Low – Below average likelihood of experiencing threat of vulnerability, effect, or reoccurrence of event. Special portions of the population affected, day-to-day operations not affected, minor cosmetic damage expected to some structures.
N – Very little or no likelihood threat will occur.

Source: *Manatee County Emergency Management, updated 10/1/2019*

G. RISK ASSESSMENT – THE ANALYSIS PROCESS

The risk assessment consists of three elements – conducting an analysis of hazards the community faces, an assessment of vulnerability related to each threat or hazard, and a review of the consequences and impact expect should an incident occur.

The creation of the **hazard profiles**, and other factors that influence the total risk score are detailed in the sections below while accounting for the research listed in the "Overview of Hazards" section of the THIRA. Research for this assessment involved the collection of both historical and statistical data, including review of available literature and interviews with professionals in various disciplines at the local-level and at the state-level. Information was then systematically analyzed for potential risk value. The threat analysis was scored by the workgroup based on: Frequency, Duration, Speed of Onset, and Magnitude.

Frequency:

A key factor in the risk of a hazard is the frequency with which it occurs. Some hazards have been relatively frequent in Manatee County while others have been only sporadic. For this hazard analysis, the frequency with which an event occurs is based on historical reports and query of subject matter experts from various state and local authorities as well as the number of County Disaster Declarations associated with each hazard. Using these criteria provides a wider variety of hazards than utilizing presidential declarations alone.

4	Highly Likely	95-100% certainty of occurring in the next year. Many county disaster declarations have occurred.
3	Likely	Between 10-95% chance of occurring in the next year, or at least one incident occurring in the next 10 years. Some county disaster declarations have occurred.
2	Possible	Between 1-10% chance of occurring in the next year or at least one incident occurring in the next 100 years. Very few disaster declarations have occurred.
1	Unlikely	Less than 1% probability of taking place in the next 100 years

Duration:

The incident duration also plays a critical role in the outcome of the disaster and may be defined as "time on the ground" or the time-period of response to a hazard or event. Transportation accidents may last a few hours whereas a tire fire may last a week and a flood several weeks. Duration, therefore, may not always be indicative of the degree of damage, but it remains an important planning factor.

5	Excessive	More than 30 days
4	Long	7 to 30 days
3	Medium	1 to 7 days
2	Short	12 to 24 hours
1	Minimal	Less than 12 hours

Speed of Onset:

How rapidly the incident takes to occur may affect all other factors due to lack of warning or time to prepare for impact. The lead-time required to protect lives and properties can vary greatly with each event. For instance, a slow-rising Manatee River flood may allow time to evacuate residents and begin flood fight measures, but flash floods can occur with little warning.

4	Short-None	Minimal to no warning
3	Short	6 to 12 hours
2	Medium	12 to 24 hours
1	Extended	More than 24 hours

Magnitude:

The magnitude of the hazard is the geographic dispersion of the incident it causes. For instance, comparing whole county being affected by a hurricane versus a transportation accident involving hazardous materials that takes place in one isolated location.

4	Catastrophic	76-100% of the county is impacted.
3	Critical	26-75% of the county is affected.
2	Limited	6-25% of the county is impacted.
1	Localized	0-5% of the county is affected.

Vulnerability:

Vulnerability is determined based on how prone the community's system is to impacts from the various hazards. The analysis was conducted based on how vulnerable the business community, humans, property, and the built environment are to the list of hazards. The focus of this section is community factors that result in higher risk to each hazard, rather than on the impact the event causes. Vulnerability manifests in a number of ways, including, but not limited to:

- Proximity to a possible hazardous event
- Population density in the area proximal to the event
- Scientific understanding of the hazard
- Public education and awareness of the hazard

- Existence or non-existence of early-warning systems and lines of communication
- Availability and readiness of emergency infrastructure
- Construction styles and building codes
- Cultural factors that influence public response to warnings

Business Vulnerability:

Business Vulnerability refers to the ability of the County and its residents to endure the economic impact of the hazard. Ability of supply chains to be maintained or not, the resiliency of the tax base, and overall economic vulnerability should be considered.

4	High	Economic systems and businesses systems are shut down or severely impacted across the county for at least 30 days.
3	Medium	Economic systems and businesses systems are shut down or severely impacted across the county for at least 14 days.
2	Low	Economic systems are severely impacted for a week.
1	Minimal	Economic systems are impacted but will recover without significant effort or outside help.

Impact on Humans:

This factor relates to the number of lives potentially lost and injuries that occur following a hazard occurrence.

4	High	Mass Fatality Event
3	Medium	Multiple deaths and/or severe injuries
2	Low	Some injuries, mostly minor
1	Minimal	Few minor injuries

Impact on Property:

This factor relates to the amount of property potentially lost to a hazard agent. This factor can vary between jurisdictions based on economics, geographic amount owned, and demographics of the populations, yet it plays an important role in the recovery process.

4	High	More than 50% of property is severely damaged
3	Medium	More than 25% of property is severely damaged
2	Low	More than 5% of property is severely damaged
1	Minimal	Less than 5% of property is severely damaged

Impact on Environment:

This factor considers the impacts from the hazard event to the air, water, land, and biomes in the County.

4	High	Catastrophic impacts to the environment as a result of the event and/or cascading effects. Environmental impacts could cause immediate and long-term health effects to people. Significant resources required for remediation.
3	Medium	Localized and temporary impacts to the environment as a result of the event and/or cascading effects. No immediate health threat to people and environmental remediation would restore the environment to acceptable limits.
2	Low	Impact to the environment would be minimal and only require a local response.
1	Minimal	Impact to the environment would not require remediation.

The **consequence analysis** further estimates the impacts to people, property and the environment by evaluating impacts to the Public, First Responders, Business Continuity, Public Confidence, Economy, Facilities/Infrastructure, and the Environment (estimated remediation required). Generally, these factors were considered for an average occurrence of the hazard.

Public:

This category considers the overall impact to the citizens of the State caused by the hazard. The short- and long-term impacts caused by the hazard were considered in addition to efforts at the State and local level to mitigate, prepare for, respond to and recover from the event. The ranking is a general reflection of the County's resilience to the hazard being evaluated.

3	High	Impacts to the public would likely exceed county and state resources, necessitating federal assistance. Impacts would include multiple casualties.
2	Medium	Impacts to the public would likely not exceed state resources. Some casualties and injuries would occur.
1	Minimal	Impacts to the public would be managed at the county level.

First Responders:

This category considers the impact of the hazard event to police, fire, Emergency Medical Technician (EMT), emergency management and other State and local officials that respond to the event. The threats to the health and safety of first responders posed by the hazard were considered in addition to staffing, training, and overall preparedness of first responders.

3	High	Extreme threat posed to first responders, which would likely exceed local and state resources.
2	Medium	Significant threat posed to first responders but would likely not exceed state and local resources.
1	Minimal	Threat posed by hazard would be managed at the county level.

Continuity of Operations:

This category considers the impact of the hazard event to county government's ability to continue or reestablish essential services.

3	High	Impacts to essential functions as a result of the hazard event and/or cascading effects would be catastrophic. This failure would have an immediate cascading effect to public health and safety.
2	Medium	Impacts to essential functions as the result of the hazard event and/or cascading effects would be significant, but localized and temporary. This impact would create delayed response to public health and safety, but no immediate concerns.
1	Minimal	Impact to essential functions would be minimal and only require a local response.

Facilities/Infrastructure:

This category considers the impacts of the hazard event to the built environment.

3	High	The hazard event would result in catastrophic damages to the built environment. Damage to the built environment would have cascading and long-term effects. Impacts would strain Federal resources and require extensive long-term recovery efforts.
2	Medium	The hazard event would result in significant damages to the built environment and likely require the need for state or federal resources to effectively recover.
1	Minimal	Effects to the built environment would be limited and likely not exceed the response and recovery efforts at the local level.

Economy:

This category considers the impact to the County's economy from the hazard event.

3	High	Cost to respond and recover from the event would quickly exceed Manatee County's capacity and would likely exceed the amount budgeted in the state and will likely require federal resources.
2	Medium	Cost to respond and recover from the event would likely not exceed the combined amount budgeted by the county and state.
1	Minimal	Cost to respond and recover from the event would likely not exceed county resources.

Environment:

This category considers the cost to remediate the environmental degradation caused by the event. The potential size, scope, and overall impact(s) to the environment should be considered.

3	High	More than 25% of property is severely damaged
2	Medium	More than 5% of property is severely damaged
1	Minimal	Less than 5% of property is severely damaged

Public Confidence:

This category considers the impact a hazard event of each type could have on the public's confidence in the government and emergency management community.

3	High	Significant negative impact. Downturn in public trust for the government's ability to respond to or recover from disaster.
2	Medium	Some negative impact. Public trust is eroded but recoverable as the recovery ensues.
1	Minimal	Little or no impact on the public trust.

The Manatee Emergency Operations Workgroup members (MEOW) were given the opportunity to provide feedback for each of the categories detailed in the Hazard Analysis, Vulnerability Analysis, and the Consequence Analysis sections of this report. For the 2019 update, 16 people from the MEOW group responded and provided feedback for each. The values from each of the respondents was averaged for each of the three sections.

To calculate the Total Risk score, a series of calculations were completed as detailed below.

1. Hazard Analysis Rating (H)

Hazard Score = (Duration + Speed of Onset + Frequency + Magnitude)/1.7

In this formula, 1.7 is a normalizing factor to adjust the scores to the model used in the FEMA Critical Asset Risk Management MGT-315, October 2016.

2. Vulnerability Analysis Rating (V)

Vulnerability Score = (Business + Human + Property + Environment)/2.2

In this formula, 2.2 is a normalizing factor to adjust scores to the scale for vulnerability ratings in FEMA Critical Asset Risk Management MGT-315, October 2016.

3. Consequence Analysis Value (C)

Consequence Score = (Public + First Responders + Continuity of Operations + Infrastructure +Economy Environment + Public Confidence)/2

In this formula, 2 is a normalizing factor to account for the three additional Manatee County factors included with the three FEMA factors used in FEMA Critical Asset Risk Management MGT-315, October 2016. This ensures that the scale will be in line with FEMA's scale.

4. Total Risk Value (R)

Probability Value = Threat Value x Vulnerability Value (P=HxV)

Total Risk = Probability Value x Consequence Value (R=PxC)

The table below provides the calculated results for each of the measures listed above. Throughout the series of calculations, the spreadsheet function rounds the values to one decimal for ease of display. The resulting risk total values allow hazards to be compared against each other to obtain a prioritization of hazards. Although this assessment considers the hazard analysis documented by Manatee County Emergency Management, the threats and hazards identified, and risk values determined in this report are used for planning purposes only.

Hazard	Total Risk Value (R)	Overall Risk Ranking	Probability Value (P)	Consequence Value (C)	Hazard/Threat Value (T)	Vulnerability Value (V)
Natural Hazards						
Hurricane	375.4	1	41.4	9.1	6.7	6.2
Flood	203.9	3	30.1	6.8	6.5	4.6
Tornado	186.5	4	28.3	6.6	6.0	4.7
Earthquake	169.9	5	22.6	7.5	5.3	4.3
Tsunami	153.9	7	22.4	6.9	5.0	4.5
Epidemic	131.1	8	21.2	6.2	6.1	3.5
Harmful Algal Blooms	126.6	10	21.8	5.8	6.0	3.7
Wildfire	125.3	11	21.9	5.7	5.9	3.7
Sea Level Rise	100.5	17	17.6	5.7	5.3	3.4
Severe Storm	95.0	19	20.8	4.6	6.7	3.1
Drought	89.5	21	19.1	4.7	5.9	3.2
Sinkholes	71.5	27	16.0	4.5	5.2	3.1
Animal Disease Outbreak	68.3	29	14.2	4.8	5.2	2.7
Space Weather	38.9	32	9.0	4.3	4.3	2.1
Winter Storm	27.2	33	7.9	3.4	3.5	2.2
Technological Hazards						
Dam/Levee failure	127.3	9	20.9	6.1	5.4	3.8
Hazardous Materials Release	122.4	12	23.0	5.3	5.9	3.9
Radiological Release	117.9	13	20.0	5.9	5.3	3.8
Critical Infrastructure Disruption	109.9	15	19.6	5.6	6.4	3.1
Airplane Crash	103.0	16	19.4	5.3	5.5	3.5
Major Transportation Incidents	99.5	18	20.2	4.9	6.2	3.3
Train Derailment	91.4	20	18.6	4.9	5.3	3.5
Urban Conflagration	87.1	22	18.3	4.8	5.1	3.6
Power Failure	80.2	23	17.6	4.6	6.5	2.7
Human Caused Hazards						
Terrorist Acts	220.7	2	28.3	7.8	6.3	4.5
Coastal Oil Spills	156.0	6	23.2	6.7	6.2	3.8
Mass Shooting	116.9	14	20.8	5.6	5.8	3.6
Sabotage	79.4	24	15.5	5.1	5.2	3.0
Cyber Incidents	79.2	25	16.0	4.9	6.1	2.6
Civil Disturbance	78.5	26	15.8	5.0	5.4	2.9
Special Events	69.3	28	15.2	4.6	4.9	3.1
Mass Migration	62.3	31	12.5	5.0	4.9	2.6

H. OMISSION OF HAZARDS

For purposes of hazard identification, the following hazards were not included based on the recommendation of the Emergency Management Coordinator and Manatee Emergency Operations Workgroup who conducted the hazards analysis. These events have never occurred or would have little to no impact if they did. These include:

- **Volcanic activity** - The nearest volcanic activity to Florida occurs on the island of the Caribbean basin and there is no probability of volcanic activity, it has been removed from the hazards.

- **Landslide** - Due to the generally flat nature of Manatee County, landslide has also been removed.

I. REPETITIVE LOSS INITIATIVE

As of May 31, 2018, unincorporated Manatee County had 62 single family residences, 3 duplexes, 29 condominiums, 7 manufactured/mobile homes, 1 commercial and 2 municipal repetitive loss properties. These properties account for 303 flood insurance claims. One property was demolished by the owner in 2016.

Jurisdiction	RLP	Single Fam.	2-4 Fam.	Multi-Fam.	Mobile Home	Comm-ercial	# of Claims
Anna Maria	31	24	3	1		3	104
Bradenton	55	50		3	2		195
Bradenton Beach	26	15		10		1	81
Holmes Beach	48	23	10	12		3	141
Longboat Key	77	64	4	7		2	257
Palmetto	7	7					26
Manatee County	91	58		24	7	2	253

Source: *NFIP Flood Insurance Manual, April 2019*

The areas with the highest number of repetitive loss locations are the geographic areas with the highest historic flooding. These include the barrier island communities. (The distribution of the structures is presented in the table above; however, the list of repetitive loss properties is not available in documents for public view given security and privacy regulations.)

The location of specific areas in the County where flooding continues to be an issue, allows planners to identify where mitigation efforts should be concentrated. For many of these areas, mitigation will involve significant property owner investment and will probably be delayed until redevelopment or reconstruction occurs.

SECTION V

PLAN MAINTENANCE

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Section V

Plan Maintenance

The Manatee County Local Mitigation Strategy serves as a guide for hazard mitigation activities on a county-wide basis. The strategy is intended to be a dynamic document that will be updated regularly. In recognition of this fact, continual review and updating of the contents of the Manatee County LMS is necessary.

A. DEVELOPMENT CHANGES

The LMS Plan is not a self-sufficient or one-time document, so during the latest update, the Working Group reviewed how population growth, changes in demographics, and/or the evolution of land use policies affected the vulnerability of the planning area to the known hazards.

As modeling and mapping capabilities have improved, more information has been gathered to support a vulnerability assessment and potential impacts of climate change and sea level rise. With the latest update the Working Group was able to integrate this information into Section IV of the Plan, as well as Appendices supporting the Plan. The Working Group identified multiple projects in most participating jurisdictions which can address aging infrastructure in these vulnerable areas. County-wide, we continue to pro-actively include mitigation measures in development and redevelopment projects as the mapping efforts highlight these areas. Some of these development changes are outlined below:

Manatee County

Manatee County has experienced an incredible growth rate since 2012. Current population is estimated to be 394,855 - rising from 258,211 in 2012 and making Manatee County the 15th largest county in Florida. The Metropolitan Planning Organization's 2035 Long Range Transportation Plan estimates approximately 1,500 dwelling units will be built each year through to 2035. Approximately 15% of the County's population resides in the county seat with most living in unincorporated areas.

In an effort for to maintain a more resilient community in the face of current and future climate stressors, the County has chosen to participate in the Tampa Bay Regional Resiliency Coalition as a partner through a Memorandum of Understanding with other Tampa Bay jurisdictions. (See Appendix L) The Coalition was formed to coordinate climate adaptation and mitigation activities across County lines and to advance local and regional responses to and preparations for economic and social disruption

projected to result from sea-level rise and other effects of climate change. The regional cooperation includes:

- Identifying common vulnerabilities and assessment methodologies; development of a Regional Resiliency Action Plan;
- Developing strategies and actions based on sound science and technical data provided by the Tampa Bay Science Advisory Panel;
- Developing legislative strategies and joint position statements recognizing the vulnerabilities of the Tampa Bay region; and
- Providing for community involvement opportunities for local businesses, organizations, associations and individuals in developing policies and recommendations which will be supported by these organizations in order to ensure successful implementation.

With the guidance of the Tampa Bay Resiliency Steering Committee, which consists of regional elected officials, and the Management & Policy Committee, multiple working groups have been initiated (Resilient Shorelines & Spaces and Geospatial Data) and the CSAP Recommended Projections of Sea Level Rise in the Tampa Bay Region (Tampa Bay Climate Science Advisory Panel, 2019) has been accepted. Next steps include the development of a Regional Resiliency Action Plan and convening the first Tampa Bay Regional Climate Summit in January 2020.

The County has amended its comprehensive plan to ensure that new large-scale development does not occur in the rural area. Similarly, the County has taken steps to protect the Lake Manatee and Evers Reservoirs and Peace River watersheds through the establishment of land use overlay districts. The purpose of these overlays is to limit the type and intensity of development within the watersheds.

Over the past 5-7 years, the County recognized that past practices of restricting the County to low-rise and low-density development types is not a recipe for a community that wants to attract better employment opportunities, businesses, and a younger and more educated workforce. The County has already begun to address changes in its land development regulations to provide greater opportunities for growth, to include more locations for greater building heights and density, increasing the variety of land uses in developing areas and allowing the free market to work more in the community. The County recently amended their Land Development Code (LDC) to emphasize or encourage development around center of activities and along the urban corridors – development of well-designed communities containing a variety of uses, renewal and rehabilitation of blighted areas and contiguous urban expansion when warranted rather than sprawl.

City of Anna Maria

Due to the location as a barrier island, growth has been restricted for several years. As such, there are no development changes to report.

City of Bradenton

No development changes were reported.

City of Bradenton Beach

Bradenton Beach is over ninety percent built out, so growth has been restricted for several years. Due to our location on a barrier island, population densities have been reduced over the years. Additionally, over the past ten years, the population has transitioned from a permanent or semi-permanent population to short-term vacation rental properties. The City has recently adopted Comprehensive Plan amendments to address sea level rise and will be amending Land Development Regulations to implement the Plan.

City of Holmes Beach

Due to the location as a barrier island, growth has been restricted for several years. As such, there are no development changes to report.

Town of Longboat Key

The Town has a permanent population of approximately 7,043 residents, but it is also a popular seasonal destination for visitors and part-time residents from both the United States and abroad. During the winter months, when the climate in Florida is mild, the population on the island can increase to approximately 18,000 to 24,000. However, most of the seasonal residents are only on the island for a few weeks to a few months, at most. The island's permanent population increased steadily in the latter part of the 20th century but slowed beginning in 2000. The Town has also adopted planning constraints on density that, in many locations, encourages a reduction in the number of dwelling units as properties redevelop over time. An ongoing trend toward seasonal residency has also increased, as more properties are utilized as vacation or seasonal residences.

Redevelopment. The Town is currently experiencing a renewed interest in redevelopment in the residential, tourism, and commercial sectors. Projects planned, underway, or recently completed include the following:

The Shore Restaurant: Redevelopment of an existing Bayfront restaurant building on north end of the island (currently under construction);

Whitney's Restaurant: Redevelopment of a former gas station site at the corner of Gulf of Mexico Dr. & Broadway Street into a restaurant and convenience store;

Arts, Cultural, and Education Center: Multi-use arts, culture, and education center in the Bay Isles shopping area near Town Hall (currently in early planning stages);

Longboat Key Club: 300-room resort with conference space on the south end of the island (currently in the early planning phase);

Mixed Use Resort: 166-room resort with meeting space and 78 condominium units at the former Colony Beach and Tennis Resort was approved by the Town Commission in early 2018; and

Numerous individual single-family homes under construction on scattered lots island-wide, including tear-down of older homes to facilitate construction of new and larger homes.

The Town has numerous on-going activities related to improving resiliency and enforces additional clearance above FEMA flood elevations

City of Palmetto

Over the past 5 years, Palmetto has experience minimal growth with the addition of approximately thirty (30) acres through annexation. Unfortunately, the fruit packing plants, once a major industry in the City of Palmetto, have closed and moved further east.

The addition of property through annexation has increased both commercial and residential development, and with that additional development, creates additional hazards for flooding and hurricane evacuation. This is especially prevalent since major roadways/evacuation routes are under the control of the County and Florida Department of Transportation (FDOT), and have not been expanded.

The City does not feel that any specific development has increased the community's vulnerability; however, the overall effect of additional development has generally increased their vulnerability to all hazard types.

The City has not gone through any major land use or policy changes otherwise.

B. PROGRESS IN MITIGATION EFFORTS

Reference Appendix G.

C. CHANGES IN PRIORITIES

The initial preparation of the goals and objectives was undertaken by the entire LMS Working Group, comprised of staff from both the County and participating local governments. As a result, a wide range of technical expertise was available to provide input into the development of the LMS goals and objectives. In preparing the LMS goals and objectives, the Working Group drew upon information contained in each jurisdiction's Local Government Comprehensive Plan (adopted pursuant to Chapter 163, Part II, Florida Statutes), Community Rating System, Flood Plain Management Plans, Repetitive Loss Initiatives, and other relevant documents. By drawing upon the adopted local government comprehensive plans, the LMS effort ensures that the goals and objectives are reflective of the County's and its jurisdictions' long-term vision. In accomplishing its work, the Working Group strove to ensure that the LMS goals and objectives were consistent with, not in conflict with, and/or furthered existing statutory and regulatory requirements. Furthermore, the goals and objectives were structured in a more generalized manner, since to one degree or another, all the jurisdictions in Manatee County are susceptible to the hazardous events described in this LMS. This approach allows for flexibility in the way the participating local governments implement the goals and objectives.

During the most recent 5-year update cycle, it was decided that a sub-committee would evaluate the goals and objective, bringing recommended revisions back to the Working Group to discuss and ultimately vote upon as a whole. This process, the sub-committee review, recommendations, and discussion process, went through three rounds prior to a final set of goals and objectives finally being voted upon. (See Appendix D – Participation, for a narrative description of the meeting process, meeting minutes, and attendance participation). In summary, previous **goal 1** was broken into two goals, new objectives were added to **goals 1 and 2**, new objectives were added to **goal 4**, and **goal 6**, as well as the corresponding objectives, were added in its entirety.

The Plan's historical evolution, found in the Preface of the Plan, provides a complete account of a summary of changes to the Plan. The summary tables allow users of the Manatee County Local Mitigation Strategy Plan to quickly and accurately determine where changes have been made. Some appendices change frequently since they are a repository of information based on action of the LMS Working Group at property noticed public meetings and therefore, the reader shall reference the appendices to see the most recent information.

D. MONITORING

The Manatee County Emergency Management Division of the Public Safety Department has the primary responsibility of monitoring and supporting the Plan. This effort shall include technical and clerical support for the benefit of the LMS Working Group. The department will monitor the status of the LMS supported projects throughout the year, and will assess the Plan against the Florida Division of Emergency Management established evaluation criteria to determine if any changes to the Plan are necessary. Should it be determined by the Chair or any member of the LMS Working Group that the Plan requires further evaluation/update, an event has significantly changed or negated parts of the LMS, or a LMS-supported project may be eligible for grant funding, the item(s) will be discussed at either one of the regularly scheduled quarterly meetings or at a Special Meeting called by the Chair.

E. EVALUATION

The Working Group shall continue to hold quarterly meetings to review the effectiveness of the LMS and update the local government LMS initiatives as necessary. In the event no potential changes have been identified in the aforementioned monitoring period, or there is a lack of business to be discussed, the Working Group will hold at, at minimum, one annual meeting to review and evaluate the Plan against FDEM and Plan established evaluation criteria. The Manatee County Public Safety Department Emergency Management Division shall be responsible for scheduling and noticing all meeting, and such notices shall be issued a minimum of 15 days in advance of the meeting date.

The participating local governments/agencies shall present new initiative projects they have identified at the quarterly meetings. These initiatives shall be evaluated, prioritized, and incorporated into the LMS at these meetings. Those mitigation initiatives which have been completed will be identified and moved to the COMPLETED list of the Project Initiatives List. Initiatives which have not been completed shall be re-evaluated for further consideration. The Mitigation Initiatives Evaluation Scoring Sheet shall be used to evaluate each new initiative. In addition, following a disaster event, the lessons learned or applicable comments from any post-event interagency hazard mitigation reports shall be incorporated into the LMS.

An annual review will take place during the third quarter of each calendar year and no later than the start of the fourth quarter of each calendar year to complete the review process prior to the conclusion of the fourth quarter of each year. The evaluation criteria shall include, but is not limited to:

1. Are there any new changing laws, regulations, or policies that require changes to the LMS?
2. Have there been any mandates from Federal, State, or Local agencies that require changes to the LMS?
3. Do the goals and objectives of the LMS address current and expected conditions for Manatee County?
4. Has the nature, magnitude, or type of risks changed for the County?
5. Are current resources appropriate for implementing the Plan?
6. Are there implementation challenges, such as technical, political, legal, financial, or coordination issues with other agencies?
7. Have the outcomes occurred as expected?
8. Are the jurisdictions and other partners participating as originally planned?
9. Are there recommendations or lessons-learned from any incident or event during the review period?

F. UPDATING THE PLAN

Commencing in January 2005 and every January thereafter, the Manatee County Public Safety Department Emergency Management Division shall publish a report which evaluates the effectiveness of the LMS to date in meeting the hazard/disaster mitigation needs of the County. The report will also include the distribution of revised/updated mitigation initiatives and other sections of the LMS as needed to include a review of its membership.

Every five years, the Plan shall undergo a 5-year cycle update. The review of the LMS shall commence eighteen (18) months prior to the expiration date of the Plan adopted by the Manatee County Board of County Commissioners. The Working Group shall appoint a sub-committee(s) to conduct an audit/review of the overall Manatee County LMS, assessing its effectiveness of the current LMS and identifying those revisions necessary to meet the disaster/hazard mitigation needs of the County. The sub-committee(s) shall report to the full Working Group at its next scheduled quarterly meeting. The report shall also be provided to the elected officials of all participating local governments for review and comment.

During the following two quarters, the sub-committee(s) and any Working Group Members shall meet to review, endorse, and/or revise the report. During this process, the Working Group shall also take into consideration the comments of participating local governments and other interested agencies/parties.

The LMS Working Group shall vote prior to transmitting the draft report to the State of Florida Division of Emergency Management, State Hazard Mitigation Officer. Upon receipt of comments for the State and subsequent

revisions, the document shall be submitted to the Manatee County Board of County Commissioners. The Board shall vote to accept the Report and after review and discussion, vote to adopt those revisions recommended by the Working Group for inclusion in the Manatee County LMS.

In addition to the 5-Year Update, the LMS may be submitted to the Manatee County Board of County Commissioners and participating City/Town Councils/Commissions for amendment following a major disaster/hazard event which results in a substantial revision to the Manatee County LMS.

The responsibility of identifying the appropriate methods or actions of incorporating the mitigation strategy into existing planning mechanisms rest with each jurisdiction's LMS Work Group representative. The process of incorporating the Local Mitigation Strategy into existing planning mechanisms begins with an audit by each jurisdiction of their plans to determine which mechanism is due for a required review or which mechanism was determined by their respective Administration for review in the upcoming year. State of Florida Statutes and Administrative Law require specific procedures in order to enact change in many of these planning mechanisms, but each jurisdiction has their own unique way of implementing these requirements. Ultimately, it is the responsibility of each jurisdiction to implement the respective changes to their planning mechanisms, and it is the responsibility of the LMS Work Group to support and assist when possible, other members of the LMS Work Group in implementing these changes.

One of the key advantages of the Manatee County LMS Working Group is that it is made up of a diverse group of job specialties ranging from professional planners, engineers, public works professionals, emergency management professionals and educators that operate on a daily basis in a diverse group of business environments. Membership also includes the County's Floodplain Managers who is responsible for the Community Rating System. The LMS Work Group has demonstrated the incorporation of the mitigation strategy into other planning mechanisms by combining the Local Mitigation Strategy Plan with each jurisdiction's Floodplain Management Plan in this document. In previous years, these planning tools were separate documents with each requiring their own jurisdictional board resolution. While this is an initial step, it has avoided the duplication of effort, duplication within the documents, and the requirement of two distinct board resolutions. The LMS Work Group and the Regional Floodplain Management Planning and Coordination Committee will continue to identify areas of common interest and requirements that can be documented in the LMS Plan to avoid further duplication and present a more refined document in the future.

Another keen aspect of the diversity within the LMS Work Group membership is all the County and municipality representatives are involved in the updating and maintenance of each jurisdiction's Comprehensive Plan. Florida Statute requires each jurisdiction to submit an Evaluation and Appraisal Report (EAR) that has been approved by their respective Board to the Florida Department of Community Affairs for approval. Reference Section I for a for a list of the respective EAR due dates.

G. COMMUNITY INVOLVEMENT

The Manatee County Local Mitigation Strategy Work Group is dedicated to public involvement in the hazard mitigation planning and review process and continues to seek opportunities to increase the public's participation. As part of the goals and objectives of the LMS, the Work Group has established standards that will continue, including advertising all quarterly and special meetings, updating and maintaining a comprehensive mitigation video, and forming partnerships with other related entities to keep the public informed and, hopefully, create greater involvement. At a minimum, public outreach plans and opportunities will be discussed at one of the quarterly meetings. In addition, the Manatee County web site will be available with the most up-to-date documentation and points of contact for the public. The partnership forged by the LMS Work Group and the Regional Floodplain Management Planning and Coordination Committee will offer an increased opportunity for success in generating public involvement during activities such as the adoption process of the new Flood Insurance Rate Maps. This partnership has also created a joint public outreach committee whose mission is to integrate the mitigation and Community Rating System outreach activities into one, to reduce expenditures and reach a greater number of community residents.

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SECTION VI

FORMAL ADOPTION

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Section VI

Formal Adoption

The final step in the planning process will be the adoption of the plan by the legislative bodies of Manatee County and its municipalities. This section includes draft proposal acceptance of the LMS plan by the LMS Working Group, as well as the cities of Anna Maria Island, Bradenton, Bradenton Beach, Holmes Beach, Town of Longboat Key, and Palmetto the and Manatee County prior to submitting the draft plan to the State of Florida Division of Emergency Management (FDEM) on or before March 31, 2020 (6 months prior to expiration date).

A. ADOPTION RESOLUTION

Manatee County:

The Resolution, by which the Manatee County Board of County Commissioners formally adopts the updated Manatee County Local Mitigation Strategy will be incorporated into this section following approval of the revised document by the Florida Division of Emergency Management and Federal Emergency Management Agency. In fulfillment of the requirements of 44 CFR 201.6(b)(1), Pursuant to Florida Statutes, the Resolution will be duly advertised and adopted during an advertised public meeting.

Participating Jurisdictions:

Resolutions from the six participating Manatee County governments formally adopting the updated Manatee County Local Mitigation Strategy will be incorporated into this section following approval of the revised document by the Florida Division of Emergency Management and Federal Emergency Management Agency. In fulfillment of the requirements of 44 CFR 201.6(b)(1), each participating jurisdiction provided a description of the procedures to be followed in the adoption of their respective LMS resolutions. Pursuant to Florida Statutes the resolutions will be duly advertised and adopted during an advertised public meeting.

B. CERTIFIED MEETING MINUTES

Certified meeting minutes from Manatee County, as well as the six participating local governments, formally adopting the updated Manatee County Local Mitigation Strategy will be incorporated into this section following approval of the revised document by the Florida Division of Emergency Management and Federal Emergency Management Agency.

NOTE

The Town of Longboat Key is located within both Manatee County and Sarasota County. As a result, the Town has participated in the development of both the Manatee County and Sarasota County LMS. This spilt participation is reflected in the fact that the repetitive loss properties and critical facilities listed within this LMS are located within the Manatee County portion of the Town. The listed initiatives are located either within the Manatee County portion of the community or have Town-wide application.

SECTION VII

APPENDICES

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APPENDIX A

2020 LMS WORKING GROUP MEMBERSHIP

The following pages contain the list of names of the members of the Manatee County Local Mitigation Strategy Working Group. The list contains their names, jurisdiction or organization, title, and contact information. This list is current as of January 14, 2020.

LOCAL MITIGATION STRATEGY
2020 WORKGROUP MEMBERS

NAME	AGENCY	Title	Position	EMAIL	PHONE	ADDRESS
Knapp, Nicole Chairperson	Manatee County Public Safety Emergency Management	Planning Manager	Prime	nicole.knapp@mymanatee.org	941-749-3500 ext. 7824	P. O. Box 1000 Bradenton, FL 34206
Myers, Matthew Vice Chair	Manatee County Public Safety Emergency Management	EM Coordinator	Alt	matthew.myers@mymanatee.org	941-749-3500 ext. 1673	P.O. Box 1000 Bradenton, FL 34206
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Addy, LeAnne	City of Anna Maria	City Clerk/Treasurer	Alt	amclerk@cityofannamaria.com	941-708-6130 ext. 122	P. O. Box 779 Anna Maria, FL 34216
Bailey, Stacey S.	Parrish Fire District	Chief	Prime	admin@parrishfd.org	941-721-2093	12132 US 301 Hwy North Parish, FL 34219
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Brownman, Isaac	Town of Longboat Key	Public Works	Alt	ibrownman@longboatkey.org	941-316-1988	600 General Harris Street Longboat Key, FL 34228
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NAME	AGENCY	Title/Position	Pri/Alt	EMAIL	PHONE	ADDRESS
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McCarty, Nancy	Centerstone of Florida. Inc.	Community Dev Officer	Prime	Nancy.mccarty@centerstoneflorida.org	941-782-4150	2020 26th Avenue East Bradenton, FL 34208
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McLellan, Jim	City of Bradenton	Public Works Director	Alt	Jim.mclellan@cityofbradenton.com	941-708-6300 ext. 235	101 Old Main St. W. Bradenton, FL 34205

NAME	AGENCY	Title/Position	Pri/Alt	EMAIL	PHONE	ADDRESS
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Mopps, Charles	Town of Longboat Key	Project Manager	Alt	cmopps@longboatkey.org	941-316-1988	600 General Harris Street Longboat Key, FL 34228
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Neasman, Trish	Southwest Florida Water Management District	Senior Planner	Prime	Trisha.neasman@swfwmd.state.fl.us	800-423-1476 ext. 4407	2379 Broad Street Brooksville, FL 34604
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O'Shea, Bill	Manatee County Redev & Economic Opportunity	Community Dev Proj Mngr	Alt	Bill.oshea@mymanatee.org	941-749-3029 ext. 6858	P.O. Box 1000 Bradenton, FL 34206
Owens, Karla	City of Palmetto	Development Services Director	Alt	kowens@palmetto.fl.org	941-723-4580	601 17th Street West Palmetto, FL 34221
Pachas, Hjalmar	Manatee County Property Management	Facilities and Building Technician	Prime	hjalmar.pachas@mymanatee.org	941-748-4501 ext. 3613	P.O. Box 1000 Bradenton, FL 34206
Parsons, Allen	Town of Longboat Key	Planning, Zoning & Building Director	Alt	aparsons@longboatkey.org	941-316-1966	501 Bay Isles Road Longboat Key, FL 34228
Pendley, Mike	School District of Manatee County	Executive Planner	Alt	pendleym@manateeschools.net	941-708-8770	215 Manatee Avenue West Bradenton, FL 34205
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Porter, Tom	Manatee Sheriff's Office	Captain	Alt	thomas.porter@manateesheriff.com	941-747-3011 ext. 2909	600 Highway 301 Bv West Bradenton, FL 34205
Prater, Myra	Manatee County Public Works	Field Maintenance Division Manager	Prime	myra.prater@mymanatee.com	941-708-7494	P.O. Box 1000 Bradenton, FL 34206
Rampino, Michael	North River Fire District	Chief	Prime	admin@nrfd.org	941-721-6700	1225 14th Avenue West Palmetto, FL 34221
Rietz, Richard	Manatee Sheriff's Office	Lieutenant	Prime	richard.rietz@manateesheriff.com	941-747-3011 ext. 2323	600 Highway 301 Bv West Bradenton, FL 34205
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NAME	AGENCY	Title/Position	Pri/Alt	EMAIL	PHONE	ADDRESS
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Tusing, Allen	City of Palmetto	Public Works Director	Prime	Atusing@palmettofl.org	941-723-4580	601 17th Street West Palmetto, FL 34221
Wasserman, Eran	LTA Engineers LLC (for the City Holmes Beach)	City Engineer	Alt	eran@ltaengineers.com	201-674-2621	5801 Marina Drive Holmes Beach, FL 34217
Weis, Duane	Florida Forest Service	Manager	Prime	Duane.Weis@FreshFromFlorida.com	941-213-6970	4723 53rd Avenue East Bradenton, FL 34203

APPENDIX B

HISTORICAL HAZARD EVENTS

To prepare an update to the mitigation strategy, it is still important to look at the history of hazards which have affected a community. The primary cause for concern in Manatee County continues to be weather events, wildfire, hazardous materials incidents, and coastal oil spills. Of these, tropical storms, hurricanes, tornados, drought, wind lightning and repetitive flooding have been the major concern.

Manatee County has experienced substantial flooding not only as a result of tropical storms and hurricanes, but as a result of "normal" summer and winter storms. Evacuation of some coastal areas has been necessary as a result of such storms. The table below captures the hazard events for the most recent 5 years.

HAZARD EVENTS 2014 THROUGH 2019

52 events were reported between 01/01/2014 and 12/31/2019 (2191 days)

Summary Info:

Number of County/Zone areas affected:	3
Number of Days with Event:	34
Number of Days with Event and Death:	4
Number of Days with Event and Death or Injury:	4
Number of Days with Event and Property Damage:	21
Number of Days with Event and Crop Damage:	1
Number of Event Types reported:	11

Column Definitions:

'Mag': Magnitude, 'Dth': Deaths, 'Inj': Injuries, 'PrD': Property Damage, 'CrD': Crop Damage

Location	County/Zone	St.	Date	Time	T.Z.	Type	Mag	Dth	Inj	PrD	CrD
Totals:								5	6	26.032M	23.500M
PALMETTO JCT	MANATEE CO.	FL	03/25/2014	09:46	EST-5	Thunderstorm Wind	45 kts. EG	0	0	40.00K	0.00K
ELWOOD PARK	MANATEE CO.	FL	05/25/2014	13:45	EST-5	Hail	0.88 in.	0	0	0.00K	0.00K
ELLENTON	MANATEE CO.	FL	06/27/2014	16:01	EST-5	Thunderstorm Wind	40 kts. EG	0	0	10.00K	0.00K
TALLEVAST	MANATEE CO.	FL	08/31/2014	16:50	EST-5	Thunderstorm Wind	54 kts. MG	0	0	0.00K	0.00K
CORTEZ	MANATEE CO.	FL	09/26/2014	17:00	EST-5	Heavy Rain		0	0	0.00K	0.00K
GILLETT	MANATEE CO.	FL	09/27/2014	08:00	EST-5	Heavy Rain		0	0	0.00K	0.00K
PALMA SOLA	MANATEE CO.	FL	09/27/2014	08:00	EST-5	Heavy Rain		0	0	0.00K	0.00K
PARRISH	MANATEE CO.	FL	09/27/2014	08:00	EST-5	Heavy Rain		0	0	0.00K	0.00K
LAKEWOOD RANCH	MANATEE CO.	FL	09/27/2014	08:00	EST-5	Heavy Rain		0	0	0.00K	0.00K
DUETTE	MANATEE CO.	FL	09/27/2014	08:00	EST-5	Heavy Rain		0	0	0.00K	0.00K
CEDAR HAMMOCK	MANATEE CO.	FL	02/05/2015	02:26	EST-5	Thunderstorm Wind	40 kts. EG	0	0	50.00K	0.00K
LAKEWOOD RANCH	MANATEE CO.	FL	04/23/2015	12:45	EST-5	Thunderstorm Wind	55 kts. EG	0	0	15.00K	0.00K
LAKEWOOD RANCH	MANATEE CO.	FL	07/12/2015	07:30	EST-5	Lightning		0	0	100.00K	0.00K
TERRA CEIA	MANATEE CO.	FL	10/01/2015	08:49	EST-5	Tornado	EF0	0	0	12.00K	0.00K
PARMALEE	MANATEE CO.	FL	01/17/2016	03:27	EST-5	Thunderstorm Wind	50 kts. EG	0	0	8.00K	0.00K
OAK KNOLL	MANATEE CO.	FL	01/17/2016	03:35	EST-5	Tornado	EF2	2	4	150.00K	0.00K
OAK KNOLL	MANATEE CO.	FL	02/24/2016	12:27	EST-5	Tornado	EF1	0	0	0.00K	0.00K
LAKEWOOD RANCH	MANATEE CO.	FL	05/04/2016	12:15	EST-5	Heavy Rain		0	0	0.00K	0.00K
BAYSHORE GARDENS	MANATEE CO.	FL	05/17/2016	17:41	EST-5	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
COASTAL MANATEE (ZONE)	COASTAL MANATEE (ZONE)	FL	06/06/2016	00:00	EST-5	Tropical Storm		0	0	5.00K	0.00K
COASTAL MANATEE (ZONE)	COASTAL MANATEE (ZONE)	FL	06/06/2016	00:00	EST-5	Storm Surge/tide		0	0	300.00K	0.00K
MYAKKA HEAD	MANATEE CO.	FL	06/13/2016	16:10	EST-5	Lightning		1	2	0.00K	0.00K
ELLENTON	MANATEE CO.	FL	07/06/2016	13:00	EST-5	Thunderstorm Wind	43 kts. EG	0	0	50.00K	0.00K
DUETTE	MANATEE CO.	FL	07/11/2016	18:00	EST-5	Tornado	EF0	0	0	0.00K	0.00K
WHITFIELD ESTATE	MANATEE CO.	FL	07/21/2016	13:23	EST-5	Thunderstorm Wind	40 kts. EG	0	0	10.00K	0.00K
TALLEVAST	MANATEE CO.	FL	08/13/2016	15:35	EST-5	Thunderstorm Wind	53 kts. MG	0	0	0.00K	0.00K

ANNA MARIA COMPS SITE	MANATEE CO.	FL	09/01/2016	11:00	EST-5	Flood		0	0	350.00K	0.00K
COASTAL MANATEE (ZONE)	COASTAL MANATEE (ZONE)	FL	09/01/2016	11:00	EST-5	Tropical Storm		0	0	500.00K	0.00K
INLAND MANATEE (ZONE)	INLAND MANATEE (ZONE)	FL	09/01/2016	12:00	EST-5	Tropical Storm		0	0	0.00K	0.00K
COASTAL MANATEE (ZONE)	COASTAL MANATEE (ZONE)	FL	09/01/2016	20:00	EST-5	Storm Surge/tide		0	0	4.250M	0.00K
COASTAL MANATEE (ZONE)	COASTAL MANATEE (ZONE)	FL	10/06/2016	14:56	EST-5	Tropical Storm		0	0	0.00K	0.00K
COASTAL MANATEE (ZONE)	COASTAL MANATEE (ZONE)	FL	10/06/2016	15:02	EST-5	Tropical Storm		0	0	0.00K	0.00K
COASTAL MANATEE (ZONE)	COASTAL MANATEE (ZONE)	FL	10/06/2016	15:07	EST-5	Tropical Storm		0	0	0.00K	0.00K
ENGLEWOOD	MANATEE CO.	FL	01/22/2017	19:45	EST-5	Thunderstorm Wind	52 kts. EG	0	0	10.00K	0.00K
ONECO	MANATEE CO.	FL	05/24/2017	13:47	EST-5	Thunderstorm Wind	50 kts. EG	0	0	1.00K	0.00K
ELWOOD PARK	MANATEE CO.	FL	05/24/2017	13:48	EST-5	Thunderstorm Wind	50 kts. EG	0	0	20.00K	0.00K
ROSEDALE	MANATEE CO.	FL	05/24/2017	13:48	EST-5	Thunderstorm Wind	50 kts. EG	0	0	5.00K	0.00K
COASTAL MANATEE (ZONE)	COASTAL MANATEE (ZONE)	FL	07/31/2017	12:00	EST-5	Tropical Storm		0	0	0.00K	0.00K
PALMA SOLA	MANATEE CO.	FL	07/31/2017	14:55	EST-5	Tornado	EF0	0	0	96.00K	0.00K
LONGBEACH	MANATEE CO.	FL	08/26/2017	09:00	EST-5	Flood		1	0	1.340M	0.00K
BRADENTON	MANATEE CO.	FL	08/26/2017	20:10	EST-5	Thunderstorm Wind	50 kts. EG	0	0	30.00K	0.00K
SAMOSET	MANATEE CO.	FL	08/26/2017	20:19	EST-5	Tornado	EF0	0	0	20.00K	0.00K
COASTAL MANATEE (ZONE)	COASTAL MANATEE (ZONE)	FL	09/10/2017	08:00	EST-5	Hurricane		1	0	15.300M	0.00K
INLAND MANATEE (ZONE)	INLAND MANATEE (ZONE)	FL	09/10/2017	08:00	EST-5	Hurricane		0	0	3.000M	23.500M
INLAND MANATEE (ZONE)	INLAND MANATEE (ZONE)	FL	01/18/2018	00:00	EST-5	Frost/freeze		0	0	0.00K	0.00K
INLAND MANATEE (ZONE)	INLAND MANATEE (ZONE)	FL	03/24/2018	12:00	EST-5	Wildfire		0	0	150.00K	0.00K
GILLETT	MANATEE CO.	FL	07/23/2018	04:20	EST-5	Thunderstorm Wind	45 kts. EG	0	0	50.00K	0.00K
BRADEN CASTLE	MANATEE CO.	FL	07/23/2018	04:30	EST-5	Thunderstorm Wind	60 kts. EG	0	0	100.00K	0.00K
PALMA SOLA	MANATEE CO.	FL	08/27/2018	16:54	EST-5	Hail	0.75 in.	0	0	0.00K	0.00K
OAK KNOLL	MANATEE CO.	FL	12/20/2018	08:32	EST-5	Tornado	EF0	0	0	30.00K	0.00K
ELLENTON	MANATEE CO.	FL	01/24/2019	05:36	EST-5	Thunderstorm Wind	50 kts. EG	0	0	10.00K	0.00K
BRADENTON SOUTH	MANATEE CO.	FL	08/15/2019	20:45	EST-5	Heavy Rain		0	0	20.00K	0.00K
Totals:								5	6	26.032M	23.500M

Additionally, the table below provides a list of known historical hazard events that occurred in Manatee County since 1921. This list will be updated as needed on an annual basis.

HISTORICALLY - MAJOR EVENTS IN MANATEE COUNTY

Year	Month	Day	Hazard	Damage
2019	August/September	27-1	Hurricane	Hurricane Dorian threatened possible hurricane/tropical storm force winds in Manatee County. Dorian stalled and changed path. No direct impact other than hourly pay.
2019	August	12-19	Flood	Days of heavy rain brought upwards of 10 inches in 7 days to portions of the county. Storm drains filled. One home flooded.
2018	May	25-27	Tropical Storm	Sub-Tropical Storm Alberto weakened before skirting west Florida. Wind gusts reported 35-40 mph with high surf and rip tide warnings.
2018	August/September	1/10	Red Tide	Red Tide along shores of Manatee County. 267.70 tons of debris from beaches into dumpsters transferred to the county landfill. Unknown total loss to economy
2018	October	7-11	Hurricane	Hurricane Michael skirted West Florida bringing wind gusts below 40 mph with high surf and rip tide warnings.
2017	January	23	Severe Weather	Weather gave minor damage to 3 mobile homes from wind.
2017	April/May		Drought	County Commission declared a State of Local Emergency and implemented a "Burn Ban" in fear of wildfires due to drought conditions. Water restrictions in place.
2017	May	18	Fire	Callighan Tire Fire.
2017	July	31	Tropical Storm	Tropical Storm Emily. "pop-up" storm formed and made landfall with 45 mph winds on Anna Maria island. Local heavy rain causing flooding and a weak tornado did minor damage.
2017	August	26-27	Severe Weather/Flood	Severe weather caused flooding after 23.28 inches fell in the county within 24 hours. 130 building impacted. Small tornado struck Public Works compound on 26th Ave E on Aug. 26. About $1,000,000 in damage to canals and stormwater pipes.

2017	September	1-2	Flood	Flooding in and around 4th St E and Burgundy Condo Area
2017	September	10-11	Hurricane	Hurricane Irma. Cat 4 @ Florida landfall which dissipated into a 2 or 1 by the time the eye wall was near Myakka City. Largest shelter population and sandbags filled. First time in history Manatee Memorial Hospital was evacuated. First time all shelters were open. 337 structures damaged or destroyed. Debris cleanup cost $13.2 million. Residents without power at 85% and longest time at 10 days past storm. 1 direct casualty from storm in the county.
2016	January	17	Tornado	Tornado touchdown Albritton Rd and 66th St NW in Myakka/Duette. 7 Patients total with one DOA. Damage estimated $173,876.00.
2016	June	5	Tropical Storm	Tropical Storm Colin. 1-3" of rain and winds up to 50+ MPH. Private Property damage at $303,344. County property damage at about $300,000. City of Bradenton damage at about $200,000.
2016	July		Public Health Crisis	Zika Virus first case found in Manatee County. Case was identified as travel-related.
2016	September	1	Hurricane	Hurricane Hermine. Gusts up to 57 MPH and average 8 inches of rain with flooding to many roads due to already wet conditions. 140 homes affected with public assistance at $3.2 million.
2016	October	6-7	Hurricane	Hurricane Matthew. Hurricane skirted the east coast. No direct damage. Cost of manpower to county.
2015	February	5	Wind	During heavy rain storm, a straight- line downburst was recorded at 55 to 65 mph caused damage at Mixon Fruit Farms in Bradenton, estimated at $50,000.
2014	March	25	Severe Weather	Winds reaching 52 mph caused roof damage to a business in Palmetto, which allowed rain to enter the building. Damage estimated at $40,000.
2014	May	25	Hail	Nickel sized hail in Elwood Park.

2014	June	27	Severe Weather	Storm produced winds up to 46 mph in Ellenton which caused minor damage estimated at $10,000 when tree fell on a home.
2014	August	31	Severe Weather	Winds recorded at 62 mph at Sarasota/Bradenton Airport.
2013	June	6	Tropical Storm	Tropical Storm Andrea. Loss of sea turtle nest, shorebird nests, some beach erosion. No damage reported to property in the island communities. Minimal damage due to tornado (EF0) spawned by storm in Myakka. Damage estimates at $36,000.
2013	July	9	Tornado	An outflow boundary collision produced a thin line of thunderstorms with a weak circulation. The storm generated an EF0 tornado which damage 7 mobile home, three of which were moderate to heavy damage in a mobile home park in Palmetto. Damage estimated at $20,000.
2013	July	17	Severe Weather	Storm producing winds at 52 mph caused $10,000 in damages at El Rancho Village mobile home park.
2012	June	8	Hail	Hail 1.25 inch in size reported in West Samoset. No damage reported.
2012	June	24	Tropical Storm	Tropical Storm Debby. Water reached retention walls of several condos on Anna Maria Island with significant damage to the south side of the island where half the sand dunes were lost. Gusts 39 to 50 mph at airport, with up to 5" of rain across the county. 278 homes and businesses damaged due to wind and flooding, estimated at $130,000. Damage to public beaches totaled $5.9 million with $300,000 damage to public buildings. Bradenton Beach had damage to the floating dock, a seawall, dinghy dock and to the City Pier. Estimate to repair came to $1,050,000. Five vessels in the mooring area were sunk, with removal costs at $18,000.

2011	January	17	Severe Weather	Storms producing winds up to 67 mph, causing $5,000 in damage in Palma Sola with lightning causing $10,000 damage on Anna Maria Sound. Parrish experienced 1" hail.
2011	January	25	Tornado	EF0 seen in rural area near SR 64 and Windgate Road. No damage reported.
2011	March	2	Wildfire	A wildfire ignited from an unattended campfire burned 19 acres in a wooded area surrounded by 8 homes in the Verna Bethany area.
2011	March	31	Severe Weather	Winds produced by storm up to 60 mph. $5,000 in damage in Palma Sola.
2011	June	12	Severe Weather	Winds estimated at 45 mph caused $5,000 in damage to stable in Myakka City.
2010	January		Freeze	Estimated $1 million in damages to palm trees at Turner Tree & Landscape included in the total damage to agriculture of $6.9 million after record 14 night below 40 degrees.
2010	February	12	Severe Weather	Winds up to 45 mph caused roof damage in East Bradenton. Tree limbs downed power lines. Estimated damage $10,000.
2010	February	26	Freeze	Temperatures as low as 27 degrees caused $900,000 in crop damage in East Manatee county.
2010	April	26	Severe Weather	Winds up to 60 mph. Caused $5,000 in damages to 15 mobile homes in Trailer Estates. Minor roof damage to house in Bayshore Gardens.
2010	December		Freeze	Sub-freezing temperatures for 2 to 5 hours, the lowest 23 degrees in Duette causing $4.32 million in crop damage.
2009	April	14	Lightning	Lightning struck the roof of a house causing $200,000 damage due to fire in Palma Sola.
2009	May	20	Hail	Quarter size hail reported in downtown Bradenton and penny size hail reported in West Bradenton. No damage estimates reported.
2009	May	24	Lightning	4 people injured standing under a tree when it was struck by lightning. Two people were transported to the hospital.

2009	May	25	Lightning	Farm worker injured when struck in back by lighting. First and second degree burns.
2009	July	1	Lightning	Caused $750,000 in damage to house in Lakewood Ranch due to fire consuming most of the house and contents.
2009	August	21	Lightning	Caused $20,000 in damage to a house in Ballentine Manor.
2009	September	11	Rainfall Event	4.45 inches of rain measured over 24 hours east of Ellenton. Minor road flooding.
2009	September	12	Rainfall Event	6.20 inches of rain measured at Lake Manatee and 5.0 inches in Palma Sola. Widespread rain of 4 to 8 inches across county resulted in road closures on SR 70, 62, 39 and CR 675. In Duette there was $100,000 in damages.
2009	September		Flood	Damage to homes north end of Anna Maria Island.
2008	July	23	Severe Weather	Thunderstorm with wind gusts up to 60 mph caused significant damage to a roof in Myakka City, causing 7.5 inches of rain in the home, rendering it uninhabitable. Golf ball sized hail was seen in the area. Damage was estimated at $165,000.
2008	September		Hurricane	Hurricane Ike. Minor flooding of Holmes Beach roads, beach erosion.
2008	December	2	Severe Weather	A cold front moved through area with a weak squall line just ahead of the front, producing wind gusts from 40 to 50 mph. Damage to sheds, lanais, and aluminums on carports in a mobile home park in Bradenton Beach. Damage estimated at $15,000.
2007	June	2	Tropical Storm	Tropical Storm Barry. Minor beach erosion.
2007	June	8	Hail	Gusty winds and golf ball size hail hit a male in the head and left a cut above his right in Holmes Beach.
2007	July	16	Lightning	Lightning struck the ground near a boy injuring him

2007	July	21	Lightning	Lightning struck a tropical furniture factory in Bradenton causing a fire with $1.5 million in damages to the building and contents
2006	June		Tropical Storm	Tropical Storm Alberto. Minor flooding and trees damaged
2006	July	13	Lightning	Lightning also struck a 16 year old male as he was doing yard work for his family lawn care business. The bolt struck a nearby tree and the boy at the same time and a branch from the tree fell and struck the boy who was transported to a nearby hospital
2006	July	27	Lightning	Lightning sparked a house fire in Panther Ridge subdivision causing $300,000 in damage.
2006	July	29	Lightning	Lightning caused a fire in the attic of a home in Northwest Bradenton causing $250,000 in damage.
2006	August	15	Lightning	Lightning sparked a fire that destroyed a 12 unit apartment complex on Manatee Avenue West. Estimated damage at $1.2 million.
2005	March	23	Wind	A low formed behind a line of thunderstorms produced winds with gust of 50 mph. A condominium in Anna Maria City had the tar roof blown off and damaged two stalls of a parking garage. Estimated damage at $40,000.
2005	July	10	Hurricane	Hurricane Dennis. Beach erosion, $1.75 million estimated to replace 250,000 cubic yards on Anna Maria Island to Manatee County Beach. It was reported that Mobile home roofs blown off in Fairlane Acres. An F1 tornado damage to several homes in Greyhawk Landings and Hidden Oaks subdivisions in east of I-75 in Manatee County.
2005	October	23	Hurricane	Hurricane Wilma. Peak winds at 48 mph. 143 insurance claims totaling $175,000.
2004	June	13	Severe Weather	Wind with gusts up to 58 mph destroyed a lanai and shingles were blow off a roof in Bradenton. Damage estimated at $12,000.

2004	July	3	Lightning	Lightning struck near a gate house at entrance of Lakewood Ranch Golf and Country Club. The lightning burned down the tree and gathered in a flaming globe around the electrical boxes at the base of the tree. The television and computer inside the gate house were destroyed. Nearby trees and sod died within days. Property damage estimated at $3,000 and crop damage at $40,000. Lightning also struck a house on Westminster Court in University Park starting a fire near the chimney causing $50,000 in damage.
2004	July	7	Lightning	A man was struck and killed by lightning in Ellenton.
2004	July	11	Lightning	Lightning ignited a propane tank that burned down a home. Damage estimated at $130,000.
2004	August	13	Hurricane	Hurricane Charley. One (1) home destroyed with minor damage to six (6) others. Maximum gust of 100 mph in the southeast tip of Manatee County. Downed trees and power lines. No documentation to cost.
2004	September	5	Hurricane	Hurricane Frances. 4-6 inches rain, winds reported at 40 mph, tide 2 to 3 feet above normal. Minor beach erosion in Anna Maria. Flooded streets in the City of Bradenton, the barrier islands and low lying areas of Manatee County. Damage to 16 single family home, 20 mobile homes, one multifamily and one commercial building. Damage estimated at $1.1 million. The roof of the Bradenton Beach Fishing Pier Restaurant was torn off and four mobile homes lost their roofs as well.
2004	September	15	Hurricane	Hurricane Ivan. Road flooding on Anna Maria Island, waves 3 to 5 feet above tide 2 feet higher than normal. Minor erosion. No damage estimate.

2004	September	26	Hurricane	Hurricane Jeanne. Estimated $13.7 million of damage to single family homes. Eight (8) single family homes were destroyed. Sixty-three single family homes had major damage and two hundred seventeen had minor damage. Businesses sustained and estimated $4.03 million of damage with seven (7) businesses had major damage and twenty-three had minor damage.
2004	December	26	Wind	A rapidly deepening low pressure center produced sustained winds of 25 to 35 mph, with a maximum gust of 65 mph near the coast around Bradenton. A roof was blown of a shed, minor roof damage on two mobile homes and numerous power lines downed leaving 1,200 customers without power. A luxury yacht broke free, damaging the yacht as well as the dock and pilings. Minor beach erosion from high surf. Estimated damage at $50,000.
2003	March	17	Severe Weather	Winds with gusts up to 60 mph caused roof damage with debris landing on SR 70. Damage estimated at $5,000.
2003	June	18	Tornado	Thunderstorms caused a brief tornado (F0) in Palmetto causing mostly carport damage to a mobile home park and roof damage to a canning factory. Damage estimated at $20,000.
2003	June	29	Severe Weather	Winds gusting up to 69 mph in Bradenton Beach produced damage to trees and vegetation. About $15,000 in damage when a roof was blown off at a two story motel allowing rain in three units on the top floor. Damage was also caused to the roof of a pump house and two concrete walls collapsed at a construction site. Damage estimated at $10,000. In Myakka, gusts up to 40 kts blew down a wood frame home under construction. Damage estimated at $20,000.

2003	August		Dam Failure	Following several days of intense rainfall events, a flood gate at the Manatee River Dam jammed opened. This resulted in the evacuation of several residences downstream as a precautionary action.
2003	June/August		Rainfall Event	Estimated $1.2 million with 43 structures receiving major damage and 33 structures receiving minor damage.
2002	July	7	Lightning	Lightning caused a hole in a house and started a fire in Bradenton. Damage estimated at $5,000.
2002	August	14	Lightning	Lightning struck a home at University Park Country Club. The resulting resulted in the home being a total loss. A nearby house was scored by the blaze. A few miles away at Lakewood Ranch a second home was struck causing a hole in the roof and blowing out several windows. Damage estimated at $500,000.
2002	November		Sinkhole	Sinkhole near downtown Bradenton less than 10 feet. Caused by drought or low water table. Not threatening to a building.
2002	December	31	Flood	$63,500 residential damage with 50 apartments impacted.
2001	July	1	Tornado	An F1 tornado formed as result of sea breeze and interaction from nearby thunderstorm activity. The tornado damaged a bill board on US 41 N, tossed and demolished a weathered travel trailer in a mini storage. Two additional travel trailers were flipped on their sides while a storage trailer was severely damaged. Damage estimated at $100,000.
2000	March	11	Wildfire	A wildfire ignited near intersection of Canal Road and 33rd Street, consuming up to 40 acres of brush and timber in Palmetto. The wildfire also consumed a storage building. Damage estimated at $20,000.
2000	June	16	Lightning	Lightning struck a tree which fell and damaged a home and vehicle in Bradenton. Damage estimate $20,000.

2000	June	20	Tornado	A tornado (F0) damaged a barn, two large storage sheds and snapped large branches north of SR 70 in Myakka City. Damage estimated at $25,000.
2000	July	15	Flood	7-11 inches in 12 hours on Anna Maria Island flooded homes, businesses and roads. Water estimated to be 3-4 feet in areas in Anna Maria and Homes Beach. Nearly 50 homes had estimated damages of $1 million.
2000	July	24	Flood	6-8 inches of rain in 4 hours damaged 15 homes on Anna Maria Island and Northwest Bradenton with damage estimated at $100,000. Roads were flooded with water up to 2 feet.
2000	July	28	Power Failure	Manatee County Emergency Communications Center out for eight hours.
2000	July	30	Lightning	Three girls were struck and injured by lightning in Myakka City.
2000	August	12	Lightning	Lightning struck and cause $95,000 worth of damage to the roof and attic of a home on 52nd Ave W in Bradenton. Lightning also struck and damaged a home on Longboat Key, the surge traveling down a water pipe which jumped to the home's gas line under the kitchen floor crawl space. The surge ignited the gas line which caused approximately $25,000 damage to the home's kitchen.
2000	September	16	Hurricane	Hurricane Gordon. 100 feet of beach eroded in Bradenton Beach, estimated damage $500,000. Flooding of 25 homes, businesses in Bradenton Beach, estimated damage $500,000. Max wind gust recorded at Coquino Beach at 60 mph.
1999	January	2	Flood	Storm surge caused by a heavy squall line, 3-4 feet above astronomical tide cause flood damage to less than 50 coastal homes and pushed a few dry-docked boats into coastal streets. Street flooding coastal roads. Damage estimated $200,000.

1999	March	14	Lightning	Lightning ignited a fire that caused $3.5 million in damage to the three story Playa Encantada Apartment building on Gulf Drive in Holmes Beach.
1999	May	19	Lightning	Seven migrant farm workers were struck and injured by lighting while taking refuge under a steel flatbed fruit truck during a thunderstorm along Verna Bethany Road, 11 miles northwest of Myakka City. The victims suffered mainly minor leg and arm injuries.
1999	May	20	Lightning	Lightning struck, igniting a wildfire and burned 77 acres of brush and scrub trees near 229th St. E, north of SR 70 and eleven miles northwest of Myakka City.
1999	July	9	Tornado	A tornado (F0) damaged the roof of one mobile home, destroyed a carport and removed three porch enclosures at Tideview Estates Mobile Home Park in Ellenton. Then it proceeded to strike Blackburn Elementary School and caused minor siding and awning damage to the building. Damage estimated at $50,000.
1998	January	23	Severe Weather	Up to 5 inches of rain in less than 12 hours. Estimated $1.2 damages due to flooding in City of Bradenton and unincorporated Manatee County. Five home with major damage and 131 with minor damage from flood waters as high as 2 feet. Manatee River at Myakka Head crested 8-1/2 feet above flood stage damaging tomatoes estimated at $400,000.
1998	February	17	Tornado	A tornado (F1) tore off the roof of a milking facility, two barns and shed, damaged feed silos and downed power lines along SR 70 in Myakka City. Damage estimated at $200,000.

1998	February	19	Severe Weather	Heavy rain of 2 to 4 inches caused localized flooding. Several cars incurred water damage at flooded roadways and intersections. Estimated damages of $20,000. A tornado (F0) caused minor damage to a mobile home park at Moccasin Wallow Road and Imperial Circle in Palmetto. Damage estimated at $50,000.
1998	March	19-20	Flood	Heavy rains flooding roads, some homes in east county. Estimated damages at $445,000. On March 19, a short-lived tornado (F1) destroyed a mobile home and six barns at a horse ranch on SR 70 near Myakka City. A man was injured when the tornado destroyed the home and pickup truck. Damage estimated at $350,000.
1998	July	9	Lightning	Lightning struck and damaged the roof of a home in Braden River Lakes subdivision along SR 64. Lightning burned two large holes in the roof and pierced the ceiling in three locations causing $20,000 in damage.
1998	July	30	Lightning	Lightning struck, ignited a wildfire and burned 50 acres of brush near the Saddlehorn Estates in the 22000 block area of SR 64 and CR 675.
1998	September	2	Hurricane	Hurricane Earl. Street flooding on Anna Maria Island.
1998	September	23	Hurricane	Hurricane Georges. City of Bradenton $50,812.25, City of Bradenton Beach $75,000, City of Palmetto $34,933.
1997	January	1	Tornado	A brief, short-lived tornado (F0) removed the roof of a mobile home and snapped a telephone pole in Paradise Bay Mobile Home Park in Bradenton. Damage estimated at $3,000

1997	April	16	Flood	Heavy rain caused localized flood 2-3 feet deep damaging numerous automobiles at the DeSoto Square Mal. A few homes in low-lying areas of Bradenton received rug damage. Oakridge and Roger Garden Park apartments on 13th St. in Palmetto had over 6 inches of floodwaters in 180 first floor units. Estimated damages to be $2.9 million.
1997	April	23	Tornado	A short-lived tornado (F0) caused severe damage to the roofs of two homes, caused moderate damage to the roof of a motel and damaged two vehicles in Bradenton Beach. Damage estimated at $60,000.
1997	June	23	Lightning	Lightning struck and knocked out the main radio system of the communications center of the Florida Highway Patrol along SR 70. Damages estimate $10,000. Lightning struck a tree with a sideflash that entered the home through the roof of a Bradenton resident. The resident was shocked by lightning inside his home. Damage estimate $2,000.
1997	July	15	Lightning	A seven year old male was slightly injured by a sideflash of lightning that struck the tree he was climbing in Bradenton.
1997	September	26	Flood	$300,000 in damage mostly to rugs and cars stalled in water in Bradenton.

1997	October	31	Severe Weather	Up 6 inches of rain in less than 12 hours causing power outages, flooded streets in Bradenton. Urban flooding caused damage to 222 apartment units at the Oakridge and Rogers Garden apartments, 63 single family homes, three mobile homes and 25 stalled vehicles. Damage estimated at $2 million. Lightning struck and damaged the roof of a home on 29th Street East in Bradenton causing $15,000 in damage. An adult female was struck and slightly injured by lightning while standing in the parking lot of a pre-school on 26th Street West and Bayshore Gardens. A tornado (F0) severely damaged a pool cage, barn roof and down several oak trees near SR 64 and Upper Manatee River Road in Bradenton. Damage estimated at $60,000. Another tornado (F0) toppled trees and power lines near 59th Street and Cortez Road in Bradenton. Damage estimated at $5,000. In Whitfield a tornado (F0) toppled trees and power lines. Damage estimated at $10,000.
1997	November	13-14	Flood	3-1/2 inches rain in less than 12 hours in west county, up to 8 inches in areas in east county. Damage to 15 single family residences and 7 mobile homes due to rising waters of Braden and Manatee Rivers. Damage estimate at $400,000.
1997	December	13	Flood	Several mobile homes flooded in Frog Creek Mobile Home Park in Rubonia. Damage estimated $50,000.
1997	December	30	Flood	Manatee River at Myakka Head along SR 64 over 6-1/2 feet above flood stage. Significant crop damage, mainly tomatoes, estimated at $500,000.
1996	February	16	Wind	Gradient winds of 40 o 50 mph tore off the roof of a mobile home in Bradenton and downed a few power lines on the barrier islands. A grocery store in Bradenton suffered metal siding damage to its roof on Manatee Avenue

				West. Damage was estimated at $20,000.
1996	May	4	Hail	Ping-pong sized hail caused significant crop damage from Parrish southeast to Lake Manatee and north to the Hillsborough county line. Most of the cucumber, bell pepper, green bean and tomato crop was destroyed. Damage estimated at $3 million.
1996	June	17-21	Flood	Street flooding up to 2 feet in the City of Palmetto caused $51,400 in damage to several stalled cars. Some homes and apartments received water damage estimated at $40,000. Localized street flooding in southeast Bradenton. No damage estimate.
1996	July	6	Flood	Heavy rain caused localized street flooding in Palmetto, along 10th Street. A few autos stalled and received minor damage estimated at $3,000.
1996	August	6	Tornado	A tornado caused moderate roof damage to three mobile homes and minor damage to twelve mobile homes at Fairlane Acres Mobile Home Park in Bradenton. Damage estimated at $50,000.
1996	August	23	Severe Weather	Heavy rain caused localized flooding of streets and low-lying areas in Bradenton. A Bradenton business and several vehicles suffered water damage estimated at $50,000. A tornado (F0) removed a roof off a duplex, shatters a few windows and damaged a lanai of a home in Palmetto. Damage estimated at $25,000.
1996	September	10	Lightning	Lightning struck and downed a power line in Bradenton which left 2,500 residents without power for nearly 5 hours. Damage estimate at $5,000.

1996	October	9	Tropical Storm	Tropical Storm Josephine $4 million in damages estimated. Heaviest flooding on Anna Maria Island. Road damage Longboat Key and Bradenton Beach
1996	November	16	Wind	Non-thunderstorm winds of 40 mph blew down a sign and several small to medium sized trees and limbs on US 41 in Palmetto. Damage estimated at $2,000.
1995	January	7	Severe Weather	Severe winds tore off part of a storage facility roof and damaged 60 units inside in Palmetto. Damage estimated at $40,000.
1995	July	18	Flood	Approximately 9 inches of rain fell within a 15-hour period and caused minor flood damage on Longboat Key.
1995	August	15	Severe Weather	Winds blew the roof off a restaurant in Anna Maria City. Damage estimated at $10,000. In Myakka City, winds overturned and damaged a mobile home on SR 70 which caused a propane leak. Damage estimated at $20,000. In West Bradenton, winds caused minor roof damage to an apartment building. Damage estimated at $2,000.
1995	November	2	Flood	Washing out of roads
1994	June	6	Tornado	Two barns, two feed structures, and a mobile home were damaged off SR 70 in Myakka City by an F0 tornado. Damage estimated at $5,000.
1994	September	28	Flood	
1993	March		Winter Storm	Manatee County Public Property $573,737, Private Property $100,000, City of Bradenton $128,027.80, City of Palmetto $49,792, City of Bradenton Beach $900,000.
1992	June	24-25	Tornado	A tornado (F0) knocked down utility poles and tree limbs in Palmetto. Damage estimated at $2,500.
1992	September	3	Tornado	A tornado (F0) tore shingles off three roofs, knocked a hole in one roof and downed trees and power lines. Damage estimated at $25,000.

1992	October	3	Tornado	A waterspout moved over Longboat Key knocking down trees and power lines. Damage estimated at $2,500.
1991	May		Tornado	A tornado (F0) moved cars about and blew down trees and power lines. The roof and side walls of a chemical storage shed were damaged. Damage estimated at $250,000.
1991	May		Flood	
1991	July	13	Tornado	A tornado (F1) moved northeast to southwest across Port Manatee. It touched down ripping off part of the roofs of three buildings, flipping a construction trailer. A 23-foot barge was thrown into the air, blown over several cars before bouncing off of several trucks. It ripped off the doors of a maintenance warehouse. Damage estimated at $250,000.
1990	July	14	Tornado	A tornado (F0) in Bradenton downed power lines and a large tree. In Terra Ceia and Anna Maria, a tornado (F0) snapped telephone poles and caused damage to a house and roof in Anna Maria. Damage estimated at $2,500.
1990	October		Tropical Storm	Tropcial Storm Marco. Up to 6.14 inches of rain fell in Bradenton. Several homes were flooded. Damage estimated at Manatee County Public Property $1,411,747, City of Bradenton damaged at $186,358, and Private Property damaged at $294,250.
1988	May		Sinkhole	Sinkhole less than 10 feet caused by drought or low water table. Location newar Sarasota Bay and Bowless Creek. Home subsided, walls and floor cracked. Damage estimated at $6,000.
1988	June		Sinkhole	Sinkhole 31-80 feet outside Myakka City, caused while drillling, a cavity was hit at 415 feet and the surface collapsed. Damage unknown.
1988	September		Flood	City of Bradenton damaged at $357.507.48, City of Palmetto damaged at $35,400.

1988	November		Tropical Storm	Tropical Storm Keith. Winds up to 65 mph, beach erosion. City of Bradenton Beach damaged at $100,000. Tidal surges 4 feet above normal, rain and winds resulted in flood damage on Longboat Key.
1987	July	7	Tornado	An F0 tornado did minor damage to a home in Bradenton. Damage estimated at $250.
1986	February	8	Tornado	An F0 tornado dirupted a flea market in Bradenton, Severely injuring a man and slightly injuring 3 others. Damage estimated at $25,000.
1986	May	20	Tornado	A cold front produced a squall line. A tornado (F0) developed and blew a porch off a home in Ellenton. Damage estimated at $2,500.
1986	August	1	Tornado	An F0 tornado blew apart a farm shed in Samoset and a waterspout (F0) damaged several sailboats in Bradenton Beach. Damage estimated at $2,500.
1985	October	28	Hurricane	Hurricane Juan. 25 to 35 foot swells in the Gulf of Mexico caused coastal flooding on Longboat Key.
1985	August/September	30-1	Hurricane	Hurricane Elena. The storm hovered over the west coast of Florida for 6 days and brough over 11 inches of rain. Manatee County Public Property damaged $708,538. Private Property damaged $7,836,141. City of Bradenton Beach damaged $2.5 Million. City of Bradenton damaged $61,000.
1984	August	23	Tornado	In central Manatee County a mobile home was destroyed by and F1 tornado. Damage estimated at $25,000.
1982	February	17	Tornado	An F1 tornado struck Ellenton and Palmetto. In Palmetto, a lumber yard was damaged and roofs ripped of a number of mobile homes at Tropical Isle Mobile Home Park. Damage in Ellenton was confined to roof damage and downed trees and power lines. Damage was estimated at $100,000, with half of that at the lumber yard.

1982	June	17-18	No Name Storm	Winds up tp 63 mph with rainfall of 4 to 6 inches. Came ashore during a high tide which resulted in tides of 5.5 feet. Manatee County Public Property damaged $68,354; Private Property - No Record.
1982	July	17	Tornado	An F1 tornado caused damage to 4 mobile homes in Gulf Lake Mobile Estates and roof damage at Oneco Plaza Shopping Center. Damage estimated at $10,000.
1981	June		Sinkhole	Sinkhole less than 10 feet caused by drought or low water table. Located in West Bradenton. Damage unknown.
1981	August	24	Tornado	An F1 tornado associated with widespread severe thunderstorm activity touched down in mobile home park located in SW Bradenton in the Whitfield area. 29 homes were damaged in a 4 block area, several heavily damaged including 5 roofs blown off, with much of the damage to carports, awnings, and porches. Damage was estimated at $250,000.
1979	September	22-23	Flood	Flood event, heavy rain
1972	June	19	Hurricane	Hurricane Agnes. Tides 3 to 6 feet above normal . Coastal areas experienced erosion from wave action and tidal damage to homes, seawalls, and roads. Damage estimated at $2 million.
1968	October	18	Tropical Storm	Tides of up to 5 feet above normal produced considerable beach erosion on Longboat Key.
1960	September		Hurricane	Hurricane Donna. Precipitation averaged 5 to 7 inches, with a pre-storm rainfall of 10 inches in previous 3 weeks saturated the group; considerable flooding resulted. Storm tides caused damage to coastal Manatee County areas with tides 1 to 23 feet above normal.

1950	September		Hurricane	Hurricane came on shore on the west coast of Florida with tides of 6 to 8 inches, flooding much of Anna Maria Island, with beach erosion taking 15 to 20 feet. The beach road was washed out in several places
1926	September		Tropical Storm	Wave action caused erosion along the Manatee County Coast and severe flooding in the Bradenton area, with more than 8 inches of rain in 24 hours.
1921	October		Tropical Storm	Originating in west Caribbean, the slow-moving storm caused flooding up to 5 feet on the north end of Anna Maria Island and in Cortez. High tides of approximately 7 feet resulted in damage on Longboat Key.

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Appendix C

REPETITIVE LOSS PROPERTIES

REPETITIVE LOSS PROPERTIES FOR 2014 LMS							
MANATEE COUNTY, FLORIDA							
Repetitive Loss Properties are defined as those properties for which two or more losses of at least $1,000 each have been paid under the National Flood Insurance Program (NFIP) within any 10-year period since 1978.							
ANNA MARIA ISLAND							
Structure Type	**No. of Losses**	**2009**	**2010**	**2011**	**2012**	**2013**	**Year Added to List**
SF	2	√	√	√	√	√	1992
SF	5	√	√	√	√	√	1996
Duplex	5	√	√	√	√	√	1982
SF	2	-					1982
SF	2	√	√	√	√	√	1985
SF	3	√	√	√	√	√	1982
SF	3	√	√	√	√	√	1985
SF	4	√	√	√	√	√	1982
SF	2	√	√	√	√	√	1992
Motel	4	√	√	√	√	√	1992
Motel	3	√	√	√	√	√	1992
SF/Office	6	√	√	√	√	√	1982
SF	2	√	√	√	√	√	1985
Duplex	7	√	√	√	√	√	1982
SF	3	√	√	√	√	√	1985
SF	3	√	√	√	√	√	1982
SF	6	√	√	√	√	√	1985
SF	5	√	√	√	√	√	1985
Duplex	3	√	√	√	√	√	1982
SF	3	√	√	√	√	√	1982
SF	3	√	√	√	√	√	1982
SF	6	√	√	√	√	√	1982
SF	2	√	√	√	√	√	1982
SF	2	√	√	√	√	√	1992
MF	3	√	-				1985
SF	2	-					2000
SF	5	-					1982
SF	3	√	√	√	√	√	1996
SF	3	√	√	√	√	√	1993
SF	5	√	√	√	√	√	1993
SF	4	√	√	√	√	√	1992
SF	2	√	-				1992
SF	2	-					1993
SF	3	√	√	√	√	√	1992
Definitions:							
"√": Structure was on Repetitive Loss list for that year.							
"+': Structure was added to Repetitive Loss list that year.							
"-": Structure was removed from Repetitive Loss List that year.							
"SF": Single family residence				"MF": Multi-Family			
"MH": Manufactured/mobile home				"Condo": Condominium			

As of year-end of 2018, the incorporated City of Anna Maria had 24 single family residences, 1 Multi-Family, 3 duplexes and 3 commercial repetitive loss properties. These properties account for 104 flood insurance claims.

BRADENTON							
Structure Type	**No. of Losses**	**2009**	**2010**	**2011**	**2012**	**2013**	**Year Added to List**
SF	2	√	√	√	√	√	1997
SF	4	√	√	√	√	√	1985
SF	3	√	√	√	√	√	1997
SF	4	√	√	√	√	√	1996
SF	4	√	√	√	√	√	1996
SF	5	√	√	√	√	√	1993
SF	5	√	√	√	√	√	1996
SF	6	√	√	√	√	√	1993
SF	3	√	√	√	√	√	1997
SF	2	√	√	√	√	√	1997
SF	3	√	√	√	√	√	1996
SF	4	√	√	√	√	√	1985
SF	5	√	√	√	√	√	1985
SF	4	√	√	√	√	√	1996
SF	2	√	√	√	√	√	1993
SF	3	√	√	√	√	√	1996
SF	3	√	√	√	√	√	1993
SF	8	√	√	√	√	√	1983
SF	4	√	√	√	√	√	1993
SF	3	√	√	√	√	√	1992
MF	5	√	√	√	√	√	1992
SF	4	√	√	√	√	√	1990
SF	3	√	√	√	√	√	1997
MF	5	√	√	√	√	√	1992
SF	7	√	√	√	√	√	1992
SF	9	√	√	√	√	√	1990
SF	5	√	√	√	√	√	1990
SF	4	√	√	√	√	√	1988
SF	5	√	√	√	√	√	1997
SF	2	√	√	√	√	√	1993
SF	4	√	√	√	√	√	1993
SF	3	√	√	√	√	√	2001
MF	3	√	√	√	√	√	2003
SF	2	√	√	√	√	√	2001
SF	4	√	√	√	√	√	2001
SF	4	√	√	√	√	√	1999
SF	2	√	√	√	√	√	2004
SF	3	√	√	√	√	√	2001
SF	3	√	√	√	√	√	2001
SF	2	√	√	√	√	√	2004
SF	3	√	√	√	√	√	2001
SF	2	√	√	√	√	√	2004
SF	3	√	√	√	√	√	2001
SF	2	√	√	√	√	√	2001
SF	3	√	√	√	√	√	2001
SF	2	√	√	√	√	√	2003
SF	3	√	√	√	√	√	2001
SF	2	√	√	√	√	√	2004
SF	3	√	√	√	√	√	2001
MH	2	√	√	√	√	√	2004

BRADENTON							
Structure Type	**No. of Losses**	**2009**	**2010**	**2011**	**2012**	**2013**	**Year Added To List**
SF	5	√	√	√	√	√	2002
SF	3	√	√	√	√	√	2001
SF	2	√	√	√	√	√	2004
MH	2	√	√	√	√	√	2004
SF	2	√	√	√	√	√	2004
Definitions:							
"√": Structure was on Repetitive Loss list for that year.							
"+': Structure was added to Repetitive Loss list that year.							
"-": Structure was removed from Repetitive Loss List that year.							
"SF": Single family residence			"MF": Multi-Family				
"MH": Manufactured/mobile home			"Condo": Condominium				

As of year-end of 2018, the incorporated City of Bradenton had 50 single family residences, 3 Multi-Family and 2 manufactured/mobile homes repetitive loss properties. These properties account for 195 flood insurance claims.

BRADENTON BEACH							
Structure Type	**No. of Losses**	**2009**	**2010**	**2011**	**2012**	**2013**	**Year Added to List**
SF	4	√	√	√	√	√	1985
MF	4	√	√	√	√	√	1985
SF	4	√	√	√	√	√	1985
SF	3	√	√	√	√	√	1985
SF	3	√	√	√	√	√	1985
SF	3	√	√	√	√	√	1985
SF	4	√	√	√	√	√	1997
SF	3	√	√	√	√	√	1985
MF	2	√	√	√	√	√	1985
MF	3	√	√	√	√	√	1985
Motel	2	√	√	√	√	√	1988
SF	2	√	√	√	√	√	1985
MF	4	√	√	√	√	√	1985
MF	4	√	√	√	√	√	1985
SF	2	√	√	√	√	√	1985
SF	3	√	√	√	√	√	1985
SF	3	√	√	√	√	√	1985
MF	2	√	√	√	√	√	1985
MF	3	√	√	√	√	√	1993
SF	3	√	√	√	√	√	1988
MF	4	√	√	√	√	√	1985
MF	4	√	√	√	√	√	1985
SF	3	√	√	√	√	√	1985
SF	3	√	√	√	√	√	1985
SF	3	√	√	√	√	√	1985
MF	3	√	√	√	√	√	1985
Definitions:							
"√": Structure was on Repetitive Loss list for that year.							
"+': Structure was added to Repetitive Loss list that year.							
"-": Structure was removed from Repetitive Loss List that year.							
"SF": Single family residence				"MF": Multi-Family			
"MH": Manufactured/mobile home				"Condo": Condominium			

As of year-end of 2018, the incorporated City of Bradenton Beach had 15 single family residences, 10 Multi-Family and 1 motel repetitive loss properties. These properties account for 81 flood insurance claims.

HOLMES BEACH							
Structure Type	**No. of Losses**	**2009**	**2010**	**2011**	**2012**	**2013**	**Year Added to List**
SF	3	√	√	√	√	√	1982
Duplex	3	√	√	√	√	√	1985
SF	2	√	√	√	√	√	1982
Duplex	3	√	√	√	√	√	1982
Duplex	2	√	√	√	√	√	1995
MF	4	√	√	√	√	√	1982
SF	2	√	√	√	√	√	1982
SF	3	√	√	√	√	√	1985
SF	2	√	√	√	√	√	1991
Duplex	2	√	√	√	√	√	1985
SF	2	√	√	√	√	√	1982
SF	3	√	√	√	√	√	1982
SF	2	√	√	√	√	√	1982
Duplex	2	√	√	√	√	√	1985
Duplex	3	√	√	√	√	√	1982
MF	3	√	√	√	√	√	1995
Duplex	3	√	√	√	√	√	1982
Duplex	6	√	√	√	√	√	1982
Motel	4	√	√	√	√	√	1982
MF	2	√	√	√	√	√	1982
Condo	3	√	√	√	√	√	1982
MF	3	√	√	√	√	√	1985
MF	2	√	√	√	√	√	1982
MF	2	√	√	√	√	√	1982
MF	2	√	√	√	√	√	1991
Resort	4	√	√	√	√	√	1982
Resort	6	√	√	√	√	√	1982
Other	2	√	√	√	√	√	1982
Other	2	√	√	√	√	√	1985
Condo	2	√	√	√	√	√	2007
SF	4	√	√	√	√	√	1982
Duplex	2	√	√	√	√	√	1982
SF	5	√	√	√	√	√	1982
SF	2	√	√	√	√	√	1993
SF	2	√	√	√	√	√	1985
SF	3	√	√	√	√	√	1982
SF	2	√	√	√	√	√	1982
Duplex	2	√	√	√	√	√	1985
SF	3	√	√	√	√	√	1985
MF	4	√	√	√	√	√	1982
SF	5	√	√	√	√	√	1982
SF	3	√	√	√	√	√	1993
SF	2	√	√	√	√	√	1996
Duplex	2	√	√	√	-		1985
SF	3	√	√	√	√	√	1979
SF	2	√	√	√	√	√	1996
MF	2	√	√	√	√	√	1982
MF	2	√	√	√	√	√	1982
SF	2	√	√	√	√	√	1982
SF	3	√	√	√	√	√	1982
SF	4	√	√	√	√	√	1982

Definitions:	
"√": Structure was on Repetitive Loss list for that year.	
"+': Structure was added to Repetitive Loss list that year.	
"-": Structure was removed from Repetitive Loss List that year.	
"SF": Single family residence	"MF": Multi-Family
"MH": Manufactured/mobile home	"Condo": Condominium

As of year-end of 2018, the incorporated City of Holmes Beach had 23 single family residences, 10 duplexes, 10 Multi-Family, 2 condominiums, 1 motel, 2 resort units and 2 other repetitive loss properties. These properties account for 141 flood insurance claims.

LONGBOAT KEY							
Structure Type	**No. of Losses**	**2009**	**2010**	**2011**	**2012**	**2013**	**Year Added to List**
Duplex	2	√	√	√	√	√	1986
Duplex	2	√	√	√	√	√	1986
Condo	5	√	√	√	√	√	1986
Condo	5	√	√	√	√	√	1989
Condo	5	√	√	√	√	√	1986
SF	3	√	√	√	√	√	1986
SF	4	√	√	√	√	√	1986
USPO	2	√	√	√	√	√	1986
SF	7	√	√	√	√	√	1986
SF	3	√	√	√	√	√	1986
SF	9	√	√	√	√	√	1986
SF	7	√	√	√	√	√	1986
SF	2	√	√	√	√	√	1986
SF	6	√	√	√	√	√	1988
SF	2	√	√	√	√	√	1986
SF	3	√	√	√	√	√	1996
SF	8	√	√	√	√	√	1986
MF	3	√	√	√	√	√	1986
SF	4	√	√	√	√	√	1986
SF	2	√	√	√	√	√	1986
SF	2	√	√	√	√	√	1994
SF	2	√	√	√	√	√	1986
SF	2	√	√	√	√	√	1989
SF	2	√	√	√	√	√	1989
SF	2	√	√	√	√	√	1986
SF	3	√	√	√	√	√	1986
SF	3	√	√	√	√	√	1986
SF	9	√	√	√	√	√	1986
SF	4	√	√	√	√	√	1986
SF	2	√	√	√	√	√	1986
SF	2	√	√	√	√	√	1989
MF	3	√	√	√	√	√	1996
SF	2	√	√	√	√	√	1986
SF	3	√	√	√	√	√	1986
SF	4	√	√	√	√	√	1986
SF	2	√	√	√	√	√	1986
SF	3	√	√	√	√	√	1989
SF	2	√	√	√	√	√	1986
SF	4	√	√	√	√	√	1986
SF	2	√	√	√	√	√	1986
SF	3	√	√	√	√	√	1986
SF	2	√	√	√	√	√	1986
SF	3	√	√	√	√	√	1986
SF	4	√	√	√	√	√	1986
SF	2	√	√	√	√	√	1986
SF	4	√	√	√	√	√	1986
MF	3	√	√	√	√	√	1986
SF	3	√	√	√	√	√	1986
SF	3	√	√	√	√	√	1986
SF	4	√	√	√	√	√	1983
SF	6	√	√	√	√	√	1986

LONGBOAT KEY							
Structure Type	**No. of Losses**	**2009**	**2010**	**2011**	**2012**	**2013**	**Year Added to List**
SF	3	√	√	√	√	√	1986
Duplex	2	√	√	√	√	√	1986
SF	3	√	√	√	√	√	1984
SF	3	√	√	√	√	√	1984
MF	3	√	√	√	√	√	1986
SF	3	√	√	√	√	√	1989
SF	3	√	√	√	√	√	1994
SF	2	√	√	√	√	√	1986
SF	2	√	√	√	√	√	1986
SF	3	√	√	√	√	√	1986
SF	3	√	√	√	√	√	1986
SF	3	√	√	√	√	√	1986
SF	3	√	√	√	√	√	1986
SF	3	√	√	√	√	√	1996
SF	3	√	√	√	√	√	1986
SF	2	√	√	√	√	√	1992
SF	2	√	√	√	√	√	1996
SF	3	√	√	√	√	√	1986
Duplex	8	√	√	√	√	√	1986
MF	2	√	√	√	√	√	1997
SF	3	√	√	√	√	√	1986
SF	3	√	√	√	√	√	1986
SF	4	√	√	√	√	√	1986
SF	2	√	√	√	√	√	1997
Commercial	2	√	√	√	√	√	1997
SF	3	√	√	√	√	√	1986
SF	2	√	√	√	√	√	1986

Definitions:	
"√": Structure was on Repetitive Loss list for that year.	
"+': Structure was added to Repetitive Loss list that year.	
"-": Structure was removed from Repetitive Loss List that year.	
"SF": Single family residence	"MF": Multi-Family
"MH": Manufactured/mobile home	"Condo": Condominium
"USPO": United States Post Office	

As of year-end of 2018, the incorporated Town of Longboat Key had 64 single family residences, 4 duplexes, 2 condominium units, 5 Multi-Family, 1 commercial and 1 federal government in the United States Post Office. These properties account for 257 flood insurance claims.

PALMETTO							
Structure Type	**No. of Losses**	**2009**	**2010**	**2011**	**2012**	**2013**	**Year Added To List**
SF	7	√	√	√	√	√	1999
SF	2	√	√	√	√	√	1997
SF	4	√	√	√	√	√	1999
SF	4	√	√	√	√	√	1993
SF	5	√	√	√	√	√	1993
SF	2	√	√	√	√	√	2004
SF	2	√	√	√	√	√	2004
Definitions:							
"√": Structure was on Repetitive Loss list for that year.							
"+': Structure was added to Repetitive Loss list that year.							
"-": Structure was removed from Repetitive Loss List that year.							
"SF": Single family residence			"MF": Multi-Family				
"MH": Manufactured/mobile home			"Condo": Condominium				

As of year-end of 2018, the incorporated City of Palmetto had 7 single family residences repetitive loss properties. These properties account for 26 flood insurance claims.

UNINCORPORATED MANATE COUNTY							
Structure Type	**No. of Losses**	**2009**	**2010**	**2011**	**2012**	**2013**	**Year Added to List**
SF	2	√	√	√	√	√	1997
SF	2	√	√	√	√	√	1985
Commercial	2	√	√	√	√	√	2003
SF	4	√	√	√	√	√	1985
SF	5	√	√	√	√	√	1985
SF	6	√	√	√	√	√	1985
SF	3	√	√	√	√	√	1993
SF	2	√	√	√	√	√	2001
SF	2	√	√	√	√	√	1998
SF	2	√	√	√	√	√	1998
SF	2	√	√	√	√	√	1998
MF	3	√	√	√	√	√	1998
MF	2	√	√	√	√	√	2001
MF	2	√	√	√	√	√	2001
Condo	2	√	√	√	√	√	2001
SF	2	√	√	√	√	√	2001
Municipal	2	√	√	√	√	√	1992
SF	3	√	√	√	√	√	1997
SF	2	√	√	√	√	√	1998
Condo	3	√	√	√	√	√	1997
Condo	2	√	√	√	√	√	1998
Condo	3	√	√	√	√	√	1997
Condo	2	+	√	√	√	√	2009
Condo	4	√	√	√	√	√	1997
Condo	2	√	√	√	√	√	1998
Condo	2	√	√	√	√	√	1998
Condo	2	√	√	√	√	√	1997
Condo	3	√	√	√	√	√	1998
Condo	3	√	√	√	√	√	1997
Condo	2	√	√	√	√	√	2003
Condo	4	√	√	√	√	√	1997
Condo	2	√	√	√	√	√	1998
Condo	2	√	√	√	√	√	1998
Condo	2	√	√	√	√	√	2003
Condo	3	√	√	√	√	√	1998
Condo	3	√	√	√	√	√	1997
Condo	2	√	√	√	√	√	1998
Condo	2	√	√	√	√	√	1998
MH	3	√	√	√	√	√	2003
SF	2	√	√	√	√	√	1998
SF	3	√	√	√	√	√	1997
SF	5	√	√	√	√	√	2002
SF	3	√	√	√	√	√	1997
MH	3	√	√	√	√	√	2003
MH	3	√	√	√	√	√	2003
SF	3	√	√	√	√	√	1997
SF	3	√	√	√	√	√	1997
SF	2	√	√	√	√	√	1998
SF	2	√	√	√	√	√	2003
SF	2	√	√	√	√	√	2003

UNINCORPORATED MANATEE COUNTY							
Structure Type	**No. of Losses**	**2009**	**2010**	**2011**	**2012**	**2013**	**Year Added to List**
SF	5	√	√	√	√	√	1998
SF	3	√	√	√	√	√	2001
SF	4	√	√	√	√	√	1996
SF	4	√	√	√	√	√	1993
SF	4	√	√	√	√	√	1996
SF	2	√	√	√	√	√	2004
SF	4	√	√	√	√	√	1993
SF	2	√	√	√	√	√	2001
SF	5	√	√	√	√	√	1993
SF	3	√	√	√	√	√	2001
Condo	2	√	√	√	√	√	2001
SF	2	√	√	√	√	√	1992
SF	2	√	√	√	√	√	2001
SF	3	√	√	√	√	√	2003
SF	4	√	√	√	√	√	1992
SF	2	√	√	√	√	√	2003
SF	2	√	√	√	√	√	2003
SF	5	√	√	√	√	√	1993
SF	4	√	√	√	√	√	1996
SF	2	√	√	√	√	√	2004
SF	3	√	√	√	√	√	2001
SF	4	√	√	√	√	√	1996
SF	3	√	√	√	√	√	1993
SF	2	√	√	√	√	√	1996
SF	2	√	√	√	√	√	1985
SF	5	√	√	√	√	√	1993
SF	6	√	√	√	√	√	1985
SF	3	√	√	√	√	√	1996
SF	3	√	√	√	√	√	2001
SF	2	√	√	√	√	√	2004
SF	2	√	√	√	√	√	1996
MH	2	√	√	√	√	√	2004
MH	2	√	√	√	√	√	2007
SF	2	√	√	√	√	√	2001
SF	2	√	√	√	√	√	2001
SF	2	√	√	√	√	√	2003
SF	3	√	√	√	√	√	2001
SF	3	√	√	√	√	√	2001
SF	2	√	√	√	√	√	2003
MH	2	√	√	√	√	√	2001
MH	2	√	√	√	√	√	2001
Definitions:							
"√": Structure was on Repetitive Loss list for that year.							
"+': Structure was added to Repetitive Loss list that year.							
"-": Structure was removed from Repetitive Loss List that year.							
"SF": Single family residence				"MF": Multi-Family			
"MH": Manufactured/mobile home				"Condo": Condominium			

As of year-end of 2018, unincorporated Manatee County had 62 single family residences, 3 duplexes, 29 condominiums, 7 manufactured/mobile homes, 1 commercial and 2 municipal repetitive loss properties. These properties account for 303 flood insurance claims. One property was demolished by owner in 2016.

