



MANATEE COUNTY

LOCAL MITIGATION STRATEGY PLAN

2024 UPDATE



Public Safety Department
Division of Emergency Management

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CURRENT OFFICIALS
of
MANATEE COUNTY, FLORIDA

Carol Ann Felts, District 1
Amanada Ballard, District 2
Tal Siddique, District 3
Mike Rahn, District 4
Robert McCann, District 5
Jason Bearden, Chair, At Large
George W. Kruse, At Large
County Commissioners

Charlie Bishop
County Administrator

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 or dash represents a certain section of the volume. The number to the right of the colon or dash represents the number of the page in that section.

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 of 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
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 of 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

20-086	6/16/2020	Manatee County	5-year Update	05/04/2020
20-761	07/16/2020	City of Anna Maria	5-year Update	05/04/2020
20-58	07/22/2020	City of Bradenton	5-year Update	05/04/2020
2020-13	07/20/2020	City of Palmetto	5-year Update	05/04/2020
20-930	06/18/2020	City of Bradenton Beach	5-year Update	05/04/2020
20-15	8/18/2020	City of Holmes Beach	5-year Update	05/04/2020
2020-20	6/30/2020	Town of Longboat Key	5-year Update	05/04/2020

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	LMS Work Group List updated - updated Initiatives Priority List – updated maps – updated RLP list
January 2024	LMS Work Group List updated - updated Initiatives Priority List – updated maps – updated RLP list
January 2023	LMS Work Group List updated - updated Initiatives Priority List
January 2022	LMS Work Group List updated - updated, Initiatives Priority List – updated data to reflect 2021 census numbers for County Profile
January 2021	LMS Work Group List updated - updated Initiatives Priority List – updated maps – updated RLP list – updated Hazard Analysis
January 2020	LMS Work Group List updated - updated Initiatives Priority List
January 2019	LMS Work Group List updated - updated Initiatives Priority List – updated RLP List – updated 20 maps – updated 2 maps
January 2018	LMS Work Group List updated- 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 - updated Initiatives Priority List – updated
January 2016	LMS Work Group List updated - 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 - 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 <i>The Planning Process</i> 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 <i>Mitigation Strategy</i> 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 <i>Risk Assessment</i> included. (Information formerly contained in Section V and Appendix D in 2014 Plan)
Section V	Minimal updates to adequately address <i>Plan Evaluation and Maintenance</i> 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.

2024 Update

Section/ Appendix	Summary of revision to the Plan
Preface	Updated Current Officials. Appropriately updated Historical Evolution.
Section I	Minimal updates to Incorporation of Existing Plans and Reports.
Section II	Minimal updates to census data and information.
Section III	Minimal updates to goals and objectives.
Section IV	Separated Drought/Heat Wave into two hazards: Drought and Extreme Heat, updates to statistics for more relevant information, all maps and graphs updated to reflect current information, expanded on <i>Probability</i> of Natural Hazards to include climate change impacts, inclusion of data and information for HHPD requirements.
Section V	Minimal updates to demographic and development changes.
Section VI	Minimal Updates
Appendix A	Latest working group list provided.
Appendix B	Updated to include hazard events since 2019 Plan.
Appendix C	Removed lists, included Flood Zone maps and RL information.
Appendix D	Updated to reflect updates since 2019 Plan
Appendix E	No change.
Appendix F	No change.
Appendix G	Minimal updates.
Appendix H	No change.
Appendix I	Minimal updates.
Appendix J	No change.
Appendix K	Removed.
Appendix K	Included The 2022 Regional Resiliency Action Plan (formerly Appendix L)
Appendix L	No change. (formerly Appendix M)

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 22.63 million residents - with 72 percent living in coastal counties - 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.

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.

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

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, hailstorms, 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, 2019, and 2024.

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 2019, 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 2024 update utilized the 2019 major revision as a baseline for this year's LMS update. 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 FL 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 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 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 2020-2024.

Utilized Manatee County Emergency Management website to provide hazard and mitigation education, information, funding sources and links to additional information.
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: Flyer distribution, Public Notice on website and County calendar, 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 82 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 – September 1, 2025
- City of Anna Maria – December 1, 2026
- City of Bradenton – September 1, 2026
- City of Bradenton Beach – July 1, 2026
- City of Holmes Beach – February 1, 2027
- Town of Longboat Key – December 1, 2026
- City of Palmetto – December 1, 2026

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, in compliance 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.

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 3.2 Reconstruction and redevelopment strategies shall be considered to promote hazard mitigation during the annual re-evaluation of the Manatee County Local Mitigation Strategy.

Policy 3.23.1 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 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 1.1.1010 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.
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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 3.4	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 3.4.1	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 3.4.2	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.
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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:

CCM OBJECTIVE 3.2: Prepare and maintain disaster response plans and programs.

CCM Policy 3.2.3: Adopt and comply with a Short-Term Post-Disaster Redevelopment Plan.

CCM Strategy 3.2.3.1: The Town's Short-Term Post-Disaster Redevelopment Plan shall define the circumstances under which the plan shall apply, the procedures required to authorize the implementation of the plan, and the scope of authority permitted.

CCM Strategy 3.2.3.2: The Town's Short-Term Post-Disaster Redevelopment Plan shall facilitate and accelerate short term recovery efforts to repair and restore structures and facilities that are potential public health, safety or welfare hazards.

- CCM OBJECTIVE 3.3: Prepare and maintain post-disaster redevelopment plans and programs.
- CCM Policy 3.3.1: Coordinate with Manatee and Sarasota Counties on long-term post-disaster planning.
- CCM Strategy 3.3.1.1: The Town shall require that reconstructed properties be brought into compliance with the FBC, FEMA requirements and the LDC to the extent practicable.

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.
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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 (2024/25) of the Manatee County LMS, the active membership of the Working Group was led by:

Chair: Joel Richmond, Manatee County Public Safety Department – Emergency Management Division, EM Coordinator, Deputy Incident Commander

Vice-Chair: Tom Gerstenberger, Manatee County Public Works Department – Engineering Division, Division Manager

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

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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 2018 the United States Census determined Manatee County's population to be 349,855 while the County's six jurisdictions were: 1,749 Anna Maria; 57,644 Bradenton; 1,278 Bradenton Beach; 4,261 Holmes Beach; 7,362 Longboat Key (total based of entire jurisdiction located in both Manatee and Sarasota Counties); and 13,717 Palmetto.

Manatee County has experienced a 12% increase in growth since 2018. Current population is estimated to be 441,095 (Manatee County, FL, 2023 U.S. Census Bureau July 2023 Estimate), and making Manatee County the 16th 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 80% of the County's population resides in the unincorporated areas, leaving 20% under city jurisdiction.

AREA, POPULATION AND DENSITY BY JURISDICTION

Jurisdiction	Area (per sq. mile)	Population (2023)	Persons (per sq. mile)
Anna Maria	0.86	1,008	1,172
Bradenton	17.16	57,076	3,327
Bradenton Beach	1.19	918	1,092
Holmes Beach	1.91	3,044	5,814
*Longboat Key	16	7,488	468
Palmetto	5.75	13,577	2,361
Manatee County	893	441,095	494
<i>*Numbers based on entire jurisdiction located in both Manatee and Sarasota Counties. Source: United States Census Bureau, Population Estimates Program (2023)</i>			

POPULATION DISTRIBUTION BY AGE

Age Group	Population	Percentage %
Under 9	39,006	8.8
10 - 19	43,931	10
20 - 29	43,184	9.8
30 - 39	48,437	11
40 - 49	47,432	10.8
50 - 59	53,678	12.2
60 - 69	71,662	16.3
70 - 79	62,897	14.3
80 +	30,868	7
Source: U.S. Census Bureau, Census Reporter (2023)		

The median age in Manatee County is 49.5 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 over 440,000 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 220,657 housing units in Manatee County. This is a 6.2% increase from the 2020 Census. Of the 220,657 units, 80.1% (176,772) were owner-occupied, which grew from the previous year of 76.9%. Furthermore, approximately 15,000 or 7.7% of the dwelling units are located within a high hazard area. The average household size is 2.36 for owner-occupied and 2.51 for renter occupied.

Manatee County has seen a growing interest in multi-family homes. Since 2020 the number of 2-unit homes increased by an astounding 70%; whereas 1-unit structures only had a 20% increase. Property value since 2020 has also boomed by average 130%. The average value for housing units based on the U.S. Census Bureau for 2023: in Bradenton Beach is \$419,400, in Longboat Key is \$909,700 in Palmetto is \$219,700, and countywide is \$453,600. No Census information was located for Anna Maria, Bradenton City, or Holmes Beach. The following tables provides a breakdown of housing units by jurisdiction for 2022:

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	220,657	1,577	28,187	1,872	4,202	9,708	6,906
Occupied Housing Units	176,772	486	22,161	444	1,590	4,171	4,957
Vacant Housing Units	3,885	1091	6,026	1,428	2,612	5,537	1,949
Homeowner vacancy rate	1.5	9.8	2.0	13.0	6.3	3.9	0.9
Rental vacancy rate	15.8	95.20	14.2	80.9	79.3	65.5	8.0
<i>*Numbers based on entire jurisdiction located in both Manatee and Sarasota Counties. Source: American Community Survey, U.S. Census Bureau - 2022 data</i>							

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	220,657	1,577	28,187	1,872	4,202	9,708	6,906
1-unit, Detached	114,877	1,343	12,249	348	1,869	2,252	2,268
1-unit, Attached	15,875	38	2,072	72	241	443	448
2 Units	7,383	140	788	247	524	86	263
3 or 4 Units	5,717	40	1,514	223	374	242	115
5 to 9 Units	11,134	10	3,346	163	293	647	50
10 or More Units	23,922	6	6,938	586	823	5,638	1,746
Mobile Home/RV/Boat	29,360	0	1,280	233	78	399	2,016
<i>*Numbers based on entire jurisdiction located in both Manatee and Sarasota Counties. Source: American Community Survey, U.S. Census Bureau - 2022 data</i>							

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. Malls like Ellenton Premium Outlets showcase how commercial activity primarily consists of strip-mall throughout the County.

CIVILIAN LABOR FORCE STATISTICS

Category	County	Florida	USA
Labor Force	195,951	11,095,400	171 million
Labor Force % of County Population	45.66%	n/a	n/a
Unemployment Rate	3.3%	3.3%	3.39%
Source: United States Bureau of Labor Statistics, May 2024			

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, IMG Academy, 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	2,100
Tropicana Brands Group	1,050
IMG Academy	902
Pierce Manufacturing, Inc.	630
Feld Entertainment	562
TriNet	500
SYSCO West Coast Florida, Inc.	468
Sun Hydraulics, Inc.	468
Public Sector	Full-Time employees
Manatee County School District	7,000
Manatee County Government	2,300
Manatee Memorial Hospital	1,900
Manatee County Sheriff's Dept	1,300
Blake Medical Center	1,471
City of Bradenton	550
State College of FL Manatee Sarasota	500
Source: Bradenton Area Economic Development Corporation	

Per the U.S. Census County Business Patterns 2021 dataset, 86.9% of establishments within the County employ less than 50 employees and 90.5% 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	27	1,217
Mining, quarrying, oil and gas	1	Not avail
Utilities	14	227
Construction	1,295	9,231
Manufacturing	294	8,329
Wholesale trade	428	3,993
Retail trade	1,354	20,212
Transportation/Warehousing	228	4,220
Information	133	1,517
Finance and insurance	563	3,337
Real estate, rental and leasing	826	2,788
Professional, scientific and technical	1,260	5,128
Management of companies & enterprise	73	2,114
Administrative support	846	8,078
Educational services	141	2,477
Health care and social assistance	1,084	15,966
Arts, entertainment and recreation	178	2,653
Accommodations and food services	711	13,165
Other services (except public admin)	919	4,505
Industries not classified	10	13
Total for all sectors	10,368	109,279

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' 2022 Florida Agriculture by the Numbers Reported, has the following information for Manatee County:

2007, 2017 and 2022 Florida Statistical Abstract			
	2007	2017	2022
Active Farms	794	753	637
Acres in Production	225,101	192,630	156,600
Acre Distribution:			
Cropland	77,299	71,172	76,790
Woodland	25,9416		25,022
Timberland		362	
Pasture	92,184	162,568	117,483
Other Uses	29,672		
Reported Income	\$239,624,000	\$360,119,000	\$321,817,000

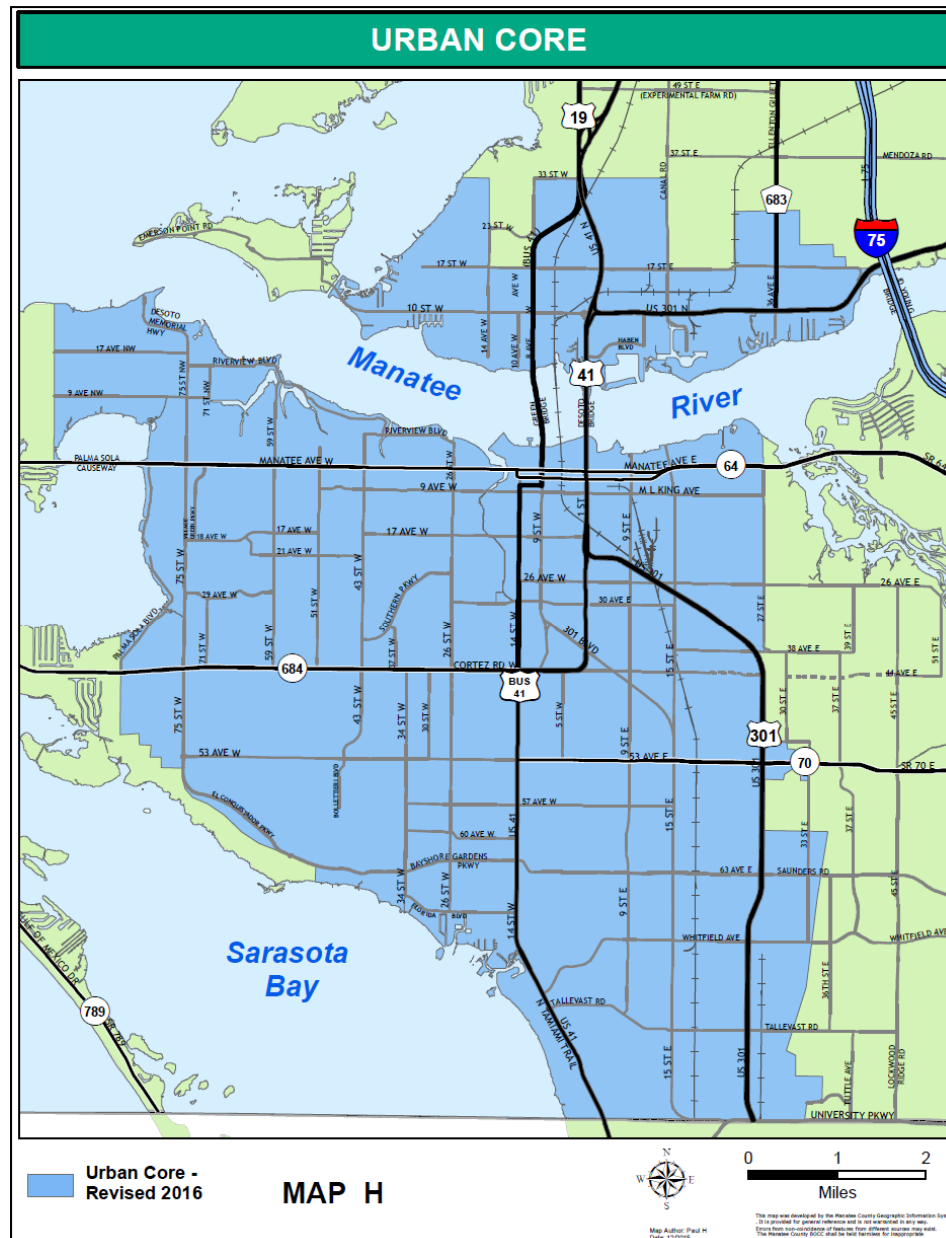
Statistical Report	Unit type	County Rank in Florida
Citrus (production -all types)	3,282,000 boxes	9 th
Commercial Citrus	16,231 acres	9 th
Citrus Trees	2,110,000 trees	9 th
Milk Cows	4,100	7 th
Cattle and Calves	31,500	19 th
Beef Cows	16,300	14 th
Source: Florida Department of Agriculture and Consumer Services' 2022 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."*