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APPENDIX D

PARTICIPATION

A. DURING THE 5-YEAR UPDATE CYCLE

An open public involvement process is essential to the development of an effective plan. To develop a more comprehensive approach to reducing the effects of natural disasters, the 5-year update cycle included stakeholder, committee and public participation. The LMS Working Group provided multi opportunities for review and comment while going through the 5-year update to the LMS.

The 2020 five-year update commenced in March 2019 when members of the LMS Working Group were informed by Emergency Management of the need to conduct a major revision update to the plan. A contractor was not used for this process, so the plan is as realistic as possible using the limited resources that are available to the County.

It was decided that three sub-committee (Data & Information, Governance, and Goals & Objective - each consisting of a minimum of three technical employees), were to be formed so that small groups could make recommendations of suggested updates. Simultaneously, one of the Public Safety Department Emergency Management Coordinators was tasked with updating the Hazard Risk and Vulnerability Assessment (Section IV). This was done with stakeholder participation and feedback with those included in the Manatee Emergency Operations Workgroup. A total of 6 sub-committee meetings and one Hazard Risk meetings were held.

Each of the sub-committees held multiple meetings to review the information and how to best proceed with the update of each section. The revised sections were sent to the LMS Working Group for comment, suggested revisions, deletions or additions. Each jurisdiction was encouraged to e-mail their changes to the Chairperson of the LMS Working Group. Each jurisdiction was represented and participated in the planning process. All suggestions, revisions and corrections were considered in the final document.

To broaden the general public and Non-Governmental Organization's access to LMS information and involvement in the process, Manatee County has a webpage dedicated to Hazard Mitigation information on the Manatee County website. Notice of meetings, agendas, and funding opportunities are posted on this webpage, in addition to posting meetings on the County calendar. The public is welcome to attend and make comments at any of these

meetings or utilize the e-mail address on the LMS webpage. During the planning process specific to the 5-year update cycle, additional opportunities were provided to the general public to provide comments, suggested revisions, additions and deletions to the updated plan. These additional opportunities were in the form of in-person community comment times held in the afternoon/evening at the public library, as well as on-line review periods. Notice of these additional opportunities were provided on the County's website, newspaper, and posted at the County Administration Building.

After all jurisdictions reviewed each section and appendices of the LMS for the 2019/2020 5-year update, the "First Draft" was posted as an agenda item on the third quarter meeting held on October 17, 2019, (rescheduled from September 19, 2019), and subsequently and unanimously approved by the LMS Working Group.

The "First Draft" was posted on the county website on October 25, 2019, for a 25-day period to receive public comment. After receiving feedback from the public, those suggested revisions, updates and corrections were considered during the November 21, 2019, Special LMS Working Group Meeting. The "Second Draft" was subsequently and unanimously approved by the LMS Working Group.

The "Second Draft" of the Manatee County 2020 LMS Update was presented to the Manatee County Board of County Commissioners as a Report on December 10, 2019 and an opportunity for public comment was given during that meeting. While there were words of encouragement from a few Commissioners, there were no additional public comments heard.

Another opportunity to receive public participation was provided on January 15, 2020, at the Manatee County Central Library from 4:00 p.m. to 7:00 p.m. There were three people in attendance from the public with no written suggested revisions, updates and corrections recorded.

The "Final Draft" was subsequently and unanimously approved by the LMS Working Group on January 30, 2020.

Upon completion of the tasks, Emergency Management conducted a final review of the LMS using the new criteria and verified the components against the required Mitigation Plan Review Checklist. Emergency Management believes that the Manatee County LMS was compliant with the new Federal criteria and submitted the plan to the Florida Division of Emergency Management for review.

Copies of agendas, minutes and sign-in sheets from LMS Workgroup meetings, Sub-Committee meetings, and public participation opportunities are included in this appendix.

B. ROUTINE STAKEHOLDER AND PUBLIC PARTICIPATION

The LMS Working Group conducts regularly scheduled meetings. Unless otherwise indicated, LMS meetings are held quarterly on the 3rd Thursday of March, June, September and December (each year) at 3:00 p.m. at the Manatee County Central Library.

To broaden the general public and Non-Governmental Organization's access to LMS information and involvement in the process, Manatee County has a webpage dedicated to Hazard Mitigation information on the Manatee County website. Notice of meetings, agendas, and funding opportunities are posted on this webpage, in addition to posting meetings on the county calendar. The public is welcome to attend and make comments at any of these meetings or utilize the e-mail address on the LMS webpage.

Copies of agendas, invitations, minutes, sign-in sheets, and feedback forms from LMS Workgroup meetings, and public participation opportunities are included as addendums in this appendix.

LMS – Attendees List Data Sub Committee

Manatee County Admin Bldg - 4th floor

Date & Time	Thursday May 2, 2019 at 8:00am

Name/Agency	Email Address	Phone Number
Nicole Knapp MC/EM	nicole.knapp@mymanatee.org	941 749-3500 x7824
Sandy Tudor BADS	Sandy.Tudor@mymanatee.org	941-748-4501 x3843
Hjalmar Pachas	hjalmar.pachas@mymanatee.org	941-748-4501
James Linkogle	jlinkogle@longboatkey.org	941-650-1957
Tristan Morath	tristan.morath@mymanatee.org	507-272-7207
Matthew Myers	matthew.myers@mymanatee.org	941-749-3500 x1673
Anthony Warren/COB	anthony.warren@cityofbradenton.com	941 932 9404
Jacob Saur	Jacob.saur@mymanatee.org	941-749-3500

LMS – Attendees List

Data & Information Sub Committee

Property Location	**Public Safety Center/EOC Conference Room**
Date & Time	**July 1, 2019** 2PM -

Name/Agency	Email Address	Phone Number
Hyalmar Pachas	hyalmar.pachas@mymanatee.org	
David Mathes, PM	david.mathews@mymanatee.org	3622
Erin Struzzieri	erin.struzzieri@mymanatee.org	x80672
Sandy Tudor BADS	sandy.tudor@mymanatee.org	x3843
Rob Braun PNRD	rob.braun@mymanatee.org	x1870
APWSSO		x7349
Matt Myers	Matthew.myers@mymanatee.org	x1673
Nicole Knepp	nicole.knepp@mymanatee.org	x7824

LMS Governance Sub-Committee
5/10/2019

Name	Agency	Signature
TONY RUSSO	MCPW	
MYRA PRATER	MCPW	
Halmar Pachas	MCPM	
Amy Pilson	MCUD	
Matthew Myers	MCEM	
Tristan Morath	MCEM	
Nicole Knapp	MC EM	

LMS Sub-Committee Governance and By-Laws
8/2/2019 2:30pm

Name	Agency	Signature
Michael Elswick	Manatee County - PNR	
Amy Pilson	MCUD	
Myra Prater	MCPW	
Rob Brown	MC PNRD	
Lea Harper	MC - PM	
Matt Myers	MCEM	
Nicole Knapp	MC EM	

Manatee Emergency Operations Workgroup

Blake Medical Center

Wednesday, August 21, Noon

1. **Steve Litschauer, Manatee County Emergency Management**
2. **Introductions**
3. **Tristan Morath, Manatee County Emergency Management**
   Threat and Hazard Identification and Risk Assessment (THIRA)
4. **Stacy Needham, Emergency Communications Center**
   911 Tech
5. **Julie Showers, The Salvation Army**
   The Salvation Army's role in disaster response; mass feeding and the like
6. **Art Stadlin, Public Safety, and Steve Litschauer, Manatee County Emergency Management**
   Nimble Network
7. **Other Topics**
8. **Open Discussion**

Thank you to Blake Medical Center
for sponsoring our working lunch meeting.

The next meeting is
Wednesday, October 16, 2019 at
Lakewood Ranch Medical Center

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MANATEE COUNTY EMERGENCY MANAGEMENT FLORIDA

follow us on twitter @MCGPublicSafety

MANATEE COUNTY EMERGENCY MANAGEMENT FLORIDA

Manatee Emergency Operations Workgroup

August 21, 2019

Please Verify Information and Initial Next to Your Name

Name		Department	Email Address	Initials
Abercrombie	Michelle	Centerstone of Florida	michelle.abercrombie@centerstone.org	
Adams	Tracie	Neighborhood Services	Tracie.Adams@mymanatee.org	
Addy	LeAnne	City Clerk / Treasurer	amclerk@cityofannamaria.com	
Barrett	Lisa	Building and Development Services	lisa.barrett@mymanatee.org	
Bartholomew	Pat	School District of Manatee County	bartholomewp@manateeschools.net	
Bassett	Julie	Human Resources	julie.bassett@mymanatee.org	
Bencie	Jennifer	Florida Department of Health in Manatee County	Jennifer.Bencie@flhealth.gov	
Bloski	Mike	Southern Manatee Fire Rescue	mbloski@smfr.com	
Bowman	Jeff	Building and Development Services	jeffrey.bowman@mymanatee.org	
Bradshaw	Kyle	Cedar Hammock Fire Rescue	kbradshaw@chfr.org	
Brown	Robbie	Florida Department of Transportation	robbie.brown@dot.state.fl.us	
Brown	Sarah	Public Safety / Animal Services	sarah.brown@mymanatee.org	
Budinsky	Cathy	American Red Cross	cathy.budinsky@redcross.org	
Butzow	Chad	Public Works	chad.butzow@mymanatee.org	
Cacchiotti	Danny	Myakka Fire	dpcacchiotti@myakkafire.org	
Capillo	Fabio	Public Works	fabio.capillo@mymanatee.org	
Cardwell	Conner	Florida Highway Patrol	ConnerCardwell@flhsmv.gov	
Case	Matthew	Public Works	matthew.case@mymanatee.org	
Clekis	Terry	Braden River Animal Hospital, Florida Veterinary Medical Association	tclekis@gmail.com	
Cluley	Kenneth	North River Fire District	CluleyK@nrfd.org	
Combee	Gary	Manatee Sheriff's Office	Gary.Combee@manateesheriff.com	
Cordes	Geoff	Manatee County Rural Health Services	gcordes@mcrhs.org	

MANATEE COUNTY EMERGENCY MANAGEMENT FLORIDA

Manatee Emergency Operations Workgroup

August 21, 2019

Please Verify Information and Initial Next to Your Name

Name		Department	Email Address	Initials
Cosby	John	Bradenton Beach Police Department	jcosby@cityofbradentonbeach.com	
Court	John	Florida Department of Agriculture and Consumer Services, Division of Animal Industry	john.court@freshfromflorida.com	
Cramer	Josh	Bradenton Police Department	josh.cramer@cityofbradenton.com	
Crutchfield	James	Public Safety / Community Paramedicine	james.crutchfield@mymanatee.org	
Cruz	Candi	Finance	candice.cruz@mymanatee.org	
Cuevas	Juan	Florida Highway Patrol	juancuevas@flhsmv.gov	
Cumming	Peter	Longboat Key Police Department	pcumming@longboatkey.org	
Davies	Scott	Manatee County Port Authority	SDavies@Portmanatee.com	
Dezzi	Paul	Longboat Key Fire Rescue	pdezzi@longboatkey.org	
Dirling	Jeff	North River Fire District	dirlingj@nrfd.org	
Donovan	John	Florida Highway Patrol	JohnDonovan@flhsmv.gov	
Dowling	Rae	FPL	rae.dowling@fpl.com	
DuBois	Adam	Florida Department of Health	adam.dubois@flhealth.gov	
Dwyer	Sean	Public Safety / EMS	sean.dwyer@mymanatee.org	
Edwards	Chuck	Bradenton Fire Department	charles.edwards@cityofbradenton.com	
Egbert	Jim	Public Works / Transit	james.egbert@mymanatee.org	
Ellis	Kaycee	County Administrator's Office	kaycee.ellis@mymanatee.org	
Elwood	John	Manatee County Search and Rescue	j.elwood@manateecountysar.org	
Estep	Rusty	Blake Medical Center	rusty.estep@hcahealthcare.com	
Ezell	Braxton	US Coast Guard Auxiliary	brezell@ij.net	
Ezell	David	Bradenton Fire Department	david.ezell@cityofbradenton.com	

MANATEE COUNTY EMERGENCY MANAGEMENT FLORIDA

Manatee Emergency Operations Workgroup

August 21, 2019

Please Verify Information and Initial Next to Your Name

Name		Department	Email Address	Initials
Falcione	Elliot	Convention and Visitors Bureau	elliott.falcione@mymanatee.org	
Falcone	Joseph	Cedar Hammock Fire Rescue	jfalcone@chfr.org	JF
Fernandez	Melissa	The Salvation Army	melissa.fernandez@uss.salvationarmy.org	
Fields	Robert	Florida Department of Health in Manatee County	Robert.Fields@flhealth.gov	
Fiske	Jodie	Florida Division of Emergency Management	Jodie.Fiske@em.myflorida.com	
Foderingham	Vincent	Feld Entertainment	vfoderingham@feldinc.com	
Foltz	Amy	Public Works	amy.foltz@mymanatee.org	
Fones	Jamie	Peace River Electric Cooperative	Jamie.Fones@preco.coop	
Ford	Angie	Manatee County Tax Collector	angief@taxcollector.com	
Geer	Tim	Bradenton Fire Department	timothy.geer@cityofbradenton.com	
Gerstenberger	Tom	Public Works	tom.gerstenberger@mymanatee.org	
Giddens	Jeremy	Bradenton Police Department	jeremy.giddens@cityofbradenton.com	
Gopalakrishna	Mukunda	Public Works	mukunda.gopalakrishna@mymanatee.org	
Gorski	Brian	Southern Manatee Fire Rescue	bgorski@SMFR.com	
Gould	Christopher	Southern Manatee Fire Rescue	cgould@SMFR.com	
Grinnell	Tammy	PW / Transit	tammy.grinnell@mymanatee.org	TG
Guetschow	Steve	American Red Cross	steve.guetschow@redcross.org	
Hadlock	JD	North River Fire District	HadlockJD@nrfd.org	
Hall	Brian	Holmes Beach Police Department	detective@holmesbeach.org	
Harmon	Hal	Neighborhood Services / Library	hal.harmon@mymanatee.org	
Harnish	Michael	Manatee Memorial Hospital	michael.harnish@mmhhs.com	
Hartley	Catherine	Bradenton	catherine.hartley@cityofbradenton.com	

MANATEE COUNTY EMERGENCY MANAGEMENT FLORIDA

Manatee Emergency Operations Workgroup

August 21, 2019

Please Verify Information and Initial Next to Your Name

Name		Department	Email Address	Initials
Heiser	David	FPL	david.heiser@FPL.com	
Highsmith	Ronnie	Florida Highway Patrol	ronniehighsmith@flhsmv.gov	
Hinds	Louis	Florida FWC	louis.hinds@myfwc.com	
Horner	Annette	The Salvation Army	Annette.Horner@uss.salvationarmy.org	
Hotaling	Mike	Information Technology	mike.hotaling@mymanatee.org	
Hoyle	Jeff	Cedar Hammock Fire Rescue	JHoyle@chfr.org	
Hull	Sally	School District of Manatee County	hullS@manateeschools.net	
Ingle	Rick	Public Safety / ECC	rick.ingle@mymanatee.org	
Inotai	Marie	Manatee County Tax Collector	mariei@taxcollector.com	
Isrel	Renée	Public Safety	renee.isrel@mymanatee.org	
Jackson	Wardell	Manatee County Rural Health Services	wjackson@mcrhs.org	
Jones	Mark	Public Safety / EMS	marc.jones@mymanatee.org	
Joshi	Kara	Public Works	kara.joshi@mymanatee.org	
Kakkad	Vishal	Public Works	vishal.kakkad@mymanatee.org	
Kapacinskas	Bruno	Redevelopment & Economic Opportunity / Economic Development Division	bruno.kapacinskas@mymanatee.org	
Kauffman	Duane	Palmetto Police Department	dkauffman@palmettopolice.com	
Keegan	Mike	Florida Forest Service	Michael.Keegan@freshfromflorida.com	
Kelly	Candace	Public Safety / Emergency Management	candy.kelly@mymanatee.org	
Kessie	Mike	New College Campus Police Department	mkessie@ncf.edu	
Kiernan	Matt	Manatee Sheriff's Office	Matthew.Kiernan@manateesheriff.com	
Kirby	Christa	Ag Extension	ccarlson@ufl.edu	
Kitchen	Tom	Public Safety / Emergency Management	thomas.kitchen@mymanatee.org	

Manatee Emergency Operations Workgroup

August 21, 2019

Please Verify Information and Initial Next to Your Name

Name		Department	Email Address	Initials
Kitchner	Brian	FDLE	briankitchner@fdle.state.fl.us	
Klasing	Linda	Risk Management	linda.klasing@mymanatee.org	
Knapp	Nicole	Public Safety / Emergency Management	nicole.knapp@mymanatee.org	
Kull	William	Risk Management	william.kull@mymanatee.org	
Laney	Steven	Public Works	steven.laney@mymanatee.org	
LaRowe	Amber	Palmetto	alarowe@palmettofl.org	
LaRowe	Ryan	Palmetto Police Department	rlarowe@palmettopolice.com	
Latham	Mark	Manatee County Mosquito Control District	marklatham@manateemosquito.com	
Leggett	Jared	Manatee County Search and Rescue	J.Leggett@ManateeCountySAR.org	
Lesser	Chris	Manatee County Mosquito Control District	christopher.lesser@manateemosquito.com	
Linkogle	James	Longboat Key Public Works	jlinkogle@longboatkey.org	
Litschauer	Steve	Public Safety / Emergency Management	steve.litschauer@mymanatee.org	
Luh	Larry	Public Safety / EMS	larry.luh@mymanatee.org	
Martinez	Maggie	Anna Maria Island	amfinance@cityofannamaria.com	
Martinez	Tracey	Risk Management	tracey.martin@mymanatee.org	
Matthews	David	Blake Medical Center	david.matthews@hcahealthcare.com	
McFall	Thomas	Blake Medical Center	thomas.mcfall@hcahealthcare.com	
McFarland	Ernie	Public Safety / ECC	ernie.mcfarland@mymanatee.org	
Merritt	Justin	Florida Department of Transportation	justin.merritt@dot.state.fl.us	
Miranda	Wilfredo	Information Technology	wilfredo.miranda@mymanatee.org	
Mitchell	Gregory	Florida Highway Patrol	gregorymitchell@flhsmv.gov	
Moncivaez	Adam	Florida Department of Transportation	Adam.Moncivaez@dot.state.fl.us	

MANATEE COUNTY EMERGENCY MANAGEMENT FLORIDA

Manatee Emergency Operations Workgroup

August 21, 2019

Please Verify Information and Initial Next to Your Name

Name		Department	Email Address	Initials
Monk	Gregory	FDLE	gregmonk@fdle.state.fl.us	
Morath	Tristan	Public Safety / Emergency Management	tristan.morath@mymanatee.org	TM
Moss	Ed	Southern Baptist Disaster Services	ed@mycpf.org	
Myers	Matt	Public Safety / Emergency Management	matthew.myers@mymanatee.org	
Needham	Stacy	Public Safety / ECC	stacy.needham@mymanatee.org	
O'Conner	John	American Red Cross	john.oconnor@redcross.org	
Osborne	John	Manatee County	john.osborne@mymanatee.org	
Panik	Paul	Parks and Natural Resources	paul.panik@mymanatee.org	
Parker	Rocky	Longboat Key Fire Rescue	rparker@longboatkey.org	
Patten	Shawn	State College of Florida	pattens@scf.edu	
Patterson	George	The Salvation Army	george.patterson@uss.salvationarmy.org	
Pilson	Amy	Utilities	amy.pilson@mymanatee.org	
Powell	Steven	Civil Air Patrol	s.powell@bankcard.net	
Rampino	Michael	North River Fire District	rampinom@nrfd.org	
Richardson	Mark	Town of Longboat Key (Public Works)	mrichardson@longboatkey.org	
Richardson	Michelle	Parks and Natural Resources	michelle.richardson@mymanatee.org	
Richmond	Joel	Public Safety / Emergency Management	joel.richmond@mymanatee.org	
Rigney	Ben	West Manatee Fire Rescue	ben.rigney@wmfr.org	
Rivera	Fil	Public Works	filaderfio.rivera@mymanatee.org	
Rivett	Christopher	New College of Florida Police	crivett@ncf.edu	
Roberts	Steven	Public Works / Transit	steven.roberts@mymanatee.org	SDR
Roller	Collin	Public Works	collin.roller@mymanatee.org	

Manatee Emergency Operations Workgroup

August 21, 2019

Please Verify Information and Initial Next to Your Name

Name		Department	Email Address	Initials
Rosa	Eddie	Florida Department of Health in Manatee County	eddie.rosa@flhealth.gov	
Ross	Anne	Lakewood Ranch Inter-District Authority	anne.ross@lwrtownhall.com	
Rubino	Frank	Longboat Key Police Department	frubino@longboatkey.org	
Salsbery	Kevin	Florida Department of Transportation	kevin.salsbery@dot.state.fl.us	
Saur	Jacob	Public Safety / ECC	jacob.saur@mymanatee.org	
Schneider	Cindy	Information Technology	cindy.schneider@mymanatee.org	
Schnering	Brian	Manatee Sheriff's Office	Brian.Schnering@manateesheriff.com	
Sellers	Mark	Peace River Electric Cooperative	Mark.Sellers@preco.coop	
Showers	Julie	The Salvation Army	Julia.Showers@uss.salvationarmy.org	
Skalecki	Ed	Manatee County ARES (Amateur Radio Emergency Service)	ni4mx@verizon.net	
Sousa	Thomas	West Manatee Fire	tom.sousa@wmfr.org	
Steele	William	Public Works / Transit	william.steele@mymanatee.org	
Stewart	Karen	Economic Redevelopment	karen.stewart@mymanatee.org	
Stinson	Mike	Palmetto Police Department	mstinson@palmettopolice.com	
Stoddard	Joe	Meals on Wheels Plus of Manatee Inc.	jstoddard@mealsonwheelsplus.org	
Suarez	Luis	New College of Florida	lusuarez@ncf.edu	
Sulliivan	Kevin	US Coast Guard	Kevin.J.Sullivan2@uscg.mil	
Thompson	Dave	Property Management	david.thompson@mymanatee.org	
Tokajer	William	Holmes Beach Police Department	chief@holmesbeach.org	
Tudor	Sandy	Building and Development Services	sandy.tudor@mymanatee.org	
Turbett	Lori	Feld Entertainment	lturbett@feldinc.com	
Tusing	Allen	Palmetto	atusing@palmettofl.org	

MANATEE COUNTY EMERGENCY MANAGEMENT FLORIDA

Manatee Emergency Operations Workgroup

August 21, 2019

Please Verify Information and Initial Next to Your Name

Name		Department	Email Address	Initials
Tyler	Scott	Palmetto Police Department	styler@palmettopolice.com	
Underwood	Jennifer	The Salvation Army	Jennifer.Underwood@uss.salvationarmy.org	
Waiters	Lorenzo	Palmetto Police Department	lwaiters@palmettopolice.com	
Ward	Deanna	Building and Development Services	deanna.ward@mymanatee.org	
Wardman	Chris	State College of Florida	wardmac@scf.edu	
Warren	Anthony	City of Bradenton	anthony.warren@cityofbradenton.com	
Weedon	Warren	US Coast Guard	warren.w.weedon@uscg.mil	
Wenzel	Patrick	Building and Development Services	patrick.wenzel@mymanatee.org	
Westerman	Joe	Public Safety / Marine Rescue	joe.westerman@mymanatee.org	
Whitehurst	Lee	East Manatee Fire	lwhitehurst@emfr.org	
Williamson	Mike	Parrish Fire District	mwilliamson@parrishfd.org	
Wilson	Melissa	Meals on Wheels Plus of Manatee Inc.	mwilson@mealsonwheelsplus.org	
Winterhalter	David	Medical Examiner Office	dwinterhalter@fldist12me.com	
Zarr	Benita	Public Works / Transit	benita.zarr@mymanatee.org	
Rietz	Rick	MCSO	richard.rietz@manatesheriff.com	(R)
Washington	Greg	MCSO	greg.washington@manatesheriff.com	
STADLIN	ART	IT	arthur.stadlin@mymanatee.org	
Gisolf	Rick	ECC	rick.gisolf@mymanatee.org	RG
Major	Juan	Guadalupe	- The Salvation Army no email please	

MANATEE COUNTY EMERGENCY MANAGEMENT FLORIDA

Manatee Emergency Operations Workgroup

August 21, 2019

Please Verify Information and Initial Next to Your Name

Name		Department	Email Address	Initials

Name: Chuck Edwards

Organization: City of Bradenton Fire Department

Additional Hazards to be Included:

Date: 9/4/2019

	Hazard Profiles					Vulnerability					Consequence Analysis							
Hazard	Frequency	Duration	Speed of Onset	Magnitude	Hazard Total Score	Impact on Humans	Impact on Business	Impact on Property	Impact on the Environment	Vulnerability Total Score	Public	First Responders	Continuity of Operations	Facilities/ Infrastructure	Economy	Environment	Public Confidence	Consequence Total Score
Natural Hazards																		
Animal Disease Outbreak	2	4	1	3	5.88235294	3	1	1	2	3.181818182	2	2	2	2	2	2	2	7
Drought	3	4	1	4	7.05882353	2	1	2	3	3.636363636	1	2	1	1	1	2	1	4.5
Earthquake	1	1	4	4	5.88235294	3	2	3	3	5	3	2	2	2	3	3	3	9
Epidemic	3	4	1	3	6.47058824	3	1	1	3	3.636363636	3	3	2	2	2	2	3	8.5
Exotic Pests and Disease	3	3	1	3	5.88235294	3	2	1	3	4.090909091	2	2	2	2	2	2	2	7
Flood	3	2	1	2	4.70588235	3	2	3	3	5	1	1	1	1	1	2	3	5
Harmful Algal Blooms	3	4	1	3	6.47058824	2	3	3	3	5	2	2	2	2	3	2	3	8
Hurricane	4	4	1	4	7.64705882	3	4	4	4	6.818181818	3	3	3	3	3	3	3	10.5
Sea Level Rise	3	5	1	2	6.47058824	1	1	1	2	2.272727273	1	1	1	1	1	1	1	3.5
Severe Thunderstorms	4	1	4	3	7.05882353	2	1	2	3	3.636363636	2	1	1	1	1	1	2	4.5
Sink Holes	2	3	4	1	5.88235294	1	1	1	2	2.272727273	1	2	1	1	1	1	2	4.5
Space Weather	1	3	2	2	4.70588235	1	1	1	1	1.818181818	1	1	1	1	1	1	1	3.5
Tornado	2	2	4	2	5.88235294	3	2	2	3	4.545454545	2	2	2	2	2	1	3	7
Tsunami	1	3	4	2	5.88235294	3	3	1	3	4.545454545	3	2	2	2	3	2	3	8.5
Wildfire	1	3	3	2	5.29411765	1	1	1	2	2.272727273	2	1	1	1	1	1	2	4.5
Winter Storm	1	3	1	3	4.70588235	1	1	1	1	1.818181818	1	1	1	1	1	1	1	3.5
Technological Hazards																		
Airplane Crash	2	2	4	3	6.47058824	4	3	4	3	6.363636364	3	3	1	2	1	3	3	8
Critical Infrastructure Disruption	3	3	4	3	7.64705882	3	3	3	3	5.454545455	2	3	1	2	1	2	3	7
Dam/Levee failure	2	4	4	3	7.64705882	3	3	4	2	5.454545455	2	2	2	2	2	3	3	8
Hazardous Materials Release	3	3	4	2	7.05882353	3	2	4	4	5.909090909	2	3	2	1	2	2	3	7.5
Power Failure	3	1	4	2	5.88235294	2	2	2	2	3.636363636	2	1	1	1	1	1	2	4.5
Radiological Release	2	1	4	3	5.88235294	3	2	2	3	4.545454545	2	3	2	2	2	2	3	8
Train Derailment	2	2	4	2	5.88235294	3	2	3	3	5	3	3	2	2	2	2	3	8.5
Major Transportation Incidents	3	2	4	3	7.05882353	4	2	2	2	4.545454545	2	2	1	1	1	1	3	5.5
Urban Conflagration	2	2	4	2	5.88235294	3	2	3	2	4.545454545	2	2	1	1	1	1	2	5
Human Caused Incidents																		
Civil Disturbance	2	2	2	2	4.70588235	3	3	4	3	5.909090909	3	3	2	1	2	1	3	7.5
Coastal Oil Spills	1	4	4	3	7.05882353	2	2	3	4	5	2	2	2	2	3	3	3	8.5
Cyber Incidents	2	3	2	2	5.29411765	1	2	1	2	2.727272727	3	2	2	2	3	1	3	8
Mass Migration	2	3	2	2	5.29411765	2	2	2	2	3.636363636	2	2	2	2	2	3	2	7.5
Sabotage	1	2	2	2	4.11764706	1	2	2	2	3.181818182	3	2	2	2	2	2	2	7.5
Mass Shooting	3	1	4	2	5.88235294	4	3	2	2	5	3	2	2	2	2	2	3	8
Special Events	3	1	4	2	5.88235294	4	3	2	2	5	3	3	2	2	2	1	3	8
Terrorist Acts	2	1	4	3	5.88235294	4	3	3	3	5.909090909	3	3	3	3	3	3	3	10.5

Name: DANIEL CACCHIOTTI

Organization: MYAKKA CITY FIRE CONTROL DISTRICT

Additional Hazards to be Included: **WATER SUPPLY- DAMS-DEEP WELLS-WATER SHED AREAS

**DEEP WELL INJECTION OF POLLUTANTS BY GOVERNMENT

Date: 8/29/2019

	Hazard Profiles					Vulnerability					Consequence Analysis							
Hazard	Frequency	Duration	Speed of Onset	Magnitude	Hazard Total Score	Impact on Humans	Impact on Business	Impact on Property	Impact on the Environment	Vulnerability Total Score	Public	First Responders	Continuity of Operations	Facilities/ Infrastructure	Economy	Environment	Public Confidence	Consequence Total Score
Natural Hazards																		
Animal Disease Outbreak	3	3	2	2	5.88235294	3	3	1	2	4.090909091	3	3	1	1	3	3	3	8.5
Drought	3	3	1	3	5.88235294	2	3	3	3	5	3	3	3	3	3	3	3	10.5
Earthquake	1	1	3	3	4.70588235	2	2	3	3	4.545454545	3	3	3	3	3	3	3	10.5
Epidemic	3	3	1	2	5.29411765	3	2	1	1	3.181818182	3	3	2	1	3	3	3	9
Exotic Pests and Disease	3	3	1	3	5.88235294	3	3	3	3	5.454545455	3	3	1	1	2	3	2	7.5
Flood	3	3	3	3	7.05882353	3	3	3	3	5.454545455	3	2	1	2	2	2	2	7
Harmful Algal Blooms	3	3	2	3	6.47058824	3	3	3	3	5.454545455	3	3	2	2	2	3	3	9
Hurricane	3	2	1	3	5.29411765	3	3	3	3	5.454545455	1	1	1	1	1	1	2	4
Sea Level Rise	2	1	1	1	2.94117647	1	1	1	1	1.818181818	2	2	1	1	1	1	3	5.5
Severe Thunderstorms	3	1	3	3	5.88235294	3	1	1	1	2.727272727	3	2	1	1	1	3	1	6
Sink Holes	3	3	3	3	7.05882353	3	3	3	3	5.454545455	3	3	3	1	2	1	1	7
Space Weather	2	1	3	3	5.29411765	3	2	0	0	2.272727273	3	3	2	1	3	1	1	7
Tornado	3	1	3	3	5.88235294	3	3	3	3	5.454545455	3	3	1	2	1	1	1	6
Tsunami	1	1	1	1	2.35294118	1	1	1	1	1.818181818	0	0	0	0	0	0	0	0
Wildfire	3	2	2	3	5.88235294	3	2	3	3	5	3	3	2	2	1	2	2	7.5
Winter Storm	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Airplane Crash	2	1	3	3	5.29411765	3	1	1	1	2.727272727	2	2	1	1	1	1	3	5.5
Critical Infrastructure Disruption	2	3	3	3	6.47058824	3	2	1	1	3.181818182	2	2	2	2	2	2	2	7
Dam/Levee failure	2	2	3	3	5.88235294	3	3	3	3	5.454545455	3	2	1	1	1	3	1	6
Hazardous Materials Release	1	1	3	3	4.70588235	3	2	3	3	5	1	1	1	1	1	1	1	3.5
Power Failure	3	3	3	3	7.05882353	3	3	1	1	3.636363636	3	3	1	1	2	1	1	6
Radiological Release	1	1	3	3	4.70588235	3	2	1	2	3.636363636	3	3	1	1	3	3	1	7.5
Train Derailment	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Major Transportation Incidents	2	3	3	2	5.88235294	2	2	1	1	2.727272727	1	1	1	1	1	1	1	3.5
Urban Conflagration	1	1	2	1	2.94117647	1	2	0	0	1.363636364	3	3	1	1	1	1	1	5.5
Civil Disturbance	1	2	1	1	2.94117647	3	2	0	0	2.272727273	3	3	1	1	1	1	1	5.5
Coastal Oil Spills	0	0	0	0	0	0	0	0	0	0	1	1	1	1	2	3	1	5
Cyber Incidents	1	2	2	2	4.11764706	2	3	0	0	2.272727273	2	2	1	1	3	1	1	5.5
Mass Migration	1	3	1	1	3.52941176	2	3	3	3	5	2	2	1	1	3	3	1	6.5
Sabotage	2	1	3	3	5.29411765	2	3	2	2	4.090909091	3	3	1	1	2	1	1	6
Mass Shooting	2	1	3	3	5.29411765	3	2	0	0	2.272727273	3	3	1	1	1	1	1	5.5
Special Events	1	1	2	2	3.52941176	2	2	3	3	4.545454545	1	1	1	1	1	1	1	3.5
Terrorist Acts	2	1	3	3	5.29411765	3	3	0	0	2.727272727	3	3	3	3	3	3	3	10.5
					0													

Name: Manatee County Area Transit (MCAT)

Organization: Public Works/Transit

Additional Hazards to be Included:

Date: 8/28/2019

Hazard	Hazard Profiles					Vulnerability					Consequence Analysis							
	Frequency	Duration	Speed of Onset	Magnitude	Hazard Total Score	Impact on Humans	Impact on Business	Impact on Property	Impact on the Environment	Vulnerability Total Score	Public	First Responders	Continuity of Operations	Facilities/ Infrastructure	Economy	Environment	Public Confidence	Consequence Total Score
Natural Hazards																		
Animal Disease Outbreak	1	1	4	1	4.11764706	1	1	1	2	2.272727273	1	1	1	1	1	1	1	3.5
Drought	3	5	1	4	7.64705882	1	1	2	4	3.636363636	2	1	1	1	1	1	2	4.5
Earthquake	2	3	4	3	7.05882353	3	2	2	3	4.545454545	3	3	2	2	2	2	3	8.5
Epidemic	1	5	4	3	7.64705882	2	1	1	3	3.181818182	3	1	1	1	1	1	2	5
Exotic Pests and Disease	1	1	4	1	4.11764706	1	1	1	2	2.272727273	1	1	1	1	1	1	1	3.5
Flood	4	3	3	3	7.64705882	3	1	2	3	4.090909091	2	2	2	2	3	2	3	8
Harmful Algal Blooms	3	1	1	1	3.52941176	2	1	1	2	2.727272727	2	1	1	2	2	1	3	6
Hurricane	4	4	1	4	7.64705882	4	3	4	4	6.818181818	3	3	3	3	3	3	3	10.5
Sea Level Rise	2	2	3	2	5.29411765	2	1	1	2	2.727272727	2	2	2	2	2	1	2	6.5
Severe Thunderstorms	4	1	3	4	7.05882353	1	1	1	3	2.727272727	2	1	1	1	1	1	1	4
Sink Holes	2	1	4	1	4.70588235	1	1	1	3	2.727272727	2	1	1	1	1	1	1	4
Space Weather	1	1	2	4	4.70588235	1	1	1	1	1.818181818	1	1	1	1	1	1	1	3.5
Tornado	3	1	3	2	5.29411765	3	1	2	4	4.545454545	3	2	3	2	3	2	2	8.5
Tsunami	2	2	4	2	5.88235294	3	1	1	3	3.636363636	3	2	2	1	2	1	2	6.5
Wildfire	2	2	4	2	5.88235294	2	1	1	3	3.181818182	2	1	1	1	2	2	1	5
Winter Storm	1	1	1	1	2.35294118	1	1	1	1	1.818181818	1	1	1	1	1	1	1	3.5
Technological Hazards																		
Airplane Crash	3	2	4	1	5.88235294	4	1	1	1	3.181818182	2	1	1	1	1	1	1	4
Critical Infrastructure Disruption	2	1	4	2	5.29411765	3	2	1	2	3.636363636	2	2	1	2	2	1	2	6
Dam/Levee failure	2	1	2	2	4.11764706	2	3	1	2	3.636363636	2	1	1	2	1	1	2	5
Hazardous Materials Release	2	2	4	2	5.88235294	3	2	1	4	4.545454545	2	2	2	2	2	1	1	6
Power Failure	4	1	4	2	6.47058824	1	1	1	3	2.727272727	1	1	1	1	1	2	1	4
Radiological Release	2	1	4	1	4.70588235	4	2	3	4	5.909090909	2	2	2	2	2	1	1	6
Train Derailment	2	1	4	1	4.70588235	3	2	1	2	3.636363636	1	1	1	1	1	1	1	3.5
Major Transportation Incidents	2	1	4	1	4.70588235	2	1	1	2	2.727272727	1	1	1	1	1	1	2	4
Urban Conflagration	1	1	4	2	4.70588235	2	4	3	4	5.909090909	2	1	1	1	1	1	2	4.5
Human Caused Incidents																		
Civil Disturbance	3	3	4	3	7.64705882	4	1	2	3	4.545454545	2	2	2	2	3	1	2	7
Coastal Oil Spills	5	1	4	1	6.47058824	2	4	1	4	5	3	3	3	2	1	1	2	7.5
Cyber Incidents	2	3	4	2	6.47058824	1	2	1	2	2.727272727	1	1	1	1	1	1	1	3.5
Mass Migration	4	2	1	2	5.29411765	2	2	1	2	3.181818182	2	2	2	1	3	1	1	6
Sabotage	2	3	4	2	6.47058824	3	1	3	2	4.090909091	1	1	1	1	2	1	1	4
Mass Shooting	4	3	4	2	7.64705882	4	2	1	2	4.090909091	1	1	1	1	2	1	1	4
Special Events	5	2	1	1	5.29411765	2	1	1	2	2.727272727	1	1	1	1	2	1	1	4
Terrorist Acts	1	5	4	4	8.23529412	4	4	1	4	5.909090909	3	3	2	3	4	2	3	10

Name: Hadlock, JD

Organization: North River Fire District

Additional Hazards to be Included:

Date: __/__/____

Hazard	Hazard Profiles					Vulnerability					Consequence Analysis							
	Frequency	Duration	Speed of Onset	Magnitude	Hazard Total Score	Impact on Humans	Impact on Business	Impact on Property	Impact on the Environment	Vulnerability Total Score	Public	First Responders	Continuity of Operations	Facilities/ Infrastructure	Economy	Environment	Public Confidence	Consequence Total Score
Natural Hazards																		
Animal Disease Outbreak	2	1	1	4	4.70588235	1	1	1	2	2.272727273	1	1	1	1	1	1	1	3.5
Drought	3	1	1	4	5.29411765	1	1	2	1	2.272727273	1	1	1	1	1	1	1	3.5
Earthquake	1	1	4	4	5.88235294	4	4	4	3	6.818181818	3	3	3	3	3	3	2	10
Epidemic	2	2	1	4	5.29411765	4	2	1	4	5	3	3	2	2	2	1	2	7.5
Exotic Pests and Disease	2	1	1	1	2.94117647	1	1	1	2	2.272727273	1	1	1	1	1	1	1	3.5
Flood	3	3	2	3	6.47058824	4	4	4	3	6.818181818	2	2	3	2	3	2	1	7.5
Harmful Algal Blooms	1	1	1	3	3.52941176	1	1	1	3	2.727272727	1	1	1	1	2	2	2	5
Hurricane	3	4	1	4	7.05882353	4	4	4	4	7.272727273	3	3	3	3	3	3	2	10
Sea Level Rise	2	1	1	3	4.11764706	1	1	1	1	1.818181818	1	1	1	1	1	2	1	4
Severe Thunderstorms	3	2	2	3	5.88235294	2	1	1	1	2.272727273	1	1	1	1	1	1	1	3.5
Sink Holes	2	1	4	1	4.70588235	4	4	4	1	5.909090909	1	2	1	1	2	2	1	5
Space Weather	2	1	1	4	4.70588235	1	1	1	2	2.272727273	1	1	1	1	1	1	1	3.5
Tornado	3	3	4	2	7.05882353	4	4	3	1	5.454545455	2	2	3	2	2	2	1	7
Tsunami	1	1	1	4	4.11764706	4	4	3	2	5.909090909	3	3	3	3	3	3	2	10
Wildfire	3	2	4	2	6.47058824	2	1	4	2	4.090909091	1	2	2	1	1	2	1	5
Winter Storm	1	1	2	4	4.70588235	2	2	2	1	3.181818182	1	1	2	1	1	1	1	4
Technological Hazards																		
Airplane Crash	2	2	4	2	5.88235294	4	1	3	2	4.545454545	2	2	2	1	2	1	1	5.5
Critical Infrastructure Disruption	2	3	4	2	6.47058824	1	3	3	1	3.636363636	1	1	2	1	1	2	2	5
Dam/Levee failure	2	3	3	2	5.88235294	4	4	3	2	5.909090909	2	2	3	2	3	3	3	9
Hazardous Materials Release	3	1	4	1	5.29411765	4	1	2	4	5	1	2	2	1	1	1	1	4.5
Power Failure	2	1	4	1	4.70588235	1	2	1	1	2.272727273	1	1	1	1	1	1	1	3.5
Radiological Release	1	1	4	1	4.11764706	4	4	4	4	7.272727273	2	3	2	2	2	2	2	7.5
Train Derailment	2	2	4	3	6.47058824	4	3	3	4	6.363636364	2	3	2	1	3	2	2	7.5
Major Transportation Incidents	3	1	4	1	5.29411765	3	1	1	1	2.727272727	1	1	1	1	1	1	1	3.5
Urban Conflagration	1	3	4	3	6.47058824	4	4	2	3	5.909090909	2	2	2	3	2	3	3	8.5
Human Caused Incidents																		
Civil Disturbance	2	2	4	2	5.88235294	3	2	1	2	3.636363636	2	2	2	2	1	1	1	5.5
Coastal Oil Spills	2	3	4	3	7.05882353	1	1	3	3	3.636363636	1	1	1	2	1	2	2	5
Cyber Incidents	2	1	4	3	5.88235294	1	4	1	1	3.181818182	2	1	1	2	2	1	3	6
Mass Migration	1	3	1	3	4.70588235	2	1	1	1	2.272727273	2	1	2	2	2	1	2	6
Sabotage	2	3	4	2	6.47058824	4	4	2	1	5	2	3	2	1	1	1	2	6
Mass Shooting	3	2	4	2	6.47058824	4	2	1	1	3.636363636	2	2	2	2	2	1	2	6.5
Special Events	3	3	1	2	5.29411765	2	1	1	1	2.272727273	1	1	1	1	1	1	1	3.5
Terrorist Acts	3	4	4	4	8.82352941	4	4	4	4	7.272727273	3	3	3	3	3	2	2	9.5

Name: Jeremy Giddens/Graham Cook

Organization: Bradenton Police Department

Additional Hazards to be Included:

Date: 8/27/2019

Hazard	Hazard Profiles					Vulnerability					Consequence Analysis							
	Frequency	Duration	Speed of Onset	Magnitude	Hazard Total Score	Impact on Humans	Impact on Business	Impact on Property	Impact on the Environment	Vulnerability Total Score	Public	First Responders	Continuity of Operations	Facilities/ Infrastructure	Economy	Environment	Public Confidence	Consequence Total Score
Natural Hazards																		
Animal Disease Outbreak	2	2	1	1	3.52941176	1	1	1	1	1.818181818	1	2	1	2	1	1	1	4.5
Drought	2	2	1	2	4.11764706	2	1	3	2	3.636363636	2	1	1	1	2	2	1	5
Earthquake	1	1	1	1	2.35294118	1	1	1	1	1.818181818	1	1	1	1	1	1	1	3.5
Epidemic	1	1	1	1	2.35294118	1	1	1	1	1.818181818	1	1	1	1	1	1	1	3.5
Exotic Pests and Disease	1	1	1	1	2.35294118	1	1	1	1	1.818181818	1	1	1	1	1	1	1	3.5
Flood	2	2	2	1	4.11764706	1	2	2	2	3.181818182	2	2	2	2	1	1	1	5.5
Harmful Algal Blooms	2	2	1	2	4.11764706	2	1	1	1	2.272727273	2	1	1	1	1	2	1	4.5
Hurricane	3	1	1	2	4.11764706	2	3	3	3	5	3	2	2	2	2	2	1	7
Sea Level Rise	1	1	1	1	2.35294118	1	1	1	1	1.818181818	1	1	1	1	1	1	1	3.5
Severe Thunderstorms	4	3	2	2	6.47058824	2	2	2	2	3.636363636	2	2	2	2	1	1	2	6
Sink Holes	1	1	1	1	2.35294118	1	1	1	1	1.818181818	1	1	1	1	1	1	1	3.5
Space Weather	1	1	1	1	2.35294118	1	1	1	1	1.818181818	1	1	1	1	1	1	1	3.5
Tornado	2	1	2	2	4.11764706	2	1	1	1	2.272727273	1	1	1	1	1	1	1	3.5
Tsunami	1	1	1	1	2.35294118	1	1	1	1	1.818181818	1	1	1	1	1	1	1	3.5
Wildfire	1	1	1	1	2.35294118	1	1	1	1	1.818181818	1	1	1	1	1	1	1	3.5
Winter Storm	1	1	1	1	2.35294118	1	1	1	1	1.818181818	1	1	1	1	1	1	1	3.5
Technological Hazards																		
Airplane Crash	1	1	1	1	2.35294118	1	1	1	1	1.818181818	1	1	1	1	1	1	1	3.5
Critical Infrastructure Disruption	1	1	1	1	2.35294118	1	1	1	1	1.818181818	1	1	1	1	1	1	1	3.5
Dam/Levee failure	1	1	1	1	2.35294118	1	1	1	1	1.818181818	1	1	1	1	1	1	1	3.5
Hazardous Materials Release	1	1	2	2	3.52941176	2	1	1	1	2.272727273	1	1	1	1	1	1	1	3.5
Power Failure	2	2	2	2	4.70588235	2	2	1	1	2.727272727	2	1	1	1	1	1	1	4
Radiological Release	1	1	1	1	2.35294118	1	1	1	1	1.818181818	1	1	1	1	1	1	1	3.5
Train Derailment	2	2	3	2	5.29411765	1	2	1	1	2.272727273	1	2	1	1	1	1	1	4
Major Transportation Incidents	2	2	3	2	5.29411765	2	2	2	1	3.181818182	1	2	2	1	1	1	1	4.5
Urban Conflagration	1	1	1	1	2.35294118	1	1	1	1	1.818181818	1	1	1	1	1	1	1	3.5
Human Caused Incidents																		
Civil Disturbance	3	3	2	2	5.88235294	2	2	2	1	3.181818182	2	2	2	2	2	1	2	6.5
Coastal Oil Spills	1	1	1	1	2.35294118	1	1	1	1	1.818181818	1	1	1	1	1	1	1	3.5
Cyber Incidents	2	2	3	2	5.29411765	2	2	1	1	2.727272727	2	2	2	2	2	1	2	6.5
Mass Migration	1	1	1	1	2.35294118	1	1	1	1	1.818181818	1	1	1	1	1	1	1	3.5
Sabotage	1	1	1	1	2.35294118	1	1	1	1	1.818181818	1	1	1	1	1	1	1	3.5
Mass Shooting	2	1	4	2	5.29411765	4	2	2	1	4.090909091	1	1	1	1	1	1	1	3.5
Special Events	1	1	1	1	2.35294118	1	1	1	1	1.818181818	1	1	1	1	1	1	1	3.5
Terrorist Acts	1	1	1	1	2.35294118	1	1	1	1	1.818181818	1	1	1	1	1	1	1	3.5

Name: _____ **Additional Hazards to be Included:** _____ **Date:** __/__/____

Organization: _____ _____

Hazard	Hazard Profiles					Vulnerability					Consequence Analysis							
	Frequency	Duration	Speed of Onset	Magnitude	Hazard Total Score	Impact on Humans	Impact on Business	Impact on Property	Impact on the Environment	Vulnerability Total Score	Public	First Responders	Continuity of Operations	Facilities/ Infrastructure	Economy	Environment	Public Confidence	Consequence Total Score
Natural Hazards																		
Animal Disease Outbreak	2	4	1	1	4.70588235	1	1	1	1	1.818181818	1	1	1	1	1	1	1	3.5
Drought	3	4	1	2	5.88235294	2	1	2	2	3.181818182	1	1	1	1	1	1	1	3.5
Earthquake	1	2	1	3	4.11764706	3	2	2	3	4.545454545	2	1	2	1	1	1	1	4.5
Epidemic	3	5	1	3	7.05882353	3	1	1	1	2.727272727	2	1	1	1	1	1	1	4
Exotic Pests and Disease	2	3	1	1	4.11764706	1	1	1	1	1.818181818	1	1	1	1	1	1	1	3.5
Flood	4	2	4	2	7.05882353	1	1	2	1	2.272727273	1	1	1	1	1	1	1	3.5
Harmful Algal Blooms	4	4	1	2	6.47058824	1	3	2	1	3.181818182	1	1	1	1	1	1	1	3.5
Hurricane	3	3	1	3	5.88235294	2	3	3	2	4.545454545	2	2	2	2	2	2	2	7
Sea Level Rise	1	5	1	1	4.70588235	1	1	1	1	1.818181818	1	1	1	1	1	1	1	3.5
Severe Thunderstorms	4	1	3	1	5.29411765	1	1	1	1	1.818181818	1	1	1	1	1	1	1	3.5
Sink Holes	1	4	4	1	5.88235294	1	1	1	1	1.818181818	1	1	1	1	1	1	1	3.5
Space Weather	1	1	4	1	4.11764706	1	1	1	1	1.818181818	1	1	1	1	1	1	1	3.5
Tornado	4	1	4	1	5.88235294	1	1	1	1	1.818181818	1	1	1	1	1	1	1	3.5
Tsunami	1	2	4	1	4.70588235	1	1	1	1	1.818181818	1	1	1	1	1	1	1	3.5
Wildfire	3	3	4	1	6.47058824	1	1	1	1	1.818181818	1	1	1	1	1	1	1	3.5
Winter Storm	1	1	2	1	2.94117647	1	1	1	1	1.818181818	1	1	1	1	1	1	1	3.5
Technological Hazards																		
Airplane Crash	2	2	4	1	5.29411765	1	1	1	1	1.818181818	1	1	1	1	1	1	1	3.5
Critical Infrastructure Disruption	2	3	4	2	6.47058824	1	1	1	1	1.818181818	1	1	1	1	1	1	1	3.5
Dam/Levee failure	1	3	3	1	4.70588235	1	1	1	1	1.818181818	1	1	1	1	1	1	1	3.5
Hazardous Materials Release	2	1	4	1	4.70588235	1	1	1	1	1.818181818	1	1	1	1	1	1	1	3.5
Power Failure	4	1	4	1	5.88235294	1	1	1	1	1.818181818	1	1	1	1	1	1	1	3.5
Radiological Release	1	2	2	1	3.52941176	1	1	1	1	1.818181818	1	1	1	1	1	1	1	3.5
Train Derailment	2	2	4	1	5.29411765	1	1	1	1	1.818181818	1	1	1	1	1	1	1	3.5
Major Transportation Incidents	4	1	4	1	5.88235294	1	1	1	1	1.818181818	1	1	1	1	1	1	1	3.5
Urban Conflagration	2	2	4	1	5.29411765	1	1	1	1	1.818181818	1	1	1	1	1	1	1	3.5
Human Caused Incidents																		
Civil Disturbance	2	3	1	1	4.11764706	1	1	1	1	1.818181818	1	1	1	1	1	1	1	3.5
Coastal Oil Spills	1	5	4	2	7.05882353	1	1	1	1	1.818181818	1	1	1	1	1	1	1	3.5
Cyber Incidents	3	3	4	1	6.47058824	1	1	1	1	1.818181818	1	1	1	1	1	1	1	3.5
Mass Migration	1	5	1	1	4.70588235	1	1	1	1	1.818181818	1	1	1	1	1	1	1	3.5
Sabotage	2	2	4	1	5.29411765	1	1	1	1	1.818181818	1	1	1	1	1	1	1	3.5
Mass Shooting	2	1	4	1	4.70588235	1	1	1	1	1.818181818	1	1	1	1	1	1	1	4
Special Events	3	3	1	1	4.70588235	1	1	1	1	1.818181818	1	1	1	1	1	1	1	3.5
Terrorist Acts	1	3	4	1	5.29411765	1	1	1	1	1.818181818	1	1	1	1	1	1	1	3.5

Name: Deputy Chief Falcone

Organization: Cedar Hammock Fire Rescue

Additional Hazards to be Included: N/A

Date: 9/10/2019

	Hazard Profiles					Vulnerability					Consequence Analysis							
Hazard	Frequency	Duration	Speed of Onset	Magnitude	Hazard Total Score	Impact on Humans	Impact on Business	Impact on Property	Impact on the Environment	Vulnerability Total Score	Public	First Responders	Continuity of Operations	Facilities/ Infrastructure	Economy	Environment	Public Confidence	Consequence Total Score
Natural Hazards																		
Animal Disease Outbreak	2	5	1	4	7.05882353	1	2	1	3	3.181818182	2	1	1	1	2	1	1	4.5
Drought	2	5	1	4	7.05882353	1	2	1	1	2.272727273	1	1	1	1	1	1	1	3.5
Earthquake	2	2	4	4	7.05882353	3	3	4	3	5.909090909	3	3	3	3	3	3	1	9.5
Epidemic	2	5	1	4	7.05882353	3	3	1	1	3.636363636	2	2	2	1	2	1	1	5.5
Exotic Pests and Disease	2	5	1	4	7.05882353	1	3	1	4	4.090909091	2	1	1	1	2	1	1	4.5
Flood	3	3	1	2	5.29411765	1	2	3	1	3.181818182	1	1	1	2	2	2	1	5
Harmful Algal Blooms	3	5	1	3	7.05882353	1	3	1	3	3.636363636	1	1	1	1	2	1	1	4
Hurricane	4	4	1	4	7.64705882	3	2	4	4	5.909090909	3	3	3	3	3	3	1	9.5
Sea Level Rise	1	5	1	2	5.29411765	1	3	1	1	2.727272727	1	1	1	1	1	1	1	3.5
Severe Thunderstorms	4	1	4	2	6.47058824	1	1	1	1	1.818181818	1	1	1	1	1	1	1	3.5
Sink Holes	2	5	4	1	7.05882353	1	2	2	1	2.727272727	1	1	1	1	1	1	1	3.5
Space Weather	1	1	4	4	5.88235294	1	2	1	1	2.272727273	1	1	1	1	1	1	1	3.5
Tornado	4	2	4	2	7.05882353	3	2	4	4	5.909090909	2	2	2	3	2	3	1	7.5
Tsunami	2	2	4	4	7.05882353	3	3	4	4	6.363636364	3	3	3	3	3	3	1	9.5
Wildfire	2	3	4	2	6.47058824	1	1	2	1	2.272727273	1	1	2	1	1	2	1	4.5
Winter Storm	1	3	2	4	5.88235294	1	2	2	1	2.727272727	1	1	1	1	1	1	1	3.5
Airplane Crash	3	2	4	2	6.47058824	4	1	2	1	3.636363636	3	2	1	1	2	1	1	5.5
Critical Infrastructure Disruption	3	3	4	2	7.05882353	1	2	1	1	2.272727273	1	1	1	1	1	1	1	3.5
Dam/Levee failure	3	3	4	2	7.05882353	1	2	2	1	2.727272727	2	2	1	1	1	1	1	4.5
Hazardous Materials Release	4	1	4	1	5.88235294	1	1	1	1	1.818181818	1	1	1	1	1	1	1	3.5
Power Failure	4	3	4	2	7.64705882	1	1	1	1	1.818181818	1	1	1	1	2	1	1	4
Radiological Release	2	3	4	2	6.47058824	1	2	1	1	2.272727273	1	3	1	1	2	1	1	5
Train Derailment	2	2	4	1	5.29411765	3	1	1	1	2.727272727	2	1	1	1	1	1	1	4
Major Transportation Incidents	3	2	4	1	5.88235294	2	1	1	1	2.272727273	1	1	1	1	1	1	1	3.5
Urban Conflagration	1	2	4	1	4.70588235	1	1	1	1	1.818181818	1	1	1	1	1	1	1	3.5
Civil Disturbance	3	1	4	1	5.29411765	1	1	1	1	1.818181818	1	1	1	1	1	1	1	3.5
Coastal Oil Spills	2	5	4	2	7.64705882	1	3	1	1	2.727272727	3	1	1	1	3	2	1	6
Cyber Incidents	3	1	4	2	5.88235294	1	2	1	1	2.272727273	1	1	1	1	1	1	1	3.5
Mass Migration	1	5	4	1	6.47058824	1	2	1	1	2.272727273	1	1	1	1	1	1	1	3.5
Sabotage	1	1	4	1	4.11764706	1	2	1	1	2.272727273	1	1	1	1	1	1	1	3.5
Mass Shooting	2	1	4	1	4.70588235	4	1	1	1	3.181818182	2	2	1	1	1	1	1	4.5
Special Events	3	1	1	1	3.52941176	1	1	1	1	1.818181818	1	1	1	1	1	1	1	3.5
Terrorist Acts	1	2	4	4	6.47058824	4	3	3	2	5.454545455	3	2	3	3	3	3	1	9

Name: _____ **Additional Hazards to be Included:** _____ **Date:** __/__/____

Organization: _____ _____

Hazard	Hazard Profiles					Vulnerability					Consequence Analysis							
	Frequency	Duration	Speed of Onset	Magnitude	Hazard Total Score	Impact on Humans	Impact on Business	Impact on Property	Impact on the Environment	Vulnerability Total Score	Public	First Responders	Continuity of Operations	Facilities/ Infrastructure	Economy	Environment	Public Confidence	Consequence Total Score
Natural Hazards																		
Animal Disease Outbreak	2	2	2	1	4.11764706	2	2	1	2	3.181818182	2	1	1	1	1	1	1	4
Drought	2	1	1	1	2.94117647	1	2	2	2	3.181818182	2	1	1	1	1	1	1	4
Earthquake	1	1	4	1	4.11764706	1	1	1	1	1.818181818	2	1	1	1	1	1	1	4
Epidemic	2	3	2	2	5.29411765	3	3	1	2	4.090909091	2	1	1	1	1	1	2	4.5
Exotic Pests and Disease	2	2	2	1	4.11764706	2	2	2	2	3.636363636	2	1	1	1	1	1	1	4
Flood	3	3	3	1	5.88235294	2	3	3	2	4.545454545	2	2	2	1	1	2	1	5.5
Harmful Algal Blooms	2	3	2	2	5.29411765	3	3	2	2	4.545454545	2	2	2	1	1	1	1	5
Hurricane	3	3	2	2	5.88235294	1	3	3	4	5	2	3	3	3	3	3	2	9.5
Sea Level Rise	2	2	2	1	4.11764706	3	1	1	2	3.181818182	3	1	2	1	1	1	1	5
Severe Thunderstorms	3	3	4	1	6.47058824	1	3	3	1	3.636363636	1	1	1	1	1	1	1	3.5
Sink Holes	2	1	3	1	4.11764706	1	1	2	1	2.272727273	1	2	2	1	1	1	1	4.5
Space Weather	2	1	1	4	4.70588235	1	1	1	1	1.818181818	2	1	1	1	1	1	1	4
Tornado	3	3	4	1	6.47058824	3	3	3	1	4.545454545	2	2	1	2	1	1	1	5
Tsunami	1	1	4	1	4.11764706	1	2	2	2	3.181818182	3	1	1	1	1	1	1	4.5
Wildfire	3	3	4	1	6.47058824	3	3	3	3	5.454545455	2	3	2	2	2	1	1	6.5
Winter Storm	1	1	2	1	2.94117647	1	1	1	2	2.272727273	1	1	1	1	1	1	1	3.5
Tecnological Hazards																		
Airplane Crash	1	2	4	1	4.70588235	2	1	2	2	3.181818182	2	1	2	1	2	1	1	5
Critical Infrastructure Disruption	1	1	4	3	5.29411765	1	2	1	2	2.727272727	2	1	2	1	1	2	1	5
Dam/Levee failure	2	2	3	1	4.70588235	2	2	2	2	3.636363636	1	1	2	2	2	1	1	5
Hazardous Materials Release	2	1	3	2	4.70588235	1	1	2	2	2.727272727	2	2	2	1	2	1	1	5.5
Power Failure	2	1	4	1	4.70588235	1	2	1	2	2.727272727	2	2	1	1	1	1	1	4.5
Radiological Release	1	1	4	2	4.70588235	1	1	1	2	2.272727273	2	2	1	1	1	1	2	5
Train Derailment	1	1	4	1	4.11764706	1	1	1	2	2.272727273	1	1	1	1	1	1	1	3.5
Major Transportation Incidents	3	2	4	1	5.88235294	2	1	1	2	2.727272727	1	1	2	1	1	1	1	4
Urban Conflagration	1	2	4	2	5.29411765	2	3	3	2	4.545454545	1	1	1	1	1	1	1	3.5
Human Caused Incidents																		
Civil Disturbance	2	2	4	2	5.88235294	2	1	1	2	2.727272727	1	1	1	1	1	1	2	4
Coastal Oil Spills	2	1	3	3	5.29411765	1	2	2	2	3.181818182	2	1	2	2	2	1	2	6
Cyber Incidents	3	1	4	3	6.47058824	1	1	1	2	2.272727273	1	1	2	1	1	1	2	4.5
Mass Migration	1	2	4	3	5.88235294	2	2	2	2	3.636363636	1	1	1	1	1	1	1	3.5
Sabotage	3	1	4	1	5.29411765	1	2	2	2	3.181818182	1	1	1	1	1	1	3	4.5
Mass Shooting	3	3	4	2	7.05882353	4	1	1	3	4.090909091	2	1	2	1	2	1	2	5.5
Special Events	3	3	1	1	4.70588235	3	2	2	3	4.545454545	2	2	2	1	2	2	1	6
Terrorist Acts	3	3	4	3	7.64705882	3	2	2	3	4.545454545	2	3	2	1	2	3	2	7.5

Name: Matthew Myers

Organization: MCEM

Additional Hazards to be Included:

Date: 8/26/2019

Hazard	Hazard Profiles					Vulnerability					Consequence Analysis							
	Frequency	Duration	Speed of Onset	Magnitude	Hazard Total Score	Impact on Humans	Impact on Business	Impact on Property	Impact on the Environment	Vulnerability Total Score	Public	First Responders	Continuity of Operations	Facilities/ Infrastructure	Economy	Environment	Public Confidence	Consequence Total Score
Natural Hazards																		
Animal Disease Outbreak	2	5	1	3	6.47058824	1	1	1	3	2.727272727	1	1	1	1	2	2	1	4.5
Drought	4	5	1	4	8.23529412	2	2	1	3	3.636363636	1	1	1	1	2	2	1	4.5
Earthquake	1	4	4	4	7.64705882	3	2	2	2	4.090909091	3	3	2	3	3	3	2	9.5
Epidemic	2	5	1	4	7.05882353	4	2	1	2	4.090909091	3	3	2	1	2	2	1	7
Exotic Pests and Disease	2	5	1	3	6.47058824	1	1	1	3	2.727272727	1	1	1	1	2	1	1	4
Flood	4	4	3	2	7.64705882	3	2	3	2	4.545454545	2	2	2	2	2	2	2	7
Harmful Algal Blooms	4	5	1	2	7.05882353	1	3	1	3	3.636363636	2	2	1	1	2	2	2	6
Hurricane	4	5	1	4	8.23529412	4	4	4	3	6.818181818	3	3	3	3	3	3	2	10
Sea Level Rise	3	5	1	2	6.47058824	2	4	2	4	5.454545455	2	2	2	2	2	2	2	7
Severe Thunderstorms	4	3	3	4	8.23529412	3	2	2	2	4.090909091	1	1	2	2	2	2	1	5.5
Sink Holes	2	3	4	1	5.88235294	3	1	3	2	4.090909091	1	1	2	2	1	1	1	4.5
Space Weather	1	3	4	1	5.29411765	3	1	2	2	3.636363636	1	1	1	2	1	1	1	4
Tornado	3	3	4	2	7.05882353	4	3	4	3	6.363636364	2	2	3	3	2	2	2	8
Tsunami	1	4	3	2	5.88235294	4	1	4	2	5	2	2	2	3	2	2	2	7.5
Wildfire	4	5	4	2	8.82352941	2	2	2	4	4.545454545	2	2	2	2	2	2	2	7
Winter Storm	1	3	2	2	4.70588235	2	2	2	2	3.636363636	1	1	1	1	1	1	1	3.5
Technological Hazards																		
Airplane Crash	2	2	4	1	5.29411765	4	1	1	2	3.636363636	2	2	1	2	2	1	1	5.5
Critical Infrastructure Disruption	2	3	4	3	7.05882353	2	2	1	2	3.181818182	2	2	2	2	2	2	2	7
Dam/Levee failure	1	4	3	2	5.88235294	3	3	2	3	5	2	2	3	3	2	2	2	8
Hazardous Materials Release	3	3	4	1	6.47058824	2	2	1	3	3.636363636	1	1	2	1	1	1	1	4
Power Failure	3	3	4	2	7.05882353	2	2	1	2	3.181818182	1	1	2	1	1	2	1	4.5
Radiological Release	2	4	4	2	7.05882353	2	2	1	3	3.636363636	1	1	1	1	1	1	1	3.5
Train Derailment	3	3	4	1	6.47058824	4	1	1	2	3.636363636	2	2	1	2	1	1	1	5
Major Transportation Incidents	3	3	4	2	7.05882353	4	2	1	2	4.090909091	2	2	3	2	2	2	2	7.5
Urban Conflagration	2	4	4	2	7.05882353	3	2	3	2	4.545454545	1	2	3	3	2	2	2	7.5
Human Caused Incidents																		
Civil Disturbance	2	2	4	2	5.88235294	3	2	1	1	3.181818182	1	2	2	2	1	1	3	6
Coastal Oil Spills	2	5	4	2	7.64705882	1	3	1	3	3.636363636	3	3	1	1	2	2	2	7
Cyber Incidents	3	3	4	2	7.05882353	1	2	1	1	2.272727273	1	1	1	1	1	1	1	3.5
Mass Migration	2	4	2	3	6.47058824	1	1	1	2	2.272727273	2	2	2	1	2	2	2	6.5
Sabotage	2	3	4	1	5.88235294	3	2	2	2	4.090909091	2	2	2	2	2	1	1	6
Mass Shooting	3	4	4	2	7.64705882	4	2	1	1	3.636363636	2	2	3	2	2	1	2	7
Special Events	3	3	1	1	4.70588235	1	1	1	2	2.272727273	1	1	1	2	1	1	1	4
Terrorist Acts	2	5	4	2	7.64705882	4	3	2	2	5	3	3	3	3	2	2	2	9

Name: Thomas Bloski

Organization: Southern Manatee Fire Rescue

Additional Hazards to be Included: None

Date: 8/26/2019

Hazard	Hazard Profiles					Vulnerability					Consequence Analysis							
	Frequency	Duration	Speed of Onset	Magnitude	Hazard Total Score	Impact on Humans	Impact on Business	Impact on Property	Impact on the Environment	Vulnerability Total Score	Public	First Responders	Continuity of Operations	Facilities/ Infrastructure	Economy	Environment	Public Confidence	Consequence Total Score
Natural Hazards																		
Animal Disease Outbreak	1	1	2	2	3.52941176	1	1	1	1	1.818181818	1	1	1	1	3	2	3	6
Drought	2	1	1	3	4.11764706	1	1	1	1	1.818181818	1	1	1	1	1	2	1	4
Earthquake	1	1	4	4	5.88235294	2	2	2	2	3.636363636	2	2	3	3	3	1	1	7.5
Epidemic	1	5	3	3	7.05882353	3	1	1	1	2.727272727	1	1	1	1	3	3	3	6.5
Exotic Pests and Disease	1	1	1	1	2.35294118	1	1	1	1	1.818181818	1	1	1	1	3	1	1	4.5
Flood	4	3	1	3	6.47058824	3	3	2	3	5	3	2	3	2	1	1	3	7.5
Harmful Algal Blooms	2	5	1	2	5.88235294	2	3	1	2	3.636363636	2	1	1	1	3	1	3	6
Hurricane	4	5	1	4	8.23529412	4	4	4	4	7.272727273	3	3	3	3	3	3	2	10
Sea Level Rise	1	1	1	1	2.35294118	2	1	2	1	2.727272727	1	1	1	1	1	1	3	4.5
Severe Thunderstorms	3	2	4	3	7.05882353	2	2	3	2	4.090909091	2	3	2	2	1	1	1	6
Sink Holes	1	1	1	1	2.35294118	1	1	2	1	2.272727273	1	1	1	1	1	1	1	3.5
Space Weather	1	1	1	1	2.35294118	1	1	1	1	1.818181818	1	1	1	1	1	3	3	5.5
Tornado	3	3	4	3	7.64705882	3	3	3	3	5.454545455	3	3	3	3	3	2	1	9
Tsunami	1	1	3	1	3.52941176	2	1	2	2	3.181818182	2	1	1	1	1	3	3	6
Wildfire	1	2	3	2	4.70588235	2	3	2	1	3.636363636	2	3	2	2	2	2	1	7
Winter Storm	1	1	1	1	2.35294118	1	1	1	1	1.818181818	1	1	1	1	1	1	1	3.5
Technological Hazards																		
Airplane Crash	3	4	4	1	7.05882353	3	2	2	1	3.636363636	2	3	1	2	3	2	2	7.5
Critical Infrastructure Disruption	4	4	4	2	8.23529412	2	2	2	2	3.636363636	1	1	2	1	3	2	1	5.5
Dam/Levee failure	1	1	3	2	4.11764706	1	2	1	2	2.727272727	1	2	2	1	1	3	1	5.5
Hazardous Materials Release	4	4	4	3	8.82352941	4	3	4	4	6.818181818	3	3	3	2		3	3	8.5
Power Failure	2	2	4	2	5.88235294	1	2	2	2	3.181818182	2	1	1	1	1	1	2	4.5
Radiological Release	2	4	4	2	7.05882353	3	2	2	2	4.090909091	3	3	3	2	3	3	3	10
Train Derailment	3	4	4	3	8.23529412	4	3	3	2	5.454545455	2	3	3	2	2	3	2	8.5
Major Transportation Incidents	4	4	4	4	9.41176471	3	3	2	3	5	2	3	3	2	3	2	1	8
Urban Conflagration	2	1	3	2	4.70588235	2	2	2	1	3.181818182	2	3	2	1	1	1	1	5.5
Human Caused Incidents																		
Civil Disturbance	2	1	3	1	4.11764706	1	2	1	1	2.272727273	1	1	1	1	1	1	3	4.5
Coastal Oil Spills	4	5	3	2	8.23529412	3	2	2	4	5	1	1	2	1	3	3	3	7
Cyber Incidents	2	2	2	1	4.11764706	2	1	1	1	2.272727273	1	1	1	1	1	1	1	3.5
Mass Migration	1	1	1	1	2.35294118	1	1	1	1	1.818181818	1	1	1	1	1	1	2	4
Sabotage	2	1	4	1	4.70588235	2	2	1	2	3.181818182	2	3	3	2	2	1	3	8
Mass Shooting	2	5	4	1	7.05882353	4	4	1	1	4.545454545	3	3	3	2	3	1	3	9
Special Events	2	5	4	4	8.82352941	4	4	4	4	7.272727273	3	3	3	2	3	1	3	9
Terrorist Acts	3	4	4	3	8.23529412	3	3	4	4	6.363636364	3	3	3	2	2	1	3	8.5

Name: Michael Harnish

Organization: Manatee Healthcare System-MMH/LWRMC

Additional Hazards to be Included:

Date: __/__/____

Hazard	Hazard Profiles					Vulnerability					Consequence Analysis							
	Frequency	Duration	Speed of Onset	Magnitude	Hazard Total Score	Impact on Humans	Impact on Business	Impact on Property	Impact on the Environment	Vulnerability Total Score	Public	First Responders	Continuity of Operations	Facilities/ Infrastructure	Economy	Environment	Public Confidence	Consequence Total Score
Natural Hazards																		
Animal Disease Outbreak	1	1	1	1	2.35294118	1	1	1	1	1.818181818	1	1	1	1	1	1	1	3.5
Drought	1	1	1	1	2.35294118	1	1	1	1	1.818181818	1	1	1	1	1	1	1	3.5
Earthquake	1	1	4	1	4.11764706	1	2	1	1	2.272727273	2	2	2	2	1	1	2	6
Epidemic	1	3	2	1	4.11764706	2	1	1	1	2.272727273	1	1	1	1	1	1	1	3.5
Exotic Pests and Disease	1	1	1	1	2.35294118	1	1	1	1	1.818181818	1	1	1	1	1	1	1	3.5
Flood	2	3	2	3	5.88235294	2	2	1	2	3.181818182	2	2	2	2	2	2	1	6.5
Harmful Algal Blooms	1	1	1	1	2.35294118	1	1	1	2	2.272727273	2	1	1	1	1	1	1	4
Hurricane	1	3	1	4	5.29411765	3	2	3	3	5	3	3	3	2	2	2	1	8
Sea Level Rise	2	4	4	3	7.64705882	3	3	3	2	5	3	1	2	2	3	1	2	7
Severe Thunderstorms	3	2	3	2	5.88235294	2	1	1	3	3.181818182	1	1	1	1	1	1	2	4
Sink Holes	1	1	1	1	2.35294118	1	1	1	2	2.272727273	1	1	2	1	1	1	1	4
Space Weather	1	1	1	1	2.35294118	1	1	1	1	1.818181818	1	1	1	1	1	1	1	3.5
Tornado	1	3	3	2	5.29411765	3	2	2	3	4.545454545	2	2	1	2	1	1	1	5
Tsunami	1	4	3	3	6.47058824	3	3	2	2	4.545454545	3	2	2	1	2	3	2	7.5
Wildfire	1	1	1	1	2.35294118	1	1	1	2	2.272727273	2	2	2	1	1	1	1	5
Winter Storm	1	1	1	1	2.35294118	1	1	1	1	1.818181818	1	1	1	1	1	1	1	3.5
Technological Hazards																		
Airplane Crash	1	2	4	2	5.29411765	2	2	1	2	3.181818182	3	2	2	1	2	1	1	6
Critical Infrastructure Disruption	1	1	4	2	4.70588235	2	2	1	1	2.727272727	2	2	2	1	1	1	1	5
Dam/Levee failure	1	1	3	1	3.52941176	2	1	1	2	2.727272727	2	2	1	1	1	1	1	4.5
Hazardous Materials Release	1	1	4	1	4.11764706	1	1	1	2	2.272727273	1	2	1	1	1	1	1	4
Power Failure	2	1	4	2	5.29411765	1	1	1	1	1.818181818	1	2	1	1	1	1	1	4
Radiological Release	1	1	4	1	4.11764706	2	1	1	2	2.727272727	2	2	1	1	1	1	1	4.5
Train Derailment	1	2	4	1	4.70588235	2	1	1	2	2.727272727	3	2	1	1	2	1	1	5.5
Major Transportation Incidents	2	2	4	2	5.88235294	2	1	1	1	2.272727273	2	2	1	1	2	1	1	5
Urban Conflagration	1	1	2	1	2.94117647	1	1	1	1	1.818181818	1	2	1	1	1	1	1	4
Human Caused Incidents																		
Civil Disturbance	1	1	4	1	4.11764706	1	1	1	1	1.818181818	1	2	1	1	2	1	1	4.5
Coastal Oil Spills	1	3	2	1	4.11764706	3	1	1	4	4.090909091	3	3	2	1	3	1	2	7.5
Cyber Incidents	2	1	2	1	3.52941176	2	2	2	2	3.636363636	2	2	1	1	2	1	1	5
Mass Migration	1	1	2	1	2.94117647	2	1	1	1	2.272727273	2	2	2	1	2	1	1	5.5
Sabotage	1	1	2	1	2.94117647	2	2	2	1	3.181818182	3	2	2	1	2	1	1	6
Mass Shooting	1	2	4	1	4.70588235	3	1	1	1	2.727272727	2	2	2	1	1	1	2	5.5
Special Events	2	1	1	1	2.94117647	2	1	1	1	2.272727273	2	1	1	2	1	1	1	4.5
Terrorist Acts	1	1	4	1	4.11764706	3	1	2	3	4.090909091	1	2	1	1	2	1	2	5

Name: Nicole Knapp

Organization: Manatee County Emergency Management

Additional Hazards to be Included: Coastal/Riverine Erosion; Extreme Heat

Date: 8/27/2019

	Hazard Profiles					Vulnerability					Consequence Analysis							
Hazard	Frequency	Duration	Speed of Onset	Magnitude	Hazard Total Score	Impact on Humans	Impact on Business	Impact on Property	Impact on the Environment	Vulnerability Total Score	Public	First Responders	Continuity of Operations	Facilities/ Infrastructure	Economy	Environment	Public Confidence	Consequence Total Score
Natural Hazards																		
Animal Disease Outbreak	2	4	1	2	5.29411765	1	1	1	2	2.272727273	1	1	1	1	1	1	1	3.5
Drought	3	5	1	4	7.64705882	1	1	4	4	4.545454545	1	1	2	1	2	3	2	6
Earthquake	1	1	4	1	4.11764706	2	2	4	4	5.454545455	3	3	3	3	3	3	3	10.5
Epidemic	2	4	1	2	5.29411765	1	2	1	2	2.727272727	2	2	2	1	2	1	3	6.5
Exotic Pests and Disease	2	4	1	2	5.29411765	1	1	1	1	1.818181818	1	1	1	1	1	1	1	3.5
Flood	4	5	2	2	7.64705882	2	3	4	3	5.454545455	2	2	3	3	2	3	3	9
Harmful Algal Blooms	4	5	1	4	8.23529412	1	4	2	3	4.545454545	1	1	2	2	2	3	3	7
Hurricane	4	2	1	3	5.88235294	4	4	4	4	7.272727273	3	3	3	3	3	3	3	10.5
Sea Level Rise	4	5	1	3	7.64705882	1	4	4	3	5.454545455	1	1	2	3	2	3	3	7.5
Severe Thunderstorms	4	2	3	2	6.47058824	2	1	2	2	3.181818182	2	2	2	2	1	2	3	7
Sink Holes	2	1	4	1	4.70588235	1	4	4	2	5	3	3	2	3	1	3	3	9
Space Weather	1		1	1	1.76470588	1	1	1	1	1.818181818	3	3	1	1	1	1	1	5.5
Tornado	3	1	4	1	5.29411765	3	4	4	2	5.909090909	3	3	2	3	1	3	3	9
Tsunami	1	1	4	2	4.70588235	4	4	4	3	6.818181818	3	3	3	3	3	3	3	10.5
Wildfire	2	5	3	3	7.64705882	1	4	4	4	5.909090909	2	2	2	3	2	3	3	8.5
Winter Storm	1	1	1	1	2.35294118	1	1	1	2	2.272727273	1	1	1	2	1	1	1	4
Technological Hazards																		
Airplane Crash	2	3	4	1	5.88235294	4	2	4	1	5	1	1	2	1	1	1	2	4.5
Critical Infrastructure Disruption	2	4	4	3	7.64705882	2	2	1	1	2.727272727	1	1	2	2	3	2	3	7
Dam/Levee failure	2	5	3	3	7.64705882	1	4	2	2	4.090909091	2	2	2	3	3	2	3	8.5
Hazardous Materials Release	2	5	4	3	8.23529412	1	4	1	4	4.545454545	1	2	2	3	2	2	3	7.5
Power Failure	4	2	4	3	7.64705882	1	2	1	1	2.272727273	1	1	1	2	1	1	1	4
Radiological Release	2	2	4	2	5.88235294	1	1	1	3	2.727272727	1	2	1	1	1	1	2	4.5
Train Derailment	2	3	4	2	6.47058824	4	4	4	1	5.909090909	2	2	1	1	1	1	1	4.5
Major Transportation Incidents	2	2	4	2	5.88235294	3	1	1	1	2.727272727	2	2	1	1	1	1	3	5.5
Urban Conflagration	2	5	3	3	7.64705882	1	1	1	1	1.818181818	1	1	1	1	1	1	1	3.5
Human Caused Incidents																		
Civil Disturbance	1	5	4	3	7.64705882	1	1	1	1	1.818181818	1	1	1	1	1	1	2	4
Coastal Oil Spills	2	5	3	2	7.05882353	1	4	2	4	5	2	2	3	3	3	3	3	9.5
Cyber Incidents	2	4	4	1	6.47058824	1	2	1	1	2.272727273	1	1	1	1	1	1	2	4
Mass Migration	1	4	3	4	7.05882353	1	1	1	1	1.818181818	1	1	1	1	1	1	1	3.5
Sabotage	1	5	3	4	7.64705882	2	2	2	1	3.181818182	1	1	2	2	1	1	2	5
Mass Shooting	2	2	4	1	5.29411765	4	2	2	1	4.090909091	1	2	2	1	1	1	3	5.5
Special Events	4	2	1	2	5.29411765	1	2	2	1	2.727272727	1	1	2	1	1	1	2	4.5
Terrorist Acts	1	3	4	4	7.05882353	4	3	4	1	5.454545455	3	3	3	2	2	2	3	9

Name: Sean Dwyer

Organization: Manatee County Public Safety Division of EMS

Additional Hazards to be Included:

Date: 9/6/2019

Hazard	Hazard Profiles					Vulnerability					Consequence Analysis							
	Frequency	Duration	Speed of Onset	Magnitude	Hazard Total Score	Impact on Humans	Impact on Business	Impact on Property	Impact on the Environment	Vulnerability Total Score	Public	First Responders	Continuity of Operations	Facilities/ Infrastructure	Economy	Environment	Public Confidence	Consequence Total Score
Natural Hazards																		
Animal Disease Outbreak	1	5	2	3	6.47058824	2	1	1	3	3.181818182	2	1	1	1	1	1	1	4
Drought	2	5	1	2	5.88235294	2	1	3	2	3.636363636	2	1	1	1	1	1	1	4
Earthquake	1	1	4	1	4.11764706	1	1	1	1	1.818181818	1	1	1	3	2	1	1	5
Epidemic	3	4	1	3	6.47058824	2	3	1	1	3.181818182	2	2	3	1	3	2	2	7.5
Exotic Pests and Disease	2	3	1	2	4.70588235	2	1	1	1	2.272727273	2	1	3	1	1	2	1	5.5
Flood	4	5	1	3	7.64705882	2	3	4	3	5.454545455	3	3	3	3	3	3	3	10.5
Harmful Algal Blooms	4	5	1	2	7.05882353	1	3	2	3	4.090909091	3	1	2	1	2	2	3	7
Hurricane	4	5	1	4	8.23529412	3	4	4	4	6.818181818	3	3	3	3	3	3	3	10.5
Sea Level Rise	4	5	1	3	7.64705882	1	4	4	4	5.909090909	3	3	3	3	3	3	3	10.5
Severe Thunderstorms	4	5	1	4	8.23529412	1	2	2	2	3.181818182	1	1	1	1	1	1	2	4
Sink Holes	4	5	4	1	8.23529412	2	1	1	1	2.272727273	1	1	1	1	1	1	1	3.5
Space Weather	1	1	4	4	5.88235294	1	1	1	1	1.818181818	3	3	1	1	1	1	1	5.5
Tornado	3	3	1	1	4.70588235	4	1	1	1	3.181818182	1	1	1	1	2	1	1	4
Tsunami	2	3	1	4	5.88235294	3	3	3	2	5	3	3	3	1	3	2	3	9
Wildfire	3	2	4	1	5.88235294	1	1	2	1	2.272727273	2	2	1	1	1	1	1	4.5
Winter Storm	1	1	1	1	2.35294118	1	1	1	1	1.818181818	1	1	1	1	1	1	1	3.5
Technological Hazards																		
Airplane Crash	2	1	4	1	4.70588235	4	1	1	1	3.181818182	3	3	1	1	1	1	1	5.5
Critical Infrastructure Disruption	3	2	4	3	7.05882353	1	3	1	1	2.727272727	3	3	2	3	3	1	2	8.5
Dam/Levee failure	3	3	2	2	5.88235294	1	1	3	3	3.636363636	3	3	2	2	2	2	3	8.5
Hazardous Materials Release	2	2	4	2	5.88235294	2	1	2	1	2.727272727	2	2	1	1	1	3	2	6
Power Failure	3	3	4	4	8.23529412	2	3	2	1	3.636363636	2	2	1	3	2	3	2	7.5
Radiological Release	1	2	4	2	5.29411765	2	1	1	1	2.272727273	2	2	1	1	1	1	3	5.5
Train Derailment	1	1	4	1	4.11764706	2	1	1	1	2.272727273	2	1	1	1	1	1	1	4
Major Transportation Incidents	1	1	4	2	4.70588235	2	3	1	1	3.181818182	3	1	1	3	2	1	2	6.5
Urban Conflagration	2	1	4	1	4.70588235	2	1	1	2	2.727272727	2	1	1	1	1	1	1	4
Human Caused Incidents																		
Civil Disturbance	2	1	4	1	4.70588235	4	1	2	1	3.636363636	1	1	1	1	1	1	1	3.5
Coastal Oil Spills	2	3	4	4	7.64705882	4	3	3	4	6.363636364	3	2	2	3	3	3	3	9.5
Cyber Incidents	3	3	4	4	8.23529412	1	4	1	1	3.181818182	3	2	1	3	3	1	3	8
Mass Migration	2	2	1	1	3.52941176	1	2	1	1	2.272727273	3	1	1	1	2	1	3	6
Sabotage	2	2	4	1	5.29411765	1	3	1	1	2.727272727	3	1	1	1	3	1	2	6
Mass Shooting	3	1	4	1	5.29411765	4	2	1	1	3.636363636	3	1	1	1	2	1	2	5.5
Special Events	3	1	1	1	3.52941176	1	2	1	1	2.272727273	1	1	1	1	1	1	1	3.5
Terrorist Acts	3	1	4	2	5.88235294	4	1	2	1	3.636363636	1	3	1	1	3	2	3	7

Name: Tom Kitchen

Organization: Manatee County EM

Additional Hazards to be Included:

Date: 9/4/2019

Hazard	Hazard Profiles					Vulnerability					Consequence Analysis							
	Frequency	Duration	Speed of Onset	Magnitude	Hazard Total Score	Impact on Humans	Impact on Business	Impact on Property	Impact on the Environment	Vulnerability Total Score	Public	First Responders	Continuity of Operations	Facilities/ Infrastructure	Economy	Environment	Public Confidence	Consequence Total Score
Natural Hazards																		
Animal Disease Outbreak	2	4	1	3	5.88235294	1	2	1	3	3.181818182	2	1	1	1	1	1	1	4
Drought	3	5	1	4	7.64705882	1	2	4	3	4.545454545	1	1	1	1	1	2	1	4
Earthquake	1	1	4	4	5.88235294	4	2	3	3	5.454545455	2	2	2	1	2	2	1	6
Epidemic	2	5	1	4	7.05882353	4	2	1	2	4.090909091	2	2	2	1	2	1	2	6
Exotic Pests and Disease	3	5	1	4	7.64705882	2	1	3	3	4.090909091	1	1	1	1	1	1	1	3.5
Flood	4	3	3	3	7.64705882	4	2	3	3	5.454545455	1	2	2	2	2	2	2	6.5
Harmful Algal Blooms	3	4	1	3	6.47058824	1	1	2	3	3.181818182	1	1	1	1	1	1	2	4
Hurricane	3	3	1	4	6.47058824	4	3	4	4	6.818181818	3	2	3	2	3	3	3	9.5
Sea Level Rise	3	5	1	4	7.64705882	1	1	3	3	3.636363636	1	1	2	2	2	2	2	6
Severe Thunderstorms	4	1	2	3	5.88235294	2	1	2	1	2.727272727	1	1	1	1	1	1	1	3.5
Sink Holes	4	4	4	2	8.23529412	2	1	1	2	2.727272727	1	1	1	1	1	1	1	3.5
Space Weather	2	2	1	3	4.70588235	1	1	1	1	1.818181818	1	1	1	1	1	1	1	3.5
Tornado	4	2	4	2	7.05882353	4	3	2	3	5.454545455	2	2	2	2	2	2	2	7
Tsunami	2	3	4	3	7.05882353	4	3	2	3	5.454545455	2	2	2	2	2	2	2	7
Wildfire	3	3	4	3	7.64705882	3	3	3	3	5.454545455	2	2	2	2	2	2	2	7
Winter Storm	2	2	3	3	5.88235294	1	1	1	1	1.818181818	1	1	1	1	1	1	1	3.5
Technological Hazards																		
Airplane Crash	3	2	4	2	6.47058824	4	1	1	2	3.636363636	2	2	1	1	1	1	1	4.5
Critical Infrastructure Disruption	3	3	4	4	8.23529412	1	2	1	2	2.727272727	2	2	2	1	1	1	2	5.5
Dam/Levee failure	2	4	4	4	8.23529412	2	1	2	3	3.636363636	1	1	2	1	2	2	2	5.5
Hazardous Materials Release	3	2	4	3	7.05882353	4	2	2	3	5	2	2	2	1	2	1	2	6
Power Failure	4	3	4	3	8.23529412	1	2	2	1	2.727272727	1	1	2	1	1	1	2	4.5
Radiological Release	2	3	4	3	7.05882353	4	3	2	3	5.454545455	3	3	3	1	2	1	2	7.5
Train Derailment	2	2	4	2	5.88235294	4	2	1	3	4.545454545	2	2	2	1	2	1	2	6
Major Transportation Incidents	3	3	4	3	7.64705882	4	2	1	3	4.545454545	2	1	2	1	2	1	2	5.5
Urban Conflagration	3	2	4	2	6.47058824	4	3	2	3	5.454545455	1	1	2	2	1	1	1	4.5
Human Caused Incidents																		
Civil Disturbance	2	1	4	2	5.29411765	3	1	1	1	2.727272727	1	1	1	1	1	1	2	4
Coastal Oil Spills	2	4	4	3	7.64705882	2	2	2	4	4.545454545	3	2	2	1	3	2	2	7.5
Cyber Incidents	3	3	4	3	7.64705882	1	2	1	1	2.272727273	1	1	1	1	1	1	1	3.5
Mass Migration	2	4	1	3	5.88235294	1	1	1	2	2.272727273	1	2	2	1	2	1	1	5
Sabotage	2	1	4	2	5.29411765	1	1	1	1	1.818181818	1	1	1	1	1	1	1	3.5
Mass Shooting	2	1	4	1	4.70588235	4	1	1	1	3.181818182	2	2	2	1	2	1	2	6
Special Events	3	1	4	1	5.29411765	3	1	1	1	2.727272727	1	2	1	1	1	1	1	4
Terrorist Acts	2	1	4	2	5.29411765	4	2	1	2	4.090909091	3	2	3	2	2	1	3	8

Name: Manatee County

Organization: Department of Health

Additional Hazards to be Included:

Date: 9/13/2019

Hazard	Hazard Profiles: Frequency	Duration	Speed of Onset	Magnitude	Hazard Total Score	Vulnerability: Impact on Humans	Impact on Business	Impact on Property	Impact on the Environment	Vulnerability Total Score	Consequence Analysis: Public	First Responders	Continuity of Operations	Facilities/ Infrastructure	Economy	Environment	Public Confidence	Consequence Total Score
Natural Hazards																		
Animal Disease Outbreak	3	5	2	2	7.05882353	2	1	1	1	2.272727273								0
Drought	2	5	1	1	5.29411765	1	1	1	1	1.818181818								0
Earthquake	1	1	4	1	4.11764706	2	3	3	3	5								0
Epidemic	3	5	1	4	7.64705882	3	3	1	2	4.090909091								0
Exotic Pests and Disease	2	5	4	2	7.64705882	2	2	1	1	2.727272727								0
Flood	3	3	3	1	5.88235294	2	2	3	2	4.090909091								0
Harmful Algal Blooms	4	5	2	2	7.64705882	2	2	1	2	3.181818182								0
Hurricane	3	3	2	1	5.29411765	4	2	3	3	5.454545455								0
Sea Level Rise	2	1	1	2	3.52941176	1	1	1	2	2.272727273								0
Severe Thunderstorms	4	4	2	2	7.05882353	1	1	1	2	2.272727273								0
Sink Holes	2	2	4	1	5.29411765	2	1	3	2	3.636363636								0
Space Weather	2	3	2	1	4.70588235	2	1	1	2	2.727272727								0
Tornado	3	1	4	1	5.29411765	2	2	3	3	4.545454545								0
Tsunami	1	1	4	1	4.11764706	4	3	4	4	6.818181818								0
Wildfire	3	3	4	1	6.47058824	2	1	4	2	4.090909091								0
Winter Storm	2	3	3	2	5.88235294	2	1	1	1	2.272727273								0
Technological Hazards																		
Airplane Crash	3	3	4	1	6.47058824	4	1	3	1	4.090909091								0
Critical Infrastructure Disruption	2	3	4	1	5.88235294	3	1	3	2	4.090909091								0
Dam/Levee failure	1	1	3	1	3.52941176	3	1	4	3	5								0
Hazardous Materials Release	3	1	4	2	5.88235294	3	1	2	3	4.090909091								0
Power Failure	4	3	4	1	7.05882353	1	1	2	2	2.727272727								0
Radiological Release	3	1	4	1	5.29411765	3	1	2	3	4.090909091								0
Train Derailment	2	3	4	1	5.88235294	3	2	2	1	3.636363636								0
Major Transportation Incidents	3	3	4	1	6.47058824	3	2	3	2	4.545454545								0
Urban Conflagration	3	3	3	1	5.88235294	3	2	3	3	5								0
Human Caused Incidents																		
Civil Disturbance	3	3	4	1	6.47058824	2	1	1	2	2.727272727								0
Coastal Oil Spills	2	2	4	2	5.88235294	2	1	1	4	3.636363636								0
Cyber Incidents	4	2	3	3	7.05882353	1	2	1	1	2.272727273								0
Mass Migration	4	4	2	2	7.05882353	1	1	1	1	1.818181818								0
Sabotage	2	3	4	1	5.88235294	2	1	2	1	2.727272727								0
Mass Shooting	2	3	4	1	5.88235294	4	2	1	1	3.636363636								0
Special Events	2	3	4	1	5.88235294	2	2	1	1	2.727272727								0
Terrorist Acts	2	3	3	1	5.29411765	4	3	1	1	4.090909091								0

Name: Tristan Morath

Organization: Manatee County Emergency Management

Additional Hazards to be Included:

Date: 8/19/2019

Hazard	Hazard Profiles					Vulnerability					Consequence Analysis							
	Frequency	Duration	Speed of Onset	Magnitude	Hazard Total Score	Impact on Humans	Impact on Business	Impact on Property	Impact on the Environment	Vulnerability Total Score	Public	First Responders	Continuity of Operations	Facilities/ Infrastructure	Economy	Environment	Public Confidence	Consequence Total Score
Natural Hazards																		
Animal Disease Outbreak	1	5	1	4	6.47	4	2	1	3	4.55	2	2	1	1	3	3	3	7.50
Drought	2	5	1	4	7.06	1	2	1	3	3.18	2	1	1	1	2	3	1	5.50
Earthquake	1	3	4	4	7.06	4	3	4	2	5.91	3	2	3	3	3	2	2	9.00
Epidemic	1	5	1	4	6.47	4	3	1	3	5.00	3	3	3	1	3	1	3	8.50
Exotic Pests and Disease	2	3	1	3	5.29	1	1	1	3	2.73	2	2	1	1	2	3	3	7.00
Flood	4	3	2	3	7.06	4	3	3	4	6.36	3	2	2	2	2	2	2	7.50
Harmful Algal Blooms	4	5	1	3	7.65	1	4	1	4	4.55	3	2	1	1	3	3	3	8.00
Hurricane	4	4	1	4	7.65	4	4	4	4	7.27	3	3	2	3	3	2	3	9.50
Sea Level Rise	2	5	1	2	5.88	1	4	3	3	5.00	2	1	2	3	3	2	3	8.00
Severe Thunderstorms	4	2	3	3	7.06	4	2	3	2	5.00	1	2	1	1	1	1	1	4.00
Sink Holes	2	1	4	1	4.71	1	1	1	1	1.82	1	1	1	1	1	1	1	3.50
Space Weather	1	2	1	3	4.12	1	2	1	1	2.27	2	1	2	1	2	1	2	5.50
Tornado	3	2	4	2	6.47	4	3	2	2	5.00	3	3	2	3	3	2	2	9.00
Tsunami	1	1	4	3	5.29	4	4	3	3	6.36	3	3	3	3	3	2	2	9.50
Wildfire	2	3	3	2	5.88	3	2	2	4	5.00	2	3	1	2	1	3	2	7.00
Winter Storm	1	2	1	4	4.71	4	2	1	4	5.00	2	1	1	1	1	2	2	5.00
Technological Hazards																		
Airplane Crash	1	2	4	1	4.71	4	1	1	2	3.64	3	2	1	1	1	1	2	5.50
Critical Infrastructure Disruption	3	2	4	2	6.47	1	2	1	1	2.27	2	1	3	1	1	1	1	5.00
Dam/Levee failure	1	3	4	2	5.88	4	2	2	2	4.55	2	2	2	2	2	1	2	6.50
Hazardous Materials Release	4	2	4	1	6.47	4	1	1	3	4.09	1	3	1	1	1	2	2	5.50
Power Failure	3	3	4	3	7.65	1	2	1	1	2.27	2	1	3	1	2	1	1	5.50
Radiological Release	1	4	4	3	7.06	4	2	1	3	4.55	2	3	2	1	2	2	2	7.00
Train Derailment	2	3	4	1	5.88	4	2	1	2	4.09	2	3	1	1	2	1	1	5.50
Major Transportation Incidents	3	2	4	1	5.88	4	1	1	2	3.64	1	2	1	1	1	1	1	4.00
Urban Conflagration	1	3	4	1	5.29	4	3	1	2	4.55	1	3	1	2	1	1	1	5.00
Human Caused Incidents																		
Civil Disturbance	3	2	3	2	5.88	3	2	1	2	3.64	2	3	1	1	1	1	1	5.00
Coastal Oil Spills	2	5	4	2	7.65	1	4	1	4	4.55	3	2	1	1	3	3	3	8.00
Cyber Incidents	4	4	4	2	8.24	1	3	1	1	2.73	2	1	3	1	2	1	1	5.50
Mass Migration	1	3	1	2	4.12	1	1	1	1	1.82	2	1	1	1	1	1	1	4.00
Sabotage	2	2	4	2	5.88	1	2	1	1	2.27	2	1	1	1	1	1	1	4.00
Mass Shooting	2	2	4	2	5.88	4	1	1	1	3.18	2	3	1	1	1	1	1	5.00
Special Events	4	2	1	3	5.88	1	1	2	2	2.73	1	1	1	1	1	1	1	3.50
Terrorist Acts	1	3	4	3	6.47	4	3	1	2	4.55	3	3	1	2	2	1	1	6.50

MANATEE COUNTY SEEKS PUBLIC INVOLVEMENT WITH LOCAL MITIGATION STRATEGY PLAN 2019 UPDATE

MANATEE COUNTY, FL (October 25, 2019) –

The Local Mitigation Strategy (LMS) is a multi-jurisdictional plan to reduce or eliminate the risks associated with natural or man-made hazards within a County.