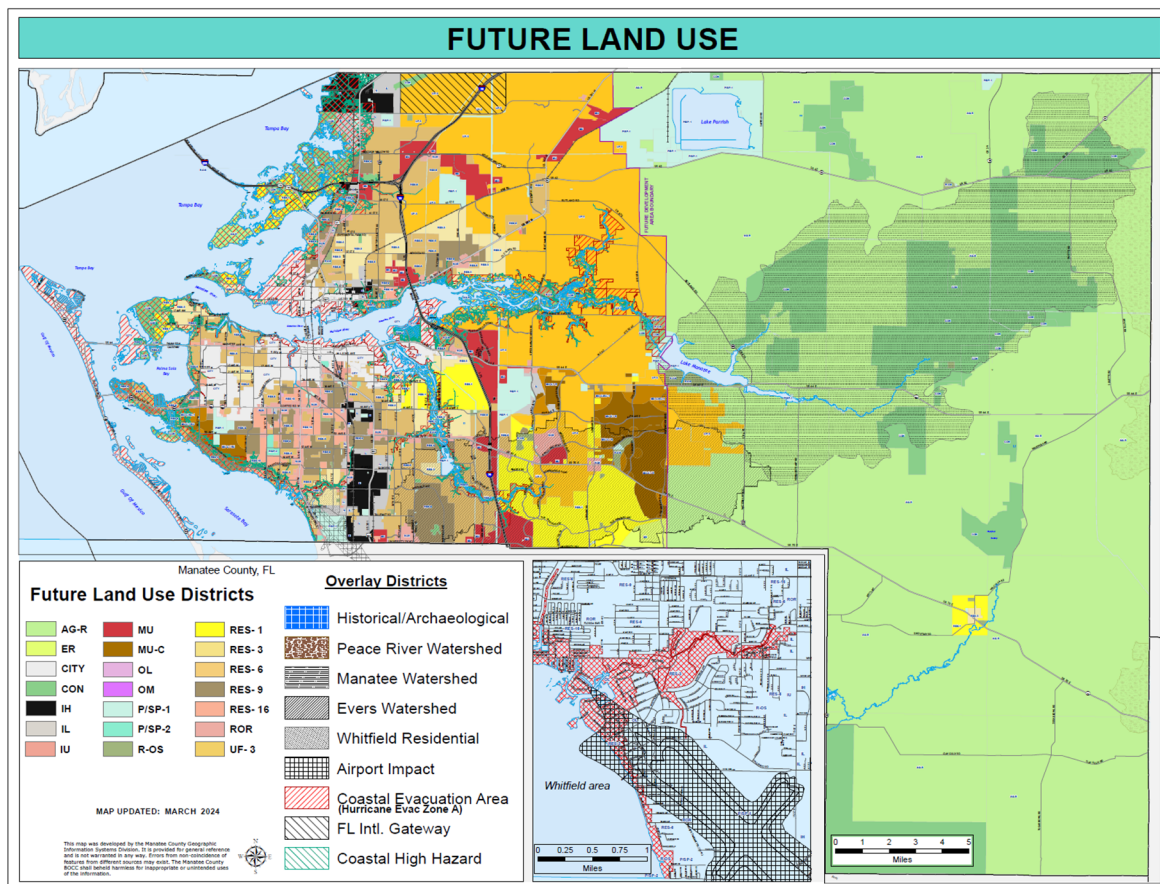
With the enactment of Florida's growth management efforts, the County made a concerted effort to ensure that an urban service boundary was

established. As seen in the following map, in 2016 the County updated the area established as the Urban Core:



Growth has expanded areas east of Lakewood Ranch past the Future Development Area Boundary, where the eastern portion of the County was primarily rural. Subdivisions have been approved over the last few years extending infrastructure past the FDAB and encroaching on agricultural lands. 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 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. To further protect the rural and agricultural character of the eastern portions of the County, the County is reviewing its Comprehensive Plan to ensure that new large-scale development does not occur in the rural area.



What will the future conditions be in Manatee County? In their 2023 projection publication, the Bureau of Economic Business Research (BEBR) estimates that Manatee County's population in the year 2050 could increase to 614,600 – an increase of 291,767, or 52.5%, since 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 53 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 43 percent of the County. There are approximately 245,632 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 (2024)

Future Land Use Category	Acres	% of Total
Ag (AG-R)	245,632	52.6
Commercial (OL, OM, ROR)	5,532	1.2
Government (50% of PSP-1, PSP-2 / 15,510ac)	9,165	2.1
Industrial (IL, IH, IU))	9,117	2.1
Institutional (CON)	54,217	11.6
Recreation (ROS)	2,200	0.4
Residential (ER, RES, UF-3)	115,003	24.6
Utilities (50% of PSP-1, PSP-2)	9,165	1.6
Total Acres – unincorporated county	466,626	
Note: MU and MU-C account for 16,596 (3.5%) acres and are divided as follows: 70% residential (11,610 ac) 15% commercial (2,470 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 Encourage disaster planning training through collaborative programs with appropriate government agencies and the private sector.
- Objective 2.3 Continue to develop training and improve communication of mitigation knowledge between all Emergency Support Function (ESF) agencies.
- Objective 2.4 Promote and expand CERT training and service opportunities throughout the county.
- Objective 2.5 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 United 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.

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	08/10/2021	03/25/2024	7
Bradenton	06/01/1981	Appx. C	08/10/2021	03/25/2024	6
Bradenton Beach	06/11/1971	Appx. C	08/10/2021	03/25/2024	6
Holmes Beach	06/11/1971	Appx. C	08/10/2021	03/25/2024	6
Longboat Key	04/20/1970	Appx. C	08/10/2021	03/25/2024	6
Palmetto	09/02/1981	Appx. C	08/10/2021	03/25/2024	7
Manatee County	06/26/1971	Appx. C	08/10/2021	03/25/2024	5
Source: NFIP Flood Insurance (Jan 2025)					

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 December 18, 2024.

NFIP POLICY INFORMATION

Community Name	Policies In-Force	Insurance In-Force Whole \$	Written Premium In-Force \$
Anna Maria	1,133	\$338,123,200	\$3,277,288
Bradenton Beach	1,537	\$325,763,800	\$2,435,904
Bradenton	4,244	\$1,133,401,400	\$4,100,744
Holmes Beach	3,364	\$854,210,200	\$6,919,208
*Longboat Key	9,725	\$2,324,518,00	\$10,880,966
Palmetto	2,093	\$524,675,600	\$2,339,230
Manatee County	22,203	\$6,492,035,200	\$17,319,917

** 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> (Dec 2024)

As of October 1st, 2010, Manatee County has maintained a CRS Class 5, giving residents a 25% discount on their flood insurance premiums. The jurisdictions within Manatee County have maintained a CRS Class of 6-7, giving their residents 20% and 15% discounts on flood insurance premiums.

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 (2024)
- Manatee County Land Development Code (2024)
- Manatee County Comprehensive Emergency Mgmt Plan (2018)
- Manatee County Stormwater Master Plan (2021)
- Community Wildfire Protection Plan (2015)

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.

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.

For hazards which posed a credible risk to Manatee County and/or any of its 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 effect 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 220,657 housing units in Manatee County. This is a 6.2% increase from the 2020 Census. Of the 220,657 units, 80.1% (176,772) were owner-occupied, which grew from the previous year of 76.9%. Furthermore, approximately 15,000 or 7.7% of the dwelling units are located within a high hazard area.

The average household size is 2.36 for owner-occupied and 2.51 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 2022.

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	220,657	1,577	28,187	1,872	4,202	9,708	6,906
Occupied Housing Units	176,772	486	22,161	444	1,590	4,171	4,957
Vacant Housing Units	43,885	1,091	6,026	1,428	2,612	5,537	1,949
Homeowner vacancy rate	1.5	9.8	2.0	13.0	6.3	3.9	0.9
Rental vacancy rate	15.8	95.2	14.2	80.9	79.3	65.5	8.0
<i>*Numbers based on entire jurisdiction located in both Manatee and Sarasota Counties. Source: American Community Survey, U.S. Census Bureau -2022 data</i>							

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	220,657	1,577	28,187	1,872	4,202	9,708	6,909
1-unit, Detached	114,877	1,343	12,249	384	1,869	2,252	2,268
1-unit, Attached	15,875	38	2,072	72	241	443	448
2 Units	7,383	140	788	247	524	86	263
3 or 4 Units	5,717	40	1,514	223	374	243	115
5 to 9 Units	11,134	10	3,346	163	293	647	50
10 or More Units	23,922	6	9,938	586	823	8,638	1,746
Mobile Home or RV	29,360	0	1,280	233	78	399	2,016
<i>*Numbers based on entire jurisdiction located in both Manatee and Sarasota Counties. Source: American Community Survey, U.S. Census Bureau -2022 data</i>							

The average value for housing units, based on the U.S. Census Bureau for 2022, in Palmetto is \$219,700, in Bradenton \$252,400, in Bradenton Beach \$419,400, in Holmes Beach \$662,900, in Longboat Key \$909,700 and countywide \$398,200. No information was located for Anna Maria.

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.

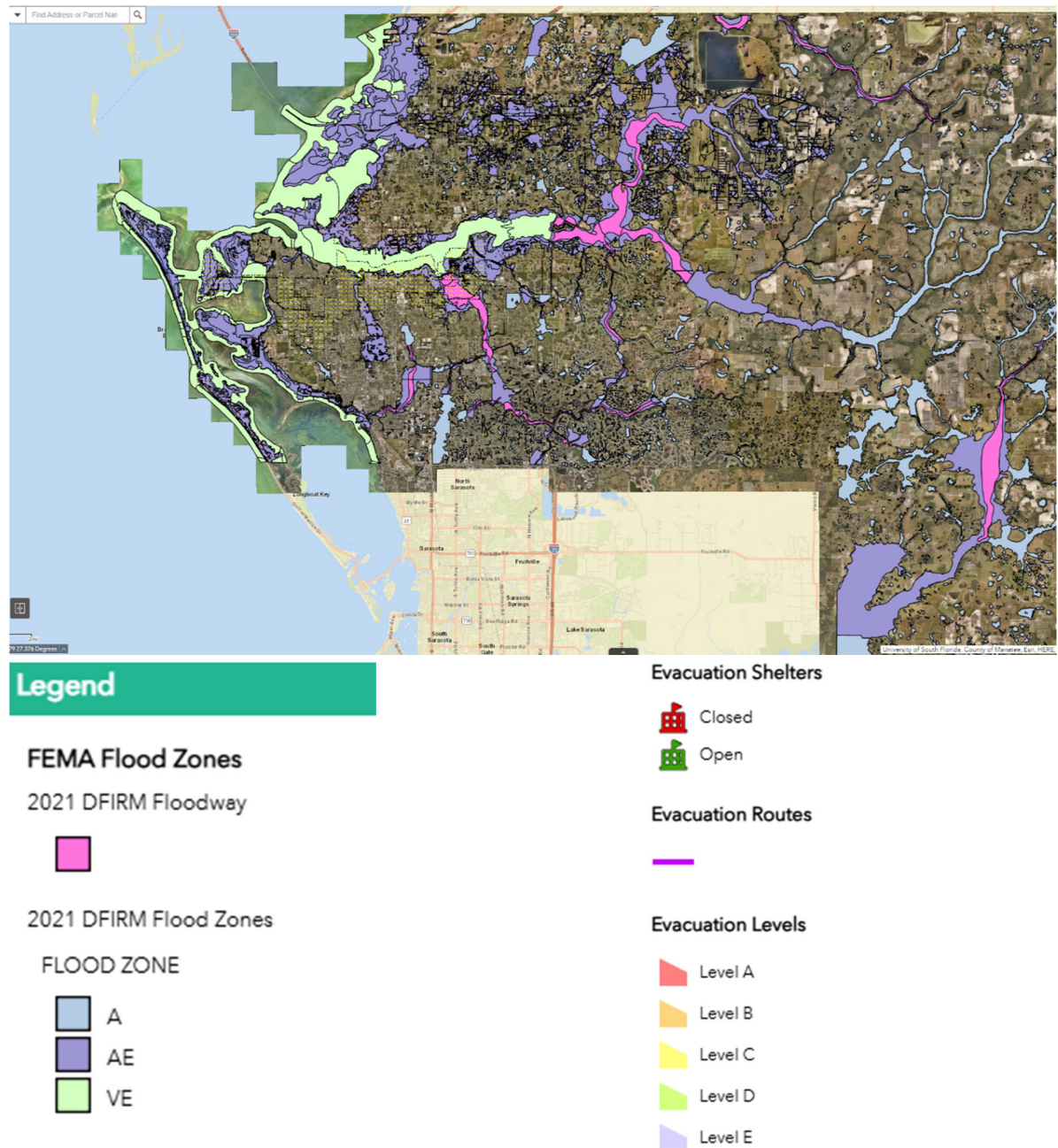
POPULATION BY EVACUATION LEVELS

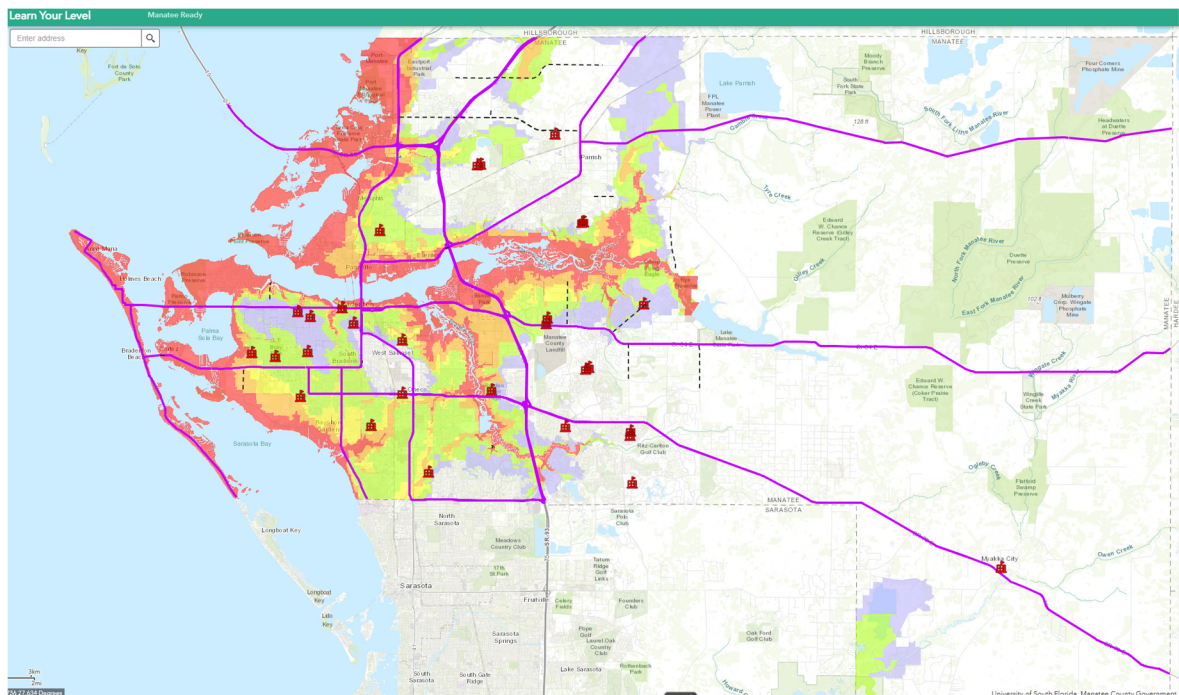
2020	Level A	Level B	Level C	Level D	Level E
Site-built Homes	77,215	20,675	42,222	55,667	37,163
Mobile/Manufact. Homes	18,519	2,095	2,767	2,860	2,209
TOTAL	95,734	22,770	44,989	58,527	39,372
2025	Level A	Level B	Level C	Level D	Level E
Site-built Homes	86,281	23,103	47,202	62,207	41,466
Mobile/Manufact. Homes	18,519	2,095	2,767	2,860	2,209
TOTAL	104,800	25,198	49,969	65,067	43,675
Source: Florida Statewide Regional Evacuation Study Program – Evacuation Transportation Analysis (2025 update)					

BUILDING BY FLOOD ZONES

Land Use Category	High Risk (A or V)	Low Risk (X)
Residential	30,886	92,726
Mobile Homes	6,291	9,217
Multi-Family	29,582	38,873
Commercial	9,161	6,474
Industrial	1,485	2,389
Agricultural	3,425	893
Institutional	1,322	1,666
Government	1,987	1,533
Mixed	2,375	876
Other	3,133	2,380
Source: Manatee County GIS, 2024		

The following maps are interactive and searchable by address, produced by Manatee County and is public for residents as well as all jurisdictions to utilize. Many jurisdictions include a link to both FEMA's Flood Hazard Layer as well as Manatee County's interactive Flood map on their website. Anyone within Manatee County can search their address and receive specific feedback on their flood and evacuation zones, pulled directly from the property appraiser.





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 2020 U.S. Census, Manatee County has 28,386 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 28 percent of the County's population is of the age 65 and above, out of which 3 percent is above the age of 85 (12,838). Moreover, the 65 years and above population has increased by 2 percent since 2020. 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 17.1% of Manatee County's current population is under the age of 18 and 4.3% 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 15% of the County's population has some form of disability. As of May 2024, almost 1,600 persons were registered with the Manatee County Special Needs Registry (SPNR) for evacuation transportation or shelter assistance. Roughly 79% of the people registered (1245 people) are either in the hurricane evacuation areas (Level A through E) and 9.5% of the people registered (149 people) are in a mobile home 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 2020 U.S. Census, approximately 26% 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 and has continued to grow.

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 2022 American Community Survey 1-year Estimates, approximately 14% of Manatee County households had a household income less than \$25,000 and around 5.3% had less than \$10,000. Moreover, in 2022 approximately 10.2% of the population was below the poverty line in comparison to 13.4% in 2017.

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 (2022).

The data outputs determined that approximately 500 businesses (that employ approximately 4,000 employees) exist in the high hazard areas.

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. Malls like Ellenton Premium Outlets showcase how commercial activity primarily consists of strip-malls throughout the County.

CIVILIAN LABOR FORCE STATISTICS

Category	Manatee County	Florida	United States
Labor Force	195,951	11,095,400	171 million
Labor Force % of County Population	45.66%	n/a	n/a
Unemployment Rate	3.3%	3.3%	3.9%
Source: United States Bureau of Labor Statistics, May 2024			

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, 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	2,100
Tropicana Brands Group	1,050
IMG Academy	902
Pierce Manufacturing, Inc	630
Feld Entertainment, Inc	562
TriNet	500
SYSCO West Coast Florida, Inc	468
Sun Hydraulics, Inc	468
Public Sector	Full-Time employees
Manatee County School District	7,000
Manatee County Government	2,300
Manatee Memorial Hospital	1,900
Manatee County Sheriff's Dept	1,300
Blake Medical Center	1,471
City of Bradenton	550
State College of FL Manatee Sarasota	500
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 (2021 Business Patterns dataset) show that 86.9% of establishments within Manatee County employ less than 50 employees and 90.5% 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	27	1,217
Mining, quarrying, oil and gas	1	Not avail
Utilities	14	227
Construction	1,295	9,231
Manufacturing	294	8,329
Wholesale trade	428	3,993

Retail trade	1,354	20,212
Transportation and warehousing	228	4,220
Information	133	1,517
Finance and insurance	563	3,337
Real estate, rental and leasing	826	2,788
Professional, scientific and technical	1,260	5,128
Management of companies & enterprise	73	2,114
Administrative support	846	8,078
Educational services	141	2,477
Health care and social assistance	1,084	15,966
Arts, entertainment and recreation	178	2,653
Accommodations and food services	711	13,165
Other services (except public admin)	919	4,505
Industries not classified	10	13
Total for all sectors	10,368	109,279
Source: United States Census Bureau, 2021 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' 2022 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)	1,094,000 boxes	10 th
Commercial Citrus	9,266 acres	10 th
Citrus Trees	1,310,700 trees	10 th
Milk Cows	4,400	7 th
Cattle and Calves	39,000	13 th
Beef Cows	16,000	16 th
Source: Florida Department of Agriculture and Consumer Services' 2022 Florida Agriculture by the Numbers Report		

2007, 2017 and 2022 Florida Statistical Abstract			
	2007	2017	2022
Active Farms	794	753	637
Acres in Production	225,101	192,630	156,600
Acre Distribution:			
Cropland	77,299	71,172	76,790
Woodland	25,946		25,022
Timberland		362	
Pasture	92,184	162,568	117,483
Other Uses	29,672		
Reported Income	\$239,624,000	\$360,119,000	\$321,817,000

DETERMINING ECONOMIC IMPACT

Based on the type and severity of the hazard, the charts below, provided by Manatee County Property Appraiser, 2023 Final 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	89	\$53,708,786	\$603,469
Single Family Residential	1,288	\$1,773,931,302	\$799,910
Multi-Fam (less than 10 units)	123	\$138,700,314	\$1,127,644
Condominium	82	\$37,035,801	\$451,656
Vacant Commercial	6	\$3,728,442	\$621,407
Improved Commercial	63	\$51,467,493	\$816,944
Institutional	7	\$9,835,546	\$1,405,078
Government	27	\$39,760,501	\$1,472,611
Miscellaneous	6	\$5,199	\$866

City of Bradenton			
Property Type	No. of Lots	Assessed Value	Average Value
Vacant Residential	1158	\$40,848,082	\$35,274
Single Family Residential	12,397	\$2,615,715,472	\$210,995
Mobile Home	2	\$27,584	\$13,792
Multi-Fam (less than 10 units)	631	\$127,804,325	\$202,542
Multi-Fam (10 units or more)	44	\$839,476,080	\$19,079,001
Condominium	6,599	\$1,251,329,315	\$189,624
Cooperatives	426	\$20,456,076	\$48,018
Ret. Home and Misc Res.	578	\$2,534,311	\$4,384
Vacant Commercial	243	\$31,146,191	\$128,173
Improved Commercial	849	\$846,665,500	\$997,250
Vacant Industrial	1	\$10	\$10
Improved Industrial	99	\$127,220,681	\$1,285,057
Agriculture	9	\$74,073	\$8,230
Institutional	211	\$428,292,995	\$2,029,824
Government	296	\$302,968,503	\$1,023,542
Miscellaneous	61	\$2,884,721	\$47,290

City of Bradenton Beach			
Property Type	No. of Lots	Assessed Value	Average Value
Vacant Residential	134	\$29,172,002	\$217,701
Single Family Residential	275	\$292,167,182	\$1,062,426
Multi-Fam (less than 10 units)	150	\$124,682,066	\$831,213
Condominium	1,035	\$456,806,021	\$441,358
Ret. Home and Misc Res.	118	\$20,215,924	\$171,321
Vacant Commercial	2	\$258,811	\$129,405
Improved Commercial	51	\$69,296,621	\$1,358,757
Institutional	5	\$4,434,616	\$886,923
Government	48	\$89,565,872	\$1,865,955

City of Holmes Beach			
Property Type	No. of Lots	Assessed Value	Average Value
Vacant Residential	143	\$56,204,533	\$393,038
Single Family Residential	1,768	\$1,719,047,716	\$972,312
Multi-Fam (less than 10 units)	320	\$297,556,775	\$929,864
Condominium	1,692	\$1,010,615,766	\$597,290
Ret. Home and Misc Res.	272	\$1,898,538	\$6,979
Vacant Commercial	4	\$1,315,187	\$328,796
Improved Commercial	172	\$114,290,702	\$664,480
Improved Industrial	1	\$1,844,038	\$1,844,038
Institutional	12	\$21,139,439	\$1,761,619
Government	39	\$12,172,883	\$312,125
Miscellaneous	35	\$813,771	\$23,250

Town of Longboat Key			
Property Type	No. of Lots	Assessed Value	Average Value
Vacant Residential	162	\$75,817,252	\$468,007
Single Family Residential	850	\$986,943,014	\$1,161,109
Multi-Fam (less than 10 units)	37	\$71,605,091	\$1,935,272
Condominium	2,480	\$1,406,546,752	\$567,155
Ret. Home and Misc Res.	143	\$246,356	\$1,722
Vacant Commercial	16	\$3,925,830	\$245,364
Improved Commercial	42	\$86,046,469	\$2,048,725
Institutional	5	\$13,670,421	\$2,734,084
Government	56	\$23,521,046	\$420,018
Miscellaneous	21	\$306,662	\$14,602

City of Palmetto			
Property Type	No. of Lots	Assessed Value	Average Value
Vacant Residential	428	\$31,537,740	\$73,686
Single Family Residential	2,773	\$676,878,300	\$244,096
Mobile Home	150	\$16,436,410	\$109,576
Multi-Fam (less than 10 units)	128	\$28,098,907	\$219,522
Multi-Fam (10 units or more)	13	\$55,067,789	\$4,235,983
Condominium	944	\$250,076,890	\$264,911
Cooperatives	595	\$52,561,976	\$88,339
Ret. Home and Misc Res.	162	\$4,088,008	\$25,234
Vacant Commercial	109	\$20,303,313	\$186,268
Improved Commercial	450	\$233,448,759	\$518,775
Vacant Industrial	16	\$3,527,878	\$220,492
Improved Industrial	135	\$78,326,165	\$4580,193
Agriculture	11	\$1,199,419	\$109,038
Institutional	111	\$99,926,122	\$900,235
Government	111	\$120,153,865	\$1,082,467
Miscellaneous	30	\$2,139,057	\$71,301

Manatee County (unincorporated)			
Property Type	No. of Lots	Assessed Value	Average Value
Vacant Residential	19,587	\$1,027,645,056	\$52,465
Single Family Residential	98,309	\$31,909,884,963	\$324,587
Mobile Home	4,531	\$372,338,060	\$82,175
Multi-Fam (less than 10 units)	3,064	\$661,446,684	\$215,876
Multi-Fam (10 units or more)	113	\$2,171,884,965	\$19,220,220
Condominium	22,641	\$3,928,473,520	\$173,511
Cooperatives	5,804	\$419,537,032	\$72,284
Ret. Home and Misc Res.	11,590	\$68,127,073	\$5,878
Vacant Commercial	913	\$210,563,181	\$230,627
Improved Commercial	2,399	\$3,468,704,063	\$1,445,895
Vacant Industrial	343	\$66,286,987	\$193,256
Improved Industrial	1,266	\$1,711,428,029	\$1,351,838
Agriculture	2,074	\$389,281,883	\$187,696
Institutional	530	\$1,062,788,018	\$2,005,260
Government	1,314	\$1,173,477,923	\$893,057
Miscellaneous	873	\$75,080,289	\$86,002
Non-Agriculture Acreage	414	\$256,628,136	\$619,874

DESCRIPTION OF HAZARDS

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.

According to NOAA's National Centers for Environmental Information (NCEI), 2023 was the warmest year in NOAA's 174-year climate record. Especially when related to natural hazards, the threats and impacts of climate change will need to be assessed and addressed therefore will be included in probability of climate related natural hazards.

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 the time, 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 Manatee County’s 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. According to Colorado State University 2024 research on Tropical Cyclone Impact Probabilities, Manatee County has a 37% average probability of having impacts by any named storm, 18% average probability of impacts of a Hurricane, and 8% average probability of impacts of a Major Hurricane (cat 3+).

According to the Center for Climate and Energy Solutions, climate change is worsening hurricane impacts in the United States by increasing the intensity and decreasing the speed at which they travel. Scientists are currently uncertain whether there will be a change in the number of hurricanes, but they are certain that the intensity and severity of

hurricanes will continue to increase. These trends are resulting in hurricanes being far more costly in terms of both physical damage and loss of life.

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.

Hurricane Debby brought historic flooding with upwards of 18 inches of rain. This flooding happened in X Flood Zones and areas that see flooding regularly. Debby was about 120 miles off shore of Manatee County at its closest. Hurricane Helene brought 4-6 feet of storm surge. This surge is the largest in recent history causing catastrophic damage to the barrier islands and coastal areas. Again, Helene was about 120 miles off shore when the surge came to the county. After these two storms, Hurricane Milton came ashore with the northern eye wall being over the county with winds up to 120mph at its peak causing wind damage throughout.

The greatest threat posed by a 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). In 2024, both Hurricane Milton and Helene caused over \$350 million in property damage to Manatee County's coastal regions due to 100-year record storm surges and 100mph winds. 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. Hurricane Debby, a Category 1 that passed Manatee about 50mi off the coast and made landfall 200mi north in Aug 2024, dropped 13.49 inches of rain in 48hrs – barely below the 100-year flood NOAA prediction of 14.2 inches. The county is still calculating the damages from this event, estimated over \$55 million.

Vulnerability: The barrier islands between northern 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 9 ft.
	Level B	Evacuate red and orange areas and all manufactured homes	Up to 14 ft.
	Level C	Evacuate red, orange and yellow areas and all manufactured homes	Up to 17 ft.
	Level D	Evacuate red, orange, yellow and green areas and all manufactured homes	Up to 21 ft.
	Level E	Evacuate red, orange, yellow, green and blue areas and all manufactured homes	Up to 24 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, 31,252 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.

In 2024 Hurricane Debby passed by the county 50 miles away and dropped almost 18 inches of rain causing an estimated \$56 million in damages

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. It is predicted the frequency and intensity of severe storms will increase with climate change.

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 32,000 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

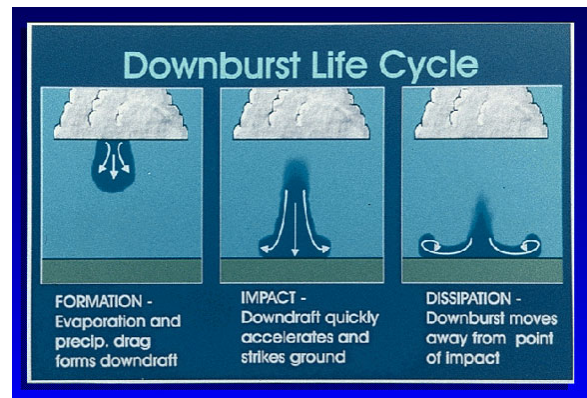
Types Characteristics	Single Cell Storm	Multi-Cell Cluster	Multi-Cell Line (Squall Line)	Super-Cell
Severe Weather Occurs As:	Brief, isolated downburst; small hail; heavy rain; weak tornadoes	Downbursts, moderate size hail; flash floods; weak tornadoes	Downbursts; small-moderate sized hail; occasional 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.				

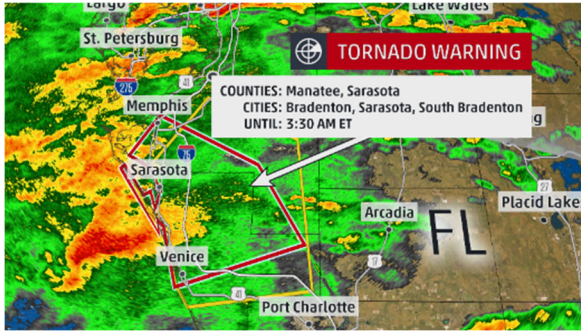
HAIL DIAMETER AND SIZE DESCRIPTION

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
<i>Source: National Weather Service</i>		

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.

An analysis provided by Climate Central states that when excluding the weakest events, the overall number of U.S. tornadoes each year hasn’t changed since 1970. Tornado activity has become concentrated in more frequent outbreaks (days with multiple tornadoes). The frequency of U.S. tornado outbreaks is increasing faster for the most extreme outbreaks. There is also evidence that tornadoes are getting more powerful in the U.S. and that fall tornado activity is increasing especially in the Southeast. Since 1979 “Tornado Alley” has shifted eastward, with increased tornadic

activity observed in the South, Southeast, and Ohio Valley. However, there's no clear connection between these observed trends and climate change.

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.

In 2024 Hurricane Debby passed by the county 50 miles away and dropped almost 18 inches of rain causing an estimated \$56 million in damages

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.

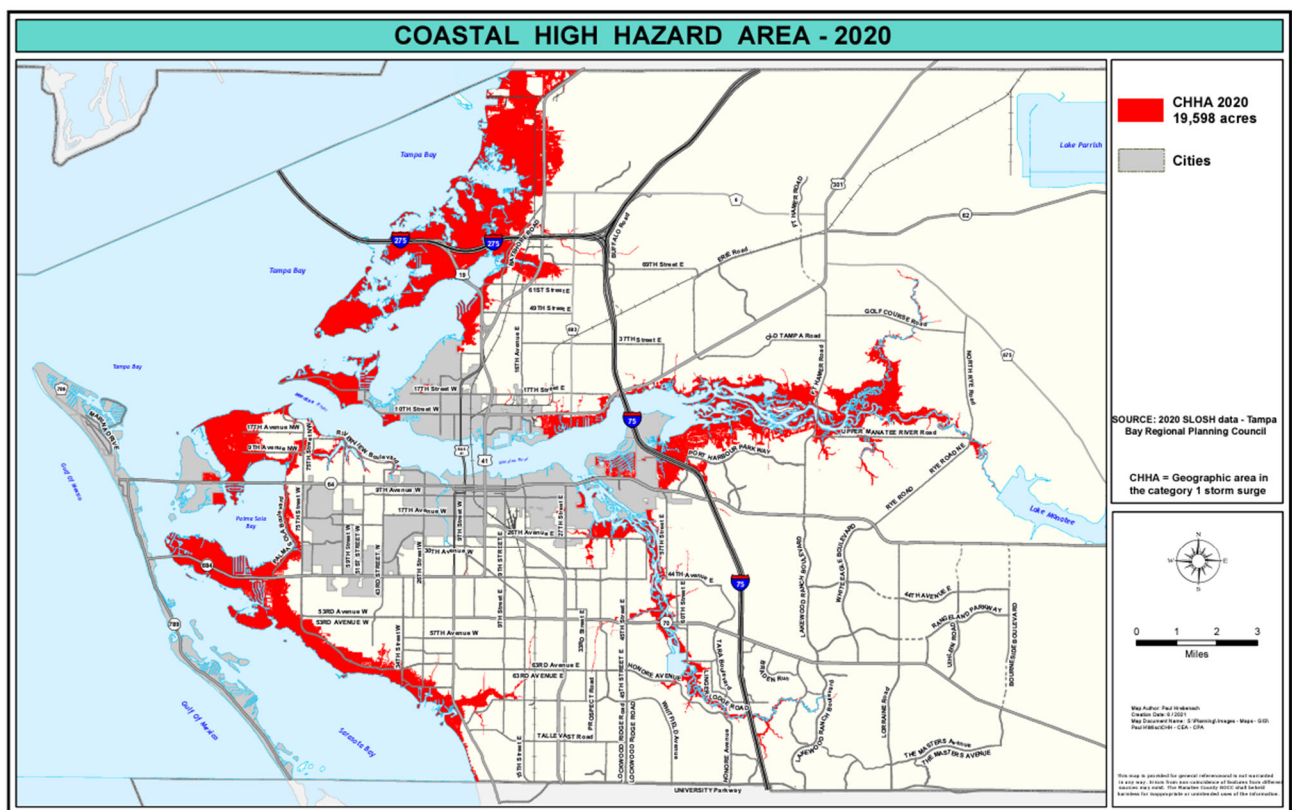
Hurricane Helene brought 4-6 ft of storm surge and pushed the sand onto the island with depths of 3-5 ft. This eroded the shoreline about 10-15 ft back.