The LMS planning process is used to set short and long-term mitigation goals and objectives for the County, as well as the cities within. Hazards effecting the community are identified, vulnerabilities to the hazards are assessed and, through a collaborative effort, consensus is reached on how to minimize the effects of the hazards.

After the President declares a disaster, Hazard Mitigation Grant Program (HMGP) funds are made available for hazard mitigation projects. The LMS guides the allocation of those funds to various projects.

The LMS is currently under a 5-year update, which began in May 2019 and will continue through January 2020. As part of the 5-year update, we are seeking for public involvement in the form of online public comment.

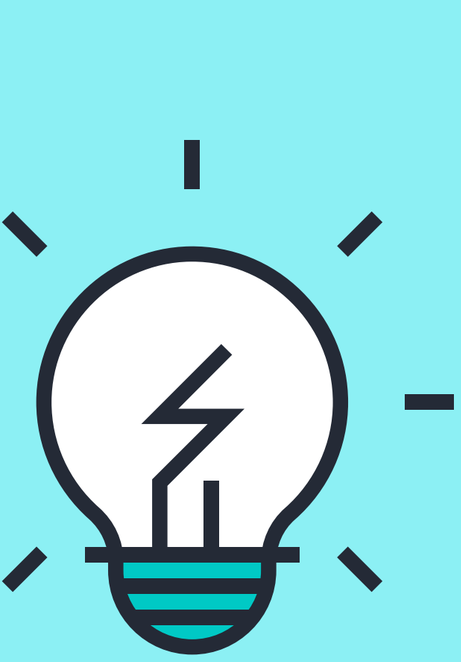
Manatee County will hold an online review and public comment period from October 24, through November 21, 2019.

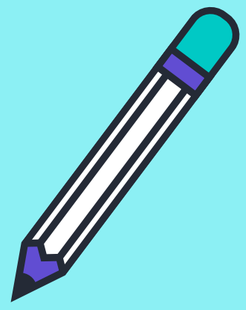
A draft copy of the LMS 2019 Update can be viewed at www.mymanatee.org/hazard. Public comment in the form of suggested revisions, deletions or corrections can be sent in writing via email to Nicole.knapp@mymanatee.org or:

Nicole Knapp, Emergency Management Planning Manager
Public Safety Department
P.O. Box 1000
Bradenton, FL 34206

Additional questions can be directed to Nicole Knapp at 941-749-3500 ext.7824

Public feedback helps to improve products and services.






We want to hear from you !

LOCAL MITIGATION STRATEGY 2019 UPDATE

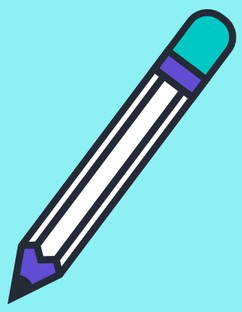
The Local Mitigation Strategy (LMS) is a multi-jurisdictional plan to reduce or eliminate the risks associated with man-made and natural hazards. To remain compliant with FEMA statutes, the LMS must be updated every 5-years. Without an approved LMS, Manatee County, and the cities within, will be unable to apply for many Federal grants to cover the expense of mitigation projects.

We are seeking public involvement with the 5-year update. Online public comment will be held

Oct. 24 - Nov. 21, 2019

WWW.MYMANATEE.ORG/HAZARD




LOCAL MITIGATION STRATEGY 2019 UPDATE



We want to hear from you!



We are seeking public involvement with the 5-year update of the LMS.

Online public comment will be held Oct. 24 - Nov. 21, 2019

WWW.MYMANATEE.ORG/HAZARD











COUNTY NEWS

ICYMI: In Case You Missed It
County Government News

Manatee County seeks public involvement with Local Mitigation Strategy Plan *Read more*



Manatee County, Palmetto officials invite public to help unveil 'Under the Rainbow' mural next week *Read more*



Manatee County Public Safety



Manatee County announces



Manatee County Public Safety announces new EMS Chief James Crutchfield *Read more*



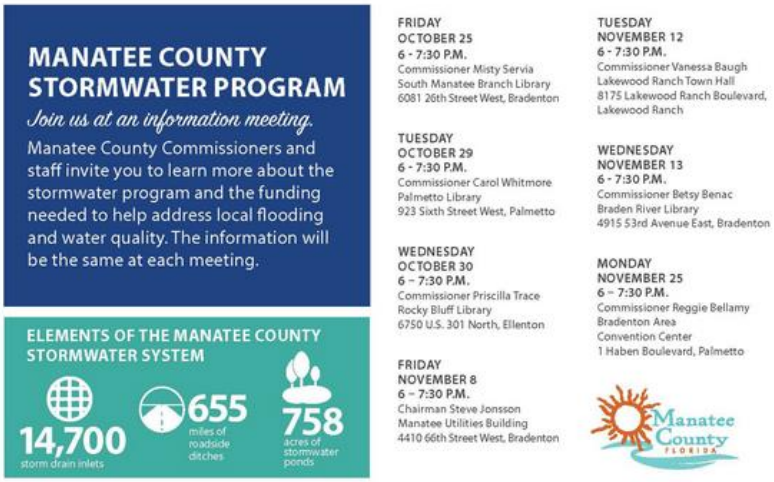
Manatee County announces stormwater informational meetings, website *Read more*

Read More



View the full County Calendar of events.

Go to Manatee County Government Meeting & Event Calendar





FRIDAY
NOVEMBER 8
6 – 7:30 P.M.
Chairman Steve Jonsson
Manatee Utilities Building
4410 66th Street West, Bradenton

1 Haben Boulevard, Palmetto

Manatee County FLORIDA

Can't attend a meeting?

More information about the stormwater program can be found on our website. Visit www.mymanatee.org/stormwater.

What can I expect to learn?

- Learn about the proposed fee options
- Get clarification on where funding will go
- Find out how the stormwater program works
- Ask questions and provide your input

INTERESTED IN LEARNING MORE?

Connect with us!

(941) 708-7497
stormwater@mymanatee.org
www.mymanatee.org/stormwater
www.facebook.com/manatee.county.fl
@manateegov
@manateegov





Manatee County Government
News Release

1112 Manatee Ave. W., Bradenton, FL 941.748.4501 www.mymanatee.org

Manatee County seeks public involvement with Local Mitigation Strategy Plan

MANATEE COUNTY, FL (Oct. 30, 2019) – Manatee County is seeking public comment on its updated Local Mitigation Strategy (LMS), a plan for how to proactively prepare for and handle disasters and emergencies in the community.

The LMS is a multi-jurisdictional plan to reduce or eliminate the risks associated with natural or manmade hazards within a county, including flooding, hurricanes, tornadoes, hazardous materials, dam failures, terrorism, power outages and other emergencies that could affect the community.

The LMS planning process is used to set short and long-term mitigation goals and objectives for the County, as well as its cities. Hazards affecting the community are identified, vulnerability to the hazards are assessed, and through a collaborative effort, consensus is reached on how to minimize the effects of the hazards.

After the President declares a disaster, Hazard Mitigation Grant Program (HMGP) funds are made available for hazard mitigation projects. The LMS guides the allocation of those funds to various projects.

The LMS is currently under a 5-year update, which began in May and will continue through January 2020. As part of the 5-year update, officials are looking for public involvement in the form of online public comment.

A draft copy of the LMS 2019 Update is available online now at www.mymanatee.org/hazard. The public can submit comments in the form of suggested revisions, deletions or corrections through Nov. 21.

Comments can be sent in writing via email at nicole.knapp@mymanatee.org or via mail to:

Nicole Knapp, Emergency Management Planning Manager
Public Safety Department
P.O. Box 1000
Bradenton, FL 34206

Additional questions can be directed to Nicole Knapp at (941) 749-3500 Ext. 7824.

For more information on Manatee County Government, visit www.mymanatee.org or call (941) 748-4501. You can also follow us on Facebook at www.facebook.com/manatee.county.fl and on Twitter @ManateeGov.

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Nicholas Azzara
Information Outreach Manager
Office: (941) 745-3771
Cell: (941) 224-9393
nicholas.azzara@mymanatee.org

Manatee County FLORIDA

https://www.mymanatee.org/departments/public_safety/emergency_management/hazard_mitigation

RT TRAC | National Oceanic and ... | N D P T C :: National D... | Emergency Managem... | Sign In - Cisco WebEx | CodeRED® | Emergen... | Local and National We... | Sarasota-Manatee Co... | Hurricane Data | Unisy... | Accela Automation® ... | Flickr | National Hurricane Ce... | Microsoft



EMERGENCY MANAGEMENT

- **Hazard Mitigation**
- Local Mitigation Strategy Feedback

HAZARD MITIGATION

LOCAL MITIGATION STRATEGY (LMS)

Manatee County is seeking public comment on its updated Local Mitigation Strategy (LMS), a plan for how to proactively prepare for and handle disasters and emergencies in the community.

VIEW LMS UPDATE DRAFT

WE WANT TO HEAR FROM YOU

We are seeking public involvement with the LMS 5-year update in the form of online public comment through Nov. 21.

Public comment, suggested revisions, deletions, or corrections can be submitted online via our feedback form, or sent to nicole.knapp@mymanatee.org or mailed to:

Emergency Management
P.O. Box 1000
Bradenton, FL 34206

SUBMIT FEEDBACK ONLINE

ABOUT THE LOCAL MITIGATION STRATEGY

The Local Mitigation Strategy (LMS) is a multi-jurisdictional plan to reduce the identified hazards within a County.

The LMS planning process, which is updated every five years, is used to set short and long-term mitigation goals and objectives for the County. Hazards affecting the community are identified, vulnerability to the hazards are assessed, and through a collaborative effort, consensus is reached on how to minimize the effects of the hazards.

In order to be eligible for Hazard Mitigation Grant Program (HMGP) project grants, the County and Cities must have a federally approved mitigation plan. The Manatee County Local Mitigation Strategy is federally compliant, and was originally adopted in 1999 with updates in 2004, 2009 and 2014.

The LMS is currently under a 5-year update, which began in May 2019 and will continue through January 2020. An opportunity for the public to view and comment on the first draft will take place October 24 through November 21, 2019, with additional opportunities for public involvement in January 2020. Additional information can be obtained by contacting Nicole Knapp or Matthew Myers at 941-749-3500.

The LMS includes an Initiatives List that is regularly updated with identified and prioritized projects both funded and

Manatee County seeks public involvement with Local Mitigation Strategy Plan

The LMS is a multi-jurisdictional plan to reduce or eliminate the risks associated with natural or manmade hazards within a County, including flooding, hurricanes, tornadoes, hazardous materials, dam failures, terrorism, power outages and other emergencies that could affect the community.

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A draft copy of the LMS 2019 Update is available online now at www.mymanatee.org/hazard. The public can submit comments in the form of suggested revisions, deletions or corrections through November 21.

Comments can be submitted through the online form or sent in writing via email at nicole.knapp@mymanatee.org or via mail to:

Nicole Knapp, Emergency Management Planning Manager
Public Safety Department
P.O. Box 1000
Bradenton, FL 34206

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Local Mitigation Strategy Feedback

Manatee County, FL

Submitted On:
November 13th, 2019 @ 4:53pm

Full Name	bill matturro
Email	wpmchm@gmail.com
Phone Number	850 661 8620
Feedback	Would it be appropriate to include a severe economic downturn, recession or depression leading to increased homelessness, food scarcity and civil unrest as part of the plan?
When it comes to mitigation in your community, what matters most to you? (Check all that apply)	Hurricane Flooding Sea Level Rise Drought Hazardous Materials Release Coastal Oil Spills
Check the three project types that you feel are most important.	Property Acquisition and Structure Demolition or Relocation Minor Localized Flood Reduction Projects (drainage projects) Hazard Mitigation Planning
What other things to do you feel Manatee County, and the communities within, should be doing to help make our community stronger?	limiting development and maintaining and planting trees for carbon absorbtion.

Local Mitigation Strategy Feedback

Manatee County, FL

Submitted On:
November 6th, 2019 @ 1:00pm

Full Name	Melanie Marken
Email	mmarkencla@yahoo.com
Phone Number	9413561003
Feedback	Manatee County needs to maximize its use of grants, federal and state funding to expand their programs and resources for localized flooding mitigation and monitoring by applicable county departments as well as community education.
When it comes to mitigation in your community, what matters most to you? (Check all that apply)	Hurricane Flooding Drought Dam/Levee Failure Hazardous Materials Release
Check the three project types that you feel are most important.	Minor Localized Flood Reduction Projects (drainage projects) Structural or non-structural retrofitting of existing buildings and facilities Wind Retrofit for residential properties Soil Stabilization Hazard Mitigation Planning
What other things to do you feel Manatee County, and the communities within, should be doing to help make our community stronger?	I am an elected official of manatee county (fire commissioner). When Irma came through in 2017, you don't know how many people asked me what the difference was between a flood zone and an evacuation zone. I realize time, personnel and funding are challenges; but I would like to see the county make a more concerted effort to inform the public of basic local emergency management terms, procedures, instructions, etc. throughout the year; not just when an impending storm is coming. I know that Public Safety made trips to large communities, churches, mobile home parks, etc, to speak on these topics last year. I think this is great. We need to continue to do that and increase our efforts to do that. I would be willing to assist in that regard. I also think it would be good to offer sand bags at a couple locations throughout hurricane/rainy season. I have notice that public works and public safety have done a better job in the last couple of fiscal years monitoring our creeks and reservoirs (as well as areas which have historically flooded, etc.) before a big rain is forecasted. We need to continue to do this. We need to up our mitigation efforts as far a localized flooding goes. Keeping drainways cut back, trimmed, monitored for height and flow, etc. so that we do not have another community flood event such as Centergate off Prospect that we had in August 2017. We need to keep on top of grants and federal funding to allow us to do this most economically.

Local Mitigation Strategy Feedback

Manatee County, FL

Submitted On:
November 10th, 2019 @ 11:47am

Full Name	Nancy Dean
Email	nancybobdean@juno.com
Phone Number	904-886-0877
Feedback	Much of what has been presented lacks sufficient clarity for me to comment. I do know that most retention ponds built to mitigate wetlands destruction are simply deep holes to provide or water reabsorption with no plan for the wildlife that depended upon the former natural wetlands. The simple act of building retention ponds with shallow shores would improve this form of mitigation quite a bit. I suggest that shallow shored retention ponds be required for all such future forms of mitigation AND that any mitigation permit in this area require restructuring of at least 2 former steep-sided retention ponds to shallow shored retention forms to include planting of native plants.
When it comes to mitigation in your community, what matters most to you? (Check all that apply)	Hurricane Flooding Sea Level Rise Drought Sinkholes Hazardous Materials Release Coastal Oil Spills
Check the three project types that you feel are most important.	Mitigation Reconstruction Infrastructure Retrofit Wildfire Mitigation Hazard Mitigation Planning
What other things to do you feel Manatee County, and the communities within, should be doing to help make our community stronger?	Honesty in governance would probably help the most.



www.mymanatee.org

Manatee County Government Administrative Center
Honorable Patricia M. Glass Commission Chambers
9:00 a.m. - December 10, 2019

REVISED - December 10, 2019 - Regular Meeting

BOARD OF COUNTY COMMISSIONERS
PORT AUTHORITY

AGENDA
and
NOTICE OF PUBLIC MEETING

MEETING CALLED TO ORDER (Stephen Jonsson, Chairman)

INVOCATION (The commission does not endorse the religious beliefs of any speaker.)

1. Invocation led by Rev. Sam Rainer, West Bradenton Baptist Church

PLEDGE OF ALLEGIANCE

ANNOUNCEMENTS

Items Scheduled for Time Certain

2. 10:15 A.M. - ITEM #85 - Infrastructure Sales Tax Oversight Committee Annual Report for FY19

3. 10:30 A.M. - ITEM #81 - Health Care Advisory Board: End of Year Summary Report

89. 11:45 A.M. - ITEM #80 - Resolution supporting ratification of the Equal Rights Amendment to the U.S. Constitution

Changes to Agenda

90. Updates to Agenda

Attachment: 20191210 Update Memo.pdf

REQUESTS BY COMMISSIONERS (Items to be pulled from Consent Agenda)

Attachment: Property Management Department Report and Recommendation.pdf
Attachment: BADS Director Suffiiciency Memorandum V-18-505.pdf
Attachment: Jurisdictional Reviews and Supplement V-18-505.pdf
Attachment: Response Email to CAO Matter No. 2019-0541 .pdf
Attachment: Location Map.pdf

G. REPORTS

Administrator

83. Letter from City of Palmetto (Lincoln Park Pool) * Clague

Attachment: Lincoln Park Pool Revised Option 1 Concept Plan and Alternatives A-E.pdf
Attachment: Lincoln Pool Letter 12.03.19.pdf

84. Letter from Town of Longboat Key

Attachment: Town of Longboat Key.pdf

Financial Management (10:15 A.M. TIME CERTAIN)

85. Infrastructure Sales Tax Oversight Committee Annual Report for FY19

Attachment: IST Annual Report 9.30.19.pdf
Attachment: Citizens Oversight Committee Presentation 12.10.19 FINAL.pdf

Public Safety

Item 86

(only first and last page of agenda shown for efficiency sake)

86. Local Mitigation Strategy Plan Five-Year Update

Attachment: _MC LMS 2019 Update 2nd DRAFT 11192019.pdf
Attachment: Dec 10 2019 Report.pdf

COMMISSIONER AGENDA

Election of Officers

87. Election of Officers for 2020

CITIZEN COMMENTS (Continuation of Consideration for Future Agenda Items, if Needed)

COMMISSIONER COMMENTS

ADJOURN

The Board of County Commissioners of Manatee County, Florida, does not discriminate upon the basis of any individual's disability status. This non-discrimination policy involves every aspect of the Board's functions including one's access to, participation in, employment with, or treatment in its programs or activities. Anyone requiring reasonable accommodation for this meeting as provided

for in the Americans with Disabilities Act (ADA), should contact Nick Azzara at 745-3771; FAX 745-3790.

The Board of County Commissioners of Manatee County and the Manatee County Port Authority may elect not to convene, if no business is scheduled; however, each reserves the right to take action on any matter during its meeting, including items not set forth within this agenda. The Chair of each governing body at his/her option may take business out of order if he/she determines that such a change in the schedule will expedite the business of the governing body.

All public comment on quasi-judicial agenda items is required to be under oath and must occur at a duly noticed public hearing. The Citizens' Comments portion of the agenda is not an advertised public hearing, and no comments on quasi-judicial agenda items are authorized during the Citizens' Comments portion of the agenda.

PUBLIC NOTICE: According to Florida Statutes, Section 286.0105, any person desiring to appeal any decision made by the Board of County Commissioners (or the other entities that are meeting) with respect to any matter considered at said public hearing/meeting will need a record of the proceedings, and for such purposes may need to ensure that a verbatim record of the proceedings is made, which includes the testimony and evidence upon which the appeal is to be based.

PUBLIC NOTICE

The Manatee County Local Mitigation Strategy Working Group will hold an Open House Public Workshop to discuss:

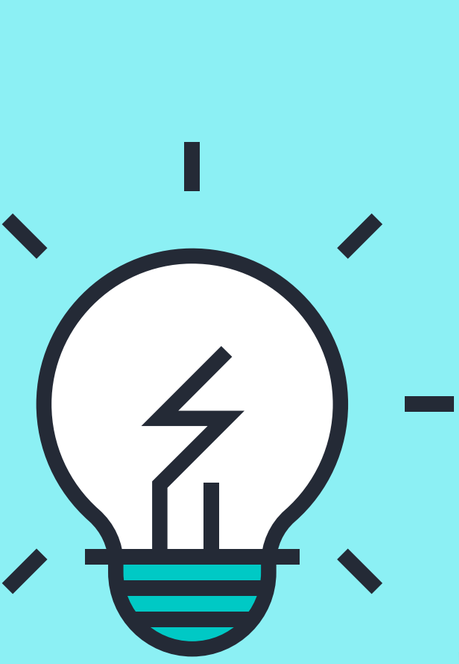
The 5-Year Update to the Local Mitigation Strategy Plan

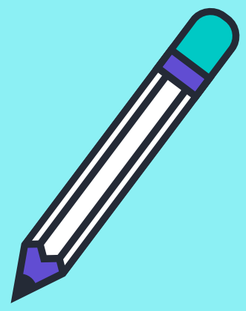
The LMS is a multi-jurisdictional hazard mitigation plan, which outlines a jurisdiction's commitment to reduce or eliminate the risks associated with natural or man-made hazards within a county.

Central Library
1301 Barcarrota Blvd. West, Bradenton
January 15, 2020 - 4:00 PM until 7:00 PM

A draft copy of the 2019 LMS Update can be viewed at:
www.mymanatee.org/hazard

Those not able to attend in person may contact Nicole Knapp, Public Safety Department, at 941-749-3500 x 7824 or send suggested revisions, deletions or corrections in writing via email to:
nicole.knapp@mymanatee.org






We want to hear from you !

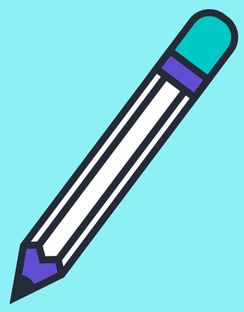
The Local Mitigation Strategy Working Group to hold an OPEN HOUSE PUBLIC WORKSHOP to discuss the 5-Year Update to the LMS Plan

January 15, 2020
4:00 p.m. to 7:00 p.m.
Central Library
1301 Barcattota Blvd., Bradenton

The LMS is a hazard mitigation plan, which outlines a jurisdiction's commitment to reduce or eliminate the risks associated with natural or man-made hazards within a county.

WWW.MYMANATEE.ORG/HAZARD




OPEN HOUSE
PUBLIC
WORKSHOP



We want to hear from you!

Manatee County's
5-year update to the LMS Plan

January 15, 2020
4:00 p.m. to 7:00 p.m.
Manatee County Central Library



WWW.MYMANATEE.ORG/HAZARD





MANATEE COUNTY SEEKS PUBLIC INVOLVEMENT WITH LOCAL MITIGATION STRATEGY PLAN 2019 UPDATE

MANATEE COUNTY, FL (December 27, 2019) –

The Local Mitigation Strategy (LMS) is a multi-jurisdictional hazard mitigation plan, which outlines a jurisdiction's commitment to reduce or eliminate the risks associated with natural or man-made hazards within a county.

The LMS planning process is used to set short and long-term mitigation goals and objectives for the County, as well as the cities within. Hazards effecting the community are identified, vulnerabilities to the hazards are assessed and, through a collaborative effort, consensus is reached on how to minimize the effects of the hazards.

After the President declares a disaster, Hazard Mitigation Grant Program (HMGP) funds are made available for hazard mitigation projects. The LMS guides the allocation of those funds to various projects.

The LMS is currently under a 5-year update, which began in May 2019 and will continue through January 2020. As part of the 5-year update, the LMS Working Group is seeking public involvement and feedback during an Open House Public Workshop.

Manatee County Local Mitigation Strategy Working Group will hold the
Open House Public Workshop on:
January 15, 2020
4:00 p.m. to 7:00 p.m.
Manatee County Central Library (Auditorium)
1301 Barcarrota Boulevard West, Bradenton

A draft copy of the LMS 2019 Update can be viewed ahead of time at
www.mymanatee.org/hazard.

Those not able to provide public comment in person may send suggested revisions, deletions or corrections via email to:
Nicole Knapp, Emergency Management Planning Manager
Nicole.knapp@mymanatee.org
Public Safety Department
P.O. Box 1000
Bradenton, FL 34206

Additional questions can be directed to Nicole Knapp at 941-749-3500 ext.7824

Public feedback helps to improve products and services.

Citizens Sign-in Sheet

Local Mitigation Strategy 5-yr Update Public Workshop

January 15, 2020 / 4-7 p.m.

*Please be sure to clearly print information below.

NAME	EMAIL	PHONE	SIGNATURE
William Swales	william.swales@manateesheriff ~~Manatee~~	747-3011	[signature]
Ernst S. Marshall	N/A	941-792-5039	Fed. manatee & Com assoc. E. S. Marshall
	Mail P.O. Box 320 (send mail outline) Brad, FL 34206		
Derrick Warner	1209 De Narzaez Bradenton 34209	847-366-0685	[signature]

LOCAL MITIGATION STRATEGY 2019 WORKGROUP
November 21, 2019 - Special Meeting

NAME	AGENCY	Title/Position	Pri/Alt	EMAIL	PHONE	SIGNATURE
Knapp, Nicole Chairperson	Manatee County Public Safety Depart/Emergency Management	Planning Manager	Prime	nicole.knapp@mymanatee.org	941-749-3500 ext. 7824	
Myers, Matthew Vice Chair	Manatee County Public Safety Depart/Emergency Management	EM Coordinator	Alt	matthew.myers@mymanatee.org	941-749-3500 ext. 1673	
Adent, Leslie	Southern Manatee Fire District	Fire Marshal	Prime	ladent@smfr.com	941-751-7675	
Bailey, Stacey S.	Parrish Fire District	Chief	Prime	admin@parrishfd.org	941-721-2093	
Behling, Terri	Manatee Chamber of Commerce	Community Dev VP	Prime	terrib@manateechamber.com	941-748-4842 ext. 1172	
Bjelke, David	USF - Sarasota EM	Assit Director, Facility Pln/Mgmt	Prime	dbjelke@sar.usf.edu	941-359-4227	
Boutote, Lisa	Lakewood Ranch Town Hall	Customer Service Coordinator	Alt	lisa.boutote@lwrtownhall.com	941-727-0899	
Brown, Rob	Manatee County Parks & Natural Resources	Enviro Protection Div Mgr	Prime	Rob.brown@mymanatee.org	941-742-5980 ext. 1870	
Brownman, Isaac	Town of Longboat Key	Public Works		ibrownman@longboatkey.org	941-316-1988	
Burnett, Lynn	LTA Engineers LLC (for the City of Holmes Beach)		Prime	cityengineer@holmesbeachfl.org	941-526-3375	
Burnett, Lynn	LTA Engineers LLC (for the Bradenton Beach)		Prime	lynn@ltaengineers.com	941-713-1175	
Cacchiotti, Daniel	Myakka City Fire District	Chief	Alt	dpcacchiotti@myakkafire.org	941-322-6525	
Calhoun, Willie	Manatee Housing Authority		Prime	Willie.calhoun@ManateeHousing.com	941-756-3974	
Camp, Mary	Manatee County Neighborhood Services	GIS Specialist	Prime	mary.camp@mymanatee.org		

NAME	AGENCY	Title/Position	Pri/Alt	EMAIL	PHONE	SIGNATURE
Campbell, Robert	Lakewood Ranch Inter District Authority	Landscape Supervisor	Prime	robert.campbell@lwrtownhall.com	941-727-0899 ext. 109	
Center, Eric	Cedar Hammock Fire Rescue	Fire Marshal	Prime	ecenter@chfr.org	941-727-2076	
Chabot, Wendy	City of Bradenton Beach		Alt	wchabot@cityofbradentonbeach.com	941-778-1005	
Colgate, William	Manatee Rural Health Services		Alt	wcolgate@mcr.health	941-776-4000	
Corsi, Susan	City of Holmes Beach	Public Works…		corsis@holmesbeachfl.org	941-708-5833	
Cosby, John	City of Bradenton Beach	Lt. - Emerg Mgmt	Alt	jcosby@cityofbradentonbeach.com	941-778-1005	
Cruz, Candice	Manatee County Financial Management	Senior Budget Analyst	Prime	Candice.cruz@mymanatee.org	941-745-3733 ext. 3733	
Curcio, Daniel	Florida Department of Emergency Management	Region 4 Liaison	Prime	Melissa.Schloss@em.myflorida.com	850-815-4504	
Curtis, Luke	City of Anna Maria	Building Official	Prime	ambo@cityofannamaria.com	941-708-6130 ext. 128	
Davies, Scott	Port Manatee		Prime	sdavies@Portmanatee.com	941-722-6621	
Davis, Jim	West Manatee Fire & Rescue	Fire Marshal	Prime	Jim.Davis@wmfr.org	941-761-1555	
Drakulich, Diane	Sarasota Manatee Airport Authority	Fire & Enviro Affairs	Alt	Diane.drakulich@srq-airport.com	941-359-2770	
Fiske, Jodie	Florida Division of Emergency Management	Regional EM Coordinator	Prime	jodie.fiske@em.myflorida.com	850-519-8635	
Ford, Angie	Manatee Tax Collector's Office	Tax Collector	Prime	AngieF@Taxcollector.com	941-741-4801	
Foxwell, Hunter	Manatee County Financial Management	Senior Budget Analyst	Alt	hunter.foxwell@mymanatee.org	941-741-4801 ext. 3761	
Galler, Eva	Manatee County Convention Visitor Bureau	CFO	Prime	eva.galler@mymanatee.org	941-729-9177 ext. 3948	
Gilbert, Steve	City of Bradenton Beach	Building Official	Prime	stevegilbert@cityofbradentonbeach.com	941-778-1005	
Graf, Dawn	Myakka City Fire District	Fire Marshal	Prime	dgraf@myakkafire.org	941-708-7476	

NAME	AGENCY	Title/Position	Pri/Alt	EMAIL	PHONE	SIGNATURE
Harper, Lea	Manatee County Property Management	GIS Analyst I		lea.harper@mymanatee.org	941-748-4501 ext. 3623	
Hartley, Catherine	City of Bradenton	Planning & Community Dev Director	Prime	catherine.hartley@cityofbradenton.com	941-932-9408	
Hayes, Keturah	Manatee Rural Health Services	Sr. Director Accreditation	Prime	khayes@mcr.health	941-776-4000	
Henley, Kimberly	Manatee Chamber of Commerce	Community Dev Manager	Alt	kimberlyh@manateechamber.com	941-748-4842 ext. 139	
Hoyle, Jeff	Cedar Hammock Fire Rescue	Chief	Alt	jeff@chfr.org	941-751-7090	
Hull, Sally	School District of Manatee County	Manager of Safety & Emerg Mgmt		hulls@manateeschools.net	941-708-8770	
Inotai, Marie	Manatee Tax Collector's Office	Tax Collector	Alt	MarieI@taxcollector.com	941-741-4870	
Keegan, Mike	Florida Forest Service		Prime	Michael.Keegan@FreshFromFlorida.com	941-213-6970	
Kumm, Shay	Sarasota Manatee Airport Authority	Fire & Enviro Affairs		Shay.Kumm@srq-airport.com	941-359-2770	
Lamiano, Eva	LTA Engineers LLC (for the City of Holmes Beach)			eva@ltaengineers.com	941-713-1175	
Linkogle, James	Town of Longboat Key	Public Works Project Manager		jlinkogle@longboatkey.org	941-316-1988	James K Linkogle
Litschauer, Steve	Manatee County Public Safety Depart/Emergency Management	Chief	Alt	Steve.Litschauer@mymanatee.org	941-749-3500 ext. 3507	
Lovett, Brenda	Manatee Housing Authority		Alt	Brenda.lovett@ManateeHousing.com	941-756-3974	
Mahoney, Patrick	Florida Forest Service		Alt	Patrick.Mahoney@FreshFromFlorida.com	941-213-6970	
McCarty, Nancy	Centerstone of Florida. Inc.			Nancy.mccarty@centerstoneflorida.org	941-782-4150	
McGuinness, Jim	City of Holmes Beach			jmcguinness@holmesbeachfl.org	941-708-5833	
McIntyre, Shannon	Manatee Clerk of the Circuit Court	Grant Accountant	Prime	Shannon.mcintyre@manateeclerk.com	941-749-1800	
McLellan, Jim	City of Bradenton	Public Works…	Alt	Jim.mclellan@cityofbradenton.com	941-708-6300 ext. 235	

Morath, Tristan Manatee EM EM Coord. AH.

NAME	AGENCY	Title/Position	Pri/Alt	EMAIL	PHONE	SIGNATURE
Miller, Andrell	North River Fire District	Fire Marshal	Alt	millera@nrfd.org	941-721-6700	
Mopps, Charles	Town of Longboat Key			cmopps@longboatkey.org	941-316-1988	
Moree, Judy	Manatee Clerk of the Circuit Court	Senior Grant Accountant	Alt	Judy.Moree@manateeclerk.com	941-749-1800	
Neasman, Trish	Southwest Florida Water Management District		Prime	Trisha.neasman@swfwmd.state.fl.us	800-423-1476 ext. 4407	
Onishenko, Alex	East Manatee Fire Rescue	Fire Marshal	Prime	aonishenko@emfr.org	941-751-5611	
O'Shea, Bill	Manatee County Redev & Economic Opp Depart	Community Development Proj Mngr	Alt	Bill.oshea@mymanatee.org	941-749-3029 ext. 6858	
Owens, Karla	City of Palmetto	Development Services Director	Alt	kowens@palmetto.fl.org	941-723-4580	
Pachas, Hjalmar	Manatee County Property Management			hjalmar.pachas@mymanatee.org	941-748-4501 ext. 3613	
Parsons, Allen	Town of Longboat Key			aparsons@longboatkey.org	941-316-1966	
Pendley, Mike	School District of Manatee County	Executive Planner	Prime	pendleym@manateeschools.net	941-708-8770	
Pilson, Amy	Manatee County Utilities Department	Public Affairs Liaison	Prime	Amy.Pilson@mymanatee.org	941-798-6745	
Porter, Tom	Manatee Sheriff's Office	Captain	Alt	thomas.porter@manateesheriff.com	941-747-3011 ext. 2909	
Prater, Myra	Manatee County Public Works Depart	Field Maintenance Division Manager	Prime	myra.prater@mymanatee.com	941-708-7494	
Rampino, Michael	North River Fire District	Chief	Prime	admin@nrfd.org	941-721-6700	
Rietz, Richard	Manatee Sheriff's Office	Lieutenant	Prime	richard.rietz@manateesheriff.com	941-747-3011 ext. 2323	
Ross, Anne	Lakewood Ranch Town Hall			anne.ross@lwrtownhall.com	941-727-0899 ext. 225	
Russo, Anthony	Manatee County Public Works Depart	Project Engineer	Alt	anthony.russo@mymanatee.org	941-708-7494	
Ryan, Jeffrey	Manatee County Redev & Economic Opp Depart	Redevelopment Coordinator	Prime	jeffrey.ryan@mymanatee.com	941-748-4501 ext. 6916	

NAME	AGENCY	Title/Position	Pri/Alt	EMAIL	PHONE	SIGNATURE
Sasada, Jeff	Sarasota Manatee Airport Authority	Fire & Enviro Affairs		jeff.sasada@srq-airport.com	941-359-2770	
Saur, Jake	Public Safety Department	Director		jacob.saur@mymanatee.org	941-749-3500	
Serra, Cara	Tampa Bay Regional Planning Council (TBRPC)	Comprehensive Resiliency Planner	Prime	cara@tbrpc.org	727-570-5151	
Shawver-Karnitz, Amanda	Manatee County Utilities Department	Water Quality Compliance Supervisor	Alt	Amanda.shawverkarnitz@mymanatee.org	941-792-8811 ext.5021	
Shnering, Brian	Manatee Sheriff's Office	Captain	Alt	Brian.Schnering@manateesheriff.com	941-737-0265	
Slusser, Cathy	Manatee Clerk of the Ciruit Court	Historical Library	Prime	Cathy.slusser@manateeclerk.com	941-749-1800	
Stuckey, Mark	Sarasota Manatee Airport Authority	Fire & Enviro Affairs		Mark.Stuckey@srq-airport.com	941-359-2770	
Tokajer, William	City of Holmes Beach	Chief	Prime	chief@holmesbeach.org	941-708-5800	
Tudor, Sandy	Manatee County Building and Development Services Department	Floodplain Manager	Prime	Sandy.Tudor@mymanatee.org	941-748-4501 ext. 3843	Sandy Tudor
Tusing, Allen	City of Palmetto	Public Works Director	Prime	Atusing@palmettofl.org	941-723-4580	
Wasserman, Eran	LTA Engineers LLC (for the City Holmes Beach)		Alt	eran@ltaengineers.com	201-674-2621	
Weis, Duane	Florida Division of Forestry		Prime	Duane.Weis@FreshFromFlorida.com	941-213-6970	

A G E N D A
Manatee County Local Mitigation Strategy

Wednesday, March 11, 2015
2:00PM – 4:00PM
Manatee County – Heron Room, 5th Floor
1112 – Manatee Avenue West ~ Bradenton FL

Chairperson: Sandy Tudor, CFM

I. Introductions

II. Review Changes to LMS
- Discuss Checklist, Section V Hazard Analysis and Initiatives. Corrections still needed

III. Next LMS Meeting
- **To be determined**

IV. Comments/Discussions

V. Adjournment

***Special Note:** Please be sure to introduce yourself prior to speaking, for meeting minutes.

Manatee County Building Development Services

Hazard Mitigation

March 11, 2015

Local Mitigation Strategy

Attendance Sheet

Chairperson; Sandy Tudor, CFM, Floodplain Management Coordinator

Name	Organization	Signature	E-Mail Address
Bob Welch	City of Anna Maria		AMBOB@CITYOFANNAMARIA.COM
Steve Gilbert	City of Bradenton Beach		stevegilbert@cityofbradentonbeach.com
Neal Mazzei	City of Palmetto		nmazzei@palmetto fl.org
Diane Percycoe	City of Anna Maria	Diane Percycoe	amclerk@cityofannamaria.com
ANTHONY WARREN	CITY OF BRADENTON		anthony.warren@cityofbradenton.com

LMS MEETING MINUTES

March 11, 2015

Heron Room, 5th Floor, Manatee County Administration Building

Members Present:
Sandy Tudor, Chairman, Manatee County Building & Development Services
Bob Welch, City of Anna Maria
Steve Gilbert, City of Bradenton Beach
Neal Mazzei, City of Palmetto
Diane Percycoe, City of Anna Maria
Anthony Warren, City of Bradenton

The meeting was called to order by Sandy Tudor, CFM, Floodplain Management Coordinator for Manatee County Building & Development Services at 2:05 p.m.

Changes were reviewed for Section V Hazard Analysis done after last meeting and receipt of Section Crosswalk review. Copies had been e-mailed.

Suggestions made to move Severe Wind. Probabilities for hazards discussed. Language suggested for description of types of non-cyclical winds could be located on National Weather Service.

Asked that they review this again and e-mail back changes for me to incorporate. Any additional changes I make I will e-mail to them for their review.

Again, reiterated getting this information back as soon as possible so that it may be transmitted as soon as possible.

No additional discussion.

Meeting adjourned at 2:55 p.m.

AGENDA
Manatee County Local Mitigation Strategy

Wednesday, December 7, 2016
2:00PM – 4:00PM
Manatee County – Manatee Room 4th Floor
1112 – Manatee Avenue West ~ Bradenton FL

Chairperson: Sandy Tudor, CFM

I. **Introductions**

II. **Rank New Projects**
- Multiple – 15 total

III. **Next LMS Meeting**
- **To be determined**

IV. **Comments/Discussions**

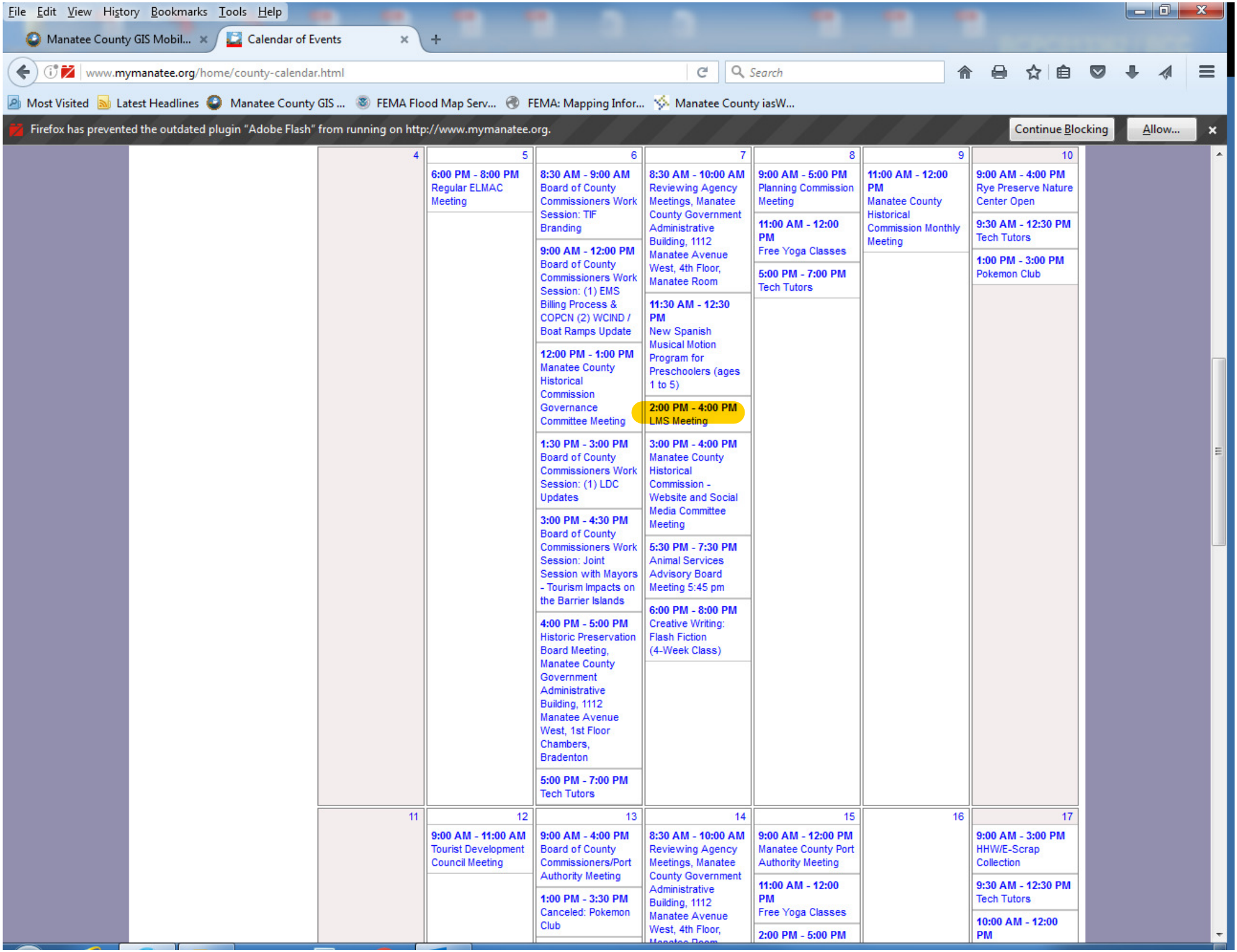
V. **Adjournment**

***Special Note:** Please be sure to introduce yourself prior to speaking, for meeting minutes.

Manatee County Building & Development Services
Hazard Mitigation
December 7, 2016
Local Mitigation Strategy
Attendance Sheet

Chairperson: Sandy Tudor, CFM, Floodplain Management Coordinator

Name	Organization	Signature	E-Mail Address
CANDIE SCHWARTZ	MCUD		Candie.Schwartz@mymanatee.org
ROBERT TOLLISE	NRFD		TOLLISER@NRFD.ORG
John Cosby	COBB		jcosby@cityofbradentonbeach.com
JIM MCLELLAN	COB		jim.mclellan@cityofbradenton.com
Steve Gilbert	COBB		stevegilbert@cityofbradentonbeach.com
Rob Brown	PNRD		rdb.brown@mymanatee.org



4	5 6:00 PM - 8:00 PM Regular ELMAC Meeting	6 8:30 AM - 9:00 AM Board of County Commissioners Work Session: TIF Branding 9:00 AM - 12:00 PM Board of County Commissioners Work Session: (1) EMS Billing Process & COPCN (2) WCIND / Boat Ramps Update 12:00 PM - 1:00 PM Manatee County Historical Commission Governance Committee Meeting 1:30 PM - 3:00 PM Board of County Commissioners Work Session: (1) LDC Updates 3:00 PM - 4:30 PM Board of County Commissioners Work Session: Joint Session with Mayors - Tourism Impacts on the Barrier Islands 4:00 PM - 5:00 PM Historic Preservation Board Meeting, Manatee County Government Administrative Building, 1112 Manatee Avenue West, 1st Floor Chambers, Bradenton 5:00 PM - 7:00 PM Tech Tutors	7 8:30 AM - 10:00 AM Reviewing Agency Meetings, Manatee County Government Administrative Building, 1112 Manatee Avenue West, 4th Floor, Manatee Room 11:30 AM - 12:30 PM New Spanish Musical Motion Program for Preschoolers (ages 1 to 5) 2:00 PM - 4:00 PM LMS Meeting 3:00 PM - 4:00 PM Manatee County Historical Commission - Website and Social Media Committee Meeting 5:30 PM - 7:30 PM Animal Services Advisory Board Meeting 5:45 pm 6:00 PM - 8:00 PM Creative Writing: Flash Fiction (4-Week Class)	8 9:00 AM - 5:00 PM Planning Commission Meeting 11:00 AM - 12:00 PM Free Yoga Classes 5:00 PM - 7:00 PM Tech Tutors	9 11:00 AM - 12:00 PM Manatee County Historical Commission Monthly Meeting	10 9:00 AM - 4:00 PM Rye Preserve Nature Center Open 9:30 AM - 12:30 PM Tech Tutors 1:00 PM - 3:00 PM Pokemon Club
11	12 9:00 AM - 11:00 AM Tourist Development Council Meeting	13 9:00 AM - 4:00 PM Board of County Commissioners/Port Authority Meeting 1:00 PM - 3:30 PM Canceled: Pokemon Club	14 8:30 AM - 10:00 AM Reviewing Agency Meetings, Manatee County Government Administrative Building, 1112 Manatee Avenue West, 4th Floor,	15 9:00 AM - 12:00 PM Manatee County Port Authority Meeting 11:00 AM - 12:00 PM Free Yoga Classes 2:00 PM - 5:00 PM	16	17 9:00 AM - 3:00 PM HHW/E-Scrap Collection 9:30 AM - 12:30 PM Tech Tutors 10:00 AM - 12:00 PM

Friday, Dec 02, 2016 07:52 AM

A G E N D A
Manatee County Local Mitigation Strategy

Tuesday, July 11, 2017
2:00PM – 4:00PM
Manatee County – Osprey Room, 4th Floor
1112 – Manatee Avenue West ~ Bradenton FL

Chairperson: Sandy Tudor, CFM

I. **Introductions**

II. **Pre-Disaster Mitigation (PDM) and Flood Mitigation Assistance (FMA)**
- Update

III. **Sea Level Rise**
- Discuss SB 1094, effective July 1, 2015
- Inclusion of sea level rise in LMS

Included in local Growth Mgt Plan

NOAA has maps (Digital)

IV. **Next LMS Meeting**
- **To be determined**

V. **Comments/Discussions** LWR Pepper Trees

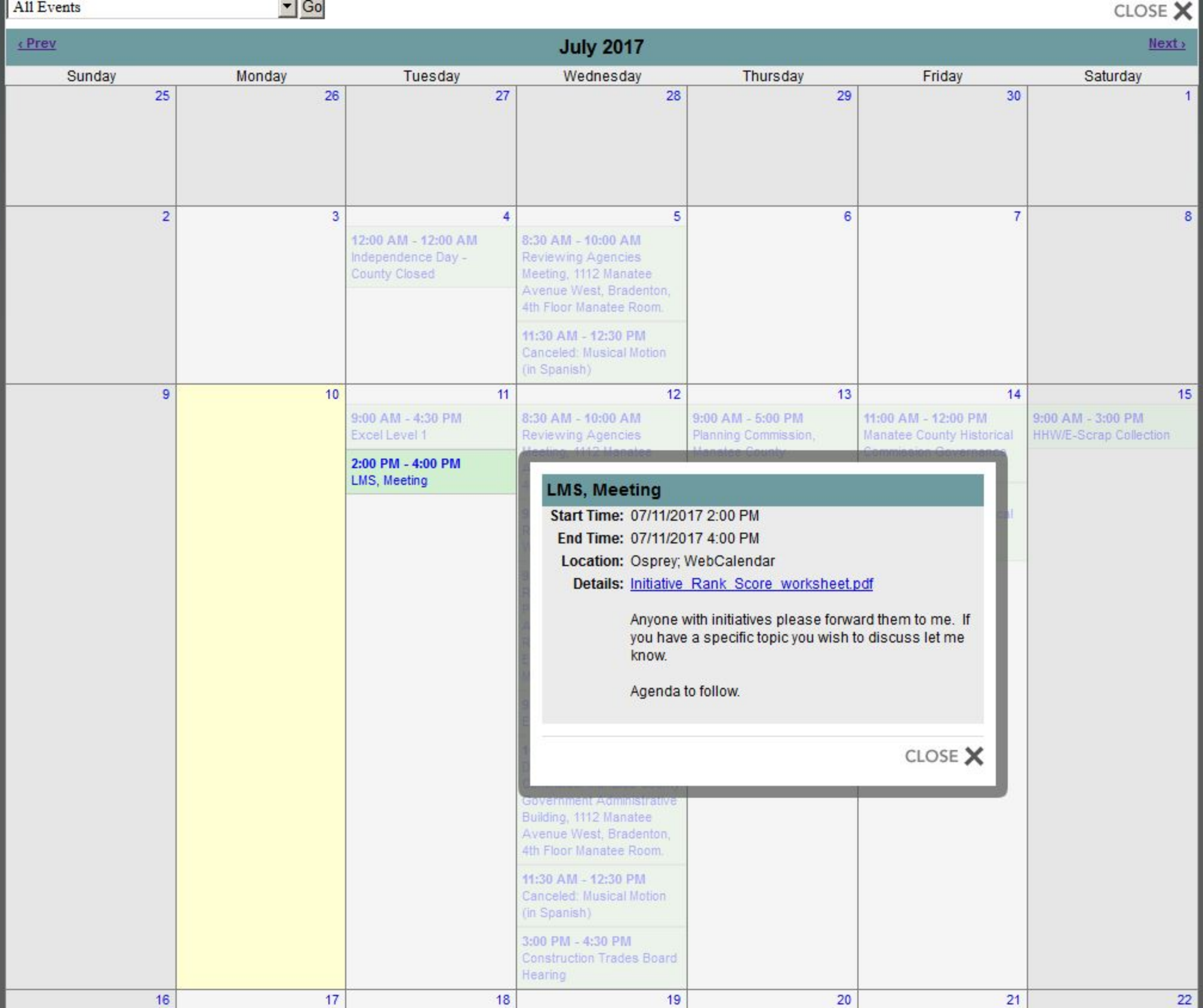
VI. **Adjournment**

Global Warning / Climate Change

** Wild Fire Data #, Acres, # of, etc.

Next LMS due 2020

***Special Note:** Please be sure to introduce yourself prior to speaking, for meeting minutes.


All Events
Go
CLOSE
‹ Prev
July 2017
Next ›
Sunday
Monday
Tuesday
Wednesday
Thursday
Friday
Saturday
25
26
27
28
29
30
1
2
3
4
12:00 AM - 12:00 AM
Independence Day - County Closed
5
8:30 AM - 10:00 AM
Reviewing Agencies Meeting, 1112 Manatee Avenue West, Bradenton, 4th Floor Manatee Room.
11:30 AM - 12:30 PM
Canceled: Musical Motion (in Spanish)
6
7
8
9
10
11
9:00 AM - 4:30 PM
Excel Level 1
2:00 PM - 4:00 PM
LMS, Meeting
12
8:30 AM - 10:00 AM
Reviewing Agencies
13
9:00 AM - 5:00 PM
Planning Commission,
14
11:00 AM - 12:00 PM
Manatee County Historical
15
9:00 AM - 3:00 PM
HHW/E-Scrap Collection
LMS, Meeting
Start Time: 07/11/2017 2:00 PM
End Time: 07/11/2017 4:00 PM
Location: Osprey; WebCalendar
Details: Initiative_Rank_Score_worksheet.pdf
Anyone with initiatives please forward them to me. If you have a specific topic you wish to discuss let me know.
Agenda to follow.
CLOSE
Government Administrative Building, 1112 Manatee Avenue West, Bradenton, 4th Floor Manatee Room.
11:30 AM - 12:30 PM
Canceled: Musical Motion (in Spanish)
3:00 PM - 4:30 PM
Construction Trades Board Hearing
16
17
18
19
20
21
22

Manatee County Building Development Services

Hazard Mitigation

July 11, 2017 2:00 p.m. – 4:00 p.m.

Local Mitigation Strategy

Attendance Sheet

Chairperson; Sandy Tudor, CFM, Floodplain Section Manager

Name	Organization	Signature	E-Mail Address
STEVE LITSCHAUER	EMERGENCY MANAGEMENT		STEVE.LITSCHAUER@MYMANATEE.ORG
Allen R Tusing	City of Palmetto		atusing@palmettofl.org
Brenda Lovett	MCHA	Brenda Lovett	Brenda.Lovett@manatcehousing.com
Rebecca Dean	Bradenton Fire		rdean@cityofbradenton.com
Robert Day	USF EM		robertday@usf.edu.
SHARON JARMAN	MANATEE EM		Sharon.Jarman@mymanatee.org
Luis Suarez	EM		luis.suarez@mymanatee.org
Rob Brown	PNRD		rob.brown@mymanatee.org
CANDIE SCHMITT	MCWD		
JOEL RICHMOND	EM		Joel.Richmond@mymanatee.org

Manatee County Building Development Services

Hazard Mitigation

July 11, 2017 2:00 p.m. – 4:00 p.m.

Local Mitigation Strategy

Attendance Sheet

Chairperson; Sandy Tudor, CFM, Floodplain Section Manager

Name	Organization	Signature	E-Mail Address
ANTHONY WARREN	C.O.B		anthony.warren@cityofbradenton.com
Stephen W. Gilbert	Bradenton Beach	Stephen W. Gilbert	stevegilbert@cityofbradenton.com
STEPHEN LAKEY	LAKEWOOD RANCH IDA	Stephen Lakey	SLLAKEY@LWRTOWNHALL.COM
JAMES LINKOGLE	TOWN OF LONGBOAT KEY	James K. Linkogle	jlinkogle@longboatkey.org

LMS MEETING MINUTES
Tuesday, July 11, 2017
2:00 PM – 4:00 PM
MINUTES

Members Present:
Sandy Tudor, Chairperson, Manatee County Building & Development Services
Steve Litschauer, Manatee County Emergency Management
Allen Tusing, City of Palmetto
Brenda Lovett, Manatee County Housing Authority
Rebecca Desch, Bradenton Fire Department
Robert Day, USF Emergency Management
Sharon Tarman, Manatee County Emergency Management
Luis Suarez, Manatee County Emergency Manatee
Rob Brown, Manatee County Parks and Natural Resources Department
Candie Schwartz, Manatee County Utilities Department
Joel Richmond, Manatee County Emergency Management
Anthony Warren, City of Bradenton
Steve Gilbert, City of Bradenton Beeach
Stephen Lakey, Lakewood Ranch IDA
James Linkogle, Town of Longboat Key

The meeting was called to order by Manatee County LMS Chairperson, Sandy Tudor at 2:05 p.m.

Introductiions:

- Attendees introduced themselves and their affiliation with the LMS group.
- Everyone signed the sign-in sheet.

Sandy Tudor gave an update to the Pre-Disaster Mitigation (PDM) and Flood Mitigation Assistance (FMA) grants. The opening date to be announced soon.

Discussion of SB 1094, inclusion of sea level rise in the Comprehensive Plan. Expanding on that, brought up incorporating it into the LMS. Sandy Tudor asked for any information have to start working on the section for LMS. A discussion ensued on climate change.

Next Meeting Date: To be determined.

Comments/Discussions:

- Sharon Tarman discussed the Comprehensive Emergency Management Plan (CEMP). Target to the state, November 2017. Last review, May 2018.
- Rob Day discussed inclusion of USF on the LMS Working Group. They are considered their own jurisdiction, participate in the Emergency Management Accreditation Program (EMAP), have initiatives to migrate hazards, both natural and man-made.
- Steve Lakey asked about possible grants to help clear waterways, preserves, remove peppertrees in Lakewood Ranch common areas.

With no other business the meeting was adjourned at 3:15 p.m.

Public Safety Department
Manatee County Emergency Management
P.O. Box 1000
Bradenton, FL 34206-1000
Phone: (941) 749-3500

Agenda
Manatee County Local Mitigation Strategy
November 8, 2017
1:00 PM – 3:00 PM

Chairperson: Sharon Tarman Vice-Chair: Sandy Tudor

- Welcome
- Introductions
- Review and rank potential HMGP project
- Next LMS Meeting
  - To be determined
- Comments / Discussions
- Adjournment

PRISCILLA TRACE * CHARLES B. SMITH * STEPHEN JONSSON * ROBIN DiSABATINO * VANESSA BAUGH * CAROL WHITMORE * BETSY BENAC

District 1 District 2 District 3 District 4 District 5 District 6 District 7

MANATEE COUNTY EMERGENCY MANAGEMENT FLORIDA

Local Mitigation Strategy Meeting
November 8, 2017

Name	Agency	Signature
STEVE LITSCHAUER	EM	
Luis Suarez	EM	
SHARON TARMAN	EM	
John Osborne	County Admin	
GARY A COMBEE	MCSO	Sgt Gary A Combee
Jeff Sasada	Airport Authority	
Brenda Lovell	MCHA	
WILLIE CALHOUN JR	MCHA	
JOEL RICHMOND	EM	
CANDIE SCHWARTZ	Utilities	
Shawn McIntyre	EOC	
Judy McVoy	CVC	
Candice Cruz	FMD	
Sandy Tudor	BADS	
James Linhoggle	Town Long Boat Key	
VAN DIXON	MCR HEALTH SERVICES	

Local Mitigation Strategy (LMS) Meeting

Meeting Goal	**LMS Initiatives List**		
Meeting Objectives	**1.** Introduction of new LMS Coordinator		
	2. Potential Hazard Mitigation Grant Program (HMGP) projects and funding		
	3.		
Date: 11/8/2017	**Time: 1:00 p.m. – 3:00 p.m.**	**Location: EOC**	**Facilitator: Sharon Tarman**
Attendees			
Sharon Tarman, Chair, Manatee County Emergency Management	Willie Calhoun, Jr., MC Housing	Jeff Sasada, Sarasota Bradenton Airport Authority	John Osborne, Manatee County Infrastructure & Strategic Planning Official
Sandy Tudor, Vice-Chair, Building and Development Services	Brenda Lovett, MC Housing	Van Dixon, Manatee County Rural Health Services	James Linkogle, Town of Longboat Key
Steve Litschauer, Manatee County Emergency Management	Candie Schwartz, Manatee County Utilities Department	Judy Moree, Manatee County Finance Department	Candice Cruz, Manatee County Financial Management Department
Luis Suarez, Manatee County Emergency Management	Gary Combee, Manatee Sheriff's Office	Shannon McIntyre, Manatee County Finance Department	Joel Richmond, Manatee County Emergency Management

Topic	Discussion	Actions and Tasks	Staff Responsible	Due
Welcome	The meeting was called to order by Manatee County LMS Chairperson, Sharon Tarman at 2:05 p.m.			
Introductions	Attendees introduced themselves and their affiliation with the LMS group.			
Goals and Objectives	Sharon Tarman told the group that the HMGP funding has not been announced yet.			
Minutes	**Subject #1:** Sharon said potential projects need to be submitted by December 22nd to her. The projects would be emailed to the Work Group to be reviewed and discussed at the next meeting.			
	Subject #2: Sharon and Sandy went over the Rank and Score criteria with the group.			

	Subject #3:			
Open Discussion	The open discussion was about potential projects from the various departments and agencies.			
Next Meeting	December 29, 2017 at 1:00 p.m.			
Adjourn	The meeting was adjourned at 2:00 p.m.			

Public Safety Department
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Agenda

Manatee County Local Mitigation Strategy

November 29, 2017

1:00 PM – 3:00 PM

Chairperson: Sharon Tarman Vice-Chair: Sandy Tudor

- Welcome
- Introductions
- Review and rank potential HMGP project
  - Bradenton Housing Authority
  - Sarasota-Bradenton Airport Generator
  - Sheriff's Office / Property Management
    - Corrections Generator
    - Shutter repair / replace (approximately 50)
    - Skylights
  - Utility Department
    - Replace / Upgrade Telemetry Control Units
    - Tree and other destructive vegetation removal at remote drinking water facilities
- Next LMS Meeting
  - To be determined
- Comments / Discussions
- Adjournment

PRISCILLA TRACE * CHARLES B. SMITH * STEPHEN JONSSON * ROBIN DiSABATINO * VANESSA BAUGH * CAROL WHITMORE * BETSY BENAC

District 1 District 2 District 3 District 4 District 5 District 6 District 7

MANATEE COUNTY EMERGENCY MANAGEMENT FLORIDA

Local Mitigation Strategy Meeting
November 29, 2017

Name	Agency	Signature
SHARON TARMAN	MC EM	Sharon Tarman
Nick Wagner	MC Utilities	
RALPH BRAUN	MC Utilities	
KATE QUILTY	MC UTILITIES	KQ
Willie Calhoun Jr	MCHA	Willie Calhoun Jr
Brenda Lovett	MCHA	Brenda Lovett
Cardie Schwartz	MCUD	Cardie Schwartz
GARY A. COMBEE	MCSO	Gary A Combee
Clint Rimer	MCPW	
Jeff Sasada	SMAA	Jeff Sasada
Luis Suarez	MC EM	
Judy Morei	M.C. finance	Judy Morei
Shannon McIntyre	" "	Shannon McIntyre
Luci Richmond	EM	
Sandy Tudor	BADS	Sandy Tudor
ALLEN R. TUSING	City of Palmetto	

Local Mitigation Strategy (LMS) Meeting

Meeting Goal	**Annual update for the LMS Initiatives List**		
Meeting Objectives	**1.** Review, rank and score potential Hazard Mitigation Grant Program (HMGP) projects		
	2.		
	3.		
Date: 11/29/2017	**Time: 1:00 p.m. – 3:00 p.m.**	**Location: EOC**	**Facilitator: Sharon Tarman**

Attendees			
Sharon Tarman, Chair, Manatee County Emergency Management	Willie Calhoun, Jr., Manatee County Housing	Jeff Sasada, Sarasota Bradenton Airport Authority	Allen Tusing, City of Palmetto
Sandy Tudor, Vice-Chair, Building and Development Services	Brenda Lovett, Manatee County Housing	Luis Suarez, Manatee County Emergency Management	James Linkogle, Town of Longboat Key
Nick Wagner, Manatee County Utilities Department	Candie Schwartz, Manatee County Utilities Department	Judy Moree, Manatee County Clerk of the Circuit Court	
Ralph Braun, Manatee County Utilities Department	Gary Combee, Manatee Sheriff's Office	Shannon McIntyre, Manatee County Clerk of the Circuit Court	
Kate Quilty, Manatee County Utilities Department	Clint Rimer, Manatee County Public Works	Joel Richmond, Manatee County Emergency Management	

Topic	Discussion	Actions and Tasks	Staff Responsible	Due
Welcome	The meeting was called to order by Manatee County LMS Chairperson, Sharon Tarman at 2:05 p.m.			
Introductions	• Attendees introduced themselves and their affiliation with the LMS group. • Everyone signed the sign-in sheet except James Linkogle.			
Goals and Objectives	Sharon Tarman told the group that the HMGP funding has not been announced yet. Sharon said that the projects submitted need to be Ranked and Scored so that they will have the opportunity for funding. Sharon led the group through ranking the projects for the LMS Initiatives. Each one of the proposed projects were individually voted on			

	by the work group. The following projects received these scores:			
Minutes	**Subject #1:** • Facility hardening for 20 affordable rental units. A motion was made by Sandy Tudor and seconded by Candie Schwartz to approve the project with a score of forty-four (44). The vote was unanimous.	This project received a score of forty-four (44).	Manatee County Housing Authority	
	Subject #2: • Generator replacement for their critical facility that repairs emergency equipment such as fire trucks, police cars and other equipment needed to keep the airfield operational. A motion was made by Brenda Lovett and seconded by Gary Combee to approve the project with a score of forty-eight (48). The vote was unanimous.	This project received a score of forty-eight (48).	Sarasota-Bradenton Airport Authority	
	Subject #3 • Generator for the main jail facility. This will enable the jail to be fully operational during a power outage. A motion was made by Kate Quilty and seconded by Jeff Sasada to approve the project with a score of fifty-three (53). The vote was unanimous.	This project received a score of fifty-three (53).	Manatee County Sheriff's Office	
	Subject #4 • Shuttering for the large windows throughout the facility. A motion was made by Sandy Tudor and seconded by Candie Schwartz to approve the project with a score of forty-eight (48). The vote was unanimous.	This project received a score of forty-eight (48).	Manatee County Sheriff's Office	
	Subject #5 • Replace / remove or repair skylights in administration, medical pod and staff dining areas. This project was discussed that it appears to be a maintenance issue not a mitigation initiative.	This project was denied.	Manatee County Sheriff's Office	
	Subject #6: • Replace / upgrade remote telemetry unity to telemetry control units on lift stations in flood plains within Manatee County. A motion was made by Gary Combee and seconded by James Linkogle to approve the	This project received a score of fifty-four (54).	Manatee County Utilities Department	

	project with a score of fifty-four (54). The vote was unanimous.			
	Subject #7: • MCUD have remote drinking water facilities which have large trees and other destructive vegetation that are encroaching on security access control and critical equipment. Damage from Hurricane Irma (trees falling on fences and equipment) has prompted this mitigation action. A motion was made by Gary Combee and seconded by Luis Suarez to approve the project with a score of fifty-five (55). The vote was unanimous.	This project received a score of fifty-five (55).	Manatee County Utilities Department	
	Subject #8: • To remove residential properties by means of a combination of demolition rebuild and / or elevation of structures. Number of structures included in Mitigation initiative depends on combined Benefit Cost Analysis and willingness of number of individual residents to participate in the parameters of the grant program. A motion was made by Candie Schwartz and seconded by Gary Combee to approve the project with a score of forty-one (41). The vote was unanimous.	This project received a score of forty-one (41).	Town of Longboat Key	
Open Discussion	The projects that received a ranking will be included in the LMS Initiatives List.			
Next Meeting	To be determined.			
Adjourn	A motion was made by Kate Quilty to adjourn and seconded by Sandy Tudor. The meeting was adjourned at 3:00 p.m.			

Public Safety Department
Manatee County Emergency Management
P.O. Box 1000
Bradenton, FL 34206-1000
Phone: (941) 749-3500

Agenda

Manatee County Local Mitigation Strategy

January 18, 2018

2:00 PM – 4:00 PM

Chairperson: Sharon Tarman Vice-Chair: Sandy Tudor

- Welcome
- Introductions
- Review and rank potential HMGP project
  - Bradenton Housing Authority
  - Sarasota-Bradenton Airport Generator
  - Sheriff's Office / Property Management
    - Corrections Generator
    - Shutter repair / replace (approximately 50)
    - Skylights
  - Utility Department
    - Replace / Upgrade Telemetry Control Units
    - Tree and other destructive vegetation removal at remote drinking water facilities
  - Post Disaster Redevelopment Plan
- Next LMS Meeting
  - To be determined
- Comments / Discussions
- Adjournment

Local Mitigation Strategy is the plan Manatee County developed to promote hazard mitigation and manage post-disaster recovery. Mitigation is a way to lessen the impact of a disaster on a community through preparedness, structural hardening and infrastructure projects. The community including citizens, businesses, non-profit agencies and all government agencies are encouraged to participate in the Local Mitigation Strategy meetings. Your membership to the Local Mitigation Strategy Workgroup can be your gateway to mitigation funding.

PRISCILLA TRACE * CHARLES B. SMITH * STEPHEN JONSSON * ROBIN DiSABATINO * VANESSA BAUGH * CAROL WHITMORE * BETSY BENAC

District 1 District 2 District 3 District 4 District 5 District 6 District 7

MANATEE COUNTY EMERGENCY MANAGEMENT FLORIDA

Local Mitigation Strategy Meeting

~~November 29, 2017~~ January 18, 2018 8:30

Name	Agency	Signature
Sharon Tarman, Chair	Emergency Management / PSD	Sharon Tarman
Sandy Tudor, Vice Chair	Floodplain Management / BDS	Sandy Tudor
Allen Tusing	City of Palmetto	
Angel Colonneso	Clerk of the Circuit Court	
Carlos Buqueras	Port Manatee	
Catherine Hartley		
David St. Pierre	Port Manatee	
Deborah Merril		
Elliott Falcione	Convention and Visitor's Bureau	
Gary Combee	Sheriff's Office	Sgt. Gary A. Combee
Heather Dilldine	Utilities Department	Heather Dilldine
James Linkogle	Town of Longboat Key	on phone
Jan Brewer	Financial Management Department	
Jeff Sasada	SRQ Airport	
John Ekufu		
Judy Moree	Clerk of the Circuit Court	
Karen Stewart	Economic and Redevelopment Department	
Joel Richmond	E.M.	

MANATEE COUNTY EMERGENCY MANAGEMENT FLORIDA

Local Mitigation Strategy Meeting

[redacted] January 18, 2018 8:30

Name	Agency	Signature
Luis Suarez	Emergency Management / PSD	
Rebecca Desch	City of Bradenton	
Rick Wells	Sheriff's Office	
Robert Smith	Public Safety Department	
Rodney Barnes	Human Resources Department	
Ron Schulhofer	Public Works Department	
Sally Hull	Manatee County School District	
Sherilyn Burris	Emergency Management / PSD	
Steve Gilbert	City of Bradenton Beach	
Steve Litschauer	Emergency Management / PSD	
Van Dixon	Manatee County Rural Health Services	
Robert Ram *	Flood Victim	
Ralph BRAUN	Utilities RALPH.BRAUN@MYMANATEE.ORG	
Angie FORD	TAX Collector	
ROBIN DiSabatino	MC BOCC	
Paula Knudsen	1108 Danny Dr.	Frumples3@yahoo.com
Willie Calhoun	Manatee County Housing Auth	Willie Calhoun Jr.
Willie.Calhoun@manatee-county.com Xavier Colon	NSD	
Amanda Shawver-Karnitz	Manatee County Utilities	A. Shawver-Karnitz
*frito_bandito@yahoo.com		

MANATEE COUNTY EMERGENCY MANAGEMENT FLORIDA

Local Mitigation Strategy Meeting
January 18, 2018

Name	Agency	Signature
DAVE GREENBALLYM	ANNA MARIA	[illegible]
Sharyn Hundley	926 Ell Way sharynhundley@gmail.com	Sharyn W. Hundley
Leola Meyer leexpresslee@aol.com	932 Byron Ct leeexpresslee@aol.com	Leola Meyer
GIBELLINA, GILES	TAXPAYER	[illegible]

Local Mitigation Strategy (LMS) Meeting

Meeting Goal	**Annual update for the LMS Initiatives List**		
Meeting Objectives	**1.** Review, rank and score potential Hazard Mitigation Grant Program (HMGP) projects		
	2. Approve the addition of Sea Level Rise to the LMS Natural Hazard List		
	3.		
Date: 1/18/2018	**Time: 2:00 p.m. – 4:00 p.m.**	**Location: EOC**	**Facilitator: Sharon Tarman**
Attendees			
Sharon Tarman, Chair, Emergency Management Division / Public Safety	Willie Calhoun, Jr., Manatee County Housing	Amanda Shawver-Karnitz, Utilities Department	Steve Litschauer, Emergency Management Division / Public Safety
Sandy Tudor, Vice-Chair, Building and Development Services	Angie Ford, Tax Collector	Luis Suarez, Emergency Management Division / Public Safety	Robert Parr, Citizen
David St. Pierre, Port Manatee	Robin DiSabatino, Commissioner, District 4	David Greenbaum, City of Anna Maria	Sharyn Hundley, Citizen
Ralph Braun, Manatee County Utilities Department	Gary Combee, Manatee Sheriff's Office	Joel Richmond, Emergency Management Division / Public Safety	Leola Meyer, Citizen
Heather Dillkine, Utilities Department	Xavier Colon, Neighborhood Services Department	James Linkogle, Town of Longboat Key (by phone)	Gwen Gibellina, Citizen

Topic	Discussion	Actions and Tasks	Staff Responsible	Due
Welcome	The meeting was called to order by Manatee County LMS Chairperson, Sharon Tarman at 2:10 p.m.			
Introductions	• Attendees introduced themselves and their affiliation with the LMS group. • Everyone signed the sign-in sheet except James Linkogle who attended by phone.			
Goals and Objectives	Sharon Tarman told the group that the HMGP funding has not been announced yet. Sharon said that the LMS Meeting had been publicly notice and the projects submitted need to be Ranked and Scored so that they will have the opportunity for funding. Sharon led the group through ranking the projects for the LMS			

	Initiatives. Each one of the proposed projects were individually voted on by the work group. The following projects received these scores out of a possible 61:			
Minutes	**Subject #1:** • Facility hardening for 20 affordable rental units. A motion was made by Sandy Tudor and seconded by Gary Combee to approve the project with a score of forty-four (44). The vote was unanimous.	This project received a score of forty-four (44).	Manatee County Housing Authority	
	Subject #2: • Generator replacement for their critical facility that repairs emergency equipment such as fire trucks, police cars and other equipment needed to keep the airfield operational. A motion was made by Gary Combee and seconded by Luis Suarez to approve the project with a score of forty-eight (48). The vote was unanimous.	This project received a score of forty-eight (48).	Sarasota-Bradenton Airport Authority	
	Subject #3 • Generator for the main jail facility. This will enable the jail to be fully operational during a power outage. A motion was made by Luis Suarez and seconded by Sandy Tudor to approve the project with a score of fifty-three (53). The vote was unanimous.	This project received a score of fifty-three (53).	Manatee County Sheriff's Office	
	Subject #4 • Shuttering for the large windows throughout the facility. A motion was made by Luis Suarez and seconded by Angie Ford to approve the project with a score of forty-eight (48). The vote was unanimous.	This project received a score of forty-eight (48).	Manatee County Sheriff's Office	
	Subject #5 • Replace / remove or repair skylights in administration, medical pod and staff dining areas. This project was discussed that it appears to be a maintenance issue not a mitigation initiative.	This project was denied.	Manatee County Sheriff's Office	
	Subject #6: • Replace / upgrade remote telemetry unity to telemetry control units on lift stations in flood plains within Manatee County. A motion was made by Gary Combee and seconded by Sandy Tudor to approve the project with a score of fifty-four (54). The vote was unanimous.	This project received a score of fifty-four (54).	Manatee County Utilities Department	

	Subject #7: • MCUD have remote drinking water facilities which have large trees and other destructive vegetation that are encroaching on security access control and critical equipment. Damage from Hurricane Irma (trees falling on fences and equipment) has prompted this mitigation action. A motion was made by Gary Combee and seconded by Angie Ford to approve the project with a score of fifty-five (55). The vote was unanimous.	This project received a score of fifty-five (55).	Manatee County Utilities Department	
	Subject #8: • To remove residential properties by means of a combination of demolition rebuild and / or elevation of structures. Number of structures included in Mitigation initiative depends on combined Benefit Cost Analysis and willingness of number of individual residents to participate in the parameters of the grant program. A motion was made by Sandy Tudor and seconded by Gary Combee to approve the project with a score of forty-one (41). The vote was unanimous.	This project received a score of forty-one (41).	Town of Longboat Key	
	Subject #9: • The Post Disaster Redevelopment Plan is a planning and organizational tool. Provides guidance to community post-disaster in addition to improving pre-disaster planning and resiliency. Our current plan is over seven (7) years old. It was apparent during Hurricane Irma that the plan needs to be updated and include all municipalities. A motion was made by Gary Combee and seconded by Sandy Tudor to approve the project with a score of fifty-seven (57). The vote was unanimous.	This project received a score of fifty-seven (57).	Manatee County Administration	
	Subject #10: • The inclusion of Sea Level Rise as a Natural Hazard in the LMS. The workgroup agreed that it needed to be included. The only concerns focused on the low risk score of 22%. Luis Suarez explained that low ranking came from the Threat Hazard Identification Risk Analysis for the Comprehensive Emergency Management Plan (CEMP) Workgroup. The LMS Workgroup agreed that this should be reviewed in depth during the 2020 LMS update. Sea Level Rise was changed from a Moderate rank to a High rank because of the likelihood of reoccurrence of flooding. Anna	Sea Level Rise will be included in the LMS as a Natural Hazard.	Manatee County Emergency Management	

	Maria Island experienced flooding during a King Tide event. A motion was made by Sandy Tudor and seconded by Angie Ford. The vote was unanimous to include Sea Level Rise as a Natural Hazard in the LMS.			
Open Discussion	• The projects that received a ranking will be included in the LMS Initiatives List.	Completed	Manatee County Emergency Management	3/8/18
	• Sea Level Rise as a Natural Hazard in the LMS.	Completed		
	• The citizens that were in attendance discussed the flooding that occurred along Bowlees Creek and possible grant opportunities and warning systems.	Flooding - Emergency Management will research the warning systems and how other counties handle this. They will also contact the Stormwater Division of Public Works to invite them to the March 8th LMS meeting.		
Meeting Schedule	• June 14, 2018, 2:00 p.m. – 4:00 p.m. • September 13, 2018, 2:00 p.m. – 4:00 p.m. • December 13, 2018, 2:00 p.m. – 4:00 p.m.			
Adjourn	A motion was made by Gary Combee to adjourn and seconded by Angie Ford. The meeting was adjourned at 3:30 p.m.			

Public Safety Department
Manatee County Emergency Management
P.O. Box 1000
Bradenton, FL 34206-1000
Phone: (941) 749-3500

Agenda
Manatee County Local Mitigation Strategy
March 8, 2018

2:00 PM – 4:00 PM

Chairperson: Sherilyn Burris Vice-Chair: Sandy Tudor

- Welcome
- Introductions
- Approval of meeting minutes from January 18, 2018
- Review and rank potential HMGP project
- Hazard Mitigation Grant Program Process
    - Application and Checklist
    - Eligibility
    - Review and rank potential HMGP projects for appropriateness
- Comments / Discussions
- LMSWG 2018 Meeting Schedule
    - June 14, 2018 – 2:00 p.m. – 4:00 p.m.
    - September 13, 2018 – 2:00 p.m. – 4:00 p.m.
    - December 13, 2018 – 2:00 p.m. – 4:00 p.m.
- Adjournment

PRISCILLA TRACE * CHARLES B. SMITH * STEPHEN JONSSON * ROBIN DiSABATINO * VANESSA BAUGH * CAROL WHITMORE * BETSY BENAC

District 1 District 2 District 3 District 4 District 5 District 6 District 7

Local Mitigation Strategy Working Group Meeting
March 8, 2018

(10)

Name	Agency	Email Address
Sherilyn Burris	Manatee County Gov.	sherilyn.burris@mymanatee.org
Robert Parr	Citizen	frito_bandito@yahoo.com
Erin Struzzieri	Manatee County Government	erin.struzzieri@mymanatee.org
Judy Moree'	Manatee Clerk of Court	judy.moree@manateeclerk.com
Shannon McIntyre	Manatee COC	shannon.mcintyre@manateeclerk.com
Sandy Tudor	BADS	sandy.tudor@mymanatee.org
JAMES LINKOGLE	TCBK PW	jlinkogle@longboatkey.org
Katherine Edwards	VA	micedw@gmail.com
Leola Meyer	Shadybrook Condos	leeexpresslee@AOL.com
LYNN BURNETT	CITIES of BRA. Beach & Anna Maria	Holmes Beach Lynn@LTALENGINEERS.com
Brooke Poindexter	Cities of Bra. Beach & Anna Maria	brooke.poindexter57@gmail.com

Local Mitigation Strategy (LMS) Meeting

Meeting Goal	Quarterly LMS Meeting		
Date: 03/08/2018	**Time: 2:00 PM to 3:13 PM**	**Location: EOC**	**Facilitator: Sherilyn Burris**
Sherilyn Burris, Chair Emergency Management	Sandy Tudor, Vice-Chair Building and Development Services	Lynn Burnett Cities of Bradenton Beach, Holmes Beach, and Anna Maria	Gary Combee Manatee County Sheriff's Office
Katherine Edwards Citizen	James Linkogle Town of Longboat Key	Shannon McIntyre Manatee Clerk of the Court	Leola Meyers Shadybrook Condos
Judy Moree Manatee Clerk of the Court	Robert Parr Citizen	Brooke Poindexter Cities of Bradenton Beach and Anna Maria	Joel Richmond Emergency Management
Erin Struzzieri Parks and Natural Resources	Luis Suarez Emergency Management		

Topic	Discussion	Actions and Tasks	Staff Responsible	Due
Welcome	The meeting was called to order by Manatee County LMS Chairperson, Sherilyn Burris at 2:08 PM.			
Introductions	Attendees introduced themselves and their affiliation with the LMS group.			
Goals and Objectives	Review and rank potential HMGP projects	Everyone interested in future grant opportunities should review the federal and state information about HMGP. Links will be included below.	All	Ongoing
Minutes	**Subject #1:** • The meeting began with changes to the agenda and approval of January meeting minutes.			
	Subject #2: • Went over Hazard Mitigation Grant Program process and what mitigation means.			

	• State of Florida and Floridadisaster.org is the best resource for information.			
	Subject #3 • Applications are due August 6, 2018. Must go thru the workgroup. Projects will be determined in the June meeting.			
	Subject #4 • Went over the kind of projects that are eligible and ineligible. • The working group will decide which would be the best for submittal to the State			
	Subject #5 • The City of Bradenton discussed their project of Evacuation Routes and Drainage.			
	Subject #6: • Changes to spreadsheet to make for easier sorting and filtering. (Funding sources, estimated cost -dollar amount only, status, timeframe for completion) • Removed generator for Myakka for Station 6 as project has been completed.			
Open Discussion	Citizens' comments • What determines the applicant's 25% of funding? • Quarterly meetings for information sharing.			
	Motion to add a study of community lift stations for opportunity to add to the project list. Motion approved by all with Gary Combee abstaining from vote.			
Next Meeting	The next meeting is June 14, 2018 at 2:00 PM. The location may change. Notice will be sent out.			
Additional Information and Links	• 90-Day Estimate of Available HMGP Funding • About HMGP (FEMA) • Acquisition-Elevation Project Handbook • Application • Data Collection Worksheet Notice • Declaration and Release Form • Drought • Duplication of Benefits Guide • Flood Control- Drainage Improvement • Florida Administrative Code 27P-22			

	• For Acquisition Projects • Generator • Guide for Citizens Seeking Mitigation Project Funding • Guide for Early Environmental Project Reviews • Have Questions? Call the State of Florida Mitigation Hotline at (850) 815-4524 • Hazard Mitigation Assistance Cost Share Guide • Hazard Mitigation Assistance Guidance • Hazard Mitigation Assistance Mitigation Activity Chart • HMA Resources & Document Collection • HMGP Application & Checklist • HMGP Application Desk Reference • HMGP Frequently Asked Questions • Hurricane Irma • Hurricane Safe Rooms • Model Deed Restriction • Model Statement of Assurances • Notice of Funding Availability • Notice of Voluntary Interest Sample- Single Site Version • Notice of Voluntary Interest Sample- Town Hall Version • Post 90 Days Quick Guide to the HMGP Timeline • Pre-Award Cost Guidance • Pre-Award Cost Request Form • Primer for New Interested Applicants • Project Eligibility Criteria • Project Type Recommendation Letter • Project Worksheets • Sample LMS Project Submission Letter • Statement of Voluntary Participation Form • The First 90 Days Quick Guide to the HMGP Timeline • The primary guidance document for the HMGP is the HMA Guidance. • Tornado Safe Rooms • Wildfire • Wind Retrofit			
Adjourn	The meeting adjourned at 3:13 PM.			

Public Safety Department
Manatee County Emergency Management
P.O. Box 1000
Bradenton, FL 34206-1000
Phone: (941) 749-3500

Agenda
Manatee County Local Mitigation Strategy
June 14, 2018

2:00 PM – 4:00 PM

Chairperson: Sherilyn Burris Vice-Chair: Sandy Tudor

- Welcome
- Introductions
- Approval of meeting minutes from March 8, 2018
- Members review and rank potential HMGP projects
- Comments / Discussions
- LMSWG 2018 Meeting Schedule
    - September 13, 2018 – 2:00 p.m. – 4:00 p.m.
    - December 13, 2018 – 2:00 p.m. – 4:00 p.m.
- Adjournment

PRISCILLA TRACE * CHARLES B. SMITH * STEPHEN JONSSON * ROBIN DiSABATINO * VANESSA BAUGH * CAROL WHITMORE * BETSY BENAC

District 1 District 2 District 3 District 4 District 5 District 6 District 7

Local Mitigation Strategy Working Group Meeting
June 14, 2018

Name	Agency	Signature
Sherilyn Burris	EM	
Matthew Myers	EM	
Gary A. Combee	MCSO	
Steve Litschauer	EM	
Shanna McHugh	COC	
Amy Pilson	Utilities	
Angela Ford	Tax Collector	
Judy Morei	C.C. Court	
Rob Campbell	LWR IDA	
Lisa Boutote	LWR IDA	
Angela Hents	MCPM.	
Lynn Burnett	Cities of Anna Maria Holmes Beach Bradenton Beach	
Sandy Tudor	BADS	Sandy Tudor
Brooke Poindexter	Cities of Anna Maria Holmes Beach Bradenton Beach ~~CTA Engineers~~	

Local Mitigation Strategy (LMS) Meeting

Meeting Goal	Quarterly LMS Meeting		
Date: 6/14/2018	**Time: 2:00PM to 3:37PM**	**Location: Central Library**	**Facilitator: Sherilyn Burris**
Sherilyn Burris, Chair Emergency Management	Sandy Tudor, Vice-Chair Building and Development Services	Lynn Burnett Cities of Bradenton Beach, Holmes Beach, and Anna Maria	Gary Combee Manatee County Sheriff's Office
Brooke Poindexter Cities of Bradenton Beach and Anna Maria	Matthew Myers Emergency Management	Steve Litschauer Emergency Management	Shannon McIntyre Clerk of the Circuit Court
Amy Pilson Utilities	Angela Ford Tax Collectors Office	Judy Moree Clerk of the Circuit Court	Rob Campbell LWR IDA
Lisa Boutote LWR IDA	Angela Honts Property Management	Brooke Poindexter Cities of Anna Maria, Holmes beach, and Bradenton Beach	

Topic	Discussion	Actions and Tasks	Staff Responsible	Due
Welcome	The meeting was called to order by Manatee County LMS Chairperson, Sherilyn Burris at 2:01 pm.			
Introductions	Attendees introduced themselves and their affiliation with the LMS group.			
Goals and Objectives	Review and rank potential HMGP projects, rank HMGP priorities		All	Ongoing
Minutes	**Subject #1:** • The meeting began with the approval of March meeting minutes			
	Subject #2: • LMS group initiative for LMS new projects. Lakewood Ranch flood mitigation project scored			
	Subject #3 • LMS group initiative for LMS new projects. Property Management added 2 one for Annex Retrofitting and Carnegie Library Retrofitting. Both Scored			

	Subject #4 • HMGP Priorities projects presented and motion for prioritized list with all in agreement			
Open Discussion	Member comment: • New utilities contact person			
Next Meeting	The next meeting is September 13, 2018 at 2:00 pm. The location may change. Notice will be sent out.			
Adjourn	Meeting adjourned at 3:37 pm.			

AGENDA

Manatee County Local Mitigation Strategy

Thursday, September 20, 2018
2:00 PM – 4:00 PM
Manatee County Central Library (Auditorium)
1301 Barcarrota Boulevard West, Bradenton

Chairperson: Nicole M. Knapp Vice-Chair: Sandy Tudor

1. Welcome
2. Introductions
3. Citizen Comments
4. Approval of meeting minutes - June 14, 2018
5. Review of HMGP submitted projects
6. Members review and rank potential HMGP projects
7. 2018 Meeting Schedule
    a. December 20, 2018/2:00 p.m. – 4:00 p.m.
8. 2019 DRAFT Meeting Schedule
    a. 3rd Thursday of each month – March, June, September & December
9. Open Discussion
    a. Agenda Submission Guidelines
10. Adjournment

PRISCILLA TRACE * CHARLES B. SMITH * STEPHEN JONSSON * ROBIN DiSABATINO * VANESSA BAUGH * CAROL WHITMORE * BETSY BENAC

District 1 District 2 District 3 District 4 District 5 District 6 District 7

Local Mitigation Strategy Working Group
September 20, 2018

Name	Agency	Signature
	Citizens Duly	
None		

Local Mitigation Strategy 2018 Workgroup
September 20, 2018

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Local Mitigation Strategy 2018 Workgroup
September 20, 2018

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Local Mitigation Strategy 2018 Workgroup
September 20, 2018

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Local Mitigation Strategy 2018 Workgroup
September 20, 2018

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Local Mitigation Strategy 2018 Workgroup
September 20, 2018

Name	Email	Phone	Mailing Address	Initials
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Local Mitigation Strategy 2018 Workgroup
September 20, 2018

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Local Mitigation Strategy 2018 Workgroup
September 20, 2018

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Local Mitigation Strategy 2018 Workgroup
September 20, 2018

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Local Mitigation Strategy 2018 Workgroup
September 20, 2018

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Local Mitigation Strategy 2018 Workgroup
September 20, 2018

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Local Mitigation Strategy 2018 Workgroup
September 20, 2018

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Local Mitigation Strategy 2018 Workgroup
September 20, 2018

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Josh Linney - City of Holmes Beach	<jlinney@holmesbeachfl.org>	Joshua Linney HB P&B 941.357.6097	City of Holmes Beach [address?]	

Local Mitigation Strategy (LMS) Meeting

Meeting Goal	Quarterly LMS Meeting		
Date: 9/20/18	**Time: 2:01pm to 2:52pm**	**Location: Central Library**	**Facilitator: Nicole Knapp**
Nicole Knapp, Chairperson Manatee County EM	Sandy Tudor, Vice Chair Manatee County Building & Dev Serv.	Aaron Rawley, Manatee County Property Management	Amy Pilson, Manatee County Utilities
Anthony Warren, City of Bradenton	Daniel Bull, City of Palmetto	Eric Center, Fire Marshal Cedar Hammock Fire Rescue	Gary Combee, Manatee Sheriff's Office
John Crosby, City of Bradenton Beach	Luke Curtis, City of Anna Maria	Judy Moree, Manatee Clerk of the Circuit Court	Matt Myers, Manatee County EM
Robert Campbell, Lakewood Ranch Town Hall	Shannon McIntyre, Manatee Clerk of Circuit Court	Steve Litschauer, Manatee County EM	Tonya Wonderly, City of Palmetto
Lynn Burnett, Cities of Bradenton Beach, Homes Beach and Anna Maria	Eva Lamiano, LTA Engineers (Holmes Beach)		

Topic	Discussion	Actions and Tasks	Staff Responsible	Due
Welcome	The meeting was called to order by Manatee County LMS Chairperson, Nicole Knapp at 2:01pm			
Introductions	Attendees introduced themselves and their affiliation with the LMS group.			
Goals and Objectives	Review and rank potential HMGP Projects, rank new HMGP projects		All	Ongoing
Citizen Comments	None			

Minutes	Motion Amy Pilson, second Matthew Myers, to approve meetings minutes of June 14,2018. Motion passed.			
Meeting agenda items	Review of HMGP projects submitted to FDEM June 19, 2018 Funding Priority Rank 1-9			
	Review of five (5) new additional projects by working group. New projects presented by Aaron Rawley, Property Management. Central Jail Admin Bldg Retrofitting, Medical Examiner Retrofitting, Utilities Operations Bldg Retrofitting, Supervisor of Elections Retrofitting, Braden River Library Retrofitting. LMS Group Initiative Worksheet discussion and scoring by all present.			
	Ranking/prioritizing of five (5) new projects for submission to HMPG as the following priorities (should additional funding become available): 10- Central Jail 11- Medical Examiner 12- Utilities Operations 13- Supervisor of Elections 14- Braden River Library Motion by Amy Pilson, Second Gary Combee to approve. Motion passed.			
Next Meeting	Next Meeting December 20, 2018 Manatee County Central Library (Auditorium) *2:30 or 3:00 p.m. start time requested in lieu of 2:00 p.m.			
Open Discussion	Discussion about agenda item submissions and timelines. Discussion continued about 2019 meeting dates being the 3rd Thursday of March, June, September and December. Requests for meeting to starts at 2:30 or 3:00 p.m.			
Adjourn	Motion Gary Combee, Second by Lynn Burnett. Motion passed			

AGENDA

Manatee County Local Mitigation Strategy

Thursday, December 20, 2018
3:00 PM – 4:30 PM
Manatee County Central Library (Auditorium)
1301 Barcarrota Boulevard West, Bradenton

Chairperson: Nicole M. Knapp Vice-Chair: Matthew Myers

1. Welcome and Introductions
2. Changes to the Agenda
3. Citizen Comments (*each person shall be limited to 3 minutes per item)
4. Approval of meeting minutes – September 20, 2018
5. Review of ranked project proposals – request to be placed on Mitigation Initiatives list
    a) Lakewood Ranch Inter District Authority
    b) Cedar Hammock Fire Rescue
6. Work Group Members - additional representation from interested private, civic, commercial and/or non-for profit organizations per 27P-22 FL Administrative Code.
7. 2019 Annual Update
    a) Updated Work Group Members List
    b) Changes to hazard assessment
    c) Changes to initiatives list
    d) Changes to critical facilities list (*subject to Homeland Security Standards)
    e) Changes to repetitive loss list
    f) Revisions of maps
8. 2019 Meeting Schedule
    a. 3rd Thursday of each month - March, June, September & December
       3:00 – 4:30 p.m. Manatee County Central Library
9. Open Discussion
10. Adjournment

PRISCILLA TRACE District 1 | REGGIE BELLAMY District 2 | STEPHEN JONSSON District 3 | MISTY SERVIA District 4 | VANESSA BAUGH District 5 | CAROL WHITMORE At Large | BETSY BENAC At Large

Local Mitigation Strategy (LMS) Meeting

Meeting Goal	Quarterly LMS Meeting		
Date: 12/20/2018	**Time: 3:00pm – 3:22pm**	**Location: Central Library**	**Facilitator: Nicole Knapp**
Nicole Knapp	Matthew Myers	Daniel Bull	Lynn Burnett
Robert Campbell	Eric Center	Gary Combee	Steve Litschauer
Tristan Morath	Eric Thompson	Tonya Wonderly	Eran Wasserman
Josh Linney, citizen			

Topic	Discussion	Actions and Tasks	Staff Responsible	Due
Welcome	The meeting was called to order by Manatee County LMS Chairperson, Nicole Knapp at 3:02 p.m.			
Introductions	Attendees introduced themselves and their affiliation with the LMS group.			
Citizen Comments	NONE			
Minutes	Motion Gary Combee, second Matthew Myers, to approve meetings minutes of September 20,2018. Motion passed.			
Goals and Objectives	Review and rank project proposals – Flood Mitigation Grant Program Lakewood Ranch Inter District Authority (Motion Gary Combee, Second Eric Center, to approve evaluation score sheet. Motion passed) Cedar Hammock Fire Rescue (Motion Steve Litschauer, Second Lynn Burnett, to approve evaluation score sheet. Motion passed)		All	Ongoing
Meeting agenda item	Work Group Members – additional representation	**TABLED**		
	2019 Annual Update – status of each item required for the annual update was presented by Nicole Knapp. Knapp noted			

	that Cities of Anna Maria Island, Holmes Beach and Bradenton Beach had yet to supply their annual update on repetitive loss properties. Lynn Burnett, engineer representative for each of these 3 communities, stated that she would assist with obtaining the information prior to BOCC meeting on 1/15/19.			
	2019 Meeting Schedule – status of the Doodle Poll results were confirmed by Nicole Knapp that confirmed the majority of workgroup members wished to keep the meetings on the 3rd Thursday of each month, March, June, September and December.			
Next Meeting	Thursday, March 21, 2019 Manatee County Central Library 3:00-4:30 p.m.			
Open Discussion	NONE			
Adjourn	Motion Tristan Morath, Second Gary Combee to adjourn the meeting. Meeting was adjourned at 3:22 p.m.			