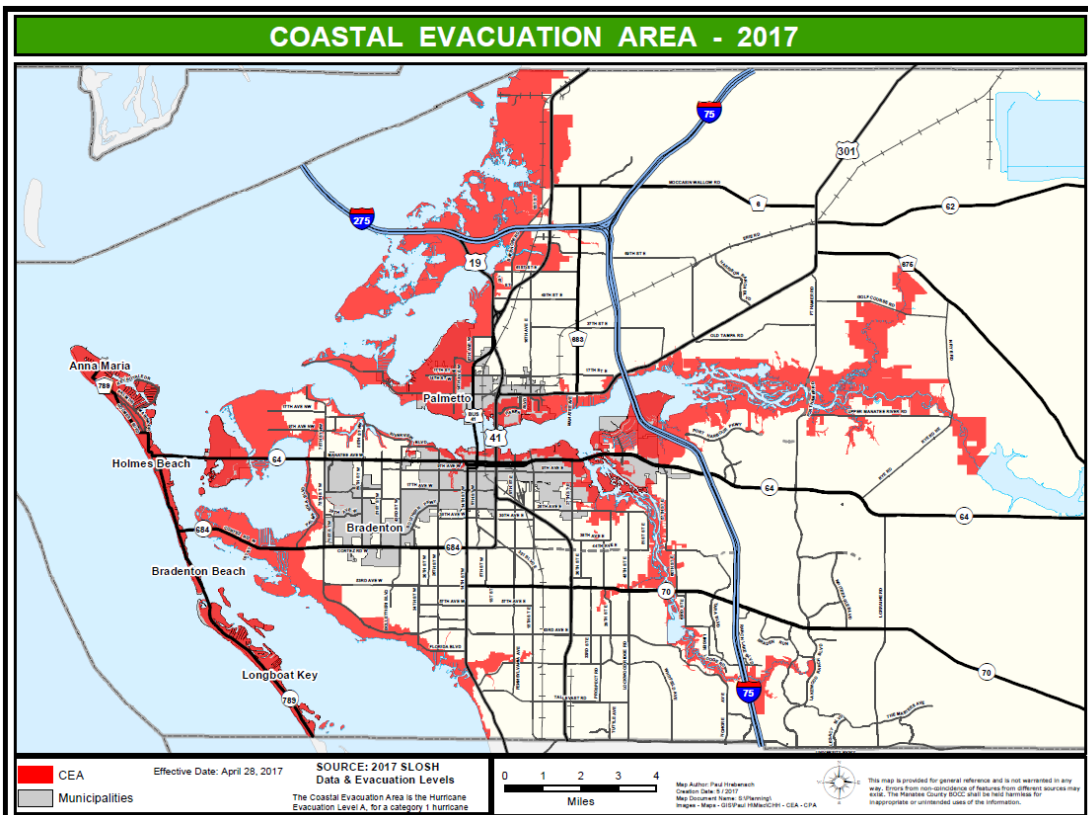
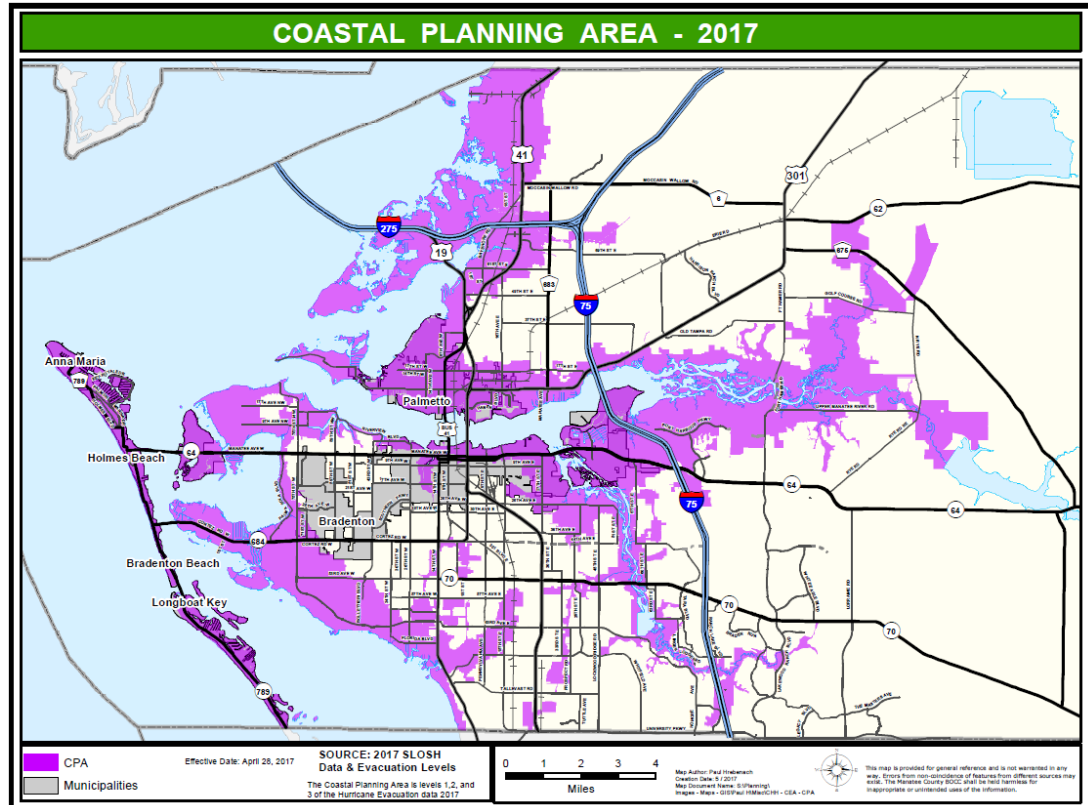
Riverine erosion has a 1% chance of occurring in any given year, up to 2 feet per year.

Climate change has an indirect impact on coastal and riverine erosion due to the increasing number of storms and rising sea levels, erosion still needs to be considered with other risks analyzed.

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.

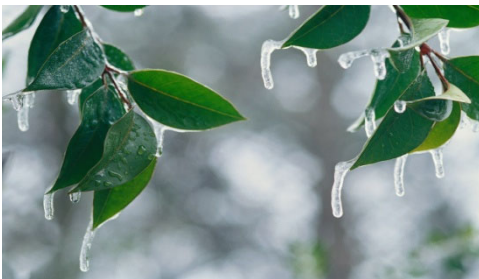




The County has experienced several severe storms in the last 25-years: Tropical Storm Debby in 2012 caused significant damage to county beaches. Since Tropical Storm Debby, roughly 600,000 cubic yards were eroded on the County beaches. Thirty to forty feet of beach, 2-3 feet deep was lost along Anna 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.

Most of the research surrounding climate change discusses a warming climate while also acknowledging more moisture in the air can result in harsher winters, as experienced in the Midwest and Northeast US. The National Climate Assessment recognizes that winter storms and their varying trends remain an active research area.

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. In winter of 2023-2024 three winter storms brought strong winds and localized flooding. While damage was small, there was about \$1 Million in damages.

According to Suncoast Partnership to End Homelessness, with the help of Turning Points, Manatee County has 1,150 homeless as of 2023. 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

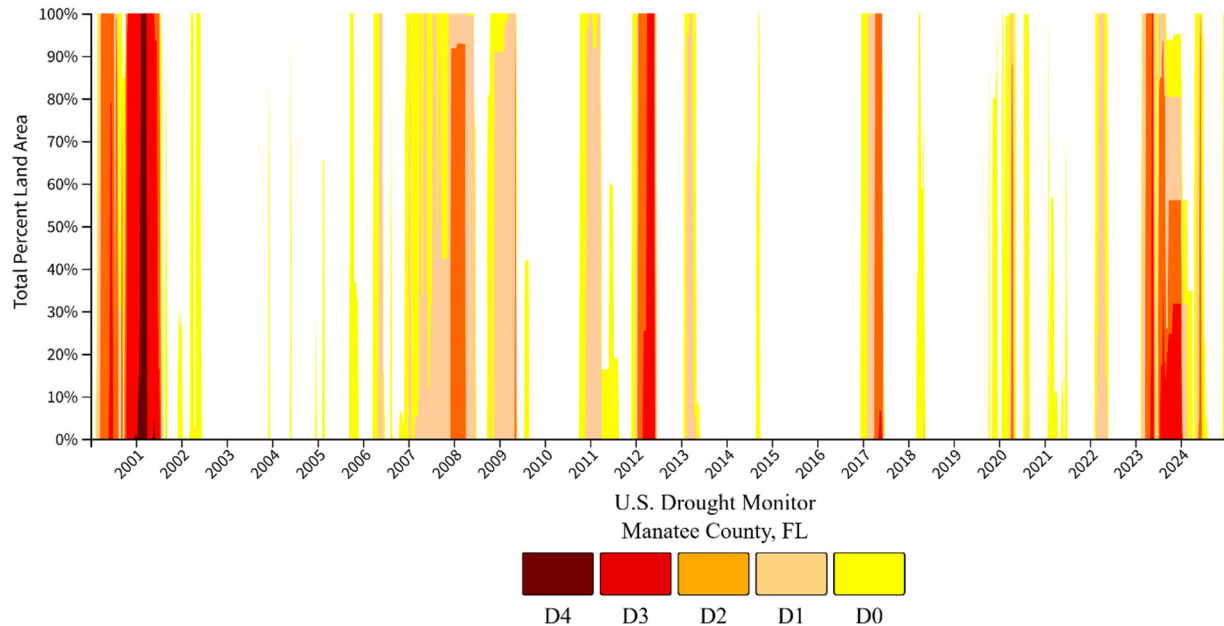
Background: A drought is a deficiency in precipitation over an extended period, usually a season or more, resulting in a water shortage causing adverse impacts on vegetation, animals, and/or people. Drought is a normal phenomenon of all climates. The technical identification is a water shortage caused 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. Most recent event of drought was in 2023 where the county ended up in a Burn Ban local state of emergency. A few wildfires occurred and watering restrictions were in place for a few months before entering the rainy season.

According to Drought.gov, the Southeast region generally receives substantial precipitation and is often considered water rich. However, the region is increasingly experiencing record-breaking droughts, highlighting competing water demands. Drought conditions can develop rapidly in the Southeast, especially when the lack of rain and high temperatures combine to increase evapotranspiration of water in the soils. Location specific information for Manatee County regarding the effects of climate change on drought conditions should continue to be monitored to see how they may impact this hazard moving forward.

HISTORICAL DROUGHT PERIODS FOR MANATEE COUNTY



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.

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.

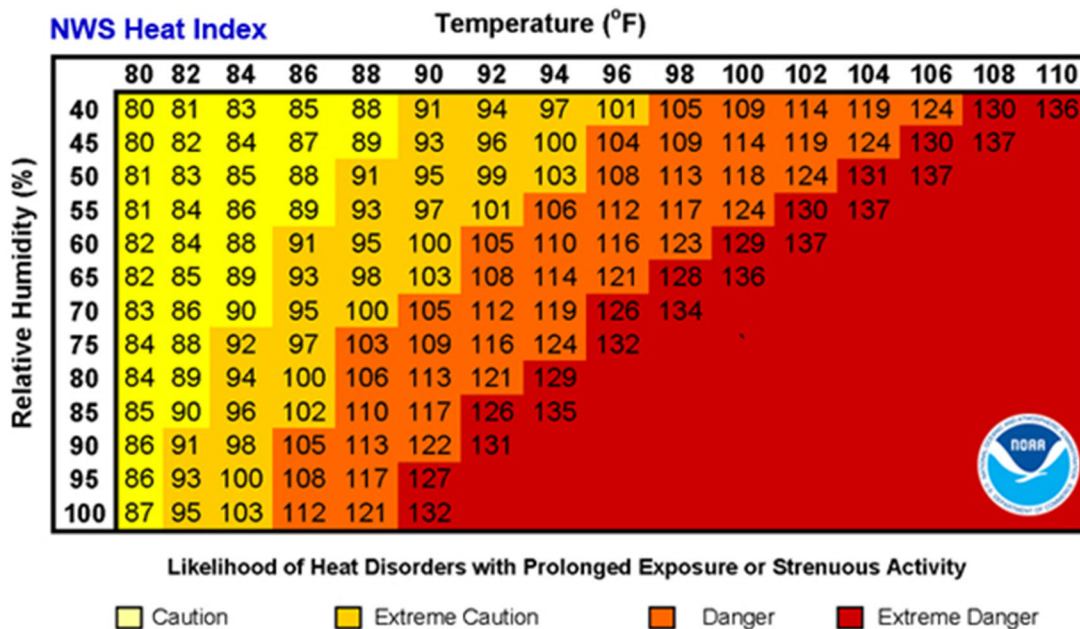
In May 2017, the County saw the driest dry season in the past 103 years, which recorded an 11-inch rainfall deficit. rivers and streams are the most impacted, flowing at the lowest rates in about five years.

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. Extreme Heat

Background: Extreme Heat focuses on the individual impacts of high temperatures, where-as Drought focuses on the environmental impacts of high temperatures. Due to the differences in the effects of these two hazards, Manatee County Division of Emergency Management has made the decision to separate Drought/Heat Wave and rename Heat Wave to Extreme Heat moving forward. The 2024 THIRA still includes Drought/Heat Wave as one and does not include Extreme Heat; these hazards are currently being evaluated for the 2026 THIRA update and will be scored appropriately.

The National Weather Service and Florida Climate Center define that Extreme Heat is classified by temperatures at or above 95° or when the Heat Index is over 105° for two consecutive days or more. Heat Index is a measure of how hot it really feels outside, relative to humidity in the air. For instance, the highest Florida Heat Index recorded was May 15th, 2024 when Key West tied its highest at 115°. The air temperature was only 96° at this time, but it felt like 115° outside. The National Weather Service also recorded 115° August 12, 2023 at Sarasota-Bradenton. Manatee County, though central and coastal, is still at risk for extreme heat.

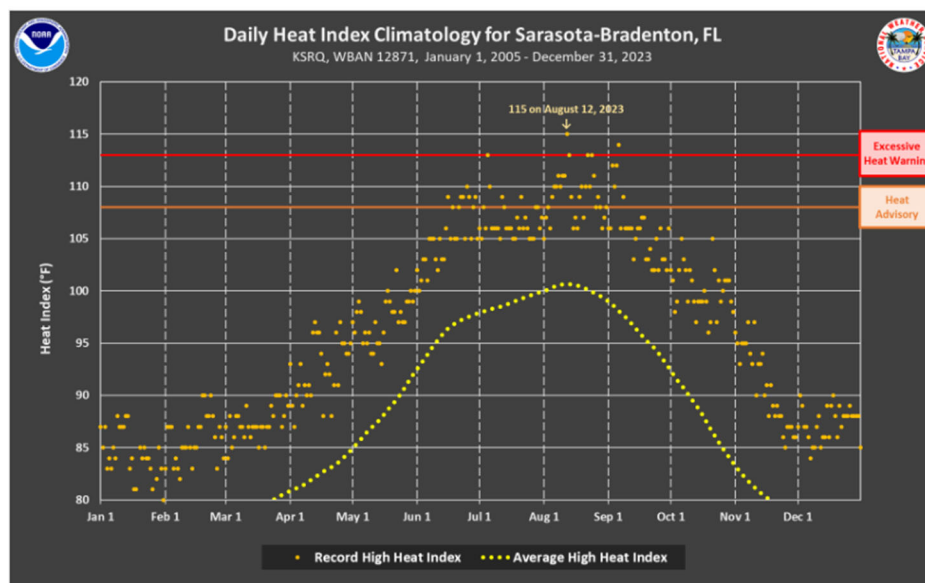


In 2024 Manatee County notified the public of 6 different Heat Advisories, none as strong as the 2023 Excessive Heat Warning, but still ranging up to 110° heat index.

The University of Florida recorded 215 heat-related deaths in Florida between 2010 and 2020. From the data they collected 3% were of those were from Manatee County.

Probability: The hottest months in Manatee County are June – September. Between 2005 and 2023 there were 27 cases that a Heat Advisory would have been in place and 6 cases where Excessive Heat Warning would have been in place, according to today’s standards.

The likelihood of these numbers increasing, both in frequency and in strength, are high. The Florida Climate Center projects that by 2070 there will be an increase by 40 days per year above 95° due to the changes in climate.



Vulnerability: According to FEMA, people living in urban areas may be at greater risk from the effects of extreme heat 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.”

Manatee County must also take proximity to the water into account for vulnerability to extreme heat. Our urban areas are closer to the water and sea breeze, where our rural areas do not benefit from that cool air. The “heat island” effect is still relevant to our urban areas, but comparatively, our eastern, rural areas are more likely to be above 95° on any given day.

Heat Illness refers to the signs the body will show when exposed to heat for too long. Heat Illness occurs when the body temperature increases too quickly to cool itself down, or when too much fluid or salt is lost through dehydration or sweating. Young children, older adults, and those who are overweight or sick are more likely to experience heat illness.

Classification	Heat Index	Effect on the body
Caution	80°F - 90°F	Fatigue possible with prolonged exposure and/or physical activity
Extreme Caution	90°F - 103°F	Heat stroke, heat cramps, or heat exhaustion possible with prolonged exposure and/or physical activity
Danger	103°F - 124°F	Heat cramps or heat exhaustion likely, and heat stroke possible with prolonged exposure and/or physical activity

9. Sinkholes

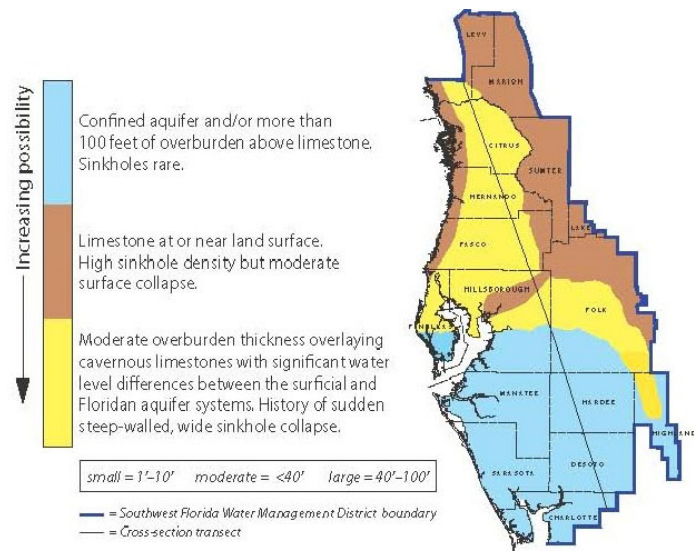
Background: For the residents of Florida, the sudden appearance of sinkholes is not an unusual occurrence. The potential magnitude of these occurrences is exemplified by the creation of Paynes Prairie at Gainesville, the loss of the automobile repair facility in downtown Winter Park and the recent de-watering 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

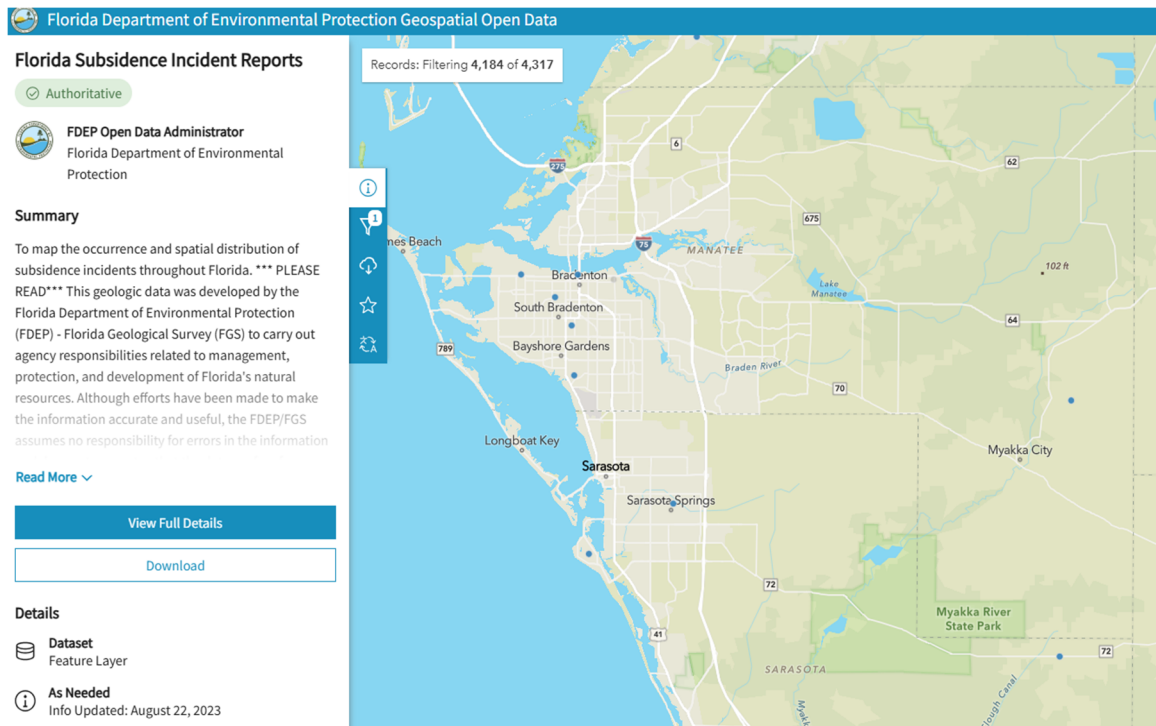
of Manatee County falls in the area identified as an area where sinkholes are a rare occurrence having a less than 1% chance of occurring in any given year. When they do occur, they are typically 10' in diameter and 6-10 feet in depth though larger ones could occur.

This is validated by the fact that Manatee County has 7 reported sinkholes, according to the Florida Department of Environmental Protection/Florida Geological Survey Subsidence Incident Report, updated August 2023.



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. On June 28th, 2011, a sinkhole was reported by a private residence in south Bradenton in their back yard with unknown dimensions claiming it was affecting their patio. April 22nd, 2014 a resident reported a very shallow 6' x 6', 0.3' deep subsidence affecting their driveway in west Bradenton. Most recently, August 5th, 2024, a resident reported a 4' diameter sinkhole with unknown depth just south of the manatee river.



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.

10. **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, which started officially recording in 1983 through 2024, there have been over 3.4 million wildfires which have destroyed over 190.4 million acres of land. This is an average of 82,926 wildfires and 4.65 million acres burned per year.

Wildfires in Florida are not an unusual occurrence. According to the Department of Agriculture and Consumer Services website, from 1981 to 2018, there have been 89 recorded significant wildfires, burning over 2.4 million acres of land.

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 2010 the number of Wildland fires are as follows:

WILDLAND FIRES IN MANATEE COUNTY

Year	Number of fires	Acres
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
2019	52	541
2020	18	88
2021	16	106
2022	31	521
2023	53	1020
Source: Florida Department of Agriculture & Consumer Services, Division of Florida Forest Service		

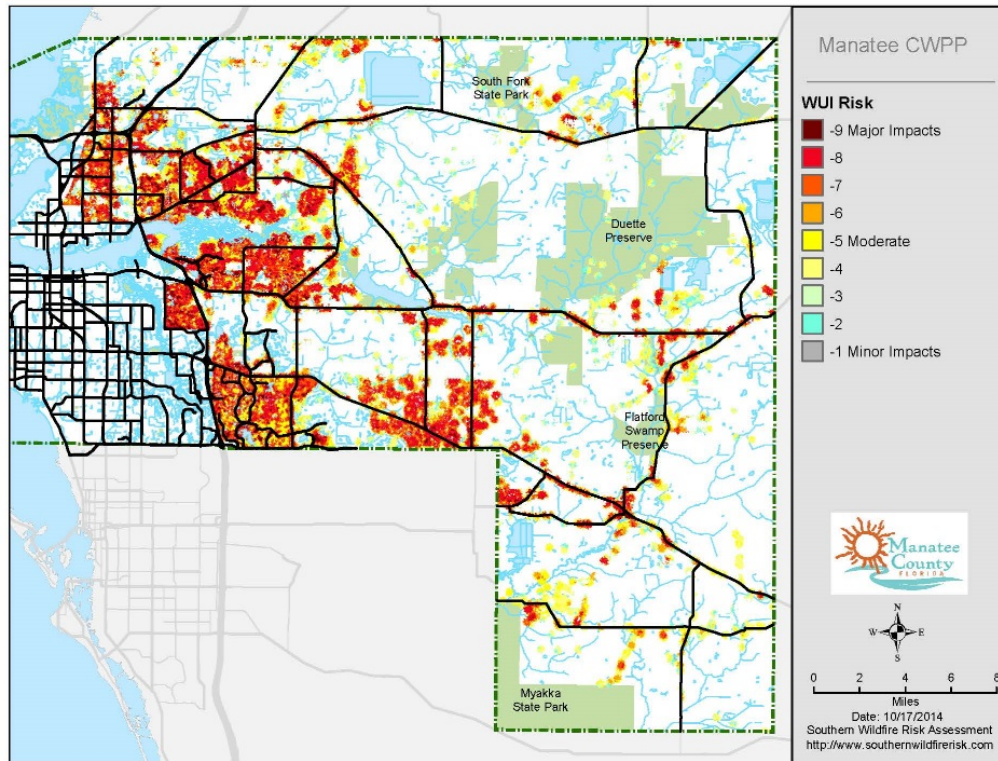
A wildfire burned five acres along I-75 northeast of SR 64 on March 13, 2009. While unsure of the cause, it was felt that it might have been a cigarette butt or spark from a passing vehicle. The fire came within 500 feet of homes in the Heritage Harbour subdivision. The Verna Bethany Fire on March 2, 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.

Florida State University's Florida Climate Center has recognized that wildfire activity is intimately linked with temperature and precipitation patterns, though research is still ongoing on the impact climate change has on wildfire occurrences.

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 2014-2019				
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 Yard Trash	6	5.66	14	1.23

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	
Years 2020-2024				
Campfire	0	0	0	0
Children	1	.7	1	0
Debris Burn*	0	0	0	0
Debris Burn-Authorized Broadcast/Acreage	0	0	0	0
Debris Burn-Authorized Piles	3	1.9	16	.7
Debris Burn- Authorized Yard Trash	4	2.4	2.7	.1
Debris Burn- Non auth Broadcast/Acreage	1	.7	2	.1
Debris Burn-Non auth Piles	27	16.5	242	11.8
Debris Burn-Non auth Yard Trash	5	3	10.5	.5
Equipment Use*	0	0	0	0
Equipment-Agriculture	4	2.4	32	1.6
Equipment-Logging	0	0	0	0
Equipment-Recreation	6	3.7	33.5	1.5
Equipment-Transp.	4	2.4	36.3	1.5
Incendiary	4	2.4	1.7	0
Lightning	36	22.1	1378.3	62.2
Miscellaneous-Breakout	39	24	140.3	7.8
Miscellaneous-Elec. Fence	0	0	0	0
Miscellaneous-Fireworks	1	.7	5.5	.2
Miscellaneous-Power Lines	10	6.1	70	3.4
Miscellaneous-Structure	0	0	0	0
Miscellaneous-Other	5	3	41	2
Railroad	0	0	0	0
Smoking	1	.7	2.5	.1
Unknown	12	7.3	36.7	1.5
Total	163		2,051	
Source: Florida Forest Service, FL Depart. of Agriculture and Consumer Services				

11. Earthquakes

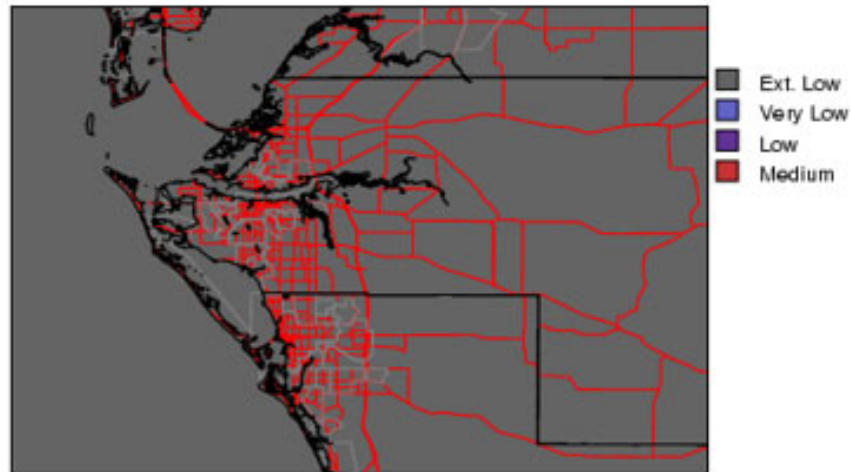
Background: An earthquake is the result of a sudden release of energy in the Earth's crust that creates seismic waves. The seismic activity of an area refers to the frequency, type, and size of earthquakes experience over a period of time.

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 an 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.”

12. 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.

13. 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.

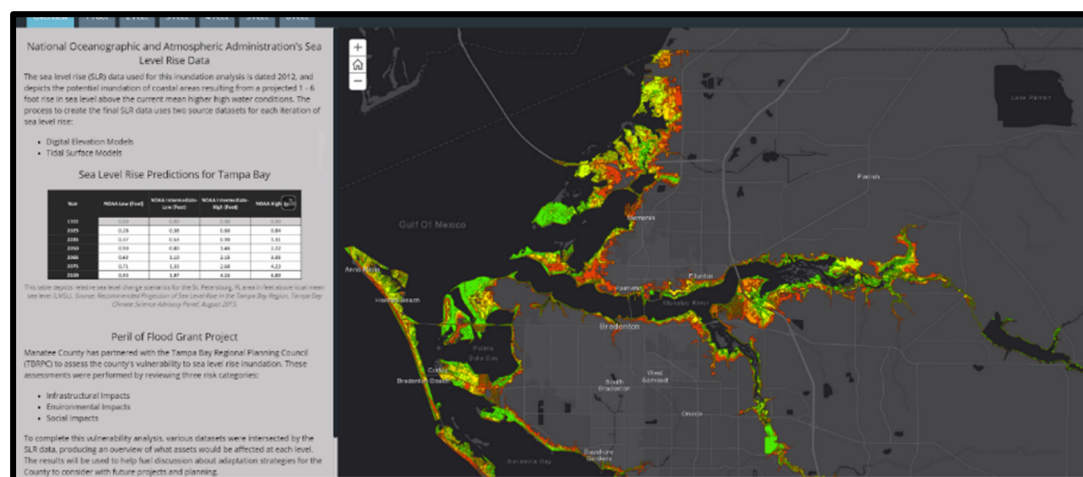
The sun is the main source of space weather. Space weather can produce electromagnetic fields that induce extreme currents in wires, disrupting power lines, and even causing wide-spread blackouts. Severe space weather also produces solar energetic particles, which can damage satellites used for commercial 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	

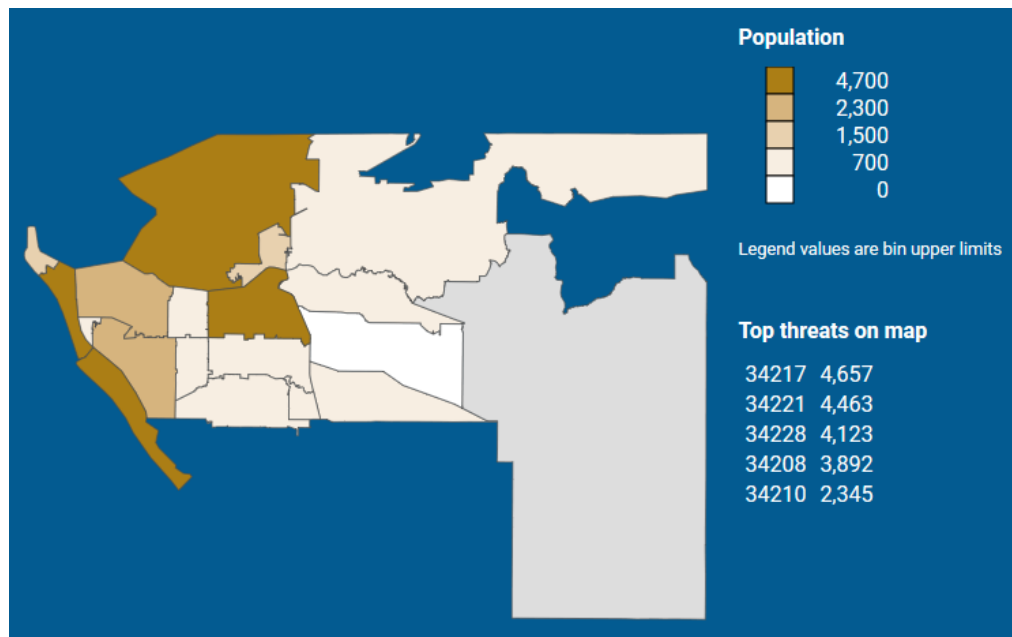
From a report by the Florida Oceans and Coastal Council, over the past 20 years the rate of sea-level rise has been about 80% faster than the best estimate from the United Nations' Intergovernmental Panel on Climate Change. This is assumed to be due to the increasing contribution of water from melting ice reservoirs, due to the increasing temperature of the planet. It is recognized that climate change has and will continue to greatly affect sea-level rise.

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.