Local Mitigation Strategy Working Group
December 20, 2018/Central Library

NAME	AGENCY	EMAIL	PHONE	SIGNATURE
Knapp, Nicole Chairperson	Manatee County Public Safety Department Emergency Management Division	nicole.knapp@mymanatee.org	941-749-3500 ext. 7824	
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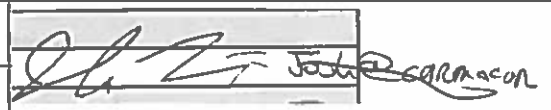
Eran Wasserman LTA Engineering on behalf of city of Holmes Beach

201-674-2621

Citizens Sign-in Sheet
Local Mitigation Strategy Working Group
December 20, 2018

Name	Email/Phone Number	Signature
Josh Linney	josh@blyzzard.com 941-357-6097	

AGENDA

Manatee County Local Mitigation Strategy

Thursday, March 21, 2019

3:00 PM – 4:30 PM

Manatee County Central Library (Auditorium)

1301 Barcarrota Boulevard West, Bradenton

Chairperson: Nicole M. Knapp Vice-Chair: Matthew Myers

1. Welcome and Introductions
2. Changes to the Agenda
3. Approval of meeting minutes – December 20, 2018
4. Citizen Comments (*each person shall be limited to 3 minutes per item)
5. LMS 5-year update
6. New Business/Old Business
   a) LMS Annual Update Compliance Letter dated 01/25/2019
7. Open Discussion
8. Adjournment

PRISCILLA TRACE *District 1* | REGGIE BELLAMY *District 2* | STEPHEN JONSSON *District 3* | MISTY SERVIA *District 4* | VANESSA BAUGH *District 5* | CAROL WHITMORE *At Large* | BETSY BENAC *At Large*

Citizens Sign-in Sheet
Local Mitigation Strategy Working Group
March 21, 2019

Name	Email/Phone Number	Signature

LOCAL MITIGATION STRATEGY
2019 WORKGROUP

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Warren, Anthony	City of Bradenton	Anthony.warren@cityofbradenton.com	941-932-9400	
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Weis, Duane	Florida Division of Forestry	Duane.Weis@FreshFromFlorida.com	941-213-6970	
Wells, Rick	Manatee Sheriff's Office	Rick.Wells@manateesheriff.com	941-747-3011	
Westerman, Matt	Manatee County Rural Health Services	mwesterman@mcrhs.org	941-776-4000	
Wolfson, Dan	Manatee Clerk of the Circuit Court	Dan.wolfson@manateeclerk.com	941-749-1800	
Wonderly, Tonya	City of Palmetto Code Enforcment	twonderly@palmettofl.org	941-723-4580	
Yarger, Tom	Manatee County Property Management	tom.yarger@mymanatee.org	941-705-2619	

Local Mitigation Strategy (LMS) Meeting

Meeting Goal	Quarterly LMS Meeting		
Date: 3/21/2019	**Time: 3:10 p.m. – 4:02 p.m.**	**Location: Central Library**	**Facilitator: Nicole Knapp**
Nicole Knapp	David Bjelke	Robert Campbell	James Linkogle
Steve Litschauer	Shannon McIntyre	Judy Moree	Hjalmar Pachas
Amy Pilson	Cara Serra	Eric Thompson	Sandy Tudor
Anthony Warren	Eran Wasserman	Tonya Wonderly	

Topic	Discussion	Actions and Tasks	Staff Responsible	Due
Welcome	The meeting was called to order by Manatee County LMS Chairperson, Nicole Knapp at 3:10 p.m.			
Introductions	Attendees introduced themselves and their affiliation with the LMS group.			
Changes to agenda	None			
Minutes	Motion Amy Pilson, second Sandy Tudor, to approve meetings minutes of December 20, 2018. AYES = 15 NAYS = None ABSTAIN = None Motion passed			
Citizen Comments	None			
Meeting agenda item **Item #5** **5-year update**	1) Knapp provided a brief overview of the timeline, including State requirements, for updating the 5-year plan. (Per detailed sub-agenda) Knapp raised a question to Cara Serra (TBRPC) on whether the draft copy could be submitted earlier without penalty. Serra responded affirmatively.			

Meeting agenda item	Discussion took place regarding making sure we keep the schedule on track over the next 12 months, especially keeping in mind the break that most boards/commissions take in July 2020. Discussion continued about potential Manatee County BOCC worksession to be scheduled for December 2019 or January/February 2020. Amy Pilson suggested that we should aim to vote on the draft copy of the LMS at the December 2019 quarterly meeting of the LMS workgroup.	No action necessary		
Item #5 **5-year update**	2) Knapp discussed the proposed approach to accomplish the update. (Per detailed sub-agenda) Eran Wasserman suggested that perhaps only one (1) committee was necessary to work on the update and not three (3) as Knapp suggested as part of proposed approach. Discussions continued and support for three (3) committees was shown from several others of the workgroup. Knapp raised questions to Serra with respect to what other Counties are doing within the region and whether those strategies worked or are working well. Serra shared that each County has used different approaches and each have work well for different reasons depending on the County's needs. Pilson mentioned that it would be beneficial to have a once a year orientation, training or introduction to LMS for new participants. Motion Amy Pilson, Second Steve Litschauer to move forward with three (3) sub committees to work on the update. AYES = 15 NAYS = None ABSTAIN = None Motion passed	Three sub committees formed: 1. Goals & Objectives Amy Pilson David Bjelke Anthony Warren 2. Data Nicole Knapp Sandy Tudor Hjalmar Pachas 3. Governance Matt Myers Amy Pilson Nicole Knapp James Linkogle	Knapp to share contact information with all so all workgroup members are aware of subcommittee meetings.	3/28/2019

Meeting agenda item CONTINUED **Item #5** **5-year update**	3) Knapp explained that any hazards listed on the THIRA within the CEMP that are not identified within the LMS, shall include an omissions statement (1 sentence) of the rational in the LMS. The workgroup reviewed and discussed the current hazards list. Discussions continued about the need to update Space Weather with data confirmed as part of THIRA in CEMP, if Earthquakes could be omitted instead of negligible, as well as adding Red Tide and cyber. It was noted by Amy Pilson about the 3 earthquakes that have occurred in the panhandled of Florida and shall remain in hazards list. Discussion continued about analyzing like-events together as one hazard. Serra confirmed that all natural hazards are to be part of list. Steve Litschauer mentioned that he would have the staff from Emergency Management assist with update the hazards list.	No action necessary		
New/Old Business	Knapp shared with the workgroup that MC had received the Annual Update Compliance Letter dated 1/25/2019			
Open Discussion	None			
Next Meeting	June 20, 2019			
Adjourn	Motion Amy Pilson, Second Steve Litschauer to adjourn meeting at 4:02 p.m.			

AGENDA

Manatee County Local Mitigation Strategy

Thursday, June 20, 2019

3:00 PM – 4:30 PM

Manatee County Central Library (Auditorium)

1301 Barcarrota Boulevard West, Bradenton

Chairperson: Nicole M. Knapp Vice-Chair: Matthew Myers

1. Welcome and Introductions
2. Changes to the Agenda
3. Approval of meeting minutes – March 21, 2019
4. Citizen Comments (*each person shall be limited to 3 minutes per item)
5. LMS 5-year update Sub-Committee reports
   a) Governance & Bylaws – Matt Myers
   b) Goals & Objectives – Amy Pilson
   c) Data Information & Maps – Nicole Knapp

      THIRA – Tristan Morath
6. New Business/Old Business
   a) MOU Tampa Bay Regional Resiliency Coalition – LMS 5-year update
   b) HMGP Update for Hurricane Michael (DR-4399)
   c) Annual update as it relates to 5-year update
7. Open Discussion
8. Adjournment

PRISCILLA TRACE District 1 | REGGIE BELLAMY District 2 | STEPHEN JONSSON District 3 | MISTY SERVIA District 4 | VANESSA BAUGH District 5 | CAROL WHITMORE At Large | BETSY BENAC At Large

Citizens Sign-in Sheet

Local Mitigation Workgroup Meeting

June 20, 2019

NAME	EMAIL	PHONE	SIGNATURE

No public present

LOCAL MITIGATION STRATEGY 2019 WORKGROUP
June 20, 2019

NAME	AGENCY	EMAIL	PHONE	SIGNATURE
Knapp, Nicole Chairperson	Manatee County Public Safety Depart/Emergency Management	nicole.knapp@mymanatee.org	941-749-3500 ext. 7824	
Myers, Matthew Vice Chair	Manatee County Public Safety Depart/Emergency Management	matthew.myers@mymanatee.org	941-749-3500 ext. 1673	
Adent, Leslie	Southern Manatee Fire District	ladent@smfr.com	941-751-7675	
Azzara, Nick	Manatee County Information Outreach	Nicholas.Azzara@mymanatee.org	941-745-3771	
Bailey, Stacey S.	Parrish Fire District	admin@parrishfd.org	941-721-2093	
Berisford, Judy	Manatee County Public Works Depart	Judy.berisford@mymanatee.org	941-708-7524	
Bishop, Charlie	Manatee County Property Management	Charlie.bishop@mymanatee.org	941-749-3004	
Bjelke, David	USF - Sarasota EM	dbjelke@sar.usf.edu	941-359-4227	
Boutote, Lisa	Lakewood Ranch Town Hall	lisa.boutote@lwrtownhall.com	941-727-0899	
Brewer, Jan	Manatee County Financial Management	Jan.Brewer@mymanatee.org	941-748-4501 ext. 3726	
Brown, Rob	Manatee County Parks & Natural Resources	Rob.brown@mymanatee.org	941-742-5980 ext. 1870	
Brownman, Isaac	Town of Longboat Key Public Works	ibrownman@longboatkey.org	941-316-1988	
Burnett, Lynn	LTA Engineers LLC (for the City of Holmes Beach)	cityengineer@holmesbeachfl.org	941-526-3375	
Burnett, Lynn	LTS Engineers LLC (for the City of Bradenton Beach)	lynn@ltaengineers.com	941-713-1175	
Burnett, Lynn	LTA Engineers LLC (for the City of Anna Maria)	amengineer@cityofannamaria.com	941-526-3375	

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Butzow, Chad	Manatee County Public Works Depart	chad.butzow@mymanatee.org	941-708-7476	
Cacchiotti, Daniel	Myakka City Fire District	dpcacchiotti@myakkafire.org	941-322-6525	
Calhoun, Willie	Manatee Housing Authority	Willie.calhoun@ManateeHousing.com	941-756-3974	
Camp, Mary	Manatee County Neighborhood Services	mary.camp@mymanatee.org		
Campbell, Robert	Lakewood Ranch Inter District Authority	robert.campbell@lwrtownhall.com	941-727-0899 ext. 109	
Center, Eric	Cedar Hammock Fire Rescue	ecenter@chfr.org	941-727-2076	
Chabot, Wendy	City of Bradenton Beach	wchabot@cityofbradentonbeach.com	941-778-1005	
Chetlain, Paul	Lakewood Ranch Town Hall	paul.chetlain@lwrtownhall.com	941-907-0202	
Cluley, Kenneth R.	North River Fire District	CluleyK@nrfd.org	941-721-6700	
Colonneso, Angel	Clerk of the Circuit Court	Angel.Colonneso@manateeclerk.com	941-749-1800	
Corsi, Susan	City of Holmes Beach Public Works	corsis@holmesbeachfl.org	941-708-5833	
Cosby, John	City of Bradenton Beach	jcosby@cityofbradentonbeach.com	941-778-1005	
Cruz, Candice	Manatee County Financial Management	Candice.cruz@mymanatee.org	941-745-3733 ext. 3733	
Curtis, Luke	City of Anna Maria	ambo@cityofannamaria.com	941-708-6130 ext. 128	
Davies, Scott	Port Manatee	sdavies@Portmanatee.com	941-722-6621	
Davis, Jim	West Manatee Fire & Rescue	Jim.Davis@wmfr.org	941-761-1555	
Dixon, Van	Manatee County Rural Health Services	vdixon@mcrhs.org	941-776-4000	
Drakulich, Diane	Sarasota-Manatee Airport	Diane.drakulich@srq-airport.com	941-359-2770	

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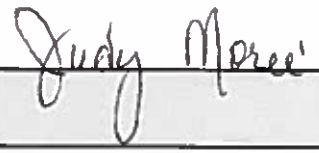
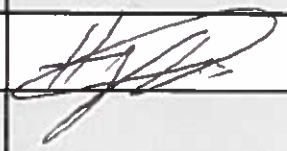
Elswick, Michael	Manatee County Parks & Natural Resources	michael.elswick@mymanatee.org		
Fiske, Jodie	Florida Division of Emergency Management	jodie.fiske@em.myflorida.com	850-519-8635	
Ford, Angie	Tax Collector	AngieF@Taxcollector.com	941-741-4801	
Foxwell, Hunter	Manatee County Financial Management	hunter.foxwell@mymanatee.org	941-741-4801 ext. 3761	
Funk, Lettie	Manatee County Property Management	Lettie.funk@mymanatee.org	941-749-4501	
Galler, Eva	Manatee County Convention Visitor Bureau	eva.galler@mymanatee.org	941-729-9177 ext. 3948	
Gerstenberger, Tom	Manatee County Public Works Depart	Tom.gerstenberger@mymanatee.org	941-708-7450 ext. 7228	
Gilbert, Steve	City of Bradenton Beach	stevegilbert@cityofbradentonbeach.com	941-778-1005	
Gopalakrishna, Mukunda	Manatee County Public Works Depart	Mukunda.gopalakrishna@mymanatee.org	941-749-3500 ext. 7813	
Goss, Debbie	Lakewood Ranch Town Hall	Debbie.goss@lwrtownhall.com	941-907-0202	
Graf, Dawn	Myakka City Fire District	dgraf@myakkafire.org	941-708-7476	
Groom, Ivan	Manatee County Redevelopment & Economic Opportunity Department	Ivan.groom@mymanatee.org	941-749-3029 ext. 6232	
Groover-Bryant, Shirley	City of Palmetto, Mayor	sbryant@palmettofl.org	941-723-4570	
Hadlock, J.D.	North River Fire District	HadlockJD@nrfd.org	941-721-6700	
Harper, Lea	Manatee County Property Management	lea.harper@mymanatee.org	941-748-4501 ext. 3623	
Hoyle, Jeff	Cedar Hammock Fire Rescue	jeff@chfr.org	941-751-7090	
Hull, Sally	School District of Manatee County	hulls@manateeschools.net	941-708-8770	
Hunsicker, Charlie	Manatee County Parks & Natural Resources	Charlie.hunsicker@mymanatee.org	941-742-5923 ext. 6001	

NAME	AGENCY	EMAIL	PHONE	SIGNATURE
Inotai, Marie	Manatee Tax Collector's Office	MarieI@taxcollector.com	941-741-4870	
Johnson, Betty	Manatee Rural Health Services	bjohnson@mcrhs.org	941-776-4000	
Keegan, Mike	Florida Forest Service	Michael.Keegan@FreshFromFlorida.com	941-213-6970	
Kitchen, Thomas	Manatee County Public Safety Depart/Emergency Management	thomas.kitchen@mymanatee.org	941-749-3500 ext. 1670	
Kumm, Shay	Sarasota-Manatee Airport	Shay.Kumm@srq-airport.com	941-359-2770	
Lamiano, Eva	LTA Engineers LLC (for the City of Holmes Beach)	eva@ltaengineers.com	941-713-1175	
Leinhauser, Jahna	Manatee Chamber of Commerce	Jahna@manateechamber.com	941-748-3411	
Linkogle, James	Town of Longboat Key	jlinkogle@longboatkey.org	941-316-1988	
Litschauer, Steve	Manatee County Public Safety Depart/Emergency Management	Steve.Litschauer@mymanatee.org	941-749-3500 ext. 3507	
Lovett, Brenda	Manatee Housing Authority	Brenda.lovett@ManateeHousing.com	941-756-3974	
Mahoney, Patrick	Florida Forest Service	Patrick.Mahoney@FreshFromFlorida.com	941-213-6970	
McCarty, Nancy	Centerstone of Florida. Inc.	Nancy.mccarty@centerstoneflorida.org	941-782-4150	
McGuinness, Jim	City of Holmes Beach	jmcguinness@holmesbeachfl.org	941-708-5833	
McIntyre, Shannon	Manatee Clerk of the Circuit Court	Shannon.mcintyre@manateeclerk.com	941-749-1800	
McLellan, Jim	City of Bradenton Public Works	Jim.mclellan@cityofbradenton.com	941-708-6300 ext. 235	
Miller, Cole	North River Fire District	millerc@nrfd.org	941-721-6700	
Mollanazar, Sia	Manatee County Public Works	Sia.mollanazar@mymanatee.org	941-708-7487	
Moore, Damon	Manatee County Parks & Natural Resources	damon.moore@mymanatee.org	941-742-5923 ext. 8073	
Mopps, Charles	Town of Longboat Key	cmopps@longboatkey.org	941-316-1988	

NAME	AGENCY	EMAIL	PHONE	SIGNATURE
Morath, Tristan	Manatee County Public Safety Depart/Emergency Management	tristan.morath@mymanatee.org	941-749-3500 ext. 1639	
Moree, Judy	Manatee Clerk of the Circuit Court	Judy.Moree@manateeclerk.com	941-749-1800	
Neasman, Trish	Southwest Florida Water Management District	Trisha.neasman@swfwmd.state.fl.us	800-423-1476 ext. 4407	
Onishenko, Alex	East Manatee Fire Rescue	aonishenko@emfr.org	941-751-5611	
Osborne, John	Manatee County Administrator's Office	John.Osborne@mymanatee.org	941-749-4501	
O'Shea, Bill	Manatee County Redevelopment & Economic Opportunity Department	Bill.oshea@mymanatee.org	941-749-3029 ext. 6858	
Owens, Karla	City of Palmetto Development Services Director	kowens@palmetto.fl.org	941-723-4580	
Pachas, Hjalmar	Manatee County Property Management	hjalmar.pachas@mymanatee.org	941-748-4501 ext. 3613	
Panik, Paul	Manatee County Parks & Natural Resources	Paul.panik@mymanatee.org	941-742-5980 ext. 1872	
Parsons, Allen	Town of Longboat Key	aparsons@longboatkey.org	941-316-1966	
Pendley, Mike	School District of Manatee County	pendleym@manateeschools.net	941-708-8770	
Pilson, Amy	Manatee County Utilities Department	Amy.Pilson@mymanatee.org	941-798-6745	
Poston, Wayne	City of Bradenton	Wayne.poston@cityofbradenton.com	941-932-9400	
Prater, Myra	Manatee County Public Works Depart	myra.prater@mymanatee.com	941-708-7494	
Rampino, Michael	North River Fire District	admin@nrfd.org	941-721-6700	
Rawley, Aaron	Manatee County Property Management	aaron.rawley@mymanatee.org	941-705-2619	
Rebokus-Scott, Jennifer	Manatee County Parks & Natural Resources	jennifer.rebokusscott@mymanatee.org	941-742-5923 ext. 6014	
Richmond, Joel	Manatee County Public Safety Depart/Emergency Management	Joel.Richmond@mymanatee.org	941-749-3500 ext. 1672	

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Robinson, Diana	Manatee County Property Management	diana.robinson@mymanatee.org	941-748-4501 ext 5843	
Ross, Anne	Lakewood Ranch Town Hall	anne.ross@lwrtownhall.com	941-727-0899 ext. 225	
Russo, Anthony	Manatee County Public Works Depart	anthony.russo@mymanatee.org	941-708-7494	
Ryan, Jeffrey	Manatee County Redevelopment & Economic Opportunity Department	jeffrey.ryan@mymanatee.com	941-748-4501 ext. 6916	
Sasada, Jeff	Sarasota-Manatee Airport	jeff.sasada@srq-airport.com	941-359-2770	
Saur, Jake	Public Safety Department	jacob.saur@mymanatee.org	941-749-3500	
Saxena, Jay	Ayres Associates (Engineer for City of Anna Maria)	saxenaj@ayresassociates.com	813-267-7775	
Schloss, Melissa	Florida Department of Emergency Management	Melissa.Schloss@em.myflorida.com	850-815-4504	
Serra, Cara	Tampa Bay Regional Planning Council (TBRPC)	cara@tbrpc.org	727-570-5151	
Shawver-Kamitz, Amanda	Manatee County Utilities Department	Amanda.shawverkamitz@mymanatee.org	941-792-8811 ext.5021	
Shnering, Brian	Manatee Sheriff's Office	Brian.Schnering@manateesheriff.com	941-737-0265	
Slusser, Cathy	Historical Library Manatee Clerk of the Ciruit Court	Cathy.slusser@manateeclerk.com	941-749-1800	
Stewart, Karen	Manatee County Redevelopment & Economic Opportunity Department	Karen.Stewart@mymanatee.org	941-749-3029 ext. 6832	
Struzzieri, Erin	Manatee County Parks & Natural Resources	erin.struzzieri@mymanatee.org	941-748-4501 ext. 8062	
Stuckey, Mark	Sarasota-Manatee Airport	Mark.Stuckey@srq-airport.com	941-359-2770	
Thompson, Eric	Manatee County Clerk of Circuit Court	eric.thompson@manateeclerk.com	941-741-4002	
Tokajer, William	City of Holmes Beach Police Depart	chief@holmesbeach.org	941-708-5800	
Tudor, Sandy	Manatee County Building and Development Services Department	Sandy.Tudor@mymanatee.org	941-748-4501 ext. 3843	
Tusing, Allen	City of Palmetto	Atusing@palmettofl.org	941-723-4580	

NAME	AGENCY	EMAIL	PHONE	SIGNATURE
Warren, Anthony	City of Bradenton	Anthony.warren@cityofbradenton.com	941-932-9400	
Wasserman, Eran	LTA Engineers LLC (for the City Holmes Beach)	eran@ltaengineers.com	201-674-2621	
Weis, Duane	Florida Division of Forestry	Duane.Weis@FreshFromFlorida.com	941-213-6970	
Wells, Rick	Manatee Sheriff's Office	Rick.Wells@manateesheriff.com	941-747-3011	
Westerman, Matt	Manatee County Rural Health Services	mwesterman@mcrhs.org	941-776-4000	
Wolfson, Dan	Manatee Clerk of the Circuit Court	Dan.wolfson@manateeclerk.com	941-749-1800	
Yarger, Tom	Manatee County Property Management	tom.yarger@mymanatee.org	941-705-2619	

Local Mitigation Strategy (LMS) Meeting

Meeting Goal	Quarterly LMS Meeting		
Date: 6/20/2019	**Time: 3:03 p.m. – 4:17 p.m.**	**Location: Central Library**	**Facilitator: Nicole Knapp**
Nicole Knapp	Matthew Myers	David Bjelke	Lisa Boutote
Rob Brown	Mary Camp	Robert Campbell	Hunter Foxwell
Lea Harper	James Linkogle	Shannon McIntyre	Damon Moore
Judy Moore	Hjalmar Pachas	Myra Prater	Diana Robinson
Anthony Russo	Cara Serra	Sandy Tudor	Eran Wasserman

Topic	Discussion	Actions and Tasks	Staff Responsible	Due
Welcome	The meeting was called to order by Manatee County LMS Chairperson, Nicole Knapp at 3:03 p.m.			
Introductions	Attendees introduced themselves and their affiliation with the LMS group.			
Changes to agenda	NONE			
Minutes	Motion Judy Moore, second Robert Campbell, to approve meetings minutes of March 21, 2019. AYES = 20 NAYS = 0 ABSTAIN = 0 Motion passed			
Citizen Comments	NONE			
Meeting agenda item **Item #5** **5-year update**	a) Governance & Bylaws Sub Committee Report provided by Matthew Myers. a. Sub Committee to discuss voting and membership	Sub-Committees to hold meetings		

Meeting agenda item **Item #5** **5-year update**	b) Goals & Objectives Sub Committee Report provided by Nicole Knapp. a. Ideas to support more relationship with Peril of Flood Act. c) Data Information & Maps Sub Committee Report provided by Nicole Knapp. a. No suggested changes currently. b. Creating data source chart and updating maps. d) THIRA report provided by Nicole Knapp. a. Nothing to review.			
New/Old Business	a) MOU Tampa Bay Regional Resiliency Coalition – 5yr update a. Requested to have more participation in workgroups and committees held by the coalition. b) HMGP Update for Hurricane Michael (DR-4399) a. No specific date set for funding. c) Annual Update as it relates to 5-year update a. Requirement of yearly update still stands even though a 5-year update will follow in March. d) 5-year update timeline a. Work session date set for December, moving up timeline for draft			
Open Discussion	NONE			
Next ¼ 'ly Meeting	September 20, 2019			
Adjourn	Motion Lea Harper, Second Robert Campbell to adjourn meeting at 4:17 p.m. Motion Passed			

MEETING RESCHEDULED

Manatee County Local Mitigation Strategy

Thursday, September 19, 2019

3:00 PM – 4:30 PM

Manatee County Central Library (Auditorium)

1301 Barcarrota Boulevard West, Bradenton

Chairperson: Nicole M. Knapp Vice-Chair: Matthew Myers

The next quarterly meeting of the Local Mitigation Strategy, previously scheduled for Thursday, September 19, 2019, at 3:00 p.m. has been rescheduled.

A SPECIAL meeting of the LMS Working Group will take place on Thursday, October 17, 2019 at 3:00 p.m.

PRISCILLA TRACE *District 1* | REGGIE BELLAMY *District 2* | STEPHEN JONSSON *District 3* | MISTY SERVIA *District 4* | VANESSA BAUGH *District 5* | CAROL WHITMORE *At Large* | BETSY BENAC *At Large*

SPECIAL MEETING AGENDA

Manatee County Local Mitigation Strategy

Thursday, October 17, 2019

3:30 PM – 5:00 PM

Manatee County Central Library (Auditorium)

1301 Barcarrota Boulevard West, Bradenton

Chairperson: Nicole M. Knapp Vice-Chair: Matthew Myers

1. Welcome and Introductions
2. Changes to the Agenda
3. Approval of meeting minutes – June 20, 2019
4. Citizen Comments (*each person shall be limited to 3 minutes per item)
5. LMS 5-year update revised timeline
6. LMS 5-year Update Sub-Committee Reports
   a) Governance & Bylaws – Matt Myers
   b) Goals & Objectives – Amy Pilson
   c) Data Information – Nicole Knapp
   d) THIRA – Tristan Morath
7. Approval of LMS 2019-2020 Update FIRST DRAFT
8. New Business/Old Business
   a) FY19 PDM and FMA Grants – Pending applications
   b) Timing and application requirements of potential Hazard Mitigation Grant Program projects (HMGP for Hurricane Michael - DR-4399)
   c) Benefit Cost Analysis
9. Open Discussion
10. Adjournment

PRISCILLA TRACE District 1 | REGGIE BELLAMY District 2 | STEPHEN JONSSON District 3 | MISTY SERVIA District 4 | VANESSA BAUGH District 5 | CAROL WHITMORE At Large | BETSY BENAC At Large

Citizens Sign-in Sheet

Local Mitigation Strategy Working Group

October 17, 2019 – Special Meeting

Name	Email/Phone Number	Signature
William Swales	William.Swales@manateesheriff.com	
Tristan Morath	tristan.mo-at@mymanatee.org	
Tom Kitchen	"	

LOCAL MITIGATION STRATEGY 2019 WORKGROUP

October 17, 2019 - Special Meeting

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Knapp, Nicole Chairperson	Manatee County Public Safety Depart/Emergency Management	Planning Manager	Prime	nicole.knapp@mymanatee.org	941-749-3500 ext. 7824	
Myers, Matthew Vice Chair	Manatee County Public Safety Depart/Emergency Management	EM Coordinator	Alt	matthew.myers@mymanatee.org	941-749-3500 ext. 1673	
Adent, Leslie	Southern Manatee Fire District	Fire Marshal	Prime	ladent@smfr.com	941-751-7675	
Bailey, Stacey S.	Parrish Fire District	Chief	Prime	admin@parrishfd.org	941-721-2093	
Bjelke, David	USF - Sarasota EM	Assit Director, Facility Pln/Mgmt	Prime	dbjelke@sar.usf.edu	941-359-4227	
Boutote, Lisa	Lakewood Ranch Town Hall	Customer Service Coordinator	Alt	lisa.boutote@lwrtownhall.com	941-727-0899	
Brown, Rob	Manatee County Parks & Natural Resources	Enviro Protection Div Mgr	Prime	Rob.brown@mymanatee.org	941-742-5980 ext. 1870	
Brownman, Isaac	Town of Longboat Key	Public Works		ibrownman@longboatkey.org	941-316-1988	
Burnett, Lynn	LTA Engineers LLC (for the City of Holmes Beach)	City Engineer	Prime	cityengineer@holmesbeachfl.org	941-526-3375	
Burnett, Lynn	LTA Engineers LLC (for the Bradenton Beach)	City Engineer	Prime	lynn@ltaengineers.com	941-713-1175	
Cacchiotti, Daniel	Myakka City Fire District	Chief	Alt	dpcacchiotti@myakkafire.org	941-322-6525	
Calhoun, Willie	Manatee Housing Authority		Prime	Willie.calhoun@ManateeHousing.com	941-756-3974	
Camp, Mary	Manatee County Neighborhood Services	GIS Specialist	Prime	mary.camp@mymanatee.org		
Campbell, Robert	Lakewood Ranch Inter District Authority	Landscape Supervisor	Prime	robert.campbell@lwrtownhall.com	941-727-0899 ext. 109	
Center, Eric	Cedar Hammock Fire Rescue	Fire Marshal	Prime	ecenter@chfr.org	941-727-2076	

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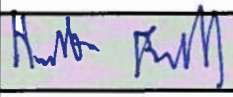
Chabot, Wendy	City of Bradenton Beach		Alt	wchabot@cityofbradentonbeach.com	941-778-1005	
Colgate, William	Manatee Rural Health Services		Alt	wcolgate@mcr.health	941-776-4000	
Corsi, Susan	City of Holmes Beach	Public Works…		corsis@holmesbeachfl.org	941-708-5833	
Cosby, John	City of Bradenton Beach	Lt. - Emerg Mgmt	Alt	jcosby@cityofbradentonbeach.com	941-778-1005	
Cruz, Candice	Manatee County Financial Management	Senior Budget Analyst	Prime	Candice.cruz@mymanatee.org	941-745-3733 ext. 3733	
Curcio, Daniel	Florida Department of Emergency Management	Region 4 Liaison	Prime	Melissa.Schloss@em.myflorida.com	850-815-4504	
Curtis, Luke	City of Anna Maria	Building Official	Prime	ambo@cityofannamaria.com	941-708-6130 ext. 128	
Davies, Scott	Port Manatee		Prime	sdavies@Portmanatee.com	941-722-6621	
Davis, Jim	West Manatee Fire & Rescue	Fire Marshal	Prime	Jim.Davis@wmfr.org	941-761-1555	
Drakulich, Diane	Sarasota Manatee Airport Authority	Fire & Enviro Affairs	Alt	Diane.drakulich@srq-airport.com	941-359-2770	
Fiske, Jodie	Florida Division of Emergency Management	Regional EM Coordinator	Prime	jodie.fiske@em.myflorida.com	850-519-8635	
Ford, Angie	Manatee Tax Collector's Office	Tax Collector	Prime	AngieF@Taxcollector.com	941-741-4801	
Foxwell, Hunter	Manatee County Financial Management	Senior Budget Analyst	Alt	hunter.foxwell@mymanatee.org	941-741-4801 ext. 3761	
Galler, Eva	Manatee County Convention Visitor Bureau	CFO	Prime	eva.galler@mymanatee.org	941-729-9177 ext. 3948	
Gilbert, Steve	City of Bradenton Beach	Building Official	Prime	stevegilbert@cityofbradentonbeach.com	941-778-1005	
Graf, Dawn	Myakka City Fire District	Fire Marshal	Prime	dgraf@myakkafire.org	941-708-7476	
Harper, Lea	Manatee County Property Management	GIS Analyst I		lea.harper@mymanatee.org	941-748-4501 ext. 3623	
Hayes, Keturah	Manatee Rural Health Services	Sr. Director Accreditation	Prime	khayes@mcr.health	941-776-4000	

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Hoyle, Jeff	Cedar Hammock Fire Rescue	Chief	Alt	jeff@chfr.org	941-751-7090	
Hull, Sally	School District of Manatee County	Manager of Safety & Emerg Mgmt		hulls@manateeschools.net	941-708-8770	
Inotai, Marie	Manatee Tax Collector's Office	Tax Collector	Alt	MarieI@taxcollector.com	941-741-4870	
Keegan, Mike	Florida Forest Service		Prime	Michael.Keegan@FreshFromFlorida.com	941-213-6970	
Kumm, Shay	Sarasota Manatee Airport Authority	Fire & Enviro Affairs		Shay.Kumm@srq-airport.com	941-359-2770	
Lamiano, Eva	LTA Engineers LLC (for the City of Holmes Beach)			eva@ltaengineers.com	941-713-1175	
Leinhauser, Jahna	Manatee Chamber of Commerce		Prime	Jahna@manateechamber.com	941-748-3411	
Linkogle, James	Town of Longboat Key	Public Works Project Manager		jlinkogle@longboatkey.org	941-316-1988	
Litschauer, Steve	Manatee County Public Safety Depart/Emergency Management	Chief	Alt	Steve.Litschauer@mymanatee.org	941-749-3500 ext. 3507	
Lovett, Brenda	Manatee Housing Authority		Alt	Brenda.lovett@ManateeHousing.com	941-756-3974	
Mahoney, Patrick	Florida Forest Service		Alt	Patrick.Mahoney@FreshFromFlorida.com	941-213-6970	
McCarty, Nancy	Centerstone of Florida. Inc.			Nancy.mccarty@centerstoneflorida.org	941-782-4150	
McGuinness, Jim	City of Holmes Beach			jmcguinness@holmesbeachfl.org	941-708-5833	
McIntyre, Shannon	Manatee Clerk of the Circuit Court	Grant Accountant	Prime	Shannon.mcintyre@manateeclerk.com	941-749-1800	
McLellan, Jim	City of Bradenton	Public Works…	Alt	Jim.mclellan@cityofbradenton.com	941-708-6300 ext. 235	
Miller, Andrell	North River Fire District	Fire Marshal	Alt	millera@nrfd.org	941-721-6700	
Mopps, Charles	Town of Longboat Key			cmopps@longboatkey.org	941-316-1988	
Moree, Judy	Manatee Clerk of the Circuit Court	Senior Grant Accountant	Alt	Judy.Moree@manateeclerk.com	941-749-1800	

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Neasman, Trish	Southwest Florida Water Management District		Prime	Trisha.neasman@swfwmd.state.fl.us	800-423-1476 ext. 4407	
Onishenko, Alex	East Manatee Fire Rescue	Fire Marshal	Prime	aonishenko@emfr.org	941-751-5611	
O'Shea, Bill	Manatee County Redev & Economic Opp Depart	Community Development Proj Mgr	Alt	Bill.oshea@mymanatee.org	941-749-3029 ext. 6858	
Owens, Karla	City of Palmetto	Development Services Director	Prime Alt	kowens@palmetto.fl.org	941-723-4580	
Pachas, Hjalmar	Manatee County Property Management	E+S		hjalmar.pachas@mymanatee.org	941-748-4501 ext. 3613	
Parsons, Allen	Town of Longboat Key			aparsons@longboatkey.org	941-316-1966	
Pendley, Mike	School District of Manatee County	Executive Planner	Prime	pendleym@manateeschools.net	941-708-8770	
Pilson, Amy	Manatee County Utilities Department	Public Affairs Liaison	Prime	Amy.Pilson@mymanatee.org	941-798-6745	
Porter, Tom	Manatee Sheriff's Office	Captain	Alt	thomas.porter@manateesheriff.com	941-747-3011 ext. 2909	
Prater, Myra	Manatee County Public Works Depart	Field Maintenance Division Manager	Prime	myra.prater@mymanatee.com	941-708-7494	
Rampino, Michael	North River Fire District	Chief	Prime	admin@nrfd.org	941-721-6700	
Rietz, Richard	Manatee Sheriff's Office	Lieutenant	Prime	richard.rietz@manateesheriff.com	941-747-3011 ext. 2323	
Ross, Anne	Lakewood Ranch Town Hall			anne.ross@lwrtownhall.com	941-727-0899 ext. 225	
Russo, Anthony	Manatee County Public Works Depart	Project Engineer	Alt	anthony.russo@mymanatee.org	941-708-7494	
Ryan, Jeffrey	Manatee County Redev & Economic Opp Depart	Redevelopment Coordinator	Prime	jeffrey.ryan@mymanatee.com	941-748-4501 ext. 6916	Jeffrey Ryan (esigned)
Sasada, Jeff	Sarasota Manatee Airport Authority	Fire & Enviro Affairs		jeff.sasada@srq-airport.com	941-359-2770	
Saur, Jake	Public Safety Department	Director		jacob.saur@mymanatee.org	941-749-3500	
Serra, Cara	Tampa Bay Regional Planning Council (TBRPC)	Comprehensive Resiliency Planner	Prime	cara@tbrpc.org	727-570-5151	

NAME	AGENCY	Title/Position	Pri/Alt	EMAIL	PHONE	SIGNATURE
Shawver-Karnitz, Amanda	Manatee County Utilities Department	Water Quality Compliance Supervisor	Alt	Amanda.shawverkarnitz@mymanatee.org	941-792-8811 ext.5021	
Shnering, Brian	Manatee Sheriff's Office	Captain	Alt	Brian.Schnering@manateesheriff.com	941-737-0265	
Slusser, Cathy	Manatee Clerk of the Ciruit Court	Historical Library	Prime	Cathy.slusser@manateeclerk.com	941-749-1800	
Stuckey, Mark	Sarasota Manatee Airport Authority	Fire & Enviro Affairs		Mark.Stuckey@srq-airport.com	941-359-2770	
Tokajer, William	City of Holmes Beach	Chief	Prime	chief@holmesbeach.org	941-708-5800	
Tudor, Sandy	Manatee County Building and Development Services Department	Floodplain Manager	Prime	Sandy.Tudor@mymanatee.org	941-748-4501 ext. 3843	
Tusing, Allen	City of Palmetto	Public Works Director	Prime	Atusing@palmettofl.org	941-723-4580	
Warren, Anthony	City of Bradenton	Building Official	Prime	Anthony.warren@cityofbradenton.com	941-932-9400	
Wasserman, Eran	LTA Engineers LLC (for the City Holmes Beach)	City of Holmes Beach	Alt	eran@ltaengineers.com	201-674-2621	
Weis, Duane	Florida Division of Forestry		Prime	Duane.Weis@FreshFromFlorida.com	941-213-6970	

Local Mitigation Strategy (LMS) Meeting

Meeting Goal	October Special LMS Meeting		
Date: 10/17/2019	**Time: 3:32 pm – 4:11 pm**	**Location: Central Library**	**Facilitator: Nicole Knapp**

Nicole Knapp	Matthew Myers	William Swales	Tristan Morath
Thomas Kitchen	Rob Brown	Lynn Burnett	Mary Camp
Robert Campbell	Hunter Foxwell	Steve Litschauer	Karla Owens
Hjalmar Pachas	Myra Prater	Richard Reitz	Cara Serra
Eran Wasserman	Jeffrey Ryan		

Topic	Discussion	Actions and Tasks	Staff Responsible	Due
Welcome	The meeting was called to order by Manatee County LMS Chairperson, Nicole Knapp at 3:32 pm			
Introductions	Attendees introduced themselves and their affiliation with the LMS group.			
Changes to agenda	None			
Minutes	Motion by Robert Campbell, second Myra Prater, to approve meetings minutes of June 20, 2019. AYES = 18 NAYS = 0 ABSTAIN = 0 Motion passed			
Citizen Comments	None			
Meeting agenda item **LMS 5 Year Update Revised Timeline**	Knapp discussed the updated timeline with draft dates and public input dates			

Meeting agenda item **LMS 5-Year Update Sub-Committee Reports**	a) Governance & Bylaws – Matthew Myers a. Discussed the update regarding the timing of officers and voting requirements. b. Discussion continued briefly about keeping Chair and Vice Chair throughout all of 2020 for consistency through the 5-year update. Discussion to continue at the Nov 21, 2019 meeting. b) Goals & Objectives – Amy Pilson a. No changes to previous draft. c) Data Information – Nicole Knapp a. No major changes. Changes only to the actual data needing to be updated. d) THIRA – Tristan Morath a. Discussed the reason why there is a new THIRA and how to process for updating worked. Discussed the new added threats (harmful algae blooms, epidemics, animal disease outbreak, airplane crashes, critical infrastructure disruption, radiological releases, train derailment, major transportation incidents, urban conflagration, civil disturbance, coastal oil spill, cyber incidents, mass migration, sabotage, mass shooting, and special events)			
Approval of LMS 2019-2020 Update FIRST DRAFT	Motion by Lynn Burnett, second Tristan Morath to approve the FIRST DRAFT of the 2019 LMS 5-Year Update AYES = 18 NAYS = 0 ABSTAIN = 0 Motion passed			
New/Old Business	a) FY19 PDM and FMA Grants – Pending Applications a. Discussed the changes and process of applications for.			

	b) Timing and application requirements of potential Hazard Mitigation Grant Program projects (HMGP for Hurricane Michael – DR-4399) a. Discussed the process and LMS's role (letter of endorsement by LMS Chair). Group to consider the prioritization at meeting to be held on January 30, 2020. b. Discussed the changes and process of applications for project priority ranking before the LMS Working Group. (updated handout provided) c) Benefit Cost Analysis a. Burnett suggested multiple working group members take the training class that was offered at 2019 Governor's Hurricane Conference and EM looking into hosting. Discussed that it is important for multiple people to be trained to so there are different points of expertise evaluating.			
Open Discussion	Burnett shared that Homes Beach and Bradenton Beach successfully amending their Comprehensive Plan to address the POF Act requirements. Kudos to Nicole for making the LMS a better workgroup.			
Next ¼ 'ly Meeting	NOVEMBER SPECIAL MEETING 11/21/2019			
Adjourn	Motion by Robert Campbell, Second Lynn Burnett to adjourn meeting at 4:11 pm Motion passed			

SPECIAL MEETING AGENDA

Manatee County Local Mitigation Strategy

Thursday, November 21, 2019

3:30 PM – 5:00 PM

Manatee County Central Library (Auditorium)

1301 Barcarrota Boulevard West, Bradenton

Chairperson: Nicole M. Knapp Vice-Chair: Matthew Myers

1. Welcome and Introductions
2. Changes to the Agenda
3. Approval of meeting minutes – October 17, 2019
4. Citizen Comments (*each person shall be limited to 3 minutes per item)
5. All Things Resiliency – Presentation by Rob Brown, Parks and Natural Resources
6. LMS 5-year Update - revised timeline for adoption hearing
7. LMS 5-year Update – Summary of Online Public Feedback
8. LMS 5-year Update – Public Comment Night
9. Approval of SECOND DRAFT – 2019 Local Mitigation Strategy Plan
10. New Business/Old Business
    a) 2020 Vice Chair position – No Action Necessary
    b) Benefit Cost Analysis Training – Update provided
11. Open Discussion
12. Adjournment

PRISCILLA TRACE *District 1* | REGGIE BELLAMY *District 2* | STEPHEN JONSSON *District 3* | MISTY SERVIA *District 4* | VANESSA BAUGH *District 5* | CAROL WHITMORE *At Large* | BETSY BENAC *At Large*

Local Mitigation Strategy (LMS) Meeting

Meeting Goal	November Special LMS Meeting		
Date: 11/21/2019	**Time: 3:37pm - 4:16pm**	**Location: Central Library**	**Facilitator: Matthew Myers**
Matthew Myers	David Bjelke	Rob Brown	Lynn Burnett
Jodie Fiske	James Linkogle	Steve Litschauer	Hjalmar Pachas
Rick Rietz	Anthony Russo	Sandy Tudor	William Swales

Topic	Discussion	Actions and Tasks	Staff Responsible	Due
Welcome	The meeting was called to order by Manatee County LMS Vice Chair, Matthew Myers at 3:37pm			
Introductions	Attendees introduced themselves and their affiliation with the LMS group.			
Changes to agenda	None			
Minutes	Motion by Rick Rietz, second Rob Brown, to approve meetings minutes of October 17, 2019. AYES = 12 NAYS = 0 ABSTAIN = 0 Motion Passed			
Citizen Comments	None			
Meeting agenda item **All Things Resiliency – Rob Brown**	Update on the resilience coalition.			

Meeting agenda item **LMS 5-Year Update Revised Timeline For Adoption Hearing**	Update for the adoption hearing to be August 4th, 2020.			
Meeting agenda item **LMS 5-Year Update Summary of Online Public Feedback**	Distributed and discussed the comments thus far.			
Meeting agenda item **LMS 5-Year Update Public Comment Night**	Public Comment night at the library is January 15th, 2020. Requested representation from all jurisdictions to help with questions specific to those jurisdictions.			
Meeting agenda item **LMS 5-Year Update Updates to 2nd Draft**	Chapter 4 updated with minor grammatical errors. Governance appendix updated to state that the vice chair will become			

	interim Chair in the even the chair is no longer with Emergency Management until the Chief appoints a new Chair.			
Approval of LMS 2019-2020 Update SECOND DRAFT	Motion by Steve Litschauer, second Rick Rietz to approve the SECOND DRAFT of the 2019 LMS 5-Year Update AYES = 12 NAYS = 0 ABSTAIN = 0 Motion Passed			
New/Old Business	a) 2020 Vice Chair Position a. No Action Necessary b) Benefic Cost Analysis Training a. Update i. Training Provided in Orlando. Minimum 10 people with a max of 20. Doodle poll to be sent out for dates. Earliest training will be in January. 1. Doodle Poll to be sent out with dates in January for the training.			
Open Discussion	None			
Next ¼ 'ly Meeting	January 30th, 2020 at 3:30pm. Central Library			
Adjourn	Motion by Lynn Burnett, Second Steve Litschauer to adjourn meeting at 4:16pm Motion Passed			

Citizens Sign-in Sheet

Local Mitigation Workgroup Meeting

November 21, 2019

NAME	EMAIL	PHONE	SIGNATURE
William Swales	William.Swales@manateesheriff.com	747-3011 Ext 2779	[signature]

LOCAL MITIGATION STRATEGY 2019 WORKGROUP
November 21, 2019 - Special Meeting

NAME	AGENCY	Title/Position	Pri/Alt	EMAIL	PHONE	SIGNATURE
Knapp, Nicole Chairperson	Manatee County Public Safety Depart/Emergency Management	Planning Manager	Prime	nicole.knapp@mymanatee.org	941-749-3500 ext. 7824	
Myers, Matthew Vice Chair	Manatee County Public Safety Depart/Emergency Management	EM Coordinator	Alt	matthew.myers@mymanatee.org	941-749-3500 ext. 1673	
Adent, Leslie	Southern Manatee Fire District	Fire Marshal	Prime	ladent@smfr.com	941-751-7675	
Bailey, Stacey S.	Parrish Fire District	Chief	Prime	admin@parrishfd.org	941-721-2093	
Bjelke, David	USF - Sarasota EM	Assit Director, Facility Pln/Mgmt	Prime	dbjelke@sar.usf.edu	941-359-4227	
Boutote, Lisa	Lakewood Ranch Town Hall	Customer Service Coordinator	Alt	lisa.boutote@lwrtownhall.com	941-727-0899	
Brown, Rob	Manatee County Parks & Natural Resources	Enviro Protection Div Mgr	Prime	Rob.brown@mymanatee.org	941-742-5980 ext. 1870	
Brownman, Isaac	Town of Longboat Key	Public Works		ibrownman@longboatkey.org	941-316-1988	
Burnett, Lynn	LTA Engineers LLC (for the City of Holmes Beach)	City Engineer	Prime	cityengineer@holmesbeachfl.org	941-526-3375	
Burnett, Lynn	LTA Engineers LLC (for the Bradenton Beach)	" "	Prime	lynn@ltaengineers.com	941-713-1175	
Cacchiotti, Daniel	Myakka City Fire District	Chief	Alt	dpcacchiotti@myakkafire.org	941-322-6525	
Calhoun, Willie	Manatee Housing Authority		Prime	Willie.calhoun@ManateeHousing.com	941-756-3974	
Camp, Mary	Manatee County Neighborhood Services	GIS Specialist	Prime	mary.camp@mymanatee.org		
Campbell, Robert	Lakewood Ranch Inter District Authority	Landscape Supervisor	Prime	robert.campbell@lwrtownhall.com	941-727-0899 ext. 109	
Center, Eric	Cedar Hammock Fire Rescue	Fire Marshal	Prime	ecenter@chfr.org	941-727-2076	

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Cosby, John	City of Bradenton Beach	Lt. - Emerg Mgmt	Alt	jcosby@cityofbradentonbeach.com	941-778-1005	
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Curcio, Daniel	Florida Department of Emergency Management	Region 4 Liaison	Prime	Melissa.Schloss@em.myflorida.com	850-815-4504	
Curtis, Luke	City of Anna Maria	Building Official	Prime	ambo@cityofannamaria.com	941-708-6130 ext. 128	
Davies, Scott	Port Manatee		Prime	sdavies@Portmanatee.com	941-722-6621	
Davis, Jim	West Manatee Fire & Rescue	Fire Marshal	Prime	Jim.Davis@wmfr.org	941-761-1555	
Drakulich, Diane	Sarasota Manatee Airport Authority	Fire & Enviro Affairs	Alt	Diane.drakulich@srq-airport.com	941-359-2770	
Fiske, Jodie	Florida Division of Emergency Management	Regional EM Coordinator	Prime	jodie.fiske@em.myflorida.com	850-519-8635	Jodie Fiske
Ford, Angie	Manatee Tax Collector's Office	Tax Collector	Prime	AngieF@Taxcollector.com	941-741-4801	
Foxwell, Hunter	Manatee County Financial Management	Senior Budget Analyst	Alt	hunter.foxwell@mymanatee.org	941-741-4801 ext. 3761	
Galler, Eva	Manatee County Convention Visitor Bureau	CFO	Prime	eva.galler@mymanatee.org	941-729-9177 ext. 3948	
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Hull, Sally	School District of Manatee County	Manager of Safety & Emerg Mgmt		hulls@manateeschools.net	941-708-8770	
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Linkogle, James	Town of Longboat Key	Public Works Project Manager		jlinkogle@longboatkey.org	941-316-1988	
Litschauer, Steve	Manatee County Public Safety Depart/Emergency Management	Chief	Alt	Steve.Litschauer@mymanatee.org	941-749-3500 ext. 3507	
Lovett, Brenda	Manatee Housing Authority		Alt	Brenda.lovett@ManateeHousing.com	941-756-3974	
Mahoney, Patrick	Florida Forest Service		Alt	Patrick.Mahoney@FreshFromFlorida.com	941-213-6970	
McCarty, Nancy	Centerstone of Florida. Inc.			Nancy.mccarty@centerstoneflorida.org	941-782-4150	
McGuinness, Jim	City of Holmes Beach			jmcguinness@holmesbeachfl.org	941-708-5833	
McIntyre, Shannon	Manatee Clerk of the Circuit Court	Grant Accountant	Prime	Shannon.mcintyre@manateeclerk.com	941-749-1800	
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Miller, Andrell	North River Fire District	Fire Marshal	Alt	millera@nrfd.org	941-721-6700	
Mopps, Charles	Town of Longboat Key			cmopps@longboatkey.org	941-316-1988	
Moree, Judy	Manatee Clerk of the Circuit Court	Senior Grant Accountant	Alt	Judy.Moree@manateeclerk.com	941-749-1800	

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Owens, Karla	City of Palmetto	Development Services Director	Alt	kowens@palmetto.fl.org	941-723-4580	
Pachas, Hjalmar	Manatee County Property Management	PM		hjalmar.pachas@mymanatee.org	941-748-4501 ext. 3613	
Parsons, Allen	Town of Longboat Key			aparsons@longboatkey.org	941-316-1966	
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Prater, Myra	Manatee County Public Works Depart	Field Maintenance Division Manager	Prime	myra.prater@mymanatee.com	941-708-7494	
Rampino, Michael	North River Fire District	Chief	Prime	admin@nrfd.org	941-721-6700	
Rietz, Richard	Manatee Sheriff's Office	Lieutenant	Prime	richard.rietz@manateesheriff.com	941-747-3011 ext. 2323	
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Russo, Anthony	Manatee County Public Works Depart	Project Engineer	Alt	anthony.russo@mymanatee.org	941-708-7494	
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MEETING RESCHEDULED

Manatee County Local Mitigation Strategy

Thursday, December 19, 2019

3:30 PM – 5:00 PM

Manatee County Central Library (Auditorium)

1301 Barcarrota Boulevard West, Bradenton

Chairperson: Nicole M. Knapp Vice-Chair: Matthew Myers

The next quarterly meeting of the Local Mitigation Strategy, previously scheduled for Thursday, December 19, 2019, at 3:30 p.m. has been rescheduled.

A SPECIAL meeting of the LMS Working Group will take place on Thursday, January 30, 2020 at 3:30 p.m.

PRISCILLA TRACE *District 1* | REGGIE BELLAMY *District 2* | STEPHEN JONSSON *District 3* | MISTY SERVIA *District 4* | VANESSA BAUGH *District 5* | CAROL WHITMORE *At Large* | BETSY BENAC *At Large*

APPENDIX E

CRITICAL FACILITIES

The Critical Facilities Inventory (CFI) Database for the county was updated and is available through the county emergency management and regional planning council.

This listing contains information that relates to the physical security of facilities used by the jurisdictions and to the security systems of these facilities.

This list is impressed within the exemption of Section 119.071(1), Florida Statutes, and is a confidential component of this document.

As such, it is not subject to the general disclosure requirements of Section 119.071(1, F. S. or to any other requirements of disclosure.

The database itself is protected under Homeland Security laws and not distributed as part of the LMS to the general public.

CRITICAL FACILITIES

VULNERABILITY SCORING METHODOLOGY

SCORING VULNERAILITY

In developing the methodology for identifying an initial listing of critical facilities in Manatee County in 1998/99, the matrix entitled "Scoring the Facilities for Vulnerability", provided by the Division of Emergency Management, Florida Department of Community Affairs, was used. Facilities were scored based on four factors ranging from 0 (least important condition) to 3 (most important condition). The subject areas included within the matrix were as follows:

- Facility category
- Subject to high winds
- Vulnerability to flooding
- Vulnerability to storm surge
- History of damage
- Subject to earth movement or loss
- Vulnerable to power outage
- Vulnerable to lightning
- Vulnerable to roadway blockage by debris or flooding of access roads
- Dependent upon water supply
- Vulnerable to sewer system outage
- Dependent upon communications
- Disruption causes health and safety hazard
- Disruption would cause psychological hardship
- Disruption would have economic impact
- Disruption impacts community services
- Environmental problems could occur
- Facility has historic value
- Facility impacts agriculture
- Hazardous materials
- Subject to major fire

Each participating governmental agency identified those facilities located within their area of responsibility deemed to be critical. Since each jurisdiction has its own unique characteristics and hazards profile/potential, no attempt was made to develop a single county-wide methodology. Instead, each governmental agency assigned scores based on their knowledge of the local situation and vulnerabilities. It is acknowledged that using this approach does not guarantee a uniformed approach in scoring. Still, by using a common matrix of scoring factors, it does ensure that the critical facilities identified by each local government/agency are reflective of its local needs and desires when compiled into a single countywide listing.

Once identified by the participating local government/agency, the individual lists of critical facilities were combined into a single countywide listing, ranked from highest to lowest based on each facility's respective total score.

In the 2014/15 update of the Manatee County LMS, many of same critical facilities identified originally remained, augmented by new additions. Majority of these critical facilities are of local importance. As a consequence, the mapping of each individual identified critical facility would be an arduous if not impossible task. Consequently, it was decided to limit the mapping of critical facilities to those identified by the Division of Emergency Management as most important from a countywide application of the LMS. The critical facilities fall under the following general headings:

- Operations centers and staging areas
- Government buildings
- Fire and EMS stations
- Law enforcement offices
- Medical services
- Potable water supply/treatment facilities
- Florida Power & Light substations
- Peace River substations
- Sewer/treatment facilities
- Schools and universities
- Convalescent and assisted living facilities
- Evacuation shelters
- Airports
- Flood control devices
- Radio/cellular/TV towers
- Manatee County landfill
- Hazardous material storage sites

No effort was made to draw a direct relationship between the countywide listing of critical facilities and the list of countywide mitigation initiatives. Depending on the local situation, there may be a direct correlation between a certain critical facility(ies) and initiatives. In others, a more generalized initiative may have been identified which covers a hazard to which several critical facilities were affected. However, the Manatee County LMS recognizes that all critical facilities may be vulnerable to all known hazards.

Such maps will only be incorporated into those documents to be used by county and local emergency responders.

DEFINITIONS

To prioritize facilities the following definitions were obtained from the website www.FloridaDisaster.org.

Critical facilities are defined as those structures from which essential services and functions for victim survival, continuation of public safety actions, and disaster recovery are performed or provided. Shelters, emergency operation centers, public health, public drinking water, sewer and wastewater facilities are examples of critical facilities. Though not explicitly included in the definition, supporting life-line infrastructure essential to the mission of critical facilities must also be included in the inventory when appropriate.

Critical infrastructure is defined as those systems and assets, whether physical or virtual, so vital that the incapacity or destruction of such systems and assets would have a debilitating impact on security, economy, public health or safety, or any combination of these elements. (Source: FloridaDisaster.org)

APPENDIX F

COMMUNITY GUIDING PRINCIPLES AND IMPLEMENTATION

A. BACKGROUND

The identification of Community Guiding Principles serves as the foundation upon which the Manatee County LMS should be implemented. As such, the documentation upon which these principles are drawn should be legally sound and represent extensive public involvement and comment. With this in mind, it was determined that the goals, objective, and policies of the adopted local governments' comprehensive plans and land development regulations from the participating governments of Manatee County represented the ideal source from which to identify the community guiding principles.

The following statements serve to reinforce this decision.

First, the intent that the adoption of a local government comprehensive plan. As outlined in Section 163.3161(4), Florida Statutes, "it is the purpose of this act that local governments have the ability to preserve and enhance present advantages; encourage the most appropriate use of land, water, and resources, consistent with the public interest; overcome present handicaps; and deal effectively with future problems that may result from the use and development of land within their jurisdictions. Through the process of comprehensive planning, it is intended that units of local government can preserve, promote, protect, and improve public health, safety, comfort, good order, appearance, convenience, law enforcement and fire prevention, and general welfare; facilitate the adequate and efficient provision of transportation, water, sewerage, schools, parks, recreational facilities, housing, and other requirements and services; and conserve, develop, utilize, and protect natural resources within their jurisdictions."

Second, in terms of hazard mitigation, specific requirements for development in the coastal zone, flood protection, handling of hazardous material, post-disaster redevelopment, and other related mitigation issues are outlined in Section 163.3177, Florida Statutes, and 62-816 FDEP, Florida Administrative Code. These requirements included both the need for data and analysis and the preparation of implementing goals, objective, and policies.

Third, Section 163.3194(1)(a), Florida Statutes, states that "after a comprehensive plan, or element or portion thereof, has been adopted in

conformity with this act, all development undertaken by, and all actions taken in regard to development orders by, governmental agencies in regard to land covered by such plan or element shall be consist with such plan or element as adopted."

Fourth, under Section 163.3177(3), Florida Statutes, each local government comprehensive plan is to contain a capital improvements element. The purpose of the element is "to consider the need for and the location of public facilities in order to encourage the efficient utilization of such facilities." In addition, all public facilities shall be consistent with the capital improvements element."

In terms of the relationship of the adopted local government comprehensive plan to the land development regulations/code, Section 163.3194(1)(b), Florida Statutes, states that "all land development regulations enacted or amended shall be consistent with the adopted comprehensive plan, or element or portion thereof, and any land development regulations existing at the time of adoption which are not consistent with the adopted comprehensive plan, or element or portion thereof, shall be amended so as to be consistent."

With regards to public participation, Section 163.3184(11), Florida Statutes outlines the requirements for public involvement including advertising and public hearings.

It is acknowledged that other sources of information were available in the identification of the Community Guiding Principles. Included were documents such as the revised Manatee County Floodplain Management Ordinance 13-39, the Island-wide Post-Disaster Redevelopment Plan for Anna Maria Island (1999), Manatee County Post-Disaster Redevelopment Plan (2009) and Community Rating System plans. Many of the issues, strategies, and mitigation efforts mentioned in these documents require implementation through some action identified in the adopted local government comprehensive plan or land development regulation/code.

Accepting the fact that the Community Guiding Principles are exactly those principles on which to build a hazard mitigation effort, the local government comprehensive plan and land development regulations/code serve as the logical sources to use in this effort.

B. GUIDING PRINCIPLES

Manatee County

Activity: Occupancy Quattlebaum Guest House (Res.-89-143)

Evaluation: Effective; enables Manatee County EMS to properly house an ambulance and its crew for emergency response coverage of Eastern Manatee County.

Activity: Football game stand-bys (Res.-93-142)

Evaluation: Effective; provides an on the spot response where a greater potential for injury exist due to the nature of the activity and large crowd gatherings, participants involved.

Activity: Certificate of public convenience and necessity West Coast Medical Transfer (Res.-91-73/Res.-93-253)

Evaluation: Effective; reduces the demand placed up resource should demand exceed supply.

Activity: Participation of Helping Hugs Program (Res.-94-112)

Evaluation: Effective; helps to alleviate the inherent difficulties associated with the emergency care of sick/injured pediatric patients.

Activity: Certificate of public convenience and necessity (Res.-94-239)

Evaluation: Effective; decreases the demand placed on Manatee County EMS and provides additional resources through mutual aid request.

Activity: Bayflight Bayfront Medical Mutual Agreement

Evaluation: Effective; successful in getting severely injured persons to a trauma center.

Activity: Tampa General Hospital and AEROMED – Serves as a backup should Bayflight not be available.

Evaluation: Effective through implementation.

Activity: Removal of Australian Pines from Coquina Beach to stabilize the beach head and provides better visibility for police.

Evaluation: Effective through implementation.

Activity: Swift water rescue training – Enables emergency personnel to respond to flood related situations where swift water situations exist.

Evaluation: Effective through implementation.

Activity: SCUBA Program – Enables emergency personnel to effectively respond to submerged victims, emergencies or body recovery.

Evaluation: Effective through implementation.

Activity: Phosphate mining – Allows for local regulation of phosphate mining operations (Ord. 04-39)

Evaluation: Effective; particularly with regards to conducting routine inspections of all phosphate mining activities to assure compliance and detect potential problems.

Activity: EMT training of marine rescue personnel

Evaluation: Effective; improved the level of patient care and enabled better integration into the 9-1-1 system as well as asset in disaster response.

Activity: Emergency procurement (Ord. 84-02, subsection 3-106) and design-build contracts (Ord. 90-31, subsection 5-401-6B.vi).

Evaluation: Effective in assuring that the County Purchasing Department is able to make or authorize the emergency procurement of necessary items when there is a threat to public health, safety, or welfare.

Activity: Hazardous Material Discharges – Governs the discharge of hazardous materials (Land Development Code 542.7.G).

Evaluation: Partially effective; needs better coordination between the Planning Department, Emergency Management Division, and Public Safety Department.

Activity: Hazardous Material Emergencies – Governs response to hazardous material emergencies (Land Development Code 542.7.H).

Evaluation: Partially effective; needs better coordination between the Planning Department, Emergency Management Division, and Public Safety Department.

Activity: Toxic airborne materials – Governs maximum allowable concentration toxic airborne materials (Land Development Code 542.7.I).

Evaluation: Partially effective; needs better coordination between the Planning Department, Emergency Management Division, and Public Safety Department.

Activity: Emergency storm shelter and evacuation program and standards for mobile home parks/subdivisions, RV parks, and campgrounds (Land Development Code 511.4).

Evaluation: Effective; no new mobile home parks/subdivisions and campgrounds have been approved since adoption. New mobile home parks are prohibited in the CHHA overlay (Land Development Code 403.8.C.1), Velocity Zone (Land Development Code 802.6.B.2.b.ix, 403.8.C.1), and floodways (Land Development Code 802.B.3.b). This prohibition is also in the Manatee County Floodplain Ordinance 13-39 Section 2-10-24(d)(1)A.

Activity: Evacuation assistance for the elderly and others in need of assistance.

Evaluation: Effective through implementation.

Activity: Storage of hazardous materials (Land Development Code 802.6.A.11) – Not permitted in the coastal high hazard area, watershed protection overlay or floodways.

Evaluation: Effective through enforcement.

Activity: Flood damage protection (Floodplain Ordinance 13-39 2-10-21, and Land Development Code 802.1) – Protect human life.

Evaluation: Effective in ensuring that building construction limits flood and storm damage.

Activity: Limit amount of hazardous materials that can be generated, stored, or disposed of from establishments located in the coastal high hazard area (Land Development Code 403.8.C.3)

Evaluation: Effective through enforcement.

Activity: Marinas must prepare hurricane evacuation plans; requested as part of issuance of development orders. (Land Development Code 402.14.D.1)

Evaluation: Marginally effective; no standards/guidelines have been established.

Activity: Development applications reviewed to determine effect on hurricane shelter capacity and evacuation times and establish standards for approval of development in the coastal high hazard area (Land Development Code 403.8.F & G)

Evaluation: Effective; conforms to the hurricane shelter standards and evacuation clearance times set by the County.

Activity: Increase rate of evacuee mobilization (Comprehensive Plan, Coastal Element, Policy 4.4.1.1).

Evaluation: Effective as policy guideline.

Activity: Maintain capacity on all evacuation routes (Comprehensive Plan, Coastal Element, Policy 4.4.1.2),

Evaluation: Partially effective; not all evacuation routes are at maximum level of service.

Activity: Prohibit disposal/storage/use of hazardous substances/waste within watershed overlay districts (Comprehensive Plan, Conservation Element, Policy 3.4.1.1).

Evaluation: Effectiveness unknown due to lack of monitoring.

Activity: Limit industrial development in the coastal high hazard area (Comprehensive Plan, Coastal Element, Policy 4.3.1.4).

Evaluation: Effective; no new industrial development has occurred in this area.

Activity: Comprehensive Plan. Coastal Element, Policy 4.3.1.1 – Direct population away from the coastal evacuation area.

Evaluation: Effective; has successfully in keeping density increases out of coastal areas.

Activity: Require all development to utilize soil stabilization procedures (Comprehensive Plan, Future Land Use Element, Policy 2.3.2.1).

Evaluation: Effective as policy guideline.

Activity: Prohibit development in areas which has a likelihood of sinkhole activity (Comprehensive Plan, Future Land Use Element, Policy 2.3.2.2).

Evaluation: Effective; no sinkholes have occurred in new development.

Activity: Establishment of Discharge Standards prohibiting discharge of stormwater into sewer system (Ord. 98-28, Section 2.1)

Evaluation: Effective as policy guideline.

Activity: No increase in the rate of runoff which adversely impacts adjacent property owners (Land Development Code 802.6.A.6).

Evaluation: Effective as policy guideline.

Activity: Fill within 100-year and 25-year floodplains to be compensated by stormwater storage of equal or greater volume within the same drainage basin (Land Development Code 801.3.L).

Evaluation: Effective as policy guideline.

Activity: Continued participation in the Tampa Bay Estuary Program aimed at decreasing stormwater runoff (Floodplain Management Plan, 8.3.1).

Evaluation: Effective as policy guideline.

Activity: Completion of Basin Prioritization Study (Stormwater Master Plan, 8.5.2).

Evaluation: Completed.

Activity: Planned Development – Waterfront must be consistent with the natural character of the coastal area (Land Development Code 402.14).

Evaluation: Effective; compiled with through the Planned Development review process.

Activity: Comprehensive Plan, Future Land Use Element, Policy 2.3.2.3 – Minimize alteration of natural slopes.

Evaluation: Effective in reducing alterations within the 25-year floodplain.

Activity: Prevent flood hazards, loss of life, property damage, and capital expenditures (Land Development Code 801.1.G).

Evaluation: Effective as policy guideline.

Activity: No alteration of sand dunes or mangrove stands (Land Development Code 802.6.B.2.b.v).

Evaluation: Effective through enforcement.

Activity: Regulation of development in the coastal high hazard areas and floodways (Land Development 802.6.B.2 & 3).

Evaluation: Effective as policy guidelines.

Activity: All development in the coastal high hazard areas must be consistent with floodplain management requirements and undergo planned development review process (Land Development Code 403.8).

Evaluation: Effective; complied with through the Planned Development review process.

Activity: All water dependent development must meet floodplain regulations (Land Development Code 402.14.F.9).

Evaluation: Effective through enforcement.

Activity: Prohibit alternation of watercourses and floodways (Land Development Code 801.3.A).

Evaluation: Partially effective; needs further study as to effectiveness.

Activity: New habitable structures must be located outside the 25-year floodplain, if possible. If not, structures must be elevated (Land Development Code 801.3.P)

Evaluation: Effective as policy guideline.

Activity: Al new construction within the identified 100-year floodplain must comply with County's Floodplain Management Ord. 13-39.

Evaluation: Effective through Building Department enforcement.

Activity: Minimize alteration/relocation of perennial lake/stream by transfer of density/intensity away from the water body and out of the floodplain (Comprehensive Plan, Future Land Use Element, Policy 2.3.1.2).

Evaluation: Effective as policy guideline.

Activity: Reduce density/intensity within watershed overlay districts (Comprehensive Plan, Future Land Use Element, Policy 2.3.1.4).

Evaluation: Marginally effective as policy guideline.

Activity: Minimize alteration of hydric soils supporting wetlands (Comprehensive Plan, Future Land Use Element, Policy 2.3.2.4).

Evaluation: Effective as policy guideline.

Activity: Prohibit new development within floodway (Comprehensive Plan, Future Land Use Element, Policy 2.3.3.1).

Evaluation: Effective as policy guideline.

Activity: Prohibit structures and major public/private investment within the 25-year floodplain (Comprehensive Plan, Future Land Use Element, Policy 2.3.3.4).

Evaluation: Marginally effective; further refinement and identification of 25-year floodplain needed.

Activity: Require developments within the coastal planning area to preserve native uplands (Comprehensive Plan, Coastal Element, Policy 4.1.2.1).

Evaluation: Effectiveness unknown at the present time.

Activity: Restore natural coastlines (Comprehensive Plan, Coastal Element, Policy 4.1.2.7).

Evaluation: Effectiveness unknown at the present time.

Activity: No new habitable structures or other major public/private investments shall be allowed within the 25-year floodplain (Land Development Code 802.6.A.10).

Evaluation: Marginally effective; further refinement and identification of 25-year floodplain needed.

Activity: Regulations pertaining to structures in the 100-year floodplain where no base flood data is available (Land Development Code 802.6.B.1).

Evaluation: Effective; enforcement through the Development Review Committee).

Activity: Continued implementation of the shoreline protection project implemented through the 1992 Local Cooperation Agreement between the County and the Army Corps of Engineers.

Evaluation: Effective through implementation.

Activity: Establish standards for project approval in the coastal high hazard area and minimize disturbance of natural shoreline resources.

Evaluation: Effective as policy guideline.

Activity: Minimize shoreline disturbances (Comprehensive Plan, Coastal Element, Policy 4.4.2.5).

Evaluation: Unknown effectiveness.

Activity: Protect and enhance coastal vegetation (Comprehensive Plan, Coastal Element, Policy 4.1.2.6).

Evaluation: Effective; no natural beach or dunes have been impacted.

Activity: Avoid impacts on coastal resources (Comprehensive Plan, Coastal Element, Policy 4.2.1.6).

Evaluation: Effective, natural resources are improving.

Activity: Prohibit seawalls (Comprehensive Plan, Coastal Element, Policy 4.4.2.6).

Evaluation: Effective as policy guideline.

Activity: Prohibit the alteration of coastal wetlands (Land Development Code 511.17.C.7).

Evaluation: Effective as policy guideline.

Activity: Allow no alteration of coastal dunes unless proven that no increased risk of flooding will result (Land Development Code 802.6.B.2.b.v).

Evaluation: Effective as policy guideline.

Activity: Wetlands are protected from development (Land Development Code 706).

Evaluation: Effective as policy guideline.

Activity: Prohibit new manufactured home developments in the coastal high hazard area (Land Development Code 403.8.C.1).

Evaluation: Effective through enforcement.

Activity: Prohibit acute care facilities in the coastal high hazard area (Land Development Code 403.8.C.2).

Evaluation: Effective through enforcement.

Activity: Protection of the evacuation population (Comprehensive Plan, Coastal Element, Policies 4.3.1.2, 4.3.1.3, and 4.3.1.5 – 4.3.1.7).

Evaluation: Mixed effectiveness; overall intent effective.

Activity: Prohibit encroachments, fill, new construction, lateral additions unless a "No-rise Certification" is issued (Land Development Code 802.6.B.3.a).

Evaluation: Effective through enforcement.

Activity: Prohibit manufactured homes and park trailers except in pre-firm and existing manufactured home or RV Park or subdivision (Land Development Code 802.6.B.3.b).

Evaluation: Effective through enforcement.

Activity: All mobile home sites must conform to stormwater and floodplain management requirements and new parks prohibited in the Hurricane Vulnerable Area (Land Development Code 402.8.D.4).

Evaluation: Effective through enforcement.

Activity: Projects adjacent to perennial lake/stream shall obtain special approvals (Comprehensive Plan, Conservation Element, Policy 3.2.2.1).

Evaluation: Partially effective; no standards for administrative approval type projects.

Activity: Require special infrastructure design in the coastal high hazard area to minimize risk of damage (Land Development Code 403.8.F.2).

Evaluation: Partially effective; no specific design standards established.

Activity: Establish lower priority for funding of public infrastructure within the coastal evacuation area (Comprehensive Plan, Coastal Element, Policy 4.3.2.5).

Evaluation: Partially effective, needs better coordination between departments.

Activity: Limit County funded infrastructure within the coastal planning area that exceeds demands generated by approved development (Comprehensive Plan, Coastal Element, Policy 4.3.2.1).

Evaluation: Partially effective; needs better coordination between departments.

Activity: Structures located a minimum of 25' landward of the reach of the shoreline (Land Development Code 802.6.B.2.a).

Evaluation: Effective through enforcement.

Activity: No fill shall be used as structural support (Land Development Code 802.6.B.2.b).

Evaluation: Effective through enforcement.

Activity: Flood damage protection – resistant to flood damage; minimize flood damage, collapse, or infiltration; electrical, heating, ventilation, plumbing, air conditioning, and other equipment located to prevent damage from flooding; and elevation record keeping (Floodplain Management Ord. 13-39 2-10-24) and Land Development Code 802.6.A).

Evaluation: Effective through application.

Activity: Standards for fire resistance, fire protection, egress, structural loads, dead loads, live loads, wind loads, flood loads, glass and glazing, and manufactured homes/wind (Building Department regulations – Chapters 7, 9, 10, 16, Section 1606, 1607, 1609, and 1612, Chapter 24; 15C-1 Florida Administrative Code).

Evaluation: Effective through implementation.

Activity: Comprehensive Plan, Future Land Use Element, Policy 2.3.3.3 – Require all buildings within 100-year floodplain to be constructed with finished floor elevations above 100-year flood elevation.

Evaluation: Effective although variance have been issued.

Activity: Standards for stormwater management associated with new construction (Land Development Code 802.6.A, 6.A.2, 6.A.3, 6.A.7, 6.A.7.a, and 6.A.11).

Evaluation: Effective; compliance through Building Department enforcement.

Activity: Minimize prolonged business interruptions (Floodplain Management Ord. 13-39 2-10-21 and Land Development Code 802.1).

Evaluation: Effective.

Activity: Regulations for rebuilding of areas damaged by coastal storms; relocation of habitable structures out of the coastal high hazard area after substantial damage occurs; and notification to use special assessment to recoup expenditures for storm damage in the coastal high hazard area (Land Development Code 403.8.G.5 and 403.8.H).

Evaluation: Unknown effectiveness; no information available.

Activity: Post-disaster redevelopment plan needed to component LMS.

Evaluation: Manatee County is the recipient of a grant and has developed and adopted a Post Disaster Redevelopment Plan on August 6, 2009.

Activity: Post-disaster recovery (Comprehensive Plan, Coastal Element, Policies 4.4.3.1 – 4.4.3.3).

Evaluation: Manatee County is the recipient of a grant and has developed and adopted a Post Disaster Redevelopment Plan on August 6, 2009.

Activity: Management of hazardous waste/small quantity generator program (Section 62.730, FAC).

Evaluation: Effective through enforcement.

Activity: Management of Pollutant Storage Tank Program (Section 62.761, FAC).

Evaluation: Effective through enforcement.

Activity: Marine Rescue Weather Station and NWS “Weather Spotter” Program.

Evaluation: Effective.

Activity: Insure potential home buyers are notified when their properties are in flood areas (Floodplain Ordinance 13-39 2-10-21(3) and Land Development Code 802.1).

Evaluation: Effective as policy guideline.

Activity: Continuation of floodplain education programs and dissemination of information to residents in special flood hazard areas.

Evaluation: Effective as policy guideline.

Activity: Notification to residents of the hazards in the coastal high hazard area (Land Development Code 403.8.G).

Evaluation: Effective as policy guideline.

Activity: Prohibit construction of county funded public facilities and accepting responsibility for maintaining new roadways within the coastal surge vulnerability area (Comprehensive Plan, Coastal Element, Policies 4.3.2.2 and 4.3.2.3).

Evaluation: Effective as policy guideline.

Activity: Minimize expenditure of public money or costly flood control projects (Floodplain Ordinance 13-39 2-10-21 and Land Development Code 802.1).

Evaluation: Effective as policy guideline.

Activity: Minimize need for rescue and relief through floodplain management (Floodplain Ordinance 13-39 2-10-21 and Land Development Code 802.1).

Evaluation: Effective as policy guideline.

Activity: Emergency coordination through Disaster Preparedness Planning Committee.

Evaluation: Effective through implementation.

Activity: Hurricane evacuation plans must be prepared (Land Development Code, 604.3.7).

Evaluation: Marginally effective; need better coordination between Planning and Public Safety Departments.

Activity: Establishment of community planning program to study specific drainage needs (Comprehensive Plan, Future Land Use Element, Policy 2.9.3.1).

Evaluation: Effective; implemented.

Activity: Continue educational programs to inform citizens about hazardous substances/waste (Comprehensive Plan, Conservation Element, Policy 3.4.1.7).

Evaluation: Effective, on-going program.

Activity: Participate in hurricane preparedness planning (Comprehensive Plan, Coastal Element, Policy 4.4.1.3).

Evaluation: Effective through on-going participation.

Activity: Improve shelter capacity in the county (Comprehensive Plan, Coastal Element, Policy 4.4.2.7).

Evaluation: Not being met; requires greater coordination/cooperation between local and state agencies.

Activity: Projects within the Coastal Evacuation Area and Coastal Planning Area must meet performance standards and minimize development in areas having recurring hurricane related damage (Comprehensive Plan, Coastal Element, Policies 4.4.2.1 and 4.4.2.2).

Evaluation: Marginally effective; performance standards were never fully developed or adopted.

Activity: Explore possibilities of establishing a pollution prevention program for storage/disposal of hazardous substances/waste.

Evaluation: Effective; implemented.

Activity: Waterfront development must provide documentation of their ability to contain any spills of petroleum or other hazardous material.

Evaluation: Effective through enforcement.

Activity: Flammable liquids products storage in excess of 500 gallons shall be located underground except for LPG storage which may be above ground (Land Development Code 531.51.E).

Evaluation: Effective through enforcement.

Activity: No storage of hazardous or acutely hazardous waste material and no other hazardous substance, including fuel storage tanks, may be located in the floodway (Land Development Code 802.6.A.11).

Evaluation: Effective; needs to be reviewed to also include the 25- and 100-year floodplain.

Activity: All sites for use, storage, and production of extremely hazardous substances in quantities listed shall be located and contained in suitable rooms located, properly labeled, and alarmed for safekeeping (Land Development Code 540.7.E).

Evaluation: Marginally effective; need better coordination between the Planning and Public Safety Departments and Fire Districts.

Activity: Prior to the termination of a business, abandonments, safe or change of use, or temporary closure more than 30 days, any business which has used, generated, or stored hazardous materials and toxic substances in listed quantities shall submit to EMD and the appropriate fire district evidence that all contaminated portions of the site have been remediated in compliance with federal and state standards and that all hazardous materials have been properly processed and disposed of (Land Development Code, 542.7.J).

Evaluation: Not effective; needs better coordination between the Planning and Public Safety Departments.

Activity: Avoiding adverse impacts associated with the storage, utilization, manufacture, or disposal of hazardous materials (Land Development Code, 542.2, 542.3, 542.7.J.1, 803.3 and Code of Ordinances 2-16.

Evaluation: Effective through enforcement.

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Activity: Evacuation routes – coordinating maintenance of evacuation routes with local, county, and state agencies (Comprehensive Plan, Coastal Management / Conservation Element, Goal 3).

Evaluation: Effective through implementation.

Activity: Post and maintain emergency evacuation routes (Comprehensive Plan, Conservation Element, Policy 3.1.3, Traffic Element 1.4.4).

Evaluation: Effective through implementation.

Activity: Limit development within the 100-year floodplain (Comprehensive Plan, Coastal/Conservation Element, Objective 3.1 and implementing policies).

Evaluation: Effective as policy guideline.

Activity: Use and preservation of native marine vegetation in association with seawalls (Comprehensive Plan, Coastal/Conservation Element, Policies 1.7.2 & 1.7.3).

Evaluation: Effective as policy guideline.

Activity: Adopt land development regulations which recognize the limitations of development on a barrier islands (Comprehensive Plan, Future Land Use Element, Policy 1.1.1).

Evaluation: Effective through application.

Activity: Maintain or reduce allowable density in the coastal high hazard area and implement growth management directive which limit densities in the coastal high hazard area (Comprehensive Plan, Coastal/Conservation Element, Policies 2.2.1 and 2.2.2).

Evaluation: Effective as policy guideline.

Activity: Participate, where appropriate, with the state and county programs in acquiring lands for environmental protection purposes and recreational use (Comprehensive Plan, Coastal/Conservation Element, Policy 1.3.3).

Evaluation: Marginally effective.

Activity: Identification of provisions for incorporation into the City's Land Development Code related to coastal management (Comprehensive Plan, Coastal/Conservation Element, Policy 2.1.1).

Evaluation: Effective through application.

Activity: Identification of provisions for incorporation into the City's Land Development Code related to general development practices (Comprehensive Plan, Future Land Use Element, Policy 1.1.2).

Evaluation: Effective as policy guideline.

Activity: The land development regulations shall require the preservation of coastal vegetative communities, coastal wildlife habitats, and dune systems from the adverse effects of development (Comprehensive Plan, Coastal/Conservation Element, Policy 1.5.7).

Evaluation: Effective as policy guideline.

Activity: The City shall ensure that development within the 100-year floodplain is strictly regulated through NFIP requirements (Comprehensive Plan, Future Land Use element, Policy 1.6.3).

Evaluation: Effective through enforcement.

Activity: Institute an educational program using mailings and public meetings to inform the city's residents of effective procedures to safely store and dispose of household and commercial hazardous material and of procedures to follow in emergencies (Comprehensive Plan, Coastal/Conservation element, Policy 1.4.1).

Evaluation: Effective through guideline.

Activity: Pilings, not fill, shall be used to elevate structure in native vegetation areas (Comprehensive Plan, Coastal/Conservation Element, Policy 1.4.5).

Evaluation: Effective through enforcement.

Bradenton

Activity: Discourage location of high density residential, public housing, elderly housing, mobile homes, and group homes in the high priority hurricane evacuation zone (Comprehensive Plan, Coastal Management/Conservation Element, Foal 5, Policies 1 – 5).

Evaluation: Effective; reduces potential for population growth in areas subject to coastal flooding.

Activity: Prohibit density in the high priority hurricane evacuation zone (Comprehensive Plan, Future Land Use Element, Objective 4, Policies 1 – 4).

Evaluation: Effective; reduces potential for population growth in areas subject to coastal flooding.

Activity: Participate in and cooperate fully in hurricane preparedness and evacuation planning and ensure evacuation routes are given priority to minimize their vulnerability to storm damage (Comprehensive Plan, Coastal Management/Conservation Element, Goal 6, Objective 1, Policies 1 – 5).

Evaluation: Effective; reduces potential loss of life.

Activity: Maintain and strictly enforce Flood Prevention ordinance (Comprehensive Plan, Coastal Management/Conservation Element, Goal 5, Objective 6, Policies 1 & 2).

Evaluation: Effective; minimizes exposure of human life and property to the effects of natural hazards.

Activity: All new development shall provide stormwater retention and drainage facilities (Comprehensive Plan, Infrastructure Element, Goal 4, Objective 4, Policy 1).

Evaluation: Effective; enforcement through Land Development Code.

Activity: Erosion control – Ensure the continued protective soil erosion control capabilities of naturally vegetated shorelines (Comprehensive Plan, Coastal Management/Conservation Element, Objective 1, Policies 1 – 5).

Evaluation: Effective as policy guidelines.

Activity: Development proposed for islands in the Braden River shall be as a planned development project and shall be restricted to upland

potions and wetland vegetation shall not be removed except for limited access points (Comprehensive Plan, Coastal Management/Conservation Element, Goal 4, Objective 1, Policies 2 & 3).

Evaluation: Effective as policy guidelines.

Activity: Require stipulations to ensure that upland development does not affect wetlands nor remove wetland vegetation except for limited access points (Comprehensive Plan, Coastal Management/Conservation Element, Goal 4, Objective 2, Policies 1, 2, & 6).

Evaluation: Effective as policy guideline.

Activity: Establish a coastal high hazard area in the Land Use and Development Regulations to include all coastal lands along the Braden and Manatee Rivers and Palma Sola Bay below two feet in elevation (Comprehensive Plan, Coastal Management/Conservation Element, Goal 5, Objective 1, Policies 1 – 4).

Evaluation: Effective as policy guideline.

Activity: Prohibit the alternation of natural shorelines, with the exceptions for certain public purposes, and require the restoration of natural shorelines with native plant species in lieu of replacement or repair of artificial shorelines (Comprehensive Plan, Coastal Management/Conservation, Goal 2, Objective 1, Policies 1 – 5).

Evaluation: Effective as policy guideline.

Activity: Mangroves are protected and land alteration affecting mangroves requires a permit (Land Development Code 202.C.1, 301.B1 & 2).

Evaluation: Effective through enforcement.

Activity: New construction and substantial improvements are prohibited in floodways unless certified by an engineer that they will not result in any increase in flood levels (Land Development Code 404.C).

Evaluation: Effective through enforcement.

Activity: Designate undeveloped coastal acreage with areas below the 8-foot elevation contour line for planned development and limit development below the 8-foot contour to low density residential or water dependent uses, and locate all public facilities outside the

coastal high hazard area (Comprehensive Plan, Coastal Management/Conservation, Goal 5, Objective 5, Policies 1 – 4).

Evaluation: Effective as policy guideline.

Activity: Planned development projects with more than 200 linear feet within the coastal high hazard area shall be designed so that parts of the project lying in the Conservation District shall be common area maintained by the homeowner's association (Land Development Code 404.A.2.f & g).

Evaluation: Effective through enforcement.

Activity: Identify special zoning districts for flood hazard areas and low lying and environmentally sensitive conservation areas (Land Development Code 401.A.2).

Evaluation: Effective through enforcement.

Activity: The City shall not spend public funds or approve private construction of facilities in the coastal high hazard area (Comprehensive Plan, Capital Improvements Elements, Goal 1, Policies 1 & 2).

Evaluation: Effective as policy guideline.

Activity: No structures are allowed in the Conservation District except docks, boardwalks, boat ramps and roadways; all buildings shall be located landward of the mean high tide and elevated, manufactured homes are prohibited (Land Development Code 404 C & D).

Evaluation: Effective through enforcement.

Activity: Discharge rates from new development shall not exceed that prior to development. Additional design standards are found in the Land Development Code 301.A.5 & D (Comprehensive Plan, Infrastructure Element, Goal, Objective 1, Policy 1).

Evaluation: Effective as policy guideline and through enforcement.

Activity: Minimum floor elevation for principal structures shall be 8 feet above MSL or 18" above the crown of the road, whichever is greater (Land Development Code 301.A.6).

Evaluation: Effective through enforcement.

Activity: Building construction and remodeling code sections designed to limit flood storm damage to structures (Land Development Code 404.C).

Evaluation: Effective through enforcement.

Activity: Standards for site improvements where drainage may be necessary (Land Development Code 301.A.4 & D).

Evaluation: Effective through enforcement.

Activity: The Land Development Code to include provisions for the rebuilding of areas damaged by coastal storms (Comprehensive Plan, Future Land Use Element, Objective 4, Policy 1).

Evaluation: Effective through incorporation.

Activity: Prepare a post-disaster redevelopment plan to allow for redevelopment in a manner which minimizes the potential for flood and wind damage (Comprehensive Plan, Coastal Management/ Conservation Element, Goal 5, Objective 6, Policies 1 & 2).

Evaluation: Effective as a policy guideline.

Activity: Variances are allowed for historic structures in the coastal high hazard areas (Land Development Code 404.C).

Evaluation: Effective through application.

Activity: Coordinate with County relative to land use and development policies in hurricane evacuation zones and for stormwater management in the coastal zone (Comprehensive Plan, Intergovernmental Coordination Element, Goal 1, Objective 2, Policies 2 & 3 and Objective 3, Policy 3).

Evaluation: Effective through coordination.

Activity: Continue to participate in the NFIP and maintain a flood prevention ordinance and adhere to FEMA and NFIP regulations related to development in the flood zone (Comprehensive Plan, Future Land Use Element, Objective 4, Policies 1 – 4 and Intergovernmental Coordination Element, Objective 6, Policy 1).

Evaluation: Effective as policy guideline and enforcement tool.

Bradenton Beach

Activity: Hurricane vulnerability – post and maintain emergency evacuation routes.

Evaluation: Effective in fostering public awareness.

Activity: Residential areas to be located to protect residents and property from flooding (Comprehensive Plan, Future Land Use Element, Policy 1.1.6).

Evaluation: Effective as policy guideline.

Activity: Maintain or reduce clearance times and maintain evacuation routes (Comprehensive Plan, Coastal and Conservation Element, Objective 2.3 and implementing policies).

Evaluation: Effective; FDOT pre-positions equipment prior to an event.

Activity: Foster public awareness of evacuation routes (Comprehensive Plan, Traffic Circulation Element, Policy 1.4.4).

Evaluation: Effective; reduces potential loss of life.

Activity: Performance standard for activities and storage of flammable and explosive materials (Land Development Code 6.6.2.1).

Evaluation: Effective through enforcement.

Activity: Preparation and implementation of master drainage plan (Comprehensive Plan, Infrastructure Element, Objective 2.1 and following policies). Also, Land Development Code Section 605 and following subsections.

Evaluation: Effective through enforcement

Evaluation: Effective; plan has been fully completed and all improvements have been made.

Activity: Establishment of drainage design standards (Code Land Development Code Section 605 (Stormwater Management).

Evaluation: Effective; limits potential flooding.

Activity: Post-development runoff rates not to exceed pre-development levels (Comprehensive Plan, Future Land Use Element, Policy 1.6.1, and Coastal and Conservation Element, Policy1.2.).

Evaluation: Effective; limits potential for flooding associated with new development and redevelopment activities.

Activity: Stormwater management plan required of all developments (Land Development Code Section 605 Stormwater Management).

Evaluation: Effective; limits potential flooding.

Activity: Minimize impervious surfaces (Land Development Code Section 511).

Evaluation: Effective through enforcement).

Evaluation: Effective; implemented through Land Development Code.

Activity: Regulate development in the 100-year floodplain (Comprehensive Plan, Future Land Use Element, Policy 1.6.2).

Evaluation: Effective as a policy guideline and through Chapter 9, Land Development Code.

Activity: Preserve natural floodplain features and flood carrying capacity and enforce coastal codes and setback regulations (Comprehensive Plan, Coastal and Conservation Element, Policies 1.2.2 – 1.2.4).

Evaluation: Effective as policy guideline and through incorporation into the City's Land Development Code

Activity: Seawall construction along Anna Maria Sound (Land Development Code Section 808.2 and 808.3).

Evaluation: Effective; enforced by requirement of letter of compliance from permitting agency and local enforcement.

Activity: Encroachments are not allowed in floodways unless certified by an engineer that they shall not result in any increase in flood levels during occurrence of the base flood discharge (Land Development Code Sections 910.3.1 and 910.3.2).

Evaluation: Effective through enforcement.

Activity: Protection and restoration of dune system and beach stabilization minimizing development in the Velocity zone (Comprehensive Plan, Future Land Use Element, Policies 2.1.2 – 2.1.6).

Evaluation: Effective as policy guideline.

Activity: Encourage planting of native shoreline vegetation (Comprehensive Plan, Coastal and Conservation Element, Policies 1.4.3 – 1.4.5).

Evaluation: Effective a policy guideline.

Activity: Dune systems are to be protected from the effects of development and dredge and fill is only to allowed when necessary and in a manner least harmful to the environments (Comprehensive Plan, Future Land Use Element, Policies 1.5.6 and 1.5.9).

Evaluation: Effective as a policy guideline.

Activity: Handling, storage, or disposal of fuel, hazardous or toxic substances and wastes are prohibited in environmentally sensitive areas (Land Development Code Section 508).

Evaluation: Effective; limits potential damage to valuable environmental areas.

Activity: Mangroves are to be protected (Land Development Code Section 602.7).

Evaluation: Effective; ensures continuation of the protective value of coastal mangroves.

Activity: Procedures for resource protection along the shoreline of Anna Maria Sound and the Gulf of Mexico (Land Development Code Section 505 and 506).

Evaluation: Effective; ensures the continued protection of valuable native vegetation, natural shoreline, and coastal dunes.

Activity: Preservation of coastal vegetative communities, coastal wildlife habitats, and dune systems from the adverse impact of development (Comprehensive Plan, Future Land Use Element, Policy 1.5.7).

Evaluation: Effective through incorporation into Land Development Code.

Activity: Limit density in the coastal high hazard area, implement land acquisition program, and require coastal hazard disclosure statement on real estate transfers (Comprehensive Plan, Coastal and Conservation Element, Objective 2.2 and implementing policies).

Evaluation: Partially effective with 2020 Future Land Use Map.

Activity: Major development plans required to identify floodplains, wetlands coastal construction control line, and vegetative or environmentally sensitive areas (land Development Code 409.2.3(2) and (3).

Evaluation: Effective; the checking of development permitting plans makes very effective.

Activity: Building construction and remodeling code designed to limit flood and storm damage to structures (Land Development Code Section 903).

Evaluation: Effective, through building plan review.

Activity: New and replacement waste supply, sanitary sewer systems to be designed to minimize or eliminate infiltration and/or discharges of/into floodwaters. On-site waste disposal systems to be located and constructed to avoid impairment or contamination from flooding (Land Development Code Sections 916.1.2, 916.2, and 91603).

Evaluation: Effective; building construction and remodeling design standards limit flood and storm damage to structures.

Activity: Any alteration, repair, reconstruction, or improvements to a building which is in compliance with the provisions of this section, shall meet the requirements of new construction (Land Development Code Section 902).

Evaluation: Effective; building construction and remodeling design standards limit flood and storm damage to structures.

Activity: Construction standards for residential and non-residential construction intended to minimize flood damage (Land Development Code34-722).

Evaluation: Effective; building construction and remodeling design standards limit flood and storm damage to structures.

Activity: All subdivisions and associated public facilities and utilities shall be consistent with the need to minimize flood damage (Land Development Code Section 915 and 916).

Evaluation: Effective; building construction and remodeling design standards limit flood and storm damage to structures.