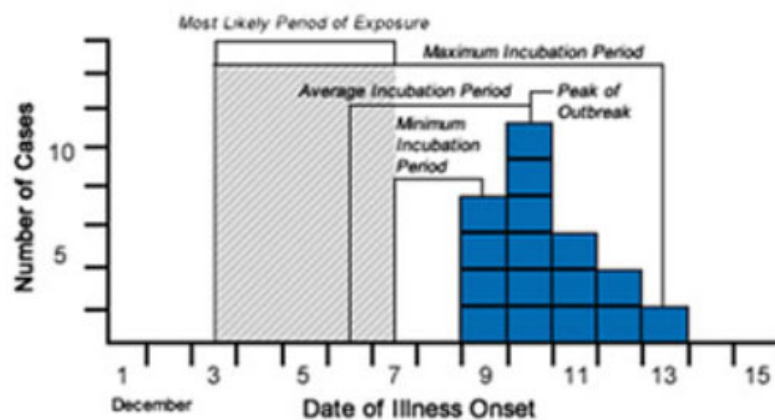
14. Epidemic

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 who's 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 had 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 Health (FDOH) announced that the first resident with a confirmed laboratory positive test result in Florida, resided in Manatee County. As of April 30, 2024, Manatee County had 134,307 positive cases and 2,008 deaths.

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 contained these elements:

- 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 addition to a State operated testing facility on the grounds of the UTC Shopping Center.

The County opened two vaccination sites in 2021 that ran through May of 2021. At least 200,000 individuals were vaccinated during this time.

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

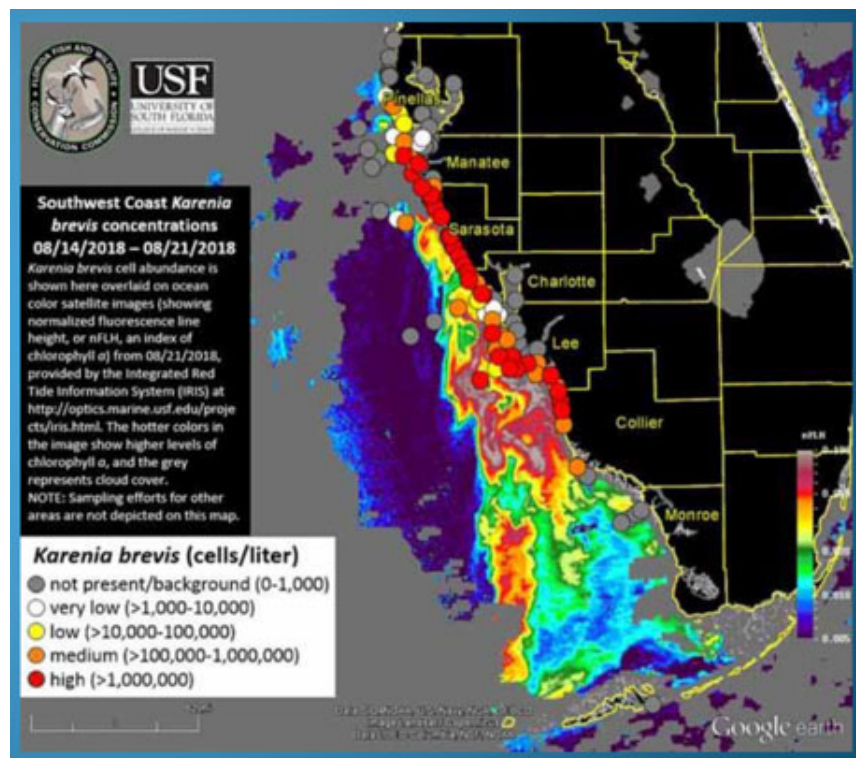


human illnesses caused by HABs, though rare, can be debilitating or even fatal. Manatee County has seen annual blooms in the form of Red Tide (the largest from a discoloration of seawater caused by a bloom of toxic red dinoflagellates) -one of the largest occurring for two months in 2018.

FWC LEVEL RATINGS 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.

United States Environmental Protection Agency (EPA) acknowledges that climate change is leading to higher air temperatures which will correspond in raising water temperatures that, paired with increased stormwater runoff, result in favorable conditions for algal blooms. The EPA states that harmful algal blooms can occur more often, in more fresh or marine water bodies, and can be more intense with increasing temperatures of climate change.

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

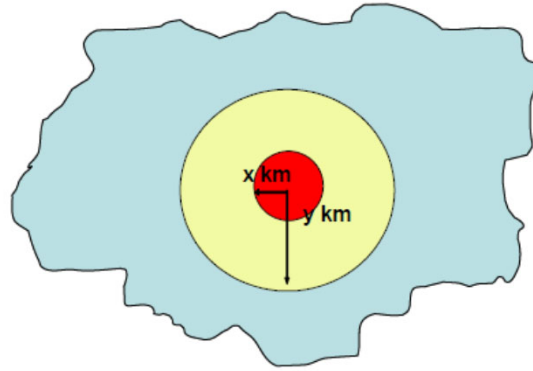


Figure – Illustration of movement control areas centered on a disease outbreak indicating an infected zone around an outbreak.

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 has been defined and started 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 phosphogypsum 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 quantities 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 even 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 refer 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 assess 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. 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

- **Extreme Heat**

Manatee County, as a whole, is affected by extreme heat. Extreme Heat affects individuals differently and all jurisdictions have residents that are more likely to suffer from heat-related illness. Those more likely to succumb to heat-related illness are children, elderly, sick, and overweight persons.

- **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/Heat Wave	M	M	M	M	M	M	M
Extreme Heat	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 10/1/2023							

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 Threat and Hazard Identification and Risk Assessment (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 ($P=H \times V$)

Total Risk = Probability Value x Consequence Value ($R=P \times C$)

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	427.2	1	41.2	10.4	7.0	5.9
Flood	274.2	2	32.6	8.4	6.6	4.9
Tornado	153.1	17	22.3	6.9	5.3	4.2
Earthquake	75.5	30	12.2	6.2	4.0	3.0
Tsunami	82.4	27	13.9	5.9	3.8	3.6
Epidemic	249.8	5	28.6	8.7	6.4	4.4
Exotic Pests and Disease	108.3	24	17.1	6.4	5.0	3.4
Harmful Algal Blooms	157.4	15	23.8	6.6	5.8	4.1
Wildfire	194.2	11	26.8	7.2	6.1	4.4
Sea Level Rise	146.9	18	21.2	6.9	5.2	4.0
Severe Storms	131.7	20	21.8	6.0	6.1	3.6
Drought	223.0	7	30.5	7.3	6.6	4.7
Sinkholes	73.0	31	15.2	4.8	4.5	3.4
Animal Disease Outbreak	81.0	28	14.5	5.6	4.6	3.1
Coastal/Riverine Erosion	63.4	32	13.9	4.6	4.9	2.8
Space Weather	51.5	33	10.5	4.9	4.2	2.5
Winter Storm	31.2	34	7.5	4.1	3.0	2.5
Technological Hazards						
Dam/Levee failure	184.7	13	25.3	7.3	6.2	4.1
Hazardous Materials Release	206.3	9	27.1	7.6	5.8	4.7
Radiological Release	194.2	10	24.0	8.1	5.3	4.5
Critical Infrastructure Disruption	214.3	8	24.9	8.6	6.1	4.1
Airplane Crash	104.2	25	17.5	6.0	4.7	3.7
Major Transportation Incidents	125.9	21	20.3	6.2	5.6	3.6
Train Derailment	91.2	26	17.0	5.4	5.3	3.2
Urban Conflagration	113.9	23	17.5	6.5	4.6	3.8
Power Failure	191.6	12	25.5	7.5	6.8	3.8
Human Caused Hazards						
Terrorist Acts	259.3	3	28.8	9.0	5.9	4.9
Coastal Oil Spills	236.5	6	31.2	7.6	6.4	4.9
Mass Shooting	139.1	19	19.2	7.3	5.1	3.8
Sabotage	174.0	14	23.0	7.6	5.7	4.1
Cyber Incidents	257.4	4	29.1	8.9	6.9	4.2
Civil Disturbance	154.3	16	20.8	7.4	5.2	4.0
Special Events	80.3	29	14.2	5.6	4.6	3.1
Mass Migration	122.9	22	18.7	6.6	5.4	3.4

THIRA is updated every two years, the above most recent being 2024. Extreme Heat was not included in the 2024 THIRA update and will be scored appropriately and included for the 2026 update.

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 September 2024, unincorporated Manatee County had 90 single family residences, 18 duplexes, 17 condominiums, 5 commercial and 2 municipal repetitive loss properties. These properties account for 376 flood insurance claims. One property was demolished by the owner in 2016. It is important to note that these numbers do not reflect impacts from the 2024 Hurricane season, in which Manatee County and its jurisdictions were impacted by 3 major storms (Debby, Helene, and Milton).

Jurisdiction	RLP	Single Fam.	2-4 Fam.	Multi-Fam.	Commercial	# of Claims
Anna Maria	32	22	9	1	0	243
Bradenton	66	55	5	4	2	215
Bradenton Beach	29	15	6	4	4	237
Holmes Beach	57	26	19	11	1	311
Longboat Key	101	87	8	2	4	485
Palmetto	8	8				196
Manatee County	130	90	18	17	5	417
Source: NFIP Flood Insurance (Sept 2024)						

The areas with the highest number of repetitive loss locations per sq. mile 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 given security and privacy regulations.

To mitigate repetitive loss, Manatee County's Building Department has implemented a process to identify and regulate construction on homes within Flood Zones to comply with FEMA's 50% Rule. The FEMA 50% rule, also known as the "substantial improvement" rule, states that if the cost to repair damage to a structure exceeds 50% of its market value, the entire structure must be brought up to current floodplain management standards, essentially meaning it must comply with the same regulations as new construction in that area; this rule is part of the National Flood Insurance Program (NFIP) regulations managed by FEMA. (*FEMA, Substantial Improvement/Substantial Damage Desk Guide*)

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.

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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 2023 population is estimated to be 441,0952 - rising from 258,211 in 2012 and making Manatee County the 16th 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 20% 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 K) 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. In November of 2022 the Regional Resiliency Action Plan was developed and is referenced in Appendix K.

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 7-12 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

In recent years the City of Bradenton has seen an increase in redevelopment with an emphasis on affordable housing. These multiple family structures are built outside of the floodplain. However, stormwater management remains an issue due to aging infrastructure. The City is considering allowing the replacement of units in vulnerable areas with the intention of replacing aging structures with new FEMA compliant structures due to the FEMA 50% Rule.

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. Due to the 2024 Hurricane Season developmental changes resulting in more FEMA compliant structures are expected arise because of the FEMA 50% Rule.

City of Holmes Beach

Due to the location as a barrier island and with a build-out rate exceeding 90 percent, growth has been restricted for several years. Of residential properties, the City is comprised of approximately 25% resident and 75% investment/vacation properties. In 2022, the City adopted a Disaster Ordinance amending Chapter 18, Sections 18-2 through 18-13 of the City's Code of Ordinances; establishing a recovery organization, authorizing preparation of a recovery plan, and granting emergency powers for staff actions to ensure timely and expeditious post-disaster recovery for the City. In 2023, the City adopted changes to the Flood Plain Ordinance by amending the Florida Building Code residential section R-322 to make more stringent the elevation requirements of new construction to Base Flood Elevation + 3' and addressed breakaway walls as ground floor construction standard. In 2024, the City adopted an Emergency Operations Plan to incorporate and coordinate the facilities and workers of the City and its contractors into an efficient organization capable of responding effectively to an emergency.

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;

Library, Arts, Cultural, and Education Center: Multi-use library, arts, culture, and education center in the Bay Isles shopping area near Town Hall (agreements are underway with Sarasota County and local donors to facilitate the completion of the design)

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

St Regis: 168-room resort with meeting space and 26 condominium units at the former Colony Beach and Tennis Resort was approved by the Town Commission in early 2018, and is now open; 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

The City of Palmetto has experienced development growth within the last 5 years. The April 2024 Census estimated the population at 13,948. Development projects that have occurred within the last 5 years have been the Sanctuary Cove Residential Development, Marriott Hotel, Emergency Room facility, Culver's and Arby's Restaurants, and renovations of existing buildings within the City. Public safety and roadway renovations have occurred in the last 5 years as well, such as the new Police Department building, 7th Street extension and roundabout, Connor Park, 23rd Street and Business 41 roundabout, as well as updates to existing parks. The City plans to further develop and enhance the existing parks and the core areas of the City, this includes:

- Multi-Modal Corridor - planned to redevelop an old north-south corridor through the City's urban core and will allow for all types of non-standard transportation such as walking, jogging and biking.
- The Ward 1 Phase III construction project includes roadway, storm drainage, sanitary sewer, water distribution and the reclaim water system.
- Wastewater Treatment Facility expansion study is proposed to increase plant processing & disposal capacity.
- The 10th Avenue Complete Street
- The 10th Street West turn lane

As you can see numerous development and renovation projects have taken place throughout the City in recent years. Such development has occurred in part due to natural disasters such as hurricanes that have affected our area. All developments are required to be built to the current codes and FEMA standards.

Future growth of both residential and commercial development is anticipated within the next 5 years.

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 last 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. Those priorities and goals have not changed for this 5-year update.

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 a 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 legislative bodies of Manatee County and its municipalities. This section includes draft proposal acceptance of the LMS plan by the LMS Working Group, which includes representatives from each jurisdiction, and the Manatee County Board of Commissioners for submittal of the draft plan to the State of Florida Division of Emergency Management (FDEM) on or before May 1, 2025. All jurisdictions within will have the LMS adopted by December 1, 2025.

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 split 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.

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APPENDIX A

2025 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, 2025.

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 2020 THROUGH 2024

51 events were reported between 01/01/2020 and 12/31/2024 (1827 days)

Summary Info:

Number of County/Zone areas affected:	3
Number of Days with Event:	33
Number of Days with Event and Death:	2
Number of Days with Event and Death or Injury:	3
Number of Days with Event and Property Damage:	18
Number of Days with Event and Crop Damage:	1
Number of Event Types reported:	10

Column Definitions:

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

Location	County/Zone	St.	Date	Time	I.Z.	Type	Mag	Dth	Inj	PrD	CrD
Totals:								5	1	1.012B	8.00K
ANNA MARIA	MANATEE CO.	FL	02/06/2020	23:04	EST-5	Thunderstorm Wind	54 kts. EG	0	0	0.00K	0.00K
OAK KNOLL	MANATEE CO.	FL	06/06/2020	11:40	EST-5	Flood		0	0	0.00K	0.00K
CORTEZ	MANATEE CO.	FL	07/16/2020	17:05	EST-5	Tornado	EF0	0	0	0.00K	8.00K
CORTEZ	MANATEE CO.	FL	08/09/2020	17:15	EST-5	Tornado	EF0	0	0	20.00K	0.00K
CORTEZ	MANATEE CO.	FL	08/09/2020	17:15	EST-5	Thunderstorm Wind	58 kts. EG	0	0	0.00K	0.00K
LAKEWOOD RANCH	MANATEE CO.	FL	08/11/2020	13:25	EST-5	Thunderstorm Wind	43 kts. EG	0	0	3.00K	0.00K
BRADENTON	MANATEE CO.	FL	09/10/2020	15:34	EST-5	Flood		0	0	0.00K	0.00K
WEST SAMOSET	MANATEE CO.	FL	09/10/2020	15:37	EST-5	Flood		0	0	0.00K	0.00K
MATOAKA	MANATEE CO.	FL	09/10/2020	17:48	EST-5	Flood		0	0	0.00K	0.00K
VERNA	MANATEE CO.	FL	11/11/2020	12:18	EST-5	Tornado	EF0	0	0	0.00K	0.00K
INLAND MANATEE (ZONE)	INLAND MANATEE (ZONE)	FL	11/11/2020	16:39	EST-5	Tropical Storm		0	0	0.00K	0.00K
COASTAL MANATEE (ZONE)	COASTAL MANATEE (ZONE)	FL	11/11/2020	16:39	EST-5	Tropical Storm		0	0	10.300M	0.00K
COASTAL MANATEE (ZONE)	COASTAL MANATEE (ZONE)	FL	11/11/2020	18:00	EST-5	Storm Surge/tide		0	0	0.00K	0.00K
COASTAL MANATEE (ZONE)	COASTAL MANATEE (ZONE)	FL	11/11/2020	21:00	EST-5	Storm Surge/tide		0	0	500.00K	0.00K
BAYSHORE GARDENS	MANATEE CO.	FL	04/10/2021	16:45	EST-5	Tornado	EF1	0	1	1.000M	0.00K
COASTAL MANATEE (ZONE)	COASTAL MANATEE (ZONE)	FL	07/06/2021	21:46	EST-5	Tropical Storm		0	0	0.00K	0.00K
COASTAL MANATEE (ZONE)	COASTAL MANATEE (ZONE)	FL	07/06/2021	22:00	EST-5	Tropical Storm		0	0	5.00K	0.00K
MYAKKA CITY	MANATEE CO.	FL	07/07/2021	05:55	EST-5	Flood		0	0	5.00K	0.00K
COASTAL MANATEE (ZONE)	COASTAL MANATEE (ZONE)	FL	07/07/2021	08:30	EST-5	Storm Surge/tide		0	0	0.00K	0.00K
GILLET	MANATEE CO.	FL	07/11/2021	15:37	EST-5	Thunderstorm Wind	50 kts. EG	0	0	5.00K	0.00K
GILLET	MANATEE CO.	FL	08/12/2021	16:59	EST-5	Thunderstorm Wind	52 kts. EG	0	0	20.00K	0.00K
ELLENTON	MANATEE CO.	FL	08/12/2021	17:01	EST-5	Thunderstorm Wind	43 kts. EG	0	0	10.00K	0.00K
LAKEWOOD RANCH	MANATEE CO.	FL	09/07/2021	13:44	EST-5	Lightning		1	0	0.00K	0.00K
PARMALEE	MANATEE CO.	FL	10/28/2021	13:16	EST-5	Tornado	EFU	0	0	0.00K	0.00K
BAYSHORE GARDENS	MANATEE CO.	FL	12/21/2021	08:12	EST-5	Thunderstorm Wind	43 kts. EG	0	0	5.00K	0.00K
MATOAKA	MANATEE CO.	FL	05/31/2022	17:55	EST-5	Hail	1.00 in.	0	0	0.00K	0.00K
ROSEDALE	MANATEE CO.	FL	05/31/2022	17:59	EST-5	Funnel Cloud		0	0	0.00K	0.00K