Activity: Protect life and health; minimize public expenditures for flood control projects; minimize need for rescue and relief efforts; minimize prolonged business operations; and minimize damage to public facilities (Land Development Code Section 903).

Evaluation: Effective; building construction and remodeling design standards limit flood storm damage to structures.

Activity: Establish standards for construction and remodeling of structures, including mobile homes, intended to ensure protection from flood damage (Land Development Code Section 903.2).

Evaluation: Effective; building construction and remodeling design standards limit flood and storm damage to structures.

Activity: Variances may be granted if flood damage prevention criteria cited in this section are met (Land Development Code Sections 912.1 and 916.3).

Evaluation: Effective; difficult to show the necessary hardship necessitating the need for a variance.

Activity: Involuntarily damaged/destroyed nonconforming structures may be reconstructed but repairs must meet flood damage protection provisions (Land Development Code Section 214.3).

Evaluation: Effective; ensures that the threat of future wind and flood damage is mitigated.

Activity: Designate a Recovery Task Force and following a major hurricane, adopt post-disaster building moratorium and post-disaster procedures (Comprehensive Plan, Coastal and Conservation Element Objective 3.1 and 3.2 and implementing policies).

Evaluation: Effective as a policy guideline.

Activity: Institute program informing residents of methods to store and dispose of hazardous materials and develop program to regulate small generators of hazardous waste (Comprehensive Plan, Infrastructure Element, Policy 1.4.1 and Coastal and Conservation Element, Policies 1.8.1, 1.8.2 & 1.8.5).

Evaluation: Effective as a policy guideline.

Activity: Sponsor preparedness seminars and coordinate with other agencies relative to hurricane evacuation (Comprehensive Plan, Coastal and Conservation element, Objective 2.3 and implementing policies).

Evaluation: Effective; seminars are conducted at least three times per year.

Activity: Limit public expenditures in the coastal high hazard area (Comprehensive Plan, Coastal and Conservation Element, Policies 2.1.2 – 2.1.3).

Evaluation: Effective as a policy guideline.

Activity: Incorporate into land development code provisions related to limiting impervious surfaces, drainage and erosion controls, construction seaward of the coastal construction line, replacement of damaged seawalls, and use of natural shoreline stabilization for non-hardened areas (Comprehensive Plan, Infrastructure Element, Objective 2.1, and Coastal and Conservation Element, Policies 1.7.1 – 1.7.5).

Evaluation: Effective through incorporation into and enforcement of Land Development Code.

Activity: Establish guidelines which address hurricane vulnerability, including preparedness and mitigation (Comprehensive Plan, Future Land Use Element Policies 3.1.1 – 3.1.4, and Coastal and Conservation Element, Objective 2.4 and implementing policies).

Evaluation: Effective as a policy guideline.

Activity: Acquire or designate as preservation or conservation properties suffering recurring damage and consider various strategies to reduce future damages to same (Comprehensive Plan, Coastal and Conservation Element, Objective 3.3 and implementing policies).

Evaluation: Effective as a policy guide.

Holmes Beach

Activity: Residential areas to be located to protect residents and property from manmade and natural hazards (Comprehensive Plan, Future Land Use Element, Policy 1.2.6).

Evaluation: Effective as policy guideline for new development.

Activity: Restrict or prohibit uses which are dangerous to health, safety, and property due to water or erosion hazards or which result in damaging increases in erosion or in flood height or velocities (Land Development Code, Article VI).

Evaluation: Effective through enforcement.

Activity: Ensure public safety through redefining evacuation routes (Comprehensive Plan, Future Land Use Policy 3.1.3 and Coastal/Conservation Element Policy 2.3.4).

Evaluation: Ineffective; additional coordination required.

Activity: Take proactive approach to emergency planning and preparedness (Comprehensive Plan, Coastal/Conservation Element, Policies 2.4.2 – 2.4.4).

Evaluation: Effective; initial efforts completed with further development and refinement needed.

Activity: Reduce potential for flooding and loss of life and property (Comprehensive Plan, Future Land Use Element, Policy 1.1.1).

Evaluation: Effective as a policy guideline.

Activity: Establish procedures for dealing with legal non-conforming structures (Comprehensive Plan, Future Land Use Element, Objective 1.4 and implementing policies).

Evaluation: Effective as a policy guideline.

Activity: Add development activities shall ensure the protection of natural resources (Comprehensive Plan, Future Land Use element, Objective 1.5 and implementing policies).

Evaluation: Effective as a policy guideline.

Activity: Promote sound coastal management to ensure the maximum long-term benefits are attained in the use of the coastal zone (Comprehensive Plan, Future Land Use Element, Goal 2).

Evaluation: Effective as a policy guideline and direction setting statement.

Activity: Maintenance and continued development of a comprehensive municipal hurricane plan (Comprehensive Plan, Future Land Use Element, Goal 3).

Evaluation: Effective as a policy guideline and direction setting statement.

Activity: Provide an efficient stormwater drainage system which protects human life, minimized property damage, improves stormwater quality (Comprehensive Plan, Infrastructure Element, Goal 2).

Evaluation: Effective as a policy guideline and direction setting statement.

Activity: Continued City cooperation and coordination with the Manatee County Local Mitigation Strategy program (Comprehensive Plan, Infrastructure Element, Objective 4).

Evaluation: Effective by cross-referencing LMS into the adopted Comprehensive Plan.

Activity: Ongoing recognition that the successful implementation of any mitigation efforts associated with stormwater, drainage, and floodplain management will have a reciprocal affect on the implementation of the Islandwide Post-Disaster Redevelopment Plan for Anna Maria Island (Comprehensive Plan, Infrastructure Element, Objective 5).

Evaluation: Effective as a policy guideline and direction setting statement.

Activity: Regulations for development within the 100-year floodplain shall continue to be strictly enforced and protect and restore beaches, dune, and natural systems, and establish construction standards which minimize the impacts of man-made structures on these systems (Comprehensive Plan, Coastal and Conservation element, Objectives 1.2 and 1.7).

Evaluation: Effective as a policy guideline and direction setting statement.

Activity: The City shall not increase densities or intensities of use within the designated coastal high hazard area (Comprehensive Plan, Coastal and Conservation Element, Objective 2.2).

Evaluation: Effective as a policy guideline and direction setting statement.

Activity: Continue to maintain or reduce hurricane clearance times (Comprehensive Plan, Coastal and Conservation Element, Objective 2.3)

Evaluation: Effective as a policy guideline and direction setting statement.

Activity: The City shall reduce the risk of expose of human life and public and private property to natural or man-made disasters through preparedness planning and implementation of hazard mitigation measures (Comprehensive Plan, Coastal and Conservation Element, Objective 2.4).

Evaluation: Effective as a policy guideline and direction setting statement.

Activity: Implementation and refinement of the Islandwide Post-Disaster Redevelopment Plan for Anna Maria Island and reconstruction and redevelopment strategies will be considered to promote hazard mitigation during the annual re-evaluation of the Manatee County LMS (Comprehensive Plan, Coastal and Conservation Element, Objective 3.1 and 3.2).

Evaluation: Effective by cross-referencing implementation of the LMS into the adopted Comprehensive Plan.

Activity: Continue to cooperate and coordinate with the Manatee County Division of Emergency Management in the development, implementation, and refinement of the County's LMS (Comprehensive Plan, Intergovernmental Coordination Element, Policy 1.1.12).

Evaluation: Effective by cross-referencing LMS into the adopted Comprehensive Plan.

Activity: Continued efforts to implement those mitigation initiatives contained in the Manatee County LMS which are applicable to the community (Comprehensive Plan, Capital Improvements Element, Objective 1.6).

Evaluation: Effective by cross-referencing LMS into the adopted Comprehensive Plan.

Activity: Preparation of updated Floodplain Management Plan (2000).

Evaluation: Effective with adoption of recommended revisions to the City's Comprehensive Plan and Code of Ordinances.

Activity: Incorporation of applicable provisions of updated Floodplain Management Plan into the Future Land use, Infrastructure, Coastal/Conservation, and Capital Improvements Elements of the Comprehensive Plan (revised Floodplain Management Plan (July 2000)).

Evaluation: Effective with adoption of appropriate amendments to the Comprehensive Plan.

Activity: Standards for hurricane resistant construction (Code of Ordinances, Part II, Chapter 14, Buildings and Building Regulations, Sections XII (Hurricane Standard for Residential Construction) and XIII (Hurricane Standard for Roof Tile)).

Evaluation: Effective through enforcement and inspection programs.

Activity: Activities aimed at providing direction during times of civil emergencies (Code of Ordinances, Part II, Chapter 18, Civil Emergencies, Sections 18-33 (Hurricanes), 18-35 (Natural Disasters), (18-38 (Declaration of Local Disaster), 18-39 (Evaluation and Assessment of Loss), and 18-40 (Post-disaster Recovery).

Evaluation: Unknown since there has been no recent need for implementation.

Activity: Provisions for addressing nonconformities and floodplain management (Part III, Land Development Code, Articles V (Nonconformities) and VI (Floodplain Management)).

Evaluation: Effective through application and enforcement during permitting process. Article VI updated in response to adoption of revised Floodplain Management Plan.

Longboat Key

Activity: Create strong disincentive for amending Comprehensive Plan/rezonings that increase existing residential density (Town Charter, Article II, Section 23).

Evaluation: Effective; there have been no amendments/rezonings since enactment.

Activity: Identification and implementation of Town-wide hazard mitigation activities that reduce loss of property or life from a hazard event (FEMA - Community Rating System (CRS) report).

Evaluation: Effective; implemented through annual recertification.

Activity: Prevention of loss of life or property caused by spills/non-containment of hazardous waste (Comprehensive Plan, Solid Waste Sub-element, Objective 1.3 and Conservation and Coastal Management Element, Objective 1.6).

Evaluation: Effective; coordinated with Manatee County in identifying post-disaster hazardous material burn sites.

Activity: Acquisition of open space land which reduces the amount of private property that may be damaged by hazards (Comprehensive Plan, Recreation and Open Space Element, Objective 1.2 and implementing policies and strategies).

Evaluation: Effective; implemented through past and programmed acquisitions.

Activity: Reduction of loss of property caused by fallen trees and maintenance of an open evacuation route (Comprehensive Plan, Conservation and Coastal Management Element, Objective 1.3).

Evaluation: Effective; implemented through the Australian pine tree removal program and site plan condition requiring removal of Australian pine trees.

Activity: Reduction of loss of life caused by ineffective evacuation (Comprehensive Plan, Conservation and Coastal Management Element, Goal 3, and implementing objectives, policies and strategies).

Evaluation: Effective; implemented through enforcement of Town Charter provisions and land development regulations.

Activity: Implementation of life safety standards (Town Code, Title IV, Chapter 94, Fire Prevention Code).

Evaluation: Effective; implemented by Fire Department.

Activity: Establishes basis for drainage and stormwater management regulations (Comprehensive Plan, Future Land Use Element, Policy 1.1.1 and Stormwater Sub-element, Goals 1 – 3).

Evaluation: Effective as policy guideline.

Activity: Reduction of loss of property caused by tidal and rainstorm flooding (Comprehensive Plan, Infrastructure: Stormwater Sub-element, Goal 1 and implementing objectives, policies and strategies).

Evaluation: Effective; implemented through enforcement by Town departments or regulatory agencies.

Activity: Require surface water management plans for site plans to reduce loss of property caused by rainstorm or tidal flooding (Town Code of Ordinances, Chapter 158, Article III).

Evaluation: Effective; implemented through enforcement of Zoning Code.

Activity: Beach re-nourishment program (Town Capital Improvements Program and Comprehensive Plan, Conservation and Coastal Management Element, Objective 1.4 and implementing policy and strategies).

Activity: Establishing erosion control structures and maintaining existing structures to mitigate erosional hot spots. (Town Capital Improvements Program and Comprehensive Plan, Conservation and Coastal Management Element, Objective 1.4 and implementing policy and strategies).

Evaluation: Effective: Program designed to provide protection coastal private property and infrastructure from damage caused by storm surge or tidal flooding

Activity: Update the Comprehensive Beach Management Plan (Town Conservation and Coastal Management Element, Objective 1.4 and updating policy and strategies)

Evaluation: Effective; Program is the basis for establishing funding and program goals that support storm surge and tidal flooding.

Activity: Update the Town of Longboat Key Floodplain Management Plan as a requirement of participation in the Community Rating System program under the NFIP. Floodplain Management Plan revisions scheduled for 2020 on a five year cyclical basis.

Evaluation: Effective with adoption of appropriate amendments to the Floodplain Management Plan.

Activity: Establish funding sources for beach restoration/re-nourishment program (Comprehensive Plan, Capital Improvements Element, Strategy 1.1.3.2).

Evaluation: Effective; implemented through budgeting process.

Activity: Establish basis for local regulations and policies which protect wetlands, coastal dunes, and other conservation lands (Comprehensive Plan, Future Land Use Element, Policy 1.1.3).

Evaluation: Effective through implementation.

Activity: Reduce loss of property caused by hazards (Comprehensive Plan, Recreation and Open Space Element, Goal 3).

Evaluation: Effective through enforcement.

Activity: Continue through Town of Longboat Key Phase 2 Vulnerability Assessment Sea Level Rise and Recurrent Flooding Study (Supports number 2 of the prioritized list of actions)

Evaluation: Effective; providing the necessary data to educate the citizens and develop plans of action to mitigate impacts.

Activity: Filling, dredging, clearing of land and changing character of land regulated to prevent loss of property caused by rainstorm or tidal flooding (Land Development Code 157.57).

Evaluation: Effective through enforcement of subdivision regulations.

Activity: Require maximum density for planned unit developments to reduce loss of property caused by hazard events (Comprehensive Plan, Future Land Use Element, Table 1 and, Land Development Code 158.039).

Evaluation: Effective through enforcement of Zoning Code.

Activity: Prohibition of industrial uses and other uses that are incompatible with barrier island to reduce loss of life or property caused by hazard event (Land Development Code Article V).

Evaluation: Effective through enforcement of Zoning Code.

Activity: Discourage new mobile home parks to reduce loss of life and property caused by hazard event (Land Development Code Article IV).

Evaluation: Effective through enforcement of Zoning Code.

Activity: Permit removal of trees that could materially impair the utility or structural integrity of existing or proposed structure of public utility lines or planting of certain nuisance species (Town Code 98.05 and 98.08).

Evaluation: Effective through enforcement of Tree Code.

Activity: Comprehensive Plan, Potable Water Sub-element, Objective 2.4 and implementing policies – Prevent of loss or interruption of critical potable water facility.

Evaluation: Effective through capital improvement projects to provide subaqueous water main crossings to provide water services to the island at both the primary northern supply from Manatee County and southern emergency back-up supply from Sarasota County.

Activity: Maintenance of existing infrastructure to prevent loss of critical facilities caused by hazard events and limit extent of critical infrastructure that is vulnerable to loss from hazard event (Comprehensive plan, Conservation and Coastal Management Element, Goal 2 and Objective 2.1 and implementing policies and strategies).

Evaluation: Effective through implementation of infrastructure maintenance program and general enforcement.

Activity: Prevent infiltration of flood water into sewer line (Town Code 52.18).

Evaluation: Effective through construction of new sewer facility.

Activity: Prevent infiltration of flood or tide water into the stormwater system through the installation backflow prevention systems in low lying portions of the Town.

Evaluation: Effective through the placement of backflow prevention systems

Activity: Limitation on the design of beach shelters to reduce damage caused by airborne debris during a storm event (Land Development Code 158.144).

Evaluation: Effective through renovations of existing sewer facilities and implementing program to reline and renovate systems to eliminate infiltration.

Activity: Require 50% minimum open space for residential uses and 20% minimum open space for non-residential use to reduce loss of property caused by hazard event (Land Development Code Article IV).

Evaluation: Effective through enforcement of Zoning Code.

Activity: Prohibit accessory uses or structures on vacant property to reduce loss of property and require anchorage standards for antennas to prevent airborne debris (Land Development Code Division 2).

Evaluation: Effective through enforcement of Zoning Code.

Activity: Restrictions on and expansion of non-conforming structures or buildings (Land Development Code 158.131 and 158.132).

Evaluation: Effective through enforcement of Zoning Code.

Activity: Require 150 ft. from setbacks from Gulf and Longboat Pass, and New Pass (Land Development Code 158.094 and 158.095).

Evaluation: Effective through enforcement of Zoning Code.

Activity: Prohibit lowering of gulf front elevations (Land Development Code 158.118).

Evaluation: Effective through enforcement of Zoning Code.

Activity: Require a wind load rating as required by the Florida Building Code, as amended, for antennas and towers (Land Development Code 158.113).

Evaluation: Effective through enforcement of Zoning Code.

Activity: Establish criteria for coastal construction and require that all construction be prepared by and certified by an architect or

professional engineer registered in Florida (Land Development Code 151.03).

Evaluation: Effective; Town standards exceed Florida statutory requirements.

Activity: Establish Town flood control program with minimum criteria for new construction and substantial improvements for non-elevated buildings and enforcement of 50% substantial improvement rule (Land Development Code, Chapter 154).

Evaluation: Effective; one of the most restrictive in Florida.

Activity: Regulations for the construction and placement of signs (Land Development Code 156.07).

Evaluation: Effective through enforcement of Sign Code.

Activity: Establish basic property rights in the event of involuntary damage or destruction of structures (Comprehensive Plan, Future Land Use Element, Policy 1.1.5).

Evaluation: Unknown effectiveness due to limited application.

Activity: Identify alternatives for potable water service in emergency or post-disaster circumstances (Comprehensive Plan, Potable Water Sub-element, Objective 1.2).

Evaluation: Effective through capital improvement projects to provide subaqueous water main crossings to provide water supply to the island at both the primary northern supply from Manatee County and southern emergency back-up supply from Sarasota County.

Activity: Establish mitigation standards and guidelines for implementation as part of the post-disaster recovery process (Comprehensive Plan, Conservation and Coastal Management Element, Objective 3.3 and implementing policies and strategies).

Evaluation: Effective through enforcement of Land Development Code.

Activity: Promote public education regulations regarding wetlands and the importance of wetlands in maintaining water quality (Comprehensive Plan, Stormwater Sub-element, Policy 1.3.3).

Evaluation: Effective as policy guideline.

Activity: Prevention of loss of life through safe, coordinated evacuation routes (Comprehensive Plan, Transportation Element Policy 1.14 and implementing strategies).

Evaluation: Effective through on-going coordination with Manatee and Sarasota Counties and adjacent municipalities.

Activity: Participation in an area wide program for management of hazardous materials in commercial, service, or institutional land uses (Comprehensive Plan, Solid Waste Sub-element, Objective 1.5 and implementing policies and strategies).

Evaluation: Effective through coordination with Manatee County.

Activity: Continue to support mitigation and construction standard programs promoted by NFIP, Florida Building Code, and FDEP (Comprehensive Plan, Conservation and Coastal Management Element, Objective 3.1 and implementing policy and strategies).

Evaluation: Effective implementation by enforcement of Town's Flood Control Standard.

Activity: Continued identification of shelter space, declaration of "standing" for all development which may impact evacuation routes, and participation in beach renourishment or other erosion control efforts (Comprehensive Plan, Conservation and Coastal Management element, Objective 3.2 and implementing policies and strategies).

Evaluation: Effective through appropriate implementation/coordination efforts.

Activity: Enforce coastal construction control line requirements (Comprehensive Plan, Conservation and Coastal Management Element, Policy 3.1.2 and implementing strategies).

Evaluation: Effective through enforcement of Flood Control regulations and permitting requirements.

Activity: Provide for multi-jurisdictional hazard mitigation efforts (Comprehensive Plan, Governance Element, Objective 2.1 and Objective 2.2 and implementing policies and strategies).

Evaluation: Effective through existing interlocal agreements on hurricane preparedness and post-disaster recovery.

Activity: Continued formalization of mutual aid agreements (Comprehensive Plan, Intergovernmental Coordination Element, Objective 1.2 and 1.3 and implementing policies and strategies).

Evaluation: Effective; mutual aid agreements are in place and reviewed annually.

Activity: Continue to fund land acquisition and capital improvements (Comprehensive Plan, Recreation and Open Space Element, Objectives 1.2 and 1.3 and implementing policies and strategies).

Evaluation: Effective through enforcement of open space and land acquisition regulations and fees.

Activity: Program funding to mitigate loss of critical infrastructure caused by hazard event and related subjects (Comprehensive Plan, Capital Improvements Element, Table 1, Policy 1.1.3 and Strategy 1.1.3.2).

Evaluation: Effective through implementation of capital improvements program.

Activity: Establish hurricane standard operating procedures.

Evaluation: Effective; implemented through adoption of General Operating Procedures and annually updated Hurricane Plans.

Activity: Comprehensive Plan, Conservation and Coastal Management Element, Strategies 3.2.2.1 and 3.2.1.2 – Participate in all transportation planning efforts to ensure the 18 hour maximum total hurricane evacuation time can be maintained and consider a hurricane shelter policy of vertical refuge as a policy of last resort.

Evaluation: Effective through ongoing coordination efforts.

Activity: Fire Department Life Safety review of all building permit application for mitigating potential loss of life and property caused by fire and other hazard.

Evaluation: Effective through joint Planning, Zoning, Building, and Fire Department review.

Activity: Encourage owners of structures threatened by destruction to relocate their buildings (Comprehensive Plan, Conservation and Coastal Management Element, Policy 1.4.1.2).

Evaluation: Partially effective; implemented through land development approval process.

Activity: Support owners taking advantage of “buy out” programs for structures in the V-zone (Comprehensive Plan, Conservation and Coastal Management Element, Strategy 3.1.2.3).

Evaluation: Effective through implementation.

Palmetto

Activity: Heavy commercial and industrial land uses subject to certain performance standards (Comprehensive Plan, Future Land Use Element, Policy 1.3.4).

Evaluation: Effective as policy guideline.

Activity: Coastal areas shall be conserved and protected by restricting development, encouraging use of planned development techniques, and acquisition of property for public open space (Comprehensive Plan, Future Land Use Element, Policy 1.5.1).

Evaluation: Effective as policy guideline.

Activity: Coastal densities to be consistent with local or regional coastal evacuation plans (Comprehensive Plan, Future Land Use Element, Policy 1.5.2).

Evaluation: Effective as policy guideline.

Activity: Improve hurricane evacuation clearance times (Comprehensive Plan, Coastal Management Element, Policies 8.5.1.and 8.5.2).

Evaluation: Partially effective; reevaluate after the Tampa Bay RPC produces its latest evacuation maps.

Activity: Avoid high density development in areas projected to receive major hurricane damage (Comprehensive Plan, Coastal Management Element, Policy 8.6.1).

Evaluation: Effective as policy guideline.

Activity: Prohibit the planting of Australian Plan, Melaleuca, Brazilian pepper, Mimosa pigra and other nuisance species (Comprehensive Plan, Coastal Management Element, Policy 8.1.8).

Evaluation: Effective as policy guideline.

Activity: Implementation of stormwater management guidelines and standards (Comprehensive Plan, Stormwater Management Element, Policies 6.1.1.1, 6.1.5 & 6.1.7).

Evaluation: Effective through implementation of land development code.

Activity: Establishment of schedule of drainage improvements (Comprehensive Plan, Stormwater Management Element, Policies 6.4.1 & 6.4.2).

Evaluation: Effective as policy guideline.

Activity: Land development regulations shall be consistent with the comprehensive plan with regards to drainage and stormwater management (Comprehensive Plan, Future Land Use Element, Policy 1.8.2).

Evaluation: Effective through implementation of land development regulations.

Activity: Use the local planning process to protect identified wetlands from physical and hydrologic alteration (Comprehensive Plan, Conservation Element, Objective 9.2).

Evaluation: Effective as policy guideline.

Activity: Development of environmentally sensitive areas such as wetlands to be avoided (Comprehensive Plan, Future Land Use Element, Policy 1.1.1).

Evaluation: Effective as policy guideline.

Activity: To ensure the preservation and compatibility of development on properties containing environmentally sensitive lands, allow the transfer of a portion of the density/intensity of the environmentally sensitive land to the upland acreage (Comprehensive Plan, Future Land Use Element, Policy 1.1.1).

Evaluation: Effective as policy guideline.

Activity: Establish land use criteria which give priority to the siting and development of water-dependent uses in the coastal area (Comprehensive Plan, Coastal Management Element, Policies 8.3.1 & 8.3.2).

Evaluation: Effective as policy guideline.

Activity: Residential development within low-lying areas subject to flooding shall meet flood insurance standards of elevation and be limited to densities that permit safe evacuation (Comprehensive Plan, Future Land Use Element, Policy 1.1.2).

Evaluation: Effective as policy guideline.

Activity: New development shall be permitted only where adequate drainage and stormwater management….are provided (Comprehensive Plan, Future Land Use Element, Policy 1.1.4).

Evaluation: Effective as policy guideline.

Activity: Continue to designate land within the coastal high hazard area as either RES-4 or Planned Development (Comprehensive Plan, Future Land Use Element, Policy 1.5.3).

Evaluation: Effective as policy guideline.

Activity: Encourage in-fill development in areas closer to the commercial core through allowing higher intensity in the commercial core zoning district. If the property is located within the coastal high hazard area, then appropriate density and intensity limitations shall apply (Comprehensive Plan, Future Land Use Element, Policy 1.2.3).

Evaluation: Effective as policy guideline.

Activity: Maximize the existing wastewater treatment facilities by limiting opportunities for inflow and infiltration and modify lift stations to ensure the effective collection of wastewater (Comprehensive Plan, Sanitary Sewer Element, Objective 4.2 and implementing policies).

Evaluation: Effective as policy guideline.

Activity: Cooperate with Manatee County to advise residents of the appropriate methods for disposal of hazardous materials (Comprehensive Plan, Solid Waste Element, Policy 5.1.5).

Evaluation: Effective through ongoing cooperation.

Activity: Continue to cooperate with the County in the development of the Local Comprehensive Emergency Management Plan which will include a mitigation strategy for Palmetto (Comprehensive Plan, Coastal Management Element, Policy 8.6.3).

Evaluation: Effective through ongoing cooperation.

Activity: Allow no storage of hazardous materials of over 220 lbs or acutely hazardous over 2.2 lbs per month. Allow no storage of hazardous materials in the 100-year floodplain or within 200 feet of any watercourse, whichever is greater. All hazardous materials must be stored in non-discharge storage facilities (Land Development Code 604.2.2.5(1) & (2), 604.1.2.6(2), & 604.1.2.6(4)).

Evaluation: Effective through enforcement.

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APPENDIX G

MITIGATION INITIATIVES

AND

PROJECT PRIORITIZATION

The Local Mitigation Strategy Working Group considers all projects that focus on mitigating losses created by natural or man-made disasters. Priorities will be given to projects that demonstrate the use of mitigating techniques in developing or retrofitting areas or structures in order to minimize effects from a catastrophic occurrence. A list illustrating hazard-mitigation projects will be maintained as a part of the Local Mitigation Strategy. The list will be scheduled for review at a minimum on an annual basis.

A detailed hazard identification and vulnerability analysis is designed to be included with the following review criteria. This analysis will provide the LMS Working Group with the ability to quantify a particular project based upon: the type of hazard being mitigated (e.g.: flooding, wind, chemical spill, etc.), the potential (or current) frequency of the hazard, the cost benefit associated with mitigating for the hazard (etc.). Although the criteria has the same weight as other listed criteria, it provides the Working Group with the ability to perform an internal review of similar projects associated with their respective jurisdiction and possible inclusion into respective Comprehensive and Capital Improvement Plans.

Additionally, there is population and location differences from one area of the county to the next, and hazard mitigation needs are expected to vary between the four jurisdictions. Priorities within one community may not necessarily reflect the priorities of another community. The process illustrated provides a working framework in which the Local Mitigation working Group will prioritize mitigation projects.

The following table represents the scoring matrix used for the submission of initiatives for consideration for inclusion in the Manatee County LMS.

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Mitigation Initiatives Evaluation Score Sheet

Category & Explanation	Maximum Points Available	Scoring Instructions	Points Awarded
1. Identified Problem Decide how important a mitigation initiative this is.	5	Major concern to Manatee County & all its jurisdictions Major concern to more than one jurisdiction Considered an important concern Considered moderately important Considered necessary but not an immediate need	(5) (4) (3) (2) (1)
2. Location of Project based on FEMA FIRM Maps Take into consideration whether the project is identified in one of the FIRM maps zones.	5	V-zone location A-zone location *Outside Flood Plain*	(5) (4) (0)
3. Percentage of Total County Population Benefited Take into consideration the percentage of the County wide population who would directly or indirectly benefit from implementation of this proposal.	5	76% to 100% 51% to 75% 26% to 50% 11% to 25% 10% or less	(5) (4) (3) (2) (1)
4. Percentage of Affected Jurisdiction(s) / Organizations (s) Population Benefit (i.e. population served by agency / department) Take into consideration the percentage of the population in the total number of jurisdictions which would benefit from the proposed mitigation initiative.	5	76% to 100% 51% to 75% 26% to 50% 11% to 25% 10% or less	(5) (4) (3) (2) (1)
5. Health & Safety Benefit Take into consideration the benefit to those served directly by proposed mitigation initiative.	5	76% to 100% 51% to 75% 26% to 50% 11% to 25% 10% or less	(5) (4) (3) (2) (1)

Mitigation Initiatives Evaluation Score Sheet

Category & Explanation	Maximum Points Available	Scoring Instructions	Points Awarded
6. Identified by Multiple Jurisdictions Take into consideration the number of jurisdictions which have identified the same mitigation initiative.	5	Five jurisdictions or more Four jurisdictions Three jurisdictions Two jurisdictions One jurisdiction	(5) (4) (3) (2) (1)
7. Jurisdictions Benefited Take into consideration the number of jurisdictions which would benefit from the proposed mitigation initiative.	5	Five jurisdictions or more Four jurisdictions Three jurisdictions Two jurisdictions One jurisdiction	(5) (4) (3) (2) (1)
8. Threat of Loss Take into consideration the frequency of loss or damage due to hazard(s). Take into consideration the severity of the loss, including casualties, property damage, economic loss, loss of services, size of area impacted and population impacted. Based on the Vulnerability Analysis, Historical Data, and Local Knowledge, assign a maximum score to projects which mitigate frequent loss areas, reducing the score assigned to projects as frequency of events decline. This will be a judgment call, based on the Hazard Vulnerability Analysis, Historical Data, Local Knowledge, and your experience.	5	High probability of recurrence High probability of occurrence Moderate probability of occurrence Low probability of occurrence Minimal probability of occurrence	(5) (4) (3) (2) (1)
9. Effective Life Expectancy of Initiative Take into consideration the expected useful life of the mitigation initiative.	2	More than 25 years Less than 25 years	(2) (1)
10. Cost Effectiveness (benefit to cost ratio) Take into consideration the benefit/cost ratio of the mitigation initiative.	1	Cost Effective Not cost Effective	(1) (0)

Mitigation Initiatives Evaluation Score Sheet

Category & Explanation	Maximum Points Available	Scoring Instructions	Points Awarded
11. Probability of Funding Take into consideration the availability of funds and the potential for future funding. If funding is currently available, mitigation initiatives may be enacted more quickly. A low score here does not lessen the importance of the initiative; it simply indicates that the project may not be as immediately do-able.	3	Funding sources now available for this type of project Funding sources availability expected within 2 - 5 years Funding sources availability expected within 3 – 5 years Funding sources availability expected to be over 5 years	(3) (2) (1) (0)
12. Community Rating System Credit Take into consideration whether the proposed initiative would provide points toward improving CRS Classification and reducing flood credit insurance rates.	1	Conveys credit points Conveys no credit points	(1) (0)
13. Identified in Existing Comprehensive Growth Management Plan Take into consideration that mitigation initiatives must comply with the Comprehensive Growth Plan of the jurisdiction; consider whether it is also an initiative which has been identified within the Plan.	2	*Identified in Comp Plan* Consistent with Comp Plan Inconsistent with Comp Plan	(2) (1) (0)
14. Identified in Existing CEMP or other Functional Plan Take into consideration any functional plan developed by any government entity, e.g., NFIP, NPDS, EPDS, etc.	1	Identified in any functional plan Not identified in any government plan	(1) (0)
15. Public Acceptance Take into consideration public support for and acceptance of this initiative.	1	Public support No public support	(1) (0)
16. Environmental Considerations Take into consideration whether there are any environmental drawbacks.	1	Positive environmental impact No environmental impact Negative environmental impact	(1) (0) (-1)

Mitigation Initiatives Evaluation Score Sheet

Category & Explanation	Maximum Points Available	Scoring Instructions	Points Awarded
17. Matching Funds Take into consideration whether matching funds will be required and the availability of matching funds.	3	No matching funds required Matching funds required and are readily available Matching funds are required and will delay initiative Cannot raise or obtain required matching funds	(3) (2) (1) (0)
18. Timeframe Take into consideration the time it will take from inception *of funding commitment* for the mitigation initiative to accomplish its stated goal(s).	5	Within one year of inception of initiative Within two years Within three years Within four years Within five years Over five years	(5) (4) (3) (2) (1) (0)
19. Partnership Take into consideration whether project will be cooperative effort between public and private interests.	1	Yes No	(1) (0)

Local Mitigation Strategy (LMS)
Group Initiative Worksheet

Date_____

Evaluating Contact Person: _____

Sponsor Organization: _____

Evaluator's Phone: _____

Evaluator's E-mail: _____

Name of Sponsor's Project: _____

☒ Please mark category:

❒ Education, Awareness & Communication
❒ Government Prevention
❒ Study, Research & New Information
❒ Structural Retrofits & Additions
❒ Technology
❒ Infrastructure Improvements

❒ Other (brief description): _____

_____

Evaluator's Notes: _____

_____

_____

_____

_____

Continued ☞

Group Ranking by Initiative (refer to score sheet):

✍ Write figure next to category numbers:

☐ 1 - Identified Problem

☐ 2 - Location of Project (FIRM)

☐ 3 - % of At Risk Population

☐ 4 - % of Jurisdiction Population

☐ 5 - Health & Safety Benefit

☐ 6 - Identified by Multiple Jurisdictions

☐ 7 - Jurisdictions Benefited

☐ 8 - Threat of Loss

☐ 9 - Life Expectancy of Initiative

☐ 10 - Cost Effectiveness

☐ 11 - Probability of Funding

☐ 12 - CRS Credit

☐ 13 - In Existing Comp Plan

☐ 14 - In Existing CEMP

☐ 15 - Public Acceptance

☐ 16 - Environmental Considerations

☐ 17 - Matching Funds

☐ 18 - Time Frames

☐ 19 - Partnership

TOTAL

☐

PROJECT PRIORITY INITIATIVES LIST

Priority Rank	Score	Name & Description of Project	Jurisdiction	Agency Responsible	Hazards Mitigated	Project Category	New or Existing bldg/infrast.	Mitigation Goals Achieved	Potential Funding Source(s)	Match (if applicable)	Estimated Costs	Status	If Deleted or Deferred, Why	Timeframe for Completion
2	57	Post Disaster Redevelopment Plan Update	ALL	County Administrator's Office	ALL	1,3,4,5	N/A		Jurisdiction Funds		$100,000	New		2019 / 2020
3	56	Full replacement of windows and doors with impact resistant windows and doors	City of Anna Maria	Public Works Department	Hurricanes, Tornados, Severe Storm	2,6	Existing	No	CIP		$50,000	In progress		2016/2017
4	56	Shuttering – installation of storm shutters on all city buildings	City of Bradenton Beach	Public Works Department	Hurricanes, Tornados, Severe Storm	2,6	Existing	No	Jurisdiction Funds		$35,000	In progress	Additional funding required	2020-2023
5	55	Evacuation Routes & Drainage – Drainage system SR 789, to combat flooding	City of Bradenton Beach	Public Works	Hurricanes, Flood, Wildfire, Dam/Levee Failure	1,4,5,6	New	Flood damage reduction & evacuation route safety improvements	FDOT		$15,000,000	In progress	Requires FDOT design & Pending Funding	2020-2025
6	55	Evacuation Routes & Drainage - Marina Dr. Drainage Improvements with Basins 12 and 13 bounded by Northern City Limits and 79th Street to the South – Street & Structure Flooding, Repetitive Loss Areas	City of Holmes Beach	Superintendent of Public Works	Hurricanes, Flood, Wildfire, Dam/Levee Failure	1,4,5,6	New	3	Jurisdiction Funds		$325,000	In progress	Pending Funding	2-3 years
7	55	Evacuation Routes & Drainage – Marina Dr. Drainage Improvements within Basins 7 and 9 bounded by 54th Street to the South and 64th Street to the North – Street & Structure Flooding, Repetitive Loss Area	City of Holmes Beach	Superintendent of Public Works	Hurricanes, Flood, Wildfire, Dam/Levee Failure	1,4,5,6	New	3	Jurisdiction Funds		$650,000	In progress	Pending Funding	2-3 years
8	55	MCUD have remote drinking water facilities which have large trees and other destructive vegetation that are encroaching on security access control and critical equipment. Damage from Hurricane Irma (trees falling on fences and equipment) has prompted this mitigation action.	ALL	Utilities Department Contact: Kate Quilty	Hurricane, Tornadoes, Severe Storm, Terrorist Attacks, Sabotage	1,4,5,6	Existing	1	Jurisdiction Funds		$141,000	New		1 year
9	54	Community Emergency Response Team - To provide a coordinated community response in time of emergency or catastrophic disaster situation. CERT is designed to prepare individuals to help themselves, their families, and their neighbors when professional emergency services are overwhelmed by a large-scale emergency. Then, as a team, they can assist within their own community until more qualified help arrives.	ALL	Public Safety, Emergency Management Division	ALL	1	N/A	No	Not identified		$5,000	Deferred	Pending funding	6 months
10	54	Relocation of Station 3 – flood area, inability to operate when flooded; location impedes adequate coverage	ALL	North River Fire District	Hurricane, Flood, Sea Level Rise, Severe Storm	1,4,5,6	New	No	Not identified		$1,800,000	Deferred	Pending funding	3 years
11	54	Replace / upgrade remote telemetry unity to telemetry control units on lift stations in flood plains within Manatee County.	ALL	Utilities Department Contact: Ralph Braun	Hurricane, Flood, Sea Level Rise, Severe Storm,	2,4,6	Existing	1	CIP		$4,098,687	New		2 years
12	53	Shuttering – This project will shutter three fire stations and the administration building.	ALL	Cedar Hammock Fire Control District	Hurricanes, Tornados, Severe Storm	1,2,4,5	Existing	No	Not identified		$67,362	Deferred	Pending funding	6 months
13	53	Evacuation Routes & Drainage – Raise road, install proper drainage system – Highland Avenue - to combat flooding of homes, roadways and evacuation routes	City of Bradenton Beach	Public Works	Hurricanes, Flood, Wildfire, Dam/Levee Failure	1,4,5,6	New	Flood damage reduction & evacuation route safety improvements	SWFMD Match & FEMA HMGP Grant		$450,000	In progress		2020-2023
14	53	Drainage – Raise road, install proper drainage system – Church Avenue – to reduce incidence of flooding	City of Bradenton Beach	Public Works	Hurricane, Flood, Severe Storm	1,4,5,6	New	Flood damage reduction & evacuation route safety improvements	SWFMD Match & FEMA HMGP Grant	SWFWMD Match	$50,000	In progress		2020-2023

15	53	Education – Publish and distribute education material to HazMat facilities to combat risk of hazardous releases.	ALL	Parks & Natural Resources Dept. / Environmental Protection Division	Hazardous Materials Release	1	N/A	Yes	Jurisdiction Funds		$40,000	In progress		Completed Annually
16	53	Generator for the main jail facility. This will enable the jail to be fully operational during a power outage.	ALL	Sheriff's Office	ALL	2	Existing	1	Not identified		$2,500,000	New		1 year
17	51	Evacuation Routes & Drainage Basin 6 Gulf Dr. and Marina Dr. Drainage Improvements bounded by 46th St. to the South and 56th St. to the North, Street & Structure Flooding, Area of Repetitive Loss	City of Holmes Beach	Superintendent of Public Works	Hurricanes, Flood, Wildfire, Dam/Levee Failure	1,4,5,6	New	3	Jurisdiction Funds		$100,000	In progress	Pending funding	2-3 years
18	51	Generators – upgrade to a permanent generator powered by natural gas – current generator is advanced in age and only supplements power to ME refrigerators, two outlets that support vaccine refrigerators on one outlet in technology servicer room. Recent power failures accentuated the need to upgrade to permanent generator to support public services to county population which includes services from W.I.C., Environmental Health and Public Health Services. A critical facility.	ALL	Florida Department of Health in Manatee County	Hurricanes, Tornados, Severe Storm, Power Failure	2	Existing	No	Not Identified		Unknown	Deferred	Pending funding	1 year
19	50	Evacuation Routes & Drainage – Basins 10 and 11 Drainage Improvements – Intersection of Palm Dr, Marina Dr, Key Royale Dr, and 66th St (Basins bounded by 64th St to south and 79th St to North) – Street & Structure flooding, Repetitive Loss Areas	City of Holmes Beach	Superintendent of Public Works	Hurricanes, Flood, Wildfire, Dam/Levee Failure	1,4,5,6	New	3	Jurisdiction Funds		$675,000	In progress	Pending Funding	2-3 years
20	50	Communications – AM Broadcast Station for the Water Treatment Plan. Purchase and install an AM Broadcast Station and install signage to provide emergency information to residents near the Manatee County Water Treatment Plan and Dam to warn and update on and for flooding events, evacuations, as well as other pertinent information regarding emergency events.	ALL	Utilities Department	Hurricanes, Flood	1,4	New	No	Not identified		$80,000	Deferred	Pending Funding	6 months
21	50	Communications – Mutual Aid and Interoperable Communications – Purchase additional mobile and portable VHF radio equipment to all MCUOD Strike First Teams to communicate with emergency responders during disaster operations inside and outside of Manatee County	ALL	Utilities Department	ALL	4	New	In progress	Jurisdiction Funds		$50,000	In progress		1 year
22	50	Communications – Satellite WAN Data and Internet System – purchase and install Satellite WAN System for DATA and Internet/Intranet at critical MCUOD facilities: Utilities Administration, Utilities Administration Annex, Utilities Compound (Distribution, Utilities Maintenance and Sewage Collection), Water Treatment Plan, Southwest and Southeast Regional Treatment Plants, North County Regional Treatment Plant, Bayshore Lift Stations and Solidwaste Landfill Operations. This system will link our critical systems such as SCADA, Radar, EENET, and will allow secure data transmission and access at all MCUOD sites to provide services during daily and emergency operations.	ALL	Utilities Department	ALL	4	New	No	Not identified		$130,000	Deferred	Pending Funding	1 year
23	49	Water Treatment Plant Potable water ground and elevated storage booster pump generators – Elwood Park I, Elwood Park II, North County groundwater storage, Port of Manatee and Cortez locations. Replace for end of service life and one initial generator procurement – power losses are mitigated by generator presence in order to maintain potable water and fire main pressures during and after an incident until power is restored.	ALL	Utilities Department Contact: Candie Schwartz	Hurricanes, Flood, Severe Storm, Power Failure, Terrorist Acts, Sabotage	1,2,4,5,6	New		Jurisdiction Funds		$700,000	Deferred	Pending Funding	As funding allows
24	49	Utilities Master Life Station: 400 KW Portable Generator	ALL	Utilities Department Contact: Candie Schwartz	Hurricane, Flood, Severe Storm, Power Failure	2	Existing		Jurisdiction Funds		$275,000	Deferred	Pending Funding	As funding allows
25	49	Generators – Purchase 6 back-up generators for traffic signals on evacuation routes through City of Palmetto. Power outages negatively impact evacuation. Back-up power generators for traffic signals will mitigate problem of unnecessary congestion on evacuation routes.	City of Palmetto	Public Works	ALL	2	Existing	No	Not identified	CIP	$33,000	Deferred	Pending Funding	1 year
26	49	Education – Education Program Emergency Plan for Pets. Public fails to plan for pets' safety in the event of evacuations	ALL	ESF 17	ALL	1	N/A	Yes	Jurisdiction Funds		$2,500	In progress		Completed Annually
27	49	Public Health – Gravity Sewer System Control. Raw sewage escape; side of road discharge	ALL	Utilities Department	Hurricanes, Flood, Severe Storm	4,5,6	Existing	No	Not identified		$200,000	Deferred	Pending Funding	2 years

28	49	Security/Safety/Emergency Response – Security Camera System for Manatee County Operations Department. Upgrade and install security camera systems, monitors, and records at MCUOD Administration Building and Utility Operations Complex, Water Treatment Plant, Southwest and Southeast Regional Sewage Treatment Plants, North County Regional Sewage Treatment Plant and the Landfill.	ALL	Utilities Department	Terrorist Acts, Sabotage	4	New		Jurisdiction Funds		$1,000,000	In progress		5 years
29	48	Communications – Radio Equipment and Accessories. Outdated communications equipment for Public Safety. In 2006 all radio consoles updated to the latest Maestro software and new hardware platforms and added a 4th radio; purchased 14 new portables with ProScan and ProVoice – latest from MA/Com; much replacement equipment still required.	ALL	Public Safety	ALL	4	New	CIP	Not identified		$500,000	In progress	Additional funding required	1 year
30	48	Evacuation Routes & Drainage – Removable Controllers for Satellite Lift Stations. Flooding	ALL	Utilities Department	Hurricanes, Flood, Wildfire, Dam/Levee Failure	1,4,5,6	New	No	Not identified		$120,000	Deferred	No funds available	2 years
31	48	Evacuation Routes & Drainage – Australian Pines removal. Problem with trees being easily uprooted and causing blockage of evacuation routes	Town of Longboat Key	Public Works Department	Hurricanes, Flood, Wildfire, Dam/Levee Failure	1,4,5,6	New	No	Streets Capital Funds		$150,000	Deferred	Funding and contingent upon Rights of Ways and access to private property	6 months
32	48	Evacuation Routes & Drainage – Streets and drainage improvement. Flooding	Town of Longboat Key	Public Works Department	Hurricanes, Flood, Wildfire, Dam/Levee Failure	1,4,5,6	New	No	Streets Capital Funds		$1,600,000	Deferred	Funding and contingent on Engineering Study	4 years
33	48	Heli-Stop – To place a heli-stop of 100x100 sq. ft. concrete pad relative to the front entrance parking lot of the Public Safety Building to include FAA approved lighting and markings. This will allow many types of emergency response personnel and Senior Leadership quick and timely access to the Emergency Operations Center, Manatee County Emergency Management, and allow interoperability with different government agencies inside and outside of the county. During a disaster, timeliness and immediate response of disaster relief and Emergency Support Function personnel is critical to allow for the protection of our citizens.	ALL	Public Safety, Division of Emergency Management	ALL	4,5,6	New	No	Not identified		Unknown	Deferred	Pending Funding	6 months
34	48	Evacuation Routes & Drainage – North Shore Drive Evacuation Route – North Shore Drive, north of Pine Ave. which runes one block east of the Gulf of Mexico and lies in a Velocity Zone per the FEMA FIRM. The location of this evacuation route for the city serves as a connection route to Gulf Dr. for half of the City's population	City of Anna Maria	Public Works Department	Hurricanes, Flood, Wildfire, Dam/Levee Failure	1,4,5,6	New	No	Not identified		Unknown	Deferred	Pending Funding	2-5 years
35	48	Evacuation Routes & Drainage – Northern Neighborhood Drainage Study and Engineering. Problem with street and structure in area of multiple repetitive loss	City of Anna Maria	Public Works	Hurricanes, Flood, Wildfire, Dam/Levee Failure	1,4,5,6	New	Partially	ECU funds		$450,000	In progress		4 years
36	48	Generator replacement for their critical facility that houses their fire department.	ALL	Sarasota Manatee Airport Authority Contact Jeffrey Sasada	Hurricanes, Flood, Tornado, Severe Storm, Power Failure	2	Existing	1, 3	Sarasota Manatee Airport Authority Budget		$375,000	New		2 years
37	47	Evacuation Routes & Drainage – Basins 2 and Basin 4 drainage improvements - South/Central Neighborhood bounded by 31st St to south and 43rd St to North. Street and structure flooding. Repetitive Loss Areas	City of Holmes Beach	Superintendent of Public Works	Hurricanes, Flood, Wildfire, Dam/Levee Failure	1,4,5,6	New	3	Jurisdiction Funds		$100,000	In progress	Pending Funding	2-3 years
38	47	Shuttering – Firehouse Update. Placement of shutters on all windows and main doors. Replacement of 7 apparatus bay doors as they are not rated doors. This is to make the station a safer place to bring people caught on the airport when cover must be taken. This will also secure the equipment so it can be pressed into service when needed. This project is to protect lives and property and keep the airport ready to serve the needs of this area.	Manatee County / Sarasota County	Sarasota Bradenton International Airport	Hurricanes, Tornado, Severe Storm	2	Existing		Not identified		$87,000	Deferred	Pending Funding	1 year

39	47	Evacuation Routes & Drainage – South Bay Neighborhood Drainage Study and Engineering. Problem with street and structure flooding	City of Anna Maria	Public Works Department	Hurricanes, Flood, Wildfire, Dam/Levee Failure	1,4,5,6	New	Partially	ECU funds		$165,000	In progress		2-3 years
40	47	Central Jail Administration Building Hurricane Shuttering	ALL	Property Management	Hurricanes, Tornado, Severe Storm	2	Existing		25% Property owners, 75% HMGP funding	$39,581	$158,327	New		1 year
41	47	Medical Examiner Hurricane Shuttering	ALL	Property Management	Hurricanes, Tornado, Severe Storm	2	Existing		25% Property owners, 75% HMGP funding	$27,481	$109,924	New		1 year
42	47	Utilities Operations Building Hurricane Shuttering	ALL	Property Management	Hurricanes, Tornado, Severe Storm	2	Existing		25% Property owners, 75% HMGP funding	$14,408	$57,632	New		1 year
43	47	Supervisor of Elections Hurricane Shuttering	ALL	Property Management	Hurricanes, Tornado, Severe Storm	2	Existing		25% Property owners, 75% HMGP funding	$24,278	$97,112	New		1 year
44	47	Braden River Library Hurricane Shuttering	ALL	Property Management	Hurricanes, Tornado, Severe Storm	2	Existing		25% Property owners, 75% HMGP funding	$31,605	$126,512	New		1 year
45	46	Evacuation Routes & Drainage – Basin 1 drainage improvements – Southern neighborhood bounded by 27th St to the south and 31st St to the North. Street & structure flooding. Repetitive Loss Areas	City of Holmes Beach	Superintendent of Public Works	Hurricanes, Flood, Wildfire, Dam/Levee Failure	1,4,5,6	New	3	Jurisdiction Funds		$150,000	In progress	Pending Funding	2-3 years
46	46	Evacuation Routes & Drainage – Drainage System for Manatee Avenue from 26th through 59th Streets West. Problem with evacuation route flooding. Manatee Avenue is a main evacuation route.	City of Bradenton	FDOT	Hurricanes, Flood, Wildfire, Dam/Levee Failure	1,4,5,6	New	Yes	FDOT		$500,000	In progress		3 years
47	46	Evacuation Routes & Drainage – Drainage System for Cortez Road from 26th through 71st streets West. Problem with the evacuation route flooding. Cortez Road is a main route of evacuation.	Manatee County / City of Bradenton	FDOT	Hurricanes, Flood, Wildfire, Dam/Levee Failure	1,4,5,6	New	No	FDOT		$500,000	Deferred	Pending Funding	3 years
48	46	Generators – Special Needs Generator	ALL	Public Safety Department Division of Emergency Management	ALL	2	Existing	No	Not identified		$12,000,000	Deferred	Pending Funding	1 year
49	46	Generators – Generators for Satellite Lift Stations. Need fifteen 65 KW generators at $25,000 each and ten 35 KW generators at $18,000 each to combat loss of power from flooding	ALL	Utilities Department	ALL	2	Existing		Jurisdiction Funds		$705,000	In progress		5 years
50	46	Emergency Lighting – Manatee Glens Hospital Shelter Upgrade. Manatee Glens Hospital serves as the psychiatric receiving center and the emergency housing shelter for inpatient psychiatric hospital clients for Manatee County. Our request is for additional emergency lighting to increase the square footage of shelter. Our goal is to keep psychiatric clients in an appropriate setting during times of evacuation	ALL	Centerstone Hospital	ALL	2	Existing	No	Not identified		$9,000	Deferred	Pending Funding	1 year
51	46	Generators – Manatee Glens Hospital Shelter Upgrade -. Manatee Glens Hospital serves as the psychiatric receiving center and the emergency housing shelter for inpatient psychiatric hospital clients for Manatee County. Our request is for additional fuel tank to increase the square footage of shelter. Our goal is to keep psychiatric clients in an appropriate setting during times of evacuation	ALL	Centerstone Hospital	ALL	2	Existing	No	Not identified		$7,200	Deferred	Pending Funding	1 year

52	46	Shuttering – Station 6. Station 6 will be the backup EOC if Station 2 EOC goes down.	ALL	North River Fire District	Hurricanes, Tornado, Severe Storm	2	Existing	No	Not identified		$2,000	Deferred	Pending Funding	6 months
53	45	SWWRF Collection System Area Infiltration Mitigation SWWRF and Rubonia Inflow Mitigation	ALL	Utilities Department Contact: Candie Schwartz	Hurricanes, Flood, Severe Weather	4,5,6	N/A		Jurisdiction Funds		$3,998,000	Deferred	Pending Funding	5 years
54	45	Shuttering – Shutters and doors for City Garage, Public Works Purchasing and Sanitation Office.	City of Bradenton	Public Works & Utilities	Hurricanes, Tornado, Severe Storm	2	Existing	No	Not identified		$250,000	Deferred	Pending Funding	2 years
55	45	Evacuation Routes & Drainage – Key Royal Drive Drainage improvements. Street & structure flooding	City of Holmes Beach	Superintendent of Public Works	Hurricanes, Flood, Wildfire, Dam/Levee Failure	1,4,5,6	New	3	Jurisdiction Funds		$125,000	In progress	Pending Funding	2-3 years
56	45	Facility Hardening – Citywide residential floodproofing. Problem with repeated structure flooding	City of Anna Maria	Public Works and Planning and Development	Flood	2,6	Existing	Partially	ECU funds		$106,000	In progress		2 years
57	45	Evacuation Routes & Drainage – Lake La Vista Neighborhood Drainage Study and Engineering. Problem with street and structure flooding	City of Anna Maria	Public Works	Hurricanes, Flood, Wildfire, Dam/Levee Failure	1,4,5,6	New	Partially	ECU funds		$75,000	In progress		2 years
58	44	Evacuation Routes & Drainage – North/Central Neighborhood Drainage Study and Engineering. Problem with street and structure flooding.	City of Anna Maria	Public Works	Hurricanes, Flood, Wildfire, Dam/Levee Failure	1,4,5,6	New	Partially	ECU funds		$90,000	In progress		2 years
59	44	Evacuation Routes & Drainage – Basin 5 & 8 Central Neighborhood improvements bounded by 43rd St to the south and Flotilla St to the north	City of Holmes Beach	Superintendent of Public Works	Hurricanes, Flood, Wildfire, Dam/Levee Failure	1,4,5,6	New	3	Jurisdiction Funds		$325,000	In progress	Pending funding	2-3 years
60	44	Evacuation Routes & Drainage – Traffic Signal Support Upgrade. Upgrading the traffic signal support to mast arm at 53rd Ave W/26th St W intersection will provide for better structural integrity to withstand tropical storm and hurricane level wind force. In addition, this will allow for a quicker recovery after a storm/hurricane event	ALL	Public Works	Hurricanes, Flood, Wildfire, Dam/Levee Failure	1,4,5,6	New	No	Not identified		$400,000	Deferred	Pending Funding	1 year
61	44	Generators – 35KW Generator for Manatee County Landfill. Problem with power loss due to flooding	ALL	Utilities Department	ALL	2	Existing		Jurisdiction Funds		$18,000	In progress		6 months
62	44	Repetitive Loss – Buyout of Repetitive Loss Properties. Buyout 4-6 repetitive loss residences downstream of Lake Manatee	ALL	Utilities Department	Hurricane, Flood, Severe Storm	3,4,5,6	N/A		Jurisdiction Funds		$2,000,000	In progress		5 years
63	44	Education – Public Information Booklet. Educate public as to the value of storm and wind proofing.	City of Anna Maria	Planning and Development Department	ALL	1	N/A	Yes	Jurisdiction Funds		$2,000	In progress		On going
64	44	Shuttering – Shutter City Centre Building. Harden entire building with Miami-Dade approved shutters over all vulnerable openings, to protect building contents from adverse effects of severe weather.	City of Bradenton	City of Bradenton Fire Department	Hurricanes, Tornado, Severe Storm	2	Existing	No	Unknown	Unknown	$500,000	Deferred	Pending availability of funding (grant and match)	1 year
65	44	South Village NOSO Repair/Replacement of Affordable Housing. Facility hardening for 20 affordable rental units.	ALL	Manatee County Housing Authority Contact: Brenda Lovett	Hurricanes, Tornado, Severe Storm	2	Existing	1, 3	Insurance		$406,860	New		2 years
66	43	Generators – MSO District II and III UPS. These are two primary substations for patrol operations. If power is interrupted countywide these districts should be operational by generator to support law enforcement services to their assigned area of the county	ALL	Manatee County Sheriff's Office	ALL	2	Existing	No	Not identified		$200,000	Deferred	Pending funding	1 year
67	43	Shuttering – Manatee Glens Hospital Shelter Upgrade. Manatee Glens Hospital serves as the psychiatric receiving center and the emergency housing shelter for inpatient psychiatric hospital clients for Manatee County. Our request is for shutters to increase the square footage of shelter. Our goal is to keep psychiatric clients in an appropriate setting during times of evacuation.	ALL	Centerstone Hospital	ALL	2	Existing	No	Not identified		$429,792	Deferred	Pending funding	2 years
68	43	Facility Hardening – Elevate City Hall	City of Bradenton Beach	Building Official/ Public Works Director	Hurricanes, Flood, Severe Storm	2	Existing	Reduction of potential Flood Damage	Jurisdiction Funds		$520,000	In progress	Additional funding required	2019-2020
69	43	Facility Hardening – Elevate Public Works Building	City of Bradenton Beach	Building Official/ Public Works Director	Hurricanes, Flood, Severe Storm	2	Existing	Reduction of potential Flood Damage	Jurisdiction Funds		$520,000	In progress	Additional funding required	2019-2020
70	42	Homeland Security - Purchase and installation of equipment, and private, underground fiber optic link between multiple facilities. Equipment and underground private fiber optic link with high bandwidth and availability will enable the Legislative, ECC, and Police Department branches to be moved to the Fire Department, and the Accounting Department to be located to the City Parking Garage. This will allow for a quick turnaround time to relocate and resume normal operation	City of Bradenton	City of Bradenton Fire Department	Terrorist Acts, Sabotage	4	New	No	Unknown	Unknown	$200,000	Deferred	Pending cooperative agreement with Manatee County Information Technology	1 year
71	41	Wind Retrofit - City Hall replacement windows and install permanent backup generators	City of Holmes Beach	City Engineer	Hurricanes, Tornado, Flood, Severe Storm	2	Existing		Jurisdiction Funds	25% Property owners, 75% HMGP funding	$151,123.12	New		2 years

72	41	Utilities Master Lift Stations Lightning Protection surge and Grounding Installation Project at three master lift stations: RTU 677, 583, and 838	ALL	Utilities Department Contact: Candie Schwartz	ALL	2	Existing		Jurisdiction Funds		$51,000	Deferred	Pending Funding	As funding allows
73	41	Communications – Computer/video system. To reconfigure the computer/ video system to allow the display of multiple computer/ video images during EOC activations.	ALL	Public Safety Department Division of Emergency Management	ALL	4	Existing	No	Not identified		$40,000	Deferred	Pending Funding	6 months
74	41	Harden Facility Addition – 20' x 100' hardened building extension/addition to house critical electronics: electrical traffic signals and fabrication (sign) equipment during emergency response/ recovery, staging and crew assembly.	ALL	Public Works Department Transportation	ALL	2	Existing	No	Not identified		$60,000	Deferred	Deferred for budgeting reasons	1 year
75	41	Shuttering – Hardening roof structure & roll down window shutters. Hardening roof structure to recommended FEMA storm wind – strata level and roll down window shutters for the new G.T. Bray Park Administration Building. Note: The Gymnasium is designated as a Federal Disaster Recovery Center 9DRC) for Manatee County. Hardening of the new center is even more important in managing recourses and manpower during and after such weather, or other related crisis event (s).	ALL	Parks and Natural Resources Department	Hurricanes, Tornado, Severe Storm	2	Existing	No	Not identified		$40,000	Deferred	Pending Funding	2 years
76	41	Evacuation Routes & Drainage – Bay Drive South from Roundabout to 5th St. South - Hardening and Elevation of Corridor to protect against sea level ride and king tides	City of Bradenton Beach	Public Works	Hurricanes, Flood, Wildfire, Dam/Levee Failure	1,4,5,6	New	Flood Damage Reduction and Water Quality Treatment	Jurisdiction Funds		$175,000	In progress	Additional funding required	2020-2023
77	41	To remove residential properties by means of a combination of demolition rebuild and / or elevation of structures. Number of structures included in Mitigation initiative depends on combined Benefit Cost Analysis and willingness of number of individual residents to participate in the parameters of the grant program.	Town of Longboat Key	Town of Longboat Key Public Works Contact: James Linkogle	Hurricanes, Flood	3,4,5,6	N/A	1, 3	25% Property owners, 75% HMGP funding		$1,000,000	New		1 year
78	41	Building & Development Services - Hurricane Shutters Retrofit	ALL	Property Management	Hurricanes, Tornado, Severe Storm	2	Existing		25% Property owners, 75% HMGP funding		$9,800	New		1 year
79	41	Braden River Flood Mitigation - Repair erosion occurring along Braden River in two districts: Greenbrook CDD-4 behind Vistas neighborhood, walking trail has washed out serveral times, and Summerfield erosion occurring from runoff behind homes located along river, causing loss of property and possible damage to structures.	Lakewood Ranch	Property Management	Hurricanes, Flood, Severe Storm	4,5,6	New		25% Property owners, 75% FEMA		$417,564	In progress		1 year
80	40	Other – Extend the existing PSC sidewalk north to the perimeter road to provide a stable, dry area to stand on while plugging the main power codes from mutual aid command vehicles into the power stanchions that will be on the west side of the sidewalk against the parking lot fence. This present stabilized parking lot area is susceptible to standing water during major storms and tropical cyclones. The probability of electrical shock to personnel plugging equipment into electrical boxes, while standing in water along the fence line, is very high. Placing a sidewalk along the fence line would reduce that possibility. This sidewalk would also provide a dry path to use for personnel working in the stabilized parking area.	ALL	Public Safety Department	ALL	4,5,6	Existing	No	Not identified		$15,400	Deferred	Pending Funding	1 year
81	40	Facility Hardening – Re-enforce roof structure to meet current code. The trusses are not fastened property to the ring beam and do not meet current code. The aluminum soffit is 40" deep and has no structural support. Losing it could mean losing the roof system. The roof system need to be modified or replaced to withstand storm force winds.	ALL	Cedar Hammock Fire Control District	Hurricanes, Tornado, Severe Storm	2	Existing	No	Not identified		$200,000	Deferred	Pending Funding	2 years
82	40	Facility Hardening – Re-enforce roof structure to meet current code. The roof system (roof tiles, sheathing, and trusses) are not fastened to meet current code and need to be modified or replaced to withstand storm force winds.	ALL	Cedar Hammock Fire Control District	Hurricanes, Tornado, Severe Storm	2	Existing	No	Not identified		$250,000	Deferred	Pending Funding	2 years
83	37	Water Treatment Plant potable water processing basins festoon cords to be replaced with system has wind rating to ensure no loss of power for basins during any wind event, associated with high winds. Current festoon cables have no wind rating and are at end of service life.	ALL	Utilities Department Contact: Candie Schwartz	ALL	2	Existing		Jurisdiction Funds		$170,000	Deferred	Pending Funding	As funding allows
84	35	Facility Hardening (public housing 41 buildings; 33 affordable rental buildings). Install impact resistant windows, wind resistant cords, harden roof structure utilizing retrofit building procedures of existing trusses, sheathing, application of water barrier and secured shingles to all public housing and affordable rental housing units.	ALL	Manatee County Housing Authority	Hurricanes, Tornado, Severe Storm	2	Existing	No	Not identified		$1,332,000	Deferred	Pending Funding	5 years
85	35	Carnegie Library - Hurricane Shutters Retrofit	ALL	Property Management	Hurricanes, Tornado, Severe Storm	2	Existing		25% Property owners, 75% FEMA		$165,400	New		1 year
86	33	Generators – Generator for City hall. To serve as a mid-point for residents and Sheriff deputies for a pick-up point.	City of Anna Maria	Public Works	Hurricanes, Tornado, Severe Storm, Power Failure	2	Existing	No	Unknown		$50,000	Deferred	Pending Funding	2 years

PROJECT PRIORITY INITIATIVES LIST - COMPLETED

Score	Name & Description of Project	Jurisdiction (Location)	Agency Responsible for Implementation	Hazards Mitigated	Mitigation Goals Achieved	Potential Funding Source(s)	Match (if applicable)	Estimated Costs	Status
49	Evacuation Routes & Drainage – installation of sand dunes on beach. Beach, roadway, and evacuation route flooding	City of Bradenton Beach	City of Bradenton Beach / Manatee County	1-5, 11	Reduction of flooding on evacuation route	Jurisdiction Funds	Private Developer Funds	$52,000	Completed
53	Shuttering – This project will shutter three fire stations and the administration building.	Manatee County	Cedar Hammock Fire Control District	1, 2, 3	No	Not identified		$67,362	Completed
44	Generators – Generator system for Station 6. Install propane, generator, and transfer switch for automatic emergency power for Myakka City Fire Station	Manatee County	Myakka City Fire District	1 through 14	Yes	Generator donated from Florida Forestry Service		$50,000	Completed
47	Evacuation Routes & Drainage – Seawall Improvement, Riverside Dr. West – Build seawall to protect residences on Riverside Drive ad well as Bridge across Manatee River	City of Palmetto	Public Works	1-5, 11	Yes	CIP		$200,000	Completed
44	Shuttering – Carnegie Library. To cover all windows and doors with 3m protective shield film. This protective measure will help ensure preservation of many artifacts and historical records currently displayed for public view.	City of Palmetto	Public Works / Risk Management	1, 2,3	Yes	CIP		$27,000	Completed
53	Communications – Add 8 more 800Mhz units, cell phones, and pagers to Police Department and Public Works for communications with Fire Department, EOC, State and mutual aid units	City of Bradenton Beach	City of Bradenton Beach Police Department	1 through 14		Jurisdiction Funds		$60,000	Completed

APPENDIX H

POTENTIAL FUNDING SOURCES

A. PRE-DISASTER

Beach Funding Program

Overview	The program provides and manages grants for the planning and implementation of beach and inlet management projects to protect upland structures and infrastructure, to provide critical habitat for threatened and endangered species, to provide opportunities and to support local economies through tourism.
Eligibility	Local governments, including county and municipal governments, community development districts and special taxing districts.
Assistance Provided	Assistance in an amount up to 50 percent of project costs
Contact	Division of Water Resource Management Beaches and Mines Funding Assistance 2600 Blair Stone Road, MS 3601 Tallahassee, FL 32399-3000 Main Phone: 850-245-8336 beaches_funding@dep.state.fl.us

Community Disaster Loan Program

Overview	The CDL Program provide operational funding to help local governments that have incurred a significant loss in revenue, due to a major disaster, that has or will adversely affect their ability to provide essential municipal services.
Eligibility	• Be located in the presidentially declared disaster area, and the disaster must have adversely affected the level of essential municipal services previously provided.44 CFR §206.363(b)(2) • Be able to show a substantial loss (greater than 5%) of tax and other revenues for the current or succeeding year as are a result of a major disaster. 44 CFR §206.363(b)(2) • Not be in arrears with respect to any payments due on previous loans. • Ensure State law doesn't prohibit local governments from incurring indebtedness resulting from a federal loan.44 CFR §206.363(a)(1)
Assistance Provided	Loan amounts cannot exceed: • the cumulative est. revenue loss for the FY of the disaster and the subsequent three FYs; or

	• 25% of the approved operating budget of the local government for the FY in which the disaster occurred or the subsequent FY; or • the $5,000,000 loan cap. If the estimated revenue loss for the FY of the disaster is at least 75% of the local government's operating budget for that FY, the loan may be 50%of the local government's operating budget for the FY of the disaster but shall not exceed $5 million. The term of the loan is five years, and can be extended to ten years, with an Applicant selected payment schedule. 44 CFR §206.361(e) The interest rate for the five-year maturities are determined by the Secretary of the Treasury on the date the promissory note is executed by FEMA, adjusted to the nearest 1/8th percent. 44 §CFR 206.361(c)
Contact	FEMA, DHS CDL Program 500 C Street SW. Washington, DC 20472

Community Facilities Loan Program

Overview	To construct, enlarge, extend, or otherwise improve community facilities providing essential services to rural residents.
Contact	Rural Development 4440 NW 25th Place PO Box 147010 Gainesville, FL 32614-7010 (352) 338-3402

Conservation and Recreation Lands (CARL)

Overview	This grant program is intended to conserve environmentally endangered lands and provide resource conservation measures for other types of lands.
Contact	Florida Department of Environmental Protection Division of State Lands Marjory Stoneman Douglas Bldg. 3900 Commonwealth Blvd., MS 100 Tallahassee, FL 32399-3000 (850) 245-2118 www.dep.state.fl.us/lands/

Community Development Block Grant (CDBG)

Overview	The Community Development Block Grants (CDBG) provide for long-term needs, such as acquisition, rehabilitation or reconstruction of damaged properties and facilities and redevelopment of disaster-affected areas. Funds may also be used for emergency response activities, such as debris clearance and demolition, extraordinary increases in the level of necessary public services.
Eligibility	Eligible activities include, but are not limited to: • Voluntary acquisition or if appropriate, elevation of storm damaged structures (can be used as match for FMA projects in low income areas); • Relocation payments for displaced people and businesses; • Rehabilitation or reconstruction of residential and commercial buildings; • Assistance to help people buy homes, including down payment assistance and interest rate subsidies; and • Improvement to public sewer and water facilities
Assistance Provided	Cost share is required. Federal funding is available for up to 75 percent of the eligible activity costs. Grants are to be awarded based on request.
Contact	Department of Housing and Urban Development Community Planning and Development 451 7th Street, SW Washington, DC 20410 (202) 708-3587 www.hud.gov

Community Assistance Program State (CAP-SSSE)

Overview	To ensure that communities participating in the National Flood Insurance Program (NFIP) are achieving flood loss reduction measures consistent with program direction. The CAP-SSSEE is intended to identify, prevent and resolve floodplain management issues in participating communities before they develop into problems requiring enforcement action.
Eligibility	State, Local and tribal governments. Eligible activities include, but are not limited to: • Entering Floodplain Management Data into the Community Information System (CIS) (Required); • Strategic Planning; • Ordinance Assistance (Required); • CAP GAP Analysis; • Community Assistance Visits and Community Assistance Contacts (Required); • Outreach, Workshops and Other Training;

	• General Technical Assistance; • Mapping Coordination Assistance; • Coordination with Other State Programs and Agencies; and • Assistance to Communities in Responding to Disasters
Assistance Provided	Cost share is required. Federal funding is available for up to 75 percent of the eligible activity costs. Grants are to be awarded based on request.
Contact	Federal Emergency Management Agency Mitigation Directorate 500 "C" Street, SW Washington, DC 20472 (202)646-4621 http://www.fema.gov/fima/

Emergency Advance Measures for Flood Prevention

Overview	To perform activities prior of flooding or flood fight that would assist in protecting against loss of life and damages to property due to flooding.
Contact	US Army Corps of Engineers Attn: CECW – OE Washington, DC 20314 (202) 272-0251

Expanded Local Management Hazardous Waste Program

Overview	The primary purpose of this fund is to cover costs incurred to establish the expanded local hazardous waste management program as stated in FS403.7238 including training for county personnel, materials & equipment for educational activities.
Contact	Florida Dept. of Environmental Protection 2600 Blair Stone Rd. Tallahassee, FL 32399-2400 (850) 488-0300

Flood Control Projects

Overview	To reduce flood damages through projects not specifically authorized by Congress.
Contact	US Army Corps of Engineers Attn: CECW – OE Washington, DC 20314 (202) 272-1975

Flood Communities Trust (FCT)

Overview	This grant program facilitates the purchase of lands for conservation and/or recreation purposes by local governments. This land acquisition program helps to implement conservation, recreation, open space, and coastal elements of local comprehensive plans. The Board of Florida Communities Trust has latitude to consider innovative financing arrangements, loans, and land swaps. However, most of the Trust's funding is for land acquisition. Land acquisition projects in which matching funds are available will receive more favorable consideration, although a portion of available funds may be awarded on outright grants.
Eligibility	Sate and Indian Tribes
Assistance Provided	Individual grants are awarded based on requests
Contact	Florida Department of Community Affairs Florida Communities Trust 2555 Shumard Oaks Blvd. Tallahassee, FL 32399 (850) 922-2207 http://www.dca.state.fl.us/ffct/florida_forever.htm

Florida Department of Environmental Protection 319(h) Grant Program

Overview	The Nonpoint Source management Section administers grant money it receives from EPA through Section 319(h) of the Federal Clean Water Act. These grant funds can be used to implement projects or programs that will help to reduce nonpoint sources of pollution (NPS). Projects or programs must be conducted within the state's NPS priority watersheds and National Estuary Program waters.
Eligibility	State and local governments, certain private non-profit organizations or institutions, and Indian tribes
Assistance Provided	Project grants (match of funds or in-kind services required). FDEP funds up to 60% of total eligible costs. All projects must include at least a 40% nonfederal match.
Contact	Florida Department of Environmental Protection Nonpoint Source Management Program 2600 Blair Stone Road, M.S. 3570 Tallahassee, Florida 32399-2400 (850) 245-7508 http://www.dep.state.fl.us

Flood Insurance

Overview	To enable persons to purchase insurance against physical damage to or loss of buildings and/or contents therein caused by floods, mudslide (i.e., mudflow), or flood-related erosion, thereby reducing Federal disaster assistance payments, and to promote wise floodplain management practices in the Nation's flood-prone and mudflow-prone areas.
Contact	FEMA 3003 Chamblee Tucker Road Atlanta, GA 30341 (770) 220-5200

Flood Mitigation Assistance (FMA)

Overview	The Flood Mitigation Assistance (FMA) assists communities in implementing measures to reduce or eliminate the risk of long-term risk of repetitive flood damage to buildings and structures insured under the National Flood Insurance Program (NFIP). The FMA program strengthens national preparedness and resilience and supports the mitigation mission area through Strategic Goal #1 Building a Culture of Preparedness, Objectives 1.1, 1.2, 1.3, and 1.4 of the 2018 – 2022 FEMA Strategic Plan.
Eligibility	State, Local and tribal governments. Eligible activities include, but are not limited to: • Property acquisition, relocation or demolition; • Structural elevation; • Mitigation reconstruction; • Dry floodproofing of historical residential structures, and non-residential structures; • Localized flood risk reduction; • Soil stabilization; and • Infrastructure retrofit
Assistance Provided	Cost share is required. Federal funding is available for up to 75 percent of the eligible activity costs. PDM grants are to be awarded on a competitive basis and without reference to state allocations, quotas, or other formula-based allocation of funds
Contact	Florida Division of Emergency Management 2555 Shumard Oak Blvd. Tallahassee, FL 32399-2100 (850) 413-9966

Flood Plain Management Services

Overview	To promote appropriate recognition of flood hazards in land and water use planning and development through the provision of flood and flood plain related data, technical services, and guidance.
Contact	US Army Corps of Engineers Attn: CECW – PF Washington, DC 20314-1000 (202) 272-0169

Florida Communities Trust (FCT)

Overview	This grant program facilitates the purchase of lands for conservation and/or recreation purposes by local governments. This land acquisition program helps to implement conservation, recreation, open space, and coastal elements of local comprehensive plans. The Board of Florida Communities Trust has latitude to consider innovative financing arrangement, loans, and land swaps. However, most of the Trust's funding is for land acquisition. Land acquisition projects in which matching funds are available will receive more favorable consideration, although a portion of available funds may be awarded on outright grants.
Contact	Florida Department of Environmental Protection Florida Communities Trust 3900 Commonwealth Blvd, M.S. 100 Tallahassee, FL 32399 (850) 245-2555

Grants for Public Works & Economic Development Facilities

Overview	To promote long-term economic development in areas experiencing substantial economic distress. EDA provides Public Works investments to support the construction of rehabilitation of essential public infrastructure and development facilities necessary to generate higher-skill, higher-wage jobs and private investment.
Contact	Economic Development Administration The Federal Building (Room 423) 80 N. Hughey Ave. Orlando, FL 32801 (407) 648-6572

Hazardous Materials Training Program for Implementation of the Superfund Amendment and Reauthorization Act (SARA) of 1986

Overview	The goal of the SARA Title III Training Program is to make funding available to support programs of State, local, and Tribal governments, and university sponsored programs designed to improve emergency planning, preparedness, mitigation, response, and recovery capabilities. These programs must provide special emphasis on emergencies associated with hazardous chemicals.
Contact	Federal Emergency Management Agency Support Systems Branch, Training Division 16825 S. Seton Ave. Emmitsburg, MD 21727 (301) 447-1142

Hurricane Program

Overview	This program provides state and local assistance; property protection; hazard identification and evacuation studies; post storm analysis; training and exercises; and public awareness and education campaigns, and materials to support State and local activities. The intent is to significantly reduce the loss of life, property, economic disruption, and disaster assistance costs resulting form hurricanes.
Eligibility	Several states including Florida
Assistance Provided	Individual grants are awarded based on requests. States are required to provide 25 percent match.
Contact	FEMA – Mitigation directorate 500 C Street SW Washington, DC 20472 (202) 646-4621 http://www.fema.gov/mit/

Protection of Essential Highways, Highway Bridge Approaches, and Public Works

Overview	To provide bank protection of highways, highway bridges, essential public works, churches, hospitals, schools, and other nonprofit public services endangered by flood-caused erosion.
Contact	US Army Corps of Engineers Attn: CECW-PM Washington, DC 20314-1000 (202) 272-1975

Pre-Disaster Mitigation (PDM) Grant Program

Overview	The PDM program was authorized by Section §203 of the Robert T. Stafford Disaster Relief and Emergency Assistance Act (Stafford Act), as amended by Section §102 of the Disaster Mitigation Act of 2000, to assist communities to plan for and implement and sustain cost-effective measures designed to reduce the risk to individuals and property from natural hazards, while also reducing reliance on Federal funding from future disasters. The PDM program strengthens national preparedness and resilience and supports the mitigation mission area through Strategic Goal #1 Building a Culture of Preparedness, Objectives 1.1, 1.2, 1.3, and 1.4 of the 2018 – 2022 FEMA Strategic Plan. Funding these plans and projects reduces overall risks to the population and structures, while also reducing reliance on funding from actual disaster declarations.
Eligibility	State, Local and tribal governments. Eligible activities include, but are not limited to: • Property acquisition, relocation or demolition; • Structural and non-structural retrofitting (e.g. elevation, storm shutters, and hurricane clips); • Mitigation reconstruction; • Generators; • Minor structural hazard control on protection (e.g. culverts, floodgates, retention basins); • Soil stabilization; • Wind retrofit for one and two-family residence; • Safe room construction; and • Localized flood control projects that are designed to protect critical facilities and are not part of a larger flood control system.
Assistance Provided	Cost share is required. Federal funding is available for up to 75 percent of the eligible activity costs. PDM grants are to be awarded on a competitive basis and without reference to state allocations, quotas, or other formula-based allocation of funds
Contact	Florida Division of Emergency Management 2555 Shumard Oak Blvd. Tallahassee, FL 32399-2100 (850) 413-9966

Resource Conservation and Development

Overview	To encourage and improve the capability of State and local units of government and local nonprofit organizations in rural areas to plan, develop and carry out programs for resource conservation and development.
Contact	Deputy Chief for Programs Resource Conservation and Community Development Division Natural Resources Conservation Service Department of Agriculture P.O. Box 2890 Washington, DC 20013 (202) 720-2847

Snagging and Clearing for Flood Control

Overview	To reduce flood damage.
Contact	US Army Corps of Engineers Attn: CECW-PM Washington, DC 20314-1000 (202) 272-1975

Soil and Water Conservation

Overview	To help people conserve, improve, and sustain our natural resources and environment.
Contact	Natural Resources Conservation Service Department of Agriculture P.O. Box 2890 Washington, DC (202) 720-4527

Watershed Protection and Flood Prevention

Overview	To provide technical and financial assistance in carrying out works of improvement to protect, develop, and utilize the land and water resources in small watersheds.
Contact	Watersheds and Wetlands Division Natural Resources Conservation Service Department of Agriculture P.O. Box 28890 Washington, DC 20013 (202) 720-3534

B. POST-DISASTER

Community Development Block Grants (CDBG)/Entitlement Grants

Overview	To develop viable urban communities by providing decent housing and a suitable living environment, and by expanding economic opportunities, principally for low to moderate income individuals.
Contact	Entitlement Communities Division Office of Block Grant Assistance CPD, HUD 451 7th Street SW Washington, DC 20410-7000 (202) 708-3587

Community Development Block Grants (CDBG)/State's Program

Overview	To develop viable urban communities by providing decent housing and a suitable living environment, and by expanding economic opportunities, principally for low to moderate income individuals.
Contact	State and Small Cities Division Office of Block Grant Assistance CPD, HUD 451 7th Street SW Washington, DC 20410-7000 (202) 708-3587

Emergency Conservation Program

Overview	To enable farmers to perform emergency conservation measures to control wind erosion on farmlands, or to rehabilitate farmlands damaged by wind erosion, floods, hurricanes, or other natural disasters and to carry out emergency water conservation or water enhancing measures during period of severe drought.
Contact	Department of Agriculture - Farm Service Agency 1400 Independence Dr. Washington, DC 20250-0513 (202) 720-6221

Emergency Operations Flood Response and Post Flood Response

Overview	To provide emergency flood response and post flood response assistance as required to supplement State and local efforts and capabilities in time of flood coastal storm.
Contact	Commander US Army Corps of Engineers Attn: CECW- OE Washington, DC 20314-1000 (202) 272-0251

Emergency Shelter Grants Program (ESG)

Overview	To provide financial assistance to renovate or convert buildings for use as emergency shelters for the homeless. Grant funds may also be used to operate the shelter (excluding staff) and pay for certain support services.
Contact	Community Planning & Development Dept. of Housing and Urban Development 325 West Adams Street Jacksonville, FL 32202-4303 (904) 232-2626

Federal Emergency Shelter Grants Program for the Homeless

Overview	Grants for the provision of emergency shelter and essential support services to the homeless. Funds may be used for structural improvements to shelters, shelter operating expenses, furnishings and equipment, and other services.
Contact	Benefit Recovery & Special Program Economic Services Program 1317 Winewood Blvd. Tallahassee, FL 32399-0700 (850) 487-2966

Hazard Mitigation Grant Program (HMGP)

Overview	HMGP is authorized by Section §203 of the Robert T. Stafford Disaster Relief and Emergency Assistance Act (Stafford Act), as amended by Section §102 of the Disaster Mitigation Act of 2000. This helps communities implement measures to reduce or eliminate long-term risk to people and property from natural hazards and their effects. To prevent future losses of lives and property due to disaster; to implement State or local hazard mitigation plans; to enable mitigation measures to be implemented during immediate recovery from a disaster; and to provide funding for previously identified mitigation measures to benefit the disaster area.

Eligibility	Eligible Applicants: • State and local governments who have an approved Local Mitigation Strategy (LMS) Plan in accordance with 44 CFR 201.6, prior to receipt of HMGP subgrant funding for projects, • Private non-profit organizations or institutions that own or operate a private non-profit facility as defined in §26.221©; and • Indian tribes or authorized tribal organizations Eligible activities include, but are not limited to: • Property acquisition or relocation of hazard-prone structures; • Retrofitting of existing buildings and facilities that will result in increased protection from hazards; • Elevation of flood-prone structures; • Infrastructure protection measures; • Stormwater management improvements; • Minor structure flood control; • Aquifer storage and recovery; • Floodplain and stream restoration; • Residential and safe room construction; and • Generators for a critical facility, provided cost-effective, contribute to a long-term solution to the problem that they intend to address and meet other project eligibility criterial as required.
Assistance Provided	The amount of HMGP funding available to the state is based on the total federal disaster assistance for the Presidential Disaster Declaration.
Contact	Florida Division of Emergency Management 2555 Shumard Oak Blvd. Tallahassee, FL 32399-2100 (850) 413-9966

Public Assistance Program

Overview	To provide supplemental assistance to States, local governments, and certain private nonprofit organizations to alleviate suffering and hardship resulting from major disasters or emergencies declared by the President.
Contact	Infrastructure Support Division Response and Recovery Directorate FEMA 500 C Street SW Washington, DC 20472 (202) 646-3026

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APPENDIX I

HAZARD MITIGATION ROLES

Participating jurisdictions have provided a list of departments and a description of their role/function in terms of hazard mitigation.

A. MANATEE COUNTY

1. Public Safety Department

   The Public Safety Department consists of four divisions: Emergency Management, Emergency Medical Services (EMS), 9-1-1, and Animal Services. Each division has defined responsibilities in providing community services. Emergency Management is tasked with disaster planning and response/recovery coordination efforts for an all hazards approach. It provides training and educational programs to citizens and organizations in preparing for all five Phases of emergency management: Preparedness, response, recovery, mitigation, and prevention. EMS provides critical lifesaving services to citizens of the county that require immediate medical attention. 9-1-1 is responsible for servicing emergency calls for EMS, law, hazmat, and fire services and ensuring the calls are processed in a timely manner by the appropriate response agency. Marine Rescue provides medical rescue to county residents and visitors on public beaches and waterways. HazMat provides the management and coordination of public service First Responders and special equipment for those who respond to hazardous material emergency releases. Animal Services enforces animal code regulations and provides medical assistance and adoption processes for small animals.

2. Public Works Department

   Responsible for ongoing maintenance and development of roadways and associated drainage systems in the unincorporated county and where the County has responsibility for such systems in incorporated areas.

3. Parks and Natural Resources Department (PNRD)

   The Environmental Protection Division (EPD) within the PNRD is responsible for coordinating the County's National Pollutant Discharge Elimination System – Municipal Separate Storm Sewer System (NPDES-MS4) stormwater permit with Florida Department

of Environmental Protection and local co-applicants. Additional EPD programs include inspection, tracking and discharge responses from pollutant storage systems (PSTs) and small quantity of generators of hazardous wastes (SQGs). EPD also permits the construction, abandonment and maintenance of groundwater wells in coordination with Southwest Florida Water Management District (SWFWMD).

4. Utilities Department

The Manatee County Utility Department provides potable water (drinking), wastewater (sewer), reclaimed water (processed wastewater suitable for irrigation), and solid waste (landfill) services to the unincorporated portions of Manatee County. Additionally, the department provides support and critical services to county and municipal Law Enforcement, Fire and EMS agencies during man-made and natural emergencies within Manatee County and provides mutual aid services outside the county, as part of the Statewide Mutual Aid Agreement. The Manatee County Utility Department also serves as the lead agency for Emergency Support Function (ESF) 3 at the County's Emergency Operations Center (EOC).

5. Building & Development Services Department

The Permitting and Plans Review Division reviews permits for new structures as well as renovations to existing structures to make sure that they are compliant with the FEMA and Floodplain Management requirements. The Division also attends the Pre-application meetings in the Planning/Zoning Department and reviews Final Site Plans and Final Plats to make sure all proposed developments are compliant with the Federal Emergency Management Association (FEMA) and Floodplain Management requirements. The Department is also the repository for CRS data for Manatee County and provides Flood data and FEMA publications to the public.

The Planning Division is responsible for ensuring that the County's Comprehensive Plan fulfills all the requirements of Chapter 163, Part II, FS, including those associated with the hazard mitigation.

The Code Enforcement Division is charged with implementing code restrictions on personal and commercial properties in accordance with the building codes, ordinances and the Manatee County Land Development Code.

6. Neighborhood Services Department

The Community Development Division has vital information needed to guide citizens to valuable resources offered before, during, or after a disaster with services and potential funding sources to assist in case of a catastrophic event. They provide training in mitigation and preparedness to citizens of Manatee County.

7. Manatee County Housing Authority

Manatee County Housing Authority owns Public Housing Units, and affordable market rental units. We have participated with the LMS planning and are available to assist with relocation of citizens in need of housing. We provide administration of HUD funding for federally declared disaster areas. We participated in the past events providing the relocation Housing Choice Voucher administration from Housing and Urban Development (HUD) of surrounding counties and municipalities including Hardee, Desoto, Port Charlotte, Punta Gorda and Wauchula for low and very low-income citizens with catastrophic damage to their homes. Our staff provided education and information to the community requesting service in regard to housing assistance available and placement to relocate to safe, decent, affordable housing during the post event crisis.

8. Manatee County Sheriff's Office

Provides law enforcement services in throughout the County and municipal law enforcement on a contractual basis.

B. CITY OF ANNA MARIA

1. Building Department

The Plan and Development Department reviews permits for new structures as well as renovations to existing structures to ensure that the projects are compliant with FEMA and Local Floodplain Management requirements. The Department also conducts pre-applications meetings for Planning/Zoning compliance and reviews Final Site Plans and Final Plats to make sure all proposed developments are compliant with FEMA and Local Floodplain Management requirements. The Department is also the repository for the City of Anna Maria and provides flood data and FEMA publications to the public. The Department is also responsible for ensuring that the City's Comprehensive Plan fulfills all the requirements of Chapter 163, Part II, FS, including those associated

with hazard mitigation. The City of Anna Maria has contracted professional Planning and Building Code Administration staff.

2. Public Works Department

   The City of Anna Maria Public Works Department conducts routine maintenance of flood control infrastructure and formulates plans and budgets for stormwater projects to satisfy Regional and National clean water regulations (SWFMD and NPDES). This Department is also responsible for ongoing maintenance of roadways for emergency evacuation.

3. City Clerk's Office

   This office provides liaison with the Manatee County Emergency Management Division for preparation for severe weather events. The office has responsibility for developing and implementing the Continuity of Operations Plan.

C. CITY OF BRADENTON

1. Department of Developmental Services

   The Building Department reviews permits for new structures as well as renovations to existing structures to make sure that they are compliant with the FEMA and Floodplain Management requirements. The Department also attends the Pre-application meetings in the Planning/Zoning Department and reviews Final Site Plans and Final Plats to make sure all proposed developments are compliant with the FEMA and Floodplain Management requirements.

2. Fire Department

   The Bradenton Fire Department provides the citizens and businesses of the City of Bradenton with services including fire prevention and education, suppression, plans review, inspections and investigation. The BFD is comprised of three stations and 67 filled positions which include 57 suppression personnel 10 Administration and Support personnel. The current Insurance Services Office (ISO) rating is a three (3) with an ultimate goal of achieving a rating of a two (2). The department has been internationally accredited by the Commission on Fire Accreditation International since 2005. The average annual emergency response is 4,500 per year, utilizing six basic life support (BLS) engine companies and two aerial ladders, special operations/technical rescue and marine rescue units.

On the foundation of public safety through education and hazard prevention, the Bradenton Fire Department exists to deliver prompt and effective emergency preparedness, response, recovery and mitigation to our community which places its trust in us.

3. Police Department

   The mission of the Bradenton Police Department is to eliminate crime and the fear of crime, to enhance the quality of life for the stakeholders, and to hold themselves to the highest professional standards of performance and ethics. The department is a professional driven organization that partners with the community to make the City of Bradenton a better place to live, work, visit, and conduct business.

   In City or Countywide emergency situations, the department's purpose is to reduce the vulnerability of people and communities of Bradenton to loss of life, injury, or damage and loss of property resulting from natural, technological, and man-made emergencies, disasters, catastrophes, or hostile military or paramilitary action. They prepare for prompt and efficient response and recovery activities to protect lives, and property affected by emergencies, disasters, or catastrophes; and respond to emergencies, disasters, and catastrophes using all systems plans, and resources necessary to preserve and protect the health, safety, and well-being of persons affected by the event.

4. Public Works Department

   The overall mission of the Department of Public Works and Utilities is to develop, maintain and operate an efficient infrastructure system serving the City of Bradenton, and to effectively provide water, sewer and sanitation services to our residents. Maintenance of City parks and various City buildings is also included in the Department of Public Works and Utilities mission. The Department of Public Works and Utilities is comprised of 16 divisions. Each of the divisions is managed by a Superintendent or Assistant Superintendent who report to the Director of Public Works or to the Utility Manager or Public Works Section Manager. Each of the divisions plays a key role in the effective operation and maintenance of the City's service and facilities.

   The Executive Department provides overall administration and planning functions for Public Works. Adherence to the approved budget while assuring the best possible operation of the Public Works Department is also a primary goal. Long range planning and

management of the City's National Pollutant Discharge Elimination System (NPDES) Permit activities are important functions of the Executive Department.

The Financial Department is primarily responsible for the collection, distribution and maintenance of funds handled within the Department of Public Works. The division administers the accounting and budget functions, and helps maintains the fiscal integrity of the department's budget and fiscal policies. Additionally, the department works with federal, state and local funding entities to construct and provide improvements to the City's infrastructure.

The Engineering group's principal duties include maintenance of records indicating City rights-of-way and other property locations of underground City utilities, preparation of plans for smaller projects, review of developer of plans, utility location in construction areas, site and project surveys and assisting other City departments with improvement projects. Their in-house development of maps depicting water, wastewater, drainage and road systems provides an information base that is of great value to City staff, developers, contractors and others needing ready access to such data.

The Roads and Streets Department's principal goals are maintenance of 140 miles of paved streets, unpaved roads, bridges, sidewalks and curbs throughout the City. The Department maintains asphalt pavement and resurfaces roads that have generally deteriorated to a condition that is no longer serviceable. Major resurfacing projects are done by an asphalt paving company. The Department is also responsible for the removal of dirt and debris by street sweeping. Various conditions affect the need for sweeping, including seasons of the year, excessive rainfall and special circumstances. Sweepers are also used to remove spills of petroleum products and other non-hazardous materials.

The Grounds and Landscape Department crews mow the state road rights-of-way and edge 95 miles of curbs and sidewalks, mow and edge City median strips, and maintain City Centre grounds and other areas.

The Water Distribution Department maintains the water distribution system which consists of 160 miles of water pipe, (2" to 30" in diameter), isolation valves, fire hydrants, and water meters. This department installs new water main extensions, relocates mains as necessary, repairs broken mains, installs new

water meters and maintains fire hydrants. Inspection of water mains installed by contractors and slated for dedication to the City are inspected by the department. A routine water main flushing program is carried out to assist with a city-wide water quality maintenance program. Personnel are on call 24 hours a day for emergencies such as broken water mains.

Water Plant operation is a 24 hours a day function and personnel are always on site. Staff provides routine maintenance functions, and a complete Health and Human Services (HHS) certified laboratory is operated for process control and compliance testing and reporting.

The Sewer Collection Department maintains the existing system of pipes and manholes. An on-call crew is available for sewer stoppages, pipeline breaks and backups on a 24-hour basis. The Department occasionally replaces sections of sewer lines and manholes that have failed.

There are approximately 125 miles of gravity sewers which consist of various sizes (8" to 36") and different types of pipe material (clay, cast iron and PVC).

Due to the critical nature of these facilities, some staff is always on call for emergencies. The monitoring system notifies staff of any malfunction that may interrupt service so that a quick response is possible. After-hours notification is done by a telephone auto-dialer. Emergency equipment includes spare parts, extra pumps, portable pumps and portable generators. The three master stations are equipped with in-place emergency generators that start automatically should there be a power failure.

The Advanced Water Reclamation Facility accomplishes the removal of waste products and nutrients by biological and chemical means. Plant capacity is 9 million gallons per day. Staff duties include day to day monitoring of the process and equipment, and the collecting and sampling of raw, partially treated, and fully treated wastewater. Careful process control is necessary to maintain a quality effluent prior to agricultural and irrigation reuse, and discharge to the Manatee River. Plant staff performs all maintenance excluding special work, massive rebuilds, or new construction.

Residual materials (sludge) are treated to a very high quality. Private agricultural lands in Hardee County are used for disposal in cooperation with ranch and citrus grove owners.

The Storm Drainage Department maintains the City's drainage system of pipes, culverts, storm manholes, storm inlets, and various ditches and swales for which the City is responsible. The department also maintains several retention ponds within residential developments throughout the City. Maintenance can vary from the routine cleaning of drainage facilities to the rebuilding and/or replacing of manholes, inlets and culverts.

The Solid Waste Department has the responsibility of the collection, removal, and disposal of both residential and commercially generated solid waste within the City of Bradenton. This department also removes yard and lawn waste, junk, and other rubbish. Yard waste and other rubbish is also collected on these days. Special collections are offered to handicap residents although a doctor's certificate is required. There is also a schedule for the pickup of commercial garbage which is predominately container (dumpster) service.

The Recycling Department is tasked with the mission of collecting discarded, recyclable solid waste which would otherwise enter the general solid waste stream. This includes plastics, aluminum, glass, newspaper, and cardboard. The recycling program was mandated in the early 1990's by Florida Department of Environmental Protection (FDEP) to reduce the solid waste stream entering the States landfills, thereby extending the landfill's useful life. The City also collects most major appliances and white goods, and delivers them to collection centers.