BRADENTON SOUTH	MANATEE CO.	FL	05/31/2022	18:51	EST-5	Thunderstorm Wind	52 kts. EG	0	0	50.00K	0.00K
PARRISH	MANATEE CO.	FL	06/15/2022	17:30	EST-5	Hail	1.00 in.	0	0	0.00K	0.00K
BRADENTON SOUTH	MANATEE CO.	FL	06/26/2022	16:28	EST-5	Flood		0	0	0.00K	0.00K
BRADENTON SOUTH	MANATEE CO.	FL	06/26/2022	18:00	EST-5	Flood		0	0	0.00K	0.00K
GILLETT	MANATEE CO.	FL	08/21/2022	16:35	EST-5	Thunderstorm Wind	48 kts. EG	0	0	100.00K	0.00K
PARRISH	MANATEE CO.	FL	08/29/2022	17:15	EST-5	Lightning		0	0	25.00K	0.00K
EL RANCHO VLG	MANATEE CO.	FL	09/02/2022	13:17	EST-5	Thunderstorm Wind	52 kts. EG	0	0	200.00K	0.00K
BALENTINE MANOR	MANATEE CO.	FL	09/17/2022	20:00	EST-5	Flood		0	0	50.00K	0.00K
INLAND MANATEE (ZONE)	INLAND MANATEE (ZONE)	FL	09/28/2022	15:35	EST-5	Tropical Storm		0	0	0.00K	0.00K
COASTAL MANATEE (ZONE)	COASTAL MANATEE (ZONE)	FL	09/28/2022	15:35	EST-5	Hurricane		4	0	1.000B	0.00K
LAKEWOOD RANCH	MANATEE CO.	FL	10/15/2022	17:36	EST-5	Hail	1.00 in.	0	0	0.00K	0.00K
COASTAL MANATEE (ZONE)	COASTAL MANATEE (ZONE)	FL	11/10/2022	08:00	EST-5	Tropical Storm		0	0	0.00K	0.00K
INLAND MANATEE (ZONE)	INLAND MANATEE (ZONE)	FL	11/10/2022	08:00	EST-5	Tropical Storm		0	0	0.00K	0.00K
INLAND MANATEE (ZONE)	INLAND MANATEE (ZONE)	FL	08/30/2023	01:30	EST-5	Tropical Storm		0	0	0.00K	0.00K
COASTAL MANATEE (ZONE)	COASTAL MANATEE (ZONE)	FL	08/30/2023	01:30	EST-5	Tropical Storm		0	0	0.00K	0.00K
COASTAL MANATEE (ZONE)	COASTAL MANATEE (ZONE)	FL	12/17/2023	00:30	EST-5	Coastal Flood		0	0	0.00K	0.00K
PARRISH	MANATEE CO.	FL	06/23/2024	14:19	EST-5	Funnel Cloud		0	0	0.00K	0.00K
GILLETT	MANATEE CO.	FL	07/25/2024	16:30	EST-5	Lightning		0	0	35.00K	0.00K
BAYSHORE GARDENS	MANATEE CO.	FL	07/30/2024	15:55	EST-5	Thunderstorm Wind	43 kts. EG	0	0	25.00K	0.00K
COASTAL MANATEE (ZONE)	COASTAL MANATEE (ZONE)	FL	08/04/2024	07:00	EST-5	Tropical Storm		0	0	0.00K	0.00K
INLAND MANATEE (ZONE)	INLAND MANATEE (ZONE)	FL	08/04/2024	07:00	EST-5	Tropical Storm		0	0	0.00K	0.00K
HOLMES BEACH	MANATEE CO.	FL	08/22/2024	08:19	EST-5	Lightning		0	0	100.00K	0.00K
COASTAL MANATEE (ZONE)	COASTAL MANATEE (ZONE)	FL	09/26/2024	09:00	EST-5	Tropical Storm		0	0	0.00K	0.00K
INLAND MANATEE (ZONE)	INLAND MANATEE (ZONE)	FL	09/26/2024	09:00	EST-5	Tropical Storm		0	0	0.00K	0.00K
Totals:								5	1	1.012B	8.00K

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
2024	October	9	Hurricane	Hurricane Milton made direct landfall on Siesta Key at 8:30pm as a major hurricane. The effects to the county's infrastructure are still undetermined.
2024	September	27	Hurricane	Hurricane Helene made its way up the west coast of Florida, 100 miles off shore, and brought historical flooding and sand displacement to coastline & river properties. The beaches will be under construction for the years to come to recover from Helene.
2024	July		Hurricane	Hurricane Debby made landfall near Steinhatchee, Florida, bringing unprecedented rainfall to Manatee County. Over a 24-hour period, the storm dumped record-breaking amounts of rain, over 18inches, leading to widespread flooding and dangerous conditions across the county. The heavy rainfall resulted in river and flash flooding, prompting the closure of numerous roadways and requiring water rescues from stranded vehicles and homes in area neighborhoods. The county experienced significant damage, with early estimates indicating costs surpassing \$13 million.
2024	May-June	30-11	Drought	Manatee County experienced significant drought conditions, with rainfall in May totaling less than an inch—well below the normal range of 2.21 to 5.16 inches. This prolonged dry spell led to increased wildfire risks, prompting the county to implement a burn ban starting June 3, which was subsequently extended through June 17. The ban prohibited all outdoor burning, including the use of fireworks and sparklers, to mitigate fire hazards. Despite the onset of Florida's rainy season on June 1, initial rainfall was insufficient to alleviate the drought,

				necessitating continued fire safety measures.
2024	January	9	Winter Storm	A potent winter storm system impacted Manatee County, Florida, bringing severe weather conditions. The county experienced strong winds, with gusts reaching up to 50 miles per hour, and heavy rainfall, leading to concerns over coastal flooding. In response to the rapidly intensifying storm and an active tornado watch, Manatee County officials declared a local state of emergency and closed all county services and programming for the day. Residents were advised to exercise caution due to the hazardous conditions.
2023	December	17	Flood Event	Manatee County, Florida, experienced significant flooding due to a potent storm system that brought heavy rainfall and elevated tides. The National Weather Service reported that storm surge levels at Port Manatee exceeded three feet, leading to road closures and the temporary shutdown of several county parks. Anna Maria Island was particularly affected, with numerous roads and some homes inundated by floodwaters.
2023	August	30	Hurricane	Hurricane Idalia made landfall in Florida's Big Bend region as a Category 3 storm with sustained winds of 125 mph. Although the eye of Idalia was approximately 100 miles west of Manatee County, the area still experienced significant effects. The Manatee River overflowed along the Riverwalk in Bradenton, leading to localized flooding. The Sunshine Skyway Bridge was closed due to sustained winds between 50 to 60 mph. Rainfall in the county ranged from 3 to 4.5 inches, with wind gusts reaching up to 67 mph. Evacuation orders were

				lifted, and access to barrier islands was restored by the afternoon of August 30
2023	February	28	Train De-rail	On February 28, 2023, a train derailed in an industrial area east of the Sarasota-Bradenton International Airport in Manatee County, Florida. The incident involved two propane tankers and five rail cars; one propane tanker overturned, while the other remained upright. Fortunately, no leaks or injuries were reported. Emergency crews, including fire and hazmat teams, responded promptly to monitor the situation and ensure safety. The cleanup process required careful handling, as the propane had to be safely removed from the overturned tanker before the cars could be righted and the tracks cleared.
2022	November – Dec		Red Tide	Elevated concentrations of <i>Karenia brevis</i> were detected in local waters, leading to health alerts for areas such as Bayfront Park and Coquina Beach South. Residents and visitors reported respiratory irritations, and there were notable fish kills in the region. The Florida Department of Health in Manatee County issued advisories, urging the public to avoid affected areas, refrain from consuming distressed or dead fish, and exercise caution due to potential respiratory issues.
2022	November	8	Hurricane	As Hurricane Nicole approached Florida, Manatee County declared a state of emergency in anticipation of potential impacts. The county opened Freedom Elementary School as a "Safe Haven" shelter for residents concerned about their homes' structural integrity, especially those in mobile or manufactured homes. Although Nicole made landfall on Florida's east coast as a Category 1 hurricane, by the time it

				reached the Sarasota-Manatee area, it had weakened to tropical storm strength, resulting in minimal impacts locally. Residents experienced some gusty winds and rainfall, but no significant damage was reported in Manatee County.
2022	October	3	Hurricane	Hurricane Ian made landfall in Florida as a powerful Category 4 storm, bringing significant impacts to Manatee County. The county experienced heavy rainfall and hurricane-force winds, leading to widespread damage. Numerous trees were uprooted, and structural damage was reported across the region. In the aftermath, residents began the process of cleaning up and assessing the damage caused by the storm.
2022	April	10	Fire	On April 10, 2022, a significant fire broke out at Port Manatee in Manatee County, Florida, causing substantial damage to the port's facilities and infrastructure. The blaze led to the temporary closure of certain port operations, affecting cargo handling and shipping schedules. Emergency response teams were deployed to contain the fire and assess the extent of the damage. Following the incident, port authorities initiated investigations to determine the cause and implemented measures to prevent future occurrences, ensuring the safety and security of port activities.
2021	June	5	Hurricane	Hurricane Elsa approached Florida's west coast, impacting Manatee County on July 6–7. The storm brought heavy rainfall, with some areas receiving up to 10 inches, leading to localized flooding. Wind gusts reached up to 54 mph at Sarasota-Bradenton International Airport, causing minor damage and power outages. Despite the challenges, the county's preparedness efforts helped mitigate more severe impacts.

2021	July-August		Red Tide	Elevated concentrations of <i>Karenia brevis</i> were detected in local waters, leading to health alerts for areas such as Bayfront Park and Coquina Beach South. Residents and visitors reported respiratory irritations, and there were notable fish kills in the region. The Florida Department of Health in Manatee County issued advisories, urging the public to avoid affected areas, refrain from consuming distressed or dead fish, and exercise caution due to potential respiratory issues.
2021	March - April	1	HAZMAT	In March 2021, a leak was discovered in a containment wall of a wastewater reservoir at the former Piney Point phosphate plant in Manatee County, Florida. To prevent a catastrophic collapse, officials authorized the controlled release of over 200 million gallons of nutrient-rich wastewater into Tampa Bay. This discharge raised environmental concerns due to elevated levels of nitrogen and phosphorus, which can exacerbate harmful algal blooms and negatively impact marine ecosystems. In response, Governor Ron DeSantis declared a state of emergency, and local authorities issued evacuation orders for nearby residents as a precautionary measure. Efforts to manage and remediate the site have been ongoing, with plans to permanently close the facility and address the environmental impacts.
2020	September	16	Hurricane	Hurricane Sally formed in the Gulf of Mexico and made landfall near Gulf Shores, Alabama, on September 16 as a Category 2 hurricane. While the most severe impacts were concentrated in Alabama and the Florida Panhandle, Manatee County, experienced rainfall and gusty winds, leading to minor flooding in low-lying areas and temporary power outages. The county's

				emergency management services monitored the situation closely, but no significant damage or long-term disruptions were reported in Manatee County due to Hurricane Sally.
2020	March – March 21		Pandemic	In March 2020, Manatee County, Florida, reported its first confirmed COVID-19 cases, marking the local onset of the pandemic. In response, the Board of County Commissioners declared a state of local emergency on March 16, enabling the county to implement protective measures swiftly. By the end of March, the county had enacted a temporary curfew to limit non-essential travel during nighttime hours, aiming to curb the virus's spread. These early actions were part of broader efforts to manage the emerging public health crisis within the community.
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 lightning. 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	Tropical 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 near 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 drilling, 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 disrupted 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 brought 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 off 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 to 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 ground; 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

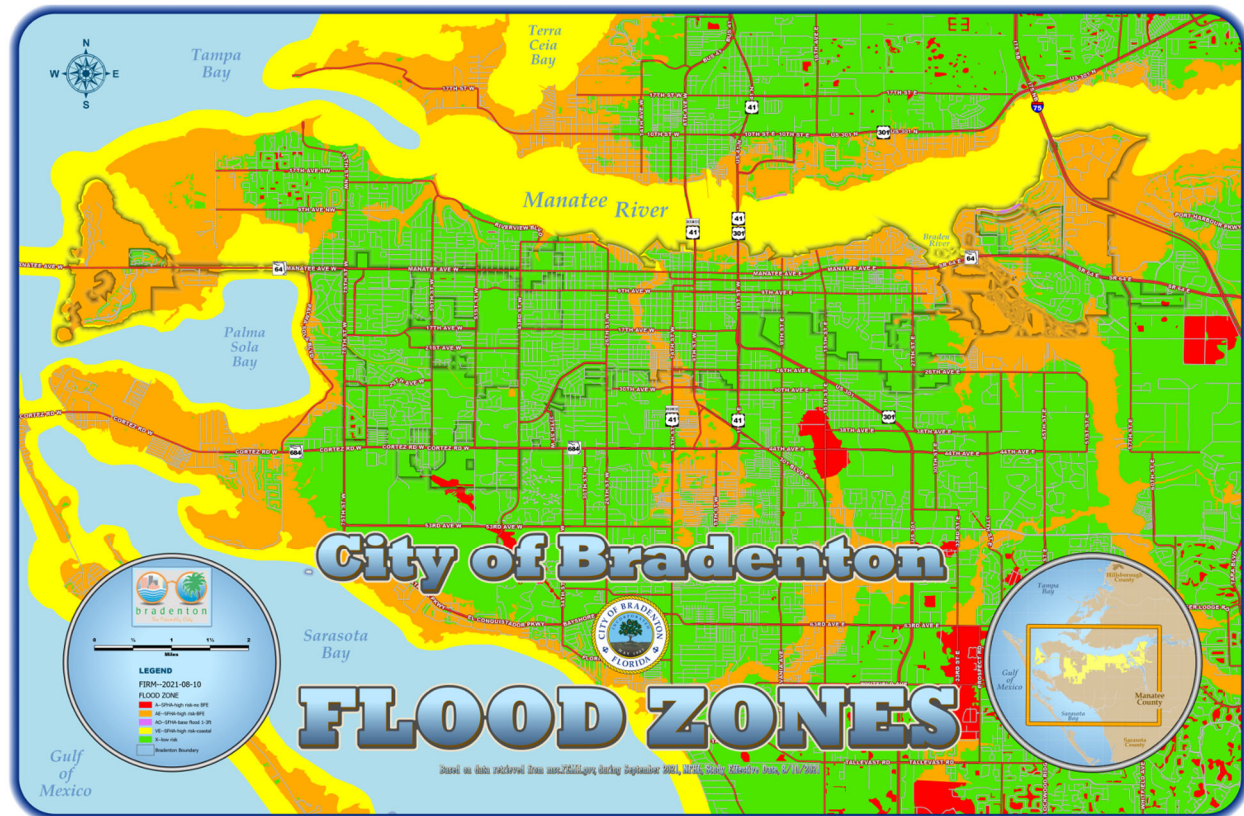
Jurisdiction	RLP	Single Fam.	2-4 Fam.	Multi-Fam.	Commercial	# of Claims
Anna Maria	32	22	9	1	0	243
Bradenton	66	55	5	4	2	215
Bradenton Beach	29	15	6	4	4	237
Holmes Beach	57	26	19	11	1	311
Longboat Key	101	87	8	2	4	485
Palmetto	8	8	0	0	0	196
Manatee County	130	90	18	17	5	417
Source: NFIP Flood Insurance (Sept 2024)						

City of Anna Maria

City of Anna Maria links FEMA's National Flood Hazard Layer on their website for their citizens to utilize.

As of September 2024, the incorporated City of Anna Maria had 22 single family residences, 1 multifamily, and nine 2-4 family repetitive loss properties. These properties account for 243 flood insurance claims.