The City Garage maintains a total of 318 vehicles, tractors and other pieces of rolling equipment. Virtually all work necessary to maintain the fleet is done at the garage located in the Public Works yard. Work done in the garage ranges from routine lubrication to engine overhaul.

The Carpentry Shop maintains all City owned buildings, parks and recreation facilities, and carries out remodeling or replacement projects within these facilities. The Carpentry Department also fabricates and installs hurricane protection such as hurricane shutters for City buildings that do not have pre-existing protection.

The Central Electrical Department install electrical components and maintains traffic signals, street lamps, sewage lift station electrical and controls, wastewater treatment plant electrical, recreational facilities electrical, and other City buildings. Electrical repairs necessary to maintain sewage lift station and treatment

works operation are responded to on a 24 hour basis. Other repair work is done in a timely fashion and is prioritized on a needs basis.

D. CITY OF BRADENTON BEACH

1. Planning and Building Department

   The Planning & Development Department reviews all applications for new development, as well as additions and renovations to existing developments and structures. The department, which includes Planning, Zoning, Building, and Floodplain Management, conducts pre-application meetings for all new development and alterations to current development. All applications are reviewed for compliance with Floodplain Management regulations as well as typical local development regulations. The Department also reviews all preliminary and final Site Plans to ensure compliance with National Flood Insurance Program requirements and the City's Floodplain Regulations. This department serves as the repository for Flood Maps, Elevation Certificates, and other flood-related documentation, and is responsible for dissemination of flood data and other NFIP and FEMA publications. The Community Rating System (CRS) Coordinator's position staffed in this department, as well as the Floodplain Manager.

2. Police Department

   The Police Department is responsible for public safety, including walking patrols of the City's streets, and regular patrols of the beach areas. The City Commission has also vested emergency operations authority in the Police Department, with specific responsibilities for notification of the public in times of emergencies, coordination of evacuations in the event of disaster, and recovery supervision during post-storm evaluations and re-entry. Evaluation and updating of the City's Post-Disaster Recovery Plan is also vested in this department. Staff is also charged with working closely with Manatee County's Emergency Operations personnel during their monthly tests, their annual hurricane drills, and with any potential emergency conditions.

3. Public Works Department

   The Public Works Department is responsible for all City-owned infrastructure. This department conducts maintenance and reporting of all stormwater conveyance and flood control structures. In addition, this department is responsible for planning & implementing projects to reduce potential flood damage, and including projects to satisfy NPDES and SWFWMD regulations to reduce pollutant loads. In addition, the Public Works Department provides critical staffing

and support services to the Police Department during emergency operations, including identification of potential ponding areas which might affect evacuation routes. Public Works personnel are also tasked with post-storm recovery operations under the direction of the Emergency Operations liaison in the Police Department.

E. CITY OF HOLMES BEACH

1. Police Department

The Police Department is responsible for public safety including regular patrols of the beach areas including the Manatee County public beach. It also has operations responsibilities in times of emergencies, evacuation coordination in the event of a disaster, and recovery supervision during post event and re-entry. The Police Department works with the Building/Public Works Department in formulating the post disaster recovery plan. Both departments are involved in Manatee County's Emergency Operations Center (EOC) along with its personnel.

2. Public Works/Building Department

In addition to the review of building plans for compliance with all building and flood management regulations and floodplain maintenance, the Public Works/Building Department provides and number of hazard mitigation services. The Department possesses a sandbagger as a convenience to speed up the preparation of sandbag filling during storm events. The Department provides stormwater conveyance maintenance and adherence to NPDES standards. It also coordinates the quarterly publication of newspaper articles and advertisements and occasional mail outs of flood and hurricane preparedness information. The Department is represented at the Manatee County EOC and is involved in its functions.

F. TOWN OF LONGBOAT KEY

1. Fire Department

The Town of Longboat Key Fire Department (TLBKFD) provides the citizens and businesses of the Town with services including fire prevention and educations, suppression, investigation, plans review, pre-fire planning, and inspections. The TLBKFD is comprised of two Fire Stations that house Administration and Support personnel.

The Mission of the Town of Longboat Key Fire Department is "to prevent the loss of life and property due to fire, life threatening emergencies, and disasters for the citizens of the Town of Longboat Key by providing rapid emergency response along with fire prevention and safety education. Highly trained professional firefighters and emergency response personnel accomplish this. Every effort is made to mitigate all emergencies in the most professional, safe, and cost effective means possible.

Any changes in description of hazard mitigation roles to be provided in subsequent LMS documents.

2. Planning, Zoning & Building Department

Responsible for ensuring that the Town of Longboat Key Comprehensive Plan fulfills all the requirements of Chapter 163, Part II, FS, including those associated with the hazard mitigation. The Planning/Zoning Department also conducts the Pre-application meetings in the and reviews Final Site Plans and Final Plats to make sure all proposed developments are compliant with the FEMA and Floodplain Management requirements.

The Building Department reviews permits for new structures as well as renovations to existing structures to make sure that they are compliant with all applicable codes and the FEMA Floodplain Management requirements.

3. Police Department

The mission of the Longboat Key Police Department is to eliminate crime and the fear of crime, to enhance the quality of life for the Citizens of the Town of Longboat Key, and to hold themselves to the highest professional standards of performance and ethics. The department is a professional driven organization that partners with the community to make the Town of Longboat Key a better place to live, work, visit, and conduct business.

In Town or Countywide emergency situations, the department's purpose is to reduce the vulnerability of our citizens to loss of life, injury, or damage and loss of property resulting from natural, technological, and man-made emergencies, disasters, catastrophes. Staff prepares for prompt and efficient response and recovery activities to emergencies, disasters, or catastrophes using all systems plans, and resources necessary to preserve and protect the health, safety, and well-being of citizens affected by the event.

4. Public Works Department

The Town of Longboat Key Public Works Department provides potable water (drinking), wastewater (sewer), and solid waste collection services to the Longboat Key portions of Manatee County, and those of Sarasota County. Additionally, the department provides support and critical services to Longboat Key Police, Fire and EMS agencies during man-made and natural emergencies within the Town. The Department also serves as the lead agency for Emergency Support Function (ESF) 3 at the EOC.

The Department is also the resident of CRS Coordinator position for the Town of Longboat Key and provides Flood data and FEMA publications to the public. The Department is also the repository for data used for compliance with CRS for the Town of Longboat Key.

G. CITY OF PALMETTO

1. Planning, Zoning, Building Department & Code Enforcement

Responsible for ensuring that the City of Palmetto Comprehensive Plan fulfills all the requirements of Chapter 163, Part II, FS, including those associated with the hazard mitigation. The Planning/Zoning Department also conducts the Pre-application meetings in the and reviews Final Site Plans and Final Plats to make sure all proposed developments are compliant with the FEMA and Floodplain Management requirements.

The Building Department reviews permits for new structures as well as renovations to existing structures to make sure that they are compliant with all applicable codes and the FEMA Floodplain Management requirements.

2. Police Department

The mission of the City of Palmetto Police Department is to eliminate crime and the fear of crime, to enhance the quality of life for the Citizens of the City of Palmetto, and to hold themselves to the highest professional standards of performance and ethics. The department is a professional driven organization that partners with the community to make the Town of Longboat Key a better place to live, work, visit, and conduct business.

In City or Countywide emergency situations, the department's purpose is to reduce the vulnerability of our citizens to loss of life, injury, or damage and loss of property resulting from natural, technological, and man-made emergencies, disasters,

catastrophes. Staff prepares for prompt and efficient response and recovery activities to emergencies, disasters, or catastrophes using all systems plans, and resources necessary to preserve and protect the health, safety, and well-being of citizens affected by the event.

3. Public Works Department

The City of Palmetto Public Works Department provides potable water (drinking), wastewater (sewer), and solid waste collection services to its residents. Manages the road and street network including signage and traffic signals. Parks, Fleet Maintenance, and Reclaimwater are also functions of the Public Works Department Additionally, the department provides support and critical services to City of Palmetto Police Department, North River Fire and EMS agencies during man-made and natural emergencies within the Town. The Department also serves as the lead agency for ESF 3 at the EOC.

The Department is also the resident of CRS Coordinator position for the City of Palmetto and provides Flood data and FEMA publications to the public. The Department is also the repository for data used for compliance with CRS for the City of Palmetto

4. Risk Management

Risk Management is involved in all aspects related to any type of storm/disaster event. Risk Management uses the information from a variety of sources to assist the City in its preparation, recovery, and mitigation efforts. The Risk Manager participates in most of the Manatee County Emergency Management activities and responds to Emergency Management in a liaison capacity for the City.

5. Storm Water Manager

The Storm Water Manager is involved in all aspects related to any type of storm/disaster event. The Storm Water Manager uses the information from a variety of sources to assist the City in its preparation, recovery, and mitigation efforts. The Storm Water Manager supervises the efforts and activities of the City Small Storm Team.

H. FIRE DISTRICTS

1. Braden River Fire Department

   Provides fire services to unincorporated Manatee County in the area of the Braden River. Detailed description of hazard mitigation role to be provided in subsequent LMS document.

2. Cedar Hammock Fire Control District

   Provides fire services to unincorporated Manatee County. Detailed description of hazard mitigation role to be provided in subsequent LMS document.

3. Myakka City Fire Department

   Provides fire services to unincorporated Manatee County. Detailed description of hazard mitigation role to be provided in subsequent LMS document.

4. Southern Manatee Fire Control

   Provides fire services to unincorporated Manatee County. Detailed description of hazard mitigation role to be provided in subsequent LMS document.

5. North River Fire District

   Provides fire services to The City of Palmetto and portions of central unincorporated Manatee County. Detailed description of hazard mitigation role to be provided in subsequent LMS document.

6. Parrish Fire District

   Provides fire services to unincorporated Manatee County. Detailed description of hazard mitigation role to be provided in subsequent LMS document.

7. Trailer Estates Fire District

   Provides fire services to unincorporated Manatee County. Detailed description of hazard mitigation role to be provided in subsequent LMS document.

8. West Manatee Fire and Rescue District

   This district provides fire and rescue services to a portion of unincorporated Manatee County in the area of west and northwest Bradenton including the areas of Palma Sola, Cortez, and the cities of Anna Maria, Bradenton Beach, and Holmes Beach.

9. Airport Fire District

   Provides fire services to portions of unincorporated Manatee County near the Sarasota/Bradenton International Airport. Detail description of hazard mitigation role to be provided in subsequent LMS document.

I. OTHER

- Manatee Glens Hospital

  Manatee Glens Hospital serves as the psychiatric receiving center and emergency housing shelter for inpatient psychiatric hospital clients for Manatee County. Its goal is to keep psychiatric clients in an appropriate setting during times of evacuation.

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APPENDIX J

MANATEE COUNTY

COMMUNITY WILDFIRE PROTECTION PLAN 2015

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Manatee County

Community Wildfire Protection Plan

December 2015



1. Background

The Community Wildfire Protection Plan (CWPP) is a voluntary program that provides a unique opportunity to address the challenges of fire protection in the wildland urban interface through locally supported solutions. CWPPs are authorized by the Healthy Forests Restoration Act of 2003 and provide communities with a tremendous opportunity to influence how federal funds are distributed for fuel reduction projects on nonfederal lands. Having a CWPP gives the county priority status when applying for federal funding for wildfire mitigation projects.

This CWPP includes an assessment of the community's wildfire vulnerability, local organizations and resources available to assist with wildfire mitigation and response, and an action plan for reducing the county's wildfire vulnerability. Details for implementing the actions, such as responsible agencies and funding considerations, are included in the Plan. Recommended actions to reduce wildfire vulnerability have been collaboratively developed for the following mitigation categories:

(1) Wildland fuel management;

(2) Community outreach and education;

(3) Firewise building maintenance and landscaping;

(4) Policy and regulation recommendations; and

(5) Wildland fire response improvements.

This Plan was developed in a collaborative process with input from state and local partners and other relevant stakeholders. It identifies and prioritizes areas for wildland fuel management, and includes actions to inform residents of measures to reduce the ignitability of their homes and community. The CWPP also advances the goals and mitigation strategies of the Local Mitigation Strategy (LMS) and is consistent with recommendations of the LMS Working Group.

2. Authorization

There are several provisions in the State of Florida Comprehensive Plan and the Manatee County Comprehensive Plan that provide guidance for wildfire mitigation.

Florida Statute Chapter 187 State Comprehensive Plan provides for the protection of lives and property from natural and manmade disasters (F.S. § 187.201(6)). Manatee County Comprehensive Plan, Goal 4.4 states, "Protection of Manatee County Residents from Natural Disasters Through Disaster Mitigation, Provision of Adequate Warning and Post Disaster Planning".

In Florida Statute § 187.201(9); Natural Systems and Recreational Lands, the statute provides for acquisition, protection and conservation of natural habitats, the protection of endangered species, and the restoration of degraded natural systems to a functional condition. Manatee County Comprehensive Plan Objective 3.3.2 states, "Wildlife and Upland Habitat Protection: Protect and preserve native wildlife, endangered, threatened and species of special concern, and native upland habitat through acquisition, restoration, and development controls…"

The Comprehensive Emergency Management Plan (CEMP) and the LMS have included wildfires as a hazard in the Threat Hazard Identification Risk Assessment (THIRA) for Manatee County. Wildfires are ranked a high probability.

The THIRA is a hazard analysis that rates the probability of potential all hazards in Manatee County. THIRA rates wildland fires as high with a potential impact of complete loss of structures and crops. The

CEMP and the LMS utilize THIRA as part of their analysis. Wildfires have an average occurrence of several each year and distribution is indicated to be localized on the urban fringe.

3. Community Description

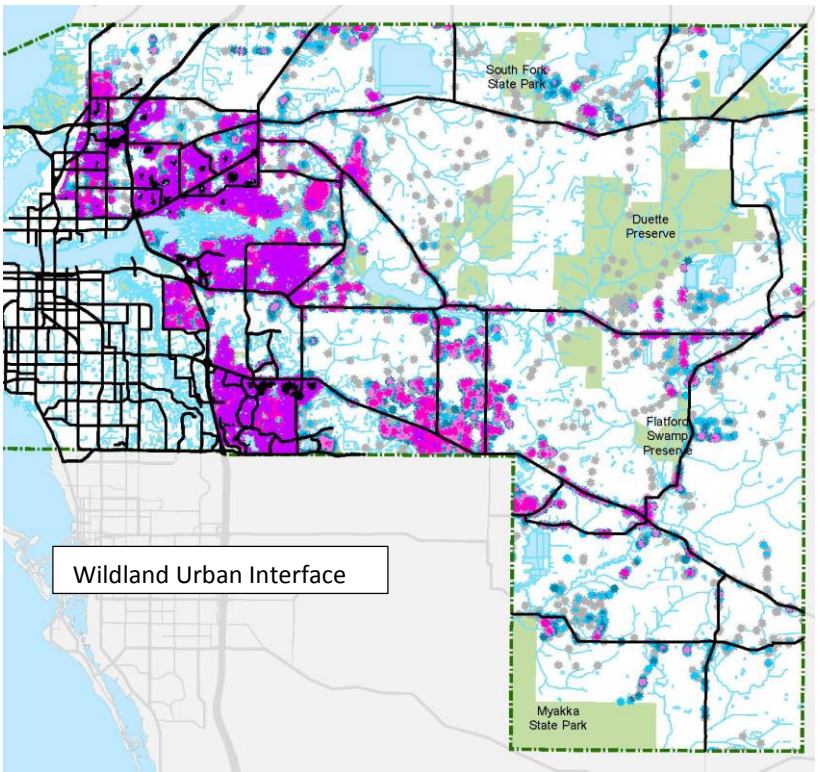
Manatee County is located along the central portion of Florida's western coastline of the Gulf of Mexico, which forms the western boundary of the county. The Gulf of Mexico and the beaches provide an attraction for residents and tourists while being a sensitive environmental resource. The county is approximately 25 miles in length from north to south and 45 miles wide east to west with an average elevation of 12 feet. Neighboring counties include Pinellas, Hillsborough, Hardee, DeSoto and Sarasota.

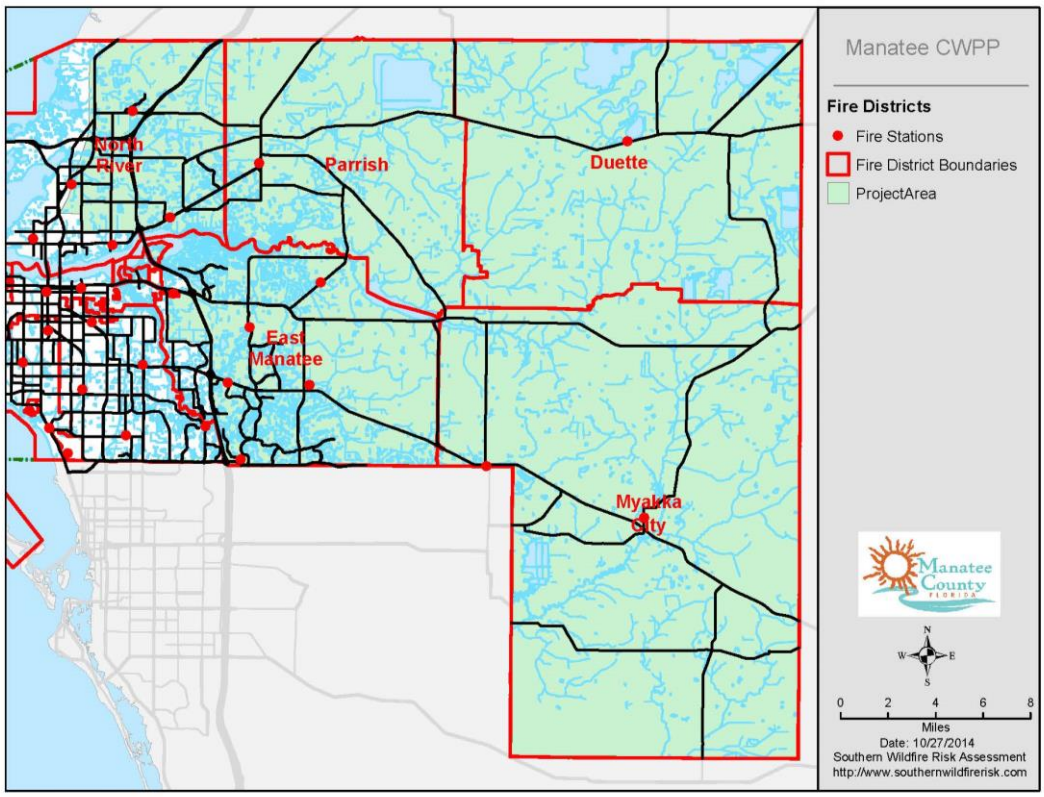
Total Land Area

Manatee County has 892.8 square miles of land. Of this 741.2 square miles are land while 151.6 square miles are comprised of water. The waterway portion of the county includes 55.2 square miles of inland, 46.7 square miles of coastal and 49.8 square miles of territorial. The unincorporated area encompasses 719.47 square miles, or more than 97 percent of the total county area. Municipalities account for 163 square miles or 3 percent of the total county area.

CWPP Boundary

The boundary of the CWPP, depicted below, is generally from I-75 east to CR 675 and from University Parkway to Moccasin Wallow Road. This area includes approximately 88,215 acres with an estimated population of 76,727.





The CWPP covers several fire districts as demonstrated in the map above.

Wildfire Problem Statement

Florida's natural environment has adapted to fire and many forest ecosystems need regular cycles of fire to be healthy systems. Efforts to eliminate wildfires from the natural environment have served to make future events much more severe when they do occur due to accumulated vegetative fuels. This severity impacts the health of the ecosystem and puts neighboring developments in danger. Today, development is interspersed in wildland areas, referred to as the Wildland Urban Interface (WUI). This interface presents challenges to managing the wildland fuel loads through prescribed burning. This is particularly the case when the wildland fuels exist on vacant parcels with multiple ownerships. Residents in Florida vary in their understanding and acceptance of the use of prescribed fire and mechanical fuel management methods. The role of wildfires in the natural environment needs to be integrated into public education programs and planning for development within the wildland/urban interface.

Manatee County developed the CWPP because of its wildfire vulnerability. The CEMP and LMS rates the County's probability and impact of wildfire as high (Manatee County, 2009). The County has suffered from prolonged droughts in recent years which increase the risk of wildfire in the WUI. A majority of the areas with the highest level of concern for wildfire are in unincorporated communities, generally Myakka City, Duette, and Parrish.

Per the National Climatic Data Center, the annual precipitation in the Myakka State Park area is 59.57 inches while in the City of Bradenton it is 56.18 inches.

Planning Process

The CWPP planning process is a collaborative effort among local, regional, and state government agencies that have a role in protecting the community and residents from wildfires. This plan was produced through a project led by the Manatee County Emergency Management Division of the Public Safety Department with collaboration from the Florida Forest Service (FFS) and affected Fire Districts.

As residential development moves eastward, the boundaries of the CWPP will change. It was determined that the CWPP will be incorporated into the CEMP and follow its four year review cycle.

4. Vulnerability Assessment and Land Coverage Table

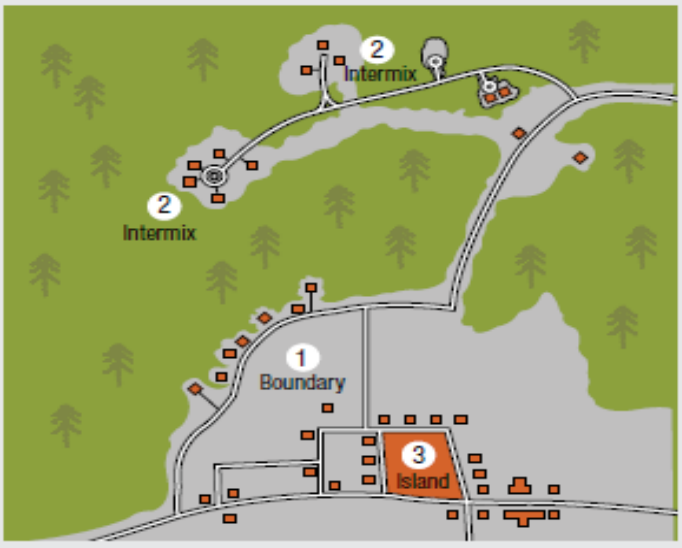
Wildfire Vulnerability Overview

The Southern Wildfire Risk Assessment (SWRA), updated in 2014, provides a spatial analysis of wildfire vulnerability across the state. The primary output of the risk assessment is the Wildland Urban Interface (WUI) map discussed in the next section. The WUI rates areas based on their susceptibility to wildfire occurrence and estimated impact. The Southern Wildfire Risk Assessment Summary Report (Appendix C) contains the methodology, maps, and charts of wildfire vulnerability.

Estimated Wildland/Urban Interface (WUI) Area

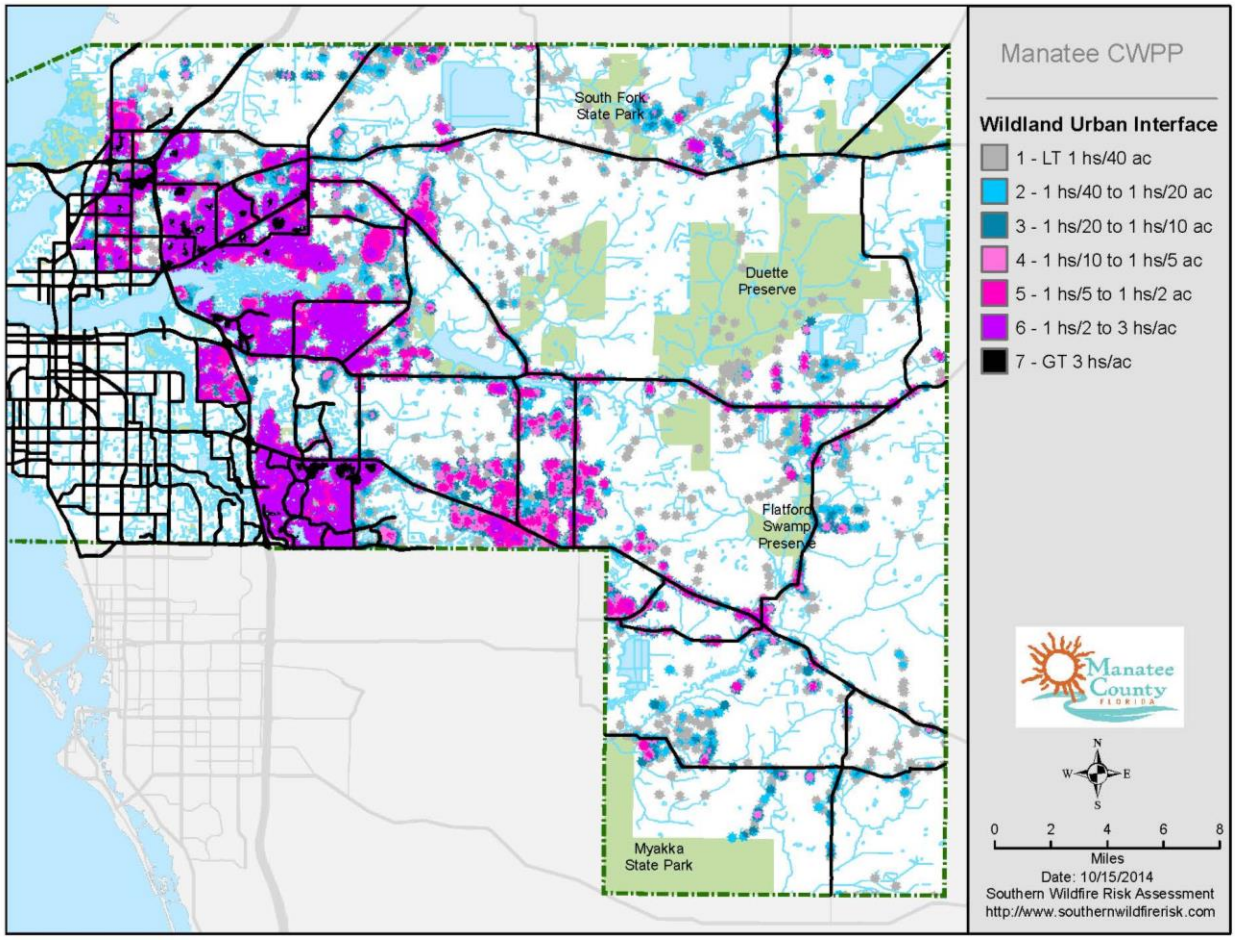
The WUI is defined in the National Fire Plan as the area where houses and wildland vegetation coincide. There are three types of WUI:

1) Boundary – areas where development is adjacent to public or private wildland
2) Intermix – structures are scattered and interspersed among wildland areas
3) Island or occluded – area of wildland surrounded by development (i.e. a subdivision preserve)



Wildland-Urban Interface

Wildland Urban Interface Map

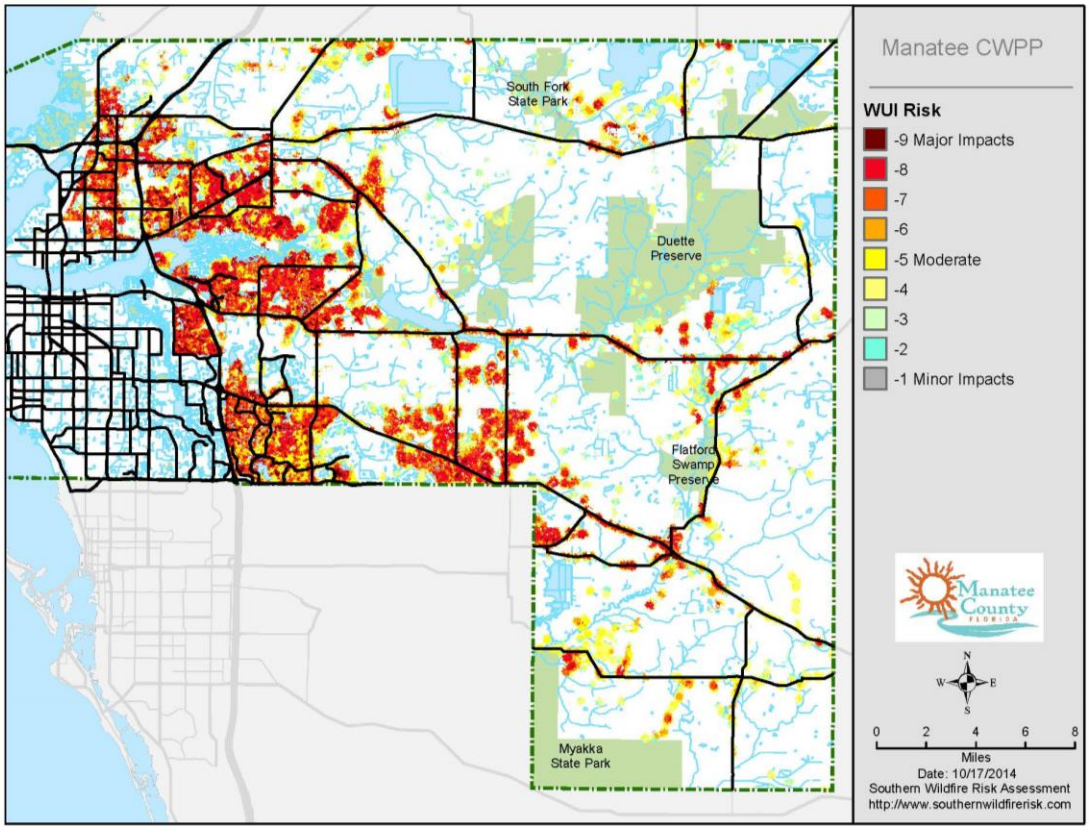


Wildland Urban Interface Population and Acres Table

Housing Density	WUI Population	Percent of WUI Population	WUI Acres	Percent of WUI Acres
Less Than 1 hs* / 40 ac	507	1.6%	30,674	27.5%
1 hs / 40 ac to 1 hs / 20 ac	641	0.8%	13,711	12.3%
1 hs / 20 ac to 1 hs / 10 ac	1,084	1.3%	11,881	10.7%
1 hs / 10 ac to 1 hs / 5 ac	2,753	3.2%	13,577	12.2%
1 hs / 5 ac to 1 hs / 2 ac	8,464	9.9%	16,185	14.5%
1 hs / 2 ac to 3 hs / 1 ac	56,120	65.8%	23,425	21.0%
GT 3 hs / 1 ac	15,761	18.5%	1,913	1.7%
Total	85,330	100.0%	111,365	100.0%

*hs = House
SOURCE: Southern Wildfire Risk Assessment Summary Report

Appendix B.2 includes a map of wildfire risk in Manatee County presented as nine WUI Risk Ranking Classes. Classes 5 through 9 are considered moderate to very high risk and can be used to approximate the WUI area of the county. Fifty-one percent of the land within the WUI is within Classes 5 through 9 and an estimated 69.7% of the population resides in these moderate to high risk areas. Roughly 15.6% of the total value of structures within the county lies within areas classified as Classes 5 through 9.



Wildland Urban Interface Risk Map

Wildland Urban Interface Risk Table

Class	Acres	Percent
-9 Major Impacts	3,750	3.9%
-8	22,678	23.8%
-7	18,908	19.9%
-6	8,354	8.8%
-5 Moderate	12,669	13.3%
-4	15,455	16.2%
-3	7,892	8.3%
-2	4,943	5.2%
-1 Minor Impacts	479	0.5%
Total	95,128	100.0%

SOURCE: Southern Wildfire Risk Assessment Summary Report

5. Manatee County Fire Protection Infrastructure

Local Fire Services

Local fire services within the defined CWPP are the responsibility of the Myakka City Fire District, Duette Fire District, North River Fire District, Parrish Fire Department, and East Manatee Fire Rescue District. The chart below includes the locations of the above mentioned fire stations.

Career - Staffed Fire Stations

Fire Station	Address
Myakka City Fire Control District	10215 Wauchula Road, Myakka City
Myakka City Fire Control District	26636 State Road 70 East, Myakka City
East Manatee Fire Rescue	3250 Lakewood Ranch Boulevard, Lakewood Ranch
East Manatee Fire Rescue	803 60th Street Court East, Bradenton
East Manatee Fire Rescue	150 Rye Road East, Bradenton
East Manatee Fire Rescue	9136 Town Center Parkway, Bradenton
East Manatee Fire Rescue	15015 59th Avenue East, Bradenton
East Manatee Fire Rescue	8800 State Road 70 East, Bradenton
North River Fire District	1225 14th Avenue West, Palmetto
North River Fire District	823 49th Street East, Palmetto
North River Fire District	3618 Cedar Street, Palmetto
North River Fire District	7498 US 301 North, Ellenton
North River Fire District	13340 Reeder Road, Palmetto
North River Fire District	9805 Gateway Boulevard, Palmetto
Parrish Fire District	12132 US 301 North, Parrish

Volunteer Fire Stations

Fire Station	Address
Duette Fire Station	35800 SR 62, Duette

Florida Forest Service (FFS)

FFS provides wildfire prevention/mitigation and response services in collaboration with local fire services. The Wildfire Mitigation Specialist for the Myakka River District is a resource for Firewise education, planning assistance as well as coordinating and implementing fuel management needs.

The Manatee County Forest Area Supervisor, located at the Myakka River District Office, directs FFS fire suppression activities. More details on FFS and local wildfire suppression are discussed in the Wildland Fire Response Capabilities section.

FFS Work Station	Address
Myakka River District Office	4723 53rd Avenue East, Bradenton

Manatee County Parks and Natural Resources, Resource Management Division

The Manatee County Parks and Natural Resources Department, Natural Resources Division is responsible for habitat and wildlife management and public access on nearly 30,000 acres of conservation lands. The division's goal is to "conserve and protect" the natural resources in Manatee County utilizing adaptive management and minimal impact to public access and utilization.

The majority of the County's parks and preserves are within the WUI, or because of continual development, soon will be (e.g. Duette Preserve and Curiosity Creek Preserve). Some parks and preserves have residential structures directly on a shared property line, such as Perico Preserve, Rye Wilderness Preserve, Emerson Preserve, Riverview Preserve, and Hidden Harbor Park. Others, like Pine Island Preserve and Robinson Preserve, are in close proximity to smoke sensitive areas, especially roads where the unmanaged smoke from wildfire could potentially cause impacts and/or closures.

Through a variety of wildland fuel management techniques, Manatee County Parks and Natural Resources Department manages the wildland/urban interface of the conservation land for its area of responsibility. Wildland fuels are any living or dead material, that will accept a spark and sustain an open or smoldering flame. Fuel management projects help reduce the size and intensity of wildland fires and may also decrease the likelihood that a wildfire will start in an area. These actions can increase the safety of people and property while reducing response and suppression costs. Fuel management methods can be used alone or in combination with other methods to achieve site-specific benefits, including:

- Prescribed burning;
- Mechanical treatment (e.g., mowing, mulching, disking, fire line plowing, and chopping);
- Chemical treatment (herbicide application);
- Biomass removal (e.g., pine straw harvesting, vegetation or tree thinning, and timber harvesting); and
- Biomass conversion (grazing).

Fuel management treatments designed to reduce wildfire risk are temporary and, in most cases, reduce the hazard in the treated area for three to five years. Periodic management is required to maintain fuels at an acceptable level to reduce wildfire risk. All 13 of the Parks and Natural Resources staff who work on conservation lands have received basic wildland fire training and nine staff members have attained a Certified Prescribed Burn Manager qualification from the Department of Agriculture's Florida Forest Service.

Example of Wildland/Urban Interface Prescribed Fire conducted by Manatee County Parks and Natural Resources:

Riverview Pointe Preserve: This 11 acre nature preserve is immediately south of De Soto National Memorial, with private residences to the east, south, and west. Two dominant natural communities present at Riverview Pointe Preserve require fire to maintain their rich biodiversity: Coastal Sand Pine Scrub and Scrubby Flatwoods. The objective was to return a natural fire regime to the area and reduce potentially dangerous fuel loads had a wildfire occurred with unfavorable winds. A Certified Prescribed Burn Manager wrote a fire prescription for this area. Riverview Point Preserve was burned on March 22, 2011 with the assistance of the National Park Service, Florida Forest Service, and West Manatee Fire District. There was very little impact to neighbors as the prevailing weather conditions carried the smoke up and out over the Manatee River. Prescribed fire will be used on a two-to-five year return interval to maintain the natural integrity of this nature preserve.

Office Location	Address
Resource Management Division	5502 33rd Avenue Drive West, Bradenton

6. Goals of the Manatee County Community Wildfire Protection Plan

Goal 1: Increase opportunities for collaboration and coordination to implement wildfire projects

Objective 1.1: Incorporate the Community Wildfire Protection Plan (CWPP) as a supplement to the Comprehensive Emergency Management Plan (CEMP) and coordinate implementation and maintenance of the CWPP with the CEMP

Objective 1.2: Develop partnerships and funding opportunities to execute wildfire mitigation projects

Objective 1.3: Prioritize the allocation of resources to mitigate wildfire risks identified in areas of concern

Objective 1.4: Work with community organizations to foster a cooperative approach to fire protection and awareness and identify mitigation needs

Objective 1.5: Research and identify communities at risk from wildfire to target for public outreach programs

Objective 1.6: Reduce the County's arson and careless burning fire statistics using public education and intervention programs

Goal 2: Improve the defensibility of residential, commercial, and institutional properties from wildfire

Objective 2.1: Expand the knowledge and practice of Firewise principles to the County's residents through appropriate education programs

Objective 2.2: Prioritize fuel management projects and implement fuel breaks for high-risk neighborhoods

Objective 2.3: Recommend policy and code amendments to guide future development in the Wildland/Urban Interface and pursue public input on these recommendations

Objective 2.4: Reduce the vulnerability of critical infrastructure to wildfire impacts through retrofits and fuel management

Goal 3: Increase focus on cost-effective pre-event wildfire mitigation and prevention

Objective 3.1: Increase opportunities for fuel management by obtaining additional funding, equipment, and public acceptance

Objective 3.2: Pursue grant funding to assist high-risk neighborhoods in making Firewise retrofits

Objective 3.3: Support the health of fire-dependent ecosystems through regular prescribed burning and ensure that residents understand the role of fire in Florida's environment

Goal 4: Assess the equipment, training and policies of the agencies that respond to wildfires and seek to improve current capabilities

Objective 4.1: Seek grant funding to purchase and maintain wildland personal protective gear for all responders

Objective 4.2: Seek grant funding to purchase and maintain VHF radios to establish common tactical communication between agencies

Objective 4.3: Provide annual wildland refresher training for all responders

Objective 4.4: Provide multi-agency live fire training opportunities on planned prescribed burns

7. Wildfire Protection Plan Implementation

Community Development

Manatee County's Comprehensive Plan details future land uses and land development code that are applied to new developments. These tools could be used to mitigate wildfire impacts for future development.

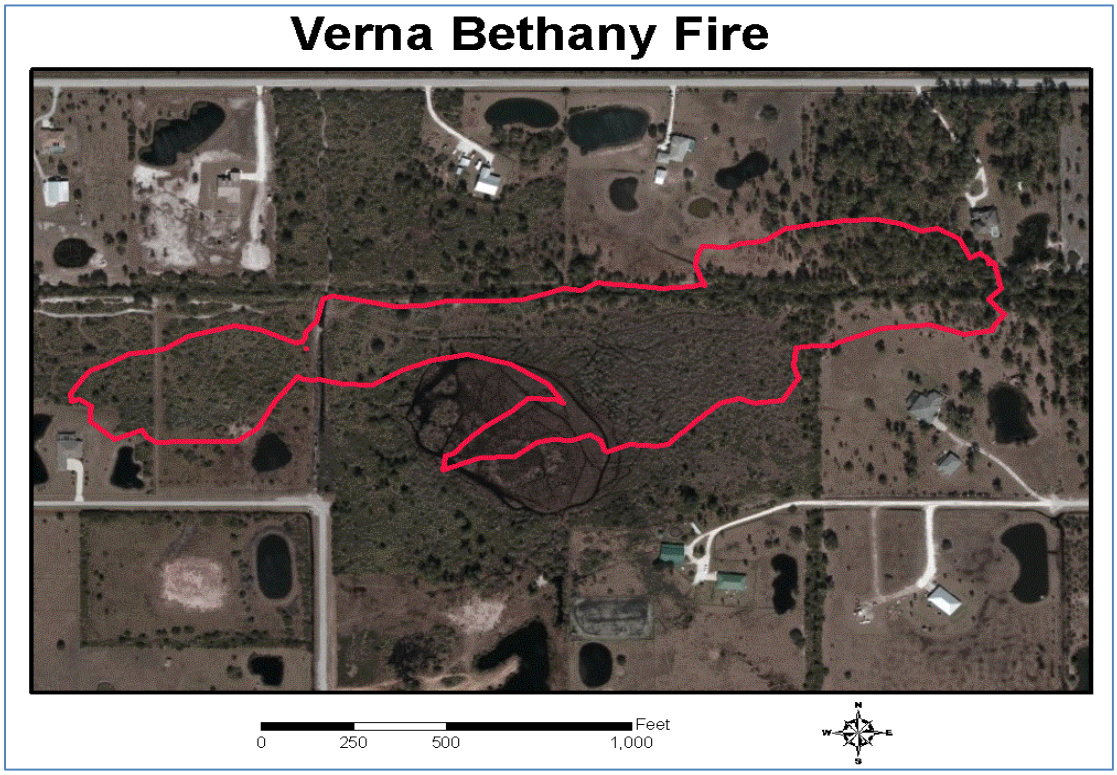
Planning Agencies in Manatee County	
Planning Agency	Role
Planning Division of the Manatee County Building and Development Services	Conducts planning, zoning, development review, permitting and inspection services.

Manatee County's Future Development Area Boundary creates a distinct border between urban/suburban and rural lands. The prevention of sprawl development intermingled with wildland has decreased the County's unincorporated areas vulnerability to wildfire as they might have been without the Future Development Area Boundary. There are exceptions to the Future Development Area Boundary's ability to mitigate wildfire, some developments were grandfathered into the rural areas before the regulations. Some developments include WUI islands consisting of conservation easements within the development that present challenges for managing fuel loads.

Manatee County's Land Development Code, Section 721 Habitat, Wildlife and Endangered Species Protection, provides for the preservation of native upland habitat within unincorporated Manatee County. Section 721 is consistent with Policy 3.3.2 of the Manatee County Comprehensive Plan which protects and preserves native wildlife, endangered, threatened and species of special concern, and native upland habitat.

The Countywide CEMP provides the ability for the Planning Division of the Building and Development Services Department to use the THIRA and disaster lessons learned in policy amendments and development reviews. For example, there was as incident named the "Verna Bethany Fire".

> The Verna Bethany Fire started at approximately 3:45 PM on March 2, 2011. It originated from an unattended campfire and burned 19 acres in a wooded area surrounded by eight homes. Resources involved in the suppression effort included two tractor plow units, four brush trucks, six engines for structure protection and 1 helicopter. The fire was contained by 8:00 PM that same night and was declared controlled two days later.



Conservation Land Agencies

The Parks and Natural Resources Department, the Southwest Florida Water Management District (SWFWMD), Florida Department of Environmental Protection, and Florida Fish and Wildlife Conservation Commission are active land management agencies within Manatee County. Each of the agencies have management plans for their conservation properties, perform fuel management, and some have fire suppression capabilities.

Manatee County Parks and Natural Resources

The Manatee County Parks and Natural Resources Department manages environmentally sensitive wildlife habitats and corridors acquired through the Environmental Lands Management and Acquisition Committee (ELMAC).

Parks and Natural Resources deals with the boundary of preserve lands that connect to private property by clearing defensible space. This is maintained by mowing and disking to create a fire break are the most important part of the prescribed fire program. The Department has been using since 2011 to mitigate for wildfire by burning land with high fuel loads. At this point maintenance burns continue to keep fuel loads at a manageable level.

Examples of Urban Interface Burns:

- Riverview Point Preserve prescribed burn, March 22, 2011: Eleven acres of land adjacent to DeSoto National Park to the north, with private residences to the south and west was burned with prescribed fire sending smoke into the river with no impact to neighbors. The objective was to reduce potentially dangerous fuel loads had a wildfire occurred with unfavorable winds. This was a successful, well monitored multi-agency effort.

- Pine Island prescribed burn, planned for 2015: The 90 acres of Pine Island that lays directly south of State Road 64 in the Braden River. This land has high fuel loads and precious mature pine trees. This multi-agency effort will be used to offset possible negative effects of wildfire. Burning this sensitive site requires significant coordination and is now in the third year awaiting proper weather conditions. The Department continues to monitor the weather conditions for the opportunity to implement this burn.

Southwest Florida Water Management District (SWFWMD)

Prescribed Fire Program

The Southwest Florida Water Management District (SWFWMD) manages approximately 11,259 acres of conservation land in Manatee County, including:

- The Edward W. Chance Preserve (Gilley Creek and Coker Prairie Tracts),
- Flatford Swamp, and
- The Little Manatee River-Southfork Tract.

All of these lands have ecosystems that depend on fire to maintain habitat quality. The SWFWMD utilizes prescribed burns on its conservation lands as a management tool to minimize wildfire risk and maintain natural conditions by mimicking natural fire cycles.

Ninety-two percent of all fire-dependent communities are located on SWFWMD managed conservation lands in Manatee County. These conservation lands have been successfully fire-maintained within the accepted fire return interval for habitat type. To maintain this goal, SWFWMD conducts annual prescribed burns on an average of 1,500 acres within Manatee County. The areas where maintenance conditions have not yet been achieved, mechanical treatments are utilized in conjunction with prescribed fire to reduce heavy fuel loads, mediate wildfire risk, and hasten the restoration process.

Mechanical treatments are especially important in overgrown scrub habitats and management units within close proximity to the WUI.

Mutual Aid

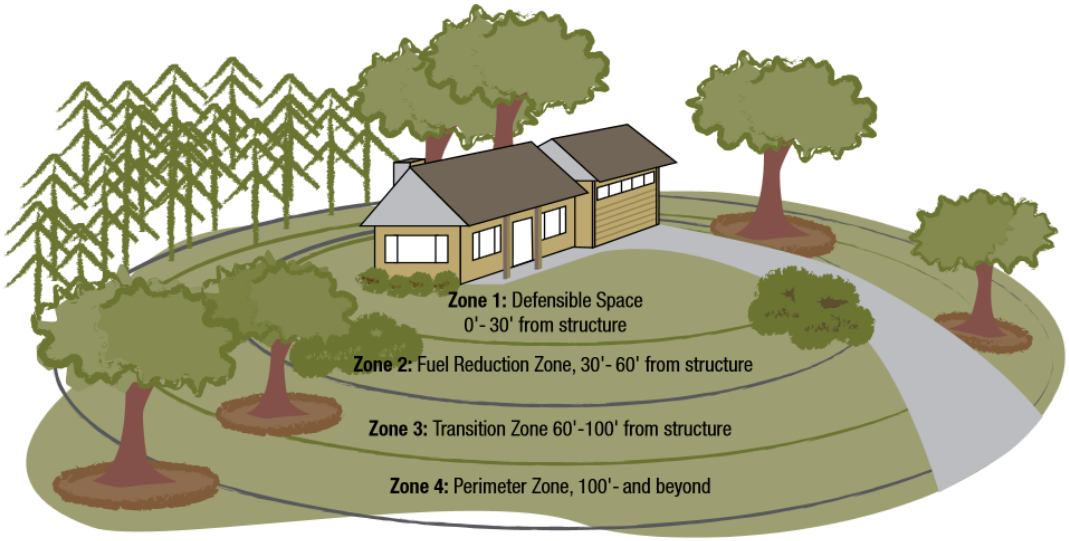
SWFWMD has a mutual aid agreement with the Florida Forest Service (FFS) to assist in wildfire suppression efforts. The District may also be requested to provide wildfire suppression support to FFS anywhere in the State through the Statewide Mutual Aid Agreement in the event that the Governor declares a state of emergency.

Public Notification

SWFWMD at a minimum, publishes annual press releases through its Public Communications Bureau to inform residents of upcoming prescribed burns. More frequent press releases are published when necessary in areas with a higher population or where special circumstances warrant. In some cases direct contact with residents is requested and prescribed burn managers coordinate with those individuals to advise them of upcoming burns. In areas with a significant WUI, SWFWMD (through its Public Communications Bureau), will utilize email and social media to inform as many residents as possible about prescribed burns and other activities taking place near the WUI boundary.

8. Structural Ignitability (Firewise)

It is important for homeowners to develop and maintain their own property in accordance with Firewise principles. Below is a graphic with suggested recommendations for to create a defensible space around structures.



Source: Wildfire Risk Reduction in Florida, Florida Department of Agriculture and Consumer Services, Florida Forest Service

Zone 1: Defensible Space (0'-30' from structure) Thin trees and vegetation, prune branches, mow regularly, clear debris, use less flammable plants, allow for firefighting access, and irrigate regularly.
Zone 2: Fuel Reduction Zone (30'-60' from structure) Reduce fuels, use less flammable plants, mow seasonably, store combustibles, and irrigate wisely.
Zone 3: Transition Zone (60' – 100' from structure) Reduce fuels, use less flammable plants, mow seasonably, store combustibles, and irrigate wisely.
Zone 4: Perimeter Zone (100' and beyond from structure) Manage Fuels.

10 Steps to Defensible Space

1. Thin tree and brush cover
2. Dispose of slash and debris left from thinning
3. Remove dead limbs, leaves and other litter
4. Stack firewood away from home
5. Maintain irrigated green belt around the home
6. Mow dry grasses and weeds
7. Prune branches to 10 feet above the ground
8. Trim branches from the lowest 1/3 of smaller trees (under 30 feet)
9. Clean roof and gutters
10. Reduce density of surround forest (beyond the defensible space zone)

Other improvement include:

- Improving driveway access and water supplies
- Fire resistive roof
- Enclosing overhanging eaves and decks
- Spark arrestors on chimneys



The photo above demonstrates how defensible space guidelines can help save a structure from wildfires.

9. Mitigation Resources

Local Mitigation Strategy (LMS)

The Manatee County LMS is a multi-jurisdictional plan that assesses the vulnerability of the county and its jurisdictions to hazards and evaluates local mitigation efforts. Through adoption of the LMS, the county and its jurisdictions are eligible for federal funds to carry out mitigation actions, (i.e., Hazard Mitigation Grant Program and Pre-Disaster Mitigation Grant Program). Manatee County Building and Development Services Department manages the Hazard Mitigation Program. The maintenance of the

LMS is a requirement of the Hazard Mitigation Program. The LMS Working Group oversees the implementation of the LMS plan. Several of the agencies of the LMS Working Group are also represented on the CWPP Working Group. The LMS Working Group consists of the County Hazard Mitigation Program; Emergency Management Division of the Public Safety Department; county departments; fire districts; and emergency management/hazard mitigation representatives from the City of Anna Maria, City of Bradenton, City of Bradenton Beach, City of Holmes Beach, City of Palmetto, and the Town of Longboat Key.

The LMS is incorporated in the CEMP. The four objectives of the LMS are:

- Increase the communities resistance to damage from an "All Hazards" approach;
- Compete effectively for pre and post-disaster mitigation funds;
- Reduce the cost of a disaster at all levels; and
- Speed the community in recovery when a disaster occurs.

Firewise Communities and Construction

At this time Manatee County does not have any designated Firewise Communities. Communities are encouraged to develop their wildfire protection plan utilizing the information in this CWPP.

Appendixes

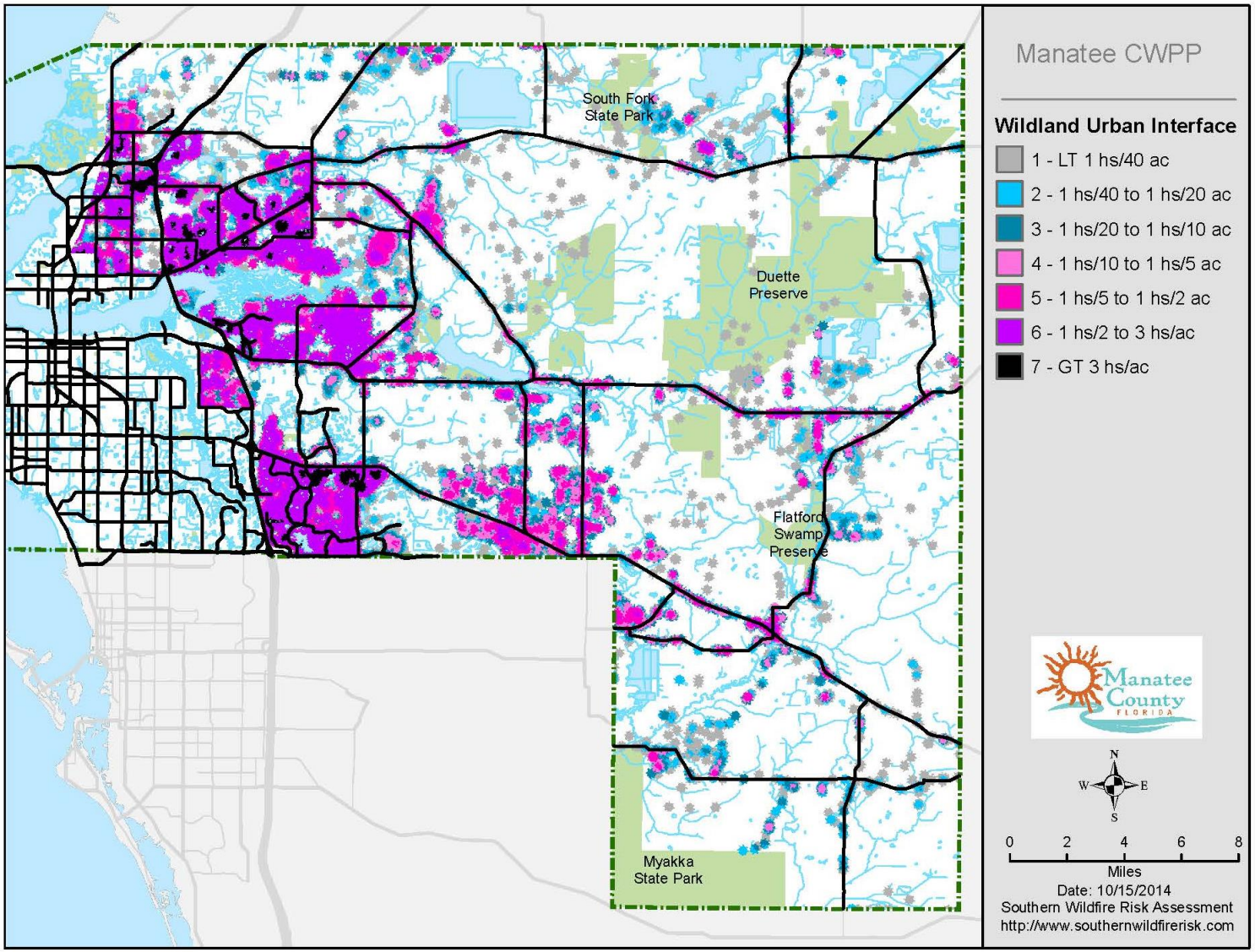
Appendix A: CWPP Working Group Members

CWPP Working Group Members				
Representative Name	**Title / Department**	**Address**	**Phone**	**Email Address**
Byron Teates	Fire Chief / East Manatee Fire District	3200 Lakewood Ranch Boulevard, FL 34211	941.751.5611	bteates@emfr.org
Dan Cacchiotti	Fire Chief / Myakka City Fire District	26636 State Road 70, Myakka, City, FL 34251	941.322.6525	dpcacchiotti@myakkafire.org
Kathleen Thompson	Planning Division / Manatee County Building and Development Services Department	1112 Manatee Avenue West, 4th Floor Bradenton, FL 34205	941.748.4501 x 6841	Kathleen.Thompson@mymanatee.org
Marcus Campion	Manatee County Parks & Natural Resources Department	5502 33rd Avenue Drive West, Bradenton, FL 34203	941.721.6885 x 8053	Marcus.Campion@mymanatee.org
Michael Keegan	Forest Area Supervisor / Florida Forest Service	4723 53rd Avenue East, Bradenton, FL 34203	941.727.6480	Michael.Keegan@FreshFromFlorida.com
Mike Johnson	Fire Chief / Parrish Fire Department (includes Duette)	12132 US 301 N, Parrish, FL 34219	941.721.2093	admin@parrishfd.org
Patrick M. Mahoney	Wildfire Mitigation Specialist / Florida Forest Service	4723 53rd Avenue East, Bradenton, FL 34203	863.993.4647	Patrick.Mahoney@FreshFromFlorida.com
Sandy Tudor	Floodplain Investigator/LMS Coordinator / Manatee County Building and Development Services Department	1112 Manatee Avenue West, 4th Floor Bradenton, FL 34205	941.748.4501 x 3843	Sandy.Tudor@mymanatee.org
Sharon Tarman	Emergency Management Officer / Manatee County Public Safety Department	2101 47th Terrace East, Bradenton, FL 34203	941.749.3500 x 1673	Sharon.Tarman@mymanatee.org
Stephanie Green	Southwest Florida Water Management District	6750 Fruitville Road, Sarasota, FL 34240	941.377.3722 x 6513	Stephanie.green@watermatters.org
Stephen Raymond	Manatee County Parks & Natural Resources Department	5502 33rd Avenue Drive West, Bradenton, FL 34209	941.721.6885	Stephen.Raymond@mymanatee.org

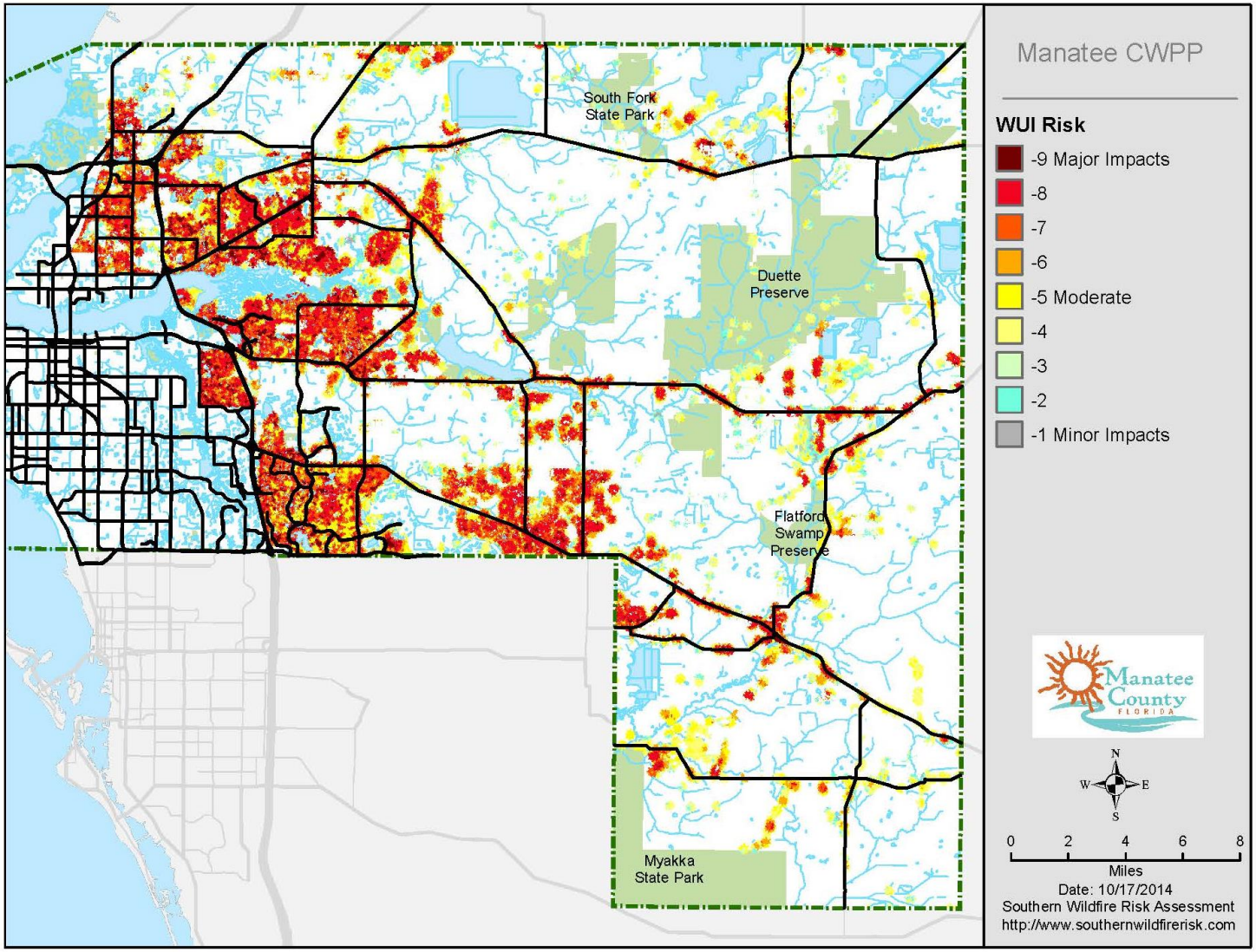
Appendix B: Maps

B.1 Wildland Urban Interface Map
B.2 Wildland Urban Interface Risk Map
B.3 Burn Probability Map
B.4 Fire Protection District Map
B.5 Community Protection Zone Map
B.6 Fire Intensity Scale Map
B.7 Fire Type Map
B.8 Flame Length Map
B.9 Rate of Spread Map
B.10 Surface Fuels Map

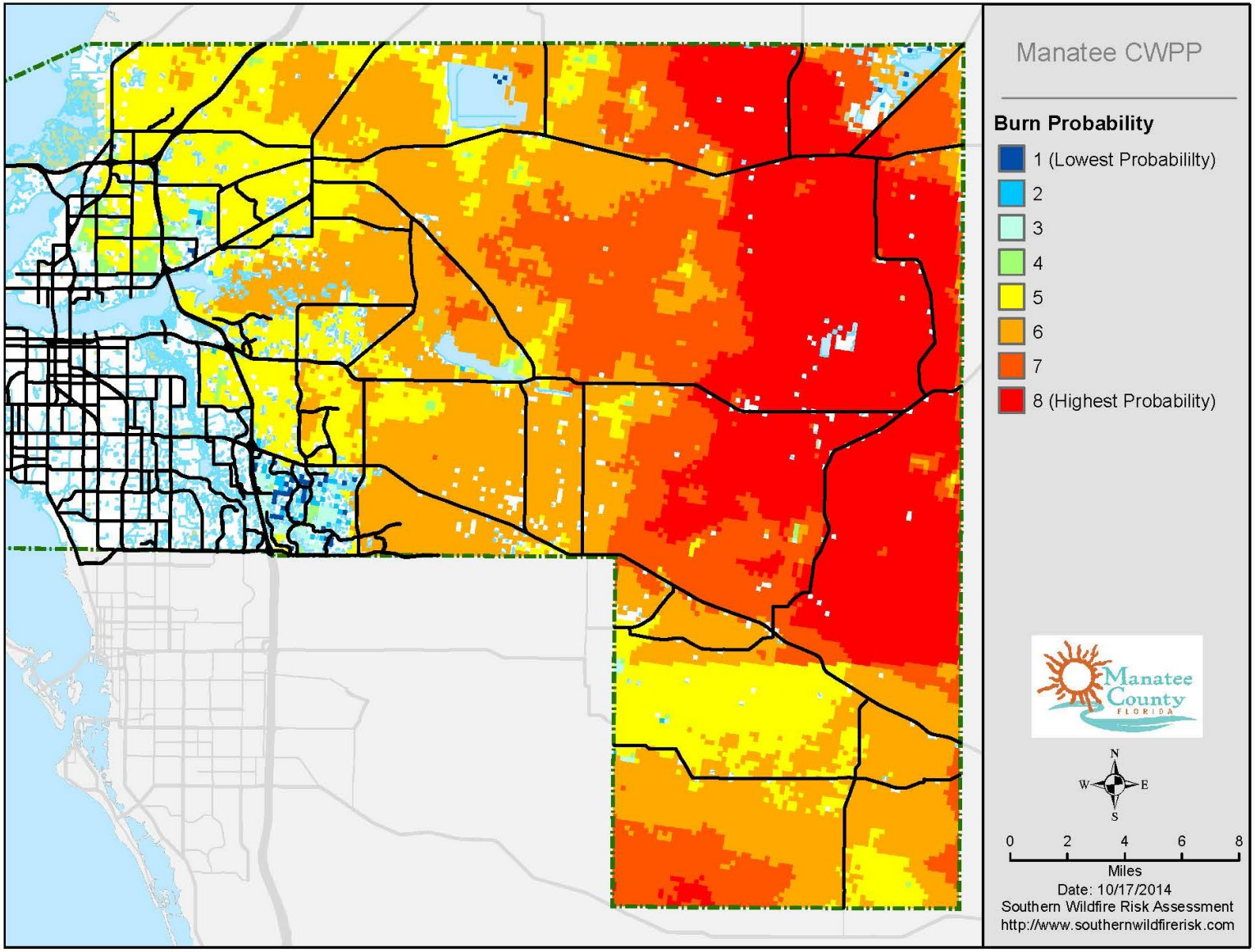
B.1 Wildland Urban Interface – Shows housing density in areas that are adjacent to wildland fuels. Uses number of homes per acre.



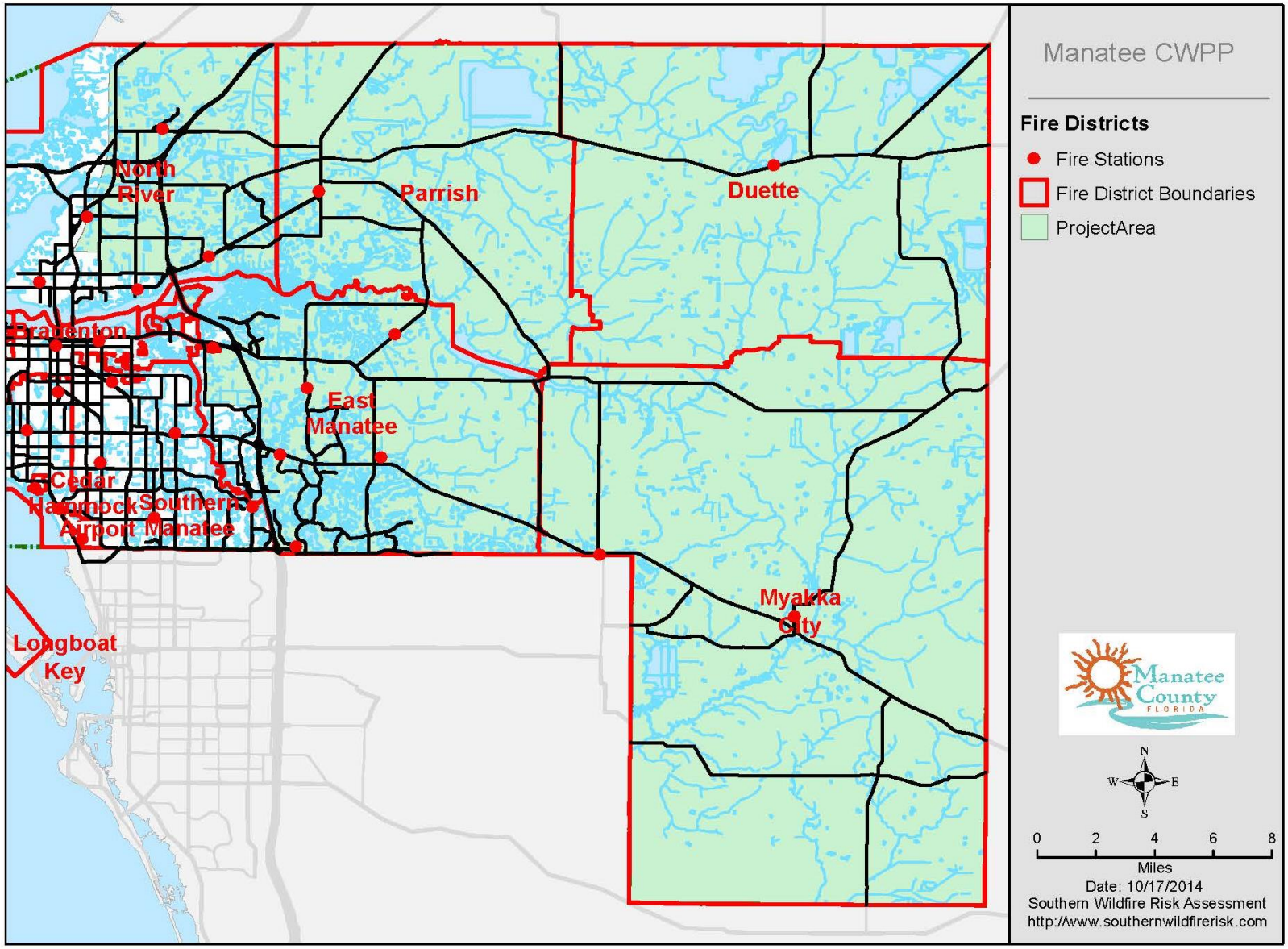
B.2 Wildland Urban Interface Risk Map – Shows the potential impact of wildfire on people and their homes. Uses housing density and flame length (as a measure of fire intensity) as inputs.



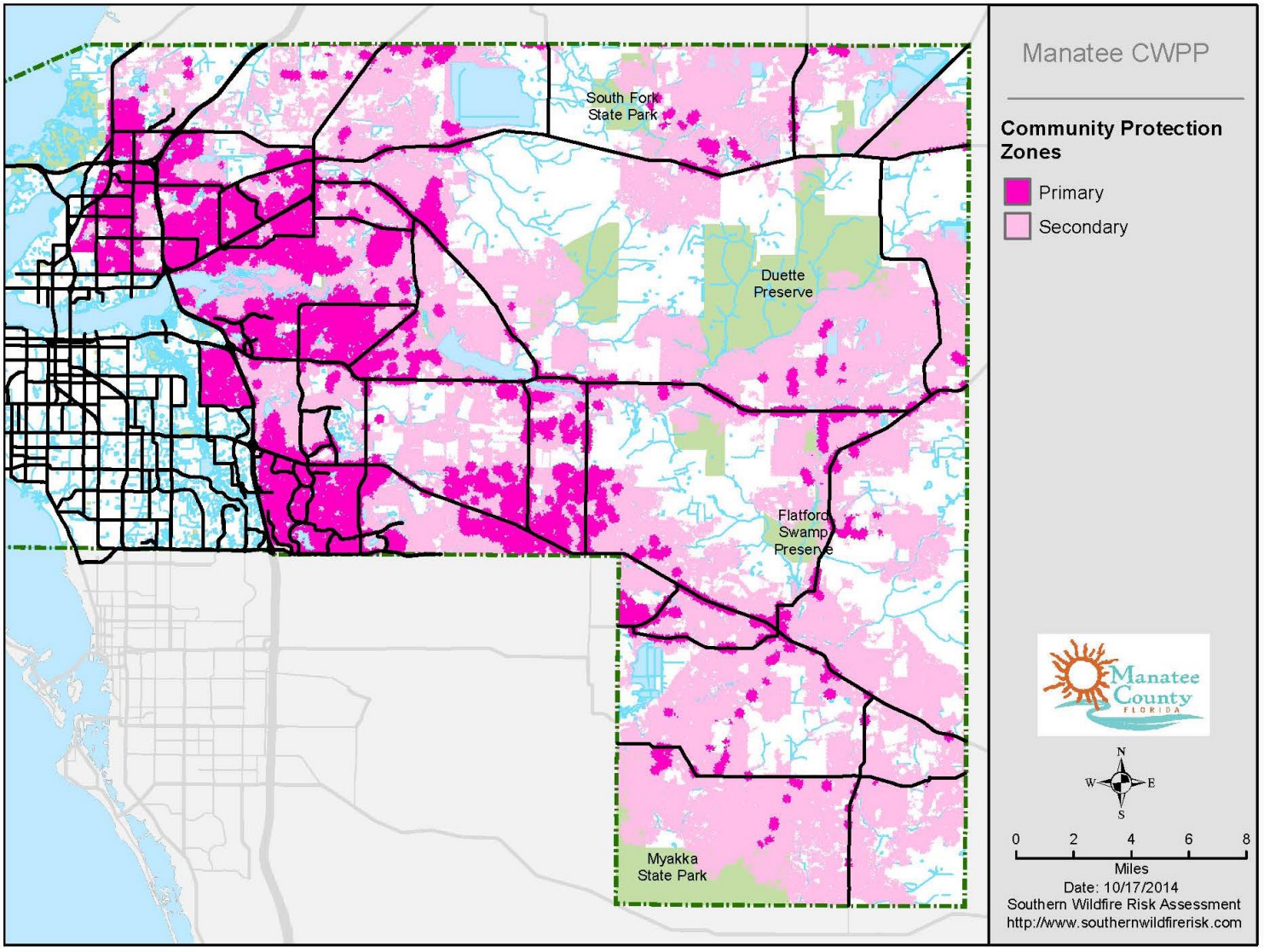
B.3 Burn Probability Map – How likely an area is to burn based on a range of weather conditions and ignition sources.



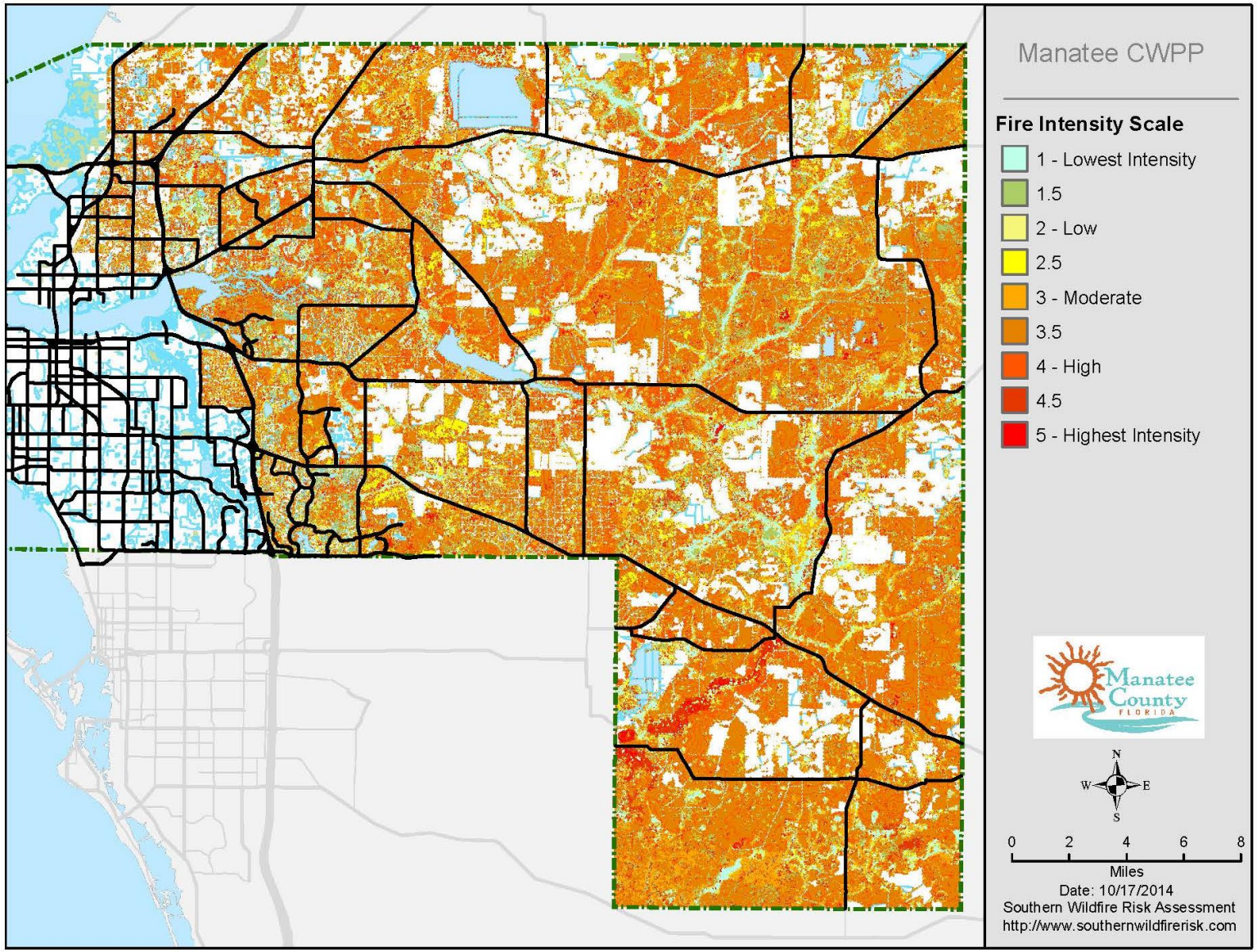
B.4 Fire District Map



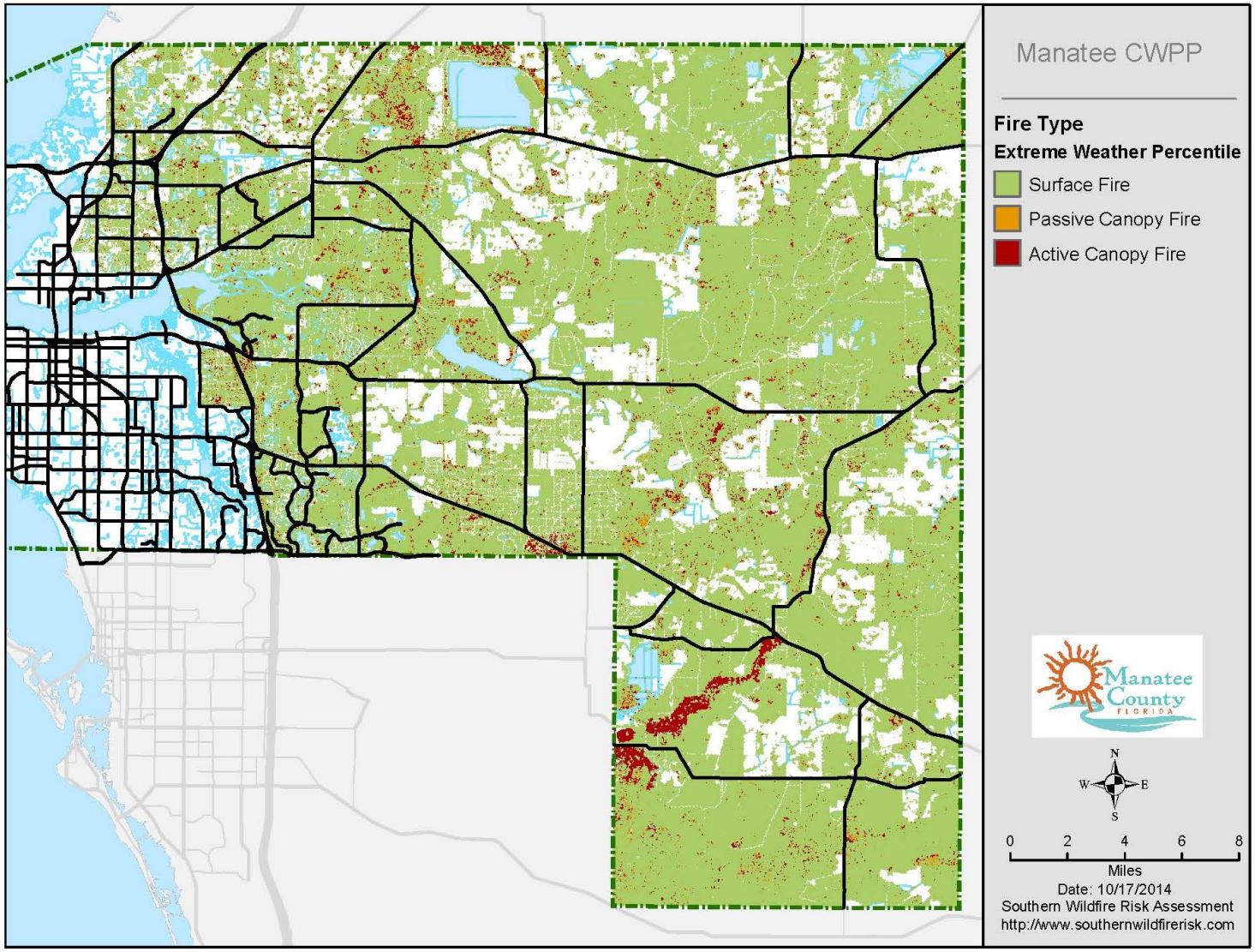
B.5 Community Protection Zone Map – Shows areas that are considered the highest priority for mitigation planning activities. Uses house density and rate of spread data. Primary CPZ's are densely populated areas adjacent to wildland fuels and secondary CPZ's are a buffer zone within a 2 hour fire spread distance from the primary zone.



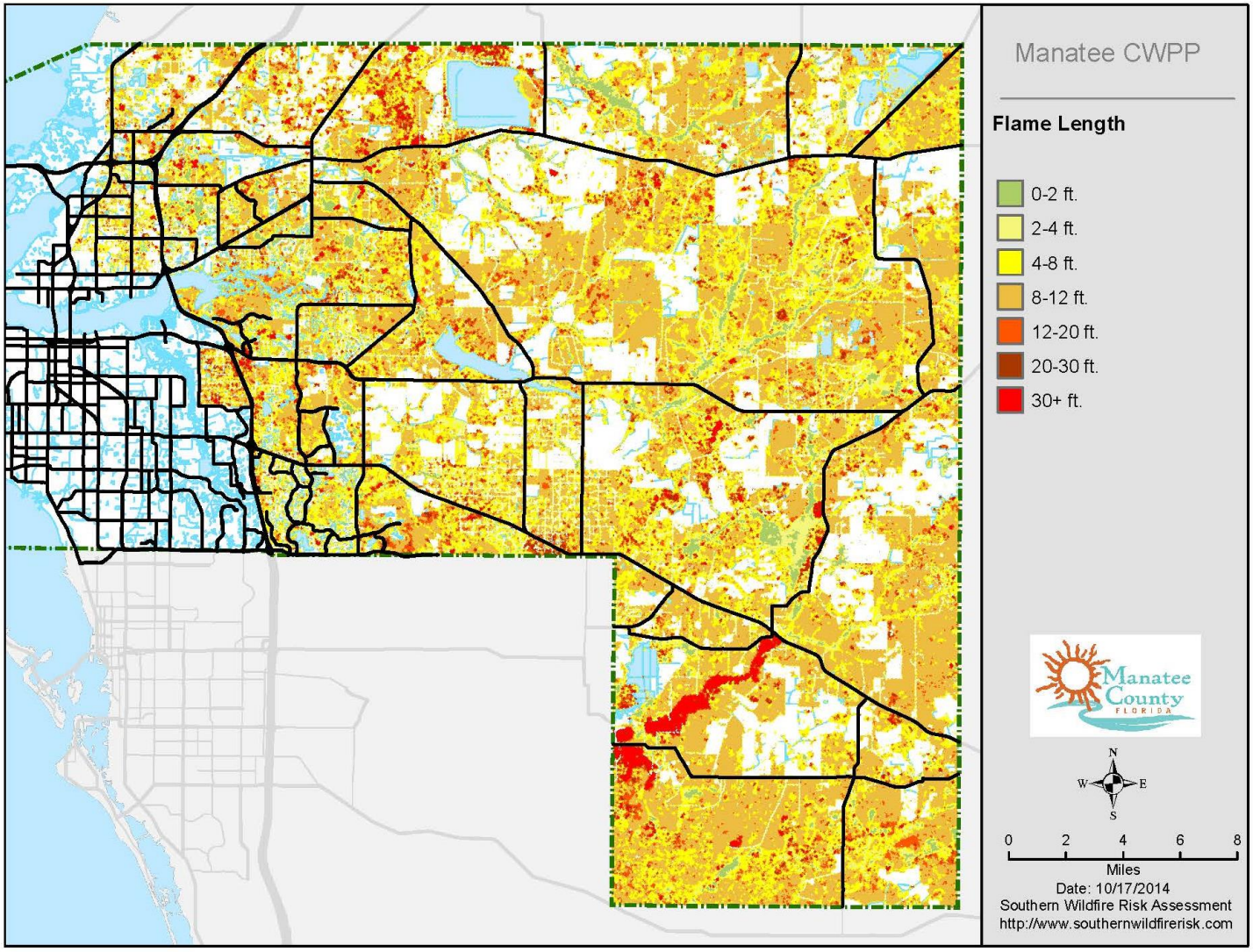
B.6 Fire Intensity Scale – How difficult a wildfire will be to control based on available fuels under a range of weather conditions.



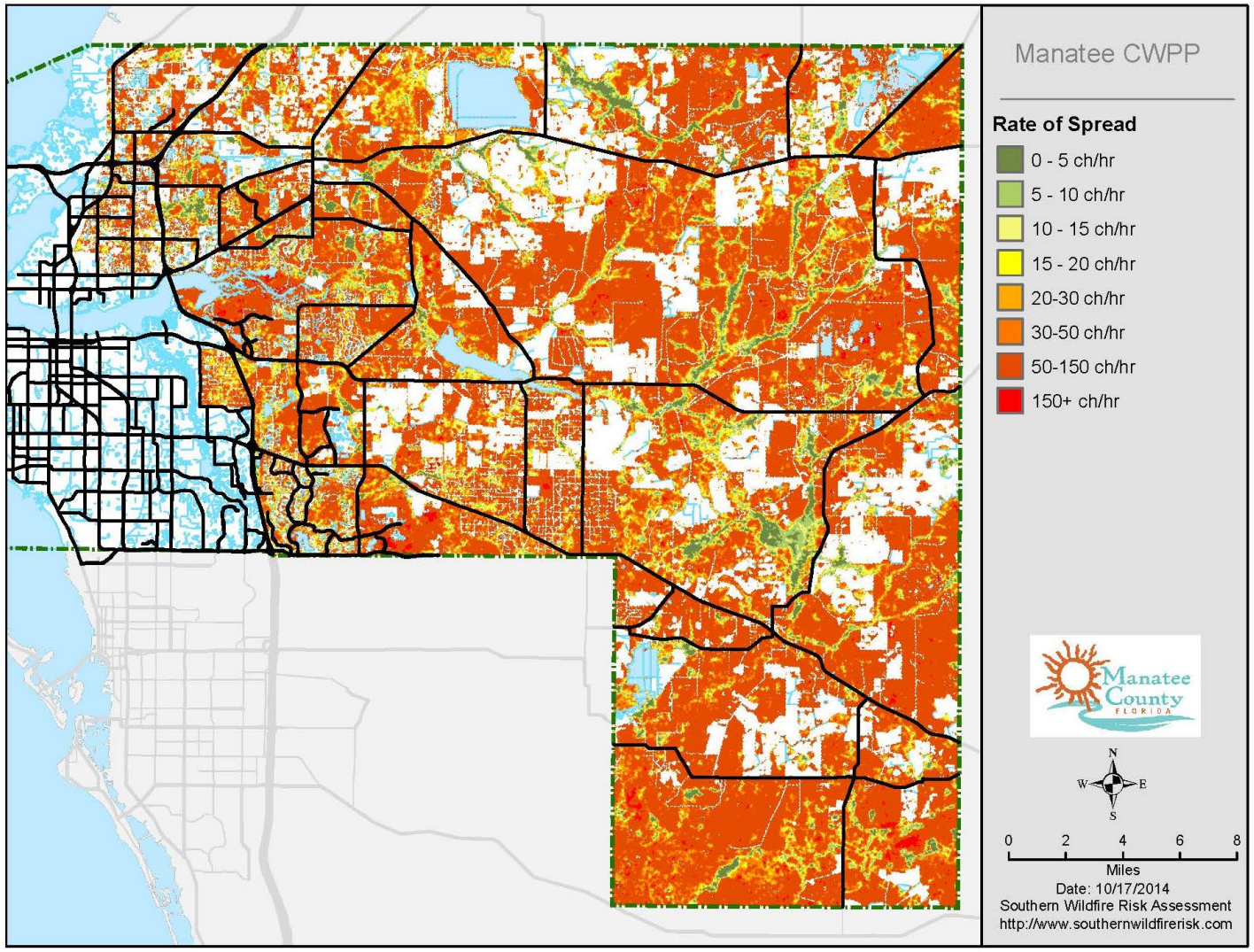
B.7 Fire Type Map – The type of wildfire that is possible based on available fuels under severe fire weather conditions. Categories are surface fire, passive canopy fire (occasional tree torching) and active canopy fire (running crown fire).



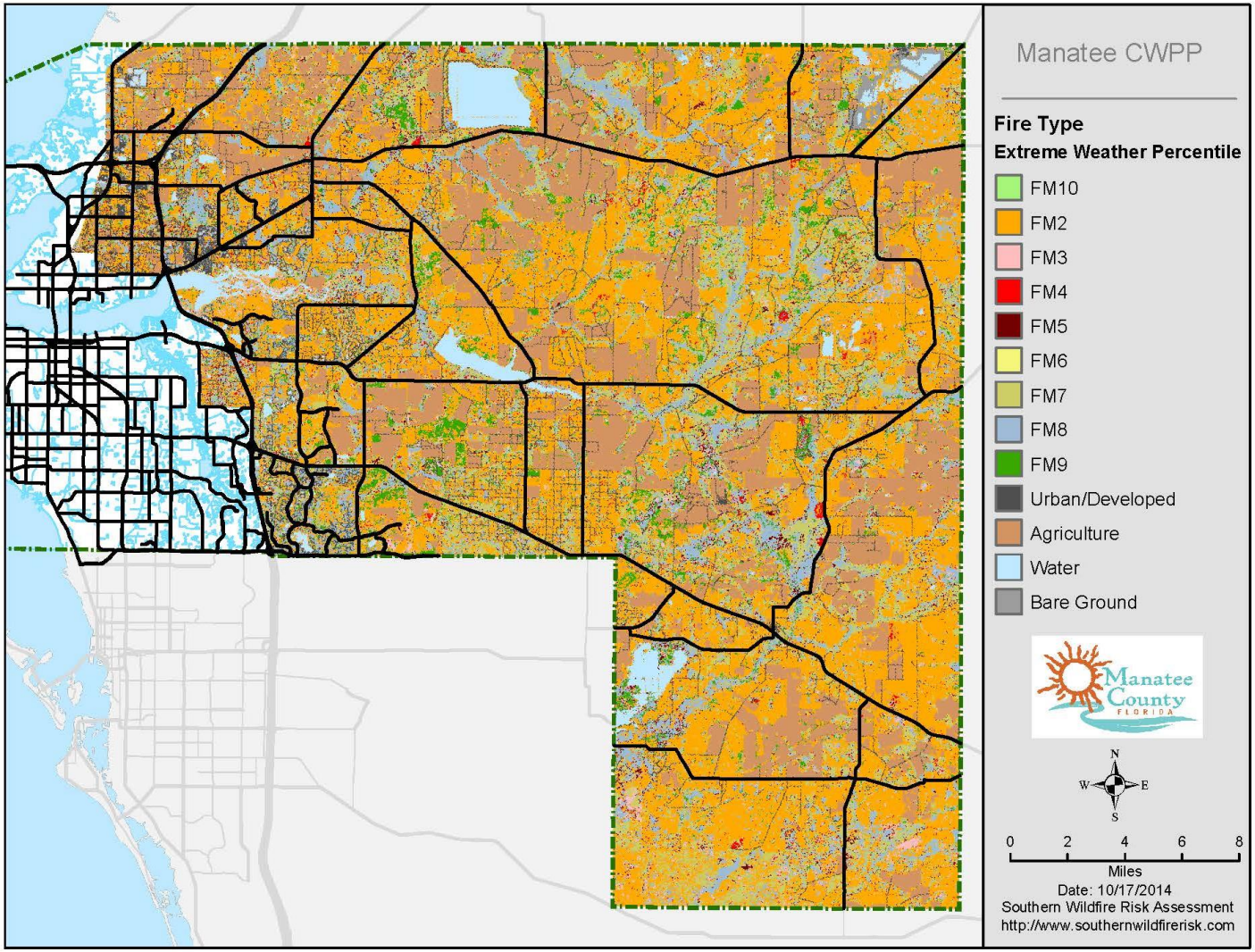
B.8 Flame Length Map – The distance between the flame tip and the base of the flame, it is good measure of fire intensity. Based on available fuels under a range of weather conditions.



B.9 Rate of Spread Map – Hos fast a wildfire will move horizontally across the landscape in chains per hour (1 chain = 66 feet).



B.10 Fuel Type Map – They type of surface vegetation based on Anderson's 13 fuel models. Grass models 1 – 3, brush models 4 – 7, timber litter 8 – 10, and logging slash models 11 – 13.



APPENDIX K

POST-DISASTER REDEVELOPMENT PLAN (PDRP)

AUDIT WITH RECOMMENDATIONS

The PDRP was adopted by the Manatee County Board of County Commissioners on August 6, 2009. Since that time and using a consultant in August 2017, Manatee County's PDRP was audited by the University of Florida – Resilient Communities Initiative Department, resulting in recommendations for possible improvements to the current PDRP to suite County's comprehensive planning and emergency management documents. A copy of the full audit report is attached.

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University of Florida
Resilient Communities Initiative
Gainesville and Sarasota, FL
August 2017



Manatee County Post Disaster Redevelopment Plan (PDRP): Audit with Update Recommendations

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Executive Summary

Florida continues to witness disasters. Numerous tropical storm related disasters in the State early in the 21st Century alone have dearly cost the people of the state and the nation. By 2008, the large, measurable losses to the victims of these disasters convinced the State to support a pilot project promoting advanced planning for long-term recovery and strategic redevelopment after disasters., i.e., post-disaster redevelopment plans (PDRPs). The State's position is that through an engaging and robust planning process, "local governments can collaboratively create a long-term recovery and redevelopment strategy in pursuit of a sustainable community."[1]

Manatee County—major participants in the pilot project—is on the leading edge of Florida coastal local governments planning for long-term recovery and redevelopment in the aftermath of disaster. Developing and maintaining a PDRP is particularly important in coastal communities for several key reasons, among which are:

1) it can reduce community vulnerability;
2) it is a recommended best practice for coastal communities; and
3) it establishes a roadmap to a more successful recovery following a disaster.

A tangible result of the effort of the state and the six (6) pilot communities was to establish the foundation data and analyses for the publication, POST-DISASTER REDEVELOPMENT PLANNING: A GUIDE FOR FLORIDA COMMUNITIES (PDRP GUIDE).[2] Among other conclusions and recommendations of the PDRP GUIDE, is that the PDRP be updated every five (5) years.[3] Many of the pilot PDRPs, like Manatee County's, are due for audit and such recommended update.

Our Audit of Manatee County's PDRP compares the relationship of the PDRP to other Manatee County planning resources: the Comprehensive Plan, the Comprehensive Emergency Management Plan (CEMP), and the Local Mitigation Strategy (LMS). Our Audit also contains a critical analysis of Manatee County's PDRP, including a review of each section of the current PDRP, with recommendations for updates based on current best practices.

RECOMMENDATIONS

This section summarizes the Audit's overall recommendations for possible improvements to the current PDRP and the suite of Manatee County's comprehensive planning and emergency management documents:

1. **Prioritize repetitive loss properties for adaptive relocation** of existing use activities and explore the legality and means by which this can best be accomplished.
2. Consider **developing an adaptation action areas designation** as part of the next PDRP update.
3. Include **an environmental and/or habitat impact analysis** as part of the vulnerability assessment.
4. Conduct an **analysis of future sea level rise (SLR) inundation** and current assessment methodologies.
5. **Expand the scope of criteria included in the capacity assessment**, thereby improving the PDRP capacity score.
6. **Add tasks to the Recovery and Redevelopment Strategy and Action Plan to reduce disaster vulnerability** through land use and development policy and regulations.
7. Combine and reconfigure the Recovery and Redevelopment Strategy and the Recovery and Redevelopment Action Plan to **improve the administrative fluidity from goals, objective, policies, and strategies to actions/tasks**.
8. **Identify a task force of historic and cultural professionals** to, *inter alia*, identify significant individual sites, prioritize them by community interest and vulnerability, and advise the County on the results of its tasks.
9. **Reevaluate** the 34 seats currently allocated to **the PDRP task force to assure that every participant has a relevant role** and streamline procedures to increase effectiveness and efficiency.
10. **Recognize the increased use of social media and websites to improve public involvement** in implementing and maintaining the PDRP.
11. Revamp the PDRP Communications Plan to enhance its efficacy by **providing processes for accomplishing recovery and redevelopment tasks**.
12. Detail how to **fund the necessary communications systems**.
13. Update the existing funding source list, detailing specifically how to **handle potential food and water distribution shortages**, including overall food and water systems assessments.
14. **Synthesize (and hyperlink) the current documents into one (1) comprehensive planning and emergency management document** in two (2) versions—a complete

digital and print document including appendices, and a "bare bones" handout version for use in an actual emergency—structurally organized to accord with the NATIONAL PREPAREDNESS SYSTEM.

Appended to the Audit are two (2) resources for additional information: a literature review (Appendix 1), and an overview of the Federal Emergency Management Agency's NATIONAL PREPAREDNESS SYSTEM (Appendix 2). We at the University of Florida greatly appreciate the opportunity to audit the PDRP. We look forward to engaging our faculty, staff, and students in future educational and planning collaborations with Manatee County.

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August 2017

Manatee County PDRP Audit

Plan Compatibility

Other official County documents provide disaster management guidance. To implement successful and coordinated post-disaster recovery and redevelopment plans, these official documents:

- Comprehensive Plan,
- Comprehensive Emergency Management Plan (CEMP), and the
- Local Mitigation Strategy (LMS)

must be successfully integrated. The capacity assessment section of the current PDRP outlines this integration. The UFRCI research team reviewed the current PDRP, and compared it with these other official documents, best disaster management practices provided in the topical literature, and other available resources in conducting this Audit.

Comprehensive Plan

The comprehensive Plan elements provide policies addressing, among other comprehensive considerations, future land use, conservation, coastal management, housing, and public infrastructure. Each element establishes goals and objectives supporting, and strategies relevant to implementing, these policies. The CEMP, LMS, and PDRP should be adequately and appropriately referenced in the comprehensive plan to ensure consistency across County operations and with all other official documents. The comprehensive plan recognizes a coastal high hazard area (CHHA) as a future land use overlay, labeled accordingly on the future land use map. The future land use element provides objectives for the use of overlay districts and floodplain management provisions.

The coastal management element provides the hazard mitigation plan for certain natural disasters but does not address sea level rise (SLR). Objective 4.4.3 specifically addresses post-disaster recovery and should be updated to relate to any CEMP, LMS, and PDRP updates. Ideally, the comprehensive plan will include a disaster management element linked to the other elements of the comprehensive plan and the CEMP, LMS, and PDRP. The current comprehensive plan does not appear to include any assessments of local and regional food

resources—information that could prove helpful for enhanced community resiliency in the event of an emergency breakdown in the food resources distribution system.

Comprehensive Emergency Management Plan (CEMP)

The CEMP is the County's emergency management and short-term disaster response plan. The overarching purpose of the CEMP is "to reduce loss of life, injury, and property damage that may result from natural, technological, or human caused disasters," with an "emergency management structure embodying the five [(5)] phases of emergency management: prevention, preparedness, response, recovery, and mitigation."[4] Compared with the LMS and PDRP, the CEMP focus is immediate action-oriented. The CEMP and PDRP are intertwined in a variety of ways with room for integration and coordination to eliminate gaps.

The CEMP's comprehensiveness may sacrifice depth to achieve breadth. The CEMP is less detailed than the PDRP, it contains more generalized information about the County, such as geographic data, economic information, and population numbers, than the other official County documents discussed in this Audit. It is the "document that establishes uniform policy and procedures for the effective coordination of response to a wide variety of natural and technological disasters."[5] It also contains some of the assessments referenced in the PDRP, e.g. hazard vulnerability assessment.

The Capacity Assessment section of the PDRP describes the relationship between the CEMP and PDRP: the CEMP provides operational guides, some assessments, fulfills federal requirements, explains emergency preparedness, and describes resource allocation for immediate and short-term disaster recovery.[6] PDRP Guiding Principle 6 for post-disaster redevelopment is that County staff and officials will use the Recovery Annex of the CEMP to manage the short-term recovery operations.[7]

The CEMP lists the relevant County departments and other organizations, as well as available funding opportunities and resources for disaster management. While the CEMP's time horizon is more immediate than that of the PDRP, many of these same identified resources are also vital to long-term disaster recovery and redevelopment. One of the most important aspects of the CEMP is the outline and activation of an emergency operations center (EOC), "the primary local coordinating agency for requesting and allocating resources and relief from State sources."[8] The eventual and ultimate handover of recovery and redevelopment responsibility

from the EOC to the specific departments responsible for the coordinated long-term recovery under the PDRP—and the logistics, operational mechanics, planning, and timing of accomplishing that coordinated long-term recovery—is significant. This Audit recommends that accountability and responsibility for accomplishing, coordinating, and reviewing these efforts and their effectiveness could be better detailed.

Local Mitigation Strategy (LMS)

Hazard mitigation, "the effort to reduce loss of life and property by lessening the impact of disasters,"[9] involves actions taken to permanently reduce or eliminate the long-term effects of known and potential hazards. The LMS is "a plan that a community can develop to promote hazard mitigation and to manage post-disaster recovery."[10] The idea of bringing together a community with a common goal—to protect citizens—is central to the LMS. The LMS operates to position the County to be proactive, rather than reactive, by identifying and analyzing the hazards to which the community might be vulnerable.[11]

Several aspects of the LMS "provide the County with a framework to develop and implement hazard mitigation measures."[12] This is important because this framework should be consistent with and complimentary to the PDRP. These aspects include:

- Identifying the community's "guiding principles" for hazard mitigation;
- Analyzing the effectiveness of mitigation initiatives already in place;
- Prioritizing mitigation initiatives; and
- Identifying funding for mitigation initiatives (projects, studies, etc.).[13]

The goals and objectives of the LMS draw upon various relevant official County documents to ensure they reflect the County's vision.[14]

In accordance with Goal 3—Reduce the number of repetitive loss properties and other associated actions— and its associated objectives, the County must consider if promoting adaptive relocation of current use activities is a reasonable option. In the long-term, allocating limited resources to repeated repairs of existing use activities' repetitive losses on vulnerable properties may be a partial, short-term, or temporary solution but an otherwise unwise allocation of these finite resources. Of course, relocation is not always an option; then retrofitting the structures may increase the structures' resilience. The County's overarching best interest may

involve prioritizing repetitive loss properties for adaptive relocation of their existing use activities and exploring the legality and means by which this can best be accomplished.

Statutory and other State Requirements.

The Florida Statutes codify the laws enacted by the Legislature and executed by the Governor. These statutory regulations often authorize certain state administrative agencies to promulgate rules to implement the statutes. These administrative rules are codified in the Florida Administrative Code (FAC)—the state's official compilation of administrative agency rules. The *Background*, *Purpose*, and *Authority* sections of the current PDRP's Introduction section describe the County's selection as a pilot community in the statewide initiative to develop replicable guidelines for preparing local government PDRPs.[15] That initiative was sponsored by the Florida Department of Community Affairs (DCA) in 2008.[16] At that time, the Local Government Comprehensive Planning and Land Development Regulation Act (LGCPLDRA)[17] provided the controlling statutory local government planning regulations. The relevant DCA implementing rules were codified in FAC Rule 9J-5. Together these state regulations required coastal counties to include in the mandatory coastal management element of their comprehensive plans a policy of intent to prepare a PDRP.[18] The County met that requirement by adopting comprehensive plan policy 4.4.3.2 and the current PDRP.

In 2011, the Florida Legislature "redesignated" the LDCPDRA as the Community Planning Act (2011 CPA).[19] The 2011 CPA modified many provisions of Florida Statutes and eliminated FAC Rule 9J-5.[20] Prior to the 2011 CPA, FAC Rule 9J-5 provided extensive guidance and specific requirements for effective implementation of the statutory requirements for post-disaster redevelopment planning,[21] specifically the requirement that local governments in coastal counties:

> plan for and where appropriate restrict development activities where such activities would damage or destroy coastal resources, and protect human life and limit public expenditures in areas that are subject to destruction by natural disaster.[22]

Significant to this Audit, the 2011 CPA repealed subpart 9J-5.012. The coastal redevelopment planning requirements of Florida Statutes chapter 163 were however expanded—most relevantly subsection 163.3177(6)(g)—the subsection of the statute requiring coastal

counties to establish and maintain a coastal management element in their comprehensive plans—to add the following option to the requirements of that subsection:

> 10. At the option of the local government, develop an adaptation action area designation for those low-lying coastal zones that are experiencing coastal flooding due to extreme high tides and storm surge and are vulnerable to the impacts of rising sea level. Local governments that adopt an adaptation action area may consider policies within the coastal management element to improve resilience to coastal flooding resulting from high-tide events, storm surge, flash floods, stormwater runoff, and related impacts of sea level rise. Criteria for the adaptation action area may include, but need not be limited to, areas for which the land elevations are below, at, or near mean higher high water, which have a hydrologic connection to coastal waters, or which are designated as evacuation zones for storm surge.[23]

More recently, the 2015 "Peril of Flood" Act[24] expanded the provisions of section 163.3178(2), adding six (6) requirements for the "redevelopment component" of the coastal management element that focuses on eliminating inappropriate and unsafe development in coastal areas. Prior to 2015, section 163.3178(2) required the County's comprehensive plan coastal management element to contain "(f) A redevelopment component which outlines the principles which shall be used to eliminate inappropriate and unsafe development in the coastal areas when opportunities arise."[25] Subsequent to the 2015 "Peril of Flood" Act, the required redevelopment component must now:

> 1. Include development and redevelopment principles, strategies, and engineering solutions that reduce the flood risk in coastal areas which results from high-tide events, storm surge, flash floods, stormwater runoff, and the related impacts of sea-level rise.
> 2. Encourage the use of best practices development and redevelopment principles, strategies, and engineering solutions that will result in the removal of coastal real property from flood zone designations established by the Federal Emergency Management Agency.
> 3. Identify site development techniques and best practices that may reduce losses due to flooding and claims made under flood insurance policies issued in this state.
> 4. Be consistent with, or more stringent than, the flood-resistant construction requirements in the Florida Building Code and applicable flood plain management regulations set forth in 44 C.F.R. part 60.
> 5. Require that any construction activities seaward of the coastal construction control lines established pursuant to s. 161.053 be consistent with chapter 161.
> 6. Encourage local governments to participate in the National Flood Insurance Program Community Rating System administered by the Federal Emergency Management Agency to achieve flood insurance premium discounts for their residents.[26]

While a PDRP may no longer be mandated by the state, the types of analyses and tools now identified by statute are similar to, or more refined than, those the County and the state utilized in preparing the original pilot PDRPs. These statutory directives, requirements, and suggestions continue to support local government planning for coastal redevelopment in post-disaster scenarios and regularly maintaining and updating the County PDRP. This Audit recommends the County consider developing an adaptation action area designation, consistent with Florida Statutes section 163.3177(6)(f)10., and implement the provisions of Florida Statutes section 163.3178(2)(f) regarding the peril of flood, as part of the next update to the PDRP.

Manatee County PDRP Analysis

The Manatee County PDRP introduction section describes the various subsequent sections of the PDRP. Much of the content of the current PDRP follows from groundbreaking research compiled in PLANNING FOR POST-DISASTER RECOVERY AND RECONSTRUCTION (1998),[27] a Planning Advisory Service (PAS) issued by the American Planning Association [hereinafter PAS REPORT]. Manatee County's post-disaster redevelopment planning efforts, along with those of the other pilot communities, were used to inform the State's PDRP GUIDE.[28]

Planning Process

The planning process section identifies the stakeholders involved, and summarizes the meetings held to establish the PDRP. It does not summarize the information gathering process. It includes a short overview of how the plan is organized and prepared. A summary of the process that the County stakeholders utilized to obtain the data and information for each section would make the planning process section more complete.

Vulnerability Assessment

Compared to the best practices outlined in the PDRP GUIDE—Figure 1[29]—the current PDRP does not have an environmental or habitat impact analysis, nor a sea level rise inundation analysis (there are task and mitigation strategies but no analysis). While Figure 1 indicates that these are advanced tasks, they are increasingly important analyses for post-disaster redevelopment planning due to the ongoing effects of climate change. The current vulnerability assessment achieves the recommended tasks outlined in Figure 1. If the PDRP adds these

additional analyses, the vulnerability assessment will be more advanced and comprehensive. This Audit suggests the PDRP include an environmental and/or habitat impact analysis.

On the NOAA website, there is a flood map image for Holmes Beach City Hall.[30] The slider bar on the website demonstrates how six (6) feet of higher tide can affect the Holmes Beach City Hall by 2100.[31] Figures 2.1 and 2.2, below are derived from NOAA's website. These figures illustrate the current sea level and show how six (6) feet of sea level rise might impact the County. This Audit recommends the County conduct an analysis of future sea level rise inundation and current assessment methodologies (GIS mapping, scanning).

Figure 1: Vulnerability Analysis at a Glance[32]

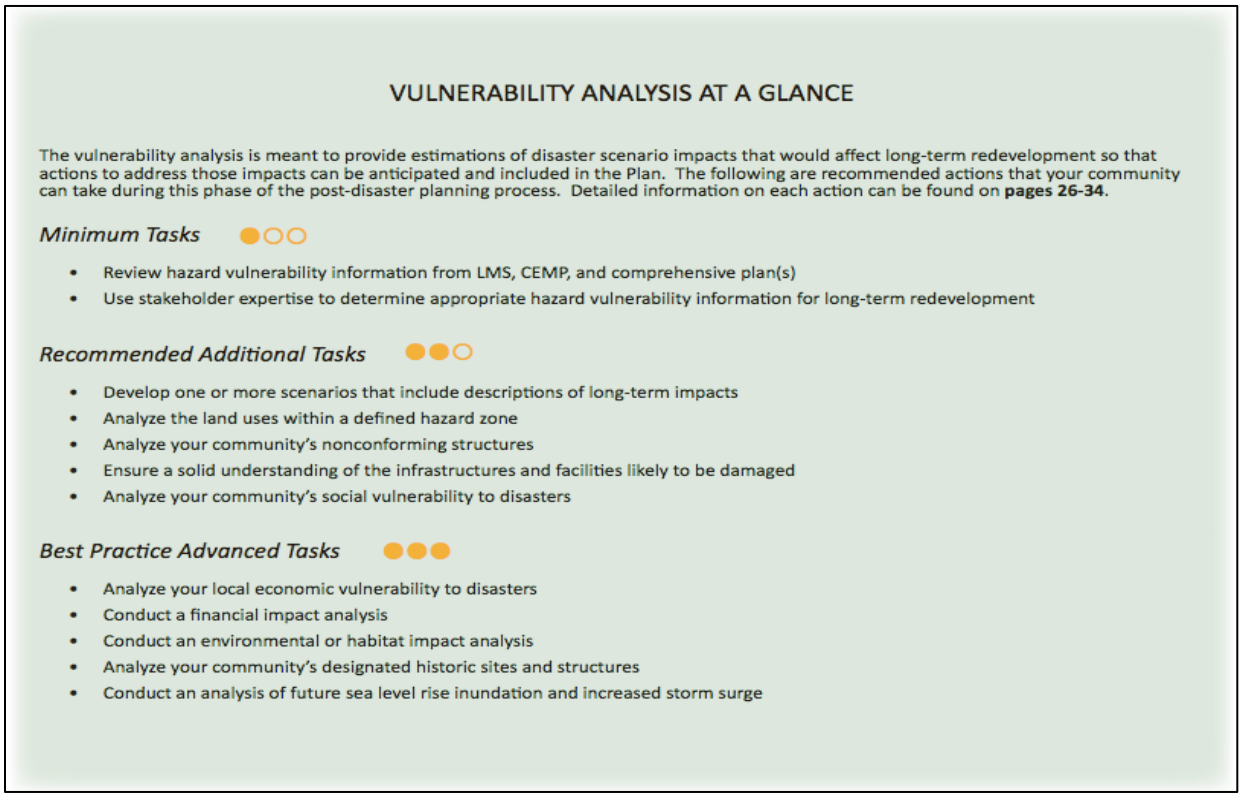
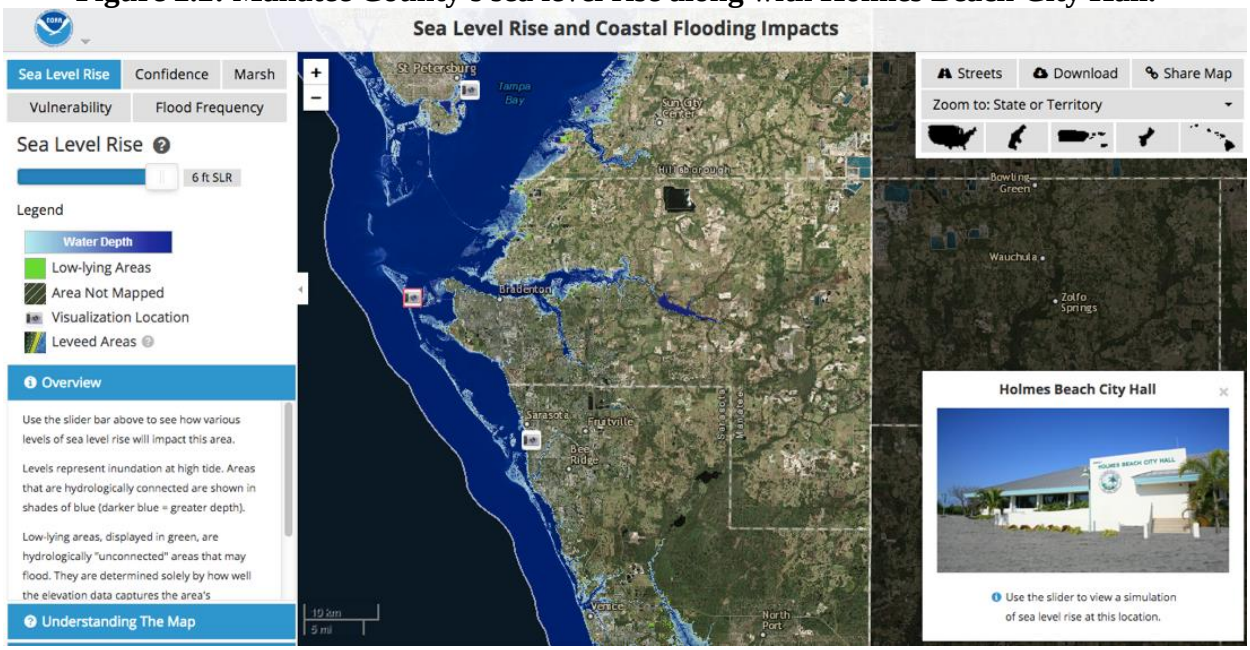


Figure 2.1: Manatee County's current sea level along with Holmes Beach City Hall.[33]



Figure 2.2: Manatee County's sea level rise along with Holmes Beach City Hall.[34]



Capacity Assessment: Institutional Capacity and Local Plan Assessment

Capacity assessments are generally comprehensive, detailed analyses of the ability of a jurisdiction to implement successful post-disaster relief efforts.[35] It is easily one of the most important pieces of the current PDRP—both as a resource and an action-oriented guide designed

to identify and reduce gaps in capacity. The current capacity assessment consists of a description of the assessment, how it was conducted, findings, conclusions on local capacity, plan integration, and recommendations for further integration.

The current capacity assessment incorporates documents and planning measures relevant to the PDRP, highlights strengths and gaps, organizes efforts into matrices, and then ranks the local system capacity. It links the vulnerability assessment findings to the recovery and redevelopment strategy. It then examines plan integration, outlining the relationship between the PDRP and other related documents (e.g., Comprehensive Plan, CEMP, LMS, etc.). The capacity assessment section closes with recommendations for further integration.

The current PDRP's capacity assessment section is more robust than comparable plans of other neighboring counties. The current PDRP is detailed, focusing on analysis rather than merely compiling documents. There is serious effort towards plan integration and steps for closing gaps; the matrices are both comprehensive and detailed; the ranking regime used is unique, insightful, and establishes an effective way to quantify changes in—and the evolution of—the County's capacity.

The County's capacity assessment is not only the strongest piece of the current PDRP but could provide a framework for other jurisdictions. This Audit suggests only minor changes to this section. First, develop a more detailed, action-oriented implementation process. This would help to reduce gaps and implement effective measures for post-disaster relief, recovery, and redevelopment. Next, topics such as finances, economics, and regulatory capacity appear adequately considered, but there could be greater emphasis placed on social capital, networks, infrastructure, and natural resources. This Audit recommends the County expand the scope of criteria included in the capacity assessment, thereby further improving the capacity score.

Recovery and Redevelopment Strategy and Action Plan

The recovery and redevelopment strategy and action plan go hand in hand to identify, prioritize, and assign tasks and provide a detailed overview of each assigned task. This Audit evaluates the current PDRP against the PDRP GUIDE.[36] The PDRP GUIDE divides the tasks into six (6) key categories: land use, housing, economic redevelopment, infrastructure and public facilities, health and social services, and the environment.[37]

The recovery and redevelopment strategy in the County's PDRP currently includes the following subsections:

- Land Use
- Restoration and Mitigation of Critical Infrastructure and Schools
- Restoration of Community Health
- Government Operations and Administration
- Restoration of the Economy (business resumption and economic redevelopment)
- Public Information and Awareness
- Restoration of Social Services
- Restoration of Historical and Cultural Assets
- Restoration of Housing (temporary housing options and repair and reconstruction of damaged housing)
- Restoration of the Natural Environment

Each section of the strategy—e.g., land use, housing, etc.—should contain key strategic information about, and a summary of, the relevant tasks:

1. *Land Use.* As a minimum achievement, the strategy should address phased reconstruction and streamlined permitting, and building standards for nonconforming and substantially damaged structures. The current PDRP contains tasks that involve reconstruction and permitting, but does not appear to address substantially damaged structures. The *PDRP Guide* recommends land use strategies to address blight; the current PDRP does not appear to address blight. The current PDRP includes tasks to reduce disaster vulnerability through voluntary mitigation programs as recommended by the *PDRP Guide*. Advanced achievement levels prioritizing areas to focus redevelopment and assessment of historic preservation and restoration are also included in the County's current PDRP. This Audit suggests adding tasks to reduce disaster vulnerability through land use and development policy and regulations, as well as designating an individual position or positions to champion this effort and provide leadership for its accomplishment.

2. *Housing.* The current PDRP contains tasks related to providing and removing temporary housing and rapidly reconstructing housing, thereby achieving all of the recommended minimum level requirements. The current PDRP does not address transitioning residents back to permanent housing, a *PDRP Guide* recommended achievement level. Toward the advanced achievement level, the current PDRP has tasks that encourage homeowners to incorporate hazard mitigation during rebuilding, but includes no tasks to address a temporary housing strategy and rebuilding affordable housing.

3. *Economic redevelopment.* The current PDRP includes most of the *PDRP Guide*-recommended tasks focused on retaining major employers, assisting small businesses, retaining workforce, and physical economic redevelopment projects. It does not address tourism renewal and opportunities to sustainably restore economic vitality.

4. *Infrastructure and public facilities.* The current PDRP appears to adequately address the tasks recommended by the *PDRP Guide*. Successful recovery depends on effective pre-planning. This Audit recommends adding tasks involving regional infrastructure coordination, e.g., roads, power, telecommunications, water, etc., and crucial documentation of existing conditions prior to the disaster event, including photographs of critical infrastructure and public facilities tied to accurate geographic coordinates for subsequent relocation utilizing the global positioning system (GPS).

5. *Health and social services.* The current PDRP includes tasks addressing the general public's health, public safety services, schools, and quality of life factors. It lacks tasks addressing mental health and behavior issues, public transportation issues, and services for vulnerable socioeconomic populations.

6. *Environment.* Although the current PDRP does not appear to contain an environmental vulnerability assessment it contains all of the tasks recommended by the *PDRP Guide* to manage environmental factors after a disaster.[38]

Goals and Objectives. The recovery and redevelopment strategy section outlines eight (8) goals and 19 guiding principles. The eight (8) goals:[39]

Goal 1: Restoration of Historical and Cultural Assets
Goal 2: Restoration of Community Health
Goal 3: Restoration of Social Services
Goal 4: Restoration of the Natural Environment
Goal 5: Restoration of Critical Infrastructure and Schools
Goal 6: Restoration of Government Operations
Goal 7: Restoration of the Economy
Goal 8: Restoration of Housing

The guiding principles are intended "to foster an effective post-disaster redevelopment of the County following a major disaster."[40] These principles appear to be the primary objectives of the PDRP and can be focused to identify policies and procedures that will direct activity during the disaster recovery period.

The recovery and redevelopment action plan, the "unambiguous and functional plan for action," was designed to achieve the goals listed in the recovery and redevelopment strategy.[41]

Important components of the plan include local action capacity, responsible action agencies, developing necessary policies, action time frames, collaborating agencies, and immediately necessary assets ("unmet needs").

The goals, objectives, and actions are confusing. Reorganization, utilizing a more conventional organizational standard could improve our communication and the collective understanding of our ongoing and scheduled activities:

- Goal 1
    - Objective(s): 1.1, 1.2, etc.
        - Action(s) (or Policies) 1.1.1, 1.1.2, 1.1.3, etc.

The action plan utilizes "topics" and "tasks/actions" labels. Most of the topics are similar to goals, but they do not align clearly with, or in comparable orders of magnitude as the enumerated goals in the preceding recovery and redevelopment strategy section. This Audit recommends potentially combining and reconfiguring these two sections to improve the administrative fluidity from goals, objectives, policies, and strategies—to actions (/tasks).

Historic component. The first goal identified by the PDRP's recovery and redevelopment strategy is "restoration of historical and cultural assets."[42] The current PDRP may fall short, particularly in identifying cultural assets, i.e., the unique places that make the communities and neighborhoods special. The historic properties data component of the current PDRP includes an inventory of historic properties, exposure of assets, extent and value of at-risk historic properties, and loss estimation. [43] There are 17 individual national register entries and two (2) historic districts in Manatee County.[44] Table X-2 in Appendix B of the current PDRP defines the exposure of 412 historic properties to flood hazard areas (riverine flooding and coastal storm surge).[45]

The total potential property value losses are estimated at approximately $45.5 million for historic properties within the one percent (1%) annual flood chance "special flood hazard area" (SFHA), and an approximately cumulative $54.4 million within the broader storm surge inundation areas.[46] While this information is important, there are no apparent policies, strategies, or actions in the current PDRP addressing these potential property losses.

Below are some recommendations to better integrate historic preservation into the PDRP:[47]

- Maintain an inventory of historic places and cultural assets

- Establish a network of preservation professionals to assist with pre-disaster mitigation and post-disaster recovery activities
- Develop historic and cultural preservation review procedures to implement in the event of a disaster
- Develop site-specific Emergency Response Plans for individual properties
- Integrate training, expertise, and assistance into the local recovery framework
- Analyze sites (temporary housing, debris disposal, etc.) for historic and archaeological resources
- Prioritize historic and cultural preservation in the LMS
- Improve mitigation and resiliency of historic resources and cultural assets
- Identify funding opportunities for mitigation of historic and cultural resources[48]

The current PDRP contains no formal historic and cultural preservation section, but the seventh and final "topic" in the recovery and redevelopment action plan is titled, "Restoration of Historical and Cultural Assets."[49] There are three (3) sections in this last "topic," including *damage assessment*, *restoration*, and *remember*. To implement the topic sections, 12 "actions/tasks." should be an action or actions for each idea on the list. A more formal historic and cultural preservation component building on the IMAGINE MANATEE effort could improve the current PDRP, particularly if the PDRP is integrated into a comprehensive planning and emergency management document.

Figure 3: Topic 7- Restoration of Historical and Cultural Assets from the Action Plan[50]

Topic 7: Restoration of Historical and Cultural Assets						
Task/ Action #	**Task/Action Description**	**Capacity Improvement**	**Plan Integration Improvement**	**Responsible Agency(ies)**	**Implementation Timeframe**	**Requires Collaboration with:**
	DAMAGE ASSESSMENT					
7.01	Include historic preservation experts in damage assessment teams in historic areas.	√		Building Department	Post Event/Short Term	Planning Department
7.02	Reconcile legitimate building hazards with preservation.	√		Building Department	Post Event/Short Term	Planning Department
7.03	Identify concentrations of historic assets, recognize that many of these will not be officially listed with the county, state, or federal governments.	√	√	Planning Department	Pre Event/Short	Clerk's Office
7.04	Stabilize and secure publicly owned damaged county historic assets from additional deterioration in a post disaster time frame.	√		Property Management	Post Event/Short Term	Building Department/ Planning Department
7.05	Establish system to prioritize county owned historic assets for restoration.	√	√	Planning Department	Pre Event/Mid Term	Property management
	RESTORATION					
7.06	Employ the expertise of the Historic Preservation Board to guide decisions effecting historic assets.	√		Planning Department	Post Event/Ongoing	Building Department/ Clerk's Office
7.07	Establish communication between the historic preservation experts and the Building, and Planning Departments to provide expertise in maintaining historic community assets.	√		Planning Department	Post Event/Ongoing	Building Department/ Clerk's Office
7.08	Invite outside experts on historic preservation to generate ideas and options instead of demolition.	√		Planning Department	Post Event/Short Term	Building Department/ Clerk's Office
7.09	Provide educational resources for owners of historic structures regarding methods of repair and rehabilitation.	√		Planning Department	Post Event/Short Term	Building Department
	REMEMBER					
7.10	Appropriately, memorialize and honor the human tragedy of a catastrophic event on Manatee County for future generations.	√		Community Services	Post Event/Mid Term	Clerk's Office/ Office of County Administrator/ Arts Council
7.11	Develop, collect, maintain a repository of items to properly document the effect of a catastrophic event on Manatee County for future generations.	√		Clerk's Office	Post Event/Mid Term	I.S. - Library Division
7.12	Coordinate with the South Florida Museum to fully understand the effects of possible storm inundation and develop effective Continuity of Operations Plan.	√	√	Public Safety	Pre Event/Mid Term	South Florida Museum

This Audit recommends the County identify a task force of historic and cultural asset preservation professionals with an outline of roles and task assignments. This task force should identify significant individual sites, prioritize them by community interest and vulnerability, and advise the County on the results of its tasks. This is consistent with the PDRP task/actions, but should identify task force members, their roles, and responsibilities. Emergency staging sites (temporary housing, debris removal and reduction, etc.) should be pre-analyzed for the presence of historic assets. Finally, the County should explore mitigation actions/tasks and funding opportunities for historic resources. If the relevant documents remain separate, a more formal historic and cultural preservation action plan could be included in the LMS with appropriate hyperlinks to the PDRP.

PDRP Implementation and Maintenance Procedures

The Board of County Commissioners oversees post-disaster redevelopment operations and the County Administrator has overall responsibility for the implementation of the PDRP.[51] County administration activates the redevelopment task force.[52] The current PDRP task force is made up of 34 individuals. The major duties of the task force include:

- Establish uniform policies for effective coordination to accomplish Manatee County redevelopment tasks resulting from a natural or man-made disaster
- Recommend and coordinate efforts to restore normalcy to areas adversely impacted by a disaster
- Help identify mitigation opportunities and resources[53]

The task force membership appears to include an unwieldly number. This Audit recommends the seats allocated the task force be reevaluated to assure that every participant has a relevant role, and procedures are streamlined to increase effectiveness and efficiency.

This section also includes information on monitoring, evaluation, and enhancement. It states the PDRP should be reviewed at least every five (5) years.[54] This Audit recommends annual monitoring practices, with a major comprehensive update no less than every five (5) years. The PDRP also provides for its review contemporaneous to the aftermath of a disaster to assess what worked and what should be revised, and continued public involvement—including a list of public efforts to involve the community in the PDRP process.[55] Technology—particularly media—has evolved since the current PDRP was approved, and will continue to evolve. This audit recommends that the PDRP recognize the increased use of websites and social media for improving public involvement.

This section also addresses PDRP training and exercises, noting the complexity of the PDRP and the imperative that the PDRP "be exercised on a regular basis."[56] This is a good policy, establishing a procedure to identify any gaps or areas of improvement that should be addressed. This Audit recommends developing a formal schedule for PDRP exercises and trainings.

Finally, the current socio-political emphasis on performance measurement suggests developing metrics for measuring success throughout the implementation process. These metrics for success can help the County and the task force assure that tasks and actions are being completed in a manner that meets (or exceeds) expectations. This is especially important for pre-

disaster mitigation activities and PDRP maintenance and enhancement. Some suggestions for performance measures are included in the literature review, Appendix 1 of this Audit.

Communication Plan

While communication during the response to a disaster event is vital to public health and awareness, communication also plays an essential role in the success and satisfaction of long-term recovery and redevelopment actions. Communication actions are included throughout the PDRP and specifically in the communication plan section. The goal for this section is to "provide information on how Manatee County staff will collect and disseminate long-term recovery information after a disaster," as well as how the public, regional entities, and state agencies will be incorporated into disaster recovery.[57]

The communications plan section of the PDRP appears to lack strategic networks, specific objectives, and concrete action-based implementation. The most detailed provisions of the PDRP addressing communication are housed within the previously discussed recovery and redevelopment action plan section.[58] That section of the PDRP includes a table with action-oriented goals, time frames, and required collaboration with other departments (see Figure 4, below).

Figure 4: Snapshot of Topic 2 from the Action Plan in Manatee County's PDRP[59]

Topic 2: Government Operation and Administration						
Task/ Action #	Task/Action Description	Capacity Improvement	Plan Integration Improvement	Responsible Agency(ies)	Implementation Timeframe	Requires Collaboration with:
	COMMUNICATION					
2.01	Establish the county website as the primary source of accurate and timely information regarding recovery and redevelopment information.	√		Information Services	Post Event/Ongoing	Public Safety
2.02	Link the web sites of all the local governments, governmental agencies and pertinent non-governmental agencies to the county web site.	√		Information Services	Post Event/Ongoing	Public Safety
2.03	Proactively communicate with the citizens of Manatee County to ensure understanding of priorities, restoration activities, and status of the redevelopment of the County.	√		Office of County Administrator	Post Event/Ongoing	Public Safety

One gap in the communications plan section is the lack of specific implementation processes. While the enumerated actions are worthwhile and will inevitably boost capacity, the processes for their accomplishment are not apparent. This Audit recommends the communications plan section of the PDRP be revamped to provide processes to accomplish recovery and redevelopment tasks, thereby enhancing its efficacy.

It would be beneficial to conduct both a communication-based assessment and a resulting communication needs assessment and incorporate the outcomes into the PDRP. Figure 5 includes information about these types of communication assessments.

Figure 5: Types of Communication Assessments[60]

Types of communication assessments	A **Communication-Based Assessment (CBA)** is an assessment in any sector that uses a variety of communication techniques to detect political risks, contextual issues, and perceptions in that sector that are not easily recognized by a normal assessment. The World Bank emphasizes the need for a CBA at the beginning of the project cycle. Although a CBA can be performed at any stage of the project, its value is highest when conducted early. A CBA uses two-way communication techniques (dialogue, focus groups, open questions, discussion groups) and generally provides qualitative findings. It takes about two weeks to conduct. A **Communication Needs Assessment (CNA)** is carried out to analyze the communication sector and understand its capacity and common practices. It focuses only on the media environment, infrastructure, communication policies, capacities, gaps, information flow, and networks. A CNA is part of a CBA.

This type of analysis identifies communication gaps, attempts to close those gaps, and identifies where capacity is strong. There are a number of low-cost strategies that the County can also explore, such as crowdsourcing, social media, freeware mapping, and low-cost alert systems via text messages.[61]

The Sarasota County PDRP communications plan is highly-regarded and could provide a possible framework for a more robust communication plan for Manatee County. This Audit recommends revising the communication plan to focus on communicating progress to the public, increasing transparency, participation, and awareness, towards higher public satisfaction rates for the County's efforts. Figure 6 is a list of potential variables to incorporate into this type of communications plan.

Figure 6: Indicators for Communicating Redevelopment Progress[62]

The Sarasota County PDRP includes a detailed communication strategy that lays-out a set of general qualitative and quantitative indicators that the community can use to evaluate post-disaster redevelopment efforts.

- Financial expenditure, including tracking outside resources received and how these funds are being used
- Performance and schedule variance from set goals or estimated timeline (that is determined after level of damage is known)
- Contracting statistics – amount of local businesses, small or minority businesses
- Public participation levels – interaction and transparency statistics
- Employment resumption metrics
- Home occupancy and rental rates
- Tourism accommodations' occupancy rates
- Standard of living measurements to judge quality of recovery
- Number of actions and projects started and accomplished, including an estimate of the population that has benefited as a result, if possible

Financing Plan

This section of the PDRP includes potential funding resources for PDRP activities and identifies how various revenue sources can be accessed and utilized following a disaster, including:

- local revenues, reserves, and loans
- state and federal assistance programs
- private sector and non-profit contributions
- mutual aid agreements, and
- pre-established recovery contracts

.

The current PDRP effectively details the source of funding for County activities, potential funding sources in case of an emergency event—including a pre-disaster grant funding possibility—and highlights the potential shortfall that could occur should a disaster happen. The current PDRP does not provide an exhaustive listing of funding sources. This Audit recommends updating the existing funding source list, detailing specifically how to handle potential food and water distribution shortages, including an overall food and water systems assessment.

Communications in times of a crisis are crucial. This Audit recommends the current PDRP be improved by detailing how to fund the necessary communications systems.

Policies and Procedures

This Audit recommends the PDRP complement and be consistent with the comprehensive plan. Although there are currently many areas of agreement with the

comprehensive plan, the current PDRP is not seamlessly integrated. Specific reference details should match sections of the comprehensive plan with the PDRP. When the comprehensive plan, CEMP, LMS, and PDRP are updated, the policies and procedures should all accord. The development of a table at the end of the recommended document could accomplish this and provide more clarity to existing consistency. By updating and providing this information, any ambiguity regarding compliance with existing policies and procedures can be eliminated.

Conclusion and Overall Recommendations

In addition to the specific recommendations contained in this Audit, we recommend the County consider synthesizing (and hyperlinking) these several documents into one (1) comprehensive planning and emergency management document. There are direct, interconnected relationships among the CEMP, LMS, and PDRP. An overarching emergency management document should cover short-term actions following a disaster (CEMP), long-term redevelopment actions (PDRP), mitigation actions in the long-term redevelopment phase (LMS), and mitigation actions in the adaptation phase to create a more resilient community. Furthermore, there should be two (2) documentary products: 1) a main digital and print document including appendices and 2) a "handout" version: a "bare bones" version that is a more useful tool in an actual emergency. The handout version should focus on alleviating conflicts between short-term and long-term preparedness actions in implementing the community vision for how Manatee County will grow.

Some considerations for all current documents in the comprehensive planning and emergency management suite include consistent pagination and appropriate external and internal hyperlinks to other documentary citations. This will improve the accessibility of the contained information, making the documents more "user friendly." If one (1) overarching document is created, the structure will change. Based on the NATIONAL PREPAREDNESS SYSTEM,[63] we recommend the following structure, appropriately tailored to the needs of Manatee County:

1. Prevention	2. Protection	3. Mitigation [cf. LMS]

• Executive Summary
• Introduction
• Planning Process
  o Policies and Procedures
  o Regulations
  o Goals and Objectives
• Terrorism and Cyber-security Plan
• Public Information & Warning (Information sharing)
• Implementation
	• Executive Summary
	• Introduction
	• Planning Process
	  o Policies and Procedures
	  o Regulations
	  o Goals and Objectives
	• Vulnerability Assessment
	• Historic and Cultural Assets Assessment
	• Capacity Assessment
		• Executive Summary
		• Introduction
		• Planning Process
		  o Policies and Procedures
		  o Regulations
		  o Goals and Objectives
		• Threats & Hazard Identification
		• Community Resilience
		  o Communication Plan
		• Risk & Disaster Resilience Assessment
		• Long-term Vulnerability Reduction
		• Implementation
		• Maintenance Procedures
		• Financing Plan
		• Communication/Coordination Plan

4. Response [cf. CEMP]

- Executive Summary
- Introduction
- Planning Process
  - Policies and Procedures
  - Regulations
  - Goals and Objectives
- Emergency Response
  - Risk Management
  - Situational Assessment
    - Damage Assessment
    - Debris Management
    - Temporary Housing
  - Geospatial
  - Coordination
    - Disaster Recovery Centers
    - First-in Teams
    - Re-entry
  - Public Health, Health Care, & Emergency Medical Services
  - Environmental Response/Health & Safety
  - Fatality Management Services
  - Infrastructure Systems
  - Mass Care Services
  - Mass Search & Rescue Operations
  - On-scene Security, Protection, & Law Enforcement
  - Fire Management & Suppression
  - Logistics & Supply Chain Management
  - Critical Transportation
- Implementation
- Maintenance Procedures
- Communication Plan
- Financing Plan

5. Recovery [cf. PDRP]

- Executive Summary
- Introduction
- Planning Process
  - Policies and Procedures
  - Regulations
  - Goals and Objectives
- Recovery & Redevelopment Strategy
  - Economic Recovery & Redevelopment
  - Health & Social Services
  - Housing
  - Infrastructure/Public Facilities
  - Land Use
  - Natural & Cultural Resources
- Recovery & Redevelopment Action Plan
- Implementation
- Maintenance Procedures
- Communication Plan
- Financing Plan

Appendices

Appendix 1: Literature Review

The PDRP identifies policies, operational strategies, and roles and responsibilities for implementation that will guide decisions that affect long-term recovery and redevelopment of the community after a disaster.[64] It emphasizes seizing opportunities for hazard mitigation and community improvement consistent with the goals of the local Comprehensive Plan and with full participation of the citizens.[65] Recovery topics include sustainable land use, housing repair and reconstruction, business resumption and economic redevelopment, infrastructure restoration and mitigation, long-term health and social services support, environmental restoration, financial considerations, and short-term recovery actions that affect long-term redevelopment as well as other long-term recovery issues identified by the community.[66]

Planning Process

What is it?

The planning process is a participatory process that involves stakeholder groups that are part of the community beyond government agencies. "While a well-written plan is essential in documenting the planning process and input gathered, the importance of the process itself should not be underestimated and may be a precursor of the level of success your community has in implementing the Plan".[67]

The first step of this process is to identify the stakeholders, designating a local government staff member as the PDRP coordinator, and delegating responsibilities. The planning process occurs before a disaster event and provides an adequate timeframe. Furthermore, funding is a major issue when creating a PDRP. The PDRP is broken down into sections and a section is completed when funding is available. Many grants are competitive and may go through a process of donating time and resources.

Why is it important?

The planning process is the brainstorming section of the PDRP.[68] This section encompasses all of the analysis and planning strategies that make up the Action Plan and lead to implementation. It also provides communities the opportunity to include the public in pre-disaster scenario activities.

What should it include?

The planning process includes a Capacity Assessment, Vulnerability Analysis, and Facilitating Inputs, such as addressing issues, developing strategies and actions, planning implementation, and pre-disaster public participation. In the Capacity Assessment, communities are looking at a review that provides a basis for assessing the community's ability to implement the PDRP and identify any potential gaps in capacity. The purpose of the Vulnerability Analysis is to provide estimates of disasters by creating scenarios of different impacts. These estimates will guide long-term redevelopment strategies. This section provides data in the form of maps and tables for easy understanding.

The Facilitating Input section is designed to address issues uncovered in the planning process. During this process, the project team and stakeholders need to create actions or tasks in order to develop the goals of the PDRP. These issues vary by community and need to be the first step for local stakeholder input. After the capacity assessment and the vulnerability assessment findings have been presented, stakeholders can start a discussion about the priorities, as well as the goals and objectives of the Action Plan.

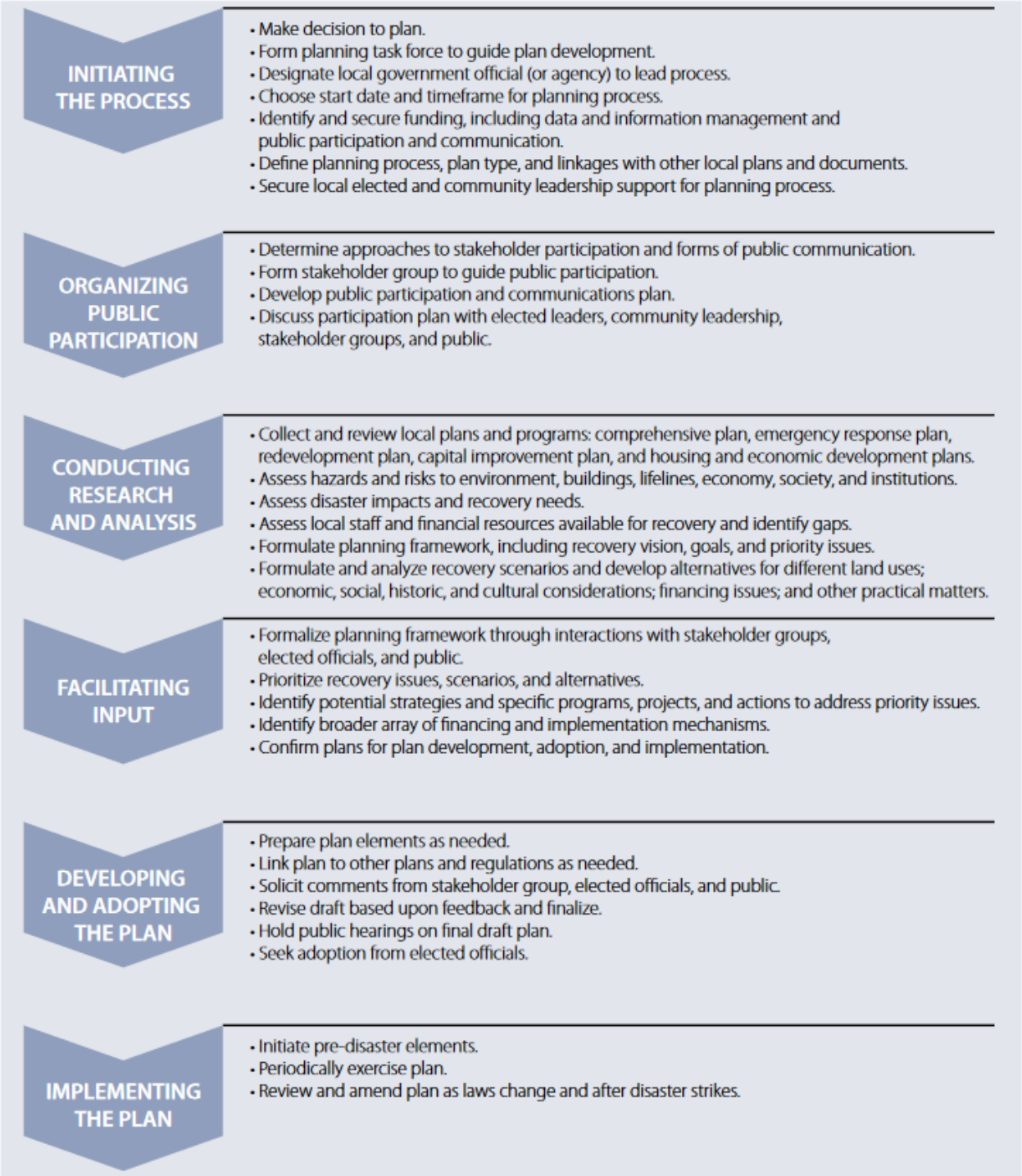
The PDRP GUIDE suggests the issues should be prioritized into: the degree to which the issue has immediate and/or public safety implications, estimated impact of the issue on ability for local disaster recovery, rough percentage of community's population that would be impacted by the issue, timing of the issue, ability of the issue to be addressed by local actions versus something that might require State or Federal policy, and public perception of the issue as an important local quality of life factor.[69]

Stakeholders need to also develop strategies and actions that address each issue. Figure 1 provides a framework on how local governments should plan for hazard issues. They must answer questions like, "What disaster does this issue address?; Are these actions pre-disaster or post-disaster?; Who would lead this responsibility?; What are the founding sources?; What will be the mechanisms for implementation?; Who is the targeted population?; Is the participation required or voluntary?"[70] Figure 2 illustrates the ideal planning process that includes information on how to initiate the process, organize public participation, conduct research analysis, facilitate input, develop and adopt the PDRP, and finally implement the PDRP.

Figure 1: Florida's Planning Framework: How Local plans address hazard issues. [71]

Purpose and Use	CEMP	LMS	Comp Plan	PDRP
Provide hazard assessment information	✓	✓	✓	
Define procedures for providing evacuation and sheltering services	✓			
Define policies for maintaining and enhancing evacuation clearance times		✓	✓	✓
Define capital expenditure priorities for enhancing evacuation and sheltering capacities		✓	✓	
Define policies and capital expenditure priorities for making the environment less hazardous		✓	✓	
Define policies for making structures more resistant to natural hazard forces		✓	✓	✓
Define capital expenditure priorities for making public facilities more resistant to natural hazard forces		✓	✓	
Define policies for managing the pre-disaster development and redevelopment of land exposed to natural hazards		✓	✓	
Define operational procedures for post-disaster recovery and redevelopment	✓			✓
Define policies for governing post-disaster recovery and redevelopment actions		✓	✓	✓

Figure 2: PDRP Planning Process Conceptual Framework[72]



Vulnerability Assessment

What is it?

The PDRP GUIDE says the vulnerability analysis doesn't have to gather large amounts of data and produces an expensive analysis. The purpose of the vulnerability analysis is to provide estimates of disasters by creating different scenarios that show impacts to long-term redevelopment in different areas. These impacts can then be anticipated and planned for in the PDRP.[73]

The hazard vulnerability assessment (HVA) is defined as a systematic approach that identifies all possible hazards that may affect a specific population, assess the risk associated with each hazard (e.g., the probability of hazard occurrence and the consequences for the population), and study the findings to develop a prioritized comparison of hazard vulnerabilities.[74]

Why is it important?

This section contains an overall assessment of every area or aspect that will be significantly impacted by a natural or manmade disaster. This is done using GIS to analyze how vulnerable each area is to such disasters, based on past trends. The vulnerability assessment is used as a guideline to create the tasks in the Action Plan.

What should it include?

Different regions and countries have different priorities for HVA content. The HVA team should first use brainstorming to determine the potential disasters that the community as a whole may encounter. Disasters can be generally classified as either natural disasters or manmade disasters.[75] The vulnerability assessment is different for every community, since some are more susceptible to disasters than others. Figure 3 is Nassau County's Hazard Vulnerability Assessment structure.

Figure 3: Nassau County HVA Section[76]

4.1 Hazard Risk Overview
- 4.1.1 Disaster History
- 4.1.2 National Flood Insurance Program (NFIP) Payments
- 4.1.3 Repetitive Flood Losses

4.2 Methodology
- 4.2.1 HAZUS-MH
- 4.2.2 GIS Parcel Analysis

4.3 Population and Demographic Vulnerability
- 4.3.1 Existing and Future Population
- 4.3.2 Social Vulnerability

4.4 GIS Vulnerability and Risk Assessment Results
- 4.4.1 Building Vulnerability
- 4.4.2 Economic Vulnerability
- 4.4.3 Vulnerability of Critical Facilities and Infrastructure
- 4.4.4 Vulnerability of Properties of Cultural Significance
- 4.4.5 Vulnerability of Environmentally Sensitive Areas
- 4.4.6 Cemeteries

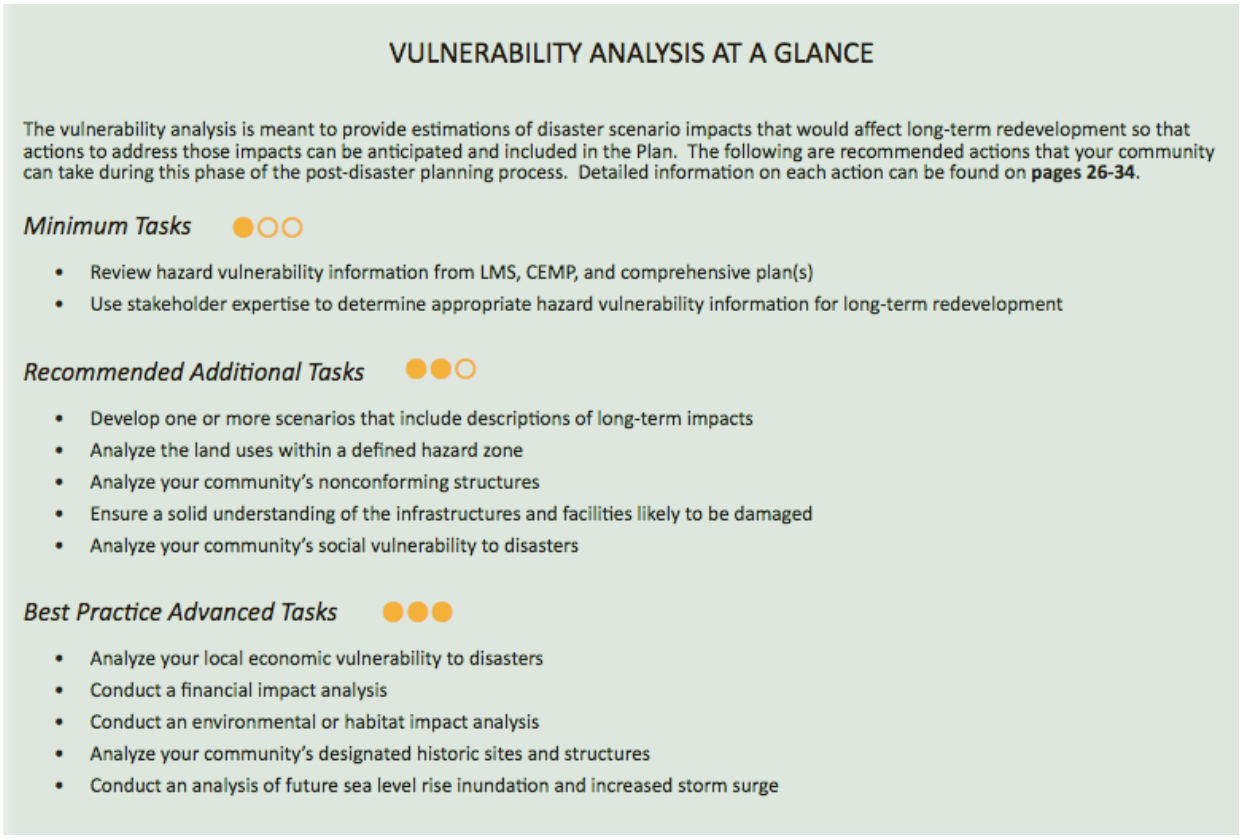
4.5 Considerations for Short Term Recovery Operation Sites
- 4.5.1 Debris Operation Sites
- 4.5.2 Temporary Housing Sites

4.6 Development Trends and Implications
- 4.6.1 Analysis of Current and Future Vulnerability Based on Land Use

4.7 Conclusions on Hazard Vulnerability

Nassau County's HVA is easy to understand and is organized into categories that encompass the main subjects found in a HVA. Figure 4 is a summary of the recommended steps a community must make in order to take action. These steps are divided into minimum, recommended, and advanced levels.

Figure 4: Vulnerability Analysis at a Glance[77]



It is important for a vulnerability assessment to include information gathered from the LMS, CEMP, and the Comprehensive Plan. The LMS identifies the hazards that the communities are most vulnerable to. Also, stakeholder expertise is a valuable source because they are the ones who create the PDRP and develop the strategies.[78]

In order to be prepared, each community should develop hazard risk scenarios that include long-term impacts. Furthermore, this is a way to educate the public and create tasks that can address these problems. A disaster scenario program, like HAZUS,[79] can help local governments better understand their risks. Beckmann and Simpson (2006), mention that: "The use of HAZUS is being encouraged by FEMA (Federal Emergency Management Agency) as jurisdictions are being forced, by regulation, to perform more sophisticated planning and risk assessment."[80] The article also defines HAZUS as a multi-hazard risk assessment tool that is available to the public sector free of charge, which runs on the ArcGIS platform.[81] Moreover, an analysis like this can help facilitate local governments and allocate funding where it is most needed.

Land use analysis can help to define potential hazard zones, as well as identify vulnerable properties that should be reinforced or removed from the hazard zone. The vulnerability assessment must also include an assessment of vulnerable infrastructures and public facilities, as well as the capacity for social recovery programs. Geospatial social vulnerability data provides stakeholders with the information needed to create an action plan that can prepare the community for long-term social recovery.[82]

Some of the most comprehensive PDRP's, include effective data about economic redevelopment initiatives, financial impact analysis, environmental or habitat impact analysis, historical preservation assessment, sea level rise inundation and increased storm surge analysis. If funding is tight, these comprehensive elements can be added one by one. As the authors of the PAS REPORT mention:

> Knowing when and how disaster will strike is still a highly uncertain science. Communities that have developed recovery plans in advance of a disaster can be well-positioned, whenever that inevitable time comes, to more quickly organize for recovery, engage knowledgeably with state and federal partners as well as citizens about the likely recovery needs and challenges, and ultimately achieve a more successful recovery for the entire community.[83]

Historic Component

What is it?

A historic structure is defined by the Florida Building Code as 1) individually listed in the National Register of Historic Places; 2) a contributing property in a listed historic district; 3) designated as a contributing historic property by a local, State, or special district; or 4) determined to be eligible for listing in the National Register.[84] The resources may be historically significant because of history, architecture, archaeology, engineering and culture.[85] Historic structures contribute to the character and heritage of a city, as well as contribute economically through tourism and local business. There are also funding opportunities, like the Bureau of Historic Preservation investing in architectural preservation, compliance review, survey and registration, master site file, Florida Folklife Program, and grant services.[86]

Why is it important?

During a storm, the most vulnerable buildings and districts tend to incur the most damage. In many cases, this is the historic resources. In many coastal communities, like St. Augustine, Savannah, and Charleston for example, there are very significant historic resources located along the riverfront that certainly add to the culture of the city. With many historic preservation programs, from the local to Federal level, a lack of communication and interaction has left these structures vulnerable, especially when a disaster strikes. "A lack of preparedness can lead to the inadvertent loss of or increased damage to historic resources."[87]

Figure 5 below, explains some of the concerns local officials should be aware of. To avoid some common mistakes, a plan for the care and restoration of historic resources should be included in the PDRP.

Figure 5: Common Historic Preservation Concerns[88]

COMMON HISTORIC PRESERVATION CONCERNS AFTER A DISASTER

- Restorable buildings are torn down.
- Irreplaceable architectural elements that could be salvaged are carted away with debris.
- Property owners make hasty decisions and inappropriate repairs.
- Archaeological resources are disturbed by heavy equipment.
- Construction applications may overburden officials, as there may be insufficient staff to carefully review all the applications.
- Inspections of historic structures may be carried out by persons without appropriate qualifications with respect to the preservation of historic resources.

Florida Division of Historical Resources, 2006, pg. 18

What should it include?

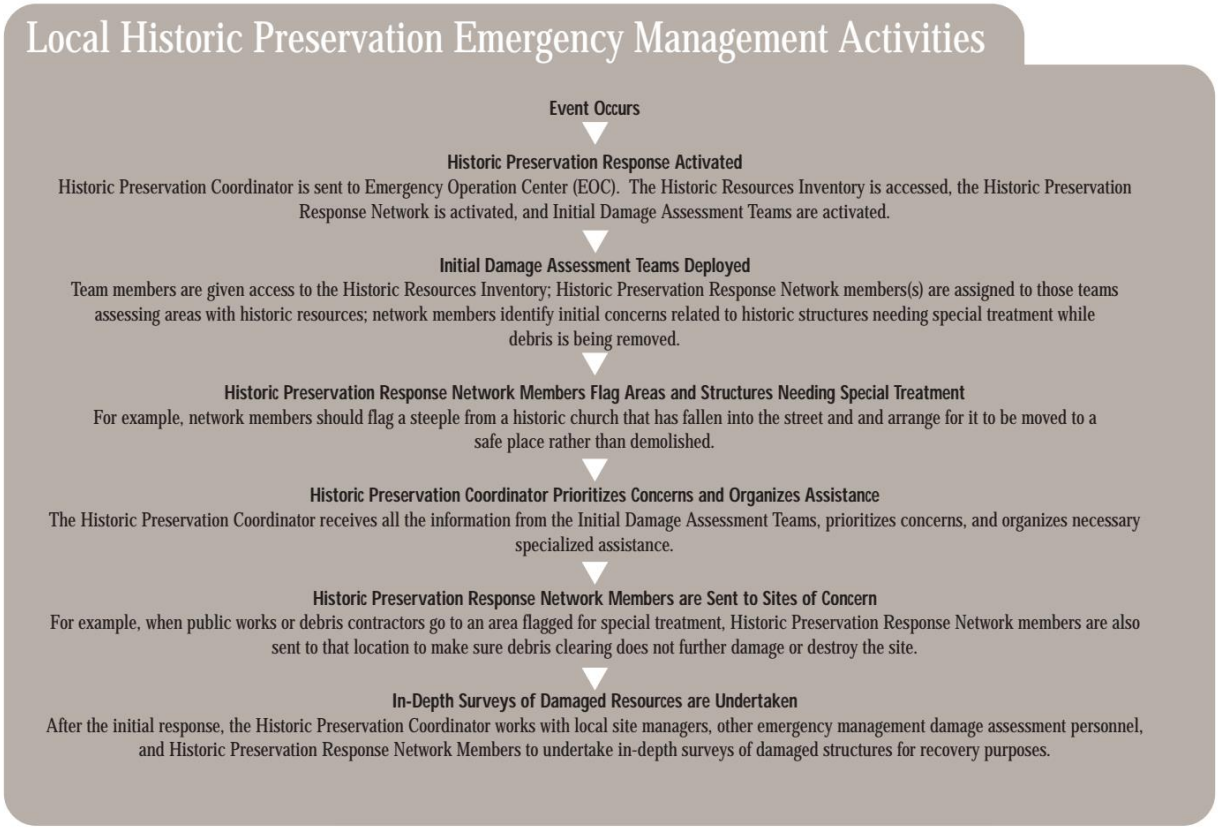
As mentioned above, the PDRP GUIDE is full of best practices for PDRPs, with each task broken down into minimum, recommended and advanced achievement levels. One of the advanced tasks of Vulnerability Analysis is to "analyze your community's designated historic sites and structure."[89]

Additionally, there should be a plan in place regarding the community's historic inventory and post-disaster procedures. 1000 FRIENDS OF FLA. (2003) includes a guide to help with the creation of such an inventory.[90] Once an inventory is in place a response network can be established. This will include key people with historic preservation knowledge and the ability to help with mitigation and post-disaster recovery.[91] Information, such as the inventory, should be stored in a database that can easily be updated, accessed, and shared. A list of teams should be identified with different tasks, like recovery assistance and damage assessment, and a process for activating the response network should be established. It would also be useful to establish a

process for volunteers, such as living arrangement and tasks they will be doing. A guide for the creation of the historic preservation response network is also available.[92] Figure 6 below provides a flow chart of response activities.

In creating a response plan/network, the recovery process of historic resources should be expedited. It could reduce the number of clean-up mistakes, like trashing key pieces of the architecture that may be mold resistance. It could increase the chance of getting timely funding for recovery efforts. This response plan/network can also be used outside of "natural disasters", like hurricanes. For example, first responders would be more knowledgeable about what to do in the case of a fire and could potentially save precious historic features.

Figure 6: Local Historic Preservation Emergency Management Activities[93]



Capacity Assessment: Institutional Capacity and Local Plan Assessment

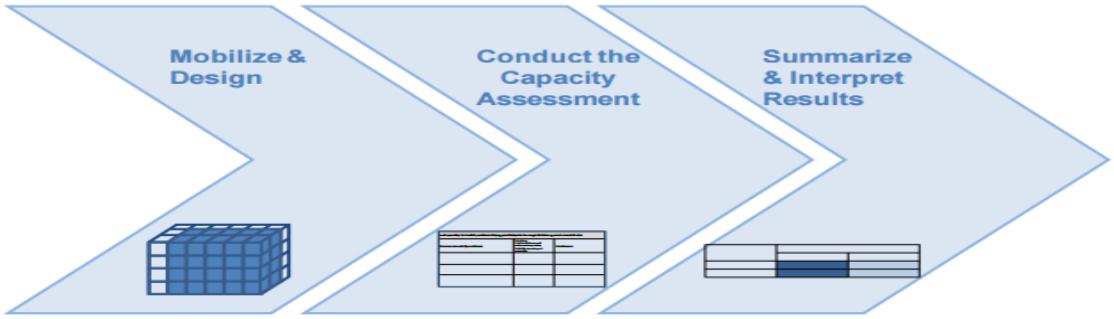
What is it?

Although sometimes broad and vague, capacity assessment of existing plans, programs, and resources has the potential to fit to any locality by allowing variables to be flexible. A general, all-encompassing definition of a capacity assessment is:

> an analysis of desired capacities against existing capacities which generates an understanding of capacity assets and needs that can serve as input for formulating a capacity development response that addresses those capacities that could be strengthened and optimizes existing capacities that are already strong and well founded.[94]

Essentially, they help to set baselines and examine to what extent the locality can respond to certain stimuli—in this instance, a "disaster." The general direction for a capacity assessment is shown below in Figure 7.

Figure 7: Process for Conducting a Capacity Assessment[95]



Why is it important?

Capacity assessments are generally based around two (2) components: (1) inventory, and (2) assessment.[96] The variables included in these two (2) components can range from physical capital to institutional frameworks, to local and regional plans and applicable ordinances and programs. The assessment section should help to not only detect gaps, but assist in moving to close those gaps.

Capacity assessments organize and showcase current initiatives and plans in line with the PDRP, and thus are a vital part of the planning component of the PDRP. Why reinvent the wheel, especially when all Florida communities have existing plans, programs, and resources that are compatible with post-disaster redevelopment. A capacity assessment helps to prevent duplication and wasted efforts, as well as helping to integrate efforts across agencies and scales.

The PASCO COUNTY POST-DISASTER REDEVELOPMENT PLAN (PDRP)[97] contains a robust example of institutional capacity assessment. It focuses on "strategies related to Land Use, Environment, Economic Redevelopment, Housing, Health and Social Services, Infrastructure and Government Functions."[98] The capacity assessment has three (3) functions to:

1. highlight "existing capability for recovering and redeveloping from a major disaster,"
2. expand on "additional capability required to meet post-disaster needs," and
3. foster "opportunities to enhance/improve what's existing to effectively deal with post-disaster needs."[99]

Figure 8, from the PASCO COUNTY PDRP, shows an example of an organizational table identifying organizations and their roles related to disaster recovery—in this example, relating back to "Environmental Capacity Assessment."[100]

Figure 8: Agencies and Organizations Related to Environment[101]

Organization/Department	Role and Expertise
Environmental Lands Acquisition and Management Program (ELAMP)	Acquire lands and conservation easements to protect natural habitats, wetland systems and natural resources, and connect natural linkages. Enhance recreational opportunities and expand environmental education.
Pasco County Parks and Recreation	Manage parks, facilities and programs, and provide recreational opportunities.
City of New Port Richey, Parks and Recreation	
City of Port Richey, Public Works/Parks	
City of Zephyrhills, Parks and Recreation	
Dade City, Recreation	
Florida Division of Forestry	Provide wildfire mitigation, conservation and forestry expertise.
Florida Fish and Wildlife Conservation Commission (FWC)	Provide environmental protection/restoration on natural habitats.
Southwest Florida Water Management District (SWFWMD)	Flood protection, water supply, water quality, water conservation, environmental protection, assess and plan for future water needs.

What should it include?

In moving away from "general" capacity assessment, it is important to frame the approach for post-disaster planning. Capacity assessments provide a basis for assessing the community's ability to implement the PDRP and identify any potential gaps in capacity. Further, the process of compiling data and capacities helps to prevent duplication in other existing plans. Components that should be in the capacity assessment include—but are not limited to—existing plans, compatible programs, and resources. All of these—plus other potential variables—are compiled and assessed for gaps, then factored into the overall capacity assessment.

Any and all compatible plans and programs should be factored into the PDRP capacity assessment. This includes local comprehensive plans, local development regulations, LMS, CEMP, long-range transportation plans, economic development strategies, debris management plans, temporary housing plans, etc. The capacity assessment should identify gaps and provide recommendations.

Resources—or assets—should also be incorporated, including financial (both local funds and potential outside funding) and human resources (e.g., staff, stakeholder volunteers, and non-governmental organizations and private-sector support). The capacity assessment should evaluate implementation and efficacy. Finally, the capacity assessment can recommend an action plan to reduce the gaps between current capacity and the ideal, envisioned capacity.

Goals and Objectives

What is it?

Every PDRP, or recovery plan, has three (3) overarching goals: 1) speeding up the recovery process and restoring essential services as quickly as possible to get back general sense of normalcy; 2) effective use of resources; and 3) to increase the opportunity for community betterment.[102] The idea of having a more resilient and sustainable community following a disaster should be in the minds of the goal/objective makers. The main objective of a PDRP "is to guide the redevelopment decision-making process following a disaster,"[103] and it should offer "milestones" to ensure progress is occurring.[104] Having well defined goals and objectives could mean the difference between creating a PDRP that is useful and creating a PDRP that is not utilized. The PDRP should help to maintain order and local control in the various stages following a disaster. The goal making process should "enhance collaboration by helping stakeholders overcome differences in mission and culture" as well as "identify obstacles and opportunities that they may encounter in reaching that future, and measure their progress in achieving recovery as they have defined it."[105]

Why is it important?

In any plan, goals and specific objectives and policies are essential to set a clear framework for implementation and action. Each goal/objective should be clear and concise, while allowing for growth and adaptability because this plan will span many years. The PDRP

should also be consistent with the other local plans and codes such as the comprehensive plan, LMS, CEMP, and the Land Development Code. This consistency is important because in a time of crisis each plan needs to be set in motion with little confusion about tasks and responsibility and conflicting ideas between plans will provide roadblocks in the process.

What should it include?

The goals and objectives of a PDRP should provide a framework for long-term redevelopment following a disaster. Short-term recovery is generally described as those "activities that have to take place following a disaster in order for citizens to return to their homes."[106] These goals and objectives will be specific to each locality but will likely cover the same general topics. Some examples include restoration of infrastructure, the economy, housing, and natural environment; establish accurate and timely information for future threats; training staff; consider building code revision when rebuilding; and restoration/maintenance of cultural resources.

Before a community can identify these goals and objectives, it must collect data and assess it collective capacity and vulnerability. This can be accomplished through stakeholder meetings and public workshops, along with expert analysis including GIS analysis, vulnerability and capacity assessments, historic property identification, etc., depending on community priorities.

Proper and consistent formatting is also important. In the PDRP, the goals and objectives should be consistent in each section and should contain the same themes and vocabulary. The only things that should differ in each section are the specificity and level of detail. For example, in the implementation section there may be a list of "action items" for each goal and objective. Consistency throughout the document, as well as throughout other plans, will reduce confusion and conflicting language.

Recovery and Redevelopment Strategy

What is it?

The Recovery and Redevelopment Strategy section is used as a blueprint for strategizing and implementing the post-disaster recovery and redevelopment. Stakeholders come in a consensus during the planning process based on the capacity assessment and vulnerability

assessment. It takes into account land use, housing, economic redevelopment, infrastructure and public facilities, health and social services, and the environment.

Why is it important?

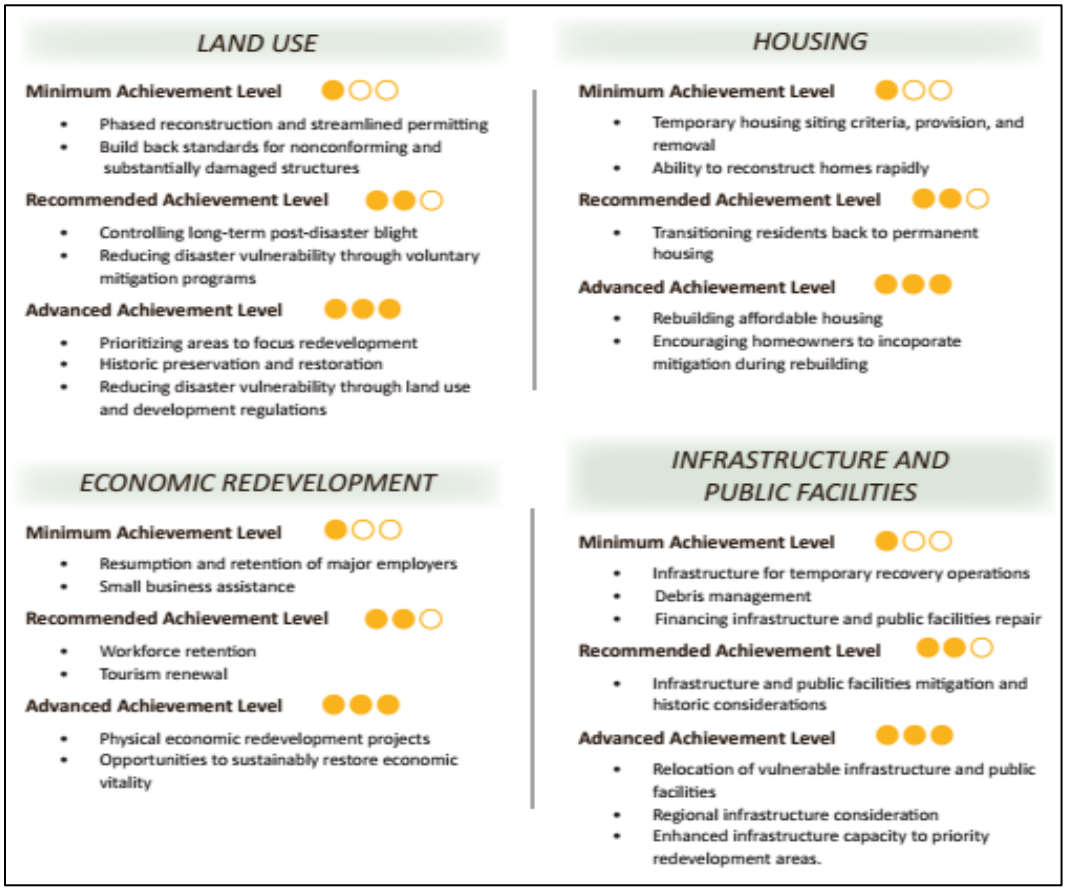
This section is highly important because it uses the data gathered from the capacity assessment and the vulnerability assessment to create goals and objectives for the development of tasks as well as mitigation strategies.

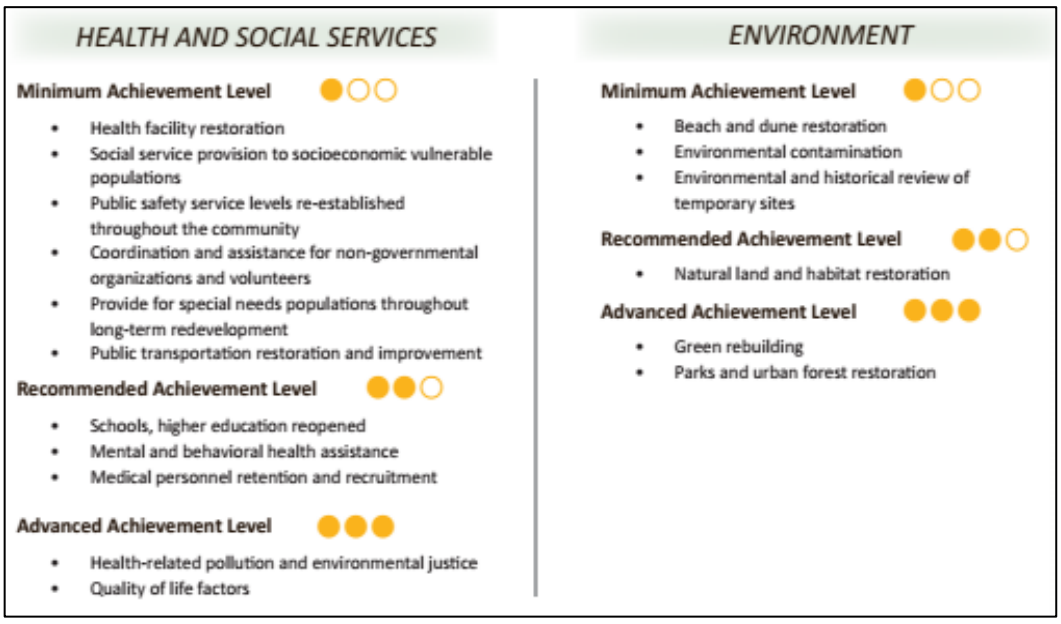
What should it include?

The recovery redevelopment strategy should include information about land use, housing, economic redevelopment, infrastructure and public facilities, health and social services, and the environment. Figure 9 below provide more detailed information. The NATIONAL DISASTER RECOVERY FRAMEWORK provides a set of criteria focused more on governance, primarily local governments, that have been shown to help ensure a successful recovery.[107]

- Effective decision making and coordination among local government leaders, stakeholders, and the community
- Integration of community recovery planning processes into the implementation efforts
- Well-managed recovery
- Proactive community engagement, public participation, and public awareness in the recovery planning and implementation efforts
- Well-administered financial acquisition of all disaster assistance programs and funds
- Organizational flexibility to adapt to post-disaster complexity and change
- Resilient rebuilding[108]

Figures 9: Recommended Considerations for the Recovery and Redevelopment Strategy[109]





Recovery and Redevelopment Action Plan

What is it?

The recovery and redevelopment action plan is a task assignment section that provides, guidelines, timeframe, agencies, collaboration, etc. for fulfillment after a disaster, based on the goals and objectives set by the stakeholders in the strategy section.

Why is it important?

This section contains the tasks required to ensure the redevelopment of the community. It lists and organizes the important agencies, time frame, and other factors based on each task. Without this section, the community does not have any guidelines to follow after a disaster.

What should it include?

The recovery and redevelopment strategy and action plan go hand in hand to assign tasks and provide a detailed overview of each one. The PDRP GUIDE divides the tasks into six key categories (Figure 9, above).[110] The land use section of the PDRP GUIDE, as minimum achievements, includes phased reconstruction and streamlined permitting, and building standard for nonconforming and substantially damaged structures. The PDRP GUIDE mentions that if the locality waits for a disaster to occur in order to make land use decisions, a community may not be able to take advantage of creating more resilient developments.[111] The PDRP must be consistent with the comprehensive plan to increase the community's resiliency to future disasters. Community must review their Comprehensive Plan, LMS, Long-Range Transportation Plan, and other local and regional plans when addressing future land use issues with respect to the PDRP.

The PDRP GUIDE recommends addressing blight.[112] After disaster strikes, communities must review the protocols for demolishing structures severely impacted, so that these unsafe structures do not remain in neighborhoods for years.[113] Reducing disaster vulnerability through a voluntary mitigation program is another PDRP GUIDE recommended task. [114] At the advanced achievement level, the PDRP GUIDE recommends prioritizing redevelopment focus areas, and assessing opportunities for historic preservation and restoration.[115] Enacting land use policies and land development regulations that can reduce disaster vulnerability is also recommended.[116]

The second category is housing. It includes tasks about temporary housing, provision, removal, and how to help reconstruct homes rapidly.[117] The recommended achievement level

only contains a task about transitioning residents back to permanent housing.[118] For the advanced achievement level, counties must have tasks that encourage homeowners to incorporate mitigation during rebuilding, as well as addressing tasks about rebuilding affordable housing.[119]

The PDRP GUIDE next addresses economic redevelopment. In his article, *Natural Disasters, Economic Development, and Humanitarian Aid*,[120] David Strömberg mentions how the economic damage from natural disasters between 1980-2004 is estimated around $1 trillion.[121] In order to address the economic development after a disaster, the PDRP GUIDE suggests retaining major employers, working hand-in-hand with local governments and industries should work for the resumption of these companies and the economy.[122] Because small businesses are often most unlucky in these situations, since being closed for short periods of time can damage both the reputation and the cash flow of the business, the PDRP GUIDE suggests that small businesses receive assistance and be informed of opportunities that can help them reopen.[123] Potential objectives to ensure businesses can adequately prepare for a disaster and enhance their ability to recover from a disaster might include: supporting and promoting business continuity and disaster preparedness planning, providing support and guidance to the business community in identifying financial assistance, and developing a strategy for resource sharing and identification of alternate locations to conduct business. Not only do business have to retain business, they must also retain the workforce the support them.

Tourism renewal is another recommended achievement task in economic development.[124] Communities need to focus on rebuilding recreational sites, conference facilities, and other tourist attractions so that they can boost local economy.[125] Some communities may even take advantage of post-disaster sites and push physical economic redevelopment projects using post-disaster funding, available lands, and/or public will.[126] The final task is how the community can use this opportunity to sustainably restore economic vitality.[127]

The fourth category is infrastructure and public facilities. Tasks in this category include: infrastructure for temporary recovery operations, like temporary housing; Debris management; financing infrastructure and public facilities repair; infrastructure and public facilities mitigation; relocation of vulnerable infrastructures and public facilities; regional infrastructure considerations; and enhanced infrastructure capacity to priority redevelopment areas.[128]

The next category is health and social services. This area is demanding and recommends tasks that address the general public's health, public safety services, schools, and quality of life

factors.[129] There are also tasks that include mental health and behavior issues, public transportation issues, and services for those who are vulnerable socioeconomic population.[130] The PDRP GUIDE notes that some communities would have to primarily focus on getting health facilities running, social services provisions to socioeconomic vulnerable populations, public safety services, reopening schools, provide for special need population, and restoration of public transportation.[131]

The final category is environment. If a local government is seeking federal reimbursement for this category, it must comply with the National Environmental Policy Act (NEPA). This section identifies how communities may need to restore damaged beaches and dunes caused by coastal flooding; clean-up of environmental contamination, such as hazardous material spills and leaks; environmental and historic review of temporary sites; natural land and habitat restoration; and parks and forest restoration.[132] An advanced practice for this section would be to do green rebuilding providing economical practices, utility, durability, and comfort.[133]

Plan Implementation and Maintenance Procedures

What is it?

"One of the purposes of the PDRP is to prepare the community for more successful disaster recovery and redevelopment than could be achieved without pre-planning."[134] There are different phases of plan implementation based on which phase of the disaster cycle the area is in. Figure 10, below, shows the Plan Implementation Cycle, including the phases: pre-disaster implementation, plan activation (immediately following a disaster), short-term transition, long-term redevelopment implementation, plan de-activation, and post-disaster plan update.[135] Ongoing pre-disaster preparation will help to build resiliency in the community and will expedite the redevelopment process.

Figure 10: PDRP Implementation Cycle



Why is it important?

Without good implementation, all of the prior data collection, community outreach, and planning efforts would essentially result in naught. A good implementation plan provides a foundation for the local government and a viable guide for post-disaster redevelopment.[136]

Overall, our understanding of the implementation phase is far less than the planning process, such as what actually gets funded, how it is executed, and what does and does not succeed.[137] This speaks to the idea that while governments can have a plan, the programs rarely work as intended. While there is still a need for more research on best practices, there are some basic steps that should be considered.[138]

What should it include?

The basic steps can be broken down into the different phases of the Plan Implementation Cycle (see Figure 10, above). In pre-disaster implementation, there are action and maintenance steps that can be taken. Some of the actions include adopting appropriate redevelopment policies and procedures, conducting studies, and training staff and stakeholders.[139] Public outreach is an integral part of this process. Having the actions in place is only the beginning; it is important to keep pressing for follow through and build community resilience. Plan maintenance is essential and should be conducted on an annual basis, with a major update every five (5) years.[140]

Figure 11: Components of the Annual and Five-year Maintenance of the PDRP

ANNUAL MONITORING

The following components should be addressed on an annual basis:

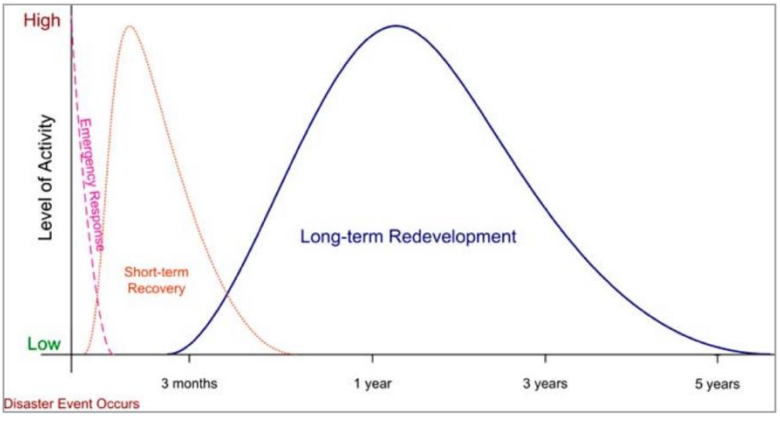
- Review stakeholder membership and update as needed.
- Document actions that have been completed and remove them from Plan action lists.
- Include new actions as recommended by the Stakeholder Group.
- Determine if priorities need readjusting and review the actions previously scheduled to be implemented over the next year. Adjust implementation timeframe of actions accordingly.
- Seek resources and funding for actions scheduled to be implemented in the next 2 years.
- PDRP Coordinator will compile a brief report of accomplishments on behalf of the Stakeholder Group for presentation to the Board of County Commissioners. Municipal PDRP liaisons may also want to present this to their city councils.

5-YEAR MAJOR PLAN UPDATE STEPS

- Research to determine if there is new guidance on Post-Disaster Redevelopment planning or new lessons learned from recent disasters in other communities that could be used to enhance the Plan.
- Update vulnerability analysis if any new data are available*.
- Update institutional capacity and plans assessments*.
- Research and update potential funding sources*.
- Review and revise issues, if necessary.
- Reprioritize issues based on current assessments.
- Update actions and add more if applicable.
- Document the planning process, including public participation*.

* Items that can be updated for use in both the PDRP and LMS.

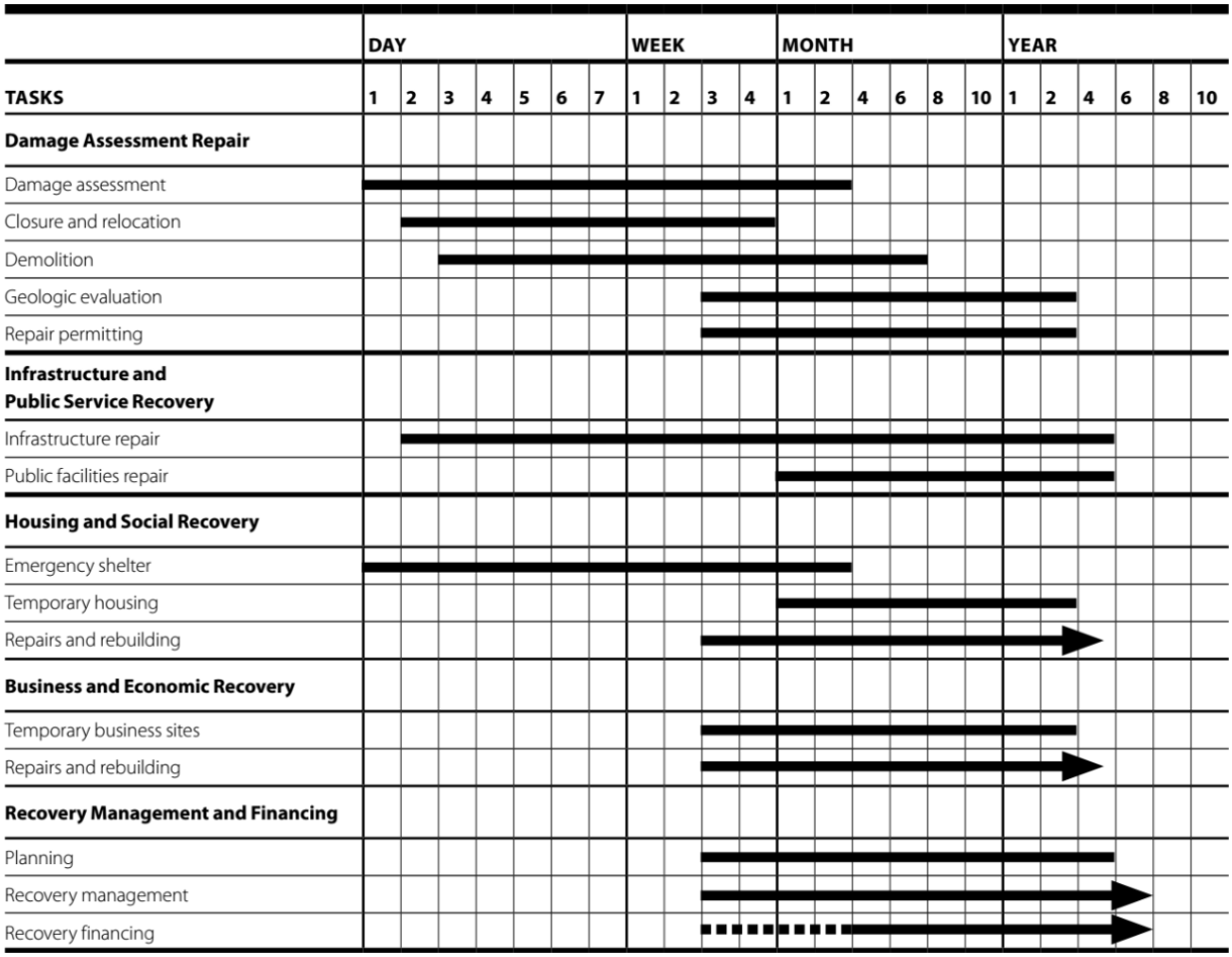
Post-disaster steps involve activation, decision-making authority, organization and roles, actions, coordination, and communication considerations.[141] The graph to the left (below) is a guide to when the different phases occur and as one can see the long-term redevelopment phase takes up the vast majority of the time.[142] Figure 12, below is a more detailed timeline of the implementation and recovery process.[143] This phase also has a long span of high to medium activity. Post-disaster activation depends on whether redevelopment is necessary and will emerge from the short-term recovery efforts.[144] Authority over decision-making should be clearly defined and will depend on jurisdiction and the phase of the disaster. Organization and roles should be similar to the stakeholder planning body formed in the planning process or should be consistent with the local government's typical department



organization.[145] While the implementation plan should do a good job of providing an overall redevelopment strategy, it will be necessary to meet following a disaster to discuss strategy specific to what disaster occurred. An overarching theme that should be realized and prioritized throughout the implementation process, and entire PRDP, is communication and coordination. Implementation requires coordination to move through the different phases, as well as complete the various actions planned.[146]

The final phases of the Plan Implementation Cycle include deactivation and updating.[147] Deactivation is basically a return to pre-disaster status. When this occurs will depend on the level of disaster. Following deactivation, there should be a process to discuss lessons learned and gaps of knowledge to provide recommendations for the updating/maintenance process.[148] An "after action" report is a great way to record what was discussed and would be a good document to inform the major update that occurs every five (5) years.[149]

Figure 12: Generalized Recovery Timeline for Local Governments.[150]



There are also logistical issues to be aware of throughout the implementation process. First of all, some decisions made in the early phase of response can undermine long-term recovery priorities and policy implementation.[151] This mainly includes building permitting for re-occupancy and rehabilitation/demolition, transportation restoration priorities, debris management, and temporary housing location.[152] Another issue is limited funding resources and out-of-sync receipt of funds. In this case, it could further exacerbate the "warping" effect of post-disaster redevelopment.[153] Warping happens when recovery processes, like construction and economic recovery, happen "unevenly and unnaturally across the community."[154] This could ultimately slow the recovery process and could lead to other social/economic issues like increased inequality. Proper care to choose a good management team with authority for the recovery effort, can lead to a positive momentum throughout the process. The three (3) most influential factors in choosing these personnel include personal leadership, the ability to act, and knowledge of disaster management and available resources.[155]

Finally, the plan should include some metrics of recovery to measure success throughout the implementation process.[156] Three (3) questions to ask to determine "how to" measure success are:

1. At what scale will the recovery success be measured—at the individual or household level; by census tract, neighborhood, or other community subset; citywide; or something broader or more regionally?
2. Over what length of time, and in what increments of time, will the recovery be measured—days months, years, or beyond?
3. Who will be the evaluator? Will the evaluator consider the perspective of the disaster-affected or recipients of assistance, the entire community, program and project staff and funding agencies, or independently?[157]

While the "how to" is fairly straightforward, the "what" is far more complicated and there are no set guidelines in the literature.[158] There are multiples areas of recovery to consider and a clear definition and description of each should be established.[159] These include environmental restoration, physical reconstruction of buildings and infrastructure, rebuilding the economy, and reestablishment of social and institutional well-being.[160] And as always, community/stakeholder input is essential, but needs to be guided and structured.[161] While there is no set list of definitions or guidelines, there are some conditions and milestones that successfully recovered communities share:

- Overcoming physical, emotional, and environmental impacts of the disaster
- Reestablishing an economic and social base that will give the community confidence that it will recover and gain back viability
- Rebuilding by integrating the needs of all residents and reducing future vulnerability
- The community has a capability to be prepared, responsive, and resilient in the face of future disasters
- Replacement of housing stock is adequate for the population of the area
- Unemployment indicators have stabilized and are comparable to pre-disaster rates
- 70% or more of businesses are open for business for at least 3 months
- The percentage of population dependent on disaster assistance or other assistance has dropped back to pre-disaster levels[162]

Communication Plan

What is it?

Public outreach and communication is one of the most pivotal components of immediate post-disaster relief. Generally, it is based on social capital and the ability to communicate messages, instructions, and guidelines in a timely and effective manner. This is increasingly important to remember in a post-disaster situation, as communication networks may be impacted or deemed unusable. "Strategic communication builds trust, consensus, and active participation, key factors for positive outcomes in development programs."[163] This is true both for short-term emergency timeframes and long-term rebuilding timeframes.

Figure 13, below, highlights both the definitions of these concepts, and two types of assessments that can be completed to gauge communication networks.

Figure 13: Communication Definitions and Assessment Types[164]

Communication	**Communication** encompasses all forms of human interactions, from the interpersonal to the mediated, and from the one-way linear flow to the two-way dialogic process.[2] For development purposes, communication components include (1) external communication, (2) media relations, (3) grassroots communication, (4) institutional coordination, (5) capacity building, (6) community development, and (7) coordination with program implementation units.
Types of communication assessments	A **Communication-Based Assessment (CBA)** is an assessment in any sector that uses a variety of communication techniques to detect political risks, contextual issues, and perceptions in that sector that are not easily recognized by a normal assessment. The World Bank emphasizes the need for a CBA at the beginning of the project cycle. Although a CBA can be performed at any stage of the project, its value is highest when conducted early. A CBA uses two-way communication techniques (dialogue, focus groups, open questions, discussion groups) and generally provides qualitative findings. It takes about two weeks to conduct. A **Communication Needs Assessment (CNA)** is carried out to analyze the communication sector and understand its capacity and common practices. It focuses only on the media environment, infrastructure, communication policies, capacities, gaps, information flow, and networks. A CNA is part of a CBA.

Why is it important?

It is important to identify and be pre-prepared to solve some of the issues that may arise in public outreach and communication networks after a disruption. From a single-tier perspective, there are three (3) general categories of communication challenges after a disaster: technological, sociological, and organizational.[165]

The greatest technological challenge after a disaster is "rapid deployment of communication systems for first responders and disaster management workers."[166] This can be overcome by installing updated and robust communication systems—perhaps using cellphones as an alternative avenue for communication (e.g., "Amber Alerts")—keeping in mind that "emergency communication tools for the general public must be affordable, available, and applicable during their day-to-day life in order to ensure that they will be used during a crisis."[167]

Sociologically, the emergence of ephemeral groups, level of trust, and emotional volatility are all challenges.[168] Vernacular and vocabulary must be consistent and understandable by all groups.[169] The PDRP GUIDE points out that certain demographics may need additional targeting; non-English speakers may need a translated version of communications, and the elderly may not utilize the same technologies (smartphones, internet) as

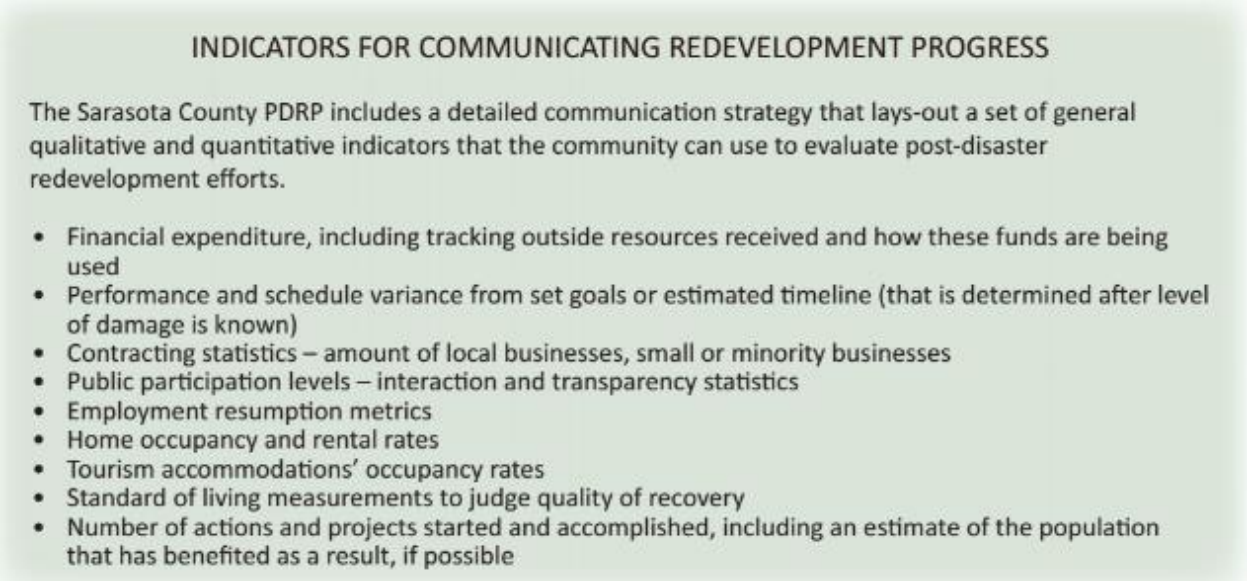
the general population.[170] These challenges can be combatted by fostering "an understanding of human activity," especially at a local level, and realizing that "communication behavior models should be incorporated into communication system designs."[171]

Organizationally, challenges are especially present in groups that are normally accustomed to hierarchy. However, collaborative technologies and applications can aid in the organizational structure.[172]

What should it include?

It is important to remember that the CEMP deals with local government, short-term responses and communications. The PDRP focus is more long-term. Therefore, it should be focused on redevelopment communications, public input, and status disseminations. For instance, build-back/repair/redevelopment requirements are often lost in the chaos of the shift from short-term recovery to long-term recovery. Figure 14 shows some progress-based communication indicators.