City of Bradenton



City of Bradenton links FEMA's National Flood Hazard Layer on their website for their citizens to utilize as well as has created a pdf of City flood zones.

As of September 2024, the incorporated City of Bradenton had 55 single family residences, 4 multifamily, five 2-4 family, and 2 commercial repetitive loss properties. These properties account for 215 flood insurance claims.

City of Bradenton Beach

City of Bradenton Beach links both Manatee County Flood Zone maps and FEMA's National Flood Hazard Layer on their website for their citizens to utilize.

As of September 2024, the incorporated City of Bradenton Beach had 15 single family residences, 4 multifamily, six 2-4 family, and 4 commercial repetitive loss properties. These properties account for 237 flood insurance claims.

City of Holmes Beach

City of Holmes Beach links FEMA's National Flood Hazard Layer on their website for their citizens to utilize as well as very clearly indicates on their website that "All property in Holmes Beach falls within a special flood hazard area".

As of September 2024, the incorporated City of Holmes Beach had 29 single family residences, 19 multifamily, eleven 2-4 family, and 1 commercial repetitive loss properties. These properties account for 311 flood insurance claims.

Town of Longboat Key

Being a part of both Manatee County and Sarasota County, Town of Longboat Key reference both Manatee and Sarasota Flood Zone maps on their website and encourage residents to utilize their associated county maps.

As of September 2024, the incorporated Town of Longboat Key had 87 single family residences, 8 multifamily, two 2-4 family, and 4 commercial repetitive loss properties within Manatee County. These properties account for 485 flood insurance claims.

City of Palmetto

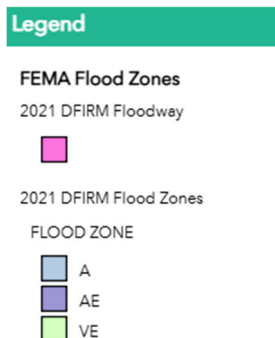
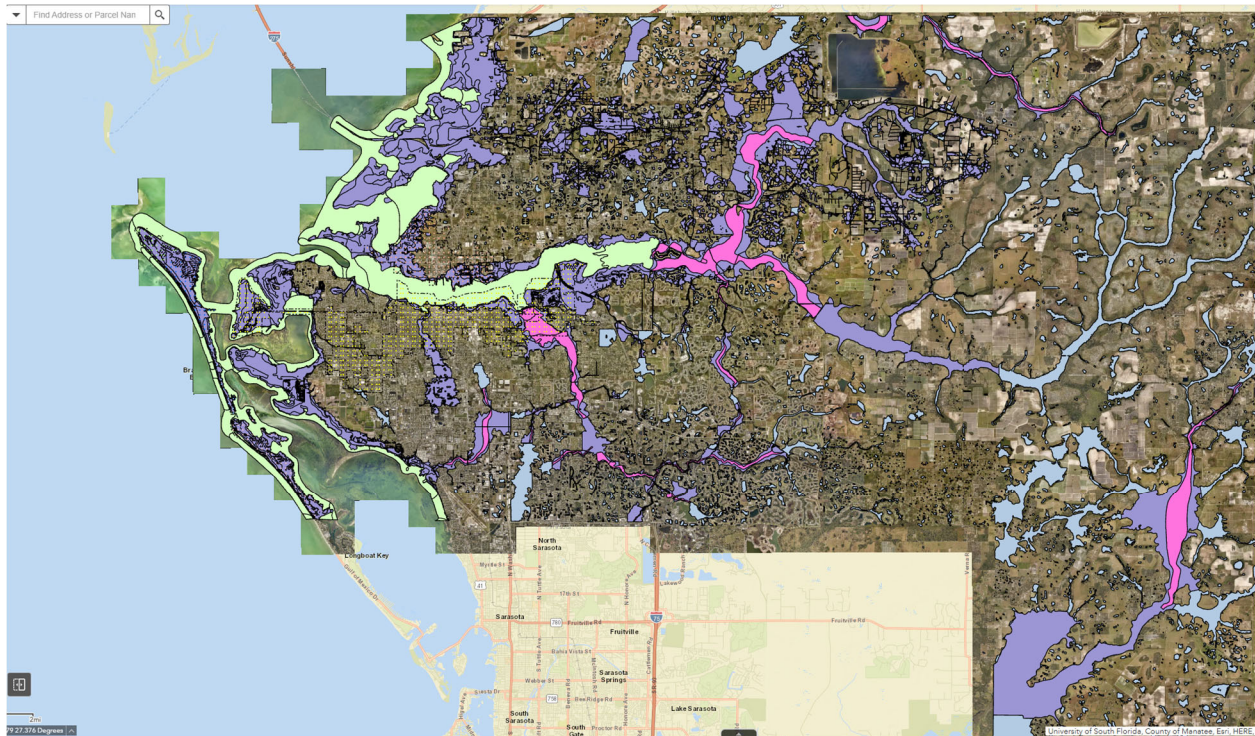
City of Palmetto links FEMA's National Flood Hazard Layer on their website for their citizens to utilize.

As of September 2024, the incorporated City of Holmes Beach had 8 single family residence repetitive loss properties. These properties account for 196 flood insurance claims.

Unincorporated Manatee County

Unincorporated Manatee has encouraged jurisdictions to utilize and reference Manatee County Flood Zone maps, should they not have their own. Manatee County has interactive Flood Zone maps which are address specific and user friendly for all residents within Manatee County and its jurisdictions.

As of September 2024, the incorporated Town of Longboat Key had 90 single family residences, 18 multifamily, seventeen 2-4 family, and 5 commercial repetitive loss properties within Manatee County. These properties account for 417 flood insurance claims.



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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 2024 five-year update commenced in March 2023 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.

The 2024 hurricane season put a pause on the LMS update from August – December while Emergency Management focused on recovery from Debby, Helene, and Milton for Manatee County. At the final LMS Workgroup meeting of 2024, December 18th, Emergency Management brought the LMS update back to the forefront of all jurisdiction's priorities.

After all jurisdictions reviewed each section and appendices of the LMS for the 2024 5-year update, the "First Draft" was posted as an agenda item on the first quarter meeting held on March 19th, 2025, and subsequently and unanimously approved by the LMS Working Group. This meeting was also advertised as public and there was public present, but no comments were made. The "First Draft" was then posted on the county website the next day, March 20th, 2025 for a 20-day period to receive public comment.

The "Final Draft" of the Manatee County 2024 LMS Update was presented to the Manatee County Board of County Commissioners as a Report on April 15th, 2025, 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.

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 2nd or 3rd Wed of March, June, September and December (each year) at 3:00 p.m. at the Manatee County EOC. The LMS Working Group meetings were previously

held at the Manatee County Central Library, but with further thought, Emergency Management decided it was a good idea to open the EOC to the public for these meetings.

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.

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 VULNERABILITY

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: All 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, sale 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.

Anna Maria

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

ptions 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, Policy 1.2.).

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 Code 34-722).

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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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	<ul style="list-style-type: none"> • 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: <ul style="list-style-type: none"> • the cumulative est. revenue loss for the FY of the disaster and the subsequent three FYs; or

	<ul style="list-style-type: none"> • 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. <p>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.</p> <p>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)</p> <p>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)</p>
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 25 th 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: <ul style="list-style-type: none"> • 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 7 th 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: <ul style="list-style-type: none"> • 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;

	<ul style="list-style-type: none"> • 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	State 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: <ul style="list-style-type: none"> • 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 from 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	<p>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.</p>
Eligibility	<p>State, Local and tribal governments. Eligible activities include, but are not limited to:</p> <ul style="list-style-type: none"> • 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	<p>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</p>
Contact	<p>Florida Division of Emergency Management 2555 Shumard Oak Blvd. Tallahassee, FL 32399-2100 (850) 413-9966</p>

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 7 th 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 7 th 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.
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Eligibility	<p>Eligible Applicants:</p> <ul style="list-style-type: none"> • 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 <p>Eligible activities include, but are not limited to:</p> <ul style="list-style-type: none"> • 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 criteria 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	<p>Florida Division of Emergency Management 2555 Shumard Oak Blvd. Tallahassee, FL 32399-2100 (850) 413-9966</p>

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	<p>Infrastructure Support Division Response and Recovery Directorate FEMA 500 C Street SW Washington, DC 20472 (202) 646-3026</p>

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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 five divisions: Emergency Management, Emergency Medical Services (EMS), 9-1-1, Code Enforcement, 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. The Code Enforcement Division is tasked with ensuring compliance with the codes and ordinances established by the Board of Commissioners, as well as the Manatee County Land Development Code, on both residential and commercial properties.

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.

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. Planning and Community Development Department

The Building 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 Building Division also attends the Pre-application meetings in the Planning/Zoning Division and reviews Final Site Improvement Plans and Final Plats to make sure all proposed developments are compliant with the FEMA and Floodplain Management requirements. Floodplain Management activities related to the review of permits occurs throughout the year. Following a storm event, the Building Division oversees the damage assessment process and reports findings to FEMA and other local agencies. The Building Division may coordinate with other agencies, such as the Florida Department of Emergency Management, on more detailed reports of damage assessment.

2. Fire Department

Out of a calling to serve, the Bradenton Fire Department (BFD) exists to provide the highest level of public safety and education to protect all. The department provides all those in the City of Bradenton with services including fire suppression, emergency medical response, fire prevention and education (including plans review, inspections, and investigation), and specialized services such as technical and marine rescue. The BFD is comprised of three stations and 74 filled positions, which include 63 suppression personnel responding to nearly 9,000 annual calls for service, along with 11 administration and support personnel. The current Insurance Services Office (ISO) rating is a two.

3. Police Department

The mission of the Bradenton Police Department is to achieve excellence in policing through professionalism, courage and transparency. In emergency situations that impact our community, the Department will focus its resources and efforts on reducing and minimizing loss of life, injuries and property damage caused by natural disasters, technological failures, catastrophes, or hostile actions.

The Department is committed to responding efficiently and effectively to these dangers and recovering from catastrophic events. The Bradenton Police Department will train and utilize all necessary systems, plans, and resources to ensure the health, safety, and well-being of those affected by any emergency or disaster within our community.

4. Public Works Department

The mission of the Department of Public Works and Utilities (DPWU) is to develop, maintain and operate an efficient infrastructure system serving the City of Bradenton, to effectively provide water, sewer and sanitation services to residents and to maintain City parks, rights-of-way, vehicles and City-owned. The DPWU facilitates street, drainage, infrastructure, and utility system repairs to reduce, mitigate and recover from disasters impacting the Bradenton community.

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.

liaison in the Police Department.

A. 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 operational responsibilities in times of emergencies, evacuation coordination in the event of a disaster, and response supervision during post event and re-entry. All departments are involved in Manatee County's Emergency Operations Center (EOC) along with its personnel. The Chief of Police or designee staffs the City's representative at the County EOC.

Police Chief

- Activate emergency plans, City EOC liaison, or portions thereof, whenever a situation warrants.

- In coordination with Manatee County Emergency Management, develop, update, and coordinate emergency plans and Standard Operating Procedures for response and recovery activities.
- Notify the City Mayor, the Board of City Commissioners, and appropriate Department Heads of disaster situation.
- Maintain communications with Manatee County Emergency Management and adjacent municipalities. Provide information for the City Mayor and Department Heads prior to, and during any emergency/disaster.
- Provide updated information to maintain current and workable plan for emergency operations of the City of Holmes Beach.
- Develop and present the annual Hurricane Awareness Program.

Police Department

- Responsible for all Police Department operations.
- Provide law enforcement, traffic, and crowd control, restrict access and provide security to designated disaster area(s).
- Assist in public notification of evacuation order and establish traffic control points to aid in orderly evacuation and return of evacuees.
- Assist Fire Department in search and rescue operations, as necessary.
- Coordinate re-entry operations with Manatee County Sheriff's office and Bradenton Police Department following hurricane evacuations.

2. Development Services

Development Services consists of three (3) departments, Planning & Zoning, Code Compliance and Building. The Building Department is responsible for the review and issuance of building permits. The department acts as the coordinator for all related applications into the online CitizenServe permitting system that require departmental review. Building Department staff are positioned at the Building counter and help coordinate related questions to Building and other department staff. The department is housed at City Hall.

Building Department

- 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.
- Coordinate Damage Assessment Team following disaster.
- The Community Rating System (CRS) Coordinator's position is staffed in this department, as well as the Floodplain Manager.

- Building Official duties, inspections, floodplain management and permitting assistance for all residential and commercial building permitting, review and inspections. Specifically, review and inspection for Florida Building Code, and FEMA code compliance.
- Building Department provides support for a number of residential hazard mitigation services. It also coordinates the publication of news articles and advertisements and dissemination of other storm preparedness and recovery information. The Department is represented at the Manatee County EOC and is involved in its functions.
- Identify substantially damaged properties to determine whether the structures must be brought up to current floodplain requirements or if they can be mitigated and remain constructed below base flood elevation.

Code Compliance Department

- In conjunction with the City's Building Department, the Code Compliance Department workers (and contractual agents) assists with damage assessment duties and coordination.
- Responsible for monitoring non-permitted storm recovery work and addressing code violations.

Planning Department

- Attends pre-application meetings, reviews site plans and permits for compliance with the provisions of the Land Development Code and Comprehensive Plan.
- Responsible for determinations of non-conforming uses and structures for re-development.
- Administers interpretations of the Land Development Code.
- Ensures the Development Services Department maintains continuity of operations.

3. Public Works

The Mayor, Building Official, Public Works Director and Police Chief confer with the County and utility personnel in formulating the post disaster recovery plan. In accordance with the EOP and the Recovery Management Organization (RMO), the Public Works Director is the recovery emergency management deputy director and acts as the RMO director in the absence of the Mayor. The Department provides stormwater conveyance maintenance and adherence to NPDES standards.

- The Mayor, Public Works Director, Building Official, Chief of Police, City Clerk and other knowledgeable persons determine assessment of loss.
- Take necessary steps to ensure that city facilities are prepared for disasters.
- Provide workers, vehicles, and equipment for debris clearance, barricading impassable streets and secured areas and for mechanical repairs to Public Works vehicles and heavy equipment.
- In coordination with the Police Department, plan for movement and security of designated workers and equipment to Alternate City EOC (AEOC) for protection prior to arrival of hurricane force winds (see COOP Plan)
- Arrange for acquisition and staging of necessary rental equipment such as front-end loaders and transport/storage vans.
- Provide refueling capability.
- Assist Police Department and West Manatee Fire District in search and rescue operations, as necessary.
- Restore normal operations as soon as possible following disaster.
- Chief of Police and Public Works Director confer with the Mayor to determine a program for orderly return to the City.
- Establish procedures and provide workers in support of debris clearance and removal operations and temporary debris storage sites.
- The Public Works Director establishes designated areas for debris accumulation.
- Coordinates the City's co-application with the County's National Pollutant Discharge Elimination System – Municipal Separate Storm Sewer System (NPDES-MS4) stormwater permit with Florida Department of Environmental Protection.

B. 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.

C. CITY OF PALMETTO

1. Development Services Department

The City of Palmetto Development Services Department is responsible for the coordination and direction of all services associated with development and construction, through the implementation of the City of Palmetto Comprehensive Plan and enforcement of the City of Palmetto Code of Ordinances. The following departments provide planning and enforcement services necessary to provide appropriate infrastructure for current and future developments and to regulate City Ordinances:

- A.** The Building Department protects the quality of life in the City of Palmetto by enforcing building and City Ordinances, floodplain regulations, issuing building permits, inspecting structures under construction, and reviewing proposals for future development.
- B.** The Planning and Zoning Department guides the City's current and future physical growth through the establishment of a long-term vision through the Comprehensive Plan, and through the implementation and on-going enforcement of its existing City Ordinance regulations.
- C.** Code Enforcement Department enforces the City codes; to promote, protect and improve the health, safety, and welfare of the citizens and visitors of the City of Palmetto.

The Development Services Department is also the resident of the 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.

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 fully accredited through the Commission for Florida Accreditation, and it partners with the

community to make the City of Palmetto a better place to live, work, visit, and conduct business.

During local or Countywide emergency situations, the department's purpose is to reduce the vulnerability of our citizens due to loss of life, injury, damage and loss of property resulting from natural, technological, and man-made emergencies, disasters. 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 Reclaim water 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 City. The Department also serves as the lead agency for ESF 3 at the EOC.

Storm water is a combined effort throughout the Public Works team that involves all aspects related to any type of storm/disaster event. The team uses the information from a variety of sources to assist the City in its preparation, recovery, and mitigation efforts. The City regularly cleans ditches and maintains areas that are prone to flooding.

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. Risk management participates in most of the Manatee County Emergency Management activities and responds to Emergency Management in a liaison capacity for the City.

5. 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.

6. 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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APPENDIX K

RECOMMENDED PROJECTIONS OF SEA LEVEL RISE IN THE TAMPA BAY REGION

**BY
TAMPA BAY CLIMATE SCIENCE ADVISORY PANEL (CSAP)**

and

TAMPA BAY REGIONAL RESILIANCY ACTION PLAN 2022

**BY
TAMPA BAY REGIONAL PLANNING COUNCIL (TBRPC)**

APPENDIX L

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. Cancellation 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.