Figure 14: Indicators for Communicating Redevelopment Progress[173]



It is important to explicitly state which agencies are involved with making decisions related to communications, as well as the coordination between these agencies. The following figure outlines some guidelines, common procedures, and effective coordination in relation to communicating during and after a disaster.

Figure 15: Key Communication Agencies, Coordination, and Decisions[174]

Key Decisions

1. **Government** should decide on the lead agency to develop and coordinate the post-disaster communications strategy and assign staff to carry it out. Other **public agencies** and **levels of government** may also designate focal points for communications activities.
2. The **lead communications agency** should decide with the **lead disaster agency** whether there is a need for technical assistance or institutional strengthening in communications, how the communications strategy will be financed, and whether and how to mobilize additional resources.
3. The **lead communications agency** should decide with the **lead disaster agency** whether communications should be included as an element of the initial post-disaster assessment.
4. The **lead communications agency** should decide what assessments will be conducted before defining the communications strategy.
5. The **lead communications agency** should confer with **key stakeholders** and the **local private communications sector** to agree on the role of the community, local governments, nongovernmental organizations (NGOs), and the private sector in defining and carrying out the communications strategy.
6. **Agencies involved in reconstruction** and **other key stakeholders** should agree on the outcomes that are being sought from the community (disaster risk reduction [DRR], changes in construction practices, community participation, etc.) and on the messages and forms of communications that should be used.
7. The **lead communications agency** should collaborate with **agencies involved in reconstruction** and **other stakeholders** to design the monitoring and evaluation (M&E) plan for the project communications strategy and agree on feedback mechanisms to be used during reconstruction.

Financing Plan

What is it?

The finance section of a PDRP provides an overview of the financial resources and challenges that exist for the affected community—both pre-disaster and post-disaster.[175] The financing and financial resources sections of any PDRP are essential to ensure that the community can have uninterrupted service and maintain resiliency during any timeframe of the disaster. By knowing what type of funding is available from all levels of government, the affected community can prepare and recover in a more efficient and productive manner following a disaster.

The key focus of any financial section is to look at and review the financial resources to support a PDRP. Any aspect of financial management includes oversight, knowledge of available resources, and a certain level of checks and balances to ensure funds are being appropriated where they should be. Per Florida Statute 163.3178:

> The Legislature recognizes there is significant interest in the resources of the coastal zone of the state. Further, the Legislature recognizes that, in the event of a natural disaster, the

> state may provide financial assistance to local governments for the reconstruction of roads, sewer systems, and other public facilities.[176]

This empowers the state to provide financial resources to assist communities when needed.

Why is it important?

The physical consequences of a natural disaster are visually evident: flooded businesses, homes, and streets, damaged equipment and vehicles, devastated crops and landscapes. But there are less visually obvious consequences with equally serious implications for communities. The strain natural disasters place on local governments' financial capacity is one of the most serious of these impacts.[177]

Local governments may receive financial assistance from the federal and state governments and other sources after a disaster. Accounting for and managing these funds is critically important and the community should be prepared to do so in advance of an actual disaster occurrence. But beyond this additional administrative responsibility, the community may remain responsible for other costs associated with response and long-term recover. If the local government is not prepared, these costs can have lasting impacts on local financial health.[178] A local government's financial resilience is its ability to understand its potential future financial burdens and to also plan for covering these costs.[179] The planning process is the brainstorming section of the PDRP; the financial section encompasses all of the fiscal analysis and planning strategies that fund the Action Plan and lead to implementation.

What should it include?

It is evident from reviewing other PDRPs that there are some key components that must be included to ensure the community receives funding and all local, state, and federal rules are being followed, in addition to fiduciary accountability for those communities affected. Florida Statutes require the Comprehensive Plan include:

> A component which outlines principles for providing that financial assurances are made that required public facilities will be in place to meet the demand imposed by the completed development or redevelopment.[180]

This component must be detailed in how funds are to be handled. Figure 16 lists many options available to help and provide relief or assistance that can be documented in a community's PDRP.

Figure 16: A Variety of Agencies and Organizations[181]



The PDRP GUIDE:

> addresses the basics of what a PDRP is, what current requirements there are, and different forms it can take (Chapter 1); proven methods for the initial planning process (Chapter 2); suggestions for topics and issues to include in your Plan (Chapter 3); and considerations for implementation and future updates of your Plan (Chapter 4).[182]

By utilizing this information and following the best practices for financial and fiduciary management, the PDRP can accommodate the community's needs. How funds are handled within a community to address planning for pre-disaster and post-disaster is an essential element in any PDRP.

Policies and Procedures

What is it?

The policies and procedures that govern all the elements of the PDRP should be maintained on a local level to ensure proper controls, timely updates, and the ability to customize the PDRP to each community as needed. The PDRP GUIDE describes how the PDRP acts as a guide for utilizing the policies and procedures found in other documents when making post-disaster redevelopment decisions.[183]

Why is it important?

One of the benefits of a PDRP is that it enables businesses, local government officials, and residents to have the opportunity to determine long-term redevelopment goals and develop policies and procedures to guide redevelopment before well-intended outside agencies and non-government organizations rush to aid the community.[184] This is imperative as the people living and working in the community are the ones who truly know what the community needs and what will work best within their own community. By having a PDRP that details policies and procedures to deal with disasters, the members of the community can maintain consistency with the Comprehensive Plan and other regulatory documents.

What should it include?

The policies and procedures in the PDRP should include sections that show consistency with the Comprehensive Plan. "The [PDRP] provides the strategy and action plan, but other local plans must support the [PDRP] strategy through policy, regulations, procedures, and projects."[185]

For the PDRP to be most effective, seamless coordination with other plans, such as the CEMP and LMS, in addition to the Comprehensive Plan is required.

Appendix 2: National Preparedness Overview

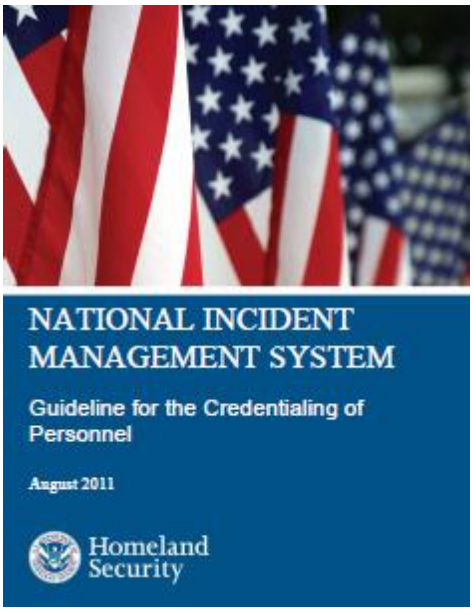
Any overview of national post-disaster redevelopment planning begins with the roles played by the Federal Emergency Management Agency (FEMA) in the Department of Homeland Security (DHS) to ensure the Nation's overarching preparedness. The following is a discussion of the NATIONAL PREPAREDNESS GOAL, and the NATIONAL PREPAREDNESS FRAMEWORKS promulgated under the NATIONAL PREPAREDNESS SYSTEM, with extensive verbatim excerpts from the numerous official documents associated with these Federal planning efforts.

The Robert T. Stafford Disaster Relief and Emergency Assistance Act (Stafford Act),[186] established the system in place today by which a presidential disaster declaration of an emergency triggers financial and physical assistance through FEMA. The Stafford Act gives FEMA the responsibility for coordinating government-wide relief efforts "to bring an orderly and systemic means of federal natural disaster assistance for state and local governments in carrying out their responsibilities to aid citizens."[187]

> Congress' intention was to encourage states and localities to develop *comprehensive* disaster preparedness plans, prepare for better intergovernmental coordination in the face of a disaster, encourage the use of insurance coverage, and provide federal assistance programs for losses due to a disaster.[188]

The Stafford Act provides for most federal disaster response activities especially as they pertain to FEMA and FEMA programs.[189] Among those programs of most concern to this Audit and disaster planning in general are the National Incident Management System, The Incident Command System, The National Preparedness Goal, and the Frameworks promulgated under the National Preparedness System.

NATIONAL INCIDENT MANAGEMENT SYSTEM

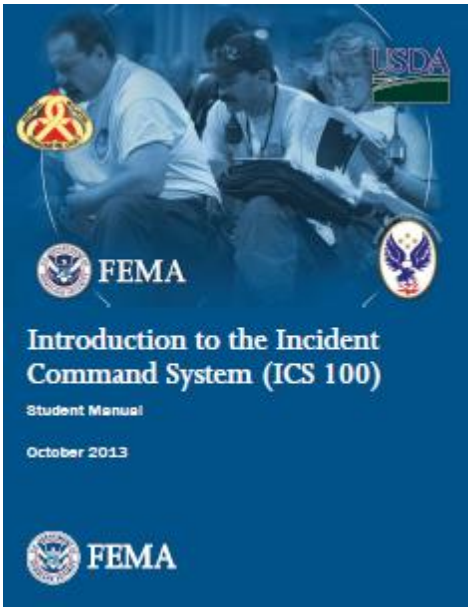


The NATIONAL INCIDENT MANAGEMENT SYSTEM (NIMS) is a comprehensive, national approach to incident management that is applicable at all jurisdictional levels and across functional disciplines.[190] NIMS is intended to:

- Apply across the full spectrum of potential hazards, impacts, and incidents, regardless of complexity, location, or magnitude.
- Improve coordination and cooperation between public and private entities in a variety of incident management activities.
- Provide a common approach for managing incidents.[191]

By using NIMS, communities are part of a comprehensive national approach that improves the effectiveness of emergency management and response personnel across the full spectrum of potential threats and hazards (including natural hazards, terrorist activities, and other human-caused disasters) regardless of size or complexity.[192]

Federal agencies and departments are required to make adoption of NIMS by local, state, territorial, and tribal nation jurisdictions a condition to receive Federal Preparedness grants and awards.[193] The NIMS IMPLEMENTATION OBJECTIVES[194] were developed to guide jurisdictions in their implementation of NIMS.[195] NIMS implementation is assessed through the direct reporting of data to FEMA utilizing the *Unified Reporting Tool*.[196]

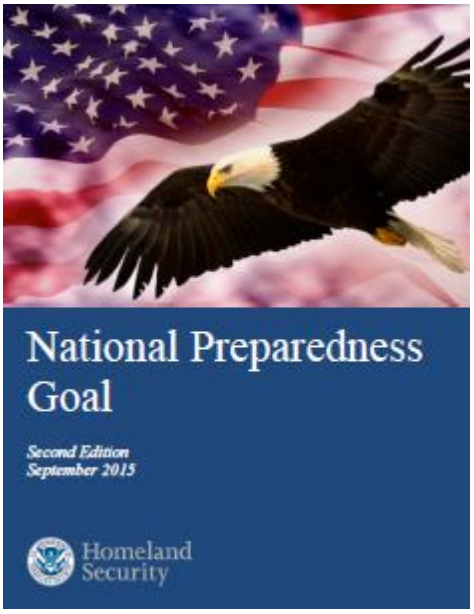


INCIDENT COMMAND SYSTEM

The INCIDENT COMMAND SYSTEM (ICS) is a fundamental element of NIMS.[197] Using ICS provides systemic standardization through consistent terminology and established organizational structures.[198] ICS enables effective and efficient domestic incident management by integrating a combination of facilities, equipment, personnel, procedures, and communications operating within a common organizational structure.[199] ICS is normally structured to facilitate activities in major functional areas: command, intelligence &

investigations, finance & administration, logistics, operations, and planning.[200] It is a fundamental form of management, with the purpose of enabling incident managers to identify the key concerns associated with the incident—often under urgent conditions—without sacrificing attention to any component of the command system.[201]

National Preparedness



"Preparedness is the shared responsibility of our entire nation."[202] The United States has made "measurable strides" toward improved preparedness for the full range of hazards across the spectrum of government and society.[203] The NATIONAL PREPAREDNESS GOAL[204] "defines what it means for the whole community to be prepared for all types of disasters and emergencies."[205]

> A secure and resilient nation with the capabilities required across the whole community to prevent, protect against, mitigate, respond to, and recover from the threats and hazards that pose the greatest risk.[206]

These risks include things like natural disasters, disease pandemics, manmade hazards, terrorist attacks and cyber-attacks.[207]

The NATIONAL PREPAREDNESS GOAL also describes 32 activities, called core capabilities that address the greatest risks to the nation.[208]

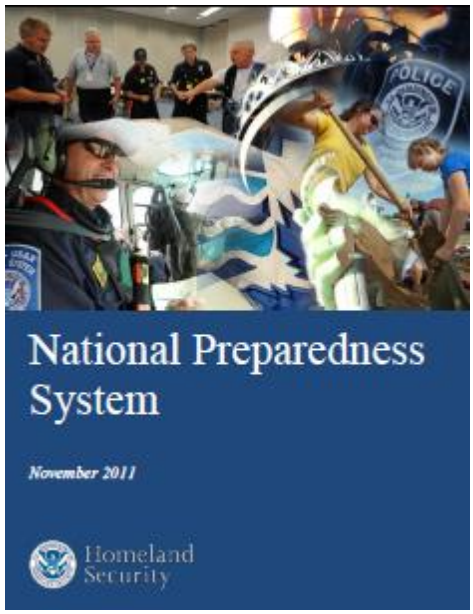
> Each of these core capabilities is tied to a capability target. These targets recognize that everyone needs the flexibility to determine how they apply their resources, based on the threats that are most relevant to them and their communities.[209]

The core capabilities are organized into the five (5) mission areas:

- **Prevention.** Prevent, avoid or stop an imminent, threatened or actual act of terrorism.
- **Protection.** Protect our citizens, residents, visitors and assets against the greatest threats and hazards in a manner that allows our interests, aspirations and way of life to thrive.
- **Mitigation.** Reduce the loss of life and property by lessening the impact of future disasters.

- **Response.** Respond quickly to save lives, protect property and the environment, and meet basic human needs in the aftermath of a catastrophic incident.
- **Recovery.** Recover through a focus on the timely restoration, strengthening and revitalization of infrastructure, housing and a sustainable economy, as well as the health, social, cultural, historic and environmental fabric of communities affected by a catastrophic incident.[210]

The NATIONAL PREPAREDNESS SYSTEM[211] outlines an organized process for everyone in the whole community to move forward with their preparedness activities and achieve the NATIONAL PREPAREDNESS GOAL.[212] It is composed of six parts:



- **Identifying and Assessing Risk.** This part involves collecting historical and recent data on existing, potential and perceived threats and hazards. The results of these risk assessments form the basis for the remaining steps.
- **Estimating Capability Requirements.** Next, you can determine the specific capabilities and activities to best address those risks. Some capabilities may already exist and some may need to be built or improved. FEMA provides a list of core capabilities related to protection, prevention, mitigation, response and recovery, the five (5) mission areas of preparedness.
- **Building and Sustaining Capabilities.** This involves figuring out the best way to use limited resources to build capabilities. You can use the risk assessment to prioritize resources to address the highest probability or highest consequence threats.
- **Planning to Deliver Capabilities.** Because preparedness efforts involve and affect the whole community, it's important that you coordinate your plans with other organizations. This includes all parts of the whole community: individuals, businesses, nonprofits, community and faith-based groups, and all levels of government.
- **Validating Capabilities.** Now it's time to see if your activities are working as intended. Participating in exercises, simulations or other activities helps you identify gaps in your plans and capabilities. It also helps you see progress toward meeting preparedness goals. Please visit the National Exercise Division for more information.
- **Reviewing and Updating.** It is important to regularly review and update all capabilities, resources and plans. Risks and resources evolve—and so should your preparedness efforts.[213]

The NATIONAL PLANNING SYSTEM[214] provides a unified approach and common terminology to support the implementation of the NATIONAL PREPAREDNESS SYSTEM through plans that support an all threats and hazards approach to preparedness.[215] The NATIONAL PLANNING SYSTEM contains two (2) key elements:

1) the Planning Architecture, which describes the strategic, operational, and tactical levels of planning and planning integration; and
2) the Planning Process, which describes the steps necessary to develop a comprehensive plan, from forming a team to implementing the plan.[216]

The NATIONAL PLANNING SYSTEM consists of three (3) levels of planning:

- **Strategic-level** plans address the execution of long-term or ongoing processes. Senior elected or appointed officials provide policies and/or directives that drive development strategies.
- **Operational-level** plans provide a description of roles and responsibilities, tasks, integration and actions required of a jurisdiction or its departments and agencies during incidents.
- **Tactical-level** plans focus on managing resources such as personnel and equipment that play a direct role in incident response.[217]

Planning is coordinated and integrated vertically—up and down levels of government and the community – and horizontally—across diverse functions, mission areas, organizations, and jurisdictions. Taken together, vertical and horizontal planning helps ensure coordination of incident management expectations across the various functions and capabilities required for all threats and hazards.[218]

Planning activities involve two (2) parts: 1) ensuring support of applicable parties, and 2) conducting a common planning process.[219]

The common planning process, as outlined in Comprehensive Preparedness Guide (CPG) 101,[220] encompasses the following steps:

1. **Form a Collaborative Planning Team.** Engaging and integrating the whole community as part of the planning team produces the most realistic and complete plans.
2. **Understand the Situation.** At its core, planning is a process to manage risk. By understanding the risk landscape, planning teams can make better decisions regarding how to manage risk and develop needed capabilities.
3. **Determine Goals and Objectives.** The necessary capabilities identified in Step 2 are used to establish priorities, goals and objectives. Priorities indicate a desired end-state. Goals are broad, general statements that specify desired results. Objectives are specific and identifiable actions carried out during the operation.

4. **Plan Development.** Develop and analyze possible solutions or courses of action for achieving the outcome of Step 3. Based on this analysis, select the preferred solution or course of action.
5. **Plan Preparation, Review, and Approval.** The courses of action developed in Step 4 become a plan. Once drafted, the organizations responsible for implementation circulate the plan for review and approval.
6. **Plan Implementation & Maintenance.** Plans should be regularly reviewed and updated due to changes in risk, statute, policy, or doctrine, as well as lessons learned from actual incidents.[221]

The NATIONAL PLANNING FRAMEWORKS,[222] one (1) for each of the NATIONAL PREPAREDNESS GOAL mission areas, describe how the whole community works together to achieve the NATIONAL PREPAREDNESS GOAL. The NATIONAL PLANNING FRAMEWORKS are part of the NATIONAL PREPAREDNESS SYSTEM. There is one Framework for each of the five (5) preparedness mission areas, as listed below:[223]

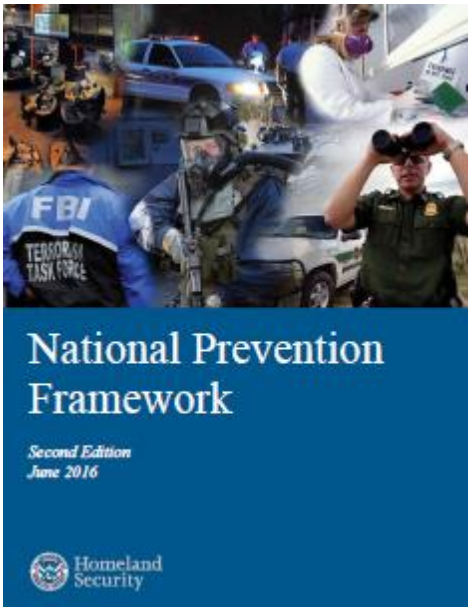
I. NATIONAL PREVENTION FRAMEWORK[224]
II. NATIONAL PROTECTION FRAMEWORK[225]
III. NATIONAL MITIGATION FRAMEWORK[226]
IV. NATIONAL RESPONSE FRAMEWORK[227]
V. NATIONAL DISASTER RECOVERY FRAMEWORK[228]

The NATIONAL PLANNING FRAMEWORKS foster a shared understanding of our roles and responsibilities from the fire house to the White House. They help us understand how we, as a nation, coordinate, share information, and work together—which ultimately results in a more secure and resilient nation.[229]

The frameworks provide guidance for better organization by:

- Describing the core capabilities needed to prevent an imminent act of terrorism
- Aligning key roles and responsibilities to deliver Prevention capabilities in time-sensitive situations
- Describing coordinating structures that enable all stakeholders to work together.
- Laying the foundation for further operational coordination and planning that will synchronize prevention efforts within the whole community and across the protection, mitigation, response, and disaster recovery mission areas.[230]

I. NATIONAL PREVENTION FRAMEWORK



The NATIONAL PREVENTION FRAMEWORK[231] describes what the whole community—from community members to senior leaders in government—should do upon the discovery of intelligence or information regarding an imminent threat to the homeland.[232]

A. Roles and Responsibilities[233]

This section provides an overview of who has a role to play in preventing terrorism. Local, state, tribal, territorial, and Federal partners have roles and responsibilities for prevention. This framework also includes an important role for community members and the private sector.[234] This list of partners should plan to work together to prepare and deliver essential core capabilities to prevent terrorist attacks on the United States. The following is a list of the roles and highlights of responsibilities provided in the NATIONAL PREVENTION FRAMEWORK:

- ***Individuals, Families, and Households*** identify and report potential terrorism-related information to law enforcements.
- ***Communities*** foster the development of organizations and organizational capacity that act toward a common goal, such as a local neighborhood watch.
- ***Nongovernmental Organizations (NGOs)*** includes non-profit entities, faith-based organizations, and academia, that support terrorism prevention activities through information sharing.
- ***Private Sector Entities*** assist in the prevention of terrorism by identifying and reporting potential terrorism-related information to law enforcement.
- ***Local Governments*** coordinate prevention resources and capabilities with neighboring jurisdictions, the state, and the private and nonprofit sector. They provide leadership for services such as law enforcement, fire, public safety, environmental response, public health, emergency management, emergency medical services, and public works for all manner of threats, hazards, and emergencies.
- ***State, Tribal, Territorial, and Insular Area Governments.*** State and territorial governments coordinate activities in support of cities, counties, and intrastate regions. State law enforcement agencies are responsible for the protection of life and property, the preservation of peace, the prevention of crime, and the arrest of violators of the law. These agencies respond to incidents, conduct criminal investigations, collect

criminal intelligence, and collaborate with other law enforcement agencies to resolve crime. They also engage in community, private industry, and interagency partnerships to identify and prevent criminal acts, including terrorism and transnational threats, and are responsible for overseeing their state's threat prevention activities. Tribal governments engage in government-to-government relationships with local, state, tribal, territorial, and Federal governments and have special status under Federal laws and treaties. Tribal governments provide essential services to members and nonmembers residing within their jurisdictional boundaries.

- ***Federal Government.*** The President leads the Federal Government in preparing the Nation for acts of terrorism. To be successful, any approach to the delivery of Prevention capabilities will require an all-of-Nation approach. All Federal departments and agencies must cooperate with one another, and with local, state, tribal, and territorial governments, community members, and the private sector, to the maximum extent possible.[235]

B. Core Capabilities[236]

The Core Capabilities are the distinct elements needed to achieve the NATIONAL PREPAREDNESS GOAL. The NATIONAL PREVENTION FRAMEWORK describes its seven (7) core capabilities and lists critical tasks for each. The capabilities, followed by a critical task example, are listed below.

- **Intelligence and Information Sharing:** Planning and Direction: Establish the intelligence and information requirements of the consumer.
- **Screening, Search and Detection:** Locate persons and networks associated with imminent terrorist threats.
- **Interdiction and Disruption:** Disrupt terrorist financing or prevent other material support from reaching its target.
- **Forensics and Attribution:** Preserve the crime scene and conduct site exploitation for intelligence collection.
- **Planning:** Initiate a time-sensitive, flexible planning process that builds on existing plans and incorporates real-time intelligence.
- **Public Information and Warning:** Refine and consider options to release pre-event information publicly, and take action accordingly.
- **Operational Coordination:** Define and communicate clear roles and responsibilities relative to courses of action.[237]

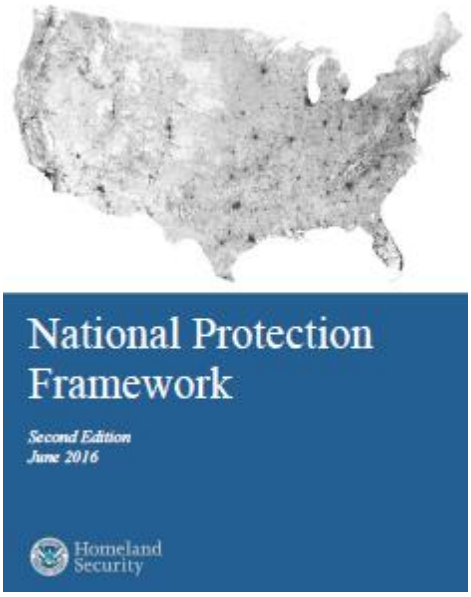
C. Coordinating Structures and Integration

A coordinating structure is composed of representatives from multiple departments or agencies and public and/or private sector organizations who are able to facilitate the preparedness and delivery of capabilities. Coordinating structures ensure ongoing communication and coordination among Federal agencies and corresponding local, state, tribal, and territorial authorities and nonprofit and private sector organizations, as applicable.

Coordinating structures bring together those entities involved in conducting activities and operations to address the requirements of the mission and serve both a readiness and an operational role. The functions and benefits provided by these coordinating structures are not necessarily limited to Prevention; many coordinating structures also support the Protection, Response, and Recovery mission areas.[238]

II. NATIONAL PROTECTION FRAMEWORK [239]

A. Roles and Responsibilities[240]



Protection takes place across a continuum of conditions. The roles and responsibilities of Protection partners reflect a decentralized model of coordination and independent action that comprises the national approach to Protection.[241]

The following is a list of the roles and responsibilities for the NATIONAL PROTECTION FRAMEWORK:

- ***Individuals, families, and households*** acquire an awareness of potential threats and hazards through sources such as news outlets, local emergency management agencies, public information and warning systems, community education campaigns, and information-sharing mechanisms.
- ***Communities*** are instrumental in the development and delivery of Protection capabilities, often leading the way in establishing protection standards of practice, mutual aid agreements, and mechanisms for information sharing. For this reason, communities play a central role in the development of Protection plans and in identifying and implementing solutions to Protection challenges. As risks transect geographical and jurisdictional boundaries, communities are essential partners for understanding how to manage complex Protection issues across multiple spheres of responsibility.
- ***Private Sector Entities*** maintain situational awareness, take actions on a continuous basis to build protection capabilities, and make investments in security and resilience as necessary components of prudent day-to-day business and continuity of operations planning. Private sector entities work together and with public sector entities through sector coordination bodies established under relevant legal authorities to share information and jointly address public risks.
- ***International Partnerships*** are essential to developing and delivering core capabilities for the Protection mission. Protection efforts with international partners require coordination with the Department of State and, as appropriate, other government entities at the local, regional/metropolitan, state, tribal, territorial, insular area, and Federal levels.

- ***Nongovernmental organizations (NGOs)*** include non-profit entities, faith-based organizations, and academia, and support protection activities through information sharing.
- ***Local Governments*** promote the coordination of ongoing protection plans and the implementation of core capabilities, as well as engagement and information sharing with private sector entities, infrastructure owners and operators, and other jurisdictions and regional entities. They provide leadership for services such as law enforcement, fire, public safety, environmental response, public health, emergency management, emergency medical services, and public works for all manner of threats, hazards, and emergencies.
- ***State, Tribal, Territorial, and Insular Area Governments*** are responsible for implementing the Protection mission, protecting public welfare, and ensuring the provision of uninterrupted essential services and information to protect public health and security to communities and infrastructure within their jurisdictions. They address trans-border issues and organizational interdependencies and establish coordination agreements. These governments serve an integral role as a conduit for coordination between Federal agencies and local governments.
- ***Federal Government.*** The President leads the Federal Government in preparing the Nation for all hazards, including natural disasters, acts of terrorism, and other emergencies. To be successful, any approach to the delivery of Protection capabilities will require an all-of-Nation approach, coordination and integration. All Federal departments and agencies must cooperate with one another, and with local, state, tribal, and territorial governments, community members, and the private sector, to the maximum extent possible.[242]

B. Core Capabilities[243]

Core capabilities are the distinct elements needed to achieve the NATIONAL PREPAREDNESS GOAL. The NATIONAL PROTECTION FRAMEWORK describes its 11 core capabilities and lists critical tasks for each. The capabilities, followed by a critical task example, are listed below.

- **Planning:** Implement security, protection, resilience, and continuity plans and programs, train and exercise, and take corrective actions.
- **Public Information and Warning:** Determine requirements for protection stakeholder information and information sharing.
- **Operational Coordination:** Determine jurisdictional priorities, objectives, strategies and resource allocations.
- **Intelligence and Information Sharing:** Adhere to appropriate mechanisms for safeguarding sensitive and classified information.
- **Interdiction and Disruption:** Prevent movement and operation of terrorists into or within the United States and its territories.

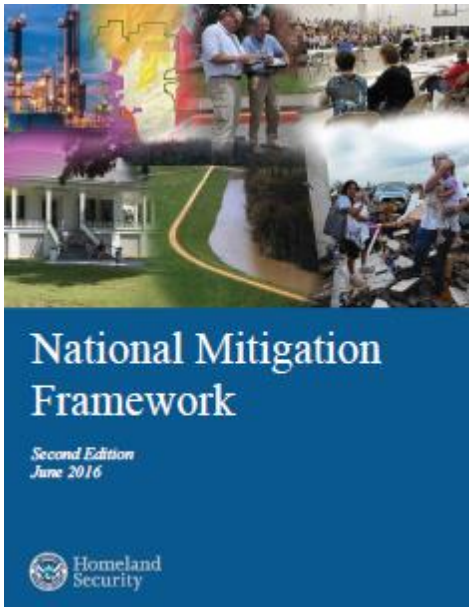
- **Screening, Search and Detection:** Develop and engage an observant nation (individuals, families, communities, and local, state, tribal and territorial government and private sector partners).
- **Access Control and Identity Verification:** Control and limit access to critical locations and systems to authorized individuals carrying out legitimate activities.
- **Cybersecurity:** Detect malicious activity and conduct technical countermeasures and mitigation activities.
- **Physical Protective Measures:** Implement security training for workers, focused on awareness and response.
- **Risk Management for Protection Programs and Activities:** Identify, implement and monitor risk management plans.
- **Supply Chain Integrity and Security:** Analyze key dependencies and interdependencies related to supply chain operations.[244]

C. Coordinating Structures and Integration[245]

The NATIONAL PROTECTION FRAMEWORK relies on a wide array of existing coordinating structures across the whole community, and identifies a unified approach that aligns various jurisdictions, mission activities, and areas of responsibility, to address complex and interdisciplinary Protection issues. Coordinating structures support steady state Protection mission activities and strengthen the Nation's ability to increase its protective posture during periods of heightened alert, periods of incident response, or in support of planned special events. These structures are used to conduct planning, implement training and exercise programs, promote information sharing, shape research and development priorities and technical requirements, address common vulnerabilities, align resources, and promote the delivery of Protection capabilities.[246]

III. NATIONAL MITIGATION FRAMEWORK [247]

A. Roles and Responsibilities[248]



Resilience depends on the whole community—individuals and communities, the private and nonprofit sectors, faith-based organizations, and all levels of government (local, regional/metropolitan, state, tribal, territorial, insular area, and Federal) [and] nongovernmental organizations. Leaders strengthen community and economic vitality while reducing the long-term vulnerabilities when they support, promote, align, and implement these policies and activities.[249]

A list of the roles and responsibilities for the NATIONAL MITIGATION FRAMEWORK:

- ***Individuals, families, and households*.** Mitigation begins with individual awareness and action. Informed decisions facilitate actions that reduce risk and enable individuals, families, and households to better withstand, absorb, or adapt to the impacts of threats and hazards and quickly recover from future incidents. Adverse incidents can compromise safety, physical and behavioral health, property, and financial well-being. Safe, secure, and prepared individuals, families, and households are often less dependent on response services that, in turn, places fewer responders in hazardous response situations.
- ***Communities*.** Communities have the ability to promote and implement mitigation activities without necessarily holding a formal position of authority within a jurisdiction. Communities advancing mitigation can include social and community service groups and institutions, neighborhood partnerships, communities representing and/or including those with disabilities and others with access and functional needs, online communities, hazard-specific coalitions, and communities of practice
- ***Nongovernmental organizations (NGOs)*.** Nongovernmental organizations and nonprofit organizations play an essential role in facilitating resilience across the whole community. They can augment government efforts and provide services to groups. Nongovernmental organizations can provide training and education to communities, including how-to guides. They can represent communities and many groups in mitigation policy discussions.
- ***Private Sector Entities*.** Private sector entities are integral parts of the community, and their perspectives are indispensable in mitigation efforts. Mitigation is a sound business practice that reduces disaster losses and quickens restoration of normal operations. Private sector investments in continuity and vulnerability reduction have broad benefits. A more resilient private sector strengthens community resilience by helping to sustain economic vitality and ensuring the delivery of goods and services in the aftermath of a disaster. Among numerous activities that promote and implement the mitigation core capabilities, businesses help protect America's infrastructure, and promote the return on investment realized from increased resilience, developed continuity of operations plans, and reduced vulnerability.
- ***Local Government*.** Working to protect the health, safety, and welfare of the people they represent, local governments also bear responsibility for mitigation activities. Across multiple levels of public service, they develop, assess, and implement mitigation core capabilities with consideration given to the economy, housing, health and social services, infrastructure, and natural and cultural resources. Local governments often join together and take a regional approach to mitigation, such as across watersheds or nuclear emergency planning zones.
- ***State, Tribal, Territorial, and Insular Area Governments*.** State, tribal, territorial, and insular area governments are responsible for the public safety, security, health, and welfare of the people who live in their jurisdictions. They implement mitigation

core capabilities through designated officials, such as State or Tribal Hazard Mitigation Officers or National Flood Insurance Program Coordinators. State, tribal, territorial, and insular area governments can promote resilience through their legislative bodies by implementing legislation that facilitates mitigation in all relevant functional components of the government, such as laws governing local land use and development decisions or building codes.

- ***Federal Government.*** The President leads the Federal Government mitigation efforts to prepare the Nation for all hazards. Supporting the whole community with Federal resources, data, information, and leadership requires an engaged and responsive Federal role in mitigation. All Federal departments and agencies must cooperate with one another and with local, state, tribal, and territorial governments, community members, and the private sector to the maximum extent possible. The Secretary of Homeland Security has the broad responsibility of coordinating preparedness activities, including mitigation activities, to respond to and recover from terrorist attacks, natural disasters, and other emergencies to ensure Federal unity of effort. FEMA plays a role in the NATIONAL MITIGATION FRAMEWORK coordinating Federal mitigation policy and the effectiveness of mitigation capabilities as they are developed and deployed across the Nation.[250]

B. Core Capabilities[251]

Core capabilities are the distinct elements needed to achieve the NATIONAL PREPAREDNESS GOAL.[252] The NATIONAL MITIGATION FRAMEWORK describes its seven (7) core capabilities and lists critical tasks for each. The capabilities, followed by a critical task example, are listed below.[253]

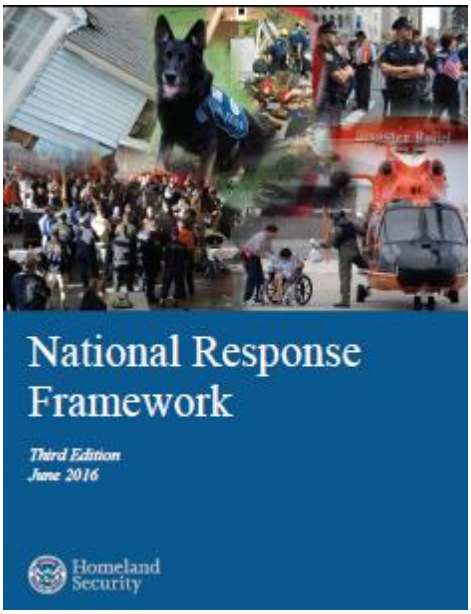
- **Threats and Hazard Identification:** Build cooperation between private and public sectors by protecting internal interests but sharing threats and hazard identification resources and benefits.
- **Risk and Disaster Resilience Assessment:** Perform credible risk assessments using scientifically valid and widely used risk assessment techniques.
- **Planning:** Incorporate the findings from assessment of risk and disaster resilience into the planning process.
- **Community Resilience:** Recognize the interdependent nature of the economy, health and social services, housing infrastructure, and natural and cultural resources within a community.
- **Public Information and Warning:** Target messages to reach organizations representing children, individuals with disabilities or access and functional needs, diverse communities and people with limited English proficiency.
- **Long-Term Vulnerability Reduction:** Adopt and enforce a suitable building code to ensure resilient construction.

- **Operational Coordination:** Capitalize on opportunities for mitigation actions following disasters and incidents.[254]

C. Coordinating Structures and Integration[255]

Federal agencies facilitate the ongoing communication and coordination of all involved parties. The preponderance of the coordinating structures originates and is sustained at a regional and local scale. The coordinating structures for mitigation should focus on creating a national culture shift that embeds risk management and mitigation in all planning, decision-making, and development. Regardless of the level of the coordinating structure, consideration of risk management and mitigation will reduce the Nation's risk and associated consequences. Coordinating structures at the national level, particularly the Federal Government, should always strive to make Federal programs most useful and reduce the time it takes to go through processes.[256]

IV. National Response Framework[257]



A. Roles and Responsibilities[258]

An effective, unified national response requires layered, mutually supporting capabilities. Individuals and communities, the private and nonprofit sectors, faith-based organizations, and all levels of government (local, state, tribal, territorial, insular area, and Federal) should each understand their respective roles and responsibilities and how to complement each other in achieving shared goals. All elements of the whole community play prominent roles in developing the core capabilities needed to respond to incidents. This includes developing plans, conducting assessments and exercises, providing and directing resources and capabilities, and gathering lessons learned. These activities require that all partners understand how they fit within and are supported by the structures described in the National Response Framework.[259]

- ***Individuals, families, and households.*** Individuals, families, and households play an important role in emergency preparedness and response. By reducing hazards in and around their homes through efforts such as raising utilities above flood level or securing unanchored objects against the threat of high winds, individuals reduce potential emergency response requirements. Individuals, families, and households should also prepare emergency supply kits and emergency plans, so they can take care of themselves and their neighbors until assistance arrives.
- ***Communities.*** Communities bring people together in different ways for different reasons, but each provides opportunities for sharing information and promoting collective action. Engaging Manatee County's communities in preparedness efforts—

particularly at the local and state levels, is important to identifying needs and taking advantage of their potential contributions.

- ***Nongovernmental Organizations (NGOs).*** NGOs play vital roles at governmental levels in delivering important services, including those associated with the response core capabilities. NGOs are inherently independent and committed to specific interests and values. These interests and values drive the groups' operational priorities and shape the resources they provide. NGOs bolster government efforts at all levels and often provide specialized services to the whole community. NGOs are key partners in preparedness activities and response operations. At the same time when NGOs support response core capabilities, they may also require government assistance. When planning for local community emergency management resources, government organizations should consider the potential need to better enable NGOs to perform their essential response functions. Some NGOs are officially designated as support elements to national response capabilities:
  - **The American Red Cross.** The American Red Cross is chartered by Congress to provide relief to survivors of disasters and help people prevent, prepare for, and respond to emergencies. Red Cross has a legal status of "a federal instrumentality" and maintains a special relationship with the Federal Government.
  - **National Voluntary Organizations Active in Disaster (National VOAD).** National VOAD is the forum where organizations share knowledge and resources throughout the disaster cycle—preparation, response, recovery, and mitigation—to help disaster survivors and their communities. National VOAD is a consortium of approximately 50 national organizations and 55 territorial and state equivalents.
  - **Volunteers and Donations.** Incident response operations frequently exceed the resources of government organizations. Volunteers and donors support response efforts in many ways, and governments at all levels must plan ahead to incorporate volunteers and donated resources into response activities. The goal of volunteer and donations management is to support jurisdictions affected by disasters through close collaboration with the voluntary organizations and agencies. The objective is to manage the influx of volunteers and donations to voluntary agencies and all levels of government before, during, and after an incident. Additional information may be found in the Volunteers and Donations Management Support Annex.[260]
  - **National Center for Missing & Exploited Children (NCMEC).** Within the NCMEC, the National Emergency Child Locator Center (NECLC) facilitates the expeditious identification and reunification of children with their families.
- ***Private Sector Entities.*** Private sector entities include large, medium, and small businesses; commerce, private cultural and educational institutions, and industry; as

well as public/private partnerships that have been established specifically for emergency management purposes. During an incident, key private sector partners should have a direct link to emergency managers and, in some cases, be involved in the decision-making process. Strong integration into response efforts can offer many benefits to both the public and private sectors.

- ***Local Government.*** The responsibility for responding to natural and manmade incidents that have recognizable geographic boundaries generally begins at the local level with individuals and public officials in the county, parish, city, or town affected by an incident. The NATIONAL RESPONSE FRAMEWORK describes specific responsibilities for the Chief (appointed or elected) Official, the Emergency Manager, and other Local Agencies and Departments.
- ***State, Tribal, Territorial, and Insular Area Governments*** - State, tribal, territorial, and insular area governments are responsible for the health and welfare of their residents, communities, lands, and cultural heritage within their jurisdictional boundaries. State and territorial governments coordinate activities in support of cities, counties, and intrastate regions. State law enforcement agencies are responsible for the protection of life and property, the preservation of peace, the prevention of crime, and the arrest of violators of the law.
- ***Federal Government.*** Regardless of the type of incident, the President leads the Federal Government response effort to ensure that the necessary resources are applied quickly and efficiently to large-scale and catastrophic incidents. Different Federal departments or agencies lead coordination of the Federal Government's response depending on the type and magnitude of the incident and are also supported by other agencies that bring their relevant capabilities to bear in responding to the incident. Examples of Federal agents and agencies include the Secretary of Homeland Security, FEMA Administrator, Attorney General, Secretary of Defense, Secretary of State, Director of National Intelligence, and other Federal department and agency heads.[261]

B. Core Capabilities[262]

Core capabilities are the distinct elements needed to achieve the NATIONAL PREPAREDNESS GOAL. The NATION RESPONSE FRAMEWORK describes its 15 core capabilities and lists critical tasks for each.[263]

- **Planning.** Develop operational plans that adequately identify critical objectives that are implementable within the time frame contemplated in the plan using available resources based on the planning requirements. Provide a complete and integrated picture of the sequence and scope of the tasks to achieve the objectives.
- **Public Information and Warning.** Deliver credible and actionable messages to inform ongoing emergency services and the public about protective measures and other life-sustaining actions and facilitate the integration of recovery activities.

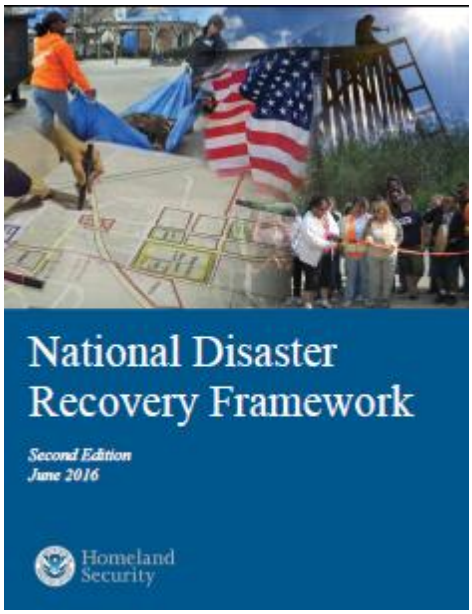
- **Operational Coordination.** Enhance and maintain command, control, and coordination structures, consistent with NIMS, to meet basic human needs, stabilize the incident, and facilitate the integration of recovery activities.
- **Critical Transportation.** Monitor and report the status of and damage to the transportation system and infrastructure.
- **Environmental Response/Health and Safety.** Minimize public exposure to environmental hazards through assessment of the hazards and implementation of public protective actions.
- **Fatality Management Services.** Establish and maintain operations to recover a significant number of fatalities over a geographically dispersed area.
- **Fire Management and Suppression.** Conduct expanded or extended attack firefighting and support operations through coordinated response of fire management and specialized fire suppression resources.
- **Infrastructure Systems.** Re-establish critical infrastructure within the affected areas to support ongoing emergency response operations, life sustainment, community functionality, and facilitate the integration of recovery activities.
- **Logistics and Supply Chain Management.** Enhance public and private resource and services support for an affected area.
- **Mass Care Services.** Move and deliver resources and capabilities to meet the needs of disaster survivors, including children and adults with disabilities and/or access and functional needs.
- **Mass Search and Rescue Operations.** Initiate community based search and rescue support operations across a wide geographically dispersed area.
- **On-Scene Security, Protection, and Law Enforcement.** Provide and maintain on scene security and meet the protection needs of the affected population over a geographically dispersed area while eliminating or mitigating the risk of further damage to persons, property, and the environment.
- **Operational Communications.** Ensure the capacity to communicate with both the emergency response community and the affected populations and establish interoperable voice and data communications between local, state, tribal, territorial, and Federal first responders.
- **Public Health, Healthcare, Emergency Medical Services.** Deliver medical countermeasures to exposed populations.
- **Situational Assessment.** Deliver enhance[d] information to reinforce ongoing lifesaving and life-sustaining activities, and engage governmental, private, and civic sector resources within and outside of the affected area to meet basic human needs, stabilize the incident, and facilitate the integration of recovery activities.[264]

C. Coordinating Structures and Integration[265]

Scalable, flexible, and adaptable coordinating structures are essential in aligning the key roles and responsibilities to deliver the Response mission area's core capabilities. The flexibility of such structures helps ensure that communities across the country can organize response efforts to address a variety of risks based on their unique needs, capabilities, demographics, governing structures, and non-traditional partners. The NATIONAL RESPONSE FRAMEWORK is not based on a one-size-fits-all organizational construct, but instead acknowledges the concept of tiered response, which emphasizes that response to incidents should be handled at the lowest jurisdictional level capable of handling the mission. These structures can be partially or fully implemented in the context of a threat, in anticipation of a significant event, or in response to an incident. Selective implementation allows for a scaled response, delivery of the exact resources that are needed, and a level of coordination appropriate to each incident.[266]

V. NATIONAL DISASTER RECOVERY FRAMEWORK[267]

A. Roles and Responsibilities[268]



Successful recovery depends on all recovery stakeholders having a clear understanding of pre- and post-disaster roles and responsibilities. In keeping with the NATIONAL DISASTER RECOVERY FRAMEWORK principles, clearly defined roles and responsibilities are a foundation for unity of effort among all recovery partners to jointly identify opportunities, foster partnerships, and optimize resources. This section reviews the recommended roles and responsibilities of local, regional/metropolitan, state, tribal, territorial, insular area, and Federal governments as well as the recommended recovery leadership positions. Additionally, this section addresses roles and responsibilities for individuals, families, and households, NGOs, and private sector entities.[269]

- ***Ensuring Inclusion of the Whole Community.*** A successful recovery effort is inclusive of the whole community. Understanding legal obligations and sharing best practices when planning and implementing recovery strategies to avoid excluding groups is critical. Actions, both intentional and unintentional, that exclude groups of people based on race, color, ethnicity, national origin (including limited English proficiency), religion, sex, sexual orientation, gender identity, age, or disability can have long-term negative consequences on entire communities and may violate law.
- ***Individuals, families, and households.*** Individual plans should include requirements to address the access and functional needs of all individuals who reside in the household, including children, pregnant women, older adults, people with disabilities,

and pet owners and their animals, including household pets and service and assistance animals that reside in the household. Those who prepare will reduce their personal stress, be able to reach out to others in need of assistance, and be better positioned to actively contribute to post-disaster recovery planning efforts.

- ***Nongovernmental organizations (NGOs).*** NGOs are voluntary, faith-based, philanthropic, or community organizations that coordinate and collaborate to help individuals and communities respond to and recover from disaster. NGO support is provided by a range of organizations from small community-based nonprofits to national organizations with extensive experience in disaster response and recovery.
- ***Private Sector Entities.*** The private sector plays a critical role in establishing public confidence immediately after an incident. When the business community is working, the area recovers more quickly by retaining and providing jobs, goods and services, and a stable tax base. A prevailing indicator of future economic recovery efforts is when local and tribal nation leadership and the business community work together during pre-disaster periods to develop recovery plans, the public is more likely to be optimistic about the community's ability to recover.
- ***Local Government.*** The local government has primacy in preparing for and managing the response and recovery of its community. Individuals, families, and businesses look to local governments to articulate their recovery needs. The local government leads pre-disaster recovery and mitigation planning efforts and has the primary role of planning and managing all aspects of a community's recovery post-disaster. These capabilities must be able to be delivered in a no-notice environment regardless of the threat or hazard. Because such incidents may affect organizations' and communities' ability to accomplish these functions, continuity planning and operations need to be an inherent component of pre-disaster planning processes to ensure the continuation of each core capability and of the coordinating structures that provide them.
- ***State, Tribal, Territorial, and Insular Area Governments.*** The state has a critical role in supporting local recovery efforts. Post-disaster recovery is a locally driven process, and the state supports communities by coordinating and/or providing any needed technical or financial support to help communities address recovery needs. Tribes, as sovereign nations, govern and manage the safety and security of their lands and community members. Many tribal boundaries cross multiple counties and states, presenting a unique challenge in planning for response and recovery efforts. The roles and responsibilities of territorial and insular area governments are similar to those of a state. Their governments are responsible for coordinating resources to address actual or potential incidents.
- ***Federal Government.*** The Federal Government uses the NATIONAL DISASTER RECOVERY FRAMEWORK and its coordinating structures to engage necessary and available department and agency capabilities to provide enhanced coordination and

support state, territorial, tribal, and local recovery efforts when necessary. Primarily, enhanced coordination of resources and support is needed when one (1) or more incidents occur that exceed the capacity of state, tribal, or territorial resources; that are exceptionally complex, involve multiple states, or impact Federal property, other areas of primary Federal jurisdiction, or national security interests. Addressing the unique recovery need of each affected community requires a national, collaborative effort of the whole community, including Federal agencies, local, regional/metropolitan, state, tribal, territorial, insular area, and Federal governments, community members, NGOs, and the private sector.[270]

B. Core Capabilities[271]

Core capabilities are the distinct elements needed to achieve the NATIONAL PREPAREDNESS GOAL. The NATIONAL DISASTER RECOVERY FRAMEWORK describes its eight (8) core capabilities and lists critical tasks for each. The capabilities, with critical task examples, are listed below.

- **Planning.** Convene the core of an inclusive whole community planning team, identified pre-disaster, that will oversee the disaster recovery planning process and activities to reduce recovery risk and increase resilience.
- **Public Information and Warning.** Manage expectations through clarity, accuracy, and transparency.
- **Operational Coordination.** Lead, coordinate, and drive the recovery process.
- **Economic Recovery.** Share, aggregate, and integrate economic impact data to assess economic issues and identify potential inhibitors to fostering stabilization of the affected communities.
- **Health and Social Services.** Identify affected populations, groups, and key partners in recovery.
- **Housing.** Assess preliminary housing impacts and pre- and post-disaster needs, identify available options for temporary housing, and support the local development of the plan for permanent housing.
- **Infrastructure Systems.** Facilitate the restoration of and sustain essential services (public and private) to maintain community functionality.
- **Natural and Cultural Resources.** Implement measures to protect and stabilize records and culturally significant documents, objects, and structures.[272]

C. Coordinating Structures and Integration[273]

Recovery leadership will need an effective coordination structure in place to assess and evaluate recovery issues, determine priorities, engage partners, and identify and coordinate key resources. Engaging all stakeholders under an appropriately scaled coordination structure will increase the capacity of any single agency to partner and facilitate recovery in support of local, regional, state, tribal, and territorial priorities. It will also

enhance access to recovery resources, including information sharing, technical assistance, subject matter expertise, and potential funding opportunities.[274]

Endnotes

[1] FLA. DEP'T OF CMTY AFFAIRS, POST-DISASTER REDEVELOPMENT PLANNING: A GUIDE FOR FLORIDA COMMUNITIES 1 (Oct. 2010), *available at* http://floridadisaster.org/Recovery/documents/Post%20Disaster%20Redevelopment%20Planning%20Guidebook%20Lo.pdf. [hereinafter PDRP GUIDE].
[2] *Id.*
[3] *Id*. at 103-04.
[4] MANATEE COUNTY EMERGENCY MANAGEMENT, COMPREHENSIVE EMERGENCY MANAGEMENT PLAN, § 1.2 at 9-10 (2013) [hereinafter CEMP].
[5] MANATEE COUNTY, POST DISASTER REDEVELOPMENT PLAN, gloss. at 2 (2009) [hereinafter PDRP].
[6] *Id*. § 4 at 4-7, -27.
[7] *Id.* § 5 at 5-3.
[8] CEMP, *supra* note 4, § 7.22.2 at 63.
[9] FEDERAL EMERGENCY MANAGEMENT AGENCY [hereinafter FEMA], *What is Mitigation?* (03/01/2017 - 12:24 PM), https://www.fema.gov/what-mitigation (last visited June 1, 2017).
[10] MANATEE COUNTY, LOCAL MITIGATION STRATEGY UPDATE, § I-B at 1 (2014) [hereinafter LMS].
[11] *Id.*, § I-C at 2.
[12] *Id.*, § I-F at 4.
[13] *Id*.
[14] *Id*. § VII-B at 1-6.
[15] PDRP, *supra* note 5, § 1, at 1-1 to -3.
[16] *Id*. at 1-1. (DCA has been reorganized as the Department of Economic Opportunity (DEO)).
[17] Local Government Comprehensive Planning and Land Development Regulation Act (codified as amended at FLA. STAT. §§ 163.3161-3217. (2010)).
[18] PDRP, *supra* note 5, § 1 at 1-2; FLA. ADMIN. CODE r. 9J-5.012(3)(b)(8) (2010).
[19] 2011 Fla. Laws ch. 2011-139 at 1, 4, 8.
[20] 2011 Fla. Laws, *supra* note 19.
[21] FLA. ADMIN. CODE r. 9J-5.012 (2010); *see id.*, r. 9-J-5.012(2), (2)(e), (3)(c)5 & 6 (2010).
[22] *Id*., r. 9J-5.012 (2010).
[23] 2011 Fla. Laws, *supra* note 19 at § 12; FLA. STAT. § 163.3177(6)(g)10 (2016).
[24] 2015 Fla. Laws ch. 2015-69 at 1-2.
[25] FLA. STAT. § 163.3178(2)(f) (2014).
[26] FLA. STAT. § 163.3178(2)(f) (2016).
[27] SCHWAB, JAMES C., ET AL., PLANNING FOR POST-DISASTER RECOVERY AND RECONSTRUCTION, Planning Advisory Services, (PAS) Report 483/484 (APA) (1998); *see also* SCHWAB, JAMES C., ED., PLANNING FOR POST-DISASTER RECOVERY: NEXT GENERATION, (PAS) Report 576 (APA) (2014).

[28] PDRP GUIDE, *supra* note 1 at 27.
[29] *Id*. at 26-27.
[30] *Sea Level Rise and Coastal Flooding Impacts Viewer*, NOAA (April 2017), available at https://coast.noaa.gov/slr/ (last visited June 1, 2017).
[31] *Id.*
[32] PDRP GUIDE, *supra* note 1 at 26-27.
[33] NOAA, *supra* n. 29.
[34] *Id*.
[35] PDRP GUIDE, *supra* note 1 at 25.
[36] PDRP GUIDE, *supra* note 1.
[37] *Id*. at 41 *passim*.
[38] *Id*. at 43; PDRP, *supra* note 5 at 6-21 to -23.
[39] PDRP, *supra* note 5, at 5-1 to -2.
[40] *Id.* at 5-2.
[41] *Id.* at 6-1.
[42] *Id*. at 5-1.
[43] *Id.*, app. B.
[44] *Id.* at B-2.
[45] *Id.* at B-5 to -15.
[46] *Id.* at B-21.
[47] 1000 FRIENDS OF FLORIDA, DISASTER PLANNING FOR FLORIDA'S HISTORIC STRUCTURES (2003).
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[49] PDRP, *supra* note 5 at 6-27 to -28. *See also* IMAGINE MANATEE, available at https://www.mymanatee.org/home/government/departments/building-and-development-services/planning-zoning/comprehensive-planning-section/imagine-manatee.html (last visited June 1, 2017).
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[51] PDRP, *supra* note 5 at 7-1.
[52] *Id.*
[53] *Id.*
[54] *Id*. at 7-3.
[55] *Id.*
[56] *Id*.
[57] PDRP, *supra* note 5 at 8-1.
[58] *See supra* notes 35-49 and accompanying text.
[59] PDRP, *supra* note 5 at 6-3.
[60] JHA, ABHAS K., ET AL., SAFER HOMES, STRONGER COMMUNITIES: A HANDBOOK FOR RECONSTRUCTING AFTER NATURAL DISASTER, World Bank (2010), available at https://openknowledge.worldbank.org/handle/10986/2409 (last visited May 28, 2017).
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[62] PDRP GUIDE, *supra* note 1 at 119.

[63] FEMA, NATIONAL PREPAREDNESS SYSTEM, https://www.fema.gov/national-preparedness-system (12/20/2016) (last visited June 1, 2017).
[64] PDRP GUIDE, *supra* note 1 at 2.
[65] *Id*.
[66] *Id*.
[67] PDRP GUIDE, *supra* note 1 at 17.
[68] *See id*. at 37
[69] *Id*. at 35.
[70] *Id*. at 37.
[71] FLA. DEP'T OF CMTY AFFAIRS, PROTECTING FLORIDA'S COMMUNITIES: LAND USE PLANNING STRATEGIES AND BEST DEVELOPMENT PRACTICES FOR MINIMIZING VULNERABILITY TO FLOODING AND COASTAL STORMS 27 tbl.2.6 (2006) *available at* http://www.floridajobs.org/fdcp/dcp/hazardmitigation/files/Protecting_FL_Comm.pdf (last visited June 1, 2017).
[72] SCHWAB, JAMES C., ED., PLANNING FOR POST-DISASTER RECOVERY: NEXT GENERATION, (PAS) Report 576 (APA) 94 fig.6.1 (2014).
[73] *See* PDRP GUIDE, *supra* note 1 at 26.
[74] YAN DU, ET AL., *The Role of Hazard Vulnerability Assessment in Disaster Preparedness and Prevention in China* (2015) *available at* https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4657270/ (last visited June 1, 2017).
[75] *Id.*
[76] NASSAU COUNTY, FLA., POST DISASTER REDEVELOPMENT PLAN 4-1 (June 2009) *available at* http://www.floridadisaster.org/Recovery/IndividualAssistance/pdredevelopmentplan/documents/Toolbox/Nassau%20County%20Post-Disaster%20Redevelopment%20Plan.pdf.
[77] PDRP GUIDE, *supra* note 1 at 27.
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[79] FEMA, https://www.fema.gov/hazus/ (March 27, 2017, 2:22 PM) (last visited June 1, 2017).
[80] HEATHER BECKMANN & DAVID M. SIMPSON, RISK ASSESSMENT AND GIS IN NATURAL HAZARDS: ISSUES IN THE APPLICATION OF HAZUS." 6 INT'L J.RISK ASSESSMENT & MGMT. 4/5/6 at 408-422 (2006) *available at* http://www.inderscience.com/info/inarticle.php?artid=9544 (last visited June 1, 2017).
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[82] PDRP GUIDE, *supra* note 1 at 30.
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[87] 1000 FRIENDS OF FLA., *supra* note 84 at 3.
[88] PDRP GUIDE, *supra* note 1 at 52.
[89] *Id*. at 27; fig. and text accompanying SCHWAB *supra* note 71.
[90] *See* 1000 FRIENDS OF FLA., *supra* note 84 at 21-26.

[91] *See id*. at 27-29.
[92] *Id*.
[93] *Id*. at 41.
[94] U.N. DEV. PROGRAMME, CAPACITY ASSESSMENT METHODOLOGY USER'S GUIDE 5 (2008).
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[96] PDRP, *supra* note 5, § 4 at 4-1.
[97] PASCO COUNTY, POST-DISASTER REDEVELOPMENT PLAN (Jan. 2016) *available at* http://www.pascocountyfl.net/DocumentCenter/View/23860 (last visited June 1, 2017).
[98] *Id*. at 97.
[99] *See id*. at 97.
[100] *See id*. at 102.
[101] *See id*. at 102-03.
[102] *See* SCHWAB, *supra* note 71 at 9.
[103] *See* PDRP GUIDE, *supra* note 1 at 10.
[104] *Id*. at 110-11
[105] SCHWAB, *supra* note 71 at 73.
[106] PDRP, *supra* note 5, § 4 at 4-6.
[107] *See* SCHWAB, *supra* note 71 at 126.
[108] *Id*.
[109] PDRP GUIDE, *supra* note 1 at 42.
[110] *Id*.
[111] *Id*. at 44.
[112] *See id*. at 48.
[113] *Id*. at 48.
[114] *Id*. at 42, 49.
[115] *Id*. at 42.
[116] *Id*.
[117] *Id*.
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[120] David Strömberg, *Natural Disasters, Economic Development, and Humanitarian Aid*, 21 J. ECON. PERSPECTIVES 3 at 199-222 (2007) *available at* http://pubs.aeaweb.org/doi/pdfplus/10.1257/jep.21.3.199 (last visited June 1, 2017).
[121] *Id*. at 199.
[122] PDRP GUIDE, *supra* note 1 at 42.
[123] *Id*. at 42, 64-65.
[124] *Id*. at 42.
[125] *See id*. at 67 (citing ANA PUSZKIN-CHEVLIN ET AL., LIVING ON THE EDGE: TREASURE COAST BARRIER ISLAND COASTAL VULNERABILITY STUDY 121 (2007)).
[126] An example of this is Greenburg, Kansas which, after a tornado struck in May 2007, redeveloped and opened a business incubator. *See* DEPT. ENERGY, *Rebuilding It Better:*

Greensburg, Kansas 6 (2010) *available at* http://www.nrel.gov/docs/fy12osti/53539.pdf (last visited June 1, 2017).
[127] PDRP GUIDE, *supra* note 1 at 42.
[128] *Id*.
[129] *Id*. at 43, 81-92.
[130] *Id*. at 43.
[131] *Id*.
[132] *Id*.
[133] *Id*. at 43, 96.
[134] *Id*. at 103.
[135] *Id*. at 102 fig.14.
[136] *Id*. at 101.
[137] SCHWAB, *supra* note 71 at 121.
[138] PDRP GUIDE, *supra* note 1 at 101.
[139] *Id*. at 103.
[140] *Id*.
[141] *Id*. at 106-113.
[142] *Id*. at 106.
[143] SCHWAB, *supra* note 71 at 149.
[144] PDRP GUIDE, *supra* note 1 at 106.
[145] *Id*. at 107.
[146] *Id*. at 113.
[147] *Id*. at 114.
[148] *Id*.
[149] *Id*.
[150] SCHWAB, *supra* note 71 at 108 fig.7.3.
[151] *Id*. at 121.
[152] *Id*.
[153] *Id*.
[154] *Id*.
[155] *Id*. at 13, 126.
[156] *Id*. at 155-57.
[157] *Id*. at 155-56.
[158] *Id*. at 156.
[159] *Id*.
[160] *Id*.
[161] *Id*.
[162] *Id*. at 156-157.
[163] JHA, *supra* note 59 at 45.
[164] *Id*. at 46.
[165] B.S Manoj & Alexandra Hubenko Baker, *Communication Challenges in Emergency Response* 51, 50 COMMUNICATIONS OF THE ACM 3 (2007).
[166] *Id*.
[167] *Id*. at 52.

[168] *Id*.
[169] *Id*.
[170] PDRP GUIDE, *supra* note 1 at 84-85 *passim*.
[171] B.S Manoj, *supra* note 164 at 52.
[172] *Id*.
[173] PDRP GUIDE, *supra* note 1 at 119.
[174] JHA, *supra* note 59 at 46.
[175] *See* PDRP, *supra* note 5, §9 at 9-1.
[176] FLA. STAT. § 163.3178(1) (2016).
[177] RURAL POLICY RESEARCH INSTITUTE, FINANCIAL PLANNING FOR NATURAL DISASTERS: A WORKBOOK FOR LOCAL GOVERNMENTS AND REGIONS 3 (2014) *available at* https://www.nado.org/wp-content/uploads/2014/01/FINAL_Workbook.pdf (last visited June 1, 2017.
[178] *Id*.
[179] *Id*.
[180] FLA. STAT. § 163.3178(2)(i) (2016).
[181] PDRP GUIDE, *supra* note 1 at 55.
[182] *Id*. at ii.
[183] *Id*. at 10.
[184] *Id*. at 5.
[185] *Id*. at 10.
[186] Stafford Act of 1988, Pub. L. No. 93-288, as amended, 42 U.S.C.§§ 5121-5207 *available at* https://www.fema.gov/media-library-data/1490360363533-a531e65a3e1e63b8b2cfb7d3da7a785c/Stafford_ActselectHSA2016.pdf.
[187] *See* FEMA, https://www.fema.gov/about-agency ("Statutory Authority" section) (May 16, 2017 1:33 PM) (last visited June 1, 2017).
[188] *Id*. (emphasis added).
[189] *See id*.
[190] *See* FEMA, NATIONAL INCIDENT MANAGEMENT SYSTEM (May 1, 2017, 7:38 AM) *available at* https://www.fema. gov/national-incident-management-system (last visited June 1, 2017) [hereinafter NIMS] (NIMS is currently under revision; the comments FEMA has received can be found here: www.fema.gov/nims-comments-received-fema).
[191] *Id.*
[192] *Id*.
[193] *Id*.
[194] *Id*., *available at* https://www.fema.gov/implementation-guidance-and-reporting (last visited June 1, 2017); *see also* https://www.fema.gov/media-library/assets/documents/130743 (last visited June 1, 2017).
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[213] *Id.*; *see also* DHS *supra* note 210 at 2-6.
[214] DHS, NATIONAL PLANNING SYSTEM (June 2016) *available at* https://www.fema.gov/media-library-data/1454504745569-c5234d4556a00eb7b86342c869531ea0/National_Planning_System_20151029.pdf (last visited June 1, 2017).
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[218] *Id.*
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[238] DHS, *supra* note 223 at 17.
[239] DHS, *supra* note 224.
[240] *Id*. at 6-10.
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[245] DHS, *supra* note 224 at 21-24.
[246] *Id*. at 21.
[247] DHS, *supra* note 225.
[248] *Id*. at 7-14.
[249] *Id*. at 7.
[250] *Id*. at 8-11.
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[266] *Id*. at 32.
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APPENDIX L

RECOMMENDED PROJECTIONS OF SEA LEVEL RISE IN THE TAMPA BAY REGION

By

TAMPA BAY CLIMATE SCIENCE ADVISORY PANEL (CSAP)



RECOMMENDED PROJECTIONS OF

Sea Level Rise
in the Tampa Bay Region

Tampa Bay Climate Science Advisory Panel

Updated April 2019

EXECUTIVE SUMMARY

In this document, the Tampa Bay Climate Science Advisory Panel (CSAP) recommends a common set of sea level rise (SLR) projections for use throughout the Tampa Bay region. The recommendation establishes the foundation for a coordinated approach to address the effects of a changing climate, which advances the objectives of the newly-established Tampa Bay Regional Resiliency Coalition. Local governments and other agencies planning for SLR in the Tampa Bay region should incorporate the following key findings of this CSAP recommendation.

- Data measured at the St. Petersburg tide gauge shows that water levels in Tampa Bay have already increased approximately 7.8 inches since 1946.
- Based upon a thorough assessment of scientific data and literature, the Tampa Bay region can expect to see an additional 2 to 8.5 feet of SLR by 2100.
- Projections of SLR should be consistent with present and future National Climate Assessment estimates and methods. The National Oceanic and Atmospheric Administration (NOAA) Low scenario should not be used for planning purposes.
- Projections of SLR should be regionally corrected using St. Petersburg tide gauge data.
- Adaptation planning should employ a scenario-based approach that, at minimum, considers location, time horizon, and risk tolerance.

INTRODUCTION

Formed in spring 2014, the CSAP is an ad hoc network of scientists and resource managers working in the Tampa Bay region (Figure 1). The group's goal is to collaboratively develop science-based recommendations for local governments and regional agencies as they respond to climate change, including associated sea level change. The CSAP first released a recommended projection of SLR in the Tampa Bay region in 2015. The original recommendation (CSAP 2015) included a set of projections that were regionally corrected to the St. Petersburg tide gauge and consistent with the 3rd National Climate Assessment (NCA3). The original guidance called for the recommendation to be revisited at a minimum of every five years, or sooner if significant new scientific information on future SLR became available.



Figure 1. *Map of the four-county region served by the CSAP.*

This document, which is an update of the 2015 report, assesses the 4th National Climate Assessment (NCA4) that was released in November 2018 and recently published literature synthesizing observed changes in sea level using satellite altimetry (Nerem et al. 2018). The update explains the technical methods used to produce SLR projections and offers the rationale for the selection of SLR projections recommended for the Tampa Bay region through 2100. With these shared projections, local governments can coordinate, develop, and implement appropriate coastal adaptation and risk reduction strategies.



Storm surge
Source: Pinellas County

The Tampa Bay region, with nearly 700 miles of shoreline and 3 million residents – most of whom live near Tampa Bay or the Gulf of Mexico – is highly vulnerable to the potential effects of SLR (BEBR 2019). Citizens, emergency managers, and regional leaders have been accustomed to thinking of hazards in terms of the episodic effects of hurricanes or coastal storms; however, it is also important for local governments and regional agencies to consider the long-term, sustained effects of SLR on real property, quality of life, and perhaps most importantly, our ability to sustain growth in the regional economy.

The Tampa Bay regional economy is closely tied to both the Gulf of Mexico and Tampa Bay. It is valued at $170 billion, with $51 billion directly influenced by the bay itself (TBEP and TBRPC 2014). A number of recent reports have identified the Tampa Bay region as one of the most vulnerable coastal metropolitan areas throughout the world due to SLR and flooding (World Bank 2013, Climate Central 2017). Regional measurements show the Tampa Bay region is already experiencing SLR (Figure 2, p. 5) and there is broad scientific consensus that this trend will continue into the next century. If adaptation strategies are not implemented, cities throughout the Tampa Bay region will likely experience the following conditions, all of which may incur substantial economic costs:

- Flooding of public infrastructure and private property;
- Shoreline and beach erosion;
- Impacts to the operation and management of coastal drainage systems;

- Threats to drinking water and wastewater treatment facilities and distribution infrastructure; and
- Shifts in wetlands and other tidal habitats, resulting in the loss of ecosystem services.



City skyline
Source: City of Tampa

The economic costs of inaction given the known threats of SLR must be carefully weighed against the costs of implementing adaptation strategies, technological solutions, and infrastructure investments necessary to protect the health, safety, and quality of life for the community. The Tampa Bay Regional Planning Council estimates that without a coordinated response, the regional economy may lose more than $15 billion in real estate value, $5 billion in property tax revenue, and approximately 17,000 jobs as a direct result of SLR (TBRPC 2017). However, local governments in the Tampa Bay region should feel confident that there are viable opportunities to implement adaptation strategies that increase resilience to SLR and other coastal hazards and protect the region from substantial economic losses. These opportunities benefit from a common set of regional SLR projections that promote coordinated planning and policy efforts; providing such a projection is the fundamental purpose of this recommendation.

TECHNICAL METHODS AND RECOMMENDATIONS

Estimates of future SLR are typically expressed by plotting or tabulating a quadratic function. This function is chosen because it is the simplest mathematical function that can effectively capture a wide range of possible SLR scenarios, from a constant rate of increase to various accelerated rates of increase. Defining a specific SLR scenario requires three numbers: a datum, the point in time the sea level is defined to be zero; a rate of change, how rapidly sea level is changing (increasing or decreasing) at time zero; and a projection, the amount global sea level is expected to change between time zero and some point in the future[1].

[1] Most often, this point in the future is the year 2100. However, this does not mean that SLR will stop in 2100, nor does it mean that we only know what the predicted sea level will be in 2100. The quadratic function can show possible sea levels at any point along the curve, between now, 2100, and beyond.

Both the datum and the rate of change are defined using present-day observations from a tide gauge proximate to the region of interest. Local sea level change rates reflect a variety of local factors, including vertical land motion (subsidence or uplift) and changes in estuarine and shelf hydrodynamics, regional oceanographic circulation patterns, and hydrologic cycles (river flow). So, while global measurements and projections are important for estimating SLR, local measurements and projections are needed for realistic regional planning efforts. For the Tampa Bay region, the CSAP recommends using data collected from the tide gauge located near downtown St. Petersburg to adjust the first two parameters necessary to predict regional SLR. The St. Petersburg tide gauge (NOAA 2019a) has the longest reliable period of record in the region and is consistent with other nearby tide gauges, including one located in the Gulf of Mexico at Clearwater (NOAA 2019b). Data measured at the St. Petersburg tide gauge shows that water levels in Tampa Bay have increased 7.8 inches (~1 inch/decade) since 1946 when water levels were first recorded at this tide gauge (Figure 2).

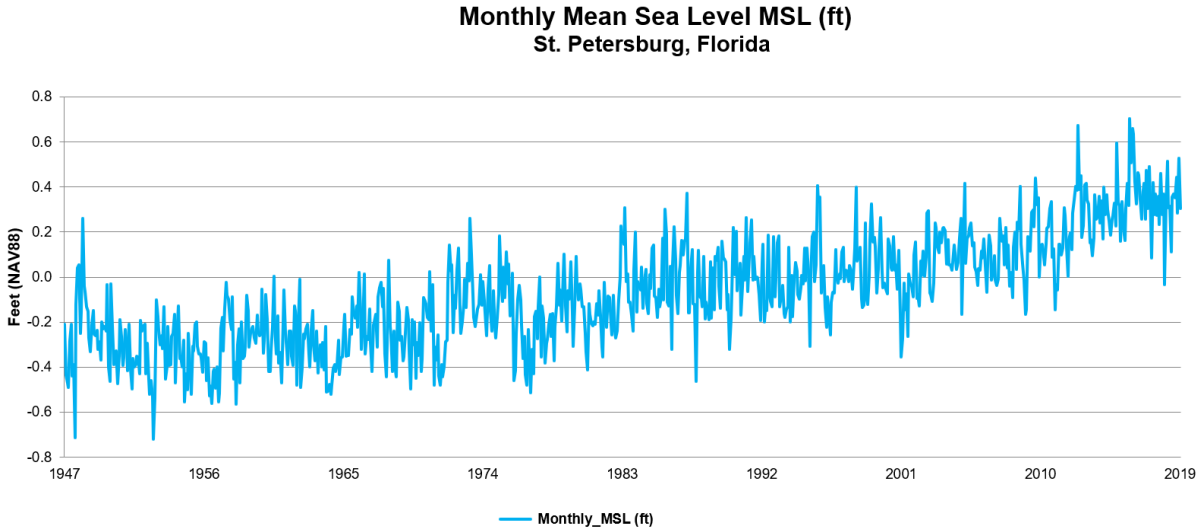

Figure 2. *1946-2018 Monthly Mean Sea Level Trend in St. Petersburg, FL, NOAA Tide Gauge #8726520*

The final parameter, projections of how much sea level will change globally over the next 100 years, is derived from expert climate scientists. Currently, there are two primary sources of information regarding SLR projections: the Intergovernmental Panel on Climate Change (IPCC), and the U.S. National Climate Assessment (NCA). Although these assessments employ different methods (IPCC relies upon numerical process models; the NCA employs a semi-empirical, probabilistic approach to estimate contributions from oceanic, cryosphere, geologic, and anthropogenic processes), both approaches result in similar estimates of SLR. This implies that the results obtained through either approach are robust and should provide practitioners with a higher degree of confidence in using the recommended projections for planning purposes.

The National Oceanic and Atmospheric Administration (NOAA) Technical Report, *Global and Regional Sea Level Rise Scenarios for the United States* (Sweet et al. 2017b), was produced as a coordinated, interagency task force to identify nationally agreed-upon estimates for global and regional SLR to inform the 4th National Climate Assessment (hereinafter the NOAA projections). Notably, the report incorporates regional factors contributing to sea level change for the entire U.S. coastline and assigns conditional probabilities to six SLR projections based on future greenhouse gas emissions and associated ocean-atmosphere warming in order to help decision-makers assess and manage risk (Sweet et al. 2017a). These scenarios, known as representative concentration pathways (RCPs), describe four different 21st-century pathways of greenhouse gas emissions and atmospheric concentrations, air pollutant emissions, and land use (IPCC AR5) which are necessary for understanding future sea level change.



Habitat migration; Cypress tree stump in a salt barren
Source: Doug Robison

The CSAP advises that local governments and regional agencies continue to use the SLR scenarios included in the NCA, adjusted to local conditions, to inform adaptation and infrastructure planning efforts in the Tampa Bay region. Although the CSAP generally recommends following the NCA, only three of the six SLR scenarios included in the NCA4 are part of this recommendation: NOAA Intermediate-Low, Intermediate, and High. Further, until the

private and public sectors make meaningful efforts to reduce greenhouse gas emissions, the CSAP advises that local governments and regional agencies assess the likelihood of the three SLR scenarios using RCP 8.5, which models climate change without additional efforts to constrain emissions (Van Vuuren et al. 2011, IPCC AR5).

Additional evidence published in 2018 was evaluated and incorporated into the updated recommendation. This recently published work, which was not available at the time the NCA4 was developed, uses satellite altimetry data to assess the rate of global sea level change (Nerem et al. 2018). Satellite radar altimeters have been measuring the open ocean surface height (sea level) since 1993 by quantifying the time it takes a radar pulse to make a round-trip from the satellite to the sea surface and back. Observed (not modeled) changes over 25 years demonstrate that the rate of SLR is increasing and that the increase is consistent with the mathematical models used to inform the IPCC and NCA. Based on these validating observations, the NOAA Low scenario (which depicts a linear rate of rise with no projected acceleration) is very unlikely and should be excluded. Therefore, the CSAP recommends that entities planning for SLR use the NOAA Intermediate-Low scenario as the lowest plausible bound for future sea level change.



Bayboro, St. Petersburg; sunny day flooding
Source: Maya Burke

Similarly, the NOAA Extreme scenario represents the maximum ice sheet melt that is physically possible. However, the probability of this occurrence is exceptionally low and not yet supported by established science. There is, however, emerging science that suggests there may be a new instability mechanism in the ice sheets that would lead to significantly higher melt rates (Alley et al. 2019). While this is not yet scientifically vetted, it does suggest that long-term sea level changes may be higher than the current best available science supports. Therefore, the CSAP recommends that entities planning for SLR use the NOAA High as the upper bound for future sea level change until additional information related to ice sheet processes is settled. The CSAP will continue to monitor this rapidly-evolving field of research.

Finally, the NOAA Intermediate scenario is recommended to fully capture the plausible range of likely SLR given the probabilistic framework laid out in the NCA4.

Future SLR estimates consistent with this recommendation that integrate data from the local St. Petersburg tide gauge, can be calculated for the Tampa Bay region using a flexible, well-supported tool developed by the U.S. Army Corps of Engineers (USACE)[2]. The tool takes the three parameters discussed above (datum, rate of change, projection) and produces the plots or tables that describe how sea level will change in the future, such as those included as Figure 3 and Table 1.

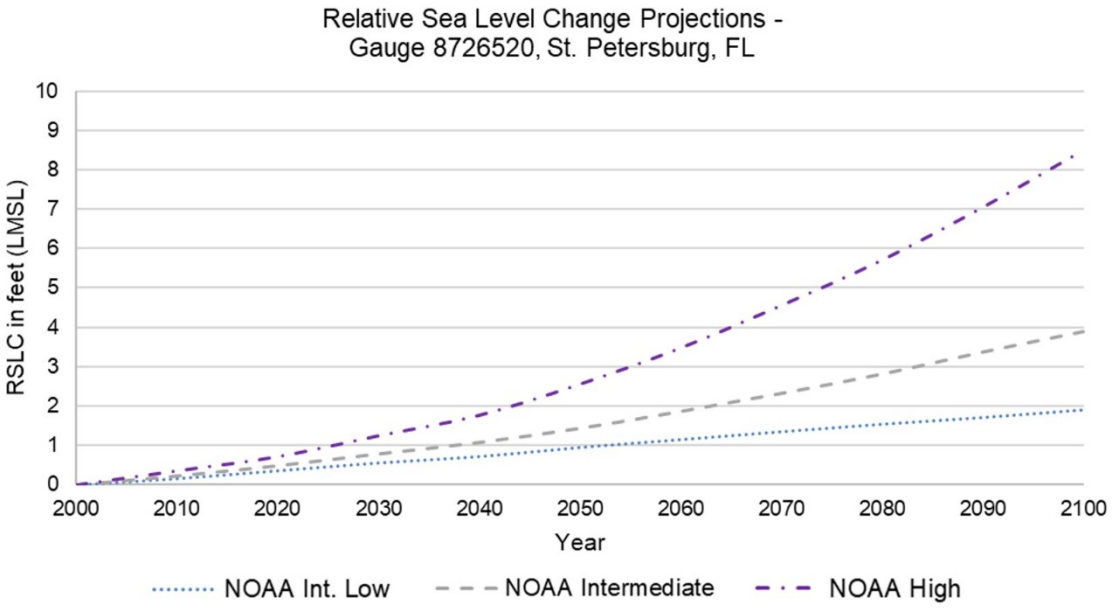

***Figure 3**. Graphic Relative Sea Level Change (RSLC) Scenarios for St. Petersburg, Florida, as calculated using the regionally corrected NOAA 2017 curves. (USACE 2019)*

The regionally adjusted NOAA SLR projections (Table 1 and Figure 3) can be summarized as follows:

[2] When using the USACE Sea Level Change Curve Calculator Tool, first select the "St. Petersburg, FL" gauge, then choose "NOAA 2017" as the output agency. Although the CSAP recommends using the USACE Sea Level Change Curve Calculator Tool, this should not be confused with a recommendation of the USACE SLR projections. Although the USACE SLR projections produce results that are similar to that of the IPCC and NCA, they are based on equations developed in 1987 for the National Research Council (NRC) report, *Responding to Changes in Sea Level; Engineering Implications* and do not represent the best available science.

- *NOAA Intermediate Low (1.9 feet by 2100)*: This scenario represents a slight increase in the rate of SLR. The low end of the *very likely* range if greenhouse gas emissions continue current trends (RCP8.5).
- *NOAA Intermediate (3.9 feet by 2100)*: This scenario represents a moderate increase in the rate of SLR. The high end of *likely* range if greenhouse gas emissions continue current trends (RCP8.5).
- *NOAA High (8.5 feet by 2100)*: This scenario represents a significant increase in the rate of SLR. The high end of the *very likely* range if greenhouse gas emissions continue current trends (RCP8.5) and when accounting for possible ice sheet instabilities.

Year	NOAA Int-Low (feet)	NOAA Intermediate (feet)	NOAA High (feet)
2000[3]	0	0	0
2030	0.56	0.79	1.25
2040	0.72	1.08	1.77
2050	0.95	1.44	2.56
2060	1.15	1.87	3.48
2070	1.35	2.33	4.56
2080	1.54	2.82	5.71
2090	1.71	3.38	7.05
2100	1.90	3.90	8.50

Table 1. *Sea Level Change Relative to the Year 2000 for St. Petersburg, FL in Feet above Local Mean Sea Level (LMSL).*

Future sea level estimates are provided in tabular form to help planners and policymakers apply the CSAP recommendations in everyday practice; however, additional clarification is necessary to ensure that the projections are used appropriately. SLR projections should only be used to determine the change in sea level between any two given time periods. For example, Table 1 shows sea level change in 2100 under the NOAA High scenario as 8.50 feet. This means that the sea level height at any location is projected to be 8.50 feet higher on average than it was at that site in the year 2000.

[3] For the purposes of projecting sea level change, the year 2000 is the starting point for the recommended SLR scenarios. Although this represents a point in time the sea level is defined to be zero, it does not mean that sea level change has not occurred prior to that time.

Similarly, consider a hypothetical situation where a government constructs an infrastructure project in 2030. The costs and risk tolerance associated with the project are moderate. Elected officials have requested that the project withstand at least 30 years of likely SLR. Staff needs to calculate how much additional elevation to incorporate into a modified project design. The appropriate calculation to determine the necessary modifications would be as follows:

1. Select an appropriate SLR projection scenario. (NOAA Intermediate)
2. Determine the sea level at time zero. (0.79 feet)
3. Determine the projected sea level at a known point in the future. (1.87 feet)
4. Calculate the difference between projected SLR at a known point in the future and SLR at time zero. (1.08 feet)

In this example, an additional 1.08 feet above the observed sea level in 2030 would be needed to make the infrastructure project more resilient to future conditions in 2060.

SUMMARY

Based upon a thorough assessment of scientific data and literature on SLR, the Tampa Bay region can expect to see approximately 1 to 2.5 feet SLR by 2050 and between 2 to 8.5 feet by 2100.



Wastewater Treatment Plant
Source: Manatee County

Given this range of uncertainty in future SLR, the CSAP recommends that local governments and other agencies consider a variety of factors, including the expected lifespan of the project, project cost, and criticality of function when developing adaptation strategies. Scenario planning offers opportunities to initiate actions now by balancing the costs of inaction against reasonable returns on investments made to reduce future impacts on the built environment (Figure 4).

For example, decision-makers may decide to plan for less SLR (using the NOAA Intermediate Low) when implementing projects with greater risk tolerance such as infrastructure projects with a relatively short life cycle or those with high adaptive capacity (e.g. a waterfront park or parking lot), while they may choose to plan for more extreme SLR (using the NOAA High) in situations where there is little tolerance for risk (e.g. new infrastructure with a long-anticipated life cycle such as a power plant) (NOAA 2012). The level of adaptation planning necessary will be up to the planning entity and based on the acceptable level of risk and vulnerability. The CSAP anticipates working with the Tampa Bay Regional Resiliency Coalition to develop detailed guidance on the appropriate application of each scenario in various risk contexts.

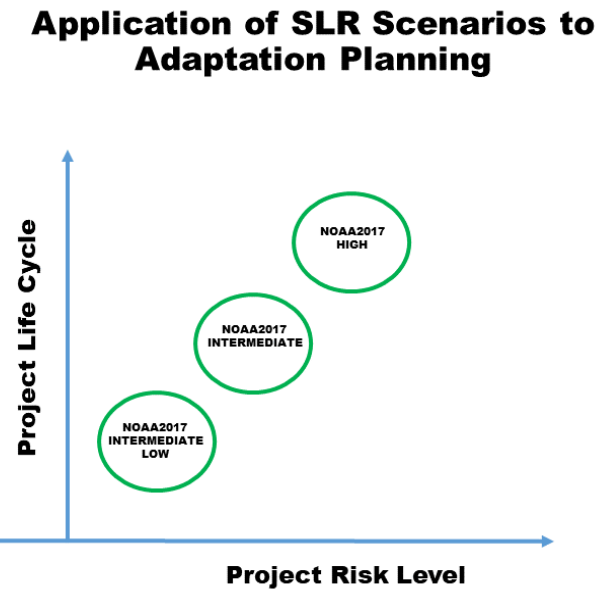

Figure 4. *Conceptual diagram demonstrating how to apply SLR scenarios to risk-based decision-making.*

Selecting a common set of SLR projections throughout the Tampa Bay region will advance the objectives of the newly-established Tampa Bay Regional Resiliency Coalition, supporting the efficient development and intergovernmental sharing of vulnerability assessment information and related policies. Furthermore, use of a regional set of projections of SLR will enable other entities to develop decision support tools, best practices, and planning documents to inform adaptation strategies for those charged with managing public infrastructure and natural resources. The CSAP recommendation is intended to further these goals, but it is important to acknowledge that scientific research advances as a continuous process. New data and technologies require refinements and reevaluation over time. In order to keep up with the best available science, the CSAP commits to revisit this recommendation in five (5) years, at a minimum, or sooner if significant new scientific information on future SLR becomes available.



Mangroves growing into road
Source: Dave Tomasko

Local governments and other agencies planning for SLR in the Tampa Bay region should incorporate three key findings of the CSAP recommendation:

- Projections of SLR should be consistent with present and future National Climate Assessment estimates and methods. The NOAA Low scenario should not be used for planning purposes.
- Projections of SLR should be regionally corrected using the St. Petersburg tide gauge data[4].
- Adaptation planning should employ a scenario-based approach that, at minimum, considers location, time horizon, and risk tolerance.

A resilient Tampa Bay region – one that acknowledges and responds to coastal vulnerabilities – is one that can support continued economic, environmental, and cultural prosperity for many years to come.



Weedon Island Preserve
Source: Pinellas County

[4] The Cedar Key tide gauge should be used for Citrus and Hernando counties, which are part of the Tampa Bay Regional Resiliency Coalition.

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LIST OF ACRONYMS

CSAP	Tampa Bay Climate Science Advisory Panel
IPCC	United Nations Intergovernmental Panel on Climate Change
LMSL	Lower Mean Sea Level (average tidal measurement)
NCA	U.S. National Climate Assessment
NCA3	3rd National Climate Assessment
NCA4	4th National Climate Assessment
NOAA	National Oceanic and Atmospheric Administration
NRC	National Research Council
RCP	Representative Concentration Pathway
RSLC	Relative Sea Level Change
SLR	Sea Level Rise
USACE	United States Army Corps of Engineers

DEFINITION OF TERMS

Datum	The base elevation used as a reference from which to reckon heights or depths; the point in time that sea level is defined to be zero.
Projection	The numerical value of sea level change between time zero and some point in the future.
Rate of Change	How rapidly sea level is changing (increasing or decreasing) at time zero.
Scenario	The quadratic function that shows possible sea levels at any point along the curve, between time zero and some point in the future.
Tool	Processes the datum, rate of change and projection to produce the plots or tables that describe how sea level will change in the future (e.g. USACE Sea Level Change Curve Calculator).

GROUP COMPOSITION

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APPENDIX M

GOVERNANCE OF THE LMS WORKING GROUP

ARTICLE I. PURPOSE OF LMS WORKING GROUP

The Manatee County Board of County Commissioners, Local Mitigation Strategy (LMS) Work Group is responsible for maintaining current the LMS in accordance with Chapter 9G-22.004 and 9G-22.005 of the Florida Administrative Code. The LMS Work Group will develop a comprehensive planning document intended to reduce or attempt to eliminate the loss of life, property and economic vitality in the event of a natural, man-made, or technological disaster; to be formally adopted by local government officials, County Commissioners, and incorporated jurisdictions within the county for eligibility to pre-disaster mitigation funding and federal disaster relief. The LMS Work Group will develop, promote, update, and maintain a comprehensive plan for hazard mitigation which will be intended to accomplish said purpose.

ARTICLE II. MEMBERSHIP

Participation in the LMS Work Group is voluntary by all entities. Membership in the LMS Work Group is open to any person except for those not associated with a formed jurisdiction or organization. Active members are those persons whom have attended at least half of the previous year's meetings. Only active members will be allowed to participate in the decision making of the LMS Work Group.

Establishment of an LMS Work Group including participants, organizational structure and eligibility are authorized by Chapter 9G-22.004 and 9G-22.005 F.A.C. These rules are authorized under Chapter 252 F.S.

The LMS Work Group encourages organizations, community stakeholders and other agencies, listed in Chapter 9G-22.004 and 9G-22.005 F.A.C. above, to demonstrate their participation by endorsing the LMS Work Group by letter and participating in Work Group meetings.

ARTICLE III. ORGANIZATIONAL STRUCTURE

A. Officers:

The organizational structure of the LMS Work Group shall consist of a Chair and Vice Chair. The Chair will be a staff member of the Manatee County Division of Emergency Management and appointed by the Manatee County Division of Emergency Management Chief with suggestion from the workgroup. The Vice Chair will be selected by the Chair, with additional officers appointed as needed. Any active member of the LMS Work Group is eligible for selection as an officer. The Chair of the LMS Work Group will declare meetings, prepare agendas, and preside at each meeting of the LMS Work Group, as well as establish permanent or temporary Committees when necessary and assign personnel to them.

The Vice Chair will fulfill the duties and responsibilities of the Chair in his or her absence. The Vice Chair will serve a term of one calendar year beginning January through December and be eligible for re-selection. Selection for officers of the subsequent term will occur during the 4th quarter meeting of each calendar year.

In the event the Chair is no longer a staff member of Manatee County Division of Emergency Management, the Vice Chair shall assume the position for the interim until said time the Chief of Emergency Management designates a new Chair.

B. Committees:

A permanent or temporary Committee and their members may be established at any time for special purposes by the LMS Work Group and the Chair. All members of the Committee (s) may vote regardless of their jurisdiction or organizational membership. Committees serve at the pleasure of the Chair and the LMS Work Group and must report on projects on a quarterly basis. If there is a lack of action from committees, the LMS Workgroup will take on such duties of each committee. All decisions/outcomes from a committee will be approved, denied, or amended by the LMS Work Group.

C. Staffing:

Manatee County Government will provide staff support to the LMS Work Group, Chair and any Committee created by the Chair. This support shall include technical and clerical support as necessary for the benefit of the LMS Work Group. Other jurisdictions and organizations may also provide such services on a voluntary basis upon request of the chair of the LMS Work Group.

ARTICLE IV. RESPONSIBILITIES

All responsibilities of the LMS Work Group shall be as specified by Chapter 9G-22.004 and 9G-22.005 F.A.C These rules are authorized under F.S. 252.

The LMS Work Group will be responsible for oversight and coordination of all actions and decisions by each Committee formed and are solely responsible for formal actions in the name of the Committee, including the release of reports, development of resolutions, issuance of position papers, and similar activities. The LMS Work Group makes assignments to the Committee, coordinates their work and takes action on their recommendations. All duties described above are within the supervision of the LMS Work Group Chair.

A. Notice Requirements:

The LMS Work Group will encourage the public to participate in the planning process. The LMS Chair will inform the public about the activities of the LMS Work Group subject to the notice requirements of Chapter 286 F.S. and the Rules of Procedures of the Board of County Commissioners. in accordance with Chapter 286 F.S. Unless otherwise required by State Law, notice shall be provided no less than ten (10) days prior to the date of the meeting.

ARTICLE V. ACTIONS BY THE LMS WORKING GROUP

A. Authority of Actions:

The LMS Work Group active members have final authority regarding decisions and or actions to the LMS.

B. Meetings, Voting and Quorum:

Meetings of the LMS Work Group including all Committee groups will be conducted in accord with Robert's Rules of Order, if and when deemed necessary by the Chair of the meeting. Regular meetings of the LMS Work Group will be scheduled quarterly unless there is a lack of action. Cancelation for lack of business will comply with public notification requirements in accordance with Article IV. Committee groups, then assigned by the LMS Work Group, will meet as necessary.

Each active member as defined in Article II, shall cast one vote for each action in the LMS Work Group Meeting, except for those votes involving mitigation initiatives project prioritization for grants. During the mitigation initiatives project prioritization voting process, each jurisdiction and/or organization shall cast one vote except for Manatee County Departments which shall be permitted to cast one vote per department. Those jurisdictions, organizations or county departments with mitigation initiative projects being prioritized shall abstain from voting on their projects. Voting must be done in person while attending an LMS Work Group meeting. Proxy voting is not allowed. However, each active member may designate an alternate who may vote in the absence of the regular active member. Such alternate members must be permanent alternates and so designated to the Chair in advance of the meeting at which they will vote. Each jurisdiction or organization must provide a list and maintain any revisions of the active and alternate members to the LMS Work Group. Active and alternative member lists must have at least the position title and name if available.

All final actions and decisions made by the LMS Work Group will be by affirmative vote of a quorum of the active members. A quorum consists of a minimum of five (5) voting members in attendance.

The Chair, or Vice Chair in his or her absence, will only cast a vote to break a tie vote.

C. Special Meetings:

Special meetings and any possible voting may be conducted under administrative emergency situations or when other extenuating circumstances judged necessary by both the Chair and Vice Chair of the LMS Work Group. If extenuating circumstances occur and it is impossible for the LMS Work Group to meet together in one location, it is acceptable to meet via conference call, the web or other methods available at that time. All special meetings shall be conducted in accordance with Chapter 125 F.S. under emergency situations including any waivers of Article IV, Notice Requirements.

D. Public Hearings:

When required by statute or the policies of Manatee County Board of County Commissioners or when deemed necessary by the LMS Work Group, a public hearing regarding actions under consideration for implementation by the LMS Work Group will be held in accord with Chapter 125 F.S. for public hearings.

E. Documentation of Actions:

All meetings minutes and other forms of action by the LMS Work Group and any Committees will be documented and made available for inspection by the public as provided by Chapter 119 F.S.

Meeting minutes will be prepared by the Vice Chair and distributed by the Chair to the attending members for approval. Meeting minutes will be approved during the following regular meeting. Upon approval by the attending active members, the Chair will ensure the meeting minutes are recorded with the Manatee County Public Records Office.

ARTICLE VI. ADOPTION OF AND AMENDMENTS TO

The Bylaws of the LMS may be adopted and/or amended by a two-thirds vote of the active members present, during a regular meeting. All proposed amendments to the Bylaws will be provided to each member of the LMS Work Group not less than thirty (30) working days prior to a vote.

ARTICLE VII. DISSOLVEMENT OF THE LMS WORKING GROUP

The LMS Work Group may be dissolved by the affirmative vote of two-thirds of the active members of the LMS Work Group and/or by instruction of the Manatee County Board of County Commissioners. When the LMS Work Group terminates activity; all remaining documents, records, equipment and supplies belonging to the LMS Work Group will be transferred for disposition to Manatee County Board of County Commissioners who is responsible for the Local Mitigation Strategy per Chapter 9G-22.004 and 9G-22.005 F.A.C. and specific authority F.S. 252**.**

CONCLUSION

